ANNUAL REPORT OF THE COMMISSIONER OF PATENTS

VOL. 1 1870

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ANNUAL REPORT

OF THE

COMMISSIONER OF PATENTS

FOR

THE YEAR 1870

U.S. Patent office

VOLUME I.

WASHINGTON:
GOVERNMENT PRINTING OFFICE.
1871.

LETTER.

DEPARTMENT OF THE INTERIOR, PATENT OFFICE,
Washington, D. C., January 31, 1871.

SIR: I have the honor to transmit herewith the annual report of the Commissioner of Patents, as required by section 9 of the act of Congress, approved July 8, 1870, entitled "An act to revise, consolidate, and amend the statutes relating to patents and copyrights."

Very respectfully, your obedient servant,

SAM'L A. DUNCAN,
Acting Commissioner.

The SPEAKER *of the House of Representatives.*

REPORT.

UNITED STATES PATENT OFFICE,
January 31, 1871.

To the Senate and House of Representatives of the United States of America in Congress assembled:

By the 9th section of the act of Congress approved July 8, 1870, entitled "An act to revise, consolidate, and amend the statutes relating to patents and copyrights," the Commissioner of Patents is required to lay before Congress, annually, in the month of January, a report "giving a detailed statement of all moneys received for patents, for copies of records or drawings, or from any other source whatever; a detailed statement of all expenditures for contingent and miscellaneous expenses; a list of all patents which were granted during the preceding year, designating under proper heads the subjects of such patents; an alphabetical list of the patentees, with their places of residence; a list of all patents which have been extended during the year; and such other information of the condition of the Patent Office as may be useful to Congress or the public."

In compliance with this requirement of the statute, I have the honor to submit the following report:

The receipts and expenditures of the office for the year ending December 31, 1870, and the condition of the balance in the Treasury on account of the patent fund, as well as the character and extent of the business done by the office during the year, are shown in the following statements:

No. 1.—*Statement of moneys received.*

Amount received on applications for patents, reissues, extensions, caveats, disclaimers, appeals and trade-marks	$603,775 00
Amount received for copies of specifications, drawings, and other papers	46,559 70
Amount received for recording assignments	19,122 06
Total	669,456 76

No. 2.—*Statement of moneys expended.*

Amount paid for salaries		$404,143 53
Amount paid for photographing		22,457 18
Amount paid for contingent and miscellaneous expenses:		
Advertising	$2,923 60	
Stationery	9,953 57	
Photographing	22,406 56	
Lithographing, printing drawings, tracings, patent heads, &c.	6,811 81	
Painting, glazing, and varnishing	6,934 30	
File-boxes	1,698 45	
Furniture, carpeting, &c	10,987 61	
Repairing furniture, carpenter's work, &c	5,005 57	
Fitting up new room over south portico	4,995 04	
Fitting up cases in model-room	11,905 20	
Fitting up cases in rooms	4,350 96	

Iron stairs leading to portico-room	$1,535 00	
Iron railing, &c., in model-room	740 88	
Reducing drawings for lithographing	1,710 50	
Making drawings	5,192 04	
Plumbing and gas-fitting	900 37	
English patents	1,910 52	
Paper-hanging	1,972 17	
Work on report	3,266 85	
Preparing index of assignments	5,514 00	
Refunding money paid by mistake	920 00	
Miscellaneous items, books for library, subscriptions to journals, freight, ice, temporary laborers and copyists, hardware, keeping horse, brooms, brushes, buckets, mops, soap, spittoons, stoves and putting up the same, clocks and keeping them in repair, washing towels, fees of judges in appeal cases, withdrawals, &c	18,911 48	
		$130,546 48
Total		557,147 19

No. 3.—*Statement of the balance in the Treasury of the United States on account of the patent fund.*

Amount to the credit of the patent fund, January 1, 1870	$531,045 64
Amount of receipts during the year 1870	669,456 76
Total	1,200,502 40
From which deduct expenditures for the year 1870	557,147 19
Balance on the 1st of January, 1871	643,355 21

No. 4.—*Statement of the business of the office for the year* 1870.

Number of applications for patents during the year 1870		19,171
Number of patents issued, including reissues and designs		13,321
Number of applications for extensions of patents		200
Number of patents extended		111
Number of caveats filed during the year		3,273
Number of patents expired during the year		2,543
Number of patents allowed, but not issued for want of final fee		1,016
Number of applications for registering of trade-marks		188
Number of trade-marks registered		121
Of the patents granted there were to—		
Citizens of the United States	12,677	
Subjects of Great Britain	349	
Subjects of France	89	
Subjects of other foreign governments	206	
		13,321

The patents issued to citizens of the United States were distributed among the citizens of the several States, Territories, &c., as follows

Alabama	36	Michigan	401
Arkansas	11	Minnesota	70
California	216	Mississippi	50
Colorado Territory	18	Missouri	210
Connecticut	739	Montana	1
Delaware	39	Nebraska	16
District of Columbia	174	Nevada	9
Florida	5	New Hampshire	111
Georgia	81	New Jersey	474
Illinois	835	New Mexico Territory	2
Indiana	452	New York	2,962
Iowa	208	North Carolina	54
Kansas	46	Ohio	982
Kentucky	143	Oregon	22
Louisiana	111	Pennsylvania	1,481
Maine	139	Rhode Island	197
Maryland	206	South Carolina	35
Massachusetts	1,448	Tennessee	109

Texas	48	Citizens of the United States residing in foreign countries	17
Utah Territory	1	Persons in United States Army	7
Vermont	123	Persons in United States Navy	1
Virginia	110		
Washington Territory	1		
West Virginia	47	Total	12,677
Wyoming Territory	1		
Wisconsin	228		

No. 5.—*Comparative statement of the business of the Office from* 1837 *to* 1870, *inclusive.*

Year.	Applications filed.	Caveats filed.	Patents issued.	Cash received.	Cash expended.
1837			435	$29,289 08	$33,506 98
1838			520	42,123 54	37,402 10
1839			425	37,260 00	34,543 51
1840	765	228	473	38,056 51	39,020 67
1841	847	312	495	40,413 01	52,666 87
1842	761	391	517	36,505 68	31,241 48
1843	819	315	531	35,315 81	30,776 96
1844	1,045	380	502	42,509 26	36,244 73
1845	1,246	452	502	51,076 14	39,395 65
1846	1,272	448	619	50,264 16	46,158 71
1847	1,531	553	572	63,111 19	41,878 35
1848	1,628	607	660	67,576 69	58,905 84
1849	1,955	595	1,070	80,752 78	77,716 44
1850	2,193	602	995	86,927 05	80,100 95
1851	2,258	760	869	95,738 61	86,916 93
1852	2,639	996	1,020	112,656 34	95,916 91
1853	2,673	901	958	121,527 45	132,869 83
1854	3,324	868	1,902	163,789 84	167,146 32
1855	4,435	906	2,024	216,459 35	179,540 33
1856	4,960	1,024	2,502	192,588 02	199,931 02
1857	4,771	1,010	2,910	196,132 01	211,582 09
1858	5,364	943	3,710	203,716 16	193,193 74
1859	6,225	1,097	4,538	245,942 15	210,278 41
1860	7,653	1,084	4,819	256,352 59	252,820 80
1861	4,643	700	3,340	137,354 44	221,491 91
1862	5,038	824	3,521	215,754 99	182,810 39
1863	6,014	787	4,170	195,593 29	189,414 14
1864	6,932	1,063	5,020	240,919 98	229,868 00
1865	10,664	1,937	6,616	348,791 84	274,199 34
1866	15,269	2,733	9,450	495,665 38	361,724 28
1867	21,276	3,597	13,015	646,581 92	639,263 32
1868	24,420	3,705	13,378	681,565 86	628,679 77
1869	19,271	3,624	13,986	693,145 81	486,430 78
1870	19,171	3,273	13,321	669,456 76	557,147 19

A subject-matter index of the patents issued during the year 1870, an alphebetical list of the patentees with their places of residence, and a list of the patents extended during the year, have been prepared and are submitted herewith as a part of this report.

Called upon to perform the duties of Commissioner of Patents temporarily only, until the gentleman already appointed to fill the vacancy occasioned by the resignation of the late Commissioner shall assume the office, it would manifestly be improper that I should embrace the present opportunity to recommend measures the advisability of which can in any respect be called in question. I shall refrain, therefore, from any general discussion of the affairs of the Patent Office, and confine myself to two or three matters which demand early attention and about which it would seem that there can be but little difference of opinion.

By the joint resolution providing for publishing the specifications and drawings of the Patent Office, approved January 11, 1871, it is provided that the publication of the abstracts of specifications and of

the engravings heretofore accompanying the annual report of the Commissioner of Patents shall be discontinued after the middle of the year eighteen hundred and sixty-nine, the mechanical illustrations for the first six months of that year having been already prepared; and that in lieu thereof the Commissioner is authorized to have printed for gratuitous distribution one hundred and fifty copies of the complete specifications and drawings of each patent thereafter issued, which copies, duly certified under the hand of the Commissioner and the seal of the Patent Office, are to be placed for free public inspection in the various State and territorial capitals and in the clerk's offices of the district courts of the various judicial districts throughout the United States; and this officer is further authorized and directed to have printed such additional numbers of copies of specifications and drawings, certified as before provided, as may be warranted by the actual demand for the same, to be sold at a price not exceeding the contract price for such drawings. It is also provided that the copies of drawings shall be made upon contract after due advertisement by the Superintendent of Public Printing, under the direction of the Joint Committee on Printing.

This discontinuance of the publication of the mechanical report is in conformity with the recommendation of the late Commissioner of Patents. I have always doubted somewhat the wisdom of such a step, knowing, as I do, the avidity with which inventors in all parts of the country seek for copies of the report; and believing, also, that the matter contained therein, though necessarily imperfect, is, nevertheless, full of suggestions, and peculiarly calculated to furnish food for the inventive mind.

The delay heretofore connected with the publication of that report could have been entirely obviated by promptness in making the necessary appropriations for the work, as by proper management the Office could easily have had all the matter ready for press within one month after the end of the year. If it was found that the report under the system of distribution heretofore adopted failed to reach the quarters where it would confer the most benefit, this evil could easily have been remedied by providing, among other things, that each patentee of a given year should receive as a gratuity one copy of the report for that year, and that the rest of the edition be sold at a price not exceeding the prime cost thereof. And as to the printed copies to be hereafter placed at central points, as provided by the joint resolution, it is feared that they will be of comparatively little service to the great mass of inventors who are scattered widely through the sparsely settled portions of the country, and who practically will have but little opportunity of consulting them. As evidence in the courts, as aids to patent solicitors and to professional experts, upon whom inventors largely rely, and as sources of information to all persons living near the places of deposit, they will of course prove valuable, as furnishing more exact

and reliable knowledge than can be gained from any other source. For this reason they would form a most valuable adjunct to the present report; and in view of the great benefits which the patent system has already conferred upon the nation—single inventions, like the sewing machine, the harvester, the telegraph, or vulcanized rubber, having more enriched the country than the whole system has cost from its inauguration to the present time—I believe that the expense of retaining the mechanical report in addition to the new publication would be fully justified. The annual income of the Patent Office, in excess of its expenditures, would more than pay the cost of the proposed additional work; and the balance of six hundred and forty thousand dollars in the Treasury to the credit of the patent fund warrants the most liberal policy in support of the workings of this bureau. The Government ought not to seek to raise revenue by levying taxes upon the inventive genius of the people; but all the money received from inventors should be expended in such a way as to secure the largest and most beneficent development of the patent system.

But, whatever question may be made as to the policy of retaining or dispensing with the mechanical report, if we inquire as to the mode in which the drawings should be reproduced in carrying out the provisions of the recent enactment, I am convinced from a careful consideration of the subject that the work should be done by the Patent Office itself and not by contract. The objections to dealing with contractors are manifold. Not the least among them is the fact that the office is required to part temporarily with the custody of its original records, a thing which, for obvious reasons, should never take place, and which at times becomes the source of great inconvenience in the transaction of business. With a proper outfit the work could undoubtedly be done in the office as artistically and more economically than by outside parties. Under this arrangement, too, the copies prepared for gratuitous distribution could be made to conform in size to those which are now being made for office use, and thus a saving of many thousands of dollars be effected annually. If under the contract system a smaller size be adopted, it would necessitate a recomposition of the entire letter-press at an annual expense of not less than sixty thousand dollars, against which there would appear as elements of saving, from the reduced cost of paper and binding, not more than thirty thousand dollars. I deem it of importance, as a matter of economy as well as convenience, that the same size be adopted for the public as for the Office.

I would respectfully suggest, therefore, that in any appropriation which may be made for carrying out the provisions of the joint resolution, it shall be provided that if, in the judgment of the Secretary of the Interior, the work can be performed more advantageously under the direction of the Commissioner of Patents than in the manner proposed by the resolution, it shall be so done. This, without deciding the ques-

tion of relative economy in advance, would give the head of the Department opportunity to investigate the whole subject thoroughly before the course to be adopted should finally be decided upon.

As regards the sale of single copies of the specification and its accompanying drawing, the price established by the joint resolution is unnecessarily and unreasonably low. "The contract price of the drawing" could hardly be expected to exceed three cents; yet the cost of the drawing and the corresponding specification, together with the handling and certifying of the same, could not be much less than ten cents. As certified copies are mainly needed for proceedings in courts and in settling questions of title, I would suggest that the price of the same be left as now fixed by the patent law, and that the price of uncertified printed copies be left to the determination of the Commissioner, ten cents being fixed as the minimum and fifty cents as the maximum. This would be such a reduction from the prices now charged as would doubtless create a largely increased demand, and give no occasion for complaint; at the same time it might reasonably be expected to add considerably to the revenues of the Office from this source.

By section 20 of the patent act approved July 8, 1870, the Commissioner of Patents is authorized to print, or cause to be printed, copies of the claims of current issues of patents, and copies of such laws, decisions, rules, regulations, and circulars as may be necessary for the information of the public. Under this provision of law the Office has, for some time past, been issuing a weekly list of patents, which contains the number, title and claim of each patent issued, together with the name and residence of the patentee. This publication costs the Government about five thousand dollars per annum. It is sold to subscribers at five dollars a year; and the amount realized from this source during the last year is thirty-three hundred and sixty-eight dollars. The amount paid for advertising applications for the extension of patents, during the same time, is twenty-nine hundred and twenty-three dollars.

I would respectfully recommend that the Commissioner of Patents be authorized to enlarge the scope of the periodical publication named, so as to make it an official gazette, in which all the advertisements pertaining to the business of the Office shall be inserted, in lieu of all other advertising as now required by law. At present, the law requires that the Commissioner shall publish a notice of every extension application in one newspaper in the city of Washington, and in such other papers published in the section most interested adversely to the extension of the patent, as he may deem proper. Under this law, the patronage of the Office is distributed among three of the Washington papers, and a second copy of the advertisement is usually sent to some paper in the vicinity of the residence of the patentee. This is at best an imperfect system of accomplishing the work intended, as there is no one paper in the entire country which contains all the advertisements of the Office,

and which therefore a person concerned, professionally or otherwise, in extension applications, can take, and feel assurance that the very case for which he is watching may not escape his eye. By the proposed change in this regard all uncertainty of this kind would disappear; the public, both inventors and attorneys, would be much better served, since in connection with the list of claims they would receive the official advertisements without further expense; and a considerable saving to the Government would be effected, both by the cessation of further payments for advertising and by the largely increased circulation which by this means would be secured for the publication already authorized by law.

By section 63 of the patent act it is provided that an application for the extension of a patent shall be filed "not more than six months nor less than ninety days before the expiration of the original term of the patent." Under this section applications are generally delayed until the last moment; and then it frequently happens, if the case is an important one, in which opposition is entered, and the taking of a large amount of testimony, to be obtained in remote and widely separated sections of the country, becomes necessary, that the application cannot be prepared for hearing until so late a day as to cause the careful consideration of it prior to the expiration of the patent seriously to interfere with the Commissioner's duties in relation to other matters. It frequently happens, too, that on the day of hearing a fatal defect in the presentation of the case is developed, which, if there were further time at the disposal of the party, might be remedied. For these reasons every such case, in my judgment, should be brought to a hearing at least four weeks before the date of the expiration of the patent. To this end the application must be filed in the Office at an earlier day than is now required by law. I would suggest that nine months be fixed as the maximum limit, and six as the minimum.

The business of the Patent Office for the past year is perhaps sufficiently exhibited by the tables already given, and does not call for any extended remark. I cannot, however, close this brief report without referring to the eminent service rendered by the late Commissioner, the Hon. Samuel S. Fisher, whose energy and ability in the discharge of his official duties have done so much to correct and systematize the practice of the Office. The periodical publication of the Commissioner's decisions, whereby the examiners, as well as attorneys, have received early information of the principles which controlled the head of the Office in deciding the cases brought to his personal attention, has proved a marked and most valuable feature of the late administration. Great care was also exercised in the filling of vacancies, the appointments being made with special reference to the merits of the persons receiving them, and in many instances after they had passed the ordeal of a severe competitive examination.

The manifest improvement thus effected in the *personnel* of the Office

reflects credit upon the officer under whose administration it was brought about. The impress which he has left behind him will be lasting, and his official connection with the patent system will long be remembered with satisfaction and pleasure.

Respectfully submitted.

SAM'L A. DUNCAN,
Acting Commissioner.

PATENTEES AND PATENTS.

ALPHABETICAL LIST

OF

PATENTEES FOR THE YEAR 1870.

No.	Name, residence, and invention or discovery.	Date.
100,581	Abbe, John R., Providence, R. I. Bolt machine. (Antedated March 1, 1870)	Mar. 8, 1870
109,993	Abbott, David S., Ischua, N. Y. Carriage-spring	Dec. 13, 1870
104,812	Abbott, Dexter, D. W., assignor to self and Henry W. Peabody & Co., Boston, Mass. Emery soap for polishing and cleaning	June 28, 1870
103,117	Abbott, Job, assignor to Automatic Fire-alarm Company, Canton, Ohio. Alarm telegraph signal lodes	May 17, 1870
	Abbott, Job, and David Hammond, (3 cases.) (*See* Hammond & Abbott.)	
101,204	Abbott, John M., Hillsdale, Mich. Elevated railways	Mar. 29, 1870
105,404	Abbott, J. P., Cleveland, Ohio. Eaves-trough hanger	July 19, 1870
104,920	Abbott, Levi, assignor to Lewiston Machine Company, Lewiston, Me. Warping-machine	July 5, 1870
	Abbott, L. C., and M. L. Holt. (*See* Holt & Abbott.)	
108,082	Abbott, Paschal J, and Job, Dexter, Me. Cover for culinary boilers	Oct. 11, 1870
	Abbott, Stephen J. (*See* Downes & Douk, assignors.)	
99,277	Abbott, Thomas R., Lowell, Mass. Roofing composition	Feb. 1, 1870
103,536	Same.....Composition felting for covering roofs, ship's bottoms, &c	May 31, 1870
100,487	Abel, Anthony, assignor to self and Adam Schwab, New York, N. Y. Barber's chair	Mar. 8, 1870
105,537	Able, William H., Lowell, Mass. Knitting-machine	July 19, 1870
105,538	Able, William H., assignor to self, Robert H. Brown, and John E. Crane, Lowell, Mass. Knitting-machine	July 19, 1870
105,539	Same.....same	July 19, 1870
106,531	Able, William H., assignor to self and John E. Crane, Bennington, Vt. Knitting-machine	Aug. 23, 1870
109,569	Abell, Joshua L., Cummington, Mass. Cutting apparatus for harvesters	Nov. 29, 1870
101,804	Abell, Olif, Wolcott, Vt. Wooden box	April 12, 1870
101,805	Same.....same	April 12, 1870
	Abendroth, W. P., *et al.* (*See* Muller, T. H., assignor) .....(Reissue.)	
102,075	Abercrombie, Edwin L., Florence, Mass. Tool-handle	April 19, 1870
	Aborn, James, and Joseph J. Comstock. (*See* Comstock & Aborn.)	
102,200	Abraham Lewis, New York, N. Y. Revenue and postal stamps	April 26, 1870
98,537	Absterdam, John, New York, N. Y. Method of manufacturing a fagot for steel-headed rails	Jan. 4, 1870
99,805	Same.....Process of welding cast or Bessemer steel	Feb. 15, 1870
109,166	Achenbach, John R., assignor to self and Thomas and P. O. Terhune, Saddle River, N. J. Chicken-coop	Nov. 15, 1870
103,820	Achenbach, John R., Saddle River, N. J. Rein-holder	June 7, 1870
110,325	Achew, Henry, Cincinnati, Ohio. Socket for broom-handles	Dec. 20, 1870
106,981	Ackerman, Michael, Steamboat Rock, Iowa. Corn-planter	Sept. 6, 1870
102,076	Adair, John J., assignor to William J. Huey, Portland, Ind. Buckle	April 19, 1870
103,118	Adair, John J., assignor to William J. Huey and Joshua Bishop, Portland, Ind. Whiffletree	May 17, 1870
109,098	Adams, Abraham S., Waynesboro, Pa. Tree protector	Nov. 8, 1870
105,877	Adams, Alfred, Chagrin Falls, Ohio., Paper-bag	Aug. 2, 1870
105,619	Adams, Alfred, and Joseph F. Jewett, Cincinnati, Ohio. Paper fruit-basket	July 26, 1870
104,531	Adams, Amos, Sturgis, Mich. Gas-heater	June 21, 1870
101,803	Adams, Andy M., Washington, D. C. Padlock	April 12, 1870
106,447	Same.....Wood pavement	Aug. 16, 1870
108,951	Same.....Pad and trunk lock	Nov. 8, 1870
	Adams, Augustus, and William R. Low. (*See* Low & Adams.)	
106,302	Adams, Benjamin F., Boston, Mass. Lamp-burner	Aug. 16, 1870
106,303	Same.....same	Aug. 16, 1870
100,095	Adams, Charles, Philadelphia, Pa. Deoxidizing and carbonizing iron-ore	Feb. 22, 1870
104,398	Adams, Charles M., Canton, Miss. Folding dental chair	June 21, 1870
100,582	Adams, Durward, Boston, Mass. Umbrella	Mar. 8, 1870
	Adams, E., jr., *et al.* (*See* Howard, James Spooner, assignor.)	
	Same.....same.	
	Adams, George. (*See* Johnston, Thomas, assignor.)	
103,537	Adams, Henry A., Sandwich, Ill. Cultivator	May 31, 1870
	Adams, Henry A., and Andrew Shogren. (*See* Shogren & Adams.)	
107,909	Adams, Henry B., New York, N. Y. Taper-holder. (Antedated Sept. 3, 1870)	Sept. 13, 1870
110,414	Adams, Henry W., Philadelphia, Pa. Apparatus for supplying air	Dec. 27, 1870
	Adams, Henry W. (*See* Hall, William Samuel, assignor.)	
100,961	Adams, Isaac, jr., Boston, Mass. Electro deposition of metals	Mar. 22, 1870
102,748	Same.....Electro deposition of nickel	May 10, 1870
101,967	Adams, Isaac J. W., Salisbury, Md. Apparatus for measuring boards	April 19, 1870
98,538	Adams, James, Newark, Del. Carriage curtain fastening	Jan. 4, 1870
	Adams, James, and Thomas B. McConaughey, (2 cases.) (*See* McConaughey & Adams.)	
102,465	Adams, James N., Chillicothe, Mo. Tin-gutter machine	May 3, 1870
102,466	Same.....Tin-tubing machine	May 3, 1870
	Adams, John, *et al.* (*See* Beatty, James H., assignor.)	
4,257	Adams, John, Birmingham, Pa. Trade-mark .....(Design)	July 26, 1870
	Adams, John H., and John W. Kenny. (*See* Kenny & Adams.)	

Alphabetical list of patentees for the year 1870—Continued.

No.	Name, residence, and invention or discovery.	Date.
106,304	Adams, John Peabody, Ipswich, Mass. Equalizing the main-spring of time-pieces	Aug. 16, 1870
104,698	Adams, John Quincy, and Samuel R. Goodsell, Brooklyn, N. Y. Knife scourer	April 12, 1870
100,834	Adams, John R., San Francisco, Cal. Track-laying machine	Mar. 15, 1870
106,760	Adams, John S., Elgin, Ill. Truss-bridge	Aug. 30, 1870
104,399	Adams, Joseph, Manteno, Ill. Cultivator. (Antedated June 11, 1870)	June 21, 1870
99,806	Adams, Joseph A., Brooklyn, N. Y. Mode of covering molds and other articles with a metallic surface	Feb. 15, 1870
102,077	Same.....Electrotyping	April 19, 1870
100,962	Adams, Joseph F., Buffalo, N. Y. Photographic show-case	Mar. 22, 1870
106,104	Adams, Joseph P., and John P. Corbin, said Adams assignor to said Corbin, Broome County, N. Y. Butter-worker	Aug. 9, 1870
99,047	Adams, Milton F., assignor to E. B. Welch, Boston, Mass. Printing-telegraph	Jan. 25, 1870
100,963	Adams, Moses, Chilmark, Mass. Buckle	Mar. 22, 1870
102,457	Adams, M. Pascal, Pittsburg, Pa. Stave-dressing machine	May 3, 1870
109,367	Adams, Samuel E., Springfield, Ohio. Electro-nasal douche	Nov. 22, 1870
105,878	Adams, Samuel W., assignor to T. B. Doolittle, Providence, R. I. Twine and thread cutter	Aug. 2, 1870
106,532	Adams, Sanford, Boston, Mass. Coal-sifter	Aug. 23, 1870
	Adams, Thomas, and Charles L. Knecht. (*See* Knecht & Adams.)	
	Adamson, Alfred. (*See* Clark, John, assignor.)	
104,400	Adamson, David, Germany. Lubricator	June 21, 1870
106,448	Adamson, William, Philadelphia, Pa. Manufacture of glue	Aug. 16, 1870
109,706	Same.....Dyeing disintegrated fibers	Nov. 29, 1870
	Adamson, William, and Anthony Van Haagen, (two cases.) (*See* Van Haagen & Adamson.)	
	Adamson, William B., and Archibald Munro. (*See* Munro & Adamson.)	
105,405	Aderhold, Luna J., Wedowee, Ala. Hoe	July 19, 1870
99,387	Adler, George W., assignor to self and George Bochius, Philadelphia, Pa. Compound for bating and raising hides	Feb. 1, 1870
99,617	Adriance, John P., and Thomas S. Brown, Poughkeepsie, N. Y. Grain platform for harvesters	Feb. 8, 1870
98,656	Adt, John, assignor to the Judd Manufacturing Company, New Haven, Conn. Screw and nut for clamps, &c	Jan. 11, 1870
110,326	Adt, John, New Haven, Conn. Twine-holder	Dec. 20, 1870
	Adt, John B., and Ernst Frank. (*See* Frank & Adt.)	
	Affron, John W., and S. Thompson Barton. (*See* Barton & Affron.)	
3,788	Ager, Wilson, Washington, D. C. Grain-cleaner.....(Reissue, division A)	Jan. 11, 1870
3,789	Same.....same.....(Reissue, division B)	Jan. 11, 1870
	Agnew, Daniel, and Thomas Bishop. (*See* Bishop & Agnew.)	
	Ahren, Philip P. (*See* Parmele, William A., assignor.)	
107,585	Ahrend, Herrmann, Newark, N. J. Lock for pianos, &c	Sept. 20, 1870
106,019	Ahrens, Theodore, Louisville, Ky. Preserving and delivering beer, ale, &c., on draught by means of carbonic acid gas	Aug. 2, 1870
106,020	Same.....Beer faucet	Aug. 2, 1870
	Aiken, William A. (*See* Vickers, John H., assignor.)	
	Same.....(*See* Appleton, Henry P., assignor.)	
	Ainsworth, Benn, *et al.* (*See* Eaton, Ainsworth & Scott.)	
	Ainsworth, Eleazer, *et al.* (*See* Sharp, Ainsworth & Sabatton.)	
98,902	Ainsworth, Squire, Pittsburg, Pa. Washing-machine	Jan. 18, 1870
98,539	Akers, William C., Petersburg, Va. Mole-trap	Jan. 4, 1870
103,407	Akley, James D., and Richard English, Oil City, Pa. Device for adjusting cross-heads of locomotives	May 24, 1870
104,401	Albaugh, James, Lyons, N. Y. Potato-digger	June 21, 1870
106,533	Albaum, Franz, Green Point, N. Y. Sheet-metal can	Aug. 23, 1870
107,849	Albee, James, assignor to Moses Pond & Co., Chelsea, Mass. Cooking-range	Oct. 4, 1870
109,327	Albertson, Ichabod H., Bedias, Texas. Combined lint-room and cotton-press	Dec. 20, 1870
103,921	Albertson, James M., New London, Conn. Construction of horse-power for cotton-gins, &c. (Antedated May 30, 1870)	June 7, 1870
	Albertson, Oliver, and Augustin Ellis. (*See* Ellis & Albertson.)	
103,956	Albright, Chester E., Muncy, Pa. Manger	June 7, 1870
99,388	Albright, Isaac, jr., and Joel Y. Bloomingdale, New Salem, N. Y. Wagon-tongue support	Feb. 1, 1870
	Albro, William H. (*See* Dick, James M., assignor.)	
	Same.....same.....(Reissue.)	
98,729	Alcorn, David, and John Walsh, New York, N. Y. Sheet-iron wash-tub and bucket	Jan. 11, 1870
100,835	Alden, Charles, Newburg, N. Y. Apparatus for drying and evaporating	Mar. 15, 1870
101,562	Same.....Preparing tomatoes and other fruits and vegetables to be used as food	April 5, 1870
4,010	Alden, Charles, assignor of part interest to Alden Fruit Preserving Company, Newburg, N. Y. Apparatus for evaporating the moisture from animal and vegetable substances. (Reissue, division A)	June 7, 1870
4,011	Same.....same.....(Reissue, division B)	June 7, 1870
98,540	Alden, Henry A., Matteawan, N. Y. Vulcanized India-rubber car-spring	Jan. 4, 1870
100,098	Alden, Henry A., assignor to New York Rubber Company, Matteawan, N. Y. Vulcanized rubber-hose	Feb. 22, 1870
110,532	Alden, James M., assignor to International Screw-Nail Company, New York, N. Y. Wood-screw machine	Dec. 27, 1870
	Alden, John C., *et al.* (*See* Carver, Joseph Eleazer, assignor.)	

Alphabetical list of patentees for the year 1870—Continued.

No.	Name, residence, and invention or discovery.	Date.
115,406	Aldred, Samuel, Avoca, Wis. Ring for harness	July 19, 1870
104,813	Aldrich, Robert, assignor to self and E. D. Wilcox, Forest Dale, R. I. Flock-grinder	June 28, 1870
103,119	Alesworth, John W., Santa Cruz, Cal. Machine for jointing staves	May 17, 1870
	Alexander, Columbus, *et al.* (*See* Russell, James F., assignor.)	
99,046	Alexander, Horace Clifton, New York, N. Y. Can-opener	Jan. 25, 1870
104,402	Same.....Safety-cap for cans	June 21, 1870
105,157	Same.....same	July 12, 1870
104,683	Alexander, Israel, San Francisco, Cal. Belt-buckle	June 28, 1870
101,409	Alexander, Joseph B., Washington, D. C. Lamp-shade supporter	April 5, 1870
101,961	Same.....Lamp	April 12, 1870
4,148	Same.....Lamp-burner.....(Design)	June 14, 1870
	Alexander, J. P. (*See* Eberhard, William, assignor.)	
99,744	Alfred, William D., and J. H. Pitkin, Cuyahoga Falls, Ohio. Pipe-coupling	Feb. 15, 1870
98,730	Algeo, William G., Allegheny, Pa. Coffin	Jan. 11, 1870
107,148	Alger, Darius, assignor to self and Theodore Barnum, Byron, Mich. Automatic cradle	Sept. 6, 1870
	Alger, Samuel B., *et al.* (*See* Jerome, Alger & Sage.)	
	Alger, Samuel B., and Clinton H. Sage. (*See* Sage & Alger.)	
101,205	Alicott, Alonzo, Haverhill, Mass. Anti-friction carriage-axle	Mar. 29, 1870
105,763	Allegrette, Ignazio, Philadelphia, Pa. Refrigerator	July 26, 1870
100,244	Allen, Albert F., Providence, R. I. Suction-hose	Mar. 1, 1870
	Same.....(*See* Bean, Charles, assignor.)	
4,012	Allen, Alexander, Rochester, N. Y. Fire-alarm signal and apparatus. (Reissue, Division A)	June 7, 1870
4,013	Same.....(Reissue, Division B)	June 7, 1870
101,806	Allen, Almon N., and Rodney H. Dewey, Pittsfield, Mass. Apparatus for lighting and extinguishing gas	April 12, 1870
	Allen, Alpheus N., *et al.* (*See* Davis, Blakeslee & Allen, assignors.)	
98,731	Allen, Arthur M., New York, N. Y. Car-brake	Jan. 11, 1870
3,790	Same.....Railway-car brake.....(Reissue)	Jan. 11, 1870
99,127	Same.....Toy-propeller	Jan. 25, 1870
99,383	Same.....same	Feb. 1, 1870
101,076	Same.....Toy-rolling cage	Mar. 22, 1870
103,957	Same.....Velocipede	June 7, 1870
108,427	Same.....Treadle-motion	Oct. 18, 1870
110,533	Same.....Treadle	Dec. 27, 1870
106,647	Allen, Augustus, Cass County, Mich. Method of preventing decay in the timbers of bridges, buildings, &c	Aug. 23, 1870
109,713	Allen, Austin W., Indianapolis, Ind. Knitting-machine and needle	Dec. 6, 1870
107,586	Allen, Austin W., and Charles Reitz, Indianapolis, Ind. Mail-box	Sept. 20, 1870
105,158	Allen, Charles L., assignor to self and William Shick, Flat Rock, Mich. Fan-case for grain and seed separators	July 12, 1870
109,368	Allen, Daniel R., Cumberland, Me. Seat for vehicles	Nov. 22, 1870
108,749	Allen, Edwin F., assignor to self, Charles Campbell, and Elmer A. Beaman, Providence, R. I. Friction-pulley	Nov. 1, 1870
	Allen, Elisha. (*See* Barbour, Joseph W., assignor.)	
110,328	Allen, Frank, Erie, Pa. Revolving refrigerator	Dec. 20, 1870
100,708	Allen, George B., Norwalk, Conn. Combined lock and latch	Mar. 15, 1870
	Allen, Gerard B., & Company, *et al.* (*See* Fisher & Reid, assignors.)	
108,428	Allen, Horace R., Indianapolis, Ind. Truss	Oct. 18, 1870
100,245	Allen, John P., Springfield, Ohio. Main-spring barrel for watches	Mar. 1, 1870
100,246	Allen, John P., and William E. Banta, Springfield, Ohio. Watch-regulator	Mar. 1, 1870
101,206	Allen, John P., Dawson, Ga. Cotton-seed planter	Mar. 29, 1870
107,149	Allen, Joshua G., Philadelphia, Pa. Railroad-car heater	Sept. 6, 1870
105,630	Allen, Julian, and John Fanning, assignors to American Cigar Machine Company, Brooklyn, N. Y. Cigar-machine	July 26, 1870
110,329	Allen, Nathaniel P. and Nathaniel E., Salem, Mass. Grapnel	Dec. 20, 1870
101,342	Allen, Nelson E., Trenton, Israel B. Record, James Rood, and Jasper Hayden, Beaver Dam, Wis. Seeder and cultivator combined	Mar. 29, 1870
105,407	Allen, Richard N., Pittsford, Vt. Car-coupling	July 19, 1870
110,105	Allen, Robert, Cleveland, Ohio. Cheese-press	Dec. 13, 1870
4,092	Allen, Samuel Leeds, Cinnaminson, N. J. Planing-machine.....(Reissue)	Aug. 9, 1870
108,672	Same.....Planting and fertilizing machine	Oct. 25, 1870
103,275	Allen, Stephen M., Boston, Mass. Preparing the fiber of ramie and other plants	May 24, 1870
105,025	Allen, Warren, Oswego, N. Y. Door-spring	July 5, 1870
110,415	Allen, William A., Baltimore, Md. Wood-splitting machine	Dec. 27, 1870
109,859	Alley, Blancy L., Salem, and Thomas W. Shapleigh, Cambridgeport, Mass. Tree-protector	Dec. 6, 1870
109,097	Allgaier, John, Philadelphia, Pa. Hand-motive carriage	Feb. 22, 1870
110,534	Alling, Albert, Chicago, Ill. Cope for casting car-wheels	Dec. 27, 1870
105,621	Alling, Prudden, Norwalk, Ohio. Seed-planter	July 26, 1870
4,258	Allinson, James, assignor to James Bromley & Brothers, Philadelphia, Pa. Carpet pattern.....(Design)	July 26, 1870
103,276	Allison, Richard, New York, N. Y. Sweat-cloth for saddles	May 24, 1870
105,290	Allison, William Clare, Philadelphia, Pa. Pipe-coupling	July 12, 1870
98,541	Allonas, Joseph, assignor to C. Aultman and H. H. Taylor, Mansfield, Ohio. Lumber-drier	Jan. 4, 1870
107,994	Allonas, Joseph, Mansfield, Ohio. Thrashing-machine	Oct. 4, 1870
109,482	Same.....same	Nov. 22, 1870

Alphabetical list of patentees for the year 1870—Continued.

No.	Name, residence, and invention or discovery.	Date.
105,879	Alloways, John, assignor to self and W. Cummings, Decatur, Ill. Gang-plow	Aug. 2, 1870
101,699	Allport, William, New Britain, Conn. Door-bell	April 12, 1870
4,214	Same.....same.....(Design)	July 12, 1870
103,690	Same	May 31, 1870
	Allstatter, Robert, Hamilton, Ohio. Harvester-cutter bar	Jan. 11, 1870
	Allstatter, Robert, *et al.* (*See* Patton, Samuel, assignor.)	
98,732	Allyn, T. F., Nyack, N. Y. Railroad-car spring	April 5, 1870
101,563	Same.....Car-spring	June 21, 1870
104,403	Allyn, William B., Boston, Mass. Rotary-pump	June 7, 1870
103,822	Almond, Thomas, Fitchburg, Mass. Skate-fastening	Feb. 8, 1870
99,518	Almqvist, A. W., and F. W. Ofeldt, New York, N. Y. Cut-off valve-gear	Mar. 22, 1870
100,964	Same.....Water-meter	
	Almy, Charles T. (*See* Hackley, William, assignor.)	Mar. 15, 1870
100,836	Almy, George F., Toledo, Ohio. Spoke-lathe	Jan. 4, 1870
98,460	Alsing, Carl Petrus, New York, N. Y. Asphalt pavement	Jan. 25, 1870
99,128	Alsing, John Robert, England. Apparatus for pulverizing porcelain paste	
110,535	Altemus, William W., Philadelphia, Pa. Thread guide and holder for bobbin-winding machines	Dec. 27, 1870
99,300	Alter, Henry, Lakeport, Cal. Pruning-knife	Feb. 1, 1870
100,098	Same.....Wheelbarrow	Feb. 22, 1870
102,469	Alter, J. S., Leavenworth, Kans. Guide for sewing-machines	May 3, 1870
100,349	Altick, William, Dayton, Ohio. Parlor-fountain for diffusing liquids	Mar. 1, 1870
106,761	Altman, Moritz, Baltimore, Md. Neck-tie	Aug. 30, 1870
98,543	Alvord, Clark, Westford, Wis. Combined seeder and cultivator	Jan. 4, 1870
102,201	Same.....Cultivator	April 26, 1870
102,904	Alvord, Elijah S., Harmony, N. Y. Stanchion for securing cattle	May 10, 1870
106,910	Alvord, Henry J., assignor to self and Charles E. Bishop, Washington, D. C. Wood-pavement	Aug. 30, 1870
102,468	Alvord, Joseph D., Bridgeport, Conn. Die for drawing wire	May 3, 1870
109,994	Alvord, Joseph D., assignor to James Wilson, Bridgeport, Conn. Pump-piston	Dec. 13, 1870
106,246	Ambler, Nathan H., East Cleveland, Ohio. Magazine-gun	Aug. 9, 1870
109,167	Ambos, Herman F., Columbus, Ohio. Steam-engine	Nov. 15, 1870
102,470	Ambrun, Julius, Leavenworth, Kans. Straw-cutter. (Antedated April 28, 1870)	May 3, 1870
104,921	Amende, Edward, Paris, Ky. Self-feeding fountain	July 5, 1870
	American Button Hole Overseaming and Sewing Machine Company. (*See* Rehfuss, George.)	
	American Chair Seat Company, (3 cases.) (*See* Watkins, Gardner A., assignor.)	
	American Coal Barge Company. (*See* Hartley, Roger, assignor.)	
	American Eagle Steam Gauge Company. (*See* Campfield, Matthew E., assignor.)	
	American Flask and Cap Company, (2 cases.) (*See* Hoxsie, David K., deceased.)	
	American Gerner Boiler Company. (*See* Gerner, Henry, assignor) ..(Reissue.)	
	American Metaline Company. (*See* Gwyan, Stuart, assignor.)	
	American Metallic Tubing Company. (*See* Smith, Charles G., assignor.)	
	American Mortising Machine Company. (*See* Smith, Henry C., assignor.)	
	American Seal Lock Company. (*See* Corbett & Brooks, assignors.)	
	American Segar Manufacturing Company. (*See* Allen & Fanning, assignors.)	
	American Stair Rod Company, (2 cases.) (*See* Uhry, H., assignor.)	
	American Standard Tool Company. (*See* Morse, Stephen A., assignor.)	
	American Steam Fire-Proof Safe Company. (*See* Burton, Stephen J., assignor.)	
	American Suspender Company. (*See* Dayton, John W., assignor.)	
	American Water Purifying Company. (*See* Thompson, John A., assignor.)	
	American Whip Company, (2 cases.) (*See* Hull, Liverus, assignor.)	
	American Wood Protection Company, (3 cases.) (*See* Crosson, Charles M., assignor.)	Aug. 23, 1870
106,534	Ames, Franklin, North Bridgewater, Mass. Machine for ruling slate	July 13, 1870
105,622	Ames, Gustavus, assignor to self and William H. Cilley, New York, N. Y. Apparatus for reducing wood to pulp	April 19, 1870
3,973	Ames, James, Indianapolis, Ind. Masonic chart.....(Design)	
	Ames Manufacturing Company. (*See* Hadley, Charles F., assignor.)	April 19, 1870
101,908	Amick, John, Assumption Parish, La. Spider furnace for burning bagasse	June 28, 1870
	Same.....Spider arch for burning bagasse .....(Reissue)	
4,044	Amidon, Charles H., and Levi J. Gunn. (*See* Moore, A. C., assignor) ..(Reissue.)	
	Amigh, George W. (*See* Corbett, Henry V., assignor.)	May 24, 1870
103,408	Amory, Jonathan, West Roxbury, Mass. Steam-generator and furnace	May 17, 1870
103,120	Amsdell, Dexter, Hamburg, N. Y. Steam-generator	
	Anchors, James H. and Allen, *et al.* (*See* Donnelly and James H. and Allen Anchors.)	April 12, 1870
101,807	Ancona, A. C., Evansville, Ind. Oil-cup	Nov. 22, 1870
109,483	.....Same.....Safety-valve	Nov. 1, 1870
108,867	Anders, George L., assignor to self and E. B. Welch, Boston, Mass. Printing telegraph	July 12, 1870
105,159	Anderson, Alexander G., assignor to self and A. W. Anderson, Quincy, Ill. Machine for dressing stone	Mar. 22, 1870
100,965	Anderson, Aron, South Bend, Ind. Table-leaf support	Dec. 6, 1870
109,880	Anderson, Charles R., St. Louis, Mo. Clothes-drier	April 26, 1870
102,354	Anderson, Charles T., Clarksburg, Md. Churn	Mar. 1, 1870
100,247	Anderson, C. W., Groavernordale, Conn. Stop-mechanism for cording-machine	Feb. 15, 1870
99,807	Anderson, David, Philadelphia, Pa. Paddle-wheel	Jan. 11, 1870
98,657	Anderson, D. M., Twinsburg, Ohio. Velocipede sleigh	Mar. 22, 1870
3,891	Anderson, E. F., Mansfield, Conn. Teachers' toy.....(Reissue)	
	Anderson, E. Willoughby, and Moses Palmer, jr. (*See* Palmer & Anderson.)	
108,063	Anderson, George A., and Charles J. Baker, Albany, N. Y. Meat and vegetable masher	Oct. 11, 1870

Alphabetical list of patentees for the year 1870—Continued.

No.	Name, residence, and invention or discovery.	Date.
107,748	Anderson, Harrison, Peoria County, Ill. Steam-engine condenser	Sept. 27, 1870
107,850	Same.....Peoria, Ill. Feed-water heater	Oct. 4, 1870
	Anderson Horatio. (*See* Cushing, George W., assignor.)	
	Anderson, Isaac. (*See* Morgans, William T., assignor.)	
101,473	Anderson, James, deceased, by Samuel Kingan, administrator, New York, N. Y. Machine for the manufacture of felted fabrics for roofing, &c	April 5, 1870
103,199	Same.....Manufacture of roofing felt	May 17, 1870
	Anderson, James, and William Ferguson. (*See* Ferguson & Anderson.)	
106,021	Anderson, James H., Terre Haute, Ind. Broom, &c	Aug. 2, 1870
100,000	Anderson, John, Brooklyn, N. Y. Sun-bonnet for horses	Feb. 22, 1870
	Anderson, John, *et al.* (*See* Battersby, William Augustus, assignor.)	
100,099	Anderson, John A., Chicago, Ill. Photographic screen	Feb. 22, 1870
103,538	Anderson, Lauritz, Chicago, Ill. Binding attachment for sewing-machines. (Antedated May 3, 1870)	May 31, 1870
107,995	Anderson, Lewis, Chicago, Ill. Spring-bed	Oct. 4, 1870
	Anderson, O. H. P. (*See* Smith, Thomas S., assignor.)	
100,837	Anderson, Samuel Jones, Cazenovia, N. Y. Railway-car coupling	Mar. 15, 1870
102,202	Same.....Coal scuttle	April 26, 1870
	Anderson, Samuel J., and Ezekiel P. Moore. (*See* Moore & Anderson.)	
100,248	Anderson, Smith W., New York, N. Y. Chameleotrope	Mar. 1, 1870
4,098	Anderson, Thomas K., Hornellsville, N. Y. Stove-pipe thimble.....(Reissue)	Aug. 16, 1870
103,510	Anderson, Valerius D., Kewanee, Ill. Boiler-feeder and low-water alarm	May 31, 1870
109,484	Anderson, William W., Camden, N. J. Thill-coupling	Nov. 22, 1870
101,808	Andrew, Matthew, Melbourne, Col. of Victoria. Attaching knobs to spindles	April 12, 1870
4,014	Same.....Tap for oil vessels.....(Reissue)	June 7, 1870
4,114	Same.....Attaching knobs to spindles.....(Reissue)	Sept. 6, 1870
99,803	Andrew, Moses L., Cincinnati, Ohio. Planing-machine	Feb. 15, 1870
104,404	Andrews, Albert L., Bristol, Conn. Auger-bit. (Antedated Dec. 21, 1869)	June 21, 1870
106,762	Andrews, Charles, Providence, R. I. Lubricating-box	Aug. 30, 1870
101,343	Andrews, Emanuel, Williamsport, Pa. Saw-mill	Mar. 29, 1870
103,700	Same.....Saw-frame	May 31, 1870
104,035	Same.....Handle for cross-cut saws	June 14, 1870
	Same.....Machine for grinding saws.....(Disclaimer filed)	Dec. 5, 1870
	Same.....same.....(Extension)	Dec. 12, 1870
99,278	Andrews, Jacob K., East Lampeter Township, Pa. Mode of attaching horses to vehicles	Feb. 1, 1870
106,982	Andrews, James H., Benicia, Cal. Gang-plow	Sept. 6, 1870
	Andrews, John S. (*See* Noyes, Alpheus P., assignor.)	
106,763	Andrews, Thomas, Warren, Wis. Gate	Aug. 30, 1870
100,838	Andrews, William D., New York, N. Y. Centrifugal-pump	Mar. 15, 1870
100,839	Same.....Friction-wheel for gearing	Mar. 15, 1870
110,310	Same.....Brook Haven, N. Y. Rotary-pump	Dec. 20, 1870
110,331	Same.....Hoisting-apparatus	Dec. 20, 1870
101,564	Andrews, William H., assignor to Burton Mallory, New Haven, Conn. Door-lock	April 5, 1870
105,026	Same.....Reversible-latch	July 5, 1870
101,077	Andrews, William J., Columbia, Tenn. Cotton-cultivator	Mar. 22, 1870
	Androvatt, Jacob W., and J. W. Slaight. (*See* Slaight & Androvatt.)	
109,861	Andrus, R. C., Poughkeepsie, N. Y. Corpse-preserver. (Antedated Dec. 3, 1870)	Dec. 6, 1870
103,005	Anesley, George W., Marengo Township, Mich. Pruning-tool	May 17, 1870
104,684	Angle, Charles, Hazel Green, Mich. Animal-trap	June 28, 1870
104,814	Angster, Lawrence, Newark, N. J. Refrigerator for condensing vapors from fermenting vats in breweries, &c	June 28, 1870
104,085	Angus, John and John P., Mindenville, N. Y. Quilting-frame	June 28, 1870
	Annable, Benjamin R., and John P. Friend. (*See* Friend & Annable.)	
4,503	Annan, Charles F., assignor to self and Herbert S. Merrill, Boston, Mass. Frame for a paper-bag machine.....(Design)	Dec. 6, 1870
110,536	Same.....Paper-bag machine	Dec. 27, 1870
110,537	Same.....Adjustable cam	Dec. 27, 1870
100,709	Annan, Charles F., Boston, Mass. Ships' block	Mar. 15, 1870
4,501	Annis, Emeline T., Mount Morris, N. Y. Lamp-chimney cleaner.....(Design)	Dec. 6, 1870
110,106	Annis, Truman M., and Thomas B. Luce, Linden, Mich. Barrel chamfering and crozing machine	Dec. 13, 1870
104,086	Ansell, George Frederick, England. Manufacture of iron and steel	June 28, 1870
101,565	Ansley, Henry, Washington, D. C. Die for forming sleeve-buttons	April 5, 1870
	Anthony, E. and H. T., & Co. (*See* Murphy, Peter, assignor.)	
105,408	Anthony, John H., Cambridge, Md. Tobacco-pipe	July 19, 1870
99,279	Anthony, Richard, assignor to self and Thomas Williams, Luzerne County, Pa. Railway-rail chair	Feb. 1, 1870
107,433	Anthony, Sherman E., Stillwater, N. Y. Potato-digger. (Antedated Sept. 10, 1870)	Sept. 20, 1870
105,160	Antiguedad, Ramon, New York, N. Y. Manufacture of tobacco-paper	July 12, 1870
101,307	Apgar, Allen S., assignor to self and Isaac Arnold, jr., New York, N. Y. Screw and screw-driver	Mar. 29, 1870
	Aplin, Stephen A., *et al.* (*See* Magee, James, assignor.)	
	Apperly, James, and William Clissold, England. Machinery for preparing fibrous substances for spinning.....(Extension)	Dec. 3, 1870
106,022	Apperly, William, Louisville, Ky. Cotton-picker	Aug. 2, 1870
	Apple, Jacob. (*See* McLaughlin, John, assignor.)	
104,244	Applegate, Joseph F., New Albany, Ind. Bung	June 14, 1870
106,023	Same.....same	Aug. 2, 1870
101,078	Applegate, Joseph F., and Caspar Pelock, New Albany, Ind. Bung	Mar. 22, 1870

Alphabetical list of patentees for the year 1870—Continued.

No.	Name, residence, and invention or discovery.	Date.
107,740	Appleton, Charles J., assignor to self, Earl L. and S. Edward Stimson, Cohoes, N. Y. Knit-fabric	Sept. 27, 1870
107,750	Same ..... Knitting-machine	Sept. 27, 1870
107,587	Appleton, Henry P., assignor to William A. Aiken, Norwich, Conn. Reversible-knob latch	Sept. 20, 1870
4,387	Appleton, Thomas, Lake Village, N. H. Stocking ..... (Design)	Oct. 11, 1870
	Appleton, T. L. (*See* Tucker, Charles E., assignor.)	
106,648	Appold, Samuel A., Baltimore, Md. Steam-coupling for railroad cars	Aug. 23, 1870
3,784	Arbeiter, Joseph, assignor to Samuel Colt, East Hartford, Conn. Lawn-mower. (Reissue)	Jan. 4, 1870
100,840	Same ..... Lawn-mower	Mar. 15, 1870
	Archer & Pancoast Manufacturing Company. (*See* Deavs, Charles, assignor.)	
110,417	Archer, James, Springfield, Wis. Plow	Dec. 27, 1870
103,823	Archer, John H., Vermont, Tex. Drawing off tallow, lard, &c., from rendering-tanks	June 7, 1870
100,100	Archer, William S., Dayton, Ohio. Broadcast-seeder	Feb. 22, 1870
106,449	Archibald, Edward A., Methuen, Mass. Manufacture of wheels	Aug. 16, 1870
108,972	Arden, Henry, St. Louis, Mo. Electro-magnetic lock	Nov. 8, 1870
104,405	Arey, Isaiah H., Boscawen, N. H. Violin-holder	June 21, 1870
103,206	Arey, John P., Col. Ter. Furnace for roasting, oxidizing, and chloridizing ore	May 17, 1870
102,845	Arlen, Charles, and Charles Gautschi, New York, N. Y. Screw-propeller	May 3, 1870
108,230	Arman, Jean Lucien, France. Propelling vessels	Oct. 11, 1870
	Armeling, Charles C. G. (*See* Keen, Jacob M., assignor.)	
102,646	Armington, William W., assignor to self, Stephen L. Usher, and Fred. A. Walton, New Haven, Conn. Stove-blacking box	May 3, 1870
106,450	Arms, James C., Northampton, Mass. Manufacture of pocket-books	Aug. 16, 1870
100,101	Arms, John L., St. Louis, Mo. Railroad-switch	Feb. 22, 1870
109,905	Armstrong, Benjamin A., assignor to self, James P. Brainerd, and Leonard O. Smith, Jersey City, N. J. Holder for silk, &c	Dec. 13, 1870
	Armstrong Company. (*See* Rose & Calely, assignors) ..... (Design.)	
3,960	Armstrong, Daniel, Chicago, Ill. Machine for making wrought-nails. (Reissue)	May 17, 1870
	Armstrong, Frank. (*See* House, Henry A., assignor) ..... (Two cases.)	
103,540	Armstrong, George, assignor to self and William H. Eckert, England. Barrel-filter	May 31, 1870
110,416	Armstrong, George B., Chicago, Ill., and George F. McLellan, Washington, D. C. Railroad-car ventilator	Dec. 27, 1870
3,834	Armstrong, James, Bucyrus, Ohio. Feed-water heater and filter	Feb. 15, 1870
100,906	Armstrong, Jasper, Brookfield, Mo. Safety-valve	Dec. 13, 1870
	Armstrong, John R., administrator. (*See* Bonner, Thomas E.)	
108,429	Armstrong, Joseph, England. Method of forming bifurcated ends of railway-crossings	Oct. 18, 1870
105,623	Armstrong, Maurice, Girard, Ill. Adjustable door-sill	July 26, 1870
100,906	Armstrong, Uel W., and Ira Keeney, assignors to U. W. Armstrong, Evansville, Ind. Rubber-connection for mosquito-net frames	Mar. 22, 1870
104,245	Same ..... Metallic-connection for mosquito-net frames	June 14, 1870
108,673	Armstrong, William, assignor to self and Ezra Miller, Kent, Ohio. Lubricating-device for bolt-threading machines	Oct. 25, 1870
3,974	Armstrong, William M., Middletown, Ohio. Buggy-body ..... (Design)	April 19, 1870
103,956	Arnaud, Derk, Boston, Mass. Sideboard and extension-table	June 7, 1870
106,911	Arndt, Daniel, Cleveland, Ohio. Cement	Aug. 30, 1870
	Arndt, Peter, *et al.* (*See* Nicholson, Frederic, assignor.)	
	Arney, Solomon, and Elias Fiscus. (*See* Fiscus & Arney.)	
106,024	Arnheim, Eugene, New York, N. Y. Fabric for head-coverings	Aug. 2, 1870
98,461	Arnold, Benjamin, East Greenwich, R. I. Machine for making nets	Jan. 4, 1870
106,105	Arnold, Francis Y., Philadelphia, Pa. Non-conducting casing for boilers, steam-pipe, &c	Aug. 9, 1870
	Arnold, Isaac, jr. (*See* Apgar, Allen S., assignor.)	
103,277	Arnold, James, Pawtucket, R. I. Stopping-mechanism for doubling, spooling, and like machines	May 24, 1870
107,319	Arnold, Merritt T., Summit, R. I. Kindling-wood	Sept. 13, 1870
106,106	Arnold, Olney, and Isaac Lindsley, assignors to Pawtucket Hair-Cloth Company, North Providence, R. I. Machine for trimming and shearing cloth, &c	Aug. 9, 1870
110,332	Arnold, Roberson, Suffolk, Va. Bee-hive	Dec. 20, 1870
104,406	Arnold, Samuel, Silver Springs, Tenn. Animal-trap	June 21, 1870
105,880	Same ..... same	Aug. 2, 1870
104,532	Arnold, Satterlee, Claverack, N. Y. Mode of uniting the edges of knitted goods	June 21, 1870
105,409	Arnold, Stephen D., assignor to P. and F. Corbin, New Britain, Conn. Shutter-fastening	July 19, 1870
106,025	Arnold, Varnum G., Providence, R. I. Knitting-machine	Aug. 2, 1870
109,794	Arnold, William A., Rockport, Mass. Cloth-winding mechanism for looms	Dec. 6, 1870
4,446	Aronson, Albert, New York, N. Y. Collar-box ..... (Design)	Nov. 1, 1870
100,001	Arrington, Joseph, Livingston, Ala. Seed-planter and fertilizer-distributor	Feb. 22, 1870
101,908	Arrington, William J., Jefferson County, Ga. Carriage-wheel hub	Mar. 29, 1870
103,701	Arson, Lewis Francis Alexandre, France. Correcting the deviation of the mariner's compass	May 31, 1870
	Arthur, John, and Alexander Ross. (*See* Ross & Arthur.)	
104,533	Arthur, William, Newport, Ky. Steam-generator	June 21, 1870
105,764	Ascough, William, Buffalo, N. Y. Vent for casks	July 26, 1870
	Ashburner, Samuel. (*See* Cushing, Samuel B., assignor) ..... (Disclaimer.)	
4,045	Ashcroft, Edward H., Lynn, Mass. Non-corrosive valve-seat ..... (Reissue)	June 28, 1870
110,418	Ashcroft, Edward H., Boston, Mass. Machine for burring wool on the skin	Dec. 27, 1870

Alphabetical list of patentees for the year 1870—Continued.

No.	Name, residence, and invention or discovery.	Date.
101,410	Ashcroft, John, New York, N. Y. Faucet	April 5, 1870
	Ashcroft, John. (*See* Patterson, James Willard, assignor.)	
104,534	Ashe, Robert, Boston, Mass. Boot and shoe	June 21, 1870
106,983	Asher, James R., assignor to self and Robert I. Robeson, Oscaloosa, Iowa. Egg-carrier	Sept. 6, 1870
107,320	Ashley, John T., Brooklyn, E. D., N. Y. Paper-feeding apparatus	Sept. 13, 1870
107,851	Same ..... same	Oct. 4, 1870
102,203	Ashworth, Daniel, Wappinger's Falls, N. Y. Apparatus for mixing hydrogen and air	April 26, 1870
100,249	Ashworth, John, North Andover, Mass. Steam-trap	Mar. 1, 1870
106,306	Same ..... Harness-operating mechanism for looms	Aug. 16, 1870
98,835	Asire, Daniel, Ada, Ohio. Device for soldering eaves-troughs	Jan. 18, 1870
	Asmann, Albert, *et al.* (*See* Compton & Toms, assignors.)	
104,687	Aspinall, William, Philadelphia, Pa. Lappet-loom	June 28, 1870
101,899	Aspinwall, L. Augustus, Albany, N. Y. Corn-husker	April 12, 1870
4,099	Same ..... Machine for husking corn ..... (Reissue)	Aug. 16, 1870
4,174	Same ..... same ..... (Reissue)	Nov. 8, 1870
	Aspinwall, Sterne F. (*See* Snow, Charles P., assignor.)	
103,541	Assmann, Albert, Rahway, N. J. Weighing-scale	May 31, 1870
99,899	Atha, Simeon, West Liberty, Ohio. Carriage-wheel hub	Feb. 15, 1870
109,707	Same ..... same	Nov. 29, 1810
	Atherton, Abel T., *et al.* (*See* Hallowell, Albert, assignor.)	
103,490	Atkins, Charles M., and Alexander Govan, Pottsville, Pa. Furnace for roasting ore	May 24, 1870
101,810	Atkinson, Mahlon B., Georgetown, D. C. Churn	April 12, 1870
107,321	Atkinson, Mahlon B., assignor to self and James H. Welch, Georgetown, D. C. Potato and fruit peeler	Sept. 13, 1870
102,304	Atterbury, J. S. and T. B., Pittsburg, Pa. Lamp	April 26, 1870
103,702	Same ..... Jelly-glass	May 31, 1870
4,225	Same ..... Jelly-cup ..... (Design)	July 19, 1870
4,259	Same ..... Lamp ..... (Design)	July 26, 1870
4,298	Same ..... Damp-stand ..... (Design)	Aug. 23, 1870
4,457	Same ..... Ornamentation of glassware ..... (Design)	Nov. 8, 1870
109,369	Same ..... Glass-lamp	Nov. 22, 1870
109,370	Same ..... Manufacture of lamps	Nov. 22, 1870
3,854	Atterbury, Thomas B., assignor to William Doyle, Pittsburg, Pa. Ornamenting glassware ..... (Design)	Feb. 22, 1870
	Atwater, Benham, and Company. (*See* Fitzmaier, Louis, assignor) ..... (Reissue.)	
98,903	Atwater, John H., Oshtemo, Mich. Drawing-knife	Jan. 18, 1870
4,300	Atwater, Joseph H., Providence, R. I. Black-board eraser ..... (Design)	Oct. 11, 1870
	Atwood & McCaffrey. (*See* Snyder, August, assignor.)	
108,311	Atwood, Carell, Lebanon, Ill. Gang-plow	Oct. 18, 1870
103,291	Atwood, Corydon F., assignor to James F. Wiley and Vincent C. Price, Hancock, Wis. Time-lock	July 12, 1870
107,322	Atwood, James E., Pittsburg, Pa. Refining iron and steel	Sept. 13, 1870
108,084	Same ..... Crucible for melting iron and steel. (Antedated Oct. 8, 1870)	Oct. 11, 1870
100,350	Atwood, John E., Willimantic, Conn. Horse-power	Mar. 1, 1870
109,708	Atwood, John E., Mansfield, Conn. Traverse-motion for winding and spooling machinery	Nov. 29, 1870
109,709	Same ..... Pulley-coupling	Nov. 29, 1870
	Atwood, John E., and A. S. Whittemore. (*See* Whittemore & Atwood.)	
98,836	Atwood, Lewis J., assignor to Holmes, Booth, and Haydens, Waterbury, Conn. Lamp-burner	Jan. 18, 1870
99,810	Atwood, Loring, and Edward Ripley, assignors to selves and Baxter T. Whitney, Rutland, Vt. Wood-turning lathe. (Antedated Feb. 5, 1870)	Feb. 15, 1870
99,129	Aubin, N., Albany, N. Y. Peat-auger	Jan. 25, 1870
99,130	Same ..... Peat-molding machine	Jan. 25, 1870
	Aubin, N., and Edwin James Hulbert. (*See* Hulbert & Aubin.)	
105,881	Aubin, Nicholas Napoleon, Portland, Conn. Peat-machine	Aug. 2, 1870
	Aucherman, John R. (*See* Orewiler, Michael, assignor.)	
104,535	Auchincloss, William S., New York, N. Y. Apparatus for indicating the position of elevators	June 21, 1870
109,168	Augenstein, Moritz, Brooklyn, N. Y. Testing-instrument for brewers and distillers	Nov. 15, 1870
102,905	Augur, John B., Poughkeepsie, N. Y. Buggy-gearing	May 10, 1870
108,085	Same ..... Gearing for wagons	Oct. 11, 1870
108,086	Aull, Adam A. and John A., Bellefontaine, Ohio. Bake-oven	Oct. 11, 1870
	Aull, Samuel, jr. (*See* McAvoy, Hugh L., assignor.)	
	Aultman, C. (*See* Bope, Jacob W., assignor) ..... (Two cases.)	
	Same ..... (*See* Lee, George W., assignor.)	
	Same ..... (*See* Allouas, Joseph, assignor.)	
101,079	Aurich, William, Chicago, Ill. Vapor-burner	Mar. 22, 1870
109,795	Austin, Charles Dudley, England. Lubricator	Dec. 6, 1870
99,811	Austin, Jacob M., assignor to self and William Tash, York, Pa. Soap-mixture	Feb. 15, 1870
105,540	Austin, James E., Oswego, N. Y. Shingle-machine	July 19, 1870
109,997	Austin, James M., assignor to Isaac Turner, Georgetown, Mo. Brick-machine	Dec. 13, 1870
	Austin, John, *et al.* (*See* Westcott, Charles S., assignor.)	
109,571	Austin, John W., Plaquemine, La. Apparatus for treating cane-juice with sulphurous-acid gas	Nov. 29, 1870
99,280	Austin, L., and Joshua E. Hall, Cleveland, Ohio. Powder-keg	Feb. 1, 1870

Alphabetical list of patentees for the year 1870—Continued.

No.	Name, residence, and invention or discovery.	Date.
108,312	Austin, Phineas E., assignor to self and Leander Buell, New Haven, Conn. Feed-device for power-presses	Oct. 18, 1870
101,811	Austin, Solomon H., assignor to Wanton J. Austin, Providence, R. I. Cloth-stretching machine	April 12, 1870
106,764	Austin, Theodore P., New York, N. Y. Street-lamp	Aug. 30, 1870
	Austin, William H. (*See* Barrell, Thomas A., assignor.)	
	Automatic Fire-Alarm Company. (*See* Abbott, Job, assignor.)	
	Same ..... (*See* Cushman, Sylvanus D., assignor) ..... (Three cases.)	
100,583	Averell, Ellicott D., and Joseph Malan, Brooklyn, N. Y. Vegetable and fruit peeler	Mar. 8, 1870
4,035	Same ..... Vegetable and fruit peeler ..... (Reissue)	June 14, 1870
	Averell, George W., and Gardiner Hall, jr. (*See* Hall & Averell.)	
108,087	Averell, John D., and George A. Higgins, New York, N. Y., Thomas Gordon, Shrewsbury, N. J., assignors to George A. Higgins. Combined pump and siphon	Oct. 11, 1870
	Averell, William W. (*See* La Breche Viger, Louis, assignor) ..... (Reissue.)	
3,813	Averill, Damon R., New Centreville, N. Y. Varnish ..... (Division A, reissue)	Feb. 1, 1870
3,814	Same ..... Manufacture of varnish ..... (Division B, reissue)	Feb. 1, 1870
108,953	Averill, Henry K., New Oregon, Iowa. Fanning-mill	Nov. 8, 1870
	Averill, Levi. Lime-kiln ..... (Extension)	Aug. 17, 1870
	Avery, Benjamin F., Louisville, Ky. Plow ..... (Disclaimer)	Jan. 7, 1870
	Same ..... same ..... (Extension)	Jan. 7, 1870
	Same ..... (*See* Wiard, Edward, assignor.)	
107,323	Avery, Clark, San Francisco, Cal. Siding for buildings	Sept. 13, 1870
	Avery, John G., *et al.* (*See* Kent & Bancroft, assignors.)	
110,419	Avery, Robert H., Galesburg, Ill. Cultivator	Dec. 27, 1870
98,904	Avery, William, and Albert Fenton, assignors to William Avery, England. Needle-case	Jan. 18, 1870
102,471	Same ..... same	May 3, 1870
100,102	Avery, William J., and Tunis Laberteaux, Marshall Township, Mich. Potato cultivator and digger	Feb. 22, 1870
	Avis, James F., and Elias Propst. (*See* Propst & Avis.)	
100,351	Axe, William R., Rockton, Ill. Barn-door hanger	Mar. 1, 1870
107,646	Axtell, Ephraim S., Macomb, Mich. Pulley for gates	Sept. 27, 1870
99,519	Ayaras, Benjamin, Greenwich, N. J. Thrashing-machine	Feb. 8, 1870
106,305	Aydelott, Henry C., Carthage, Ind. Cutting-apparatus for harvesters	Aug. 16, 1870
104,407	Ayers, Almon P., Chicago, Ill. Harvester	June 21, 1870
105,882	Ayers, Samuel S., assignor to self and Abram Sebring, Plainfield, N. J. Tube-well	Aug. 2, 1870
101,566	Aylworth, G. H., Brighton, Ill. Hay-press	April 5, 1870
102,647	Ayres, Isaac, Elkhart, Ind., and D. C. Payne, Delavan, Wis. Well-tube	May 3, 1870
100,488	Ayres, Parley J., Lydon, N. Y. Tire-upsetting machine	Mar. 8, 1870
99,745	Ayres, William G., and Seth L. Cole, Brooklyn, N. Y. Cigar-machine. (Antedated Feb. 9, 1870)	Feb. 15, 1870
100,316	Baade, Charles T., Brooklyn, N. Y. Spring-bed bottom	Aug. 16, 1870
	Baader, J. Nicodemus, and Peter Funk. (*See* Funk & Baader.)	
103,824	Babbitt, Avery, and William W. Binny, assignors to selves and Solomon N. Bierce, Auburn, N. Y. Condenser for the manufacture of coal-gas	June 7, 1870
103,121	Babbitt, Benjamin T., New York, N. Y. Air-compressing apparatus	May 17, 1870
107,324	Same ..... Process of obtaining glycerine from soap-makers' spent lye	Sept. 13, 1870
	Babbitt, Platt D. (*See* Bailey, Ralph P., assignor of part interest to Platt D. Babbitt) ..... (Reissue.)	
99,282	Babbitt, Samuel, assignor to self and George W. Orr, Brazil, Ind. Boot and shoe	Feb. 1, 1870
103,161	Babbitt, Samuel, assignor to self and Joseph L. Hussey, Brazil, Ind. Awl	July 12, 1870
	Babcock, Alpheus, and William W. Huntley. (*See* Huntley and Babcock.)	
107,210	Babcock, Franklin and Frederick, Middletown, Conn. Blind-fastener	Sept. 13, 1870
101,989	Babcock, James F., Boston, Mass. Spring for railroad-car	Mar. 22, 1870
99,618	Babcock, John, Cambridgeport, Mass. Composition for preparing wood for painting	Feb. 8, 1870
101,200	Babcock, Noyes E., and George D. Goodsell, Rockford, Ill. Knife	Mar. 29, 1870
	Same ..... (*See* Goodsell & Babcock) ..... (Two cases.)	
99,131	Bach, Louis, and L. C. Christlip, Tiffin, Ohio. Sawing-machine	Jan. 25, 1870
98,905	Bacharach, Moritz, New York, N. Y. Street-urinal	Jan. 18, 1870
105,621	Bache, Christian W., Philadelphia, Pa. Chimney-cowl	July 26, 1870
101,411	Bache, Richard Meade, Philadelphia, Pa. Elastic graduated-scale	April 5, 1870
	Bache, Robert C., and James R. Bancroft. (*See* Bancroft & Bache.)	
99,610	Bachelder, John, Norwich, Conn. Neck-tie	Feb. 8, 1870
100,250	Same ..... Fastening for neck-ties	Mar. 1, 1870
100,710	Same ..... Hay-loader	Mar. 15, 1870
	Same ..... Sewing-machine ..... (Extension)	July 14, 1870
110,167	Bacher, Solomon, Edina, Mo. Planter and cultivator	Dec. 20, 1870
100,489	Bachman, Francis M., and Samuel Ricker, Fredericksburg, Pa. Faucet	Mar. 8, 1870
107,647	Bachman, William K., Columbia, S. C. Mouse-trap	Sept. 27, 1870
105,410	Backus, George M., Oil City, Pa. Sucker-rod connection	July 19, 1870
102,078	Backus, Quimby S., Winchendon, Mass. Process for facing valves and valve-seats for steam-engines	April 19, 1870
103,930	Bacon, Frank M., Plainfield, N. J. Washing-machine	June 7, 1870
4,035	Bacon, Fred Walton, New Haven, Conn. Seal or banner ..... (Design)	June 7, 1870
99,746	Bacon, Robert, assignor to self and Joseph Lincoln, jr., Boston, Mass. Cabinet	Feb. 15, 1870
	Bacon, William, *et al.* (*See* Thomas, John, assignor.)	
105,765	Baden, Thomas E., Washington, D. C. Traveling-belt stop for machinery	July 26, 1870

Alphabetical list of patentees for the year 1870—Continued.

No.	Name, residence, and invention or discovery.	Date.
102,472	Badger, William, Hastings-on-Hudson, N. Y. Washing-machine	May 3, 1870
	Baer, John H., *et al.* (*See* Deeds, William S., assignor.)	
99,132	Bagg, Albert G., New York, N. Y. Cheese-press	Jan. 25, 1870
107,211	Baggs, James T., Bridgeport, Ohio. Sawing-machine	Sept. 13, 1870
105,162	Bagley, Allen, Ypsilanti, Mich. Double-acting force-pump	July 12, 1870
101,412	Bailey, Albert R., Plantsville, Conn. Die for forging shear-bows	April 5, 1870
	Bailey, Alfred, Amesbury, Mass. Pegging-jack ..... (Extension)	July 23, 1870
	Bailey, Allen. (*See* Boyd, John G., assignor.)	
107,212	Bailey, Alonzo B., Cobalt, Conn. Coffin-handle	Sept. 13, 1870
100,103	Bailey, Alson S., Chicago, Ill. Coal-elevator	Feb. 22, 1870
103,960	Bailey, Bennett C., Constitution, Ohio. Pump	June 7, 1870
109,719	Same ..... Washing-machine	Nov. 29, 1870
109,371	Bailey, Charles S., Mobile, Ala. Hydraulic stop-valve. (Antedated Nov. 19, 1870)	Nov. 22, 1870
106,984	Bailey, Charles W., Boston, Mass. Detachable boot and shoe heel	Sept. 6, 1870
99,747	Bailey, Fortune L., Freeport, Ind. Washing-machine	Feb. 15, 1870
	Bailey, George W., and A. H. Knapp. (*See* Knapp & Bailey.)	
107,213	Bailey, Henry Dwight Wright, Sterling, Ill. Spring-bed bottom	Sept. 13, 1870
101,567	Bailey, H. F., Amsterdam, N. Y. Tablet for tombs	April 5, 1870
103,278	Bailey, Jacob B., New York, N. Y. Handle for knives	May 24, 1870
105,883	Bailey, John A., assignor to self, L. E. Webb, Joseph Lederle, Anthony Lederle, and John H. Wells, Detroit, Mich. Excavating-machine	Aug. 2, 1870
103,279	Bailey, John W., Aurora, Ind. Steam-engine	May 24, 1870
98,837	Bailey, Joseph R., Woonsocket, R. I. Tool-holder	Jan. 18, 1870
98,838	Same ..... same	Jan. 18, 1870
105,766	Bailey, Joseph R., assignor to self and Selden A. Bailey, Woonsocket, R. I. Box-scraper	July 26, 1870
105,767	Same ..... Bench-plane	July 26, 1870
4,057	Bailey, Ralph P., assignor of part interest to Platt D. Babbitt, Niagara Falls, N. Y. Machine for dressing marble ..... (Reissue)	July 5, 1870
106,765	Bailey, Timothy, Wyoming, Ill. Combined harrow and roller	Aug. 30, 1870
107,434	Bailey, William, Troy, N. Y. Hydrant	Sept. 20, 1870
4,155	Same ..... same ..... (Reissue)	Oct. 18, 1870
	Same ..... (*See* Kirk, Solomon W., assignor.)	
98,907	Bailey, W. N., Duplain, Mich. Combined latch and lock	Jan. 18, 1870
98,906	Baily, A. H., and W. G. Bratton, Marseilles, Ill. Leather channeling and folding tool	Jan. 18, 1870
108,231	Bainbridge, David, Philadelphia, Pa. Anvil-last	Oct. 11, 1870
	Bair, Brothers & Co. (*See* Bowker, James, assignor) ..... (Two cases.)	
99,620	Baird, Francis R., Norfolk, Va. Hasp fastening for fruit-crates	Feb. 8, 1870
102,473	Baird, James M., assignor to self, John McLure, James W. Ward, and John Boone McLure, Wheeling, West Va. Fastening for bedsteads, tables, &c. (Antedated April 20, 1870)	May 3, 1870
100,584	Baird, James R., Vincennes, Ind. Carriage wheel	Mar. 8, 1870
106,247	Baird, John, and Warren Fisher, Hamilton, Ohio. Mica chimney for lamps	Aug. 9, 1870
101,210	Baird, Joseph H., Oakville, Conn. Hinge machine	Mar. 29, 1870
106,985	Baird, Thomas W., Bowling Green, Ky. Fireplace	Sept. 6, 1870
	Baisly, George H., and John Wilson. (*See* Wilson & Baisly.)	
104,240	Baker, Albert C., assignor to self and George L. Laflin, Westfield, Mass. Steam-radiator	June 14, 1870
98,543	Baker, Ansel Granville, and George Movier Ennis, New Bedford, Mass. Axle-box for carriages	Jan. 4, 1870
104,536	Baker, Benjamin, Addison, Mich. Grain-measuring attachment to thrasing-machines	June 21, 1870
	Baker, Charles J., and George A. Anderson. (*See* Anderson & Baker.)	
106,986	Baker, Charles L. W., Hartford, Conn. Mop. (Antedated August 25, 1870.)	Sept. 6, 1870
	Baker, C. S. (*See* Noyes, Walter B., assignor.)	
	Baker, David H., and C. S. Southwick. (*See* Southwick & Baker.)	
98,908	Baker, George W., Lincoln, Ill. Scaffold	Jan. 18, 1870
	Same ..... (*See* Morris, Lewis, assignor.)	
98,658	Baker, Haydn M., Washington, D. C., Process of cleaning cotton-waste and other fibers from oil, &c	Jan. 11, 1870
101,969	Same ..... Manufacture of steel from cast or pig-iron	April 19, 1870
102,906	Same ..... Manufacture of soap	May 10, 1870
108,088	Same ..... Process for the manufacture of soda, hydrocloric acid, &c	Oct. 11, 1870
108,089	Same ..... Brooklyn, Eastern Division, N. Y. Manufacture of aluminate of soda	Oct. 11, 1870
105,884	Baker, Haydn M., assignor to John M. Smith, Washington, D. C. Preparation of paper stock	Aug. 2, 1870
108,090	Baker, Haydn M., Williamsburg, N. Y. Manufacture of nitric acid	Oct. 11, 1870
99,048	Baker, Henry, assignor to self and Christian G. Herr, Lancaster, Pa. Stove-pipe damper	Jan. 25, 1870
109,862	Baker, Henry P., Centreville, Ind. Drain-tile machine	Dec. 6, 1870
110,333	Same ..... Combined land-roller and marker	Dec. 20, 1870
3,812	Baker, Henry N., assignor through mesne assignments to Gold and Stock Telegraph Company, New York, N. Y. Printing-telegraph ..... (Reissue)	Jan. 25, 1870
	Baker, Henry W., Binghamton, N. Y. Printing-telegraph ..... (Extension)	April 28, 1870
3,854	Baker, Horace, assignor to Richard K. Sanford, Cortland, N. Y. Hay-raker and loader ..... (Reissue)	Mar. 1, 1870
104,408	Baker, Isaac L., Prairie City, Kansas. Weaning-bit	June 21, 1870
104,096	Baker, Israel, Tomar, Wis. Washing-machine	June 14, 1870
	Baker, James H., *et al.* (*See* Warriner, Baker & Slocum.)	

Alphabetical list of patentees for the year 1870—Continued.

No.	Name, residence, and invention or discovery.	Date.
101,812	Baker, John G., Wilmington, Del. Apparatus for tanning by infiltration	April 12, 1870
4,141	Baker, John Gulick, Philadelphia, Pa. Grinding-mill stand or frame. (Design)	June 7, 1870
104,537	Same. Grinding-mill	June 21, 1870
102,749	Baker, John W., Columbus, Ohio. Vapor-burner	May 10, 1870
104,815	Baker, Lucas, Templeton, Mass. Method of securing the seats and backs of chairs, sofas, &c	June 28, 1870
103,542	Baker, Moses O., New York, N. Y. Lock	May 31, 1870
102,355	Baker, Philander, Chicago, Ill. Lamp-burner	April 26, 1870
110,188	Same. Lamp-wick	Dec. 20, 1870
103,122	Baker, Robert Breckenridge, Philadelphia, Pa. Insulator for telegraph wire	May 7, 1870
104,097	Baker, Sanford J., Madison Centre, Me. Horse-shoe	June 14, 1870
107,648	Baker, S. William, Austin, Texas. Truss	Sept. 27, 1870
100,711	Baker, Timothy, St. John's, Mich. Churn	Mar. 15, 1870
106,706	Baker, Vincent M., Preston, Minn. Water-wheel	Aug. 30, 1870
105,885	Baker, Virginia L., Richmond, Va. Bedstead and cot	Aug. 2, 1870
105,886	Baker, William C., New York, N. Y. Steam-heater	Aug. 2, 1870
104,098	Baker, William Rondeau, Trempelcau, Wis. Car-coupling	June 14, 1870
	Baker, William R., and L. J. McCormick. (*See* McCormick & Baker, assignors.)	
	Same. same.	
	Baker, William R., *et al.* (*See* McCormick, Baker & Erpelding, assignors.)	
	Baker, Winslow. (*See* Hankenson, James W., assignor.)	
	Baker, Winslow, and James W. Hankenson. (*See* Hankenson & Baker.)	
	Bakewell, Pears & Co. (*See* Kirchner, William M., assignor) (Design.)	
99,282	Balch, Edward T., Philadelphia, Pa. Sun-shade for horses. (Antedated January 20, 1870)	Feb. 1, 1870
100,585	Balding, Anson, Wheeling, W. Va. Expansible core for casting iron, glass, &c	Mar. 8, 1870
104,689	Same. Pump	June 28, 1870
103,123	Baldwin, Augustine, New York, N. Y. Steam cotton-press	May 17, 1870
108,531	Baldwin, Charles N., Willington, Conn. Horse hay-fork	Oct. 25, 1870
108,532	Same. Boring-machine	Oct. 25, 1870
3,695	Baldwin, Charles S., New York, N. Y. Artificial flowers (Design)	Mar. 15, 1870
99,049	Baldwin, Cyrus W., Boston, Mass. Elevator for hoisting human beings, merchandise, &c	Jan. 25, 1870
109,169	Same. Elevator	Nov. 15, 1870
106,767	Baldwin, Frederick, Janesville, Wis. Wood-turning lathe	Aug. 30, 1870
102,751	Baldwin, George G., Milford, Conn. Earth chamber-vessel	May 10, 1870
107,150	Baldwin, James S., assignor to Charles F. Ritchel, Newark, N. J. Method of inlaying wood, &c	Sept. 6, 1870
103,124	Baldwin, John B., assignor to self and the Miles Alarm-Till Manufacturing Company, Nashua, N. H. Alarm-till	May 17, 1870
99,812	Baldwin, J. W., Laconia, N. H. Globe-valve	Feb. 15, 1870
101,413	Baldwin, Silas D., Chicago, Ill. Vapor-burner	April 5, 1870
105,685	Baldwin, William W., Cleveland, Ohio. Telegraph-insulator	July 26, 1870
	Baldy, James B., and Charles C. Warren. (*See* Warren & Baldy.) (Two cases.)	
107,214	Bales, Moses and William P., London, Ohio. Harvester	Sept. 13, 1870
101,970	Balfour, M. G., assignor to self and B. Boorman, Manson, Wis. Roofing material	April 19, 1870
105,411	Ball, Albert, Canton, Ohio. Iron running-gear	July 19, 1870
	Ball, Charles E. (*See* Brown, J. Hamilton, assignor.)	
110,107	Ball, Ephraim, jr., Canton, Ohio. Wagon	Dec. 13, 1870
109,570	Ball, Hiram J., Oswego, N. Y. Rubber cement. (Antedated Nov. 19, 1870)	Nov. 29, 1870
103,825	Ball, Hosea, New York, N. Y. Ore-separator	June 7, 1870
4,026	Same. Oven (Reissue)	June 14, 1870
105,541	Same. same	July 19, 1870
	Same. same (Extension)	Sept. 19, 1870
109,711	Same. Grate-bar	Nov. 29, 1870
106,451	Ball, James, assignor to self and Samuel Raynor & Co., New York, N. Y. Manufacturing envelopes	Aug. 16, 1870
109,372	Ball, Phinehas, and Benaiah Fitts, Worcester, Mass. Liquid-meter	Nov. 22, 1870
104,669	Ball, Richard, Petersburg, Va. Hay and cotton-press	June 28, 1870
	Ball, R. & Co. (*See* Clark, Milton W., assignor) (Three cases.)	
98,482	Ball, Silas R., Hyde Park, Ill. Gas-machine	Jan. 4, 1870
	Ball, Thomas W. (*See* Winter, Henry, assignor.)	
99,830	Ball, William, Chicopee, Mass. Forging and stamping machine	Jan. 18, 1870
106,107	Ball, William, Oregon, Mo. Animal-trap	Aug. 9, 1870
	Ball, William, deceased, by Adelia E. and Edwin P. Ball, administrators, Chicopee, Mass. Operating steam-stamp (Extension)	May 24, 1870
107,325	Ball, William H., and Thomas Barnard, Newark, N. J. Bracelet	Sept. 13, 1870
102,197	Ballantine, Alexander T., assignor to self, W. W. Kingsland, N. R. Bates, and D. D. Phelps, Titusville, Pa. Door-spring	April 19, 1870
108,313	Ballard, Andrew J., Cohoes, New York. Dumping-car	Oct. 18, 1870
107,326	Ballard, John A., Bombay, India. Steering apparatus for torpedo boats, &c	Sept. 13, 1870
104,090	Ballard, William, Caroline, N. Y. Spark-arrester	June 14, 1870
	Ballard, William, and Jay M. Crosby. (*See* Crosby & Ballard.)	
90,391	Ballard, William W., Elmira, N. Y. Wood pavement	Feb. 1, 1870
105,292	Same. same	July 12, 1870
4,419	Ballinger, Charles, assignor to McKee and Brothers, Pittsburg, Pa. Ornamentation of glass-ware (Design)	Oct. 18, 1870
102,905	Balmain, William Henry, Great Britain. Concentrating oil of vitriol	April 26, 1870
102,906	Same. Mode of storing and transporting oil of vitriol	April 26, 1870
110,189	Balmain, William Henry, assignor through mesne assignments to George T. Lewis, Great Britain. Packing caustic alkali	Dec. 20, 1870

Alphabetical list of patentees for the year 1870—Continued.

No.	Name, residence, and invention or discovery.	Date.
99,621	Balsley, John H., Dayton, Ohio. Step-ladder	Feb. 8, 1870
99,622	Same. Bracket-hinge for step-ladder	Feb. 8, 1870
101,414	Balsley, Joseph, Bedford, Ind. Washing-machine	April 5, 1870
103,826	Bancroft, C. R., assignor to C. C. Dickerman and C. W. Munroe, Boston, Mass. Letter-box	June 7, 1870
103,410	Bancroft, James R., and Robert C. Bache, Philadelphia, Pa. Carpet-stretcher and tacker	May 24, 1870
101,700	Bancroft, John A., assignor to L. F. Bancroft and Andrew B. Yetter, Worcester, Mass. Street-sprinkler	April 12, 1870
	Bancroft, Joseph B., and William F. Draper. (*See* Draper and Bancroft.)	
3,917	Bancroft, L. F., assignor to self and Andrew B. Yetter, Worcester, Mass. Street-sprinkler (Reissue)	April 12, 1870
107,215	Bancroft, Melvin, assignor to George F. Richardson & Co., Montague, Mass. Extension-table	Sept. 13, 1870
	Bancroft, Nathan W., and Prentiss J. Kent. (*See* Kent & Bancroft, assignors.)	
	Bance, Thomas, *et al.* (*See* Gerhardt, William, assignor.)	
103,961	Bangle, Amos A., Brooklyn, Cal. Printing-press	June 7, 1870
99,623	Bangs, Elijah, Provincetown, Mass. Chain-shackle	Feb. 8, 1870
99,045	Banigan, Joseph, and George W. Miller, Smithfield, R. I. Molds for vulcanizing rubber pencil tips	Jan. 18, 1870
107,151	Banker, Charles S., and Alexander Purdy, Hector, N. Y. Washing-machine	Sept. 6, 1870
99,813	Banks, C. M., Philadelphia, Pa. Spring for railway cars	Feb. 15, 1870
	Banks, Jeremiah H., *et al.* (*See* Cranston, Banks & Ingersoll.)	
	Bannon, Charles, W. (*See* Smith, Gibson, assignor.)	
107,852	Banta, William E., assignor to self and Buckley A. Rose, Springfield, Ohio. Diaphragm stop-cock	Oct. 4, 1870
	Banzett, William, *et al.* (*See* Snedicker, Luke S., assignor.)	
99,520	Barackman, B. P., Linesville, Pa. Hay-crane or carrier	Feb. 8, 1870
104,816	Baranger, Henry, assignor to self and James P. Bradley, St. Louis, Mo. Fare-box for passenger cars. (Antedated June 16, 1870)	June 28, 1870
	Barb, David. (*See* Heffley, William H., assignor.)	
3,892	Barbarin, Arthur, New Orleans, La. Apparatus for carbureting air and gas. Reissue	Mar. 22, 1870
	Barbarin, Arthur, and Antonie E. Dupas. (*See* Dupas and Barbarin.)	
101,701	Barber, B. J. Ballston Spa, N. Y. Cutter-head for planing-machine	April 12, 1870
109,099	Same. Water-wheel	Nov. 8, 1870
101,368	Barber, Henry B., Scott, N. Y. Gun-sight	April 5, 1870
	Barber, James D. (*See* Martin, William E., assignor.)	
98,544	Barber, Sylvester D., and James Wolf, assignors to said Barber and Hiram Cox, Mattoon, Ill. Bee-hive	Jan. 4, 1870
106,535	Barber, Vincent S., assignor to Nixon & Co., Alliance, Ohio. Harvester	Aug. 23, 1870
98,694	Barbour, J. W., Winooski Falls, Vt. Rag-cutter	Jan. 11, 1870
107,751	Barbour, Joseph W., assignor to self and William Earl, Winooski Falls, Vt. Feeding-device for carding-machines	Sept. 27, 1870
108,031	Barbour, Joseph W., assignor to self and Elisha Allen, Winooski Falls, Vt. Shears for cutting flowers	Oct. 11, 1870
105,026	Barbour, Nelson H., New York, N. Y. Steam-generator. (Antedated July 19, 1870)	July 26, 1870
106,452	Barclay, Andrew, North Britain. Ejector and steam-condenser	Aug. 16, 1870
107,588	Barclay, John, Bergen, N. J. Bracelet	Sept. 20, 1870
4,192	Same. Manufacture of plated-metal bracelets (Reissue)	Dec. 6, 1870
99,748	Bard, James I., New Orleans, La. Fireplace-back	Feb. 15, 1870
99,521	Barden, John S., Providence, R. I. Pump	Feb. 8, 1870
	Barfield, Ira, and Jasper Newton. (*See* Newton & Barfield.)	
103,125	Barker, Abel, Wyoming, Pa. Can-opener	May 17, 1870
103,126	Barker, Charles, assignor to self and T. C. Thomas, Knox County, Ill. Door for railway box-car	May 17, 1870
	Barker, Cyrus I., and Roscoe C. Reynolds. (*See* Reynolds & Barker.)	
105,768	Barker, John F., Springfield, Mass. Gas-burner	July 26, 1870
102,474	Barker, Joseph, assignor to self and Philip Myers, Chicago, Ill. Sand-paper holder	May 3, 1870
106,536	Barker, Joseph, assignor to self and Philip Myers, Chicago, Ill. Machine for sand-paper molding	Aug. 23, 1870
100,967	Barker, Osborne, Brooklyn, N. Y. Instrument for dosing animals	Mar. 22, 1870
107,752	Barker, Silas, and Henry S. Pratt, Hartford, Conn. Rolled sheet-iron	Sept. 27, 1870
	Barker, Stephen A. (*See* Capen, George O., assignor.)	
98,733	Barker, Stephen A., assignor to New England Toy Company, Providence, R. I. Cap for coffin-nails	Jan. 11, 1870
103,543	Barker, Volney, Otisfield, Me. Green-corn cutter	May 31, 1870
108,954	Barker, William C., Ypsilanti, Mich. Pump	Nov. 8, 1870
109,998	Barker, William Henry, Windsor, Nova Scotia. Cat-head anchor-stopper	Dec. 13, 1870
107,589	Barks, Ephraim, and Lucius H. Emmons, Noblesville, Ind. Latch for gates	Sept. 20, 1870
3,878	Barlow, Ashbell P., assignor to self, C. H. Eastman, W. W. King, Z. B. Small, and James H. Johnson, Claremont, N. H. Saw-mill (Reissue)	Mar. 15, 1870
102,908	Barlow, Charles B., Portsmouth, N. H. Chimney-cowl	April 26, 1870
101,702	Barlow, Jesse, Vanmeter, Iowa. Truck for moving buildings	April 12, 1870
100,104	Barnard, A. B., Worcester, Mass. Horse hay-rake	Feb. 22, 1870
	Barnard, Elisha J., *et al.* (*See* Clark, Hezekiah M., assignor.)	
	Barnard, Thomas, and William H. Ball. (*See* Ball & Barnard.)	
98,840	Barnard, William B., Waterville, Conn. Sheep-shears	Jan. 18, 1870
106,649	Barnard, William B. and Andrew J., Waterville, Conn. Manufacture of shears	Aug. 23, 1870
104,100	Barnekov, Kiel V., Cornwall, N. Y. Breech-loading fire-arm	June 14, 1870

Alphabetical list of patentees for the year 1870—Continued

No.	Name, residence, and invention or discovery.	Date.
101,971	Barnes, Alden, Bloomington, Ill. Hay-derrick	April 19, 1870
	Barnes, Chauncey, *et al.* (*See* Valentine, Jacob, *et al.*)	
107,590	Barnes, Joseph E., Danvers Center, Mass., and Lucius P. Barnes, Fitchburg, Mass. Permutation-lock	Sept. 20, 1870
106,307	Barnes, Merrick M., North Adams, Mass. Sewing-machine	Aug. 16, 1870
105,542	Barnes, Newcomb M., Tiffin, Ohio. Horse hay-rake	July 19, 1870
105,627	Barnes, William F., assignor to self and Susan H. Clark, Rockford, Ill. Machinery for cutting wax into sheets	July 26, 1870
100,490	Barnett, Lewis, assignor to self and James D. Beal, Leechburg, Pa. Bootlaster	Mar. 8, 1870
107,435	Barney, George, Swanton, Vt., and Valentine G. Barney, Minneapolis, Minn. Machine for dressing tiles	Sept. 20, 1870
	Barney, Gilbert R. (*See* Kendall, Fernando C., assignor.)	
106,108	Barns, Charles, West Liberty, Iowa. Rake-attachment for harvesters	Aug. 9, 1870
101,081	Barnstead, James T., Peabody, Mass. Machine for scraping leather	Mar. 22, 1870
103,827	Barnum, John D., Amenia Union, N. Y. Removable calk for horseshoes	June 7, 1870
105,628	Barnum, Nelson, La Porte, Ind. Needle-threader	July 26, 1870
	Barnum, Theodore. (*See* Alger, Darius, assignor.)	
108,430	Baron, Charles S. and Alfred L., Bellaire, Ohio. Lantern	Oct. 18, 1870
100,842	Baron, Joseph, Millbury, Mass. Belt-shipping mechanism for spinning-jacks	Mar. 15, 1870
100,251	Barr, J. H., Mansfield, Ohio. Wagon	Mar. 1, 1870
105,283	Barr, John H., and Jacob H. Smith, Roanoke, Ind. Dough-kneader	July 12, 1870
101,972	Barr, Orlando, Beloit, Wis. Ventilator	April 19, 1870
103,411	Barr, William H., Monterey, Ky. Liniment	May 24, 1870
108,955	Barr, William M., Williamsport, Pa. Gearing for metal-planers	Nov. 8, 1870
110,538	Barrell, Thomas A., assignor to self and William H. Austin, Marea, Ill. Portable store-room and pantry	Dec. 27, 1870
108,092	Barrett, Harry, Brooklyn, N. Y. Buffing apparatus for finishing spoons	Oct. 11, 1870
	Barrett, J. B. (*See* Hedrick, James H., assignor.)	
	Barrett, John R. (*See* Emerson, George W., assignor.)	
102,475	Barrie, John D., Lawrence, Mass. Device for attaching picker to picker-staff	May 3, 1870
109,373	Barrie, Samuel S., Green Point, N. Y. Wooden hoop-box	Nov. 22, 1870
108,431	Barron, Charles, Lafayette, Ind. Clothes-line operator	Oct. 18, 1870
110,420	Barron, George A., Pembroke, Me. Coffee-pot strainer	Dec. 27, 1870
3,920	Barron, Thomas J., assignor to The Barrons' Patent Steel Manufacturing Company, New York, N. Y. Converting iron into steel (Reissue)	April 12, 1870
104,409	Barrows, Charles H., Willimantic, Conn. Three-wheeled carriage	June 21, 1870
103,280	Barrows, Thomas, assignor to self and G. Purrington, jr., Brooklyn, N. Y. Filter	May 24, 1870
4,535	Barry, James S. and Alfred M., Albion, Mich. Fruit-gatherer (Design)	Dec. 27, 1870
107,649	Barry, William M., Nashville, Tenn. Metallic-roof	Sept. 27, 1870
	Barry, William U. (*See* Keeffer, Governeur M., assignor.)	
108,314	Bartels, Emil, New York, N. Y. Folding-chair	Oct. 18, 1870
108,750	Same Reclining-chair	Nov. 1, 1870
99,814	Barth, Gottlieb M., Philadelphia, Pa. Rotary window-washer	Feb. 15, 1870
99,133	Barth, Henry, Cincinnati, Ohio. Sheet-gauge for printing-presses	Jan. 25, 1870
99,749	Same Gripper and gauge for printing-presses	Feb. 15, 1870
100,002	Same Printing-press	Feb. 22, 1870
101,703	Same Inking-apparatus	April 12, 1870
108,432	Bartholf, Abraham, New York, N. Y. Apparatus for carburetting air and gas	Oct. 18, 1870
100,352	Bartholomay, Henry, assignor to Bartholomay & Frauenberger, Rochester, N. Y. Method of preserving the aromatic principle of hops	Mar. 1, 1870
103,281	Bartholomew, Harry S., Bristol, Conn. Bit-stock	May 24, 1870
	Bartholomew, John C., and Thomas E. Chandler. (*See* Chandler & Bartholomew, assignors.)	
101,211	Bartholomew, Thomas W., New York, N. Y. Suspender	Mar. 29, 1870
100,712	Bartholomew, William N., Newton Centre, Mass. Slate-frame	Mar. 15, 1870
3,810	Bartholomew, William N., assignor to J. Reckendorfer, Newton Centre, Mass. Rubber-eraser (Design)	Jan. 4, 1870
101,344	Same Pencil-case	Mar. 29, 1870
	Bartle, Warren S., Newark, N. J. Machine for sowing fertilizers (Extension)	April 7, 1870
107,650	Bartlett, Abel H., Spuyten Duyvil, N. Y. Hemmer for sewing-machines	Sept. 27, 1870
100,353	Bartlett, Eayres O., Birmingham, Pa. Manufacture of dry white-lead	Mar. 1, 1870
108,433	Same Treating the ores of lead and zinc for the manufacture of pigments, &c.	Oct. 18, 1870
103,292	Bartlett, Elbridge G. W., Providence, R. I. Clothes-wringer	May 24, 1870
108,674	Same Wringing-machine	Oct. 25, 1870
100,234	Bartlett, H. A., Philadelphia, Pa. Cap for powder-boxes used for domestic purposes	Feb. 22, 1870
106,453	Bartlett, Henry F., La Grange, Mo. Churn-dasher	Aug. 16, 1870
108,956	Bartlett, James S., Warsaw, N. Y. Head-rest	Nov. 8, 1870
107,853	Bartlett, John L., assignor of one-half interest to William Riven, Stockton, Cal. Gas-carburetter	Oct. 4, 1870
103,838	Bartlett, Joseph W., New York, N. Y. Lantern for streets	June 7, 1870
102,751	Bartlett, Otis B. and George E., Lewiston, Me. Stove-pipe attachment	May 10, 1870
106,454	Bartlett, Samuel R., Chicago, Ill. Automatic lubricating-sleeve	Aug. 16, 1870
106,455	Bartlett, William, Little Hocking, Ohio. Fence	Aug. 16, 1870
101,082	Bartlett, William D., Amesbury, Mass. Heating-furnace	Mar. 22, 1870
104,538	Bartlett, William W., Portland, Me. Spring bed-bottom	June 21, 1870
4,046	Barto, Elias, Tiffin, Ohio. Corn-marker, planter, and cultivator (Reissue)	June 28, 1870
99,750	Barton, Charles, assignor to Dexter, Lambert & Co., Paterson, N. J. Frame for dyeing in various colors for the manufacture of Scotch plaids, &c.	Feb. 15, 1870

Alphabetical list of patentees for the year 1870—Continued.

No.	Name, residence, and invention or discovery.	Date.
104,539	Barton, Charles C., Rochester, N. Y. Drawing-knife	June 21, 1870
101,345	Barton, George S., Worcester, Mass. Bearings for the table-rolls of Fourdrinier paper-machines	Mar. 29, 1870
	Barton, Jason, deceased, by Margarette L. Barton and Charles A. Buell, administrators, Chatham, Conn. Pressure-bell (Extension)	April 4, 1870
101,212	Barton, S. Thompson, and John W. Affron, New Orleans, La. Hasp for trunks, &c. (Antedated March 21, 1870)	Mar. 29, 1870
104,690	Barton, William E., East Hampton, Conn. Sleigh-bell	June 28, 1870
105,412	Same Mode of attaching sleigh-bells	July 19, 1870
106,456	Same Mode of attaching sleigh-bells to straps	Aug. 16, 1870
4,185	Same Attaching sleigh-bells to straps (Reissue)	Nov. 29, 1870
104,247	Bartram, Walker B., Danbury, Conn. Sewing-machine	June 14, 1870
	Bascombe, John P., and John W. Stevens. (*See* Stevens & Bascombe.)	
106,912	Bashor, Benjamin S., Carter's Depot, Tenn. Machine for packing flour	Aug. 30, 1870
104,817	Bashor, William, Johnson City, Tenn. Machine for packing flour, &c.	June 28, 1870
100,704	Bashore, Henry H., Philadelphia, Pa. Dovetailing-machine	Mar. 8, 1870
101,569	Basnett, Elzy L., Morgantown, W. Va. Harness	April 5, 1870
100,586	Bass, E. W. H., Quincy, Mass. Moustache-guard for drinking vessels	Mar. 8, 1870
103,829	Bassett, Chauncey, Kewanee, Ill. Type-cabinet	June 7, 1870
	Bassett, George W., *et al.* (*See* Egge, Frederick, assignor. Reissue.)	
105,887	Bassett, Greenleaf, Taunton, Mass. Mold for casting mackerel-jigs	Aug. 2, 1870
106,768	Bassett, Marshall L., assignor to self and Leonard H. Burt, West Haven, Conn. Shaft-coupling	Aug. 30, 1870
105,898	Bassler, John, Galesburg, Ill. Sliding-door for railway box-car	Aug. 2, 1870
105,163	Bastion, Joseph, Canton, N. Y. Water-wheel	July 12, 1870
110,108	Basye, Hedgemon T., Dyersburg, Tenn. Preserving sweet-potatoes	Dec. 13, 1870
3,970	Batchelder, Asahel G., Lowell, Mass. Apple-parer (Reissue)	May 17, 1870
103,830	Same Machine for paring fruit and vegetables	June 7, 1870
109,286	Same Pencil-sharpener	Nov 8, 1870
103,962	Batchelder, Jesse S., Fort Wayne, Ind. Candy-machine	June 7, 1870
103,831	Batchelder, William W., Boston, Mass. Apparatus for lighting gas by electricity	June 7, 1870
103,127	Batchelder, William W., assignor to George Viles, Boston, Mass. Apparatus for lighting gas by electricity	May 17, 1870
101,714	Batcheller, Charles, Des Moines, Iowa. Fire-kindler	April 12, 1870
106,537	Same Polk County, Iowa. Motive-power	Aug. 23, 1870
106,769	Batcheller, Isaac G., Wallingford, Vt. Machine for bending forks	Aug. 30, 1870
106,913	Batcheior, Joseph M., Foxcroft, Me. Track-lifter	Aug. 30, 1870
110,199	Bate, Wallace H., East Somerville, Mass. Apparatus for generating carbonic acid	Dec. 20, 1870
110,334	Same Draught-cock	Dec. 20, 1870
	Bate, Wallace H., and Matthew Scrannage. (*See* Scrannage & Bate.)	
106,308	Bateman, Charles, Baltimore, Md. Stone-sawing machine	Aug. 16, 1870
109,286	Bateman, Samuel, France. Paddle-wheel	Nov. 15, 1870
	Bateman, Samuel F., *et al.* (*See* Garlinghouse, assignor.)	
101,415	Bates, Benjamin, Baltimore, Md. Apparatus for generating carbonic acid	April 5, 1870
110,421	Same Bottle-fastening	Dec. 27, 1870
105,769	Bates, Caleb, Kingston, Mass. Apparatus for immersing shingles and other articles in liquids	July 26, 1870
	Bates, Charles H., *et al.* (*See* Perrot, Perrot & Bates.)	
106,650	Bates, Daniel L., Dayton, Ohio. Stove-leg	Aug. 23, 1870
	Bates, Frank Atwill, and Mack Delorimer Converse. (*See* Converse & Bates.)	
107,591	Bates, Joseph W. and Mary Ann, St. Paul, Minn. Wash-boiler	Sept. 20, 1870
98,838	Bates, Norman R., Titusville, Pa. Flexible joint for tubes	Jan. 11, 1870
	Bates, N. R., *et al.* (*See* Ballentyne, Alexander T., assignor.)	
102,476	Bates, Thomas, New Mexico. Ore-separator	May 3, 1870
	Bates, Thomas L. (*See* Witsil, George L., assignor.)	
104,818	Bates, William and Frederick, England. Machine for scouring and washing fabrics. (Patented in England Dec. 14, 1867)	June 28, 1870
104,819	Same Fulling-mill. (Patented in England March 16, 1866)	June 28, 1870
105,889	Battersby, William A., Brooklyn, N. Y. Manufacture of artificial stone	Aug. 2, 1870
108,957	Battersby, William Augustus, assignor to self, Timothy R. Crawford, Robert Brown, and John Anderson, Williamsburg, N. Y. Compound for pipes, tiles, sidewalks, &c.	Nov. 8, 1870
99,050	Battle, Marcus L., Bainbridge, Ga. Instrument for plugging teeth	Jan. 25, 1870
103,412	Battles, Lucretia, Gloucester, Mass. Parasol	May 24, 1870
103,232	Bauder, Silas E. Birmingham, Ohio. Churn-dasher	Oct. 11, 1870
	Bauer, George W., and John O. Kopas. (*See* Kopas & Bauer) (Design.)	
4,174	Bauer, Jacob C., New York, N. Y. Paper-box	June 28, 1870
108,315	Same Combined collar and cuff box	Oct. 18, 1870
102,648	Baugh, Edwin Pugh, Philadelphia, Pa. Drying guano	May 3, 1870
103,832	Baughman, David C., Tiffin, Ohio. Thrashing-machine	June 7, 1870
105,770	Baum, Albert B., Grantsville, Pa. Combined harrow and shovel cultivator	July 26, 1870
106,770	Baum, John E., Philadelphia, Pa. Curtain-cord tightener	Aug. 30, 1870
99,522	Baum, William, Roboken, N. J. Flooring	Feb. 8, 1870
107,906	Bauman, Herman, and Urban Mueller, Canton, Ohio. Clothes-rack	Oct. 4, 1870
100,354	Bauman, Christoph August, New York, N. Y. Covering for steam-boilers	Mar. 1, 1870
103,963	Bauman, F., and George F. Letz, Chicago, Ill. Fire-proof ceiling	June 7, 1870
100,355	Baumgarten, Fredrick, Brooklyn, N. Y. Fastening for carriage curtains	Mar. 1, 1870
99,624	Baur, Julius, New York, N. Y. Manufacture of steel	Feb. 8, 1870
108,751	Bauschtliker, Frederick, assignor to self and Frederick Gentner, Washington, D. C. Combined hydrant and fire-plug	Nov. 1, 1870

Alphabetical list of patentees for the year 1870—Continued.

No.	Name, residence, and invention or discovery.	Date.
109,033	Bausman, Abner, Minneapolis, Minn. Potato-digger	Oct. 11, 1870
102,079	Baxter, Albert, Howard, N. Y. Wheel-gear for carriages	April 19, 1870
	Baxter, Uri J., and Ephraim K. Elliott. (*See* Elliott & Baxter.)	
	Baxter, William, Newark, N. J. Wrench (Extension)	Feb. 11, 1870
104,820	Baxter, William, assignor to William D. Russell and Peter T. Speer, Newark, N. J. Steam-generator	June 28, 1870
	Bayley, Charles E. (*See* McKay, William, assignor.)	
101,083	Bayley, William, Baltimore, Md. Adjustable bearing for water-wheel shafts	Mar. 22, 1870
101,084	Bayley, William, and A. B. Crowell, Baltimore, Md. Turbine water-wheel	Mar. 22, 1870
	Baylies, Thomas L., and Edwin Crawley. (*See* Crawley & Baylies.) (Two cases.)	
101,085	Baylor, Charles G., Quincy, Mass. Vegetable-roaster	Mar. 22, 1870
100,587	Baylor, C. G., Quincy, assignor to Edward S. Tobey, Richard and Charles Soule, Boston, and Louisa D. Baylor, Quincy, Mass. Compound to be used as an article of diet	Mar. 8, 1870
108,233	Basin, Ernest, France. Apparatus for spinning hemp, flax, and other fibrous substances	Oct. 11, 1870
	Beach, Burroughs, and Woren B. Field. (*See* Field & Beach.)	
108,958	Beach, Darwin, Oshkosh, Wis. Spark catcher and consumer	Nov. 8, 1870
	Beach, Dennis. (*See* Chapman, Frank G., assignor) (Four cases.)	
107,854	Beach, Henry H., Rome, N. Y. Process of seasoning lumber	Oct. 4, 1870
102,907	Beach, Lurandus and Lurandus L., jr., Lawrence, Mass. Machine for cutting, stamping, and packing soap	May 10, 1870
104,248	Beach, Sylvester W., South Bend, Ind. Shifting carriage or buggy seat	June 14, 1870
100,103	Same Ypsilanti, Mich. Clamping movable seats for carriages	Nov. 8, 1870
	Beach, V. R., *et al.* (*See* Blood, Hathaway & Beach) (Reissue.)	
109,287	Beach, William B. H., Naples, N. Y. Washing-machine	Nov. 15, 1870
104,691	Beach, William J., Nashville, Tenn. Railroad-car spittoon	June 28, 1870
103,544	Beagle, Henry, jr., Philadelphia, Pa. Nut-lock	May 31, 1870
109,379	Same Back-band hook	Nov. 29, 1870
108,732	Beal, Richard, Commerce, Mich. Curtain fixture	Nov. 1, 1870
104,540	Beales, Emanuel D., assignor to self and John Dages, Gallipolis, Ohio. Edge-iron for shoemakers	June 21, 1870
	Beaman, Elmer A., *et al.* (*See* Allen, Edwin F., assignor.)	
104,821	Bean, Charles, Providence, R. I. Lubricating journal	June 28, 1870
99,815	Bean, Charles, assignor of one-half interest to James Langley, jr., North Providence, R. I. Sash-holder	Feb. 15, 1870
110,423	Bean, Charles, assignor to Albert F. Allen, Providence, R. I. Coupling for shafting	Dec. 27, 1870
102,477	Bean, Charles, and Suel Logee, East Douglas, Mass. Washing-machine	May 3, 1870
108,434	Bean, Frank, assignor to Edwin E. Bean, Somerville, Mass. Apparatus for lighting and extinguishing gas by electricity	Oct. 18, 1870
109,288	Bean, John, Hudson, Mich. Filter	Nov. 15, 1870
108,435	Bean, Joseph H., Marietta, Ohio. Machine for cutting soles, &c., for boots and shoes	Oct. 18, 1870
101,213	Bean, Otis W., and W. B. Rowland, Tecumseh, Mich. Apparatus for tanning leather	Mar. 29, 1870
110,539	Beard, George N., St. Louis, Mo. Cotton-bale tie	Dec. 27, 1870
	Beard, George W., and Samuel B. Sexton. (*See* Sexton & Beard.)	
108,675	Beard, Henry J., assignor to self and James Hawes, jr., New Sharon, Me. Machine for felling trees	Oct. 25, 1870
108,436	Beardsley, Edwin R., Aroma, Ill. Turbine water-wheel. (Antedated Oct. 15, 1870)	Oct. 18, 1870
100,374	Beardsley, George F., assignor to self and A. S. Parker, Oxford, N. Y. Sash-holder	Nov. 29, 1870
109,573	Beardsley, William L., Binghamton, N. Y. Spiral spring for bedsteads	Nov. 29, 1870
104,101	Bearse, Orin B., Hyannis, Mass. Hawse-pipe stopper	June 14, 1870
100,105	Beasley, Charles J., Petersburg, Va. Cotton-press	Feb. 22, 1870
100,106	Same Alarm-gun	Feb. 22, 1870
104,922	Same Hay and cotton press	July 5, 1870
109,485	Beattie, Robert A., Philadelphia, Pa. Varnish	Nov. 22, 1870
108,950	Beatty, James H., assignor to John Adams and Thaddeus W. Brigham, Franklin, Pa. Sucker-rod coupling	Nov. 8, 1870
3,855	Beatty, John P., Norwalk, Conn. Hat (Reissue)	Mar. 1, 1870
102,356	Beatty, Samuel, Norwalk, Conn. Perforated wire	April 26, 1870
103,703	Same Ventilator for hats	May 31, 1870
103,413	Beatty, William H., Columbus, Ohio. Mop-head	May 24, 1870
110,541	Beaumont, A. B., Austerlitz, Mich. Horse-yoke	Dec. 27, 1870
	Beaver Falls Cutlery Company. (*See* Nichols & Bower, assignors.)	
108,094	Bebout, Stewart, Waterford, Ohio. Horse hay-fork	Oct. 11, 1870
109,103	Bechtel, William H., Philadelphia, Pa. Steam-trap	Nov. 8, 1870
106,248	Bechtel, William H., Philadelphia, Pa. Shade-cord retainer	Aug. 9, 1870
4,480	Beck, Alexander, Philadelphia, Pa. Carpet-pattern (Design)	Nov. 22, 1870
4,481	Same same (Design)	Nov. 22, 1870
4,482	Same same (Design)	Nov. 22, 1870
	Beck, Bernard J., and John C. Koch. (*See* Koch & Beck, assignors.)	
107,907	Beck, Frederick, New York, N. Y. Compound for coloring paper and other fabrics	Oct. 4, 1870
4,181	Same Compound for coloring and ornamenting paper and other fabrics and materials (Reissue)	Nov. 22, 1870
109,486	Same Coating and ornamenting the surface of paper, cloth, &c	Nov. 22, 1870
110,540	Same Machine for drying paper and other fabrics	Dec. 27, 1870

Alphabetical list of patentees for the year 1870—Continued.

No.	Name, residence, and invention or discovery.	Date.
	Beck, Frederick, and Henry M. Johnston. (*See* Johnston & Beck.)	
104,541	Beck, Jonas D., Liberty, Pa. Vise	June 21, 1870
100,356	Beck, Joseph, Morisania, N. Y. Velocipede. (Antedated Feb. 26, 1870)	Mar. 1, 1870
110,423	Beck, Theodore, Omaha, Neb. Medical bitters	Dec. 27, 1870
108,553	Beck, William, New York, N. Y. Metallic fish-net, &c. (Antedated Oct. 12, 1870)	Oct. 25, 1870
99,051	Becker, Arthur Tappan, Cohoes, N. Y. Pocket-flask	Jan. 25, 1870
99,816	Becker, Charles, New York, N. Y. Umbrella	Feb. 15, 1870
99,434	Becker, G. A., Seymour, Conn. Fountain-pen	Jan. 25, 1870
106,987	Same same	Sept. 6, 1870
	Becker, John C., and George H. Glad. (*See* Glad & Becker.)	
103,964	Becker, Peter, Mt. Vernon, N. Y. Flour-sifter	June 7, 1870
103,545	Becker, Philip, South Bethlehem, Pa. Medical-compound	May 31, 1870
102,357	Becker, Samuel, and Peter Loucks, York, Pa. Car-mover	April 26, 1870
99,135	Beckers, Alexander, New York, N. Y. Revolving stereoscope	Jan. 25, 1870
99,136	Same same	Jan. 25, 1870
105,294	Beckett, Erasmus W., McConnellsville, Ohio. Circular-saw mill	July 12, 1870
103,704	Beckett, William, Jamaica. Steam-plow	May 31, 1870
98,463	Beckley, Philip G., Newark, N. J. Child's chair and table	Jan. 4, 1870
107,855	Beckwith, Alvin C., and George H. Graham, Oriskany, N. Y. Handle for milk-cans	Oct. 4, 1870
99,137	Beckwith, George Cyrus, Boston, Mass. Joiners' plane	Jan. 25, 1870
105,413	Beckwith, Leonard F. and Arthur, New York, N. Y. Cake-oven	July 19, 1870
102,358	Beckwith, Nelson W., McDonough, N. Y. Washing-machine	April 26, 1870
108,316	Beckwith, Philo D., Dowagiac, Mich. Dome-top stove	Oct. 18, 1870
100,713	Beckwith, Sanford, Oshkosh, Wis. Cultivator-teeth	Mar. 15, 1870
99,523	Beckwith, William L., Olmstead, Ohio. Window-stop	Feb. 8, 1870
101,570	Beeraft, Aquila, Jacksonville, Ill. Gate	April 5, 1870
101,046	Beddoe, James C., and John S. Coon, Branchport, N. Y. Cream-beater	Mar. 22, 1870
103,128	Bedford, Alma, Coldwater, Mich. Harness-buckle	May 17, 1870
98,909	Beels, William G., Independence, Iowa. Harvester-dropper	Jan. 18, 1870
98,910	Same same	Jan. 18, 1870
102,080	Beeman, Gain, Ironton, Ohio. Stove for railroad cars	April 19, 1870
	Beer, Carl, *et al.* (*See* Markl, Johan Jacob, assignor.)	
98,545	Beer, Ludwig, New York, N. Y. Lock	Jan. 4, 1870
102,350	Beers, Frederick W., New York, N. Y. Tank for raising sunken vessels	April 26, 1870
	Beers, Ira S., *et al.* (*See* Holmes, Horace H., assignor.)	
103,965	Beers, Nathan P., New York, N. Y. Copy-book	June 7, 1870
103,129	Beers, William, Milan, Ohio. Wagon-seat attachment	May 17, 1870
98,734	Beers, William, and William Raynor, Milan, Ohio. Force-pump	Jan. 11, 1870
108,960	Behe, Joseph, Carrolltown, Pa. Bee-hive	Nov. 8, 1870
102,200	Behm, John S., assignor to self and George Koehler, Elizabeth Township, Pa. Spring-guard	April 26, 1870
4,088	Behr, Edward, assignor through his administrator, by mesne assignments, to Nathaniel Ladd, Brooklyn, N. Y. Mode of fastening skates (Reissue)	Aug. 2, 1870
	Behrens, W. H., and Jacob Surens. (*See* Surens & Behrens, assignors.)	
4,382	Beiderhase, Bernhard D., New York, N. Y. Spoon and fork handle (Design)	Oct. 4, 1870
106,651	Beidler, George A., Philadelphia, Pa. Wooden-pavement	Aug. 23, 1870
109,712	Beidler, Jacob H., Adrian, Mich. Ironing-board	Nov. 29, 1870
102,360	Beiersdorf, Jacob, Chicago, Ill. Folding-lounge	April 26, 1870
	Beigham, Hubbard H. (*See* Wheeler, Lorenzo D., assignor.)	
	Beilstein, John F. (*See* Windsor, George W., assignor.)	
	Beitel, Calvin G. (*See* Bixler, Washington H., assignor.)	
	Beiter, Carl. (*See* Webendorfer, Rudolph, assignor.)	
109,104	Belbin, Charles T., Baltimore, Md. Oyster-dredge winder	Nov. 8, 1870
101,087	Belcher, Alva, Delhi, N. Y. Washing-machine	Mar. 22, 1870
	Belcher, B. B. (*See* Gale, Warren, assignor) (Reissue.)	
	Belcher, George W., *et al.* (*See* Berry, William, assignor.)	
103,705	Belcher, Nathaniel, Boston, Mass. Scissors-sharpener	May 31, 1870
107,753	Belding, Milo M., Brooklyn, N. Y. Show-case	Sept. 27, 1870
104,923	Belding, Moses, Hartford, Conn. Instep-stretcher for boots and shoes	July 5, 1870
105,027	Belfield, Henry, Philadelphia, Pa. Valve	July 5, 1870
	Belford, D. W. A. (*See* Griffith, Howard V., assignor.)	
	Bell, Alonzo, *et al.* (*See* Perham, Augustus S., assignor.)	
	Bell, George C., *et al.* (*See* Mailer, Alexander, assignor.)	
	Bell, George H. (*See* Henderson, Frederick, assignor.)	
98,735	Bell, John B., Pittsburg, Pa. Machine for jointing barrel-staves	Jan. 11, 1870
106,988	Same Stave-jointer. (Antedated Aug. 25, 1870)	Sept. 6, 1870
	Bell, John H. (*See* Williams, Allison L., assignor.)	
107,998	Bell, Jonathan, New York, N. Y. Nut-lock	Oct. 4, 1870
99,751	Bell, Joseph, Cincinnati, Ohio. Governor for steam and other enginery. (Antedated Jan. 29, 1870)	Feb. 15, 1870
4,458	Bell, Joseph L., Bell's Bridge, Cal. Buckle (Design)	Nov. 8, 1870
4,011	Bell, Robert W., Buffalo, N. Y. Trade-mark (Design)	May 10, 1870
104,924	Bell, Thomas M., New York, N. Y. Milk-can bottom, &c	July 5, 1870
105,028	Bell, Van, Seville, Ohio. Bed-bottom	July 5, 1870
98,464	Bell, W. G., Pittsburg, Pa. Water-indicator for steam-generators. (Antedated Dec. 30, 1869)	Jan. 4, 1870
103,283	Bell, William H., Spring Lake, Mich. Device for hitching horses	May 24, 1870
99,817	Bell, W. W., Chicago, Ill. Car-coupling	Feb. 15, 1870
4,023	Bellamy, John H., Charlestown, Mass. Clock-front (Design)	May 17, 1870
4,948	Same Picture-frame (Design)	July 19, 1870

Alphabetical list of patentees for the year 1870—Continued.

No.	Name, residence, and invention or discovery.	Date.
4,249	Bellamy, John H., Charlestown, Mass. Hand-glass frame (Design)	July 19, 1870
4,250	Same Bracket (Design)	July 19, 1870
4,268	Same same (Design)	Aug. 2, 1870
4,299	Same Clock-front (Design)	Aug. 23, 1870
4,465	Bellamy, John H., assignor to Samuel D. Niles and Benjamin A. Ward, Charlestown, Mass. Bracket (Design)	Nov. 15, 1870
4,466	Same same (Design)	Nov. 15, 1870
4,375	Bellamy, John H., assignor of three-fourths interest to Samuel D. Niles and Benjamin A. Ward, Charlestown, Mass. Clock-front (Design)	Oct. 4, 1870
101,973	Belleville, Julien F., France. Steam-generator. (Patented in England June 15, 1866)	April 19, 1870
101,214	Bellinger, Franklin, Lockport, N. Y. Pick-handle	Mar. 29, 1870
100,107	Bellman, Oscar, and John W. Garver, Hagerstown, Md. Hot-air furnace	Feb. 22, 1870
	Belmont Glass Works. (*See* Hipkins, Stephen, jr., assignor (Design.)	
110,109	Belmont, Henry, England. Machine for tilling or cultivating	Dec. 13, 1870
103,966	Belson, Richard W., Philadelphia, Pa. Pattern for molding stove-plates	June 7, 1870
100,843	Belt, A., Newton, Iowa. Hedge-fence	Mar. 15, 1870
	Belt, George C., and Alonzo Sprague. (*See* Sprague & Belt.)	
104,249	Bement, Charles S., Southington, Conn. Machine for graduating squares, &c	June 14, 1870
108,670	Bemis, Sumner A., Albert E. Foth, and James W. Goodrich, Springfield, Mass. Paper-cuff	Oct. 25, 1870
108,317	Bender, Charles, Phœnixville, Pa. Viaduct	Oct. 18, 1870
	Benedict & Burnham Manufacturing Company. (*See* Shelton, John H., assignor.)	
100,999	Benedict, Isaac A., West Springfield, Pa. Shovel-plow	Dec. 13, 1870
	Benham, Ovander J. (*See* Goodaire & Stead, assignors.)	
100,108	Benjamin, Christopher S., and Edward Story, Washington, Ill. Paint-brush	Feb. 22, 1870
105,771	Benjamin, John, Naples, N. Y. Bedstead-fastening	July 26, 1870
99,625	Benner, D. G., Holmesville, Ohio. Cultivator	Feb. 8, 1870
106,309	Bennet, Milton, Washington, D. C. Top-plate of cooking-stoves	Aug. 16, 1870
	Bennett, Alonzo H., and Ebenezer E. Sill. (*See* Sill & Bennett.)	
4,175	Bennett, Edwin, Baltimore, Md. Ornamentation of dishes (Design)	June 28, 1870
99,524	Bennett, George, New Pennington, Ind. Neck-yoke tug	Feb. 8, 1870
103,284	Bennett, George W., Harrodsburg, Ind. Apple parer, cutter, and corer	May 24, 1870
98,841	Bennett, Isaac C., Clinton, Ill. Gate	Jan. 18, 1870
103,414	Bennett, John C., and David N. Green, Coldwater, Mich. Elevator for building-material	May 24, 1870
	Bennett, Joseph, and Thomas Hydes. (*See* Hydes & Bennett.)	
105,800	Bennett, Joseph B., Brooklyn, assignor to self and Erastus S. Bennett, New York, N. Y. Ball-valve for injecting air	Aug. 2, 1870
105,029	Bennett, Morris L., Waverly, N. Y. Tuning-scale	July 5, 1870
101,416	Bennett, Oliver, Boston, Mass. Brick-kiln. (Antedated April 4, 1870)	April 5, 1870
108,868	Bennett, Silvester, assignor to Matthew Julius Bujac, Jefferson Parish, La. Apparatus for the manufacture of ice	Nov. 1, 1870
	Bennett, Thomas, and John Stokes. (*See* Stokes & Bennett.)	
109,574	Bennett, Walter, Springfield, Ill. Shuttle for sewing-machines	Nov. 29, 1870
110,424	Same Take-up mechanism for sewing-machines	Dec. 27, 1870
101,417	Bennett, Zelotes R., assignor to self and L. F. Reed, Williamsburg, N. Y. Tobacco-pipe	April 5, 1870
99,138	Bennor, Joseph, assignor to self and Abraham Rex, Philadelphia, Pa. Sewing-machine	Jan. 25, 1870
106,249	Same same	Aug. 9, 1870
	Bennor, Joseph, *et al.* (*See* Kitson, Lanning & Bennor, assignors.)	
110,335	Bennor, Joseph, assignor to self, John N. McLean, and Samuel Crawford, Philadelphia, Pa. Sewing-machine table	Dec. 20, 1870
99,818	Benson, Charles W., assignor of one-half interest to Richard C. Waters, Frederick, Md. Railway-car coupling	Feb. 15, 1870
108,961	Benson, George T., Jersey City, N. J. Hat and coat rack	Nov. 8, 1870
	Benson, Henry C., and Telle H. Muller. (*See* Muller & Benson) (Two cases.)	
	Benson, Robert R., *et al.* (*See* Delamarre, Charles, assignor.)	
105,295	Bent, Samuel S., Port Chester, N. Y. Grate-fender	July 12, 1870
105,296	Same Back for fire-place grate	July 12, 1870
105,297	Same Fire-place grate	July 12, 1870
4,275	Same Top-plate for mangers (Design)	Aug. 9, 1870
102,310	Bentley, George J., assignor to self and Edward Highfield, Michigan City, Ind. Hot-air drum for coal-stoves	April 26, 1870
	Bentley, Henry C. (*See* Schultz, Henry, assignor.)	
108,234	Bentley, Jeffrey O., and James Jackson, Philadelphia, Pa. Curling-iron	Oct. 11, 1870
100,714	Bentley, S., and Charles Mee, Detroit, Mich. Combination-lock	Mar. 15, 1870
109,863	Benton, Orville A., Amenia, N. Y. Hay-tedder	Dec. 6, 1870
98,911	Benton, R. O., Buffalo, N. Y. Plastic-roofing compound	Jan. 18, 1870
110,191	Benzing, J. Adam, jr., Oswego, N. Y. Smut-mill	Dec. 20, 1870
106,658	Ber, Michael, New York, N. Y. Jacket for heating-pipes	Aug. 23, 1870
107,651	Berbecker, Julius, New York, N. Y. Shutter-fastening	Sept. 27, 1870
101,418	Berdan, Hiram, assignor to Berdan Fire-Arms Manufacturing Company, New York, N. Y. Breech-loading fire-arm. (Antedated March 21, 1870)	April 5, 1870
109,869	Same Breech-loading fire-arm	Nov. 1, 1870
103,833	Berdan, Wilson A., Mooreville, Mich. Mill-bolt	June 7, 1870
109,105	Berckhemer, Charles P., Cincinnati, Ohio. Malt-kiln	Nov. 8, 1870
3,941	Berger, Henry, New York, N. Y. Bust (Design)	Mar. 29, 1870
3,947	Same Center-piece (Design)	April 5, 1870
103,546	Berger, William H., Danville, Pa. Workman's scaffold	May 31, 1870

Alphabetical list of patentees for the year 1870—Continued.

No.	Name, residence, and invention or discovery.	Date.
99,626	Berg, Bror Folke, Boston, Mass. Vise-clamp	Feb. 8, 1870
101,571	Bergner, Georg, Washington, Mo. Pruning-shears	April 5, 1870
106,539	Same same	Aug. 23, 1870
98,546	Bering, Thomas G., Harrisburg, Pa. Railway-rail chair	Jan. 4, 1870
101,215	Berkey, David, Huntington, Ind. Vapor-burner	Mar. 29, 1870
103,967	Berkstresser, George, assignor to self, F. W. Irvine, Jacob Reed, and R. W. Berkstresser, Bedford, Pa. Lamp-burner	June 7, 1870
99,393	Berlien, John, Chicago, Ill. Billiard-cushion	Feb. 1, 1870
104,542	Same same	June 21, 1870
100,253	Bernd, Gustav and Adolph, Macon, Ga. Hook for harness	Feb. 22, 1870
	Berney, James, and Thomas Marsh. (*See* Marsh & Berney) (Two cases.)	
105,414	Bernstein, Adolph, St. Louis, Mo. Tobacco-box show-case	July 19, 1870
98,736	Berolzheimer, Max E., New York, N. Y. Key-guard	Jan. 11, 1870
102,211	Same Envelope fastener	April 26, 1870
100,844	Berrey, William, assignor to self, George W. Belcher, and William G. McLeod, Boston, Mass. Detergent compound	Mar. 15, 1870
108,437	Berrie, William jr., Brooklyn, N. Y. Manufacture of oil-cloth	Oct. 18, 1870
101,419	Berry, Charles H., East Somerville, Mass. Chamber-vessel	April 5, 1870
106,457	Berry, Henry C., Wauseon, Ohio. Cooking-apparatus	Aug. 16, 1870
109,575	Berry, James, Buffalo, N. Y. Riveting-mandrel	Nov. 29, 1870
103,285	Berry, John, San Francisco, Cal. Street-car truck	May 24, 1870
107,327	Berry, Leander, assignor to self and Edward Burrell, Clyde, N. Y. Potato-digger	Sept. 13, 1870
107,328	Same Vine-puller for potato diggers, &c	Sept. 13, 1870
104,102	Berry, Plympton Ross, Youngstown, Ohio. Elevating-apparatus	June 14, 1870
100,245	Berry, William J., Brooklyn, N. Y. Lantern	Mar. 15, 1870
99,234	Berryman, Robert Philadelphia, Pa. Low-water indicator and feed-water regulator	Jan. 25, 1870
99,996	Same Low-water indicator. (Antedated August 16, 1869)	Feb. 15, 1870
109,796	Same Boston, Mass. Valve-cock	Dec. 6, 1870
	Bertolette, C. B., *et al.* (*See* Taylor, Robert R., assignor.)	
98,912	Bertsche, Leopold, Allegheny, Pa. Caster for furniture	Jan. 18, 1870
99,627	Beschke, William, Philadelphia, Pa. Packing for steam-engines, pumps, &c	Feb. 8, 1870
107,857	Beshler, Henry C., Berrysburg, Pa. Corn-planter	Oct. 4, 1870
101,420	Besse, H., Delaware, Ohio. Heating-stove	April 5, 1870
100,033	Bessemer, Henry, England. Process and apparatus for the manufacture of iron and steel. (Patented in England November 10, 1868)	Feb. 22, 1870
	Bessemer, Henry, *et al.* (*See* Ransome, Bessemer & Ransome.)	
	Best, Benjamin. (*See* Kelly, Patrick, assignor) (Reissue.)	
106,771	Bestor, George C., Peoria, Ill. Fire-proof railway-car	Aug. 30, 1870
104,250	Bestor, Samuel J., assignor to Hamilton W. Conklin, Hartford, Conn. Cigar-punch	June 14, 1870
101,346	Betteley Albert, Boston, Mass. Wood-pavement	Mar. 29, 1870
106,959	Same same	Sept. 6, 1870
107,152	Same same	Sept. 6, 1870
107,329	Betts, William, England. Machine for embossing capsules	Sept. 13, 1870
102,478	Betts, William C., Brooklyn, N. Y. Ventilator for windows	May 3, 1870
104,543	Beucus, Abraham & Tennes, Waupun, Wis. Car-coupling	June 21, 1870
99,392	Beugler, Edwin F., assignor to self and Gabriel S. Post, Williamsport, Pa. Tool for tonguing and grooving	Feb. 1, 1870
	Beugler, Edwin F., and John Du Bois. (*See* Du Bois & Beugler.)	
100,004	Beugler, James M., Williamsport, Pa. Hanging-crank shaft	Feb. 22, 1870
107,330	Bevan, John, Hudson, N. Y. Car-starter	Sept. 13, 1870
107,652	Bever, John T., Lathrop, Mo. Washing-machine	Sept. 27, 1870
100,005	Beylikgy, Marcar Wahram, New York, N. Y. Manufacture of water-proof fabrics from waste rubber	Feb. 22, 1870
	Bibb, Bentley C. (*See* Klotz, Philip, assignor.)	
99,525	Bibb, Bentley C., and Philip Klotz, assignors to Bentley C. Bibb, Baltimore, Md. Base-burning fire-place heater	Feb. 8, 1870
104,251	Bibbee, Daniel, and William Rand, Letart Falls, Ohio. Potato-digger	June 14, 1870
103,207	Bibber, Benjamin F., Boston, Mass. Handle for boat-hooks, &c	May 17, 1870
107,999	Bickell, Elias, and Michael F. Noracouk, Milton, Pa. Feather-renovater	Oct. 4, 1870
	Bickford, E. (*See* Gillet, Henry E., assignor.)	
102,081	Bickford, Lyman, Macedon, N. Y. Grain-drill tooth	April 19, 1870
105,298	Bicknell, Ira, Cincinnati, Ohio. Mode of securing carriage wheels on their axles	July 12, 1870
100,357	Bicknell, Joseph G., assignor to self, Cassander S. Wilkins, and George T. Jennings, Cambridge, Mass. Brake for carriages and wagons	Mar. 1, 1870
104,544	Biddle, Leopold, Knoxville, Iowa. Cane-mill	June 21, 1870
102,649	Biddlecom, Joab S., Macedon, N. Y. Clapboard-gauge	May 3, 1870
104,252	Bidwell, James, assignor to self and James McMeehan, San Francisco, Cal. Spring-hinge	June 14, 1870
103,706	Bidwell, Julius A., Chicago, Ill. Dental mallet	May 31, 1870
103,707	Same Artificial teeth	May 31, 1870
	Bierce, Solomon N. (*See* Babbett & Binny, assignors.)	
	Bierce, Solomon N. (*See* Binny, William W., assignor.)	
98,659	Biesenbach, P. J., Rochester, N. Y. Stove-pipe elbow	Jan 11, 1870
4,523	Biesenbach, Peter J., Rochester, N. Y. Fruit-jar clamp (Design)	Dec. 20, 1870
99,819	Bigard, H. H., E. H. Kellogg, and N. A. Prentiss, Fowler, N. Y. Churn. (Antedated Feb. 14, 1870)	Feb. 15, 1870
108,318	Bigelow, Edmund, Springfield, Mass. Liquid-cooler for cooling liquids under pressure	Oct. 18, 1870

Alphabetical list of patentees for the year 1870—Continued.

No.	Name, residence, and invention or discovery.	Date.
109,576	Bigelow, Edmund, Springfield, Mass. Chemical fire-extinguisher	Nov. 29, 1870
	Same. (*See* Curtis, George, assignor) (Two cases.)	
102,752	Bigelow, Elijah K., assignor to self and Peter Comstock, Litchfield, Mich. Pruning and hedge shears	May 10, 1870
101,088	Bigelow, Erastus B., Boston, Mass. Loom	Mar. 22, 1870
101,089	Same. Machine for crushing ramie and other fibrous stalks	Mar. 22, 1870
103,415	Same. Let-off mechanism for looms	May 24, 1870
110,000	Same. Let-off and tension mechanism for power-looms	Dec. 13, 1870
	Bigelow, George B., trustee. (*See* Duchenin, William, assignor.)	
	Bigelow, George B. (*See* Duchenin, William, assignor.)	
106,310	Bigelow, Hiram, Skowhegan, Me. Chisel for cutting gains	Aug. 16, 1870
105,030	Bigelow, Horace H., Worcester, Mass. Heel-press	July 5, 1870
108,677	Same. Machine for heeling boots and shoes	Oct. 25, 1870
108,678	Same. Machine for finishing heels on boots and shoes	Oct. 25, 1870
108,870	Same. Heel for boots and shoes	Nov. 1, 1870
3,821	Bigelow, J. H., Worcester, Mass. Corn-hopper (Reissue)	Feb. 8, 1870
101,813	Same. Stand for tea and coffee pots	April 12, 1870
	Bigelow, Oliver E. (*See* Hawkes, Allen, assignor.)	
104,692	Bilharz, Candidus, Pittsylvania Court-House, Va. Stump-extractor	June 28, 1870
110,336	Billing, James O., Halcyon Dale, Ga. Plow	Dec. 20, 1870
102,479	Billmeyer, Joseph H., Raisin, Mich. Potato-digger	May 3, 1870
100,109	Bingham, E. B., Newark, N. J. Manufacture of paper	Feb. 22, 1870
3,890	Bingham, O. A., assignor to George C. Winchester, Gardner, Mass. Chair-seat. (Reissue)	Mar. 22, 1870
101,090	Bingham, O. A., assignor to George C. Winchester, Cavendish, Vt. Chair-seat	Mar. 22, 1870
102,212	Same. Device for manufacturing chair-seats	April 26, 1870
4,164	Bingham, O. A., assignor to George C. Winchester, Ashburnham, Mass. Chair-seat (Reissue)	Oct. 25, 1870
99,820	Bingham, Samuel H., Laurelton, Pa. Combined reel and rake for harvesters	Feb. 15, 1870
110,423	Binkly, Lemuel G., Bunghman, Ohio. Middlings-purifier	Dec. 27, 1870
101,421	Binns, Amos G., Pittsburg, Pa. Nut-lock	April 5, 1870
104,253	Binny, William W., assignor to S. W. Bierce, Auburn, N. Y. Gas-machine	June 14, 1870
	Binny, William W., and Avery Babbett. (*See* Babbett & Binny.)	
104,695	Birch, James, Westfield, N. Y., Addison Crosby, Westfield, N. Y., and Thomas Birch, Meadville, Pa. Harvester	June 28, 1870
102,733	Birch, John S., New York, N. Y. Adjustable watch-key	May 10, 1870
	Birch, Addison, and Erastus G. Covey. (*See* Covey & Birch.)	
101,216	Bird, Charles, Ackley, Iowa. Cultivator	Mar. 29, 1870
108,235	Bird, Edward James, Frostburg, Md. Extracting iron from the slag of blast-furnaces	Oct. 11, 1870
99,052	Bird, George M., Dedham, Mass. Variable valve-gear	Jan. 25, 1870
103,416	Bird, James R., and George C. Smith, Matteawan, N. Y. Vulcanized India-rubber roll for wringers, drain-drills, &c.	May 24, 1870
	Bird, James R., and John P. Rider. (*See* Rider & Bird, assignors.)	
110,542	Birdsall, Edgar M., Penn Yan, N. Y. Grain thrasher, separator, and cleaner	Dec. 27, 1870
	Birdsell, J. Benjamin, and Milton V. Bulla. (*See* Bulla & Birdsell.)	
100,358	Birks, George, Marine, Ill. Compound for preventing incrustation in steam-boilers	Mar. 1, 1870
4,027	Biabee, Albert, assignor to Oscar F. Earle, Norwalk, Ct. Steam-gauge cock. (Reissue)	June 14, 1870
106,250	Bishop, Abner, Smithville, Ohio. Sausage-stuffer and lard-press	Aug. 9, 1870
	Bishop, Charles E. (*See* Alvord, Henry J., assignor.)	
109,106	Bishop, George W., assignor to self and John McFarland, Baltimore, Md. Neck-tie fastener	Nov. 8, 1870
103,347	Bishop, George W., Saratoga Springs, N. Y. Sash-holder and balance	May 31, 1870
105,299	Same. Sash-holder	July 12, 1870
108,436	Same. same	Oct. 18, 1870
98,060	Bishop, James B., New Haven, Ct. Retainer for neck-ties	Jan. 11, 1870
	Bishop, Joshua, and William J. Huey. (*See* Adair, John J., assignor.)	
108,319	Bishop, Milton B., Whittingham, Vt. Machine for boarding leather	Oct. 18, 1870
98,547	Bishop, Thomas, and Daniel Agnew, Vincennes, Ind. Brick-machine	Jan. 4, 1870
109,577	Bishop, William B., Brooklyn, N. Y. Machine for soldering can-caps	Nov. 29, 1870
	Bissell & Moore Manufacturing Company. (*See* Moore, Edwin, assignor) (Design.)	
	Bissell, Charles W., and John Riley. (*See* Riley & Bissell) (Reissue.)	
107,153	Bissell, Daniel M., Chagrin Falls, Mass. Jeweller's tool	Sept. 6, 1870
99,752	Bissell, Frank S., Pittsburg, Pa. Boiler for cooking-stoves	Feb. 15, 1870
106,772	Same. Fire-place grate	Aug. 30, 1870
110,001	Bissell, George F., Onconta, N. Y. Carpenter's vise	Dec. 13, 1870
	Biven, William. (*See* Bartlett, John L., assignor.)	
109,487	Bixler, Francis A., Nashville, Tenn. Device for cutting slats for window shades	Nov. 22, 1870
109,375	Bixler, Washington H., assignor to Calvin G. Beitel, Easton, Pa. Broom-holder	Nov. 9, 1870
99,053	Black, Andrew C., Kaukauna, Wis. Milking-apparatus. (Antedated Jan. 16, 1870)	Jan. 25, 1870
101,814	Black, Arthur M., Providence, R. I. Automatic relief-valve	April 12, 1870
	Black, Charles S., and Horace S., *et al.* (*See* Norris, Black & Black.)	
3,811	Black, Henry, assignor to the Warrior Mower Company, Little Falls, N. Y. Hoisting-apparatus (Reissue)	Jan. 25, 1870
105,029	Black, Henry W., assignor to self and Evan T. Evans, Cecilton, Md. Pruning-shears	July 26, 1870
110,337	Black, James Y., Cleveland, Ohio. Corpse-preserving coffin	Dec. 20, 1870

Alphabetical list of patentees for the year 1870—Continued.

No.	Name, residence, and invention or discovery.	Date.
4,065	Black, Louis, Detroit, Mich. Spectacles (Reissue)	July 12, 1870
99,283	Black, William, Hagerstown, Ind. Sewing-machine	Feb. 1, 1870
100,715	Blackburn, Frederick, and George W. Woodside, Philadelphia, Pa. Fare-register. (Antedated February 28, 1870)	Mar. 15, 1870
101,572	Blackburn, Joseph M., Charles L. Wood, Benjamin K. Price, and Cornelius A. Sheridan, Cleveland, Ohio. Construction of metallic cornice	April 5, 1870
107,436	Blacklidge, Edward, Abbeville, Ala. Seed and guano distributer	Sept. 20, 1870
104,103	Blackman, William I., Columbus, Miss. Press for cotton, &c.	June 14, 1870
	Blackmore, William. (*See* Duncan, George, assignor.)	
107,154	Blackwell, Benjamin B., New York, N. Y. Shooting-stick for printers. (Antedated August 26, 1870)	Sept. 6, 1870
100,846	Blades, L. J., and John Mahoney, Wilmington, Del. Lifting-jack	Mar. 15, 1870
98,661	Blair, Frank L., Allegheny, Pa. Coal-scuttle	Jan. 11, 1870
	Blair, James T., *et al.* (*See* Huntaman, E. N., assignor.)	
110,002	Blaisdell, George P., North Easton, Mass. Self-lubricating axle	Dec. 13, 1870
3,925	Blake, Christopher, Boston, Mass. Umbrella-stand (Design)	Mar. 22, 1870
4,447	Same. same (Design)	Nov. 1, 1870
107,858	Blake, Edward S., Pittsburg, Pa. Roll for crushing and pulverizing machines	Oct. 4, 1870
106,458	Blake, George, Whitby, Canada. Machine for cutting off shafts and pipes and for cutting screw-threads	Aug. 16, 1870
104,925	Blake, George A., and William B. Taylor, Calais, Me. Heating-stove	July 5, 1870
101,217	Blake, George F., Boston, Mass. Mode of cushioning steam-pistons	Mar. 29, 1870
108,554	Same. Steam-pump. (Antedated October 20, 1870)	Oct. 25, 1870
100,110	Blake, George W., New York, N. Y. Heater and ventilator	Feb. 22, 1870
104,696	Same. Steam-heater	June 28, 1870
103,008	Blake, Grinfill, Taunton, Mass. Rein-hook	May 17, 1870
109,488	Blake, Harry, Panama, N. Y. Cream-strainer	Nov. 22, 1870
	Blake, H. D. (*See* Smith, Loyal J., assignor.) (Three cases.)	
109,000	Blake, James, Scranton, Pa. Auxiliary table-attachment	Oct. 4, 1870
106,109	Blake, James, assignor to self and George Blake, Scranton, Pa. Support for tables	Aug. 9, 1870
106,110	Same. same	Aug. 9, 1870
102,361	Blake, James C., Elizabeth, N. J. Street-pavement	April 26, 1870
105,891	Blake, Lucius S., Racine, Wis. Wool-drier	Aug. 2, 1870
102,369	Blake, Lyman R., Philadelphia, Pa. Manufacture of boots and shoes	April 26, 1870
106,459	Same. Last for machine-sewed turned-shoe	Aug. 16, 1870
107,155	Same. Sole-sewing-machine	Sept. 6, 1870
103,548	Blake, Orris, Peru, Ind. Spring bed-bottom	May 31, 1870
109,170	Blake, William, assignor to self and Charles H. Parkton, Buchanan, Mich. Water-wheel	Nov. 15, 1870
106,773	Blake, William E., New York, N. Y. Tooth-pick	Aug. 30, 1870
	Blake, William Greaves, *et al.* (*See* Stevenson, Thompson & Blake, assignors.)	
99,394	Blake, William H., assignor to self and Charles M. Mitchell, Waterbury, Conn. Apparatus for centering shanks or eyes in buttons	Feb. 1, 1870
100,588	Blakeley, Ezra, assignor of one-half interest to Peter Pierson, Neponset, Ill. Paint compound	Mar. 8, 1870
103,130	Blakeney, James, Springfield, Ohio. Railway-car coupling	May 17, 1870
	Blakeslee, Charles W., *et al.* (*See* Davis, Blakeslee & Allen, assignors.)	
105,415	Blakeslee, Charles W., assignor to self and Joseph Peck, Watertown, Conn. Trace-fastening	July 19, 1870
98,602	Blakeslee, Edward C., assignor to the Benedict and Burnham Manufacturing Company, Waterbury, Conn. Reflector	Jan. 11, 1870
101,815	Blakesley, Gilbert H., Bristol, Conn. Tubular shaft for clocks	April 12, 1870
110,110	Blakesley, Albert J., and Garner C. Williams, Du Quoin, Ill. Steam-jet pump	Dec. 13, 1870
	Blanchard, Charles, *et al.* (*See* Clark, Hezekiah M., assignor.)	
100,359	Blanchard, F. B., Spuyten Duyvil, N. Y. Combined engine, boiler, and superheater. (Antedated Feb. 18, 1870)	Mar. 1, 1870
109,797	Blanchard, Henry, jr., Boston, Mass. Car-coupling	Dec. 6, 1870
103,549	Blanchard, Joseph Bond, Boston, Mass. Needle for sewing-machine	May 31, 1870
106,026	Same. Machine for manufacturing needles	Aug. 2, 1870
101,347	Blanchard, Nathaniel L., Spuyten Duyvil, N. Y. Water and gas meter. (Antedated March 24, 1870)	Mar. 29, 1870
102,630	Same. Liquid-meter. (Antedated April 25, 1870)	May 3, 1870
102,363	Blanchard, Virgil W., Bridport, Vt. Pinion	April 26, 1870
99,139	Blanchard, Virgil W., assignor to self and A. J. Soverance, Bridport, Vt. Stone-channeling machine	Jan. 25, 1870
105,892	Blanchard, William R., Hertford, N. C. Corn and cotton cultivating-plow	Aug. 2, 1870
99,140	Bland, John, Thomaston, Ga. Dash-board for carriages	Jan. 25, 1870
104,410	Blandin, Thomas, Charlestown, Mass. Jig-saw	June 21, 1870
100,360	Blanding, Sanford O., Vineland, N. J. Sifting-apparatus	Mar. 1, 1870
110,543	Same. Sifter	Dec. 27, 1870
106,539	Blankenbeker, John M., Power's Station, Ind. Combined harrow and roller	Aug. 23, 1870
107,859	Blasir, David J., Western, N. Y. Snap-hook	Oct. 4, 1870
100,252	Blatchly, A., Central City, Col. Ter. Rock-drill	Mar. 1, 1870
109,101	Blatterlien, Frederick A., West Meriden, Conn. Call-bell and caster-stand	Nov. 8, 1870
105,630	Blauser, Noah G., Etna, Ohio. Sulky-cultivator	July 26, 1870
103,708	Bleakie, Robert, assignor to Charles W. Gilbert and S. Newell Taft, Hyde Park, Mass. Harness-operating mechanism for looms	May 31, 1870
	Bleakly, Hugh, *et al.* (*See* Jackson, Richard A., assignor.)	
102,754	Bleasdale, William Henry, Chagrin Falls, N. Y. Crimping-attachment to paper-machines	May 10, 1870

Alphabetical list of patentees for the year 1870—Continued.

No.	Name, residence, and invention or discovery.	Date.
105,631	Bletcher, Thomas, assignor to self and William Riddell, England. Sewing-machine	July 26, 1870
106,653	Blickensderfer, Ulric, Springfield, Pa. Ditching-machine	Aug. 23, 1870
100,111	Bliesenick, Charles F., Providence, Pa. Machine for grooving sheet-metal	Feb. 22, 1870
100,968	Bliesenick, Ferdinand, New York, N. Y. Boot and shoe heel	Mar. 22, 1870
98,842	Blicaner, William, St. Louis, Mo. Vapor-burner	Jan. 18, 1870
106,311	Bligh, Samuel L., Sandy Lake, Pa. Hand corn-husker	Aug. 16, 1870
99,753	Blinn, Charles D., Port Huron, Mich. Wash-boiler	Feb. 15, 1870
105,632	Bliss, Eliphalet W., assignor to Maya, Bliss & Co., Brooklyn, N. Y. Power-press	July 26, 1870
	Bliss, Francis D., and George W. Tanner. (*See* Tanner & Bliss) (Two cases.)	
103,968	Bliss, George H., and Martin Rees, West Stockbridge, Mass. Manufacture of wood-paper stock	June 7, 1870
100,361	Bliss, George W., Brooklyn, N. Y. Culinary-boiler	Mar. 1, 1870
98,548	Bliss, James T., and Thomas D. Davenport, North Providence, R. I. Weather-strip	Jan. 4, 1870
	Bliss, Jeremy W. (*See* Trant, Justus A., assignor.)	
103,286	Bliss, John and George H., Brooklyn, N. Y. Mariner's compass	May 24, 1870
103,287	Same.....same	May 24, 1870
103,417	Same.....Stand for transit-instruments	May 24, 1870
101,216	Bliss, Milton, Ionia, Mich. Machine for picking and dusting wool	Mar. 29, 1870
103,009	Bliss, Milton, assignor to A. M. Bliss, Ionia, Mich. Bobbin	May 3, 1870
102,480	Bliss, William H., Newport, R. I. Earth chamber-vessel	Mar. 29, 1870
101,219	Bliven, Charles E., Toledo, Ohio. Bracket-hanger	
	Block, D. J., *et al.* (*See* Foster, H. E., assignor.)	
108,555	Blomgren, John, New York, N. Y. Compass for mining	Oct. 25, 1870
108,095	Blomsten, Bengt C., Wanpaca, Wis. Plow	Oct. 11, 1870
3,945	Blood, A. R., A. Hathaway, and V. R. Beach, Independence, Iowa. Cultivator. (Reissue)	May 3, 1870
	Blood, George A., *et al.* (*See* King, John C., assignor) (Two cases.)	
103,834	Blood, Hannibal S., New Orleans, La. Derrick or hoisting-crane	June 7, 1870
102,755	Blood, Joel, Watertown, N. Y. Bandaging and boxing cheese	May 10, 1870
107,216	Same.....Machine for making flanged and beaded hoops	Sept. 13, 1870
103,131	Bloodgood, John H., Bridgeport, Conn. Roller for cash-strap for carriages	May 17, 1870
	Bloomingdale, Joel Y., and Isaac Albright, jr. (*See* Albright & Bloomingdale.)	
105,893	Blossom, Albert H., Miamisburgh, Ohio. Stirrup	Aug. 2, 1870
	Blunt, John G., *et al.* (*See* Smith & Priest, assignors.)	
106,312	Blunt, Thomas E., Brookfield, Ohio. Steam pumping-engine	Aug. 16, 1870
100,969	Blust, C., and Matthew Harbster, assignors to C. Blust, Reading, Pa. Churn-dasher crank-fixture	Mar. 22, 1870
4,015	Bly, Douglas, Shamburg, Pa. Piston-rod adjuster (Reissue)	June 7, 1870
	Blymyer, Day & Co. (*See* Dull, Joseph H., assignor.)	
110,192	Blymyer, John S., Mansfield, Ohio. Cane-juice evaporator. (Antedated Dec. 17, 1870)	Dec. 20, 1870
	Boal, James D. (*See* Barnett, Lewis, assignor.)	Nov. 8, 1870
100,107	Boardman, David, Columbus, Ind. Dining-table	
	Boardman, Henry M., and William Pendleton. (*See* Pendleton & Boardman.)	
100,847	Boardman, Horace, Port Richmond, N. Y. Steam-engine governor	Mar. 15, 1870
104,822	Boardman, Luther and Norman S., East Haddam, Conn. Spoon-mold	June 28, 1870
	Boatwright, W. E. (*See* Evans, Lewis A., assignor.)	
	Bochius, George. (*See* Adler, George W., assignor.)	
100,578	Bocking, Carl, Boston, Mass. Composition for the manufacture of boot and shoe heels. (Antedated Nov. 12, 1870)	Nov. 29, 1870
98,465	Boda, William John, Dayton, Ohio. Extension-table	Jan. 4, 1870
	Bode, Adolph. (*See* James, John Dawson, jr., assignor) (Two cases.)	
103,286	Bodtker, James F., Chicago, Ill. Key-hole guard	May 24, 1870
102,756	Body, Thomas H., Kilbourn City, Wis. Collar for attaching cow-bells	May 10, 1870
100,171	Boecklen, Reinhold, assignor of one-half interest to Henry Forstrick, Brooklyn, N. Y. Machine for making screws and screw-nails	Nov. 15, 1870
101,816	Boerner, Wannibald R., assignor to self and C. R. Boerner, Chicago, Ill. Wire-work for railways, &c	April 12, 1870
106,900	Boesch, Emil, San Francisco, Cal. Street-lamp	Sept. 6, 1870
104,411	Bogardus, Robert, New York, N. Y. Car-starter	June 21, 1870
103,289	Bogart, Isaac, Newport, Ind. Grain-planter	May 24, 1870
100,716	Boggs, William, Covington, Ohio. Straw-stacking machine	Mar. 15, 1870
109,864	Bohner, George, Chicago, Ill. Attaching lamp-founts to brackets, chandeliers, &c	Dec. 6, 1870
107,437	Boisselier, Gustavus Emil, St. Louis, Mo. Self-locking hinge	Sept. 20, 1870
99,141	Boivin, Jules Emile, and Desire Loiseau, assignors to Charles Frederick Chandler, France. Process for extracting, manufacturing, and refining sugar	Jan. 25, 1870
105,894	Bole, John, Grand Rapids, Mich. Paper-cutting machine	Aug. 2, 1870
	Bolen, Charles M., *et al.* (*See* Campbell, Alexander McDonald, assignor.)	
104,104	Bolinder, John, Brooklyn, N. Y. Soft-soap or washing-fluid	June 14, 1870
107,754	Bolis, Victor, St. Mary's Parish, La. Cultivator-plow	Sept. 27, 1870
103,709	Boll, George W., Columbus, Ind. Sawing-machine	May 31, 1870
	Bolles, George P. (*See* Eaton, Charles A., assignor.)	
104,037	Bollinger, Oliver J., York, Pa. Water-wheel	June 28, 1870
	Bollman, Jeremiah S., *et al.* (*See* Thompson, William, assignor.)	
108,556	Bolthoff, Henry, Central City, Col. Flask for casting stamp-shoes for crushing-mills	Oct. 23, 1870
4,196	Bolton, James, assignor to the Singer Manufacturing Company, Chicago, Ill. Tuck-creasing device for sewing-machines (Reissue)	Dec. 13, 1870
109,708	Bolton, Samuel S., Big Rapids, Mich. Belt-fastener	Dec. 6, 1870
103,550	Bolton, Simeon E., Prescott, Wis. Tightening wheel-tire	May 31, 1870

Alphabetical list of patentees for the year 1870—Continued.

No.	Name, residence, invention or discovery.	Date.
99,142	Bomar, Elijah, assignor to self and William Young, Wartrace, Tenn. Railroad-tie lifter	Jan. 25, 1870
103,710	Bomar, William C., and Anderson Truxler, Wartrace, Tenn. Railroad-tie lifter	May 31, 1870
	Bonchard, C. I. (*See* Raynsford, Frederick, assignor.)	
98,406	Bond, Charles, New York, N. Y. Composition for dyeing and coloring leather, hides and skins	Jan. 4, 1870
107,156	Bond, Joel L., Marshalltown, Iowa. Corn-planter	Sept. 6, 1870
99,821	Bond, Lester L., Chicago, Ill. Hoe	Feb. 15, 1870
99,284	Bond, Thomas, assignor to Daniel J. Clark, W. F. Doggett, and S. M. Burr, East Brookfield, Mass. Trunk	Feb. 1, 1870
105,895	Bonham, Horace, Philadelphia, Pa. Head-measure for hatters	Aug. 2, 1870
106,111	Bonine, Lot, assignor to self and Warren W. Camp, Vandalia, Mich. Hame-cap for harness	Aug. 9, 1870
100,589	Bonnell, Isaac, jr., assignor to self and H. J. Lumbard, Chicago, Ill. Railroad-car ventilator	Mar. 8, 1870
101,423	Bonnell, Lansing, Milwaukee, Wis. Hot-air furnace. (Antedated March 19, 1870)	April 5, 1870
100,376	Bonner, Thomas E., deceased, by John R. Armstrong, administrator, Elkhart, Ind. Brick-machine	Nov. 22, 1870
	Bonnet, Bonnet, and Robert Skinner. (*See* Skinner & Bonnet.)	
99,822	Bonney, Charles S., Syracuse, N. Y. Gate	Feb. 15, 1870
105,896	Same.....Hollow-auger	Aug. 2, 1870
107,157	Same.....Sash-holder	Sept. 6, 1870
104,105	Bonser, William James, England. Apparatus for feeding cattle on railway trucks	June 14, 1870
98,467	Boody, N. W., Westbrook, Me. Cattle stanchion	Jan. 4, 1870
100,362	Bookwalter, John W., Springfield, Ohio. Water-wheel case	Mar. 1, 1870
110,544	Same.....Water-wheel	Dec. 27, 1870
	Bookwalter, John W., *et al.* (*See* Kraatz, David K., assignor.)	
100,363	Boole, L. H., New York, N. Y. Wood-pavement	Mar. 1, 1870
102,082	Boomer, Almon W., and John P. Haskins, Poultney, Vt. Hemmer for sewing-machines	April 19, 1870
108,733	Boomer, George E., Thomas G. Morse, and Rufus E. Boschert, Phœnix, N. Y. Cheese-press	Nov. 1, 1870
101,423	Boon, Alonzo T., and Lucien Mills, Galesburg, Ill. Flour-sifter, cullender, and strainer	April 5, 1870
102,481	Boone, Charles A., Shickshinny, Pa. Churn	May 3, 1870
	Boone, Jeremiah H., *et al.* (*See* Taylor, Robert R., assignor.)	
100,112	Boone, John L., San Francisco, Cal. Needle sewing-machine	Feb. 22, 1870
	Boorman, B. (*See* Balfour, M. G., assignor.)	
101,705	Boorman, John Marcus, Scarborough, N. Y. Hay-loader	April 12, 1870
101,817	Boorn, Samuel, Lowell, Mass. Mechanism for stopping the shuttle in looms	April 12, 1870
103,551	Booth, Alfred, Chicago, Ill. Refrigerating oyster-can	May 31, 1870
107,217	Same.....Refrigerating-car	Sept. 13, 1870
101,220	Booth, James, Worcester, Mass. Shears	Mar. 29, 1870
	Booth, William S., administrator. (*See* Clark, H. M., assignor) (Extension.)	
102,651	Boothby, Columbus S., Saco, Me. Hay-carrier	May 3, 1870
108,320	Booton, Sinclair, Seguin, Texas. Cotton-press	Oct. 18, 1870
104,254	Bootsman, Theodore, Tompkinsville, N. Y. Dumping-car	June 14, 1870
103,969	Bope, Jacob W., assignor to self and C. Aultman, South Bend, Ind. Reel for harvesters	June 7, 1870
103,970	Same.....Reel for harvesters	June 7, 1870
110,426	Borden, James Sanford, Bloomfield, Ill. Thumb-supporter	Dec. 27, 1870
109,489	Borden, Spencer, Fall River, Mass. Preparation of garancine	Nov. 22, 1870
108,096	Bordes, George, New York, N. Y. Device for opening and closing fans	Oct. 11, 1870
109,490	Borgfeldt, Nicholas H., New York, N. Y. Cigar-mold	Nov. 22, 1870
99,823	Borgner, Henry C., Lebanon, Pa. Indigo soap	Feb. 15, 1870
103,132	Borst, Valentine, New York, N. Y. Harness-saddle	May 17, 1870
109,108	Same.....same	Nov. 8, 1870
105,543	Borthwick, John Atkinson, Philadelphia, Pa. Machine for sharpening saws	July 19, 1870
104,545	Bortree, Louis S., Grand Rapids, Mich. Horse hay-rake	June 21, 1870
	Bosch, Francis H. L, executor. (*See* Brandes, Henry A., assignor.)	
	Boschert, Rufus E., *et al.* (*See* Boomer, Morse & Boschert.)	
102,737	Bosley, Elijah M., Baltimore, Md. Steam heating-apparatus	May 10, 1870
	Bosman, William A. (*See* Nevins, John H., assignor.)	
102,758	Bosom, Francis, assignor to self and W. A. Wright, Janesville, Mich. Churn-dasher	May 10, 1870
108,007	Boss, Charles D. and Charles D., jr., New London, Conn. Manufacture of biscuit	Oct. 11, 1870
106,774	Bosshard, Theodor, Columbus, Ohio. Shuttle-stopping device	Aug. 30, 1870
	Boston Machine Company. (*See* Pratt, T. Willis, assignor.)	
99,596	Bostwick, Jabez A., New York, N. Y. Siphon	Feb. 8, 1870
104,412	Same.....Soldering-iron	June 21, 1870
104,413	Same.....Nozzle and sealing-cap for sheet-metal cans	June 21, 1870
104,414	Same.....Apparatus for filling oil-cans	June 21, 1870
	Boswell, George G. F., *et al.* (*See* George, David J., assignor.)	
106,027	Bosworth, Daniel, assignor to Jordan L. Mott, New York, N. Y. Cooking-range	Aug. 2, 1870
103,133	Bosworth, Harvey, Champlain, N. Y. Clothes-drier	May 17, 1870
103,552	Both, Adolph C., Germany. Hay and straw cutter	May 31, 1870
104,255	Bothe, William, assignor to Culbert & Company, Williamsburgh, N. Y. Portable writing-desk	June 14, 1870

Alphabetical list of patentees for the year 1870—Continued.

No.	Name, residence, invention or discovery.	Date.
103,418	Bothwell, Samuel, assignor to self and Ralph Ormrod, Philadelphia, Pa. Welding-powder for iron and steel	May 24, 1870
104,106	Bo aford, Nathan, Somerset, N. Y. Hame-tug for harness	June 14, 1870
101,974	Bottger, Martin H., Sacramento City, Cal. Water-proof compound for boots and shoes	April 19, 1870
98,540	Bottomley, Henry, and Peter Greenwood, Camden, N. J. Mechanism for stopping the delivery-rollers of spinning-machines	Jan. 4, 1870
98,468	Boudren, Thomas, Bridgeport, Conn. Coach-lamp bracket	Jan. 4, 1870
4,092	Same.....Glass column for coach lamps.....(Design)	May 3, 1870
107,592	Boufila, Paul, and John Grossmann, West Hoboken, N. J. Meat and vegetable cutter	Sept. 20, 1870
100,848	Boult, M. T., Battle Creek, Mich. Carving wood	Mar. 15, 1870
105,633	Boulton, William, Tompkinsville, N. Y. Cutting ashlar	July 26, 1870
106,112	Bourgade, Gustave, New York, N. Y. Preparation of albumen	Aug. 16, 1870
106,313	Same.....Compound for fertilizer	Sept. 6, 1870
107,158	Same.....Manufacture of albumen	Nov. 29, 1870
109,579	Same.....(*See* Lambert, Jean, jr., assignor.)	July 26, 1870
105,634	Bourn, Augustus O., Providence, R. I. Elastic roller for wringers, &c	Oct. 4, 1870
108,001	Bourne, Amos H., Fort Scott, Kansas. Compound for the manufacture of paint. (Antedated June 9, 1870)	Dec. 13, 1870
110,003	Bourne, Edward. Pittsburg, Pa. Radiator	Sept. 13, 1870
107,218	Same.....Steam-heater	June 14, 1870
104,256	Bourne, Elijah, New Iberia, La. Plow, planter, and cultivator	Jan. 25, 1870
99,054	Bourne, William, assignor to self and Nathaniel Cummings, Boston, Mass. Piano-forte	April 19, 1870
101,975	Bouscay, Elvi, jr., Norwalk, Ohio. Device for applying braid to fabrics in sewing-machines. (Antedated Jan. 14, 1870)	
103,553	Boutelle, James E., Fisherville, N. H. Lathe-spindle	
99,527	Bouvier, Leopold. (*See* Tellier, Charles, assignor.)	May 31, 1870
100,500	Bouziat, Gabriel Charles, France. Mode and material for constructing floors, ceilings, roofs, &c	Feb. 8, 1870
100,775	Bovey, George C., Cincinnati, Ohio. Sediment chamber for lamp-posts	Mar. 8, 1870
105,300	Same.....Brick-machine	Aug. 30, 1870
107,860	Bowden, William, assignor to self and Abbott C. Calkins, Hamburgh, N. Y. Machine for upsetting tires	July 12, 1870
103,554	Bowdoin, David W., Salem, Mass. Elastic transfer printing	Oct. 4, 1870
100,491	Bowen, Newton M., Knightstown, Ind. Grain and seed cleaner	
101,976	Bowen, Otis E., Needham, Mass. Composition for coating shingles and clapboards	May 31, 1870
105,897	Bower, Jacob, Dayton, Ohio. Cultivator	Mar. 8, 1870
100,206	Bower, Samuel L., Auburn, N. Y. Device for riveting	April 19, 1870
103,835	Bower, William, and Josiah H. Nichols. (*See* Nichols & Bower.) (Three cases.)	Aug. 2, 1870
103,290	Bowers, Henry L., Harrisburg, Pa. Cellar-hoist or elevator	Feb. 22, 1870
103,291	Bowers, Sylvester. (*See* Tuell, Melzer, assignor.)	
90,924	Bowker, Daniel, Boston, Mass. Post for pegging-jack	June 7, 1870
4,036	Bowker, James, assignor to Bair, Brothers & Co., Baltimore, Md. Paint for ships' bottoms, &c	May 24, 1870
104,107	Same.....Varnish for tin-ware	May 24, 1870
106,113	Bowker, Joel, and Charles H. Hudson. (*See* Hudson & Bowker.)	
109,289	Bowker, Milton, and Joseph L. Stratton, Fitchburgh, Mass. Instrument for dividing circles	Feb. 15, 1870
103,063	Bowles, John, assignor of part interest to Samuel P. Ross, Augusta, Ga. Corn-sheller	June 21, 1870
107,861	Same.....(Reissue)	June 14, 1870
109,715	Bowman, Daniel, Johnson City, Tenn. Millstone dress	Aug. 9, 1870
101,573	Bowman, George R., Hagerstown, Md. Water-cooler, &c	Nov. 15, 1870
105,031	Bowman, John, Princeville, Ill. Combined threshing-machine and corn-sheller	May 10, 1870
105,898	Bowman, Uriah, Craig's Mills, West Va. Flouring-mill	Oct. 4, 1870
101,221	Bowman, William, Etna Green, Ind. Circular saw-mill	Nov. 29, 1870
99,528	Bowne, Robert T., Fallston, Md. Gate	April 5, 1870
108,557	Boxley, George, Troy, N. Y. Ironing-machine	
101,574	Boyce, Louis D., and G. H. Jones. (*See* Jones & Boyce.)	July 5, 1870
108,460	Boyd, Alexander, Boston, Mass. Rivet	Aug. 2, 1870
4,504	Boyd, Asahel C., assignor to E. W. Vaill, Worcester, Mass. Folding-chair	Mar. 29, 1870
104,546	Boyd, Clark, Andover, N. Y. Turbine water-wheel	Feb. 8, 1870
105,544	Boyd, Francis E., Boston, Mass. Metallic cartridge	
108,679	Boyd, Frederick, and James Woodruff. (*See* Woodruff & Boyd.)	
100,007	Boyd, J. F., *et al.* (*See* Strong, R. H., assignor.)	
	Boyd, James P., assignor to self and Aaron H. Miller, La Porte, Indiana. Window-blind	Oct. 25, 1870
	Boyd, John G., assignor to self and Allen Bailey, Decatur, Texas. Sulky-plow	April 5, 1870
	Boyd, Minor P., Unionville, S. C. Dining-table	Aug. 16, 1870
	Boyd, Robert, and James C. Hart, Rochester, N. Y. Base of a hot-air furnace.....(Design)	Dec. 13, 1870
	Boyd, Samuel and Roger, *et al.* (*See* Stearns, Caleb C., assignor.)	
	Boyd, Thomas B., St. Louis, Mo. Life-preserver	June 21, 1870
	Boyd, William, Mansfield, Mass. Winker for harness-bridles	July 19, 1870
	Boyden, Pardon, assignor to self and William R. Stone, Amsterdam, N. Y. Detachably-tipped whip	Oct. 25, 1870
	Boyden, William A., and C. J. Mann, Altoona, Pa. Vegetable-cutter	Feb. 22, 1870

Alphabetical list of patentees for the year 1870—Continued.

No.	Name, residence, invention or discovery.	Date.
	Boyes, Burritt C., deceased, by Sady D. Boyes, administratrix, Philadelphia, Pa. Folding-guide for sewing-machines.....(Extension)	July 6, 1870
103,836	Boyle, David, San Francisco, Cal. Pneumatic gas-machine	June 7, 1870
98,913	Boyle, Hugh, Waterloo, Iowa. Turbine water-wheel	Jan. 18, 1870
	Boynton, Charles, and Henry A. Efner. (*See* Efner & Boynton.)	
3,963	Boynton, C. B., assignor to John B. Fletcher, St. Albans, Vt. Railway axle-box.....(Reissue)	May 10, 1870
	Same.....Railway axle-box. (Disclaimer filed Nov. 28, 1870.)	
107,053	Boynton, Charles E., assignor to self and Isaac N. Vosburg, San Francisco, Cal. Tool for cutting wood-moldings	Sept. 27, 1870
99,825	Boynton, Eben Moody, Grand Rapids, Mich. Handle for cross-cut saws	Feb. 15, 1870
105,032	Same.....West Newbury, Mass. Saw-frame	July 5, 1870
106,251	Boynton, Edward S., assignor to self and Charles Parker, Meriden, Conn. Process of forming vacuum in freezing-apparatus	Aug. 9, 1870
104,698	Boynton, Edwin, Palmyra, Wis. Bag-holder	June 28, 1870
108,114	Boynton, Henry W., Haverhill, Mass. Shutter-worker	Aug. 9, 1870
110,427	Boynton, John F., Syracuse, N. Y. Apparatus for generating carbonic acid. (Disclaimer filed Sept. 24, 1870.)	
3,809	Same.....Method of producing illuminating gas	Dec. 27, 1870
110,004	Boynton, John F., assignor to Henri L. Stuart, New York, N. Y. Steam-generator.....(Reissue)	Jan. 25, 1870
100,717	Boynton, Leander W., Hartford, Conn. Cleaner and grinder for carding-machines	Dec. 13, 1870
98,914	Boynton, Leroy, and W. F. Sweet, Jackson Township, Pa. Detachable handle for knives and forks	Mar. 15, 1870
98,915	Boynton, Nathaniel A., New York, N. Y. Fender for heating stoves	Jan. 18, 1870
4,109	Same.....Base-burning stove	Jan. 18, 1870
108,439	Boynton, R. H., Oshkosh, Wis. Spoke-machine.....(Reissue)	Aug. 30, 1870
104,415	Boyrer, William, New York, N. Y. Paper-file	Oct. 18, 1870
104,546	Bozorth, John, Camden, N. J. Detaching-hook	June 21, 1870
	Brabrook, George, *et al.* (*See* Parkin, William, assignor.)	June 21, 1870
	Same.....(*See* Leech, Thomas, assignor.)	
	Brace, Julius, and J. L. Fulton. (*See* Fulton & Brace.) (Two cases.)	
100,591	Bracher, Thomas, Rahway, N. J. Water-proof fabric. (Antedated Feb. 26, 1870)	Mar. 8, 1870
99,395	Bracker, T. W., New York, N. Y. Printing-press	Feb. 1, 1870
	Braches, Charles. (*See* Fringa, Charles H., assignor.)	
103,711	Brackett, Frederick, Minneapolis, Minn. Lock for securing revenue stamps on beer barrels	May 24, 1870
102,083	Brackett, Samuel, Wenona, Mich. Washing-machine	April 19, 1870
	Brackett, Sewell. (*See* Ordway, John M., assignor.)	
	Bradbury, Lewis R. (*See* Thompson, Taylor P., assignor.)	
102,908	Bradford, Charles K., assignor to self, James F. Bradford, and W. N. Yost, Lynnfield, Mass. Railway car-wheel	May 10, 1870
	Bradford, Hezekiah, Reading, Pa. Ore-washer.....(Extension)	Aug. 11, 1870
108,962	Same.....same. (Antedated October 28, 1870)	Nov. 8, 1870
104,257	Bradford, Horace C., assignor of one-half interest to H. W. Fenner, Providence, R. I. Machine for setting button on lacing-hooks	June 14, 1870
109,799	Bradford, Lewis G., assignor to self and Nathaniel H. Morton, Plymouth, Mass. Bedstead-joint	Dec. 6, 1870
103,971	Bradford, Nathaniel, Addison, Me. Mechanical movement	June 7, 1870
	Bradley & Hubbard. (*See* Dockstader, Lansing, assignor.)	
	Bradley & Hubbard. (*See* Cinquini, Pietro, assignor.) (Design.) (Two cases.)	
110,428	Bradley, Alfred, assignor to self and W. L. Cushing, New Orleans, La. Portable fare-box	Dec. 27, 1870
105,033	Bradley, Benjamin H., New York, N. Y. Machine for making nuts	July 5, 1870
105,899	Bradley, Charles C., and Benjamin F. Upson, Brodhead, Wis. Whiffletree trace-hook	Aug. 2, 1870
104,926	Bradley, George, Rockford, Ill. Seed-sower and cultivator	July 5, 1870
100,580	Bradley, George, and Nelson A. Walker, Rockford, Ill. Clothes-pin. (Antedated Nov. 14, 1870)	Nov. 29, 1870
	Bradley, James P. (*See* Baranger, Henry, assignor.)	
105,034	Bradley, Joseph W., Rocheport, Mo. Flour-bolt knocker	July 5, 1870
105,558	Bradley, Leverett, Jersey City, N. J. Apparatus for deodorizing and improving alcoholic and vinous liquids	Oct. 25, 1870
99,098	Bradley, Lyman, and Thomas D. Phillips, assignors to selves and A. D. Denny, Buffalo, N. Y. Preserving fruits, vegetables, &c	Feb. 8, 1870
103,419	Bradley, Richard T., and Henry W. Wansbrough, assignors to R. T. Bradley and C. A. Scott, Cincinnati, Ohio. Roller-skate	May 24, 1870
	Bradley, R. T., and H. C. Stewart. (*See* Stewart & Bradley.) (Two cases.)	
99,826	Bradley, Samuel C., assignor to self and Charles E. Thompson & Co., New Haven, Conn. Clamp	Feb. 15, 1870
105,164	Bradley, Thomas H., St. Louis, Mo. Bird-cage	July 12, 1870
	Bradshaw, Clinton D., and John H. Martin. (*See* Martin & Bradshaw.)	
107,331	Bradshaw, John A., William H. Brown, and Darius Whitehead, Lowell, Mass. Power-meter	Sept. 13, 1870
103,871	Bradshaw, John A., and Seldon L. Crockett, assignors to Seldon L. Crockett, Lowell, Mass. Measuring apparatus for looms, &c. (Antedated October 21, 1870)	Nov. 1, 1870
101,818	Bradt, William H., New Scotland, N. Y. Brake-block for wagons	April 12, 1870

Alphabetical list of patentees for the year 1870—Continued.

No.	Name, residence, and invention or discovery.	Date.
102,759	Bradway, Charles, Maquoketa, Iowa. Mop-wringer	May 10, 1870
103,837	Brady, James, assignor to Branford Lock Works, Branford, Conn. Door-key	June 7, 1870
103,838	Same.....Lock	June 7, 1870
104,923	Same.....Door-key	June 28, 1870
108,098	Same.....Lock	Oct. 11, 1870
108,099	Same.....same	Oct. 11, 1870
104,548	Brady, James G., Forest Hill, Mich. Log loader and piler	June 21, 1870
100,493	Brady, James W., assignor to M. W. Brady, Baltimore, Md. Coffee-cleaning-machine	Mar. 8, 1870
100,493	Same.....same	Mar. 8, 1870
110,193	Brady, James W., Baltimore, Md. Apparatus for pitching barrels	Dec. 20, 1870
108,100	Brady, John, Fall River, Mass. Machine for brushing yarn	Oct. 11, 1870
100,364	Brady, John C. and James H., Coraica Borough, Pa. Snap-hook and buckle	Mar. 1, 1870
98,550	Brady, Reuben, New York, N. Y. Machine for cutting and pressing the heads of metal cans	Jan. 4, 1870
4,055	Braentigam, John and Henry, Chicago, Ill. Dog-muzzle.....(Design)	May 24, 1870
101,573	Bragdon, Zebina L., Bangor, Me. Sewer-grate	April 5, 1870
103,972	Braidwood, William, and Horatio J. Hewitt, New York, N. Y. Water-wheel	June 7, 1870
100,718	Brainard, Leverett, Hartford, Conn. Rag whipper and duster for treating paper-stock, &c	Mar. 15, 1870
109,173	Brainerd, Alexander H., Rome, N. Y. Furnace for deoxidizing iron ore	Nov. 15, 1870
	Brainerd, James P., *et al.* (*See* Armstrong, Benjamin A., assignor.)	
	Braitegan, N., *et al.* (*See* Myers, Harvey L., assignor.)	
	Braley, James. (*See* Bronson, Levi, assignor.)	
100,540	Braley, Joel S., John A. and Philip L. Schmitt, Utica, Mo. Method of putting face-dress on mill-stones	Aug. 23, 1870
99,035	Bramwell, Paul and W. C., Arrow Rock, Mo. Spinning-machine	Jan. 25, 1870
108,963	Branch, James C., and Hugh P. Quin, Washington, Ga. Liniment	Nov. 8, 1870
	Branch, Joseph W. (*See* Milligan, John F., assignor.)	
104,416	Brandee, Henry A., deceased, by Francis H. I. Bosch, executor, Newark, N. J. Instrument for giving fluid medicines to animals	June 21, 1870
	Brandon, James. (*See* Harte, Thomas J., assignor.)	
	Branford Lock Works. (*See* Brady, James, assignor).....(Five cases.)	
104,417	Branig, Julius M., New York, N. Y. Tuning-pin for pianos	June 21, 1870
103,134	Brase, Adolph, and Lemuel Salladey, Sciotoville, Ohio. Revolving-grate for fire-places	May 17, 1870
103,830	Same.....Railroad-car stove	June 7, 1870
	Brash, Peter, and William Young. (*See* Young & Brash.)	
	Brasher, W. N. & Co. (*See* Christie, Hugh, assignor).....(Design.)	
103,135	Brasier, Edward, assignor to John Eliot Hodgkin, England. Machine for breaking, scutching, and separating fibrous materials	May 17, 1870
	Brass, Robert, and Louis Chevallier. (*See* Chevallier & Brass.)	
108,530	Bratnober, August, Webster County, Iowa. Horse-collar fastening	Oct. 25, 1870
99,285	Brattan, Thomas, assignor to A. H. Dixson, England. Gas-meter	Feb. 1, 1870
	Bratton, W. G., and A. H. Baily. (*See* Baily & Bratton.)	
107,862	Braucher, James F., Lincoln, Ill. Combined plow and harrow	Oct. 4, 1870
100,849	Brauer, Louis, Washington, D. C. Apparatus for making extracts and decoctions from coffee, tea, and other substances	Mar. 15, 1870
102,760	Braun, Frederick, and Augustus Theodore Schmidt, Pittsburgh, Pa. Bleaching, tanning, and coloring sponges	May 10, 1870
	Braun, George, *et al.* (*See* Warth, Hufeland, and Braun, assignors.)	
99,029	Braun, Martin, Cape Vincent, N. Y. Aerial-ship	Feb. 8, 1870
105,035	Same.....Double-acting pump	July 5, 1870
	Brawdy, John, *et al.* (*See* Woodworth, Brawdy & Merithew.)	
	Bray, Edward P. (*See* Renshaw, David, assignor.)	
103,420	Bray, Mellen, Boston, Mass. Nozzle and stopper for cans, &c	May 24, 1870
100,970	Bray, Morris P., Ansonia, Conn. Fastening for corsets	Mar. 22, 1870
107,963	Brayton, George Bailey, Boston, Mass. Slide-valve	Oct. 4, 1870
101,819	Brazenor, E. L., assignor to Richard Brazenor, England. Horse-collar block	April 12, 1870
99,227	Breckenridge, E. K., West Meriden, Conn. Sash-holder	Feb. 15, 1870
	Breed, Daniel. (*See* Mitchell, Thomas A., assignor.)	
	Same.....(*See* Fisher, John F., assignor).....(Two cases.)	
98,663	Breed, Nathan, Jeffersonville, Ind. Corn-planter and corn-cultivator	Jan. 11, 1870
107,150	Breed, Thomas H., Dundee, Mich. Flood-gate	Sept. 6, 1870
100,113	Breeden, Joseph, England. Stop-cock. (Patented in England Feb. 23, 1869)	Feb. 22, 1870
101,977	Same.....Stop-cock for steam and liquids. (Patented in England Dec. 21, 1868)	April 19, 1870
110,194	Brehm, Edward, Jersey City, N. J. Revolving-cannon	Dec. 20, 1870
106,314	Bremser, John Charles F., St. Louis, Mo. Foot-measure	Aug. 16, 1870
	Brennels, Philipp, and Johann Hoff. (*See* Hoff and Brennels.)	
	Brett, Burt, *et al.* (*See* Weston, Weston, Weston and Brett.)	
	Brett, Robert E. (*See* Donor, H. E., assignor.)	
108,560	Brett, Thomas, Geneva, Ohio. Melodeon	Oct. 25, 1870
105,900	Brettell, Edward W., Elizabeth, N. J. Attaching caps to bases of bell-levers	Aug. 2, 1870
108,561	Same.....Permutation-lock	Oct. 25, 1870
100,582	Brevoort, Henry L., Brooklyn, N. Y. Reducing-gear for steam-engine indicators	Mar. 8, 1870
	Brevoort, Henry L., and William Craig. (*See* Craig & Brevoort.)	
102,084	Brewbaker, Isaac, assignor to William A. McClure, Fincastle, Va. Churn-dasher	April 19, 1870
102,213	Brewer, Alanson T., Brighton, Mass. Counterpoise-platform for ordnance	April 26, 1870
102,214	Same.....Rammer-staff	April 26, 1870

Alphabetical list of patentees for the year 1870—Continued.

No.	Name, residence, and invention or discovery.	Date.
100,008	Brewer, James F., assignor to self and S. Stow Manufacturing Company, Plantaville, Conn. Coal-shovel	Feb. 22, 1870
	Brewer, Philip, *et al.* (*See* Putt, Daniel W., assignor.)	
	Brewster, Henry, *et al.* (*See* Thomas, Daniel W., assignor).....(Design.)	
99,143	Brewster, John C., New York, N. Y. Desulphurizing-oven	Jan. 25, 1870
99,639	Same.....Amalgamator	Feb. 8, 1870
104,700	Brewster, William S., Chicago, Ill. Preparation of wheat for food	June 28, 1870
101,348	Brick, Samuel Reeve, Philadelphia, Pa. Exhausting-apparatus for gas-works	Mar. 29, 1870
99,396	Bride, Timothy C., Quincy, Ill. Hydrant	Feb. 1, 1870
104,258	Bridge, Lewis, assignor to David Stuart and Richard Peterson, Philadelphia, Pa. Stove-grate	June 14, 1870
	Bridge, Lewis, and David Stuart. (*See* Stuart & Bridge, assignors) (Six cases.)	
107,654	Bridgeman, Lewis H., Rock Stream, N. Y. Machine for cutting material for baskets	Sept. 27, 1870
	Bridgeport Brass Company. (*See* Smith, George L., assignor.)	
	Bridgeport Manufacturing Company. (*See* Stedman, Nathan, assignor.) (Reissue.)	
102,482	Bridges, Albert, New York, N. Y. Rack for cars	May 3, 1870
101,978	Bridges, William C., Michigan City, Ind. Belt-replacer	April 19, 1870
	Briggs, Franklin A., *et al.* (*See* Curtis, Briggs & Cox).....(Design.)	
	Briggs, Frederic M., and Justin G. Thompson. (*See* Thompson & Briggs.)	
105,772	Briggs, George H., Montgomery, Ala. Automatic-fan	July 26, 1870
108,680	Briggs, John, Higganum, Conn. Reeling-machine	Oct. 25, 1870
100,009	Briggs, John C., Ansonia, Conn. Organ and melodeon action	Feb. 22, 1870
107,655	Same.....Melodeon	Sept. 27, 1870
103,719	Briggs, Joshua, Peterborough, N. H. Clothes-drier	May 31, 1870
99,828	Briggs, Martin, Rochester, N. Y. Bolt-work for safe-doors, &c	Feb. 15, 1870
	Briggs, O. C., and George Selden. (*See* Selden & Briggs, assignors.)	
109,377	Briggs, Richard F., Amesbury, Mass. Sliding-seat for carriages	Nov. 22, 1870
99,056	Briggs, Warren R., Boston, Mass. Bed-bottom	Jan. 25, 1870
99,825	Briggs, Warren R., assignor to M. G. Briggs, Boston, Mass. Table-leaf support	Feb. 15, 1870
	Brigham, Thaddeus W., *et al.* (*See* Beatty, James H., assignor.)	
	Bright, Richard, jr. (*See* Scholfield, Socrates, assignor.)	
98,737	Brinckerhoff, C. R., Rochester, N. Y. Harvester	Jan. 11, 1870
109,581	Brinckerhoff, John DeWitt, and James Duthie, Morrisania, N. Y. Construction of globes, maps, &c., for schools	Nov. 29, 1870
101,576	Brine, Mary D., Chicago, Ill. Portable swing	April 5, 1870
106,461	Bringman, George E., assignor to William G. Schaeffer & Co., Baltimore, Md. Toy-toad	Aug. 16, 1870
110,111	Bringman, George E., Philadelphia, Pa. Meat and vegetable cutter	Dec. 13, 1870
100,850	Brinkerhoff, George E., New York, N. Y. Cigar-shield	Mar. 15, 1870
	Brinkerhoff, Jacob. (*See* Van Dusen, John D., assignor.)	
3,881	Brinkmann, Theodore, Greenville, Tenn. Fire and water proof paint and cement.....(Reissue)	Mar. 22, 1870
99,830	Brinly, T. E. C., Louisville, Ky. Plow	Feb. 15, 1870
102,652	Same.....Plow-clevis	May 3, 1870
109,290	Same.....Plow	Nov. 15, 1870
109,291	Same.....same	Nov. 15, 1870
109,491	Same.....Cotton-sweep	Nov. 22, 1870
101,979	Brintnall, Thomas M., Medina, Ohio. Cloth-measuring apparatus	April 19, 1870
110,195	Briscoe, Benjamin, Detroit, Mich. Seal-lock	Dec. 20, 1870
	Bristol Brass and Clock Company. (*See* Taplin, Alvin, assignor) (Three cases.)	
102,909	Bristol, Truman, assignor to self and Charles Monson, Cheshire, Conn. Water-wheel	May 10, 1870
100,365	Bristow, Thomas, assignor to Amasa Sprague, Cranston, R. I. Manufacture of madder-dye	Mar. 1, 1870
104,259	Same.....Preparation of coloring-matter from madder for dyeing	June 14, 1870
99,144	Brittin, John W., Black Rock, Conn. Casting hollow cylinder	Jan. 25, 1870
98,916	Brittingham, W. B., Lafayette, Ind. Tanning and stuffing leather	Jan. 18, 1870
4,129	Same.....same.....(Reissue)	Sept. 27, 1870
109,714	Same.....Tanning-composition	Nov. 29, 1870
106,115	Britton, James, assignor to self and Garrett Brower, Williamsburgh, N. Y. Kettle-bail	Aug. 9, 1870
106,991	Same.....Top for sheet-metal cans	Sept. 6, 1870
105,416	Broad, Gustavus B., Waterville, Me. Shawl-strap	July 19, 1870
	Broadbent, Sidney, *et al.* (*See* Weston, Broadbent & Culver.)	
99,037	Broadbooks, Peter, Batavia, N. Y. Cutting-pincers	Jan. 25, 1870
105,635	Broadwell, Charles B., New Orleans, La. Railway-car starter	July 26, 1870
110,338	Broadwell, Lewis Wells, Grand Duchy of Baden. Feeder for repeating fire-arms	Dec. 20, 1870
105,417	Brobst, Caleb, Winnimac, Ind. Cutter for tonguing and grooving	July 19, 1870
	Brock, Orville W., and James H. Hawes. (*See* Hawes & Brock, assignors.)	
	Brock, Seth W., and John G. Burchfield. (*See* Burchfield & Brock.)	
100,593	Brock, William E., New York, N. Y. Blind	Mar. 8, 1870
104,549	Brockett, Leonard, assignor to self and David J. Stillson, West Haven, Conn. Soap	June 21, 1870
103,713	Brocklebank, John W., and George W. Tubbs, New York, N. Y. Wood pavement	May 31, 1870
4,361	Brockaieper, Frederick W., assignor to Sargent & Co., New Haven, Conn. Blower-holder.....(Design)	Sept. 27, 1870
4,362	Same.....Fire-set holder.....(Design)	Sept. 27, 1870
4,363	Same.....Fire-dog.....(Design)	Sept. 27, 1870
4,364	Same.....Door-pull.....(Design)	Sept. 27, 1870

Alphabetical list of patentees for the year 1870—Continued.

No.	Name, residence, and invention or discovery.	Date.
4,428	Brockaieper, Frederick W., assignor to Sargent & Co., New Haven, Conn. Match-safe ..... (Design)	Oct. 25, 1870
4,467	Same..... Lock-front ..... (Design)	Nov. 15, 1870
108,252	Brockway, Jeremiah, Richland Centre, Wis. Hop-press	Aug. 9, 1870
102,215	Brockway, Joseph W., New York, N. Y. Lubricator for loose pulleys	April 26, 1870
101,349	Brockway, Truman, Chatsworth, Ill. Corn-planter	Mar. 29, 1870
102,216	Brodie, Alexander, Union, Mich. Calculator	April 26, 1870
4,110	Brokenshire, John, assignor of part interest to George Goble and J. D. Macfarlane, Canada. Pump ..... (Reissue, Division A)	Aug. 30, 1870
4,111	Same..... same ..... (Reissue, Division B)	Aug. 30, 1870
98,843	Brombacher, Charles, Tarrytown, N. Y. Combined cutter and shears	Jan. 18, 1870
101,577	Same..... Tinman's machine	April 5, 1870
	Bromer, Julius, *et al.* (*See* Wicke, Frederick, *et al.*)	
	Bromley, James, and Brothers. (*See* Crabtree, Jonathan, assignor.) (Three cases.)	
	Same..... (*See* Allinson, James, assignor) ..... (Design.)	
	Same..... (*See* Kerr, William, assignor) ..... (Design.)	
103,425	Bronson, David C., Great Bend, Pa. Spring bed-bottom	May 24, 1870
101,980	Bronson, Ira, Lockport, N. Y. Shifting rail for buggies	April 19, 1870
110,196	Bronson, Levi, assignor to James Braley, Buffalo, N. Y. Fanning-mill	Dec. 20, 1870
102,217	Bronson, Willis S., Hartford, Ct. Hot-air register	April 26, 1870
99,145	Brooke, Homer, New York, N. Y. Manufacture of insulators for telegraph-poles	Jan. 25, 1870
107,590	Brooke, William E., assignor to self and William H. Ivens, Trenton, N. J. Saw	Sept. 20, 1870
103,532	Brookfield, James M., Brooklyn, N. Y. Mode of forming insulators	May 31, 1870
107,864	Brookhouse, William N., West Danvers, Mass. Manufacture of boots and shoes	Oct. 4, 1870
109,835	Brookmire, James H., St. Louis, Mo. Apparatus for cleaning and polishing coffee	Dec. 6, 1870
	Brooks, Albert Harvey. (*See* Pennoyer, Dorwin Dorman, assignor.)	
	Brooks, David. (*See* Dechant, William H., assignor.)	
104,550	Brooks, Edwin C., Norwich, N. Y. Boiler and washer	June 21, 1870
98,917	Brooks, Franklin W., New York, N. Y. Seal lock	Jan. 18, 1870
99,631	Same..... same	Feb. 15, 1870
104,701	Same..... Stamp-canceler	June 28, 1870
	Brooks, Franklin W., and Joseph Corbett. (*See* Corbett & Brooks.)	
106,462	Brooks, Heman P., Waterbury, Ct. Bread-toaster	Aug. 16, 1870
109,715	Same..... Plate-lifter	Nov. 29, 1870
99,146	Brooks, John W., Boston, Mass. Corset skirt-supporter	Jan. 25, 1870
103,536	Same ..... same	May 31, 1870
100,719	Brooks, Joshua, Boston, Mass. Fan and parasol combined	Mar. 15, 1870
109,378	Brooks, Leroy, Mt. Pleasant, Iowa. Trace-buckle	Nov. 22, 1870
99,754	Brooks, Reuben, jr., Rockport, Mass. Air-pistol	Feb. 15, 1870
102,210	Brooks, Rhodom M., Woodbury, Ga. Fertilizer-distributer, corn and cotton planter	May 10, 1870
102,761	Brooks, Silas M., Memphis, Tenn. Bird-trap	May 10, 1870
106,028	Brooks, Silas M., assignor to self and Charles G. Thompson, Memphis, Tenn. Spring bed-bottom	Aug. 2, 1870
	Brooks, Silas N., administrator. (*See* Yale, Linus, jr.)	
	Brooks, William F., New York, N. Y. Making seamless metal-tubes..(Extension)	Mar. 30, 1870
	Broome, Charles. (*See* Douden, Edwin, assignor.)	
103,420	Broomsell, Henry, Christiana, Pa. Valve mechanism for oscillating-engines	June 7, 1870
102,653	Broomsell, Henry, and Albin W. Wilson, Christiana, Pa. Saw	May 3, 1870
	Brosser, Charles Edward. (*See* Henricksen, Hans Peter, assignor.)	
109,800	Brothwell, John G., assignor to Turner, Seymour & Judds, Wolcottville, Conn. Curtain fixture	Dec. 6, 1870
108,873	Broughton, John, Brooklyn, N. Y. Bustle	Nov. 1, 1870
108,873	Same..... same	Nov. 1, 1870
	Broughton, Milton, and Timothy L. Carley. (*See* Carley & Broughton.)	
	Brower, Garrett. (*See* Britton, James, assignor) ..... (Two cases.)	
109,293	Brower, Henry L., assignor to Charles D. Fredericks, New York, N. Y. Connecting fire-detectors with the alarms	Nov. 15, 1870
102,364	Brown, Addison P., assignor to Continental Windmill Company, Syracuse, N. Y. Windmill	April 26, 1870
4,169	Brown, Addison, P., assignor to Continental Windmill Company, New York, N. Y. Self-regulating windmill ..... (Reissue)	Oct. 25, 1870
105,901	Brown, Adna, Springfield, Vt. Egg-holder	Aug. 2, 1870
	Brown, Adolph and Felix, New York, N. Y. Machine for cutting loaf-sugar. (Extension)	Mar. 16, 1870
109,223	Same..... Machine for cutting loaf-sugar	Nov. 15, 1870
106,854	Brown, Alanson, Rochester, N. Y. Bread-toaster	Aug. 23, 1870
103,010	Brown, Albert C., Chicago, Ill. Window-screen	May 17, 1870
99,147	Brown, Albert G., Hartford, Conn. Ink-retaining attachment for pens	Jan. 25, 1870
105,165	Brown, Alzirus, Worcester, Mass. Horse hay-rake	July 12, 1870
	Same..... (*See* Raeser, Mathias, assignor) ..... (Reissue)	
99,631	Brown, Andrew, and William Patterson, Brooklyn, E. D., N. Y. Base for summer-pieces and grate-frames	Feb. 8, 1870
100,114	Brown, Benoni S., Chicago, Ill. Clothes-drier	Feb. 22, 1870
	Brown, Benoni S., *et al.* (*See* Phillips, Thomas D. and Thomas S., assignors.)	
103,537	Brown, Bird R., and James Toone, jr., Jackson, Tenn. Hay and cotton press	May 31, 1870
99,517	Brown, Charles, Charlottesville, Va. Boot-jack	Feb. 1, 1870

Alphabetical list of patentees for the year 1870—Continued.

No.	Name residence, and invention or discovery.	Date.
103,421	Brown, Charles, assignor to self and Aaron G. Salmon, Adrian, Mich. Hammer-strap for wagons	May 24, 1870
	Brown, Charles H., and Charles Burleigh. Valve-gear for steam-engines. (Extension)	Jan. 14, 1870
104,927	Brown, Collins B., Springfield, Mo. Harvester-rake	July 5, 1870
102,365	Brown, David, Hampden, Me. Balance pivot-gate	April 26, 1870
	Brown, David F., *et al.* (*See* Thorpe, Joseph, W., assignor.)	
	Brown, David G. (*See* Fickel, Henry, assignor.)	
108,101	Brown, Dominick D., Oswego, N. Y. Chock for holding ropes	Oct. 11, 1870
101,424	Brown, Edward, Greenpoint, N. Y. Ice-pick	April 5, 1870
102,654	Brown, Edward, Philadelphia, Pa. Pyrometer	May 3, 1870
109,294	Brown, Edward, Kennebunk, Me. Hand drag-rake	Nov. 15, 1870
98,844	Brown, Elias, Wappinger's Falls, N. Y. Round comb	Jan. 18, 1870
4,523	Same..... Tuck-comb ..... (Design)	Dec. 20, 1870
109,801	Brown, Erastus L., Norwich, N. Y. Sash-lock	Dec. 6, 1870
109,295	Brown, Felix, New York, N. Y. Machine for cutting loaf-sugar	Nov. 15, 1870
109,296	Same..... same	Nov. 15, 1870
102,366	Brown, Franklin H., Chicago, Ill. Sewing-machine	April 26, 1870
108,964	Brown, Franklin H., assignor to self and Benjamin B. Wiley, Chicago, Ill. Permutation-lock. (Antedated Nov. 5, 1870)	Nov. 8, 1870
	Brown, F. S. (*See* Griffin, E. W., assignor.)	
104,702	Brown, George A., Kalamazoo, Mich. Snap-hook	June 28, 1870
101,091	Brown, G. C., Atlanta, Ga. Churn	Mar. 22, 1870
	Brown, George E. (*See* Farrar, John N., assignor.)	
	Brown, George H. (*See* Keane, John, assignor.)	
99,296	Brown, George W., Galesburg, Ill. Seed-planter	Feb. 1, 1870
103,292	Same..... New York, N. Y. Hoisting-apparatus	May 24, 1870
	Brown, Henry, and Garrettson Smith. (*See* Smith & Brown, assignors.) (Two cases.)	
107,656	Brown, Henry A., and Ethan B. Keith, Galesburgh, Mich. Coupling-jack	Sept. 27, 1870
106,541	Brown, Hiram C., Barkhamsted, Conn. Scythe	Aug. 23, 1870
102,218	Brown, Homer, Hamilton, Ill. Oil-stone holder	April 26, 1870
102,065	Brown, Isaac W., Jefferson City, Mo. Globe-valve	April 19, 1870
	Brown, Jacob H., and John F. Cory. (*See* Cory & Brown.)	
108,502	Brown, James B., Danbury, Conn. Hat-pouncing machine	Oct. 25, 1870
	Brown, James B. (*See* Hutchinson, Charles B., assignor.) (Two cases.) (Reissue.)	
110,005	Brown, J. Hamilton, assignor to self and Charles E. Ball, New York, N. Y. Gas-lamp	Dec. 13, 1870
109,379	Brown, James M., Lynn, Mass. Softening sheep and other skins	Nov. 22, 1870
107,438	Brown, James R., Cambridgeport, Mass. Bolt-cutter	Sept. 20, 1870
108,321	Same..... Box-scraper. (Antedated Oct. 1, 1870)	Oct. 18, 1870
108,874	Brown, James T., and Isaac Hird, Cincinnati, Ohio. Automatic furniture-lock	Nov. 1, 1870
103,422	Brown, Jesse Bailey, Nashville, Tenn. Printing-press	May 24, 1870
105,166	Brown, John C., Washington, D. C. Lathe for turning wood	July 12, 1870
108,440	Brown, John L., Connellsville, Pa. Blind for harness-bridles	Oct. 18, 1870
100,594	Brown, John S., Schenectady, N. Y. Adjustable-windlass	Mar. 8, 1870
106,655	Same..... Seabrook, N. H. Saw-mill dog	Aug. 23, 1870
103,423	Brown, Joseph R., New Haven, Conn. Pipe-coupling	May 24, 1870
104,551	Brown, J. Warren, Washington, D. C. Combined wood and concrete pavement	June 21, 1870
107,219	Brown, Lewis V., Salisbury, N. C. Music-stand	Sept. 13, 1870
100,010	Brown, Lorenzo, Odessa, N. Y. Seat-fastener	Feb. 22, 1870
102,066	Brown, Lorenzo W., Cleveland, Ohio. Hot-air furnace	April 19, 1870
	Brown, Lorenzo W., and Frank M. Campbell. (*See* Campbell & Brown.)	
	Brown, M. C. (*See* Knight, Judson, assignor.)	
	Brown, Mary S. (*See* Lapham, Levi S., assignor.)	
108,322	Brown, Morgan W., New York, N. Y. Box or case to contain bacon, hams, sides, &c	Oct. 18, 1870
100,366	Brown, Orrin Lee, Boston, Mass. Type distributing machine	Mar. 1, 1870
	Brown, Philo. (*See* Hendrick, Joseph E., assignor.)	
	Brown, Richard H., *et al.* (*See* Gale, L. D., assignor.) (Two cases.) (Reissues.)	
	Same..... (*See* Rand, Alonzo C., assignor.)	
108,323	Brown, Robert, Detroit, Mich. Elastic-shafting	Oct. 18, 1870
110,429	Brown, Robert, Columbus, Miss. Churn-dasher	Dec. 27, 1870
	Brown, Robert, *et al.* (*See* Batterby, William A., assignor.)	
	Brown, Robert H., *et al.* (*See* Abel, William H., assignor) ..... (Two cases.)	
108,754	Brown, Royal F., Chicago, Ill. Hot-air furnace	Nov. 1, 1870
104,260	Brown, Russell W., Providence, R. I. Needle setter and threader	June 14, 1870
101,425	Brown, Silas H., Troy, N. Y. Stop-valve	April 5, 1870
	Brown, Tallmadge E. (*See* Cowing, Turner, assignor.)	
102,762	Brown, Thomas H., Chicago, Ill. Buck-board spring	May 10, 1870
101,426	Brown, Thomas S., Poughkeepsie, N. Y. Flask-guide	April 5, 1870
	Brown, Thomas S., and John P. Adriance. (*See* Adriance & Brown.)	
105,543	Brown, Thomas W., assignor to Charles Parker, Boston, Mass. Coffee-mill	July 19, 1870
4,130	Same..... Coffee-mill ..... (Reissue)	Sept. 27, 1870
107,430	Brown, Walter, Boston, Mass. Seat for row-boats	Sept. 20, 1870
98,551	Brown, William, Thomaston, Conn. Razor-honing machine	Jan. 4, 1870
100,115	Same..... Hoboken, N. J. Tube-stopper	Feb. 22, 1870
102,367	Same..... Variable cut-off valve-gear and valve	April 26, 1870
105,026	Same..... Steam-packing	July 5, 1870
106,992	Brown, William and David, England. Rolling-mill	Sept. 6, 1870
109,866	Brown, William, England. Friction-roller	Dec. 6, 1870

Alphabetical list of patentees for the year 1870—Continued.

No.	Name, residence, and invention or discovery.	Date.
107,440	Brown, William, assignor to self and Samuel Noss, Duncannon, Pa. Street-indicator for city cars	Sept. 20, 1870
100,253	Brown, William A., Philadelphia, Pa. Washing-machine	Mar. 1, 1870
100,971	Brown, William G., Monmouth, Me. Footstool for churches, &c	Mar. 22, 1870
103,763	Brown, William H., New York, N. Y. Hoisting-apparatus	May 10, 1870
108,993	Brown, William H., Bangor, Me. Pulley-mechanism	Sept. 6, 1870
	Brown, William H., *et al.* (*See* Bradshaw, Brown & Whitehead.)	
4,058	Browne, A. W., assignor to Abraham Burtis, William D. Ludlow, and Mary A. Van Alen, Brooklyn, N. Y. Lamp-burner (Reissue)	July 5, 1870
108,324	Browne, Charles A. and Isaac S., North Adams, Mass. Electric blasting-fuse	Oct. 18, 1870
103,714	Browne, Hamilton, Des Moines, Iowa. Clothes-line holder	May 31, 1870
99,532	Browne, John David, Madisonville, Ohio. School-desk	Feb. 15, 1870
106,315	Same. Hinge	Aug. 16, 1870
	Browne, J. Marcellus. (*See* Snodgrass, William, assignor.)	
103,424	Browne, William Livingston, Shortsville, N. Y. Clothes-drier	May 24, 1870
103,293	Brownell, Asa C., Brooklyn, N. Y. Combination bath-tub	May 24, 1870
105,773	Brownell, Clark, Troy, N. Y. Platform for stoves	July 26, 1870
	Brownell, Emerson P., and John F. C. Rider. (*See* Rider & Brownell.)	
102,911	Browning, Henry, New York, N. Y. Composition for varnish, &c	May 10, 1870
107,865	Browning, Joseph, Philadelphia, Pa. Reed-setting machine	Oct. 4, 1870
	Browning, Thomas, and Robert Milburn. (*See* Milburn & Browning.)	
100,484	Brownson, James M., Brooklyn, N. Y. Printing-press	Mar. 8, 1870
	Brownson, Walter G., *et al.* (*See* Putt Daniel W., assignor.)	
106,029	Broy, Daniel, Quincy, Ill. Washing-machine	Aug. 2, 1870
	Bruce, Cosmore G. (*See* Hogel, Hascal A., assignor) (Two cases.)	
	Bruce, David Wolfe. (*See* Herriet, Julius, assignor) (Two cases.) (Design.)	
	Bruce, James H. (*See* Schott, Charles, assignor.)	
4,302	Bruce, Robert, assignor to David Wolfe Bruce, Brooklyn, N. Y. Type. (Design)	Oct. 11, 1870
98,918	Bruce, S. W., Lagnardo, Tenn. Churn	Jan. 18, 1870
4,303	Bruce, Wallace, assignor to David Wolfe Bruce, Brooklyn, N. Y. Type. (Design)	Oct. 11, 1870
108,318	Brücker, Ernst, Old Tappan, N. J. Table	Aug. 16, 1870
108,236	Brueck, Otto, New York, N. Y. Spring-fan	Oct. 11, 1870
108,081	Same. Fan	Oct. 25, 1870
	Brumback, D. G. (*See* Jones, William H., assignor.)	
	Brumfiel, Alonzo, and Henry C. McIlwain. (*See* McIlwain & Brumfiel.)	
4,301	Brummel, Albert, Indianapolis, Ind. Advertising-desk (Design)	Oct. 11, 1870
100,254	Brundage, Henry C., Buffalo, N. Y. Iron bridge	Mar. 1, 1870
100,851	Brundage, N. L., and B. Downing, Pittston, Pa. Funnel can-filler	Mar. 15, 1870
100,720	Bruner, Martin, jr., Fremont, Ohio. Cultivator	Mar. 15, 1870
106,994	Brunner, John D., and Edwin R. J. Uberroth, Doylestown, Pa. Grain-separator	Sept. 6, 1870
109,340	Brunon, Barthelemy, France. Manufacture of wrought metal wheels	Nov. 22, 1870
104,418	Brunson, Sterne, Benton Harbor, Mich. Tree-protector	June 21, 1870
	Brunswick, Solomon. (*See* Huber, Joseph, assignor.)	
108,483	Brunton, John, England. Working and locking railway switch and signals	May 3, 1870
	Brush, George A. (*See* Salisbury, Elmore J., assignor.)	
109,381	Brush, Joshua N., Eyota, Minn. Butter-worker	Nov. 22, 1870
102,087	Bruso, Charles, Worcester, Mass. Box-hook	April 17, 1870
107,160	Bruso, Frederick, Buffalo, N. Y. Die for heading bolts	Sept. 6, 1870
100,505	Bryan, James, New York, N. Y. Pump	Mar. 8, 1870
108,441	Bryan, Norman, assignor to self and Wilson Sawyer, Thomaston, Ga. Hub for carriages	Oct. 18, 1870
108,442	Same. Attachment to mills	Oct. 18, 1870
107,441	Bryan, Norman, Thomaston, Ga. Solar camera	Sept. 20, 1870
109,109	Bryan, Parish G., Louisville, Ky. Transposing-scale for teaching music	Nov. 8, 1870
106,985	Bryan, Thomas Alfred, Baltimore, Md. Flood-bridge	Sept. 6, 1870
106,656	Bryan, William W., Schaghticoke, N. Y. Grain-fork	Aug. 23, 1870
101,092	Bryant, Abner H., Chicago, Ill. Egg-carrier	Mar. 22, 1870
101,093	Same. same	Mar. 22, 1870
104,261	Same. same	June 14, 1870
3,971	Bryant, James S., Hartford, Conn. Blotting-pad (Design)	April 12, 1870
98,738	Bryant, Mertonn C., deceased, by Caroline Bryant, administratrix, assignor to William J. Towne, Newtonville, Mass. Circular loom	Jan. 11, 1870
104,824	Bryant, S. R., Waterford, Pa. Hollow metallic rim or felly	June 28, 1870
102,484	Bryant, William M., Alexandria, Va. Preparing the pith of cornstalks for use in the arts	May 3, 1870
3,855	Bryce, John, Pittsburgh, Pa. Ornamenting glassware (Design)	Feb. 22, 1870
	Same. (*See* McCord, John, assignor.)	
98,552	Bryson, James D., and William R. Dunlap, Newcastle, Pa. Water-wheel	Jan. 4, 1870
99,833	Bryson, Robert, Schenectady, N. Y. Hay-tedder	Feb. 15, 1870
	Same. Machine for husking corn (Extension)	Dec. 7, 1870
108,563	Buchanan, Alexander F., East Newark, N. J. Oil-cloth-printing machinery	Oct. 25, 1870
110,197	Buchanan, David, Philadelphia, Pa. Pew-shelf	Dec. 20, 1870
104,703	Buchanan, George, Washington, Pa. Combined hearth-grate and fender	June 28, 1870
109,803	Buchanan, James, Detroit, Mich. Apparatus for evaporating brine and other liquids	Dec. 6, 1870
107,866	Buchanan, Joseph R., Louisville, Ky. Manufacture of salt	Oct. 4, 1870
99,934	Buchanan, M. H., Washington County, Va. Bridle	Feb. 15, 1870
100,562	Buchberger, Leopoldin, Chicago, Ill. Arm-support for keyed instruments. (Antedated Nov. 12, 1870)	Nov. 29, 1870

Alphabetical list of patentees for the year 1870—Continued.

No.	Name, residence, and invention or discovery.	Date.
102,764	Buckhols, Gustav Adolph, England. Hulling-machine	May 10, 1870
106,102	Same. Manufacture of semolino and flour	Oct. 11, 1870
106,103	Same. same	Oct. 11, 1870
105,418	Buck, Addison, Hebron, Ind. Hay-loader	July 19, 1870
108,622	Buck, Isaiah D., Conshohocken, Pa. Piston	Oct. 25, 1870
100,495	Buck, S. B., Elyria, Ohio. Corn-planter	Mar. 8, 1870
105,546	Same. Carriage-wheel	July 19, 1870
	Buck, Solon K., and Justus D. Luther. (*See* Luther & Buck.)	
101,820	Buckley, Chauncey, assignor to Charles Parker, Meriden, Conn. Spectacle-frame	April 12, 1870
98,739	Buckley, Edward M., Amenia Union, N. Y. Water-wheel	Jan. 11, 1870
98,460	Buckley, Thomas, New York, N. Y. Chandelier	Jan. 4, 1870
107,442	Buckman, Edward and Alexander, Brooklyn, N. Y. Toy-gun	Sept. 20, 1870
108,104	Same. Mouse-trap. (Antedated Sept. 30, 1870)	Oct. 11, 1870
	Buckman, George A., and Samuel J. Moore. (*See* Moore & Buckman.)	
	Buckman, George W. (*See* Marr, Alfred, assignor.)	
100,496	Buckman, Ira, jr., Williamsburgh, N. Y. Fruit-jar	Mar. 8, 1870
	Buckman, John H. (*See* Reinshagen, Peter W., assignor) (Two cases.)	
	Buckman, John H., *et al.* (*See* Reinshagen, Peter W., assignor.)	
	Same. (*See* Wiehl, Daniel, assignor.)	
99,397	Buckwalter, Cyrus, Davenport, Iowa. Harvester-rake	Feb. 1, 1870
108,875	Buckwalter, Henry L., Limerick Township, Pa. Try-square and level	Nov. 1, 1870
	Buckwalter, H. L. and J. A. (*See* Smith & Brower, assignors.) (Two cases.) (Designs.)	
102,012	Budd, James Palmer, Wales. Manufacture of iron and steel	May 10, 1870
108,755	Budd, John C., New York, N. Y. Muff, collar, and cuff box	Nov. 1, 1870
102,088	Buel, Ebenezer, Silver Creek, N. Y. Capstan	April 19, 1870
	Buell, Charles A., administrator. (*See* Barton, Jason) (Extension.)	
	Buell, Ira B. (*See* Randall, Francis W., assignor.)	
	Buell, Leander. (*See* Austin, Phineas E., assignor.)	
99,755	Buell, W. H., Laughlintown, Pa. Folding-bedstead	Feb. 15, 1870
104,552	Buell, William H., Union City, Mich. Clothes-drier	June 21, 1870
	Buerk, Jacob E. (*See* Burk, John, assignor.) (Reissue.)	
	Buffalo & Niagara Scale Works Company. (*See* Usher, John H., assignor.)	
101,706	Buffington, M. C., La Harpe, Ill. Corn-plow	April 12, 1870
104,419	Buffington, Nathaniel E., assignor to self, John Rich, and Lysander Flagg, North Providence, R. I. Clothes-line holder and stretcher	June 21, 1870
	Buffum, Charles. (*See* Johnson, Joseph B., assignor) (Reissue.)	
	Buffum, David, *et al.* (*See* Wells, William, assignor.)	
3,975	Buffum, Montraville, Leominster, Mass. Watch-chain (Design)	April 19, 1870
	Bujac, Matthew Julius. (See Bennett, Silvester, assignor.)	
100,721	Bulger, James, Port Sherman, Mich. Faucet	Mar. 15, 1870
103,973	Bulgin, William G., Vienna, N. J. Chair-seat	June 7, 1870
	Bulkley, Frederick C. (*See* Cooke, Sydney, assignor.)	
105,774	Bulkley, Henry W., New York, N. Y. Machine for flocking wall-paper, show-cards, &c	July 26, 1870
106,317	Bull, Buckland W., New York, N. Y. Device for leveling billiard and other tables, &c	Aug. 16, 1870
102,089	Bull, Jeremiah N., Springfield, Mass. Spring bed-bottom. (Antedated March 31, 1870)	April 19, 1870
109,172	Bull, Ole, New York, N. Y. Piano	Nov. 15, 1870
4,468	Same. same (Design)	Nov. 15, 1870
98,845	Bulla, Milton V., and J. Benjamin Birdsell, South Bend, Ind. Washing-machine	Jan. 18, 1870
100,382	Bulla, Milton V., South Bend, Ind. Clothes-holder for clothes-lines. (Antedated Nov. 12, 1870)	Nov. 22, 1870
99,398	Bullard, John, Hyde Park, Vt. Miter-box	Feb. 1, 1870
110,006	Same. North Hyde Park, Vt. Adjustable shackle for carriage-springs	Dec. 13, 1870
106,253	Bullard, Ransom, and George E. Mills, Litchfield, Mich. Pruning-shears	Aug. 9, 1870
109,492	Bullivant, Josiah, assignor to Samuel W. Jamison and William J. Dudley, Newark, N. J. Fastening for blocks of lasts	Nov. 22, 1870
108,443	Bullivant, Thomas, England. Window	Oct. 18, 1870
107,443	Bullock, Edmund L., Hartford, Conn. Washing-machine	Sept. 20, 1870
	Bullock, Milan C. (*See* Case, George F., assignor.)	
100,367	Bullock, William, deceased, by Richard Vose, administrator, Philadelphia, Pa. Rotary paper-cutting machine. (Antedated Feb. 23, 1870)	Mar. 1, 1870
100,368	Same. Machine for planing and squaring the edges of segmental stereotype plates. (Antedated Feb. 28, 1870)	Mar. 1, 1870
98,919	Bullough, John, South Bend, Ind. Power-loom	Jan. 18, 1870
100,852	Bundy, E. C., Oneonta, N. Y. Portable beer-cooler	Mar. 15, 1870
109,174	Bundy, Lewis, Moore's Forks, N. Y. Plane	Nov. 15, 1870
108,444	Bunn, William T., Humboldt, Tenn. Plow	Oct. 18, 1870
102,765	Bunnell, Isaac S., Carbondale, Pa. Culinary-boiler	May 10, 1870
108,876	Bunnell, John N., Unionville, Conn. Mouse-trap	Nov. 1, 1870
109,867	Same. Ice ax and pick. (Antedated Nov. 25, 1870)	Dec. 6, 1870
	Buntan, William. (*See* Jope, George W., assignor.)	
	Bunton, William, and George W. Jope. (*See* Jope & Bunton.)	
99,148	Buoy, Dennis, Danville, Pa. Weighing-scale	Jan. 25, 1870
103,011	Burbank, Abner, assignor to self, Henry S. Joy, and George D. Williams, Rochester, N. Y. Lamp	May 17, 1870
101,350	Burcham, Jackson G., Noblesville, Ind. Harrow	Mar. 29, 1870

Alphabetical list of patentees for the year 1870—Continued.

No.	Name, residence, and invention or discovery.	Date.
106,542	Burchfield, John G., and Seth W. Brock, assignors to Seth W. Brock, Niantic, Ill. Combination of shaft and pole	Aug. 23, 1870
107,735	Burdett, Riley, Chicago, Ill. Reed-board for organs	Sept. 27, 1870
100,369	Burdick, A. R., Racine, Wis. Stove-pipe damper and ventilator	Mar. 1, 1870
99,835	Burdick, Hiram, Monroe, Wis. Grain-separator	Feb. 15, 1870
100,972	Burdick, James M., Ilion, N. Y. Hay-tedder	Mar. 22, 1870
105,775	Burdick, Welcome J., assignor to self and Joel F. Mourhess, Alfred, N. Y. Harrow	July 26, 1870
108,105	Burden, James C., Ladoga, Ind. Stove-fastener	Oct. 11, 1870
108,002	Burdin, Luther E., Paris, Ky. Subsoil pulverising attachment for plows	Oct. 4, 1870
99,399	Burditt, William and George H., Boston, Mass. Fire-escape	Feb. 1, 1870
105,419	Burdon, David P., New York, N. Y. Leather-scouring machine	July 19, 1870
	Burdon, David P., and Hector C. Havemeyer. (*See* Havemeyer & Burdon.)	
4,024	Burdon, William, Brooklyn, N. Y. Steam-radiator (Design)	May 17, 1870
	Burdwin, John W., and George S. Tillinghast. (*See* Tillinghast & Burdwin.)	
99,836	Burgess, Oscar S., sr., Battle Creek, Mich. Washing-machine	Feb. 15, 1870
107,756	Burgess, Charles, Rochester, N. Y. Cement walk, pavement, and road	Sept. 27, 1870
109,868	Burgess, George G., Grafton, Ohio. Combined rule, level, square, and dividers. (Antedated Nov. 26, 1870)	Dec. 6, 1870
102,766	Burgess, Hubert, Oakland, Cal. Pencil-sharpener	May 10, 1870
107,444	Burgess, John A., assignor to self and Joshua Standiah, Plymouth, Mass. Hoisting-grapple	Sept. 20, 1870
103,294	Burgess, Josiah, Zanesville, Ohio. Sad-iron heater	May 24, 1870
104,693	Burgess, Thomas J., Rondout, N. Y. Corn-husking machine	June 28, 1870
101,242	Burgess, Warren S., and George A. Lenzi, Morristown, Pa. Apparatus for cutting photographic prints	Mar. 29, 1870
105,037	Burget, David S., Martinsburgh Borough, Pa. Beehive	July 5, 1870
103,295	Burghardt, Frederick, Curtisville, Mass. Adjustable coupling for journals, axles, &c	May 24, 1870
105,420	Burghardt, William Henry, Curtisville, Mass. Weather-strip	July 19, 1870
99,837	Burgin, Thomas, Rutland, Vt. Curtain-fixture	Feb. 15, 1870
106,319	Burhams, Denslow, Burlington, Iowa. Maching for making match-splints	Aug. 16, 1870
	Burk, Charles E., and Thomas Robin. (*See* Robin & Burk.)	
3,869	Bürk, John, assignor to Jacob Buerk, Boston, Mass. Watchman's time-detector. (Reissue)	Mar. 8, 1870
106,030	Burke, Andrew, New York, N. Y. Boot and shoe	Aug. 2, 1870
104,208	Burke, Andrew J., assignor to self and Joseph B. Merrow, Manafield, Conn. Grinding-attachment for carding-machines	June 14, 1870
	Burke, Edmund. (*See* Kenerson, James M., assignor.)	
107,867	Burke, John K., Rochester, N. Y. Casting valve chambers and seats	Oct. 4, 1870
98,353	Burke, John M., Dansville, N. Y. Bag-holder	Jan. 4, 1870
	Burke, Martin K., and John D. Ross. (*See* Ross & Burke.)	
99,149	Burke, William, Brooklyn, N. Y. Die-press	Jan. 25, 1870
4,156	Burke, William A., assignor to proprietors of the Tremont Mill, Lowell, Mass. Trade-mark (Design)	June 21, 1870
101,707	Burkert, John Joseph, New York, N. Y. Tin can	April 12, 1870
103,426	Burket, George, and Samuel Lantz, Ada, Ohio. Dumping-wagon	May 24, 1870
99,838	Burkes, John H., and George, Bluffton, Ohio. Head-block for saw-mills	Feb. 15, 1870
	Burkhardt, H., *et al.* (*See* Eberweiser, John, assignor) (Reissue.)	
	Burleigh, Charles, Georgetown, Colorado Ter. Gearing for feed-rollers of planing-machines (Extension)	Feb. 10, 1870
	Burleigh, Charles, and Charles H. Brown. (*See* Brown & Burleigh). (Extension.)	
102,767	Burleigh, Micajah C., Somerworth, N. H. Heating-stove	May 10, 1870
105,167	Same.....Damper	July 12, 1870
4,286	Same.....Great Falls, N. H. Stove door and panel (Design)	July 19, 1870
106,116	Same.....Somerworth, N. H. Mechanism for actuating the picker-staff in looms	Aug. 9, 1870
106,543	Same.....Let-off mechanism for looms	Aug. 23, 1870
	Burlew, Abram, and George Heliker. (*See* Heliker & Burlew.)	
99,150	Burnap, Nelson C., Arguaville, N. Y. Milk-pan	Jan. 25, 1870
103,558	Same.....Dinner-pail and lantern	May 31, 1870
107,868	Burnell, Levi, Milwaukee, Wis. Hoisting-apparatus	Oct. 4, 1870
107,869	Same.....Nursery-footstool	Oct. 4, 1870
109,110	Same.....Drawer for cabinet furniture	Nov. 8, 1870
	Burnett, George G., *et al.* (*See* Samuels, John L., assignor) (Reissue.)	
104,694	Burnett, W. C., Burns' Mills, Pa. Lime-spreader	June 28, 1870
	Burnham, George E., *et al.* (*See* Powers, Thomas H., assignor.)	
106,657	Burham, Moses, 2d., Wenham, Mass. Heel-burnisher	Aug. 23, 1870
100,497	Burns, Elizabeth A., Meadow Lake, Cal. Desulphurising ore	Mar. 8, 1870
99,151	Burns, James William, Medway, Ohio. Curtain and map fixture	Jan. 25, 1870
103,296	Burns, Leander, Port Chester, N. Y. Die for forming carriage-steps	May 24, 1870
108,445	Burns, Miles S., Memphis, Tenn. Cotton-seed planter	Oct. 18, 1870
	Burns, P. (*See* Seibold, Severin, assignor) (Two cases.)	
103,004	Burns, Peter, Syracuse, N. Y. Seat for harness-saddles	May 10, 1870
99,839	Burns, W. H., Unionville, Mo. Boiler, furnace, and flue	Feb. 15, 1870
99,152	Burns, W. H., assignor to Jonathan Luther, Grafton, Mass. Roller jaw-temple for looms	Feb. 1, 1870
99,287	Same.....Shuttle for looms	Feb. 1, 1870
109,583	Same.....Roller-temple for looms	Nov. 29, 1870
	Burpee, Samuel J., and William M. Phelps. (*See* Phelps & Burpee.)	
100,973	Burr, Bradley, Batavia, Ill. Carriage-wheel hub	Mar. 22, 1870

Alphabetical list of patentees for the year 1870—Continued.

No.	Name, residence, and invention or discovery.	Date.
105,421	Burr, Horatio A., Manafield, Ohio. Miter-box	July 19, 1870
108,446	Burr, Joseph A., assignor to Burr & Co., Brooklyn, N. Y. Hoisting-block	Oct. 18, 1870
4,215	Same.....same (Reissue)	Dec. 27, 1870
	Burr, S. M., *et al.* (*See* Bond, Thomas, assignor.)	
106,776	Burr, Sanford S., Boston, Mass. Wardrobe-bedstead	Aug. 30, 1870
	Burr, William H. (*See* Knowlton, John L., assignor.)	
	Burrell, Edward. (*See* Berry, Leander, assignor.) (Two cases.)	
100,370	Burress, Peter, Braidwood, Ill. Spring wagon-seat	Mar. 1, 1870
109,493	Burress, Peter, and Conrad Cline, Braidwood, Ill. Wrench	Nov. 22, 1870
105,038	Burridge, Thomas H., St. Louis, Mo. Apparatus for treating oil	July 5, 1870
103,974	Burridge, William H., assignor to A. L. Kingman, C. G. Dodge, and H. C. Hartwell, Cleveland, Ohio. Compound for preventing and removing incrustation in steam-boilers	June 7, 1870
101,094	Burrill, Edgar D., Providence, R. I. Medical compound	Mar. 22, 1870
99,840	Burroughs, George A., Providence, R. I. Teasel-grading machine. (Antedated Feb. 10, 1870)	Feb. 15, 1870
	Burroughs, Caleb C., *et al.* (*See* Whitmore, Seth H., assignor) (Two cases.)	
102,368	Burrows, Edmund F., Mystic River, Conn. Shuttle for loom	April 26, 1870
108,965	Burrows, John E., Newark, N. J. Apparatus for cooling the vapors of oxide of zinc	Nov. 8, 1870
107,594	Burson, George, East Palestine, Ohio. Hand corn-planter	Sept. 20, 1870
106,595	Same.....same	Sept. 20, 1870
108,003	Burson, W. W., and John Nelson, Rockford, Ill. Knitting-machine. (Antedated Sept. 30, 1870)	Oct. 4, 1870
103,297	Burt, Calvin C., assignor to Gardner Herrick, Jackson, Mich. Gas-heater	May 24, 1870
107,445	Burt, George E., and Edwin A. Hildreth, Harvard, Mass. Broom-corn seed-stripper	Sept. 20, 1870
108,564	Burt, George E., Harvard, Mass. Link for endless-chain horse powers	Oct. 25, 1870
	Burt, Grinnell, *et al.* (*See* Green, Melvin R., assignor.)	
	Burt, Leonard H. (*See* Bassett, Marshall L., assignor.)	
101,223	Burtenshaw, A., Hope Furnace, Ohio. Hot-blast furnace	Mar. 29, 1870
	Burtis, Abraham, *et al.* (*See* Browne, A. W., assignor) (Reissue.)	
106,544	Burtnett, William B., New York, N. Y. Paint-brush	Aug. 23, 1870
106,545	Same.....Ferrule for paint-brushes.	
99,400	Burton, A. G., Rochester, N. Y. Lock-spindle for safes	Feb. 1, 1870
103,841	Burton, Stephen J., assignor to American Steam Fire-Proof Safe Company, Charlestown, Mass. Bolting-device for safes	June 7, 1870
104,928	Burton, Watkins Leigh, Richmond, Va. Circuit-charger	July 5, 1870
	Burton, William. (*See* Caldwell, Samuel N., assignor.)	
100,011	Bury, William A., Crosse Isle, Mich. Reclining-chair	Feb. 22, 1870
99,632	Buschmann, Leopold F., New York, N. Y. Railway-car coupling	Feb. 8, 1870
	Bush, Alonzo M., and Joseph B. Wakeman. (*See* Wakeman & Bush.)	
108,877	Bush, Arthur W., St. Cloud, Minn. Watch-makers' vise	Nov. 1, 1870
103,427	Bush, Jacob, Darien, Wis. Broom-corn seed-planter	May 24, 1870
106,117	Bush, James H., Bengal, Mich. Milk-safe	Aug. 9, 1870
102,768	Bush, Richard, Brooklyn, N. Y. Rotary-pump	May 10, 1870
107,332	Bush, Talmon C., New Haven, Conn. Button-hole cutter	Sept. 13, 1870
99,841	Bushfield, S. B., Parkersburgh, West Va. Slate-frame	Feb. 15, 1870
	Bushman, Eli, and John A. Walter. (*See* Walter & Bushman.)	
98,664	Bushnell, Corydon L., Jefferson, Ohio. Cane and whip combined	Jan. 11, 1870
109,297	Same.....Cherry Valley, Ohio. Combined cane and whip. (Antedated Nov. 5, 1870)	Nov. 15, 1870
4,103	Bushnell, Edwin L., Poughkeepsie, N. Y. Spring-mattress	Aug. 23, 1870
108,447	Same.....Bed-bottom	Oct. 18, 1870
108,325	Buss, Charles, Marlborough, N. H. Lathe-dog	Oct. 18, 1870
106,118	Bussell, Erastus T., assignor through mesne assignments to self, John N. Greene, and J. M. Tilford, Indianapolis, Ind. Cultivator and harrow	Aug. 9, 1870
4,202	Bussell, Erastus T., assignor to the National Spring Company, Indianapolis, Ind. Combined India-rubber and steel spring (Reissue)	Dec. 13, 1870
108,448	Bussey, A. P., Westernville, N. Y. Milk and liquid cooler	Oct. 18, 1870
99,529	Bussey, Esek, Troy, N. Y. Water-reservoir for cooking-stoves	Feb. 8, 1870
3,815	Bussey, Esek, assignor to self and Charles A. McLeod, Troy, N. Y. Cooking-stove (Reissue)	Feb. 1, 1870
103,559	Butch, Leonard C., Lancaster, Ohio. Bell for clocks	May 31, 1870
	Butcher, Robert H. (*See* Field, George W., assignor.)	
	Butler, Cephas, and David Pitcairn Wright. (*See* Wright & Butler.)	
102,090	Butler, Charles E., Hudson, N. Y. Adjustable hollow drill	April 19, 1870
99,756	Butler, Ebenezer, Salina, N. Y. Slate-frame	Feb. 15, 1870
	Butler, E. Frederick, and Charles W. Holbrook. (*See* Holbrook & Butler.)	
	Butler, Francis C., *et al.* (*See* Ward, Eugene, assignor.)	
106,777	Butler, Henry L., and Thomas A. Christie, said Christie assignor to said Butler, Pittsburgh, Pa. Steam-engine	Aug. 30, 1870
102,769	Butler, James C., Albany, N. Y. Sofa-bedstead	May 10, 1870
105,596	Butler, James D., Lancaster, Mass. Let-off tension-device for spools of braiding-machines. (Antedated February 26, 1870)	Mar. 8, 1870
100,722	Butler, James H., Hampden, Me. Machine for sawing lath. (Antedated March 1, 1870)	Mar. 15, 1870
	Butler, James J. (*See* Waters, Gardner, assignor.)	
101,224	Butler, John, New York, N. Y. Coupling for connecting the inlet-pipe to the retort of a gas-machine	Mar. 29, 1870
104,109	Butler, John G., Fort Leavenworth, Kans. Projectile for ordnance	June 14, 1870
	Butler, John Wilson. (*See* Williams, John De Witt, assignor.)	

Alphabetical list of patentees for the year 1870—Continued.

No.	Name, residence, and invention or discovery.	Date.
	Butler, Joseph C., *et al.* (*See* Danks, Samuel, assignor.)	
107,004	Butler, Manlove, Vernon, Ind. Plow	Oct. 4, 1870
104,263	Butler, William H., assignor to Valentine and Butler Safe and Lock Company, New York, N. Y. Safe-deposit box	June 14, 1870
106,463	Butler, William M., Louisville, Ky. Dentists' chair	Aug. 16, 1870
	Butterfield, E. L., trustee. (*See* Diebold, Charles, assignor.)	
108,326	Butterfield, John C., and James Hay, Chicago, Ill. Trip-hammer	Oct. 18, 1870
99,288	Butterfield, M. K., Eddyville, N. Y. Fence-post	Feb. 1, 1870
104,264	Butterfield, Spicer R., assignor to self and Sylvester J. Taylor, Rome, N. Y. Bolt-holder	June 14, 1870
100,408	Butterfield, William, assignor to self and Thomas Ellwood Roberts, Boston, Mass. Crimping-machine	Mar. 8, 1870
104,263	Butterfield, William, assignor to self and William H. Worden, Madison, Wis. Low-water indicator	June 14, 1870
101,578	Butterworth, William H., Trenton, N. J. Thrashing-machine	April 5, 1870
99,153	Buttles, C. A., Milwaukee, Wis. Steam-generating heater	Jan. 25, 1870
103,975	Buttles, Reuben P., Mansfield, Pa. Tool-holder	June 7, 1870
101,981	Buttles, Reuben P., and Salmon Sweet, Mansfield, Pa. Turning-chisel	April 19, 1870
103,012	Button, Alphonzo, Dunkirk, N. Y. Medicine-case	May 17, 1870
106,546	Same. Seeding-machine	Aug. 23, 1870
4,251	Button, Congers, Philadelphia, Pa. Stocking-fabric (Design)	July 19, 1870
	Same. (*See* Shaw, James, assignor.)	
	Button, John W., *et al.* (*See* Thomas, David W., assignor) (Design.)	
105,168	Buttrill, Lucy J., Jackson, Ga. Medical compound	July 12, 1870
	Butts, A. H., jr., *et al.* (*See* Frey, Franklin, assignor.)	
108,565	Butts, Albert M., Waterbury, Conn. Snow-plow	Oct. 25, 1870
	Butts, Isaac, *et al.* (*See* Fickett, Albert, assignor.)	
102,770	Buxton, Benjamin F., West Randolph, Vt. Wrench	May 10, 1870
106,320	Buxton, John E., Owatonna, Minn. Combined drill and seeding-machine	Aug. 16, 1870
	Buxton, Levi W., and John P. Greeley. (*See* Greeley & Buxton.) (Reissue.)	
103,715	Buys, Edward, New York, N. Y. Cooking-stove	May 31, 1870
101,379	Busby, John, Moorestown, N. J. Water-wheel	April 5, 1870
98,920	Bussell, John G., Lynn, Mass. Carriage-wheel	Jan. 18, 1870
108,327	Byard, David, Sharon, Pa. Rotary grate-bar. (Antedated October 4, 1870)	Oct. 18, 1870
110,198	Byrd, Isaiah and Turner, jr., Calvin Township, Mich. Vise	Dec. 20, 1870
110,430	Same. Saw-teeth	Dec. 27, 1870
	Byerly, Jacob. (*See* Fitshugh, Benjamin G., assignor.)	
100,974	Byland, John F., Walton, Ky. Corn-planting attachment for plows	Mar. 22, 1870
107,333	Byrd, Harvey L., Baltimore, Md. Awning and fan for horses' heads	Sept. 13, 1870
3,846	Byrne, George Joseph, New York, N. Y. Bottle (Design)	Feb. 15, 1870
3,847	Same. same (Design)	Feb. 15, 1870
3,848	Same. same (Design)	Feb. 15, 1870
	Byrne, George P., *et al.* (*See* Stephenson, Thompson, and Greaves, assignors.)	
100,860	Byrne, Thomas, New York, N. Y., and Diedrich Strunk, Lavaca County, Texas, assignors to selves and J. J. Schott. Insect-destroyer	Dec. 6, 1870
100,371	Cabell, S. G., Washington, D. C. Fluting-machine	Mar. 1, 1870
107,657	Same. same	Sept. 27, 1870
3,836	Cabell, Samuel G., assignor to Flora B. Cabell, Quincy, Ill. Crimping-machine. (Reissue)	Mar. 1, 1870
100,255	Cabell, S. G., and A. Q. Ross, Quincy, Ill. Hydrant	Mar. 1, 1870
	Cachal, Leonce, *et al.* (*See* Sauer & Cachal.)	
101,427	Cade, George, Long Branch, N. J. Lamp-wick feeder	April 5, 1870
99,154	Cady, B. F., Chittenango, N. Y. Implement for slitting and joining rags for carpets	Jan. 25, 1870
103,289	Cady, Ebenezer H., Grand Rapids, Mich. Barrel	May 24, 1870
102,914	Cady, Edson P., Trenton, Wis. Dropping-platform for harvesters	May 10, 1870
104,430	Cady, George W., Providence, R. I. Door-knob	June 21, 1870
	Cady, Henry W., and De Witt C. Clark. (*See* Clark & Cady.)	
105,636	Cahill, Mortimer, Kalamazoo, Mich. Spring bed-bottom. (Antedated July 14, 1870)	July 26, 1870
	Caillet, Ferdinand Louis Felix, and Jules César Houel. (*See* Houel & Caillet.)	
102,485	Cain, Cornelius H., Dayton, Ohio. Feed-cutter	May 3, 1870
99,401	Callahan, Edward A., Brooklyn, N. Y. Printing-telegraph	Feb. 1, 1870
3,810	Callahan, Edward A., assignor to the Gold and Stock Telegraph Company, New York, N. Y. Printing-telegraph (Reissue)	Jan. 25, 1870
107,636	Caldwell, Andrew, Lexington, Ky. Ageing spirits	Sept. 27, 1870
100,018	Caldwell, A. B., Syracuse, N. Y. Umbrella	Feb. 22, 1870
107,101	Caldwell, David B., assignor to self and John H. McGowan, Cincinnati, Ohio. Steam-engine	Sept. 6, 1870
102,915	Caldwell, James Marshall, and George Worthington, Burlington, N. J. Indelible writing fluid or ink	May 10, 1870
110,545	Caldwell, John W., Cincinnati, Ohio. Combined immersion and steam bath	Dec. 27, 1870
109,584	Caldwell, Major Robert W., Jackson, Ohio. Corn-dropper	Nov. 29, 1870
105,902	Caldwell, Samuel N., assignor to self and William Burton, Pilot Grove, Ind. Grading and ditching plow	Aug. 2, 1870
102,771	Caldwell, Walter, Bryan, Ohio. Fall-leaf table	May 10, 1870
110,199	Calef, Joseph W., assignor to self, Harvey King, and Augustus Peabody, Boston, Mass. Implement. (Antedated Dec. 10, 1870)	Dec. 20, 1870
	Calely, Edward, and John R. Rose. (*See* Rose & Calely.) (Three cases.) (Design.)	
99,842	Calhoun, N. W., Upper Tract, West Va. Washing-machine	Feb. 15, 1870

Alphabetical list of patentees for the year 1870—Continued.

No.	Name, residence, and invention or discovery.	Date.
	Calkins, Abbott C. (*See* Bowden, William, assignor.)	
98,846	Call, Horace, assignor to self and J. B. Rand, Concord, N. H. Apparatus for transmitting power by the medium of air	Jan. 18, 1870
98,554	Call, William R., and Thaddeus F. Griffin, Gloucester, Mass. Medical compound	Jan. 4, 1870
	Callaghan, James. (*See* Marsh, Thomas, assignor.)	
107,757	Callahan, Timothy O., Boston, Mass. Plane	Sept. 27, 1870
98,921	Callahan, W. P., and D. R. De Rush, Dayton, Ohio. Cotton-seed huller	Jan. 18, 1870
	Callaway, John E., and John F. Hanson. (*See* Hanson & Callaway.)	
108,328	Callender, Mills L., Brooklyn, N. Y. Superheater for gas-works, &c	Oct. 18, 1870
105,637	Calley, Benjamin F., Saugus, Mass. Design-die for ornamenting	July 26, 1870
100,597	Calliham, James, assignor to David M. Calliham, Baton Rouge, La. Ditching-machine	Mar. 8, 1870
104,929	Callow, John J., Cleveland, Ohio. Method of graining	July 5, 1870
106,547	Calnan, John B., assignor to self and Varanus P. Parkhurst, New Haven, Conn. Device for propelling canal-boats	Aug. 23, 1870
103,013	Calver, George W. H., Burlington, N. J. Revolving fire-arm	May 17, 1870
110,339	Calvert, Charles A., England. Fare-registering apparatus	Dec. 20, 1870
102,486	Cameron, Adam Scott, New York, N. Y. Direct-acting engine	May 3, 1870
	Cameron, J. C. (*See* Hull, Abraham C., assignor.)	
105,903	Cameron, Walter E., Taunton, Mass. Folding-chair	Aug. 2, 1870
4,269	Same. Arm-chair (Design)	Aug. 2, 1870
107,870	Same. Hose bridge	Oct. 4, 1870
104,421	Cammerer, David, Cincinnati, Ohio. Apparatus for agitating and cooling barrels and casks during the process of pitching	June 21, 1870
103,137	Camp, Charles L., and John H. Chappell, Brooklyn, N. Y. Milk-can	May 17, 1870
99,402	Camp, M. M., assignor to self, D. Goffe Phippa, and E. I. Foote, New Haven, Conn. Machine for forming sheet-metal tubing	Feb. 1, 1870
	Camp, Mortimer M. (*See* Phippa, D. Goffe, assignor.)	
103,976	Camp, Samuel R. P., New York, N. Y. Combined liquid gauge and hydrometer	June 7, 1870
103,977	Same. Computing spring-balance	June 7, 1870
	Camp, Warren W. (*See* Bonine, Lot, assignor.)	
	Campaigne, Arthur, *et al.* (*See* Smith, Greely & Campaigne.)	
99,530	Campbell, Alexander, assignor to Samuel S. Wilson, Charlestown, Mass. Puncturing and tubular stoppers for sealed cans	Feb. 8, 1870
110,546	Campbell, Alexander McDonald, assignor to self, Charles M. Bolon, and Frederick K. Day, Newark, N. J. Bridge	Dec. 27, 1870
108,566	Campbell, Alonzo C., New York, N. Y. Asphalt pavement	Oct. 25, 1870
100,598	Campbell, Andrew, Brooklyn, N. Y. Printing-press	Mar. 8, 1870
105,638	Same. Gauge for printing-press	July 26, 1870
105,640	Campbell, Benjamin F., and Charles Whittier, Boston, Mass. Steam-heater	July 26, 1870
	Campbell, Caleb C., and Peter Houseman. (*See* Houseman & Campbell.)	
	Campbell, Charles, *et al.* (*See* Allen, Edwin F., assignor.)	
	Campbell, Colin. (*See* Sheldon, Alexander J., assignor.)	
105,639	Campbell, Daniel, assignor to Henry Seymour & Company, Elizabeth, N. J. Sheep-shears	July 26, 1870
107,871	Campbell, Daniel, and William Saul, Elizabeth, N. J. Wrench	Oct. 4, 1870
110,431	Campbell, Duncan H., Scotland, and Erastus Woodward, Charlestown, Mass. Wire for making pegs for boots and shoes	Dec. 27, 1870
109,383	Campbell, Frank W., and Lorenzo W. Brown, Cleveland, Ohio. Tinner's fire-pot. (Antedated Nov. 9, 1870)	Nov. 22, 1870
100,975	Campbell, George, North Buffalo, N. Y. Forge	Mar. 22, 1870
105,301	Campbell, James, Rochester, N. Y. Water-wheel	July 12, 1870
3,836	Campbell, James, assignor to self and William Campbell, Harrison, Ohio. Corn-planter (Reissue)	Feb. 15, 1870
105,547	Campbell, James A., assignor to self, John W. Ribble, and P. Pharea, Rockingham County, Va. Fruit and alcohol still	July 19, 1870
100,256	Campbell, J. B., Cincinnati, Ohio. Spring bed-bottom	Mar. 1, 1870
103,843	Campbell, James C., New York, N. Y. Refrigerator	June 7, 1870
109,494	Campbell, James W., New York, N. Y. Gluing-hopper	Nov. 22, 1870
107,659	Campbell, John, and Addison Watson, London, Ohio. Flood-gate	Sept. 27, 1870
	Campbell, John J. (*See* Gould, Jacob H., assignor.)	
	Campbell, Joseph, and Seymour Raymond. (*See* Flansburg, John D., assignor.) (Design.)	
105,302	Campbell, Martin P., Barrington, N. Y. Saw-mill	July 12, 1870
	Campbell, Richard. (*See* Wilson, John C., assignor) (Design.)	
3,976	Campbell, Robert R., assignor to Lowell Manufacturing Company, Lowell, Mass. Carpet-pattern (Design)	April 19, 1870
4,081	Same. same (Design)	May 31, 1870
4,082	Same. same (Design)	May 31, 1870
4,083	Same. same (Design)	May 31, 1870
4,084	Same. same (Design)	May 31, 1870
4,324	Same. same (Design)	Sept. 6, 1870
4,325	Same. same (Design)	Sept. 6, 1870
4,326	Same. same (Design)	Sept. 6, 1870
4,327	Same. same (Design)	Sept. 6, 1870
4,328	Same. same (Design)	Sept. 6, 1870
4,329	Same. same (Design)	Sept. 6, 1870
4,330	Same. same (Design)	Sept. 6, 1870
4,331	Same. same (Design)	Sept. 6, 1870
4,332	Same. same (Design)	Sept. 6, 1870
4,333	Same. same (Design)	Sept. 6, 1870

Alphabetical list of patentees for the year 1870—Continued.

No.	Name, residence, and invention or discovery.	Date.
4,394	Campbell, Robert R., assignor to Lowell Manufacturing Company, Lowell, Mass. Carpet-pattern (Design)	Oct. 11, 1870
4,395	Same same (Design)	Oct. 11, 1870
4,396	Same same (Design)	Oct. 11, 1870
4,397	Same same (Design)	Oct. 11, 1870
99,843	Campbell, Samuel, and Duncan McFarlane, Palmer, Mass. Warping-machine	Feb. 15, 1870
106,119	Campbell, Solon O., Centretown, Mo. Railway-car coupling	Aug. 9, 1870
98,922	Campbell, Thomas A., New York, N. Y. Apparatus for oiling wool	Jan. 18, 1870
99,155	Campfield, M. E., Newark, N. J. Mortising-machine	Jan. 25, 1870
102,464	Campfield, Matthew E., assignor to American Eagle Steam Gauge Company, Newark, N. J. Adjustment of mercurial pressure-gauges	April 26, 1870
105,169	Campion, John, Woburn Centre, Mass. Apparatus for tanning	July 12, 1870
	Candee, L., & Co., *et al.* (*See* Elliott, J., & Fowler, assignors.)	
	Canfield, B. J. (*See* Proctor, Adonijah H., assignor.)	
102,487	Canfield, Charles B., Oriskany, N. Y. Clamp	May 3, 1870
102,655	Canfield, George C., Mechanicsburgh, Ohio. Water-elevator	May 3, 1870
110,432	Canfield, William M., Philadelphia, Pa. Lubricating compound for steam and other packing	Dec. 27, 1870
105,039	Cannell, Robert A., assignor to William R. C. Clark, New Orleans, La. Earth-closet	July 5, 1870
100,996	Cannon, Corydon S. and Clinton D., Chicago, Ill. Fruit-ladder	Sept. 6, 1870
108,756	Capamagian, Hagop H., Pittsburgh, Pa. Compound for treating wood	Nov. 1, 1870
103,138	Capen, George O., assignor through mesne assignments to Stephen A. Barker, Providence, R. I. Spring bed-bottom	May 17, 1870
98,847	Capewell, George J., West Cheshire, Conn. Wrench	Jan. 18, 1870
100,372	Capron, Elisha P. H., Springfield, Ohio. Chimney-cowl	Mar. 1, 1870
100,373	Capron, Jacob, New York, N. Y. Sliding-door	Mar. 1, 1870
103,130	Same Sliding-door apparatus	May 17, 1870
109,298	Same Combined latch and lock for sliding-doors	Nov. 15, 1870
110,547	Same Annunciator	Dec. 27, 1870
	Carberry, John J. (*See* Wood, Joseph S., assignor) (Four cases.)	
	Carbon Stove Company. (*See* McCoy, John, assignor.)	
101,428	Card, Edward, Providence, R. I. Stove-leg	April 5, 1870
110,007	Card, George F., Piper City, Ill. Tool-chest	Dec. 13, 1870
99,403	Cardwell, P. H., Knoxville, Tenn. Submerged pump	Feb. 1, 1870
107,334	Carew, Frank, South Hadley Falls, Mass. Wire-cutter	Sept. 13, 1870
102,773	Carey, Isaac, Morristown, N. J. Faucet	May 10, 1870
	Carey, William T. (*See* Harmer, David S., assignor.)	
99,156	Carey, Wilson W., and George W. Harris, Lowell, Mass. Hanger for shafting	Jan. 25, 1870
99,157	Same Planing-machine	Jan. 25, 1870
106,120	Same Boring-machine	Aug. 9, 1870
99,633	Cargill, William B., Waterbury, Conn. Corset-fastening	Feb. 8, 1870
	Carkeet, James H., and James A. Freemon. (*See* Freemon & Carkeet.)	
108,908	Carl, Thomas A., Nashville, Tenn. Spring bed-bottom	Nov. 8, 1870
101,821	Carleton, A. J., Springfield, Mass. Spoke-socket for carriage-wheels	April 12, 1870
104,109	Carleton, Albert S., Providence, R. I. Fountain-pen	June 14, 1870
109,565	Carleton, Cyrus, assignor to Willcox & Gibbs Sewing Machine Company, Brooklyn, N. Y. Hemmer and feller for sewing-machines	Nov. 29, 1870
105,641	Carleton, Ezra C., assignor to William Stewart & Co., Port Huron, Mich. Receptacle for measuring out shot	July 26, 1870
100,374	Carleton, Franklin B., Cambridge, Vt. Shield for pitchers, &c.	Mar. 1, 1870
107,000	Carleton, Guy E., Old Town, Me. Horse hay-rake	Sept. 27, 1870
108,329	Carleton, Leonard, Pomeroy, Ohio. Subsoil-plow	Oct. 18, 1870
102,919	Carley, Timothy L., and Milton Broughton, said Broughton assignor to said Carley, Homer, N. Y. Planing-machine	April 26, 1870
98,923	Carlin, John, New York, N. Y. Plate-holder	Jan. 18, 1870
109,683	Carlisle, Henry, jr., Philadelphia, Pa. Bracelet	Oct. 25, 1870
104,704	Carll, Samuel P., and Amos Shute, Richmond, Ind. Car-coupling	June 28, 1870
110,549	Carlow, Joseph H., Kidder, Mo. Cultivator	Dec. 27, 1870
106,321	Carmac, James, and Alexander Stobbs, Hector, N. Y. Padding for harness	Aug. 16, 1870
107,446	Carman, Leander and Alexander C., McCoy's Station, Ohio. Clothes-basket	Sept. 21, 1870
102,772	Carmichel, Alexander, assignor to self, Jonathan P. Ames, Albert and Thomas V. Stillman, Westerly, R. I. Spool or bobbin	May 10, 1870
100,853	Carnes, Ferdinand M., assignor of one-half interest to Giles Carter and Smith Carpenter. Rochester, N. Y. Culinary boiler	Mar. 15, 1870
106,121	Carney, Josiah W., Charlestown, Mass. Valve for stop-cocks	Aug. 9, 1870
103,716	Carnes, William, New Cumberland, Ohio. Portable fence-post driver	May 31, 1870
110,009	Carns, William A., Malden, Mass. Exhaust-valve	Dec. 13, 1870
	Carns, William J., and Cornelius F. Hornbeck. (*See* Hornbeck & Carns.)	
4,656	Carpenter, Abraham H., Newark, N. J. Oxygen-generator (Design)	May 24, 1840
	Carpenter, Allen. (*See* Gaily, Merritt, assignor) (Two cases.)	
	Carpenter, E. W. (*See* Wheeler, Thomas W., assignor.)	
103,978	Carpenter, Henry F., Greencastle, Pa. Bee-hive	June 7, 1870
99,534	Carpenter, Hiram, New York, N. Y. Railway	Feb. 8, 1870
109,464	Carpenter, Jesse, Niconza, Ind. Combined shovel and dung-fork	Aug. 16, 1870
102,488	Carpenter, Lauren, St. Joseph, Mich. Fruit-basket	May 3, 1870
4,145	Same same (Reissue)	Oct. 4, 1870
99,158	Carpenter, Mary P., San Francisco, Cal. Needle and arm for sewing-machine	Jan. 25, 1870
4,092	Same Needle for sewing-machine (Reissue)	May 31, 1870
104,695	Same Fluting-machine	June 28, 1870
	Carpenter, Mary P., *et al.* (*See* Palmer, Charles H., assignor.)	
106,914	Carpenter, Michael K., Cincinnati, Ohio. Hoisting-apparatus	Aug. 30, 1870

Alphabetical list of patentees for the year 1870—Continued.

No.	Name, residence, and invention or discovery.	Date.
	Carpenter, N., *et al.* (*See* Howard, James Spooner, assignor.) (Two cases.)	
105,423	Carpenter, Ralph R., Tippecanoe, Ohio. Low-water indicator	July 19, 1870
	Carpenter, Smith, and Giles Carter. (*See* Carnes, Ferdinand M., assignor.)	
	Carr, Adam. (*See* Selden, William C., assignor) (Two cases.)	
101,580	Carr, Charles, Boston, Mass. Device for ringing street-car bells. (Antedated April 1, 1870)	April 5, 1870
105,040	Same Signaling apparatus for cars	July 5, 1870
100,854	Carr, Henry C., Bordentown, N. J. Potato-digger	Mar. 15, 1870
106,548	Same Wheel plow	Aug. 23, 1870
100,499	Carr, Horace, Wooster, Ohio. Cultivator	Mar. 8, 1870
100,500	Same same	Mar. 8, 1870
100,501	Same same	Mar. 8, 1870
	Carr, John M., *et al.* (*See* Tranter, Kinsey & Carr.)	
98,740	Carr, William S., New York, N. Y. Pump	Jan. 11, 1870
	Same Water-closet (Extension)	July 23, 1870
	Carrier, Ashbell, J. (*See* Moyle, Samuel, jr., assignor.)	
103,014	Carroll, Charles, North Vernon, Ind. Digging and tamping pick	May 17, 1870
	Carroll, Henry D., *et al.* (*See* Hitchcock, Robert, assignor) (Reissue.)	
105,642	Carroll, John, Detroit, Mich. Steam-generator	July 26, 1870
104,422	Carroll, John J., Washington, D. C. Device for roasting and baking	June 21, 1870
108,567	Carroll, William H., Columbus, Miss. Shirt	Oct. 25, 1870
	Carruth, Francis W. (*See* Richardson, Everett P., assignor.)	
107,280	Carstaedt, Hugo, New York, N. Y. Shuttle for looms	Sept. 13, 1870
	Carter, Calvin H. (*See* Gibbs, John, assignor.)	
	Carter, Charles D., *et al.* (*See* Palmer, Charles H., assignor.)	
	Carter, E. J. (*See* Westover, Charles W., assignor.)	
101,429	Carter, E. P., Arcade, N. Y. Wagon-tongue	April 5, 1870
	Carter, Giles, and Smith Carpenter. (*See* Carnes, Ferdinand M., assignor.)	
100,257	Carter, Henry S., Chicago, Ill. Bed-lounge	Mar. 1, 1870
99,538	Carter, Ira, Champlain, N. Y. Water-wheel	Feb. 8, 1870
110,340	Carter, Jane, Towanda, Pa. Safety-case for fruit-jars	Dec. 20, 1870
110,341	Carter, John T., and Moses B Williamson, Xenia, Ill. Corn-planter	Dec. 20, 1870
104,553	Carter, Thomas, Niles, Ohio. Metal roofing	Jan. 21, 1870
	Carter, William, *et al.* (*See* Lee, Lee & Carter.)	
106,907	Carter, William H., Candor, N. Y. Bedstead-fastening	Sept. 6, 1870
	Carter, William L., Marietta, Pa. Ore-washer (Extension)	Feb. 26, 1870
104,110	Carttter, Miles S., and Hosea B., St. Louis, Mo. Truss-bridge	June 14, 1870
	Cartwright, Peter, and William H. St. John. (*See* St. John & Cartwright.)	
102,220	Cartwright, Robert, Chicago, Ill. Core-barrel	April 26, 1870
103,560	Same Molding pit for casting cylinders and pipes	May 31, 1870
102,369	Carver, Aaron, Little Falls, N. Y. Pump	April 26, 1870
103,561	Carver, Erastus H., Preble, N. Y. Corn-husking machine	May 31, 1870
105,643	Carver, Joseph Eleazer, assignor to Henry T. Pratt and John C. Alden, Bridgewater, Mass. Hulling-machine	July 26, 1870
103,370	Cary, Joseph C., New York, N. Y. Strap-fastening for packages	April 26, 1870
110,009	Case, Daniel W., assignor to self and John S. Smith, Garden City, Minn. Water-wheel	Dec. 13, 1870
101,095	Case, G. F., assignor to Windsor Manufacturing Company, Windsor, Vt. Drill-guide	Mar. 22, 1870
110,010	Case, George F., assignor to self and Milan C. Bullock, Windsor, Vt. Stamping-mill or crusher	Dec. 13, 1870
100,599	Case, Henry C., Pekin, Ill. Animal-trap	Mar. 8, 1870
103,562	Case, Henry J., Auburn, N. Y. Treadle for sewing-machines	May 31, 1870
4,078	Case, Henry J., assignor to self, Nelson Chapin, and Charles Richardson, Auburn, N. Y. Mechanical movement (Reissue)	July 26, 1870
108,737	Case, Joel T., New Hartford, Conn. Water-wheel	Nov. 1, 1870
101,295	Case, John M., Worthington, Ohio. Steam-boiler feeder	Mar. 29, 1870
104,986	Case, Nathan T. and Emma J., Des Moines, Iowa. Washing and cooking boiler	June 14, 1870
108,878	Case, Russel C., Guilderland, N. Y. Dining-table	Nov. 1, 1870
105,423	Casey, Albert P., Plantsville, Conn. Method of forming stump-joints for carriage-bows	July 19, 1870
104,422	Casey, James A., Maysville, Ky. Sulky-harrow, &c.	June 21, 1870
107,758	Casey, James S., Voluntown, Conn. Saddle for spinning-machines	Sept. 27, 1870
106,778	Cash, John and Joseph, jr., England. Paper-file	Aug. 30, 1870
3,811	Cash, Thomas M., assignor to Hagar & Co., San Francisco, Cal. Printers' type (Design)	Jan. 11, 1870
102,774	Cashwell, David, Wilmington, N. C. Distilling turpentine	May 10, 1870
99,756	Casilear, George W., Washington, D. C. Ruling-machine	Feb. 15, 1870
99,759	Same Bank-notes, bonds, revenue stamps, &c.	Feb. 15, 1870
104,554	Same Printing-ink	June 21, 1870
	Baskey, Benjamin R. (*See* McLaughlin, Samuel, assignor.)	
104,367	Caslow, Henry, assignor to Jacob G. Myers, York, Pa. Churn	June 14, 1870
108,330	Cass, James F., L'Original, Canada. Wrench	Oct. 18, 1870
108,116	Casseday, James, assignor to self and James D. Holt, Philadelphia, Pa. Seat for cars, &c.	Feb. 22, 1870
108,465	Cassel, Ferdinand, Prussia. Preservation of meat and other articles of food	Aug. 16, 1870
104,111	Cassidy, James, assignor to self and Harvey K. Flagler, East Boston, Mass. Apparatus for making tubing	June 14, 1870
101,706	Cassidy, William, New Bedford, Mass. Apparatus for sealing pipe-joints	April 12, 1870
107,447	Casson, Peter, San Francisco, Cal. Removing burrs from wool	Sept. 24, 1870

Alphabetical list of patentees for the year 1870—Continued.

No.	Name, residence, and invention or discovery.	Date.
103,563	Castellaw, Edwin A., Savannah, Ga. Hoisting-jack	May 31, 1870
110,200	Castle, David M., Constantine, Mich. Clevis	Dec. 20, 1870
100,581	Cate, Ebenezer, Watertown, Mass. Horseshoe	April 5, 1870
103,775	Same.....Bar for horseshoe-blanks	May 10, 1870
108,586	Same.....Horseshoe-bar	Nov. 29, 1870
107,661	Catlin, Henry W., Burlington, Vt. Washstand and tank	Sept. 27, 1870
99,150	Catlin, S. C., Cleveland Ohio. Automatic barrel-filler	Jan. 25, 1870
99,269	Catlin, S. C., and A. Corbin, Cleveland, Ohio. Lamp-extinguisher	Feb. 1, 1870
103,564	Catlin, S. C., Cleveland, Ohio. Siphon	May 31, 1870
110,201	Same.....Barrel-filler. (Antedated Dec. 17, 1870)	Dec. 20, 1870
110,202	Same.....Liquor-thief and measure. (Antedated Dec. 16, 1870)	Dec. 20, 1870
104,434	Cattaneo, Angelo, Newark, N. J. Machine for felting hats	June 21, 1870
3,847	Cauvet, Louis A., New York, N. Y. Insulator (Reissue)	Feb. 22, 1870
103,979	Same.....Wood-pavement	June 7, 1870
	Same.....(*See* White, James E., assignor.)	
	Cauvet, Louis A., and Andrew Stevens. (*See* Stevens & Cauvet.)	
105,776	Cavanaugh, Martin, Philadelphia, Pa. Liquor-pump	July 26, 1870
	Cawood, Joseph D., deceased, by George Johnson, administrator, Marshall, Mich. Repairing railway-bars (Extension)	Sept. 3, 1870
107,221	Cayce, John M., Franklin, Tenn. Motive-power	Sept. 13, 1870
3,894	Cayce, John M., assignor to A. Thomas, Franklin, Tenn. Portable forging-apparatus (Reissue)	Mar. 22, 1870
106,779	Caylor, Jacob, Half-Way, Ind. Spade and shovel	Aug. 30, 1870
107,662	Caywood, Martin, Peoria, Ill. Stalk-cutter	Sept. 27, 1870
99,058	Celley, Archibald H., assignor to J. B. Gardiner, Springfield, Mass. Spring bed-bottom	Jan. 25, 1870
105,041	Ceredo, Paul, assignor to self and Thomas Ferguson Miller, Prussia. Device for curling and dressing hair	July 5, 1870
107,506	Same.....same	Sept. 20, 1870
100,495	Ceredo, Paul, Prussia. Nut-cracker	Nov. 22, 1870
98,555	Cerisier, Constant, France. Ventilating mill-stone	Jan. 4, 1870
108,879	Chace, Alonzo, assignor of one-half interest to Ezra Cornell, Ithaca, N. Y. Stereotyping	Nov. 1, 1870
101,430	Chace, John K., assignor to self and Silas A. Daley, New York, N. Y. Fastening for pails, cans, &c	April 5, 1870
	Chadbourn, George L., and Thomas Coldwell. (*See* Coldwell & Chadbourn.)	
105,170	Chadderdon, Edward, assignor of one-half interest to Albert Stineback, Howard, Mich. Suspension-gate	July 12, 1870
96,686	Chadwick, H. A., Burnet, Texas. Turbine water-wheel	Jan. 11, 1870
	Chadwick, Robert, *et al.* (*See* Luts, Boyce, Trenor, and Chadwick.)	
100,117	Chadwick, Thomas, assignor of one-half interest to F. W. Cozad, Newton, Iowa. Portable furnace	Feb. 22, 1870
	Chaffee, Calvin C., *et al.* (*See* Reilley, John O., assignor.)	
100,723	Chaffee, Charles S., and Alexander Wahlig, assignors to selves and J. M. Goulding, Birmingham, Conn. Method of securing soles to boots and shoes	Mar. 15, 1870
105,171	Challinor, David, Birmingham, Pa. Lantern	July 12, 1870
105,644	Same.....Lamp	July 26, 1870
100,976	Chamberlain, Dexter H., West Roxbury, Mass. Dead-eye for wire-rigging	Mar. 22, 1870
100,977	Same.....Frictional gearing	Mar. 22, 1870
104,898	Same.....Rubber-roller for wringers, &c	June 28, 1870
108,106	Chamberlain, Orange M., assignor to self and George Moore, New York, N. Y. Lamp	Oct. 11, 1870
108,107	Chamberlin, Charles A., Pittsburgh, Pa. Railroad-ticket	Oct. 11, 1870
102,321	Chamberlin, Edwin, Lansingburgh, N. Y. Whip-socket	April 26, 1870
	Chamberlin, Edwin, and John O. Merriam. (*See* Morehouse, Charles B., assignor)	
106,988	Chamberlin, Edwin, assignor to self and John O. Merriam, Lansingburgh, N. Y. Whip-socket	Sept. 6, 1870
107,162	Chamberlin, George, Olean, N. Y. Ditching-plow	Sept. 6, 1870
107,335	Same.....Draft-harness	Sept. 13, 1870
98,556	Chamberlin, George E., assignor to New York Laundry Manufacturing Company, N. Y. Washing-machine	Jan. 4, 1870
99,230	Chamberlin, Henry W., New York, N. Y. Envelope-machine	Feb. 1, 1870
104,827	Chamberlin, Melvin C., Plain View, Minn. Rake-attachment for reapers	June 28, 1870
98,557	Chamberlin, M. C., and A. Clawson, Plain View, Minn. Rake-attachment for reapers	Jan. 4, 1870
99,634	Same.....Bell-tightener	Feb. 8, 1870
104,557	Chamberlin, William H., Medina, N. Y. Draft and hold-back attachment	June 21, 1870
	Chambers, Charles, *et al.* (*See* Ryerson & Stancliff, assignors.)	
	Same.....(*See* Ryerson, Stancliff & McIntosh, assignors.)	
	Chambers, Cyrus, jr., Philadelphia, Pa. Paper-folding machine...(Extension)	Oct. 4, 1870
	Same.....same...(Disclaimer filed Oct. 10, 1870.)	
104,705	Chambers, Cyrus, jr., Philadelphia, Pa. Off-bearing apparatus for brick-machines	June 28, 1870
105,424	Same.....Paper-folding machine	July 19, 1870
4,079	Same.....same (Reissue)	July 26, 1870
108,889	Same.....Brick-machine	Nov. 1, 1870
109,893	Same.....same	Dec. 6, 1870
	Chambers, Cyrus, jr., and Edwin. (*See* Mendham, William, assignor.)	
	Chambers, Cyrus, jr., and William Mendham. (*See* Mendham & Chambers.)	
101,431	Chambers, Edwin, and Cyrus, jr., Philadelphia, Pa. Machine for grinding screws. (Antedated March 24, 1870)	April 5, 1870

Alphabetical list of patentees for the year 1870—Continued.

No.	Name, residence, and invention or discovery.	Date.
	Chambers, Edwin C. and Cyrus, jr. (*See* Mendham, William, assignor.)	
99,160	Chambers, John, assignor to self and David Chambers, Birmingham, Pa. Machine for removing the "blow-over" on glass jars, &c	Jan. 25, 1870
104,555	Chambers, John D., Williamsport, Pa. Gate	June 21, 1870
104,556	Same.....same	June 21, 1870
1 4,828	Chambers, William, Lynn, Mass. Method of lasting boots and shoes	June 28, 1870
105,178	Chambers, William, New Orleans, La. Cotton-bale tie	July 12, 1870
109,804	Same.....same	Dec. 6, 1870
	Chambers, William B., and Solomon H. Dwight. (*See* Dwight & Chambers.)	
106,656	Chameroy, Edme Augustin, France. Apparatus for gauging or regulating the flow of water or other fluids	Aug. 23, 1870
106,630	Chance, Hiram D., Llewellyn, Pa. Extension step-ladder	Aug. 23, 1870
157,872	Chance, Hiram D., and Daniel Rishe, Llewellyn, Pa. Saw-filing and setting machine	Oct. 4, 1870
	Chandler, Charles Frederick. (*See* Bolvin & Loiseau, assignors.)	
107,448	Chandler, George D., West Concord, Vt. Sap-feeder to sugar-evaporators. (Antedated Sept. 10, 1870)	Sept. 20, 1870
101,226	Chandler, George R., Detroit, Mich. Washing-machine	Mar. 29, 1870
99,404	Chandler, George W., assignor to Henry and Albert A. Whitney, Mason, N. H. Apparatus for binding grain	Feb. 1, 1870
106,549	Chandler, George W., assignor to self and Calvin Searle, Mason, N. H. Hitch-hook	Aug. 23, 1870
	Chandler, Henry. (*See* Smith, J. Plummer, assignor.)	
99,405	Chandler, John P., Wilton, Me. Carriage-hub	Feb. 1, 1870
99,161	Chandler, R. K., Ruther Glen, Va. Tooth-brush. (Antedated Jan. 17, 1870)	Jan. 25, 1870
98,558	Chandler, Thomas E., and John C. Bartholomew, assignors to Thomas E. Chandler and Franklin Taylor, Indianapolis, Ind. Saw-mill	Jan. 4, 1870
98,848	Chaunte, O., and G. S. Morison, Kansas City, Mo. Dredging-machine	Jan. 18, 1870
103,299	Chapin, Eugene, St. Louis, Mo. Drinking-tube for invalids	May 24, 1870
103,300	Same.....same	May 24, 1870
99,533	Chapin, Gilbert W., Brooklyn, N. Y. Adding-machine	Feb. 8, 1870
106,099	Same.....same	Sept. 6, 1870
108,005	Chapin, Henry A., New York, N. Y. Apparatus for carbureting air and gas	Oct. 4, 1870
106,466	Chapin, Henry A., assignor to William Sparks Thomson, Bridgeport, Conn. Machine for spinning flax, hemp, &c	Aug. 16, 1870
99,102	Chapin, Louis N., New Lisbon Township, N. Y. Chimney-cowl	Jan. 25, 1870
	Chapin, Nelson, *et al.* (*See* Case, Henry J., assignor) (Reissue.)	
105,173	Chapman, Athanasius B., Clyde, Ohio. Pruning-shears	July 12, 1870
99,534	Chapman, C. H., Shirley, Mass. Step and bolster for cotton-spindles	Feb. 8, 1870
100,258	Chapman, Charles H., assignor to A. G. Snell, Shirley, Mass. Tag-machine	Mar. 1, 1870
106,322	Chapman, Dudley B., New London, Conn. Manufacture of resin soap	Aug. 16, 1870
107,396	Chapman, Eugene, Lacon, Ill. Broom or mop clamp	Sept. 13, 1870
100,502	Chapman, Frank G., assignor to Dennis Beach, Chicago, Ill. Mortising-machine	Mar. 8, 1870
100,503	Same.....Machine for polishing wood	Mar. 8, 1870
103,717	Same.....Machine for sand-papering mouldings	May 31, 1870
107,222	Same.....Machine for tenoning window-sash	Sept. 13, 1870
3,883	Chapman, George T., New York, N. Y. Horseshoe (Reissue)	Feb. 8, 1870
	Same.....(*See* Gee, John H., assignor.)	
102,489	Chapman, John L., West Roxbury, Mass. Draw-slide	May 3, 1870
104,268	Chapman, Joseph L., assignor to self and James Bice Stuart, Philadelphia, Pa. Brick-machine	June 14, 1870
107,000	Chapman, Levi, New York, N. Y. Mode of forming umbrella-handles from plastic materials	Sept. 6, 1870
100,978	Chapman, Luke, Collinsville, Conn. Wrench	Mar. 22, 1870
99,050	Chapman, Luke, assignor to the Collins Company, Collinsville, Conn. Milling-machine	Jan. 25, 1870
106,254	Chapman, Matthew, Greenfield, Mass. Handle for knives	Aug. 9, 1870
106,323	Same.....Table-knife	Aug. 16, 1870
107,223	Same.....Handle for table and other cutlery	Sept. 13, 1870
110,011	Chapman, Nathan, Hopedale, Mass. Hay and cotton press	Dec. 13, 1870
4,038	Chapman, Oliver S., Canton, Mass. Excavating-machine (Reissue, division A)	June 21, 1870
4,039	Same.....same (Reissue, division B)	June 21, 1870
106,467	Chapman, Sylvanus, Charlestown, Mass. Wrench	Aug. 16, 1870
104,112	Chapman, William C., Charleston, S. C. Rice-screen	June 14, 1870
104,930	Chapman, William D., Theresa, N. Y. Minnow-propeller	July 5, 1870
	Chappel, John H., and Charles L. Camp. (*See* Camp & Chappel.)	
105,645	Chappell, John H., Brooklyn, N. Y. Toy money-box	July 26, 1870
98,924	Chapple, John, Jasper, N. Y. Churn	Jan. 18, 1870
103,565	Charles, Michael E., Hope, Ind. Stand and clothes-drier	May 31, 1870
103,136	Charlesworth, Clark H., and Joseph H. Short, Avoca, N. Y. Harvester	May 17, 1870
101,582	Chase, Andrew J., Boston, Mass. Refrigerator	April 5, 1870
110,112	Chase, Andrew J., assignor to self and Perrin C. Drisko, Boston, Mass. Refrigerator	Dec. 13, 1870
	Chase, Austin C. (*See* Wolcott, Russell F., assignor.)	
103,425	Chase, Henry A., Tulley, N. Y. Medical compound for treating rheumatism, &c	July 19, 1870
100,855	Chase, James, Rochester, N. Y. Wood-turning lathe	Mar. 15, 1870
103,843	Same.....Sawing-machine. (Antedated May 23, 1870)	June 7, 1870
	Same.....(*See* Purgin, H. J., assignor.)	
98,741	Chase, John, Paterson, N. J. Scroll-case for water-wheels	Jan. 11, 1870
	Chase, J. S. (*See* Plumer, Isaac L., assignor.)	
100,375	Chase, Lewson E., assignor to Chase & Co., Watertown, Mass. Confectionery	Mar. 1, 1870

Alphabetical list of patentees for the year 1870—Continued.

No.	Name, residence, and invention or discovery.	Date.
105,548	Chase, Milton, assignor to self and Horace Chase, Haverhill, Mass. Sewing-machine and its supporting-table	July 19, 1870
98,686	Chase, Philander, Peoria, Ill. Machinery for cutting barrel-heads	Jan. 11, 1870
105,426	Chase, Thomas, Washington, D. C. Anti-friction gearing	July 19, 1870
100,609	Chase, Wesley, Buffalo, N. Y. School-desk and seat	Mar. 8, 1870
3,883	Same.....Settee (Reissue)	Mar. 22, 1870
	Chase, William C. (*See* Perrine, Alfred T., assignor.)	
101,086	Chatfield, George W., New Haven, Conn. Medicine or cough sirup	Mar. 22, 1870
100,979	Chatfield, Thomas W., Utica, N. Y. Hot-air furnace	Mar. 22, 1870
110,432	Chatham, Walter S., assignor to John W. Riddell, Williamsport, Pa. Boot-jack and door-buffer	Dec. 27, 1870
105,777	Chattaway, George T., Brooklyn, N. Y. Scissors-sharpening attachment for sewing-machines	July 26, 1870
98,539	Chattin, James, Marion, Iowa. Scaffold-bracket	Jan. 4, 1870
101,709	Chaufourier, Jules Alfred, France. Self-feeding cotton-gin	April 12, 1870
107,873	Chavanne, Julius, Switzerland. Vise	Oct. 4, 1870
	Chaytor, Hugh, *et al.* (*See* Thomas, John, assignor.)	
106,660	Cheek, Moses D., Memphis, Tenn. Baling-press	Aug. 23, 1870
101,822	Cheek, Nash, Chapel Hill, N. C. Cotton and tobacco press	April 12, 1870
110,549	Same.....Cotton-press	Dec. 27, 1870
105,646	Cheeseman, William B., Winona, Minn. Washing-machine	July 26, 1870
101,823	Cheever, John H., New York, N. Y. India-rubber carpeting and embossed matting	April 12, 1870
105,904	Cheney, Chandler, assignor of one-half interest to William Nash, Milford, Mass. Coupling for wheel-fellies	Aug. 2, 1870
	Cheney, E. R. (*See* Emery, John J., assignor) (Reissue.)	
102,916	Cheney, Ethan R., assignor to self and Naylor & Co., Boston, Mass. Machine for straightening bars of metal	May 10, 1870
104,425	Cheny, Ethan R., and John J. Emery, Boston, Mass. Cable-stopper	June 21, 1870
106,631	Same.....same	Aug. 2, 1870
101,710	Chenoweth, James, Shelbyville, Mo. Rotary spader	April 12, 1870
103,308	Cherry, John W., Carthage, Ill. Fence	July 12, 1870
102,490	Chesebrough, Amos S., Hartford, Conn. Device for securing the features of a corpse in place	May 3, 1870
99,496	Chesebrough, Robert A., New York, N. Y. Method of aerial transit. (Antedated Jan. 24, 1870)	Feb. 1, 1870
	Cheshire Manufacturing Company. (*See* Guilford, Ralph H., assignor.)	
105,427	Chesman, Francis G., Lemont, Ill. Grain-meter	July 19, 1870
106,324	Chester, Charles T., Engiewood, N. J. Protecting safes and vaults from burglars	Aug. 16, 1870
98,742	Chevallier, Louis, Williamsburgh, N. Y., and Robert Brass, Waterbury, Conn. Wire-cradle	Jan. 11, 1870
106,913	Chevrier, Gervais, France. Treating acid tar from coal	Aug. 30, 1870
106,661	Chew, Charles F., England. Piano	Aug. 23, 1870
100,250	Chichester, Lewis, S., Brooklyn, N. Y. Coal-hoisting apparatus	Mar. 1, 1870
107,001	Chicken, William, Chelsea, Mass. Button-hole sewing-machine	Sept. 6, 1870
	Chickering & Sons. (*See* Neill, George W., assignor.)	
99,739	Child, Cyril C., Boston, Mass. Gauge for paper-cutting machines	Feb. 15, 1870
	Same.....(*See* Montague, Charles, assignor.)	
4,260	Child, Pascal P., St. Louis, Mo. Journal-box (Design)	Aug. 16, 1870
	Child, William Henry, *et al.* (*See* Loader, John, assignor.)	
	Child, William Henry, and John Loader. (*See* Loader & Child, assignors.)	
	Childs, John W. (*See* Stilson, Lyman B., assignor.)	
	Childs, O. D. (*See* Wright, Horton, assignor.)	
	Childs, Warner A. (*See* Pellisz, Augustus, assignor.)	
99,833	Chinn, Richard H., Washington, D. C. Fountain-pen	Feb. 8, 1870
110,342	Same.....Pen	Dec. 20, 1870
100,394	Chinn, Richard H., and John F. Rigart, Washington, D. C. Sheet-metal cover for sewing-machines	Nov. 23, 1870
100,960	Chinnock, George H., New York, N. Y. Toilet-mirror	Mar. 22, 1870
103,960	Chinnock, George H., New York, N. Y., and Edward P. Williams, Elizabeth, N. J. Toilet-mirror	June 7, 1870
	Same.....(*See* William & Chinnock) (Three cases.)	
4,066	Chipman, George W., Boston, Mass. Carpet-lining (Reissue)	July 12, 1870
	Chipp, J. Deyo. (*See* Schryver, Henry, assignor.)	
	Chisholm, J. W. and K. (*See* Solomons, Leopold, assignor) (Design.)	
	Chittenden, Morgan, *et al.* (*See* Jennings, Frederick S., assignor.)	
	Chittenden, Samuel M., and Ephraim Martin. (*See* Martin & Chittenden, assignors.)	
101,711	Choate, George C., Wyoming Territory. Shovel-handle	April 12, 1870
110,200	Chormann, Ernest G., and Edward McLaughlin, Philadelphia, Pa. Kitchen and household sink	Dec. 20, 1870
106,550	Christen, Joseph, New Orleans, La. Tile-machine	Aug. 23, 1870
108,967	Christian, Andrew, New York, N. Y. Steering-mechanism for velocipedes	Nov. 8, 1870
3,892	Christie, Hugh, Morrisania, N. Y. Carpet-pattern (Design)	Mar. 8, 1870
3,898	Christie, Hugh, assignor to W. M. Brasher & Co., Brooklyn, N. Y. Floor-cloth pattern (Design)	Mar. 15, 1870
3,897	Same.....Floor-cloth pattern (Design)	Mar. 15, 1870
4,176	Christie, Hugh, assignor to Israel Foster, Brooklyn, N. Y. Carpet-pattern. (Design)	June 28, 1870
4,177	Same.....Carpet-pattern (Design)	June 28, 1870

Alphabetical list of patentees for the year 1870—Continued.

No.	Name, residence, and invention or discovery.	Date.
4,252	Christie, Hugh, assignor to Israel Foster, Brooklyn, N. Y. Carpet-pattern. (Design)	July 19, 1870
	Christie, Thomas A., and Henry L. But'er. (*See* Butler & Christie.)	
	Christlip, L. C., and Louis Bach. (*See* Bach & Christlip.)	
100,961	Christofel, John B., Williamsburgh, N. Y. Gauge-cock	Mar. 22, 1870
103,634	Christopher, Jesse K., Dayton, Ohio. Horseshoe	Oct. 25, 1870
98,580	Chubb, A. L., Grand Rapids, Mich. Cultivator	Jan. 4, 1870
100,013	Chubbuck, S. E., assignor to self, Israel Y. and S. E. Chubbuck, jr., Boston, Mass. Water-heater for green-houses	Feb. 22, 1870
107,874	Same.....Stove-leg	Oct. 4, 1870
105,778	Church, D. M., assignor to self and Timothy Merrick, Holyoke, Mass. Spool of thread for sewing-machine shuttles	July 26, 1870
108,758	Church, Dwight M., Holyoke, Mass. Thread-winding machine	Nov. 1, 1870
107,008	Church, Henry M., Brunswick, Ohio. Method of hanging grindstones	Sept. 6, 1870
	Churchill, Bela L., and George C. Vanderalice. (*See* Vanderalice & Churchill.)	
	Churchill, Robert W., and Frederick Eggs. (*See* Eggs & Churchill.)	
104,113	Churchman, T. C., Sacramento, Cal. Snow-plow	June 14, 1870
105,042	Chutaux, Theophile, France. Electric battery	July 5, 1870
105,043	Same.....same	July 5, 1870
101,832	Chwatal, Herman, assignor to W. Staehlen and L. Portong, New York, N. Y. Pressure-gauge. (Antedated April 2, 1870)	April 12, 1870
107,224	Cicsor, Julius, Davenport, Iowa. Sofa	Sept. 13, 1870
105,174	Cilley, Daniel, Osceola Mills, Pa. Muley-saw hanging	July 12, 1870
	Cilley, William H. (*See* Ames, Gustavus, assignor.)	
105,498	Cills, William, Philadelphia, Pa. Packing tobacco-box	July 19, 1870
	Cincinnati Type Foundry. (*See* Reuter, Conrad, assignor.)	
4,065	Cinquini, Pietro, assignor to Bradley & McHubbard, West Meriden, Conn. Chandelier (Design)	May 31, 1870
4,066	Same.....Lamp-bracket (Design)	May 31, 1870
107,225	Claflin, George, Miller's Corners, N. Y. Adjustable lifting-ladder	Sept. 13, 1870
106,916	Clagett, David, Hagerstown, Md. Hay-loader	Aug. 30, 1870
109,587	Clampitt, Elias, Baltimore, Md. Hydrant	Nov. 29, 1870
	Claney, William M., *et al.* (*See* Hunteman, E. N., assignor.)	
3,890	Clapp, Abel S., New York, N. Y. Carriage-body (Design)	Jan. 25, 1870
102,776	Clapp, Charles, assignor to Erastus C. and Chauncey P. Gregg, Trumansburg, N. Y. Harvester	May 10, 1870
	Clapp, E. D., *et al.* (*See* Van Patten, Frederick, assignor.)	
	Clapp, E. D., and Frederick Van Patten. (*See* Van Patten & Clapp.)	
109,175	Clapp, George, Geneva, N. Y. Fruit-crate	Nov. 15, 1870
	Clapp, James H., and Daniel B. Read. (*See* Read & Clapp, assignors.)	
	Clapp, Ozro W. (*See* Hall, Elias P., assignor.)	
100,794	Clark, A. B., North Oxford, Mass. Boot and shoe shave	Mar. 15, 1870
103,844	Same.....Grass Lake, Mich. Hay-loading device	June, 7, 1870
105,304	Clark, Alfred D., Greenfield, Ohio. Automatic feeder and indicator for steam-boilers	July 12, 1870
109,385	Clark, Andrew, Plymouth, Ohio. Machine for washing and wringing clothes	Nov. 22, 1870
109,176	Clark, Augustus R., Onondaga, N. Y. Hay-binder	Nov. 15, 1870
99,844	Clark, Charles B., Buffalo, N. Y. Blind-hinge. (Antedated Jan. 5, 1870)	Feb. 15, 1870
108,968	Same.....Sash-holder	Nov. 8, 1870
105,905	Clark, Charles H., Pittsfield, Me. Combined swift and reel	Aug. 2, 1870
105,906	Same.....Bit-stock	Aug. 2, 1870
	Clark, Daniel J., *et al.* (*See* Bond, Thomas, assignor.)	
108,237	Clark, David W., Tidioute, Pa. Pump-valve	Oct. 11, 1870
100,725	Clark, Decius W., Chicago, Ill. Enamel for clay gas-retorts, burners, tiles, &c.	Mar. 15, 1870
104,209	Clark, Dewitt C., and Henry W. Cady, Sioux City, Iowa. Coal-stove	June 14, 1870
104,430	Clark, Edward B., Philadelphia, Pa. Pipe-tongs	June 21, 1870
101,563	Clark, Elijah, assignor to United States Steam Gauge Company, Louisville, Ky. Registering steam-gauge	April 5, 1870
	Clark, Elisha C., *et al.* (*See* Magee, James, assignor.)	
105,779	Clark, Emma, Buffalo, N. Y. Culinary vessel	July 26, 1870
101,968	Clark, Erastus Y., New York, N. Y. Saw-set	April 19, 1870
	Clark, Eugene, and Henry L. Franklin. (*See* Franklin & Clark.)	
	Clark, Ezra W., jr., *et al.* (*See* Hood & Clark.)	
108,449	Clark, Fannie M. B., Wilmington, Vt. Work-table	Oct. 18, 1870
108,936	Clark, George, assignor to self, Franklin B. Ives, and R. L. Dean, Dover, Ill. Road-scraper and ditcher	Oct. 11, 1870
	Clark, George R. (*See* Taylor, A. P., assignor.)	
	Clark, Henry A. (*See* Tirrell, Jacob Porter, assignor.)	
	Same.....(*See* Kelsey, William, assignor.)	
	Clark, H. M., deceased, by William S. Booth, administrator, New Britain, Conn. Machine for heading bolts (Extension)	Jan. 10, 1870
101,584	Clark, Hezekiah M., assignor to Elisha J. Barnard and Charles Blanchard, Meriden, Conn. Lamp	April 5, 1870
99,391	Clark, Isaac H., Boston, Mass. Apparatus for extinguishing fires. (Antedated Jan. 29, 1870)	Feb. 1, 1870
102,091	Clark, James A., Leavenworth, Ind. Head-block for saw-mills	April 19, 1870
107,875	Clark, James B., Plantsville, Conn. Machine for drilling carriage-shackles	Oct. 4, 1870
110,113	Clark, James F., Morenci, Mich. Brick-press	Dec. 13, 1870
101,712	Clark, James V., Camden, N. J. Clothes-drier	April 12, 1870
98,925	Clark, John, Astoria, N. Y. Pipe-tongs	Jan. 18, 1870
99,846	Same.....Harrisburg, Pa. Piston-packing	Feb. 15, 1870
103,149	Same.....same	May 17, 1870

Alphabetical list of patentees for the year 1870—Continued.

No.	Name, residence, and invention or discovery.	Date.
108,685	Clark, John, assignor to self and Alfred Adamson, Philadelphia, Pa. Coupling-attachment for pianos	Oct. 25, 1870
	Clark, John, and Marmaduke Wilkin. (*See* Wilkin & Clark.)	
105,044	Clark, John Hosmer, Washington, D. C. File	July 5, 1870
105,439	Same.....Flemington, N. J. Gate for railway-crossings	July 19, 1870
107,876	Clark, John S., Philadelphia, Pa. Range for heating and cooking	Oct. 4, 1870
101,433	Clark, Jonathan M., New York, N. Y. Steam-generator	April 5, 1870
101,434	Same.....same	April 5, 1870
106,669	Same.....same	Aug. 23, 1870
	Clark, Joseph D. (*See* Cummings, Perley M., assignor.)	
	Clark, Joseph W. (*See* McChesney, Henry, assignor.)	
105,907	Clark, Josiah S., Philadelphia, Pa. Branch-attachment for water-tubes	Aug. 2, 1870
104,890	Clark, Lucas C., Plantsville, Conn. Tea-pot handle	June 28, 1870
99,535	Clark, L. S., assignor to self, G. S. Peck, and G. W. Lyon, Bethel, Conn. Shifting cutter-thille	Feb. 8, 1870
	Clark, Mary E. B. (*See* Drake, James A., assignor).....(Three cases.)	
108,450	Clark, Michael R., Columbia, S. C. Cotton-bale tie	Oct. 18, 1870
100,118	Clark, Milton W., assignor to R. Ball & Co., Worcester, Mass. Blind-slat	Feb. 22, 1870
101,824	Same.....Combined pulley and clamp	April 12, 1870
102,228	Same.....Cutter-head	April 26, 1870
105,647	Clark, Moses Neal, Harrison City, Pa. Sawing-machine	July 26, 1870
106,122	Clark, Patrick, Rahway, N. J. Pipe-joint	Aug. 9, 1870
99,407	Clark, P. C., Philadelphia, Pa. Oil-can	Feb. 1, 1870
	Clark, P. J. (*See* Kintz, Joseph, assignor).....(Two cases.)	
102,491	Clark, Philo W., Oblong, N. Y. Horse-power	May 3, 1870
102,492	Same.....Excavating-apparatus	May 3, 1870
99,393	Clark, Simeon, Howard, N. Y. Horse hay-fork	Feb. 1, 1870
	Clark, Susan H. (*See* Barnes, William F., assignor.)	
107,203	Clark, Thomas A., and Henry C. Mascroft, Worcester, Mass. Fruit-jar cover	Sept. 6, 1870
107,440	Same.....Fruit-jar	Sept. 20, 1870
100,856	Clark, Thomas J. and George M., Higganum, Conn. Hay-tedder	Mar. 15, 1870
108,686	Same.....Cutting-apparatus for harvesters	Oct. 25, 1870
105,648	Clark, Thomas S., Charlestown, Mass. Water-proof cement	July 26, 1870
101,227	Clark, William, Johnsonville, N. Y. King-bolt for carriages	Mar. 29, 1870
102,493	Clark, William, Decatur, Ill. Lifting-jack	May 3, 1870
101,097	Clark, William A., Woodbridge, Conn. Carriage-axle	Mar. 22, 1870
100,857	Clark, William J., Lena, Ill. Egg-carrier	Mar. 15, 1870
4,095	Same.....Providence, R. I. Trade-mark.....(Design)	May 17, 1870
	Clark, W. J., & Co. (*See* Hotchkiss, Bennet, assignor.)	
106,345	Clark, William M., and Alexander, Pittsburgh, Pa. Post-office cabinet for Sunday-school and other rooms	Aug. 16, 1870
101,098	Clark, William R. C., New Orleans, La. Earth-closet	Mar. 22, 1870
102,494	Same.....same	May 3, 1870
102,495	Same.....same	May 3, 1870
105,043	Same.....same	July 5, 1870
	Same.....(*See* Caunell, Robert A., assignor.)	
	Same.....(*See* Drake, James A., assignor).....(Two cases.)	
	Clark, William R. C., and James A. Drake. (*See* Drake & Clark.)	
	Clark, William T. (*See* Knowlton, William F., assignor.)	
103,506	Clarke, Alfred and Arthur, Philadelphia, Pa. Shoemakers' tool	May 31, 1870
110,434	Clarke, Almon, assignor of one-half interest to Charles A. Spencer, Sheboygan Falls, Wis. Umbrella-holder	Dec. 27, 1870
101,436	Clarke, F. L., Oakland, Ill. Brick-machine	April 5, 1870
96,561	Clarke, F. O., Unadilla Forks, N. Y. Water-wheel	Jan. 4, 1870
107,759	Clarke, Greville E., Racine, Wis. Fanning-mill	Sept. 27, 1870
109,386	Clarke, Henry, Baltimore, Md. Umbrella-lock	Nov. 22, 1870
	Clarke, Henry A. (*See* Jewsbury, Joseph, assignor.)	
105,780	Clarke, Hugh Archibald, Philadelphia, Pa. Organ, melodeon, &c.	July 26, 1870
99,845	Clarke, James A., New York, N. Y. Latch	Feb. 15, 1870
110,435	Clarke, James Freeman, West Roxbury, Mass. Astronomical lantern	Dec. 27, 1870
3,827	Clarke, John, Boston, Mass. Stool-pan and its cover.....(Design)	Feb. 1, 1870
102,092	Clarke, John W., Kingston, Wis. Combined manure fork and scraper	April 19, 1870
100,982	Clarke, Orlando, Rockford, Ill. Base-burning stove for shavings and other light fuel	Mar. 22, 1870
100,983	Same.....Sectional steam-generator	Mar. 22, 1870
103,141	Clarke, Richard T., assignor to self and Gabriel A. Taylor, Philadelphia, Pa. Process of purifying linseed oil	May 17, 1870
100,601	Clarke, Robert, Macon, Ga. Laundry-indicator	Mar. 8, 1870
	Clarke, Samuel, and William Crawford. (*See* Crawford & Clarke, assignors.)	
99,060	Clarke, S. W., New Milford, Conn. Washing-machine	Jan. 25, 1870
	Clarke, Thomas William, and William S. Dexter, trustees. (*See* Whelpley & Storer).....(Release.)	
	Same.....(*See* Storer & Whelpley, assignors).....(Disclaimer.)	
105,909	Clarke, William E., assignor to Mary E. Dean, Troy, N. Y. Joint for tongs &c.	Aug. 2, 1870
105,549	Clarkson, Edward H., assignor to self and James H. Robinson, Alexandria, Va. Valve for water-boilers	July 19, 1870
103,406	Clarkson, James, and George W. Decker, Washington, D. C. Lime-kiln	May 3, 1870
99,393	Clarkson, W. J., Gordon's Depot, Northeastern Railroad, S. C. Animal-trap	Feb. 1, 1870
109,177	Clarner, John Ernest, assignor of one-half interest to Benjamin F. Greene and Horace Daniels, Pawtucket, R. I. Apparatus for bleaching threads, yarns, &c.	Nov. 15, 1870
99,667	Claus, William F., and W. Napp, Cleveland, Ohio. Liquid-meter	Jan. 11, 1870
108,568	Claus, William F., and Leo. W. Sapp, Cleveland, Ohio. Faucet	Oct. 25, 1870

Alphabetical list of patentees for the year 1870—Continued.

No.	Name, residence, and invention or discovery.	Date.
	Clawson, A., and M. C. Chamberlin. (*See* Chamberlin & Clawson). (Two cases.)	
	Clay, E. C., and A. B. Ely. (*See* Ely & Clay.)	
4,016	Clayton, Barnes, Philadelphia, Pa. Sleeve-button and stud.....(Reissue)	June 7, 1870
100,858	Clayton, Webster M., New York, N. Y. Stair-rod	Mar. 15, 1870
109,588	Clegg, Edward T., North Harpersfield, N. Y. Burglar-alarm	Nov. 29, 1870
99,536	Clemans, Joseph B., Kansas, Ill. Seed-drill	Feb. 8, 1870
	Clemence, Benjamin T., *et al.* (*See* Green, Mellvin R., assignor.)	
109,496	Clement, John P., Grinnell, Iowa. Wind-mill	Nov. 22, 1870
101,228	Clement, Nathan S., Northampton, Mass. Machine for nicking screws	Mar. 29, 1870
102,223	Clements, Albion P., and John C. Nealey, Monroe, Me. Cultivator	April 26, 1870
107,760	Clements, Jesse, Blooming Grove, Ind. Corn-cultivator	Sept. 27, 1870
108,759	Clements, Thomas A., Little Rock, Ark. Printers' chase	Nov. 1, 1870
108,760	Same.....same	Nov. 1, 1870
106,336	Clemmons, Alveus J., Aberdeen, Miss. Well-bucket	Aug. 16, 1870
106,255	Clemons, Everett Catawissa, Pa. Seal-lock	Aug. 2, 1870
4,149	Clemons, Robert G., Nashua, N. H. Spool-stand.....(Design)	June 14, 1870
102,497	Clemons, Samuel P., Dansville, N. Y. Cattle-poke	May 3, 1870
101,099	Clemson, William, Middletown, N. Y. Saw-swage	Mar. 22, 1870
101,229	Same.....Saw-gauge	Mar. 29, 1870
	Same.....Grinding circular saws.....(Extension)	May 24, 1870
104,830	Same.....Machine for grinding saw-teeth	June 28, 1870
106,193	Same.....Saw-handle	Aug. 9, 1870
	Clemson, William, *et al.* (*See* Tuttle, Joseph H., assignor).....(Reissue.)	
	Clendening, J. M., *et al.* (*See* Doubler, John W. H., assignor.)	
3,948	Clendinen, William H., Baltimore, Md. Ornamental letters.....(Design)	April 5, 1870
	Cleveland, Albert. (*See* Thompson, A. B., assignor.)	
99,760	Cleveland, A. J., Baltimore, Md. Window-frame. (Antedated Jan. 31, 1870)	Feb. 15, 1870
	Cleveland Fire-Alarm Company. (*See* Shawk, George W., assignor.)	
104,114	Cleveland, James B., and Henry C. Guildersleive, Newark, N. J. Machine for forming elliptic springs	June 14, 1870
	Cleveland Non-Explosive Lamp Company. (*See* House, Mark W., assignor.)	
105,900	Clifford, Henry A., Rockville, Conn. Stop-action for cabinet organs, &c.	Aug. 2, 1870
99,947	Clifford, Thomas G., assignor to self and William B. Clifford, New York, N. Y. Folding-bedstead	Feb. 15, 1870
110,550	Clifton, Josiah, Georgetown, Texas. Plow	Dec. 27, 1870
108,230	Clifton, William C., Elk River Township, Iowa. Corn-plow	Oct. 11, 1870
	Climax Horse Collar Company. (*See* Marshall, Charles K., assignor.)	
106,780	Clime, John C., Philadelphia, Pa. Velocipede	Aug. 30, 1870
109,178	Same.....Sawing-machine. (Antedated Nov. 11, 1870)	Nov. 15, 1870
	Cline, Conrad, and Peter Burress. (*See* Burress & Cline.)	
	Cline, John W., *et al.* (*See* Swickard, Noah, assignor).....(Reissue.)	
	Cline, William, jr., and J. Morgan. (*See* Morgan & Cline.)	
103,142	Clingen, Robert, assignor to Thomas Goddard, Boston, Mass. Flap-fastener for the dasher of carriages	May 17, 1870
101,825	Clinger, Peter S., Conestoga Centre, Pa. Seat and cap for tie and sill-plate	April 12, 1870
	Clinton, Charles M., and B. W. Squires. (*See* Squires & Clinton.)	
	Clinton, Charles M., and W. W. Travis. (*See* Travis & Clinton.)	
101,585	Clinton, Charles M., assignor to self and A. H. Gregg, Ithaca, N. Y. Lawn-mower	April 5, 1870
99,163	Clippinger, I. A., Newton, Iowa. Shoemakers' tool	Jan. 25, 1870
99,636	Clippinger, I. A., and S. S. Pratt, Newton, Iowa. Bed-bottom	Feb. 8, 1870
	Clissold, William, and James Apperly. (*See* Apperly & Clissold). (Extension.)	
107,450	Clock, Frank B., Boston, Mass. Shaving-mug	Sept. 20, 1870
104,270	Clock, Lewis G., Manchester, N. H. Earth-closet	June 14, 1870
107,451	Same.....same	Sept. 20, 1870
101,890	Cloes, John Joseph, assignor to Edward de Beaumont, Belgium. Breech-loading fire-arm	April 12, 1870
102,498	Close, Thomas J., Philadelphia, Pa. Reversible seat for railway-cars	May 3, 1870
110,436	Close, Walter R., Bangor, Me. Tidal motive power	Dec. 27, 1870
107,877	Cloud, Hiram W., Evansville, Ind. Medical compound	Oct. 4, 1870
108,451	Cloudman, Augustin F., Brooklyn, N. Y., and George W. Coffin, Charlestown, Mass. Composing-stick	Oct. 18, 1870
	Clough, Carlos. (*See* Fitch, Eugene L., assignor.)	
	Clough, Isaac S., and William S. Estey. (*See* Estey & Clough.)	
103,981	Clough, Jefferson M., Ilion, N. Y. Cotton-gin	June 7, 1870
104,271	Clough, Theodore, Dobb's Ferry, N. Y. Gas-burner	June 14, 1870
	Clough, William T., Newark, N. J. Concentrating-apparatus for sulphuric acid.....(Extension)	June 29, 1870
108,761	Clover, William C., assignor to Henry E. Clover, Brooklyn, N. Y. Curtain-fixture	Nov. 1, 1870
107,004	Clow, Daniel, Janesville, Wis. Harvester-rake	Sept. 6, 1870
107,459	Clow, George E., assignor to self and Benjamin Clow, Jeffersonville, Ind. Securing hubs to axles	Sept. 20, 1870
	Clow, James B. (*See* Fisher, John T., assignor.)	
98,849	Clowser, Edward H., Boston, Mass. Food for horses and cattle	Jan. 18, 1870
103,992	Cloyd, Henry C., West Alexandria, Ohio. Plow	June 7, 1870
100,984	Cluckner, Joseph, Arcadia, Ind. Dirt-gauge for plows	Mar. 22, 1870
108,569	Clute, Nicholas, Schenectady, N. Y., and Oliver W. Marshall, Hartford, Conn. Work-holder	Oct. 25, 1870
101,586	Cluxton, Thomas M., Rising Sun, Ind. Wagon-axle	April 5, 1870
103,143	Clymo, Henry, Galena, Ill. Latch for gates	May 17, 1870

Alphabetical list of patentees for the year 1870—Continued.

No.	Name, residence, and invention or discovery.	Date.
100,726	Coar, Robert B., Jersey City, N. J. Pipe-joint	Mar. 15, 1870
102,567	Same.....same	May 31, 1870
	Coates, Joseph H., and George C. Miller. (*See* Miller & Coates.)	
103,869	Coates, Thomas, Ironton, Ohio. Chill-basins for boiling and puddling furnaces	June 7, 1870
99,668	Coates, William B., assignor of one-half interest to Joseph Leeds, Philadelphia, Pa. Ice-creeper	Jan. 11, 1870
100,737	Same.....Concrete and wooden pavement	Mar. 15, 1870
100,397	Same.....Roofing-felt. (Antedated Aug. 6, 1870)	Aug. 16, 1870
	Coats, Chandler C., *et al.* (*See* Hopper, Hopper & Coats.)	
103,984	Cobb, James J., Philadelphia, Pa. Sewing-machine	June 7, 1870
103,598	Cobb, Lucius J., Chicago, Ill. Reseawing-machine	May 31, 1870
102,093	Cobb, Pleasant A., Lynchburg, Va. Extract for the cure of cancer and other diseases	April 19, 1870
104,437	Cobb, William A., Orange, Mass. Inclosed tail-race of water-wheels	June 21, 1870
103,718	Cobb, William Stokes, Philadelphia, Pa. Water-cooler	May 31, 1870
107,663	Cobb, Zenas, Chicago, Ill. Mode of inserting glass in vault-lights	Sept. 27, 1870
102,580	Coburn, Phinehas, East Walpole, Mass. Machine for calendering and polishing paper	May 31, 1870
102,777	Cochran, Frederick G., St. Louis, Mo. Heating-stove	May 10, 1870
100,376	Cochran, John, Purdy's Station, N. Y. Milk-can	Mar. 1, 1870
110,204	Cochran, John W., New York, N. Y. Car and other springs	Dec. 20, 1870
109,111	Cochran, Lemuel, Penn's Grove, N. J. Potato-digging machine	Nov. 8, 1870
105,910	Cochran, William M., Indianapolis, Ind. Sawing-machine	Aug. 2, 1870
3,906	Cochrane, John, Wall Township, N. J. Machine for forging or rolling screw-threads upon metal bolts (Reissue)	May 31, 1870
106,256	Cochrane, John, Farmington, N. J. Railway-rail fastening	Aug. 9, 1870
100,377	Cochrane, John, jr., Malden, Mass. Carpet	Mar. 1, 1870
106,761	Same.....Driving-mechanism for sawing-machines	Aug. 16, 1870
110,112	Cocker, Peter, assignor to self and William L. McBride, Philadelphia, Pa. Woven fringed fabric	Dec. 13, 1870
105,175	Codd, Edward James, Baltimore, Md. Coffee-polisher	July 12, 1870
100,504	Codding, D. D., North Attleboro', Mass. Bracelet	Mar. 8, 1870
104,706	Codding, Fred W., West Rutland, Mass. Device for tendering or chopping meat	June 28, 1870
107,664	Coddington, Benjamin, Lafayette, Ind. Tin-roofing	Sept. 27, 1870
	Coe, George W. (*See* Odell & Little, assignors.)	
3,963	Coe, Samuel Sage, Cleveland, Ohio. Adjustable counting-house calendar (Design)	April 19, 1870
103,144	Coeller, Frederich, assignor to Cornelius Walsh, New Haven, Conn. Traveling-bag fastener	May 17, 1870
	Coerver, John, and Frank Sauer. (*See* Sauer & Coerver.)	
100,602	Coes, Aury G., Worcester, Mass. Wrench	Mar. 8, 1870
102,371	Same.....Pipe-tongs	April 26, 1870
104,931	Same.....Machine for forging the heads of wrenches	July 5, 1870
	Coes, Loring. (*See* Taft, George C., assignor) (Reissue.)	
103,015	Same.....Worcester, Mass. Automatic friction dog-lathe chuck	May 17, 1870
105,398	Coester, Charles, jr., and James L. Moore, Bridgeport, Conn. Garter	Aug. 16, 1870
105,911	Coester, Henry, New York, N. Y. Extension gas-fixture	Aug. 2, 1870
101,331	Coffield, Timothy, Natrona, Pa. Fence	Mar. 29, 1870
108,969	Coffield, Timothy, and Benedic Egli, Natrona, Pa. Churn	Nov. 8, 1870
100,850	Coffin, D. N. B., jr., Newton Centre, Mass. Capstan	Mar. 15, 1870
4,100	Coffin, David N. B., jr., assignor through mesne assignments to self and Benjamin Woodward, Newton, Mass. Capstan and windlass (Reissue)	Aug. 16, 1870
101,567	Coffin, Edwin F., Newburyport, Mass. Molding and clarifying horn	April 5, 1870
3,986	Same.....Comb (Design)	April 26, 1870
	Coffin, Edward W., and C. F. A. Simonin. (*See* Simonin & Coffin) (Two cases.)	
	Coffin, George W., and Augustin F. Cloudman. (*See* Cloudman & Coffin.)	
102,636	Coffin, James H., Danielsville, Pa. Slate-frame clamp	May 3, 1870
4,315	Coffin, John M., Lehigh Township, Pa. Slate-frame (Design)	July 12, 1870
107,336	Coffin, Mark, Milton, Ky. Ice-velocipede	Sept. 13, 1870
105,918	Coffin, Nathan T., Knightstown, Ind. Machine for securing sheet-metal lining in pump-stocks	Aug. 2, 1870
105,913	Same.....Pump-valve	Aug. 2, 1870
99,661	Coffin, T. S., Harrington, Me. Lifter for kitchen use	Jan. 25, 1870
	Coffin, William. (*See* Simonin & Coffin, assignors.)	
107,605	Coffin, Z. E., Newton, Mass. Device for lubricating, cooling, and washing vertical hammer-shafts or stamps	Sept. 6, 1870
108,970	Coggin, Frederick G., Burlington, Vt. Water-wheel	Nov. 8, 1870
	Cogill, John H. (*See* Thompson, George, assignor.)	
107,965	Cogswell, Thomas, Boston, Mass. Cuff-supporter	Mar. 22, 1870
105,914	Cohen, Moses M., Boston, Mass. Chignon	Aug. 2, 1870
4,336	Cohen, Solomon L., assignor to Lawrence & Cohen, New York, N. Y. Back of a playing-card (Design)	Dec. 27, 1870
4,337	Same.....Back of a playing-card (Design)	Dec. 27, 1870
	Cohn, David. (*See* Taylor, Enos D., assignor.)	
	Cohn, M., & Co., *et al.* (*See* Pratt, Charles E., assignor.)	
99,662	Coignet, François, assignor to Coignet Agglomerate Company of the United States, France. Manufacture of artificial stone	Jan. 25, 1870
99,627	Coignet, François, assignor to La Société Centrale des Betons Systeme Coignet, France. Treating argillaceous limestone to obtain hydraulic cement, &c.	Feb. 8, 1870
	Coit, Samuel. (*See* Arbetter, Joseph, assignor.) (Reissue) (Two cases.)	

Alphabetical list of patentees for the year 1870—Continued.

No.	Name, residence, and invention or discovery.	Date.
106,339	Colahan, Samuel, Cleveland, Ohio. Straw-cutter	Aug. 16, 1870
99,582	Colburn, G. F. J., Newark, N. J. Bird-cage	Jan. 4, 1870
99,164	Same.....same	Jan. 25, 1870
100,603	Same.....Hand-rubber for washing clothes	Mar. 8, 1870
102,373	Colburn, Horace, assignor to self and Sylvester Colburn, Stafford, Conn. Die for forging ox-shoes	April 26, 1870
106,663	Colby, Charles, and Henry C. Ward, Benton Harbor, Mich. Fruit-box	Aug. 23, 1870
101,100	Colby, D. C., Washington, D. C. Street-pavement	Mar. 22, 1870
	Colby, Daniel C., *et al.* (*See* Hansen, H. S., assignor) (Reissue.)	
103,570	Colby, Eastman, Brockport, N. Y. Fruit-basket	May 31, 1870
100,119	Colby, Hall, assignor to self and George G. Colby, New York, N. Y. Altitude instrument	Feb. 22, 1870
105,781	Coldwell, Thomas, and George L. Chadborn, Newburgh, N. Y. Lawn-mower	July 26, 1870
109,299	Coldwell, Thomas, Newburgh, N. Y. Friction-clutch	Nov. 15, 1870
	Cole, Benjamin J. (*See* Cook, Jacob M., assignor.)	
108,971	Cole, Calvin, Ithaca, N. Y. Gate-latch	Nov. 8, 1870
100,860	Cole, Charles, assignor to self and Harvey Cole, Troy, N. Y. Railway-car axle	Mar. 15, 1870
104,272	Cole, Cyrus, Havana, N. Y. Stove-cover, dish and kettle lifter	June 14, 1870
98,563	Cole, Cyrus C., Phelps, N. Y. Draught attachment for horses	Jan. 4, 1870
99,537	Cole, Daniel, Scott Township, Pa. Trap	Feb. 8, 1870
108,458	Cole, Edward R. and Henry S., Pawtucket, R. I. Steam fire-engine	Oct. 18, 1870
3,874	Cole, G. W., Farmington, Ill. Cornstalk-cutter (Reissue)	Mar. 8, 1870
	Cole, Isaac, and John Stainthorp. (*See* Stainthorp & Cole.)	
99,848	Cole, J. H., assignor to Samuel P. Emerson and Amos White, Millbury, Mass. Die and plunger	Feb. 15, 1870
110,343	Cole, James H., Chicago, Ill. Roofing material	Dec. 20, 1870
101,101	Cole, James R., Demopolis, Ala. Composition for the manufacture of tobacco-pipes, stems, and cigar-holders	Mar. 22, 1870
101,435	Cole, John H., Vacaville, Cal. Sulky-plow	April 5, 1870
103,719	Same.....Wheel-carriage seed-sower	May 31, 1870
109,604	Cole, Noah L., assignor to self and Albert N. Upham, Norwich, Conn. Machine for picking curled hair	Mar. 8, 1870
100,861	Cole, R. H. and G. F., Greenport, N. Y. Hay and cotton press	Mar. 15, 1870
108,331	Cole, Seth L., Brooklyn, N. Y. Forming cigar-tips	Oct. 18, 1870
	Cole, Seth L., and William G. Ayres. (*See* Ayres & Cole.)	
106,330	Cole, Stephen H., East Enterprise, Ind. Approach-gate	Aug. 16, 1870
106,551	Cole, William T., New York, N. Y. Chucks for holding pipes and tubes while being screw-threaded	Aug. 23, 1870
110,437	Same.....Die-plate for screw-cutting dies	Dec. 27, 1870
99,038	Coleman, Columbus, Allegheny City, Pa. Machine for bending rake-teeth	Feb. 8, 1870
101,230	Same.....same	Mar. 29, 1870
102,499	Coleman, Frank B., Southampton, Mass. Match-case	May 3, 1870
	Coleman, G. J., *et al.* (*See* Morgans, William T., assignor.)	
107,761	Coleman, George S., Alexandria, Va. Corn-sheller, &c. (Antedated Sept. 21, 1870)	Sept. 27, 1870
106,782	Coleman, Henry V., Chicago, Ill. Circulating water-heater for steam fire-engines	Aug. 30, 1870
103,016	Coleman, Isaac B., Detroit, Mich. Steam-trap	May 17, 1870
105,915	Coleman, Jesse C., and George Strayer, Clinton, Kansas. Wind-wheel	Aug. 2, 1870
102,500	Coleman, John, Lynchburg, Va. Car-coupling	May 3, 1870
99,639	Coleman, Stephen G., Providence, R. I. Rudder for vessels	Feb. 8, 1870
	Coleman, William. (*See* Evans, William, assignor.)	
	Colgrove, Eli J., and Stephen S. Wilcox. (*See* Wilcox & Colgrove.)	
110,205	Coll, Hugh, Millvale Borough, Pa. Ejector	Dec. 20, 1870
103,301	Colley, William H., Leavenworth, Kans. Lounge	May 24, 1870
109,569	Collier, Charles, Selma, Ala. Globe for gas-lights	Nov. 29, 1870
107,453	Collier, Orrin, and William H. Masterman, Sacramento, Cal. Balance slide-valve	Sept. 13, 1870
106,552	Collier, William F., Worcester, Mass. Dish-stand	Aug. 23, 1870
107,006	Same.....Wire for wire goods	Sept. 6, 1870
99,995	Collier, William F., assignor to Howe, Bigelow & Co., Worcester, Mass. Animal-trap	Feb. 15, 1870
105,176	Collins, Alfred S., Caledonia, N. Y. Spawning-screen	July 12, 1870
	Collins Company. (*See* Chapman, Luke, assignor.)	
	Same.....(*See* Jordan & Smith, assignors.)	
107,337	Collins, George, Fremont, Neb. Rotary harrow	Sept. 13, 1870
	Collins, Henry H. and Benjamin F. (*See* Wright, Homer, assignor.)	
	Collins, Jairus. (*See* Stephens, John, assignor.)	
	Collins, Jairus, and John Stephens. (*See* Stephens & Collins.)	
103,571	Collins, John F., and Arthur Neill, New York, N. Y. Button. (Antedated May 27, 1870)	May 31, 1870
102,501	Collins, John J. G., Philadelphia, Pa. Manufacture of malleable iron	May 3, 1870
	Collins, Joseph, and John B. Rittenhouse. (*See* Rittenhouse & Collins.)	
109,389	Collins, Matthew Grier, Meadville, Pa. Combined railroad-jack and pinch-bar	Nov. 29, 1870
100,980	Collins, M. H., Chelsea, Mass. Lamp-burner	Mar. 1, 1870
108,972	Same.....Shade for lamp and gas-burners	Nov. 8, 1870
	Collins, Samuel C. (*See* Hindemeyer, Anthony J., assignor.)	
104,932	Collins, William A., Bloomfield, N. J. Fifth-wheel for carriages	July 5, 1870
99,640	Collinson, Henry, assignor to self and N. M. Hansen, Andover, Mass. Grate-bar	Feb. 8, 1870
106,553	Colton, John, Empire City, Col. Ter. Roasting-furnace for ores. (Antedated Aug. 15, 1870)	Aug. 23, 1870
106,554	Colson, James M., Morrill, Me. Horse hay-rake	Aug. 23, 1870

Alphabetical list of patentees for the year 1870—Continued.

No.	Name, residence, and invention or discovery.	Date.
4,087	Colt, Calvin and Chester H., Jonesborough, Tenn. Mica chimney for lamps. (Design)	May 31, 1870
99,063	Colton, Aaron, Sycamore, Ill. Propeller	Jan. 25, 1870
101,568	Colton, Edward S., assignor to Colton Refrigerator Company, Boston, Mass. Refrigerator	April 5, 1870
110,436	Colton, Francis, Brooklyn, N. Y. Folding-chair	Dec. 27, 1870
	Colton, Frederick P., and Peter Doyle. (*See* Doyle & Colton.)	
100,726	Colton, Henry R. S., Houghton, Mich. Safety-attachment for pockets	Mar. 15, 1870
	Colt's Patent Fire Arms Manufacturing Company. (*See* Thuer, F. Alexander, assignor.)	
	Same.....same.	
101,569	Colvin, Leighton O., New York, N. Y. Cow-milker. (Antedated Mar. 24, 1870)	April 5, 1870
108,881	Same.....Humphreyville, Pa.....same	Nov. 1, 1870
108,882	Same.....Newark, N. J. Breast-pump	Nov. 1, 1870
107,665	Colwell, William S., Pittsburgh, Pa. Blower	Sept. 27, 1870
	Combination Rubber Company *et al.* (*See* Perry & Manheim, assignors.) (Reissue.)	
108,108	Combs, Richard J., Bergen, N. J. Brush	Oct. 11, 1870
102,502	Combs, Roy, and Henry J. Leasure, Wheeling, W. Va. Pot for smelting glass	May 3, 1870
102,234	Combs, Thomas, Yonkers, N. Y. Ointment	April 26, 1870
	Comegys, Henry C., and Charles F. Smith. (*See* Klaucke, Alexander A. C., assignor.)	
106,124	Comins, James M., New York, N. Y. Railroad-car stove	Aug. 9, 1870
98,743	Comins, Thomas Babbitt, jr., Lowell, Mass. Folding-chair	Jan. 11, 1870
108,973	Same.....same	Nov. 8, 1870
	Comly, John P. (*See* Wells, Richard P., assignor.)	
103,017	Comly, Joshua, Philadelphia, Pa. Gas-heater	May 17, 1870
4,346	Same.....Combined top-plate combustion and air-chamber of a vapor generator and burner.....(Design)	Sept. 13, 1870
99,284	Cummins, John, Charleston, S. C. Fertilizer	Feb. 1, 1870
100,739	Same.....same	Mar. 15, 1870
107,878	Same.....Manufacture of fertilizers	Oct. 4, 1870
103,329	Compton, John R., and Crowell M. Toms, assignors to selves and Albert Asmann, Rahway, N. J. Oil-can	May 24, 1870
103,965	Comstock, Alonzo, and James H. Nicholson, Chicopee, Mass. Carriage-curtain button	June 7, 1870
101,108	Comstock, Charles H., Chebanse, Ill. End-gate for grain-wagons	Mar. 22, 1870
107,454	Comstock, Francis M., assignor to self, George W. Howe, and David M. Somerville, Cleveland, Ohio. Knitting-machine	Sept. 20, 1870
107,879	Comstock, James, assignor to self and John W. Comstock, Greenfield, Ind. Fence	Oct. 4, 1870
103,018	Comstock, Joseph J., and James Aborn Cloth, Providence, R. I. Manufacture of imitation hair-cloth	May 17, 1870
107,880	Comstock, Levi Richardson, Keokuk, Iowa. Water-cooler and refrigerator	Oct. 4, 1870
	Comstock, Peter. (*See* Bigelow, Elijah K., assignor.)	
100,961	Conant, C. B., and H. Thompson, Worcester, Mass. Spoke-lathe	Mar. 1, 1870
99,641	Conant, Hezekiah, Providence County, R. I. Machine for combing cotton, &c.	Feb. 8, 1870
3,949	Same.....Pawtucket, R. I. Spool for thread.....(Design)	April 5, 1870
106,555	Conant, Leander T., New Lisbon, Ohio. Automatic buggy-brake	Aug. 23, 1870
	Conant, William E., and George W. Hubbard. (*See* Hubbard & Conant.) (Reissue.)	
105,046	Conard, William, Burlington, N. J. Railroad-car ventilator	July 5, 1870
107,163	Same.....Deflector for windows of railroad-cars	Sept. 6, 1870
3,950	Condon, Charles, Rochester, N. Y. Pruning-shears.....(Design)	April 5, 1870
108,109	Cone, Francis C., San Francisco, Cal. Candlestick	Oct. 11, 1870
108,110	Same.....Fountain-pen	Oct. 11, 1870
99,643	Cone, J., and William K. Kelly, Bristol, Pa. Furnace grate-bar	Feb. 8, 1870
105,305	Cone, John E., Chicago, Ill. Gas-heater	July 12, 1870
110,013	Congle, George J., Chippewa Falls, Wis. Table	Dec. 13, 1870
	Conklin, Edward, and Franklin Whitmore. (*See* Whitmore & Conklin.)	
	Conklin, Hamilton W. (*See* Bestor, Samuel J., assignor.)	
98,564	Conklin, Henry N., Indianapolis, Ind. Shoulder-brace	Jan. 4, 1870
100,730	Conklin, Hiram M., Carlstadt, N. J. Compound for making concrete pavements	Mar. 15, 1870
101,436	Conklin, Theodore, Fond du Lac, Wis. Machine for cutting locks in hoops	April 5, 1870
104,933	Conklin, Theodore F., Fond du Lac, Wis. Cover for pails, firkins, &c	July 5, 1870
	Conklin, William G., and Samuel H. Sheplar. (*See* Sheplar & Conklin.)	
101,437	Conley, Edward, Cincinnati, Ohio. Railroad-station indicator	April 5, 1870
105,550	Connel, James M., Newark, Ohio. Harvester-cutter	July 19, 1870
	Connel, Nathaniel B. (*See* Trunick, William B., assignor.)	
103,579	Connelly, Joseph H., and John McLure, Wheeling, West Va. Collecting, separating, and purifying the gases from furnaces	May 31, 1870
106,331	Connelly, Richard H., Philadelphia, Pa. Paddle-wheel	Aug. 16, 1870
105,306	Conner, Andrew Jackson, Louisville, Ky. Cistern influx-regulator	July 12, 1870
105,640	Conner, James, Richmond, Ind. Sad-iron. (Antedated July 15, 1870)	July 26, 1870
110,114	Conner, Joseph, Philadelphia, Pa. Steam-pipe coupling for railroad-cars	Dec. 13, 1870
108,769	Conner, Michael, Plymouth, Mich. Tinsmiths' furnace	Nov. 1, 1870
109,805	Same.....same	Dec. 6, 1870
101,103	Connor, Henry W., Richmond, Ind. Washing-machine	Mar. 22, 1870
110,340	Conover, Daniel B. New Bedford, N. J. Harrow	Dec. 20, 1870
108,111	Conover, George, Mott Haven, N. Y. Syringe	Oct. 11, 1870
104,558	Conrad, Ernst Eustach, assignor to Henry Coulter and Barton H. Jones, Philadelphia, Pa. Lamp-shade supporter. (Antedated June 13, 1870)	June 21, 1870

Alphabetical list of patentees for the year 1870—Continued.

No.	Name, residence, and invention or discovery.	Date.
4,227	Conradt, Augustus, Philadelphia, Pa. Handle of spoons and other articles. (Design)	July 19, 1870
104,707	Consalvi, Alexander A., New York, N. Y. Street-sweeping machine. (Antedated June 13, 1870)	June 28, 1870
109,179	Constantine, James, Mansfield, La. Rotary engine	Nov. 15, 1870
	Continental Windmill Company. (*See* Brown, Addison P., assignor.)	
	Same.....same.....(Reissue.)	
104,115	Convers, Eugene, Oswego, N. Y. Oil-cup and bearing for spindles	June 14, 1870
104,116	Same.....Folding school-desk	June 14, 1870
106,664	Converse, Charles C., Brooklyn, N. Y. Mucilage-holder	Aug. 23, 1870
100,605	Converse, Mack D., London, Ohio. Brad-setter	Mar. 8, 1870
104,841	Converse, Mack Delorimer, London, Ohio, and Frank Atwell Bates, Boston, Mass. Rubber-eraser	June 28, 1870
105,916	Conselman, John, St. Louis, Mo. Cough-syrup	Aug. 9, 1870
98,926	Coogan, Edward, Washington, D. C. Chair-tip	Jan. 18, 1870
108,883	Coogan, Edward, assignor to self and Joseph L. Simons, Washington, D. C. Wood-splitting machine	Nov. 1, 1870
100,190	Cook, Abel D., and James Graves, New Madrid, Mo. Feather-renovator	Feb. 22, 1870
110,206	Cook, Daniel McFarland, Mansfield, Ohio. Galvanic battery	Dec. 20, 1870
104,117	Cook, Daniel P., Hartford, Conn. Self-protector	June 14, 1870
100,014	Cook, Elbert P., Cartersville, Ga. Head-rest	Feb. 22, 1870
103,019	Cook, George, New Haven, Conn. Sub-bass reed-organ couplers	May 17, 1870
102,373	Cook, Hanson, New Bridgeport, Pa. Washing-machine	April 26, 1870
	Cook, Harrison F. (*See* Harvey, Moses B., assignor.)	
98,997	Cook, Henry, Washington, D. C. Telegraphic apparatus	Jan. 18, 1870
	Cook, Henry W., *et al.* (*See* Jordan, William N., assignor.)	
107,338	Cook, Hezekiah, Dillsburgh, Pa. Grain-separator	Sept. 13, 1870
99,849	Cook, Hiram, Norwich, Conn. Fish-joint for railway-rails	Feb. 15, 1870
99,408	Cook, J. C., New Haven, Conn. Apparatus for administering medicated vapors	Feb. 1, 1870
107,007	Cook, Jacob M., assignor of one-half interest to Benjamin J. Cole, Lake Village, N. H. Water-wheel	Sept. 6, 1870
106,783	Cook, James V., and Edward J. Crossman, Auburn, N. Y. Scaffolding	Aug. 30, 1870
99,643	Cook, John H., assignor to Hagerstown Agricultural Implement Manufacturing Company, Hagerstown, Md. Horse hay-rake	Feb. 8, 1870
	Cook, Joseph, *et al.* (*See* Phelps, Augustus H., assignor.)	
108,763	Cook, Leeds A., Concord, Mich. Sliding-door	Nov. 1, 1870
103,429	Cook, Roswell F., assignor to Sparrow & Swan, Potsdam, N. Y. Brad-punch	May 24, 1870
	Cook, Simeon S. (*See* Lofvendahl, Joseph, assignor.)	
109,180	Cook, William H., Bergen, N. J. Rocking-chair and step-ladder	Nov. 15, 1870
	Cooke, Augustus D., and Thomas B. Fitts. (*See* Fitts & Cooke.)	
100,862	Cooke, Edward L., Hartford, Conn. Orange-knife	Mar. 15, 1870
3,818	Cooke, George, New Haven, Conn. Organ or melodeon case.....(Design)	Jan. 18, 1870
100,505	Cooke, James C., assignor to DeWitt C. Sage, Bridgeport, Conn. Sash-bolt	Mar. 8, 1870
102,503	Cooke, Matthew, Sacramento, Cal. Apparatus for blasting logs. (Antedated April 27, 1870)	May 3, 1870
101,231	Cooke, Robert F., Brooklyn, N. Y. Cotton-picker	Mar. 29, 1870
103,986	Same.....Electrical cotton-picking machine	June 7, 1870
103,225	Cooke, Sydney, assignor to self and Frederick C. Bulkley, Bayonne City, N. J. Dredge-box, cake-cutter, and grater	April 26, 1870
99,165	Cooke, Watts, Paterson, N. J. Railroad-rail and base-plate	Jan. 25, 1870
103,987	Cookerly, John A., Middletown, Md. Quilting-frame	June 7, 1870
105,650	Cool, Emanuel and Sadisea, Buckhannon, West Va. Washing-machine	July 26, 1870
109,287	Cooley, DeWitt C., Wilkesbarre, Pa. Washing-machine. (Antedated Nov. 9, 1870)	Nov. 22, 1870
104,118	Cooley, Eli P., New York, N. Y. Broom and whisk	June 14, 1870
104,550	Cooley, Newton C., Wyoming, Del. Fruit-drier	June 21, 1870
107,455	Coolidge, John K., and Nathan H. Hill, Cincinnati, Ohio. Folding or knock-down chair	Sept. 20, 1870
99,850	Coolman, Grant T., and Charles M. Young, Corry, Pa. Harvester	Feb. 15, 1870
105,430	Coombes, Eden M., Memphis, Ind. Hominy-mill	July 19, 1870
99,644	Coomba, Charles L., Washington, D. C. Toy	Feb. 8, 1870
98,565	Coomba, William C., and James M. Gray, Memphis, Ind. Hominy-mill	Jan. 4, 1870
106,556	Coomba, William G. New Gloucester, Me. Plow	Aug. 23, 1870
	Coon, John S., and James C. Beddoe. (*See* Beddoe & Coon.)	
106,032	Coon, John V., Elyria, Ohio. Sewing-machine	Aug. 2, 1870
98,998	Coon, S. Park, assignor to Caleb Croswell, Sarah V. Coon, and Susan M. Hunter, Milwaukee, Wis. Skipping-rope	Jan. 18, 1870
105,307	Coon, S. Park, assignor to self and David G. Power, Milwaukee, Wis. Fence	July 12, 1870
101,104	Coon, William S., Rochester, N. Y. Treadle	Mar. 22, 1870
102,236	Cooney, William, Bridgeport, Conn. Sewing-machine	April 26, 1870
102,237	Cooper, Albert, Harrisburgh, Pa. Sash-lock	April 26, 1870
100,262	Cooper, Almond F., San Francisco, Cal. Foundation for buildings	Mar. 1, 1870
102,657	Same.....Carriage-wheel hub	May 3, 1870
103,573	Same.....Carriage and railroad-car wheel	May 31, 1870
99,851	Cooper, Almond F., assignor to self and John G. Tappan, San Francisco, Cal. Wheel for carriages and other vehicles	Feb. 15, 1870
103,308	Cooper, Emmett, Theresa, N. Y. Hay-loader	July 12, 1870
100,015	Cooper, H. B., Memphis, Tenn. Bee-hive	Feb. 22, 1870
100,710	Cooper, Matthew M., and James W. Donaldson, Fairfield, Cal. Riddle for separating grain	Nov. 29, 1870
98,566	Cooper, William, Independence, Iowa. Clothes-wringer	Jan. 4, 1870
105,651	Cooper, William H., Glover, Vt. Rein-holder	July 26, 1870

Alphabetical list of patentees for the year 1870—Continued.

No.	Name, residence, and invention or discovery.	Date.
103,145	Cooper, William S., Philadelphia, Pa. Faucet	May 17, 1870
109,288	Cooper, William S., assignor to Cooper, Jones & Cadbury, Philadelphia, Pa. Steam-whistle	Nov. 22, 1870
	Copcutt, F. W., and George W. Ladd. (*See* Ladd & Copcutt.)	
103,845	Cope, David, England. Cask-filler	June 7, 1870
	Cope, Ezra, and James R. Maxwell. (*See* Maxwell & Cope.)	
	Cope, John D., *et al.* (*See* Filson, Filson & Cope.)	
	Cope, J. K., *et al.* (*See* Pollard, Thomas, assignor.)	
105,177	Copeland, Charles W., New York, N. Y. Safety hoisting-apparatus	July 12, 1870
102,504	Copeland, George, Denver, Colorado Territory. Horse-shoe	May 3, 1870
103,574	Same.....Ore-separator	May 31, 1870
107,456	Copeland, Ira, North Bridgewater, Mass. Horse-hoe	Sept. 20, 1870
101,358	Copeley, Humphrey E., Brooklyn, N. Y. Rivet	Mar. 29, 1870
107,330	Copenhaver, Jacob D., Martinsburgh, West Va. Charring barrel-heads	Sept. 13, 1870
	Copp, C. D. & E. J. (*See* McClure, Jacob, assignor.)	
	Coppock, Henry H., *et al.* (*See* Tucker, Williams & Coppock.)	
	Corbet, Paul and Lescieux. (*See* Horts, Conrad, assignor.)	
	Corbett, Augustus O. (*See* Hussey, Roland C., assignor.)	
100,883	Corbett, Cooper E., Binghamton, N. Y. Culinary vessel	Mar. 15, 1870
110,014	Corbett, Henry V., assignor to George W. Amigh, Allendale, Mich. Corn-cutter	Dec. 13, 1870
109,717	Corbett, Joseph, Brooklyn, N. Y. Padlock	Nov. 29, 1870
109,716	Corbett, Joseph, Brooklyn, and Franklin W. Brooks, New York, N. Y., assignors to the American Seal Lock Company. Seal-lock	Nov. 29, 1870
	Corbin, A., and S. C. Catlin. (*See* Catlin & Corbin.)	
109,806	Corbin, Elijah H., Winchester, Ind. Circular saw-jointer	Dec. 6, 1870
	Corbin, John P., and Joseph P. Adams. (*See* Adams & Corbin.)	
	Corbin P. and F. (*See* Fracker, F. T., assignor.....(Reissue of design.)	
	Same.....(*See* Munger, W. T., assignor).....(Four cases.)	
	Same.....(*See* Arnold, Stephen D., assignor.)	
	Same.....(*See* Summers, Lucius P., assignor).....(Two cases.)	
109,719	Corbin, Squire W., Cambridge, N. Y. Harrow-teeth	Nov. 29, 1870
110,531	Corby, Emmons B., Bloomfield, N. J. Clothes-drier	Dec. 27, 1870
100,406	Corey, G. W., and Thomas Louis, New York, N. Y. Floating-ship. (Antedated Feb. 28, 1870)	Mar. 8, 1870
108,824	Corey, James W., Newark, N. J. Brim for soft-hats	Nov. 1, 1870
	Corey, Thomas, *et al.* (*See* Stearns, Caleb S., assignor).....(Reissue.)	
	Corfield, William, and Samuel Woolston. (*See* Woolston & Corfield.)	
	Corkhill, Henry E., and Samuel Fawcett. (*See* Fawcett & Corkhill).(Design.)	
106,635	Corne, William F., New York, N. Y. Head-stamp	Aug. 23, 1870
106,764	Cornelius, George F., England. Manufacture of paint and varnish	Aug. 30, 1870
101,983	Cornell, Abe C., St. Louis, Mo. Shutter-worker. (Antedated April 14, 1870)	April 19, 1870
	Cornell, Ezra. (*See* Chase, Alonzo, assignor.)	
109,607	Cornell, Leffert Ryerson, Flatbush, N. Y. Steam-generator	Dec. 6, 1870
	Cornell, Thomas L. and Sidney. (*See* McChesney, Reuben, assignor.)	
	Cornell, Ward & Comings. (*See* Leslie, Arthur M., assignor).....(Two cases.)	
100,966	Corning, Jasper E., Rye, N. Y. Locking-device for traps	Mar. 22, 1870
3,899	Cornwell, Willett and Elmira, Rochester, Minn. Pattern or chart for applying measurements and laying out dress-waists.....(Design)	Mar. 15, 1870
104,498	Corpe, Alpheus C., Stafford, Conn. Water-wheel	June 21, 1870
103,080	Correll, William Hurd, Nashville, Ohio. Shaft-tug	May 17, 1870
	Corrister, W. D., and Susan R. Knox. (*See* Knox & Corrister.).....(Reissue.)	
103,575	Corse, William Pinckney, Catskill, N. Y. Machine for cutting, printing, and folding paper	May 31, 1870
107,597	Corse, Albert C., Troy, N. Y. Base-burning coal-stove	Sept. 20, 1870
	Same.....(*See* Fagan, Michael G., assignor.)	
	Corser, George A. (*See* Hankey, Anthony, assignor.)	
110,307	Corson, Richard B. and Henry, Henry County, Mo. Corn-planter	Dec. 20, 1870
101,713	Cortrite, Barnard, Norwalk, Ohio. Fanning-mill	April 12, 1870
110,115	Corwin, Eugene P., Washington, Ill. Buckle	Dec. 13, 1870
109,389	Corwin, John W., Lebanon, Ohio. Potato-digger	Nov. 22, 1870
103,646	Cory, A. Morrell, New Providence, N. J. Baggy-top bed	June 7, 1870
4,104	Same.....Buggy-top	Aug. 23, 1870
104,838	Cory, Jeremiah, Holden, Me. Bee-protector	June 28, 1870
103,148	Cory, John F., and Jacob H. Brown, Brooklyn, E. D., N. Y. Hand-stamp for cutting checks, bonds, &c.	May 17, 1870
103,730	Cory, John F., and Henry C. Webb, Brooklyn, E. D., N. Y. Blacksmiths' bellows	May 31, 1870
107,457	Cosand, Joseph, Russiaville, Ind. Corn-planter	Sept. 20, 1870
109,113	Cosolowsky, John, Titusville, Pa. Animal-trap	Nov. 8, 1870
104,633	Costello, Charles J., Kingston, and John Costello, New York, N. Y. Music-note block	June 28, 1870
104,560	Cote, Louis, St. Hyacinth, Canada. Sole-edge finishing-machine for boots and shoes	June 21, 1870
109,309	Same.....Apparatus for trimming heels of boots and shoes	Nov. 15, 1870
105,305	Cotam, Edward, England. Smoking-pipe	July 12, 1870
105,551	Cotten, Thomas L., assignor to Martha J. Cotten, Madison County, Miss. Subsoil-plow	July 19, 1870
106,125	Same.....Manure-cart	Aug. 9, 1870
106,453	Same.....Medical compound for hog-cholera	Oct. 18, 1870
104,708	Cottingham, Gideon W., Marshall, Texas. Washing-machine	June 28, 1870
106,454	Cottingham, John C., Philadelphia, Pa. Boot-detaching apparatus	Oct. 18, 1870
110,116	Same.....same	Dec. 13, 1870
106,783	Cottle, Edward, Randolph, Mass. Book-marker	Aug. 30, 1870

Alphabetical list of patentees for the year 1870—Continued.

No.	Name, residence, and invention or discovery.	Date.
106,917	Cotton, James B., Dayton, Ohio. Automatic gate	Aug. 30, 1870
102,238	Cottrell, Henry C., assignor to W. H. Hayward, Norwich, Conn. Ventilated rubber-boot	April 26, 1870
99,409	Couch, Alfred B., Worcester, Mass. Machine for planing iron	Feb. 1, 1870
103,021	Same.....Shaping-machine	May 17, 1870
109,181	Coughlan, Thomas, Newton, Mass. Gun-carriage	Nov. 15, 1870
107,768	Coughlin, William, Clarksville, Ohio. Adjustable stop for casters for stove-legs	Sept. 27, 1870
104,273	Coulston, Thomas J., assignor to Enos S. Shantz, and Oliver B. Keely, Royer's Ford, Pa. Combined stove-lid and cover	June 14, 1870
104,274	Same.....Heating-stove	June 14, 1870
	Coulter, Henry. (*See* Croft, Edward, assignor.)	
	Coulter, Henry, *et al.* (*See* Conrad, Ernst Eustach, assignor.)	
98,856	Coulter, James, and Herbert Harpin, England. Stone-dressing machine	Jan. 18, 1870
103,576	Coulton, Charles J., Seville, Ohio. Engraving-machine	May 31, 1870
102,917	Courtney, William, Richview, Ill. Bee-hive	May 10, 1870
107,666	Courts, Richard Winn, Russellville, Ky. Roller for sewing-machine	Sept. 27, 1870
98,669	Courvoisier, Auguste, Denver, Colorado Territory, Time-register for hiring purposes	Jan. 11, 1870
104,420	Coutant, John E., Rondout, N. Y. Sled-brake	June 21, 1870
107,237	Covart, William, Claytonville, Kansas. Stone-adze	Sept. 13, 1870
99,410	Covell, E. T., Brooklyn, N. Y. Soldering-machine	Feb. 1, 1870
103,988	Same.....Metallic cap and nozzle	June 7, 1870
104,275	Same.....Reversible cap and spout for oil-cans	June 14, 1870
104,430	Same.....Nozzle and cap for oil-cans	June 21, 1870
104,431	Same.....Soldering-machine. (Antedated June 6, 1870)	June 21, 1870
106,257	Same.....Machine for soldering metallic vessels	Aug. 9, 1870
107,458	Same.....Soldering-machine. (Antedated Sept. 10, 1870)	Sept. 20, 1870
108,764	Covell, John S., Salt River, Mich. Gate	Nov. 1, 1870
103,303	Covey, Erastus G., and Addison Birch, Marshall, Mich. Weather-strip for doors	May 24, 1870
107,009	Cowell, Rensselaer A., Cleveland, Ohio. Railway-car coupling. (Antedated July 15, 1870)	Sept. 6, 1870
108,885	Same.....Earth-closet	Nov. 1, 1870
105,310	Cowgill, Oliver R., Pana, Ill. Reservatory for groceries, &c	July 12, 1870
103,220	Cowing, George, Seneca Falls, N. Y. Fire-extinguisher. (Antedated April 16, 1870)	April 26, 1870
101,827	Cowing, Marshall, assignor to self, John P., Philo, and George Cowing, New York, N. Y. Railroad-tank valve	April 12, 1870
101,590	Cowing, Turner, assignor to Tallmadge E. Brown, San Francisco, Cal. Wood-pavement	April 5, 1870
110,430	Cowing, William J. Fastening for neckties	Dec. 27, 1870
	Cowles, C., & Co. (*See* Hine, Merrit, assignor.)	
103,022	Cowles, Charles H., Nebraska City, Neb. Seeding-machine	May 17, 1870
103,847	Cowles, Edwin, Cleveland, Ohio. Mechanical movement for sewing-machine, &c	June 7, 1870
100,864	Cowles, Frederick A., assignor to self and J. B. Savage, Plantsville, Conn. Body-loop for carriages	Mar. 15, 1870
104,119	Cowles, George B., Bridgeport, Conn. Pulley	June 14, 1870
109,870	Cowles, James A., Chicago, Ill. Journal-lubricator. (Antedated Nov. 30, 1870)	Dec. 6, 1870
109,871	Cowles, Lorenzo Dow, Romeo, Mich. Buckles	Dec. 6, 1870
110,117	Cowley, David, Erie, Pa. Car axle-box cover	Dec. 13, 1870
110,208	Cowngill, James, Philadelphia Pa. Stopping-mechanism for looms	Dec. 20, 1870
102,230	Cox, Albert W., Indianapolis, Ind. Drier	April 26, 1870
98,470	Cox, Albert W., and William Gause, Indianapolis, Ind. Drier	Jan. 4, 1870
	Cox, Andrew W., *et al.* (*See* Rider, Samuel, assignor.)	
98,471	Cox, Bowman, S., Paulsborough, N. J. Cultivator	Jan. 4, 1870
	Cox, Church & Co. (*See* Ham, Robert, assignor.)	
	Cox, Hiram, *et al.* (*See* Barber & Wolf, assignors.)	
101,353	Cox, James E., Cincinnati, Ohio. Apparatus for keeping pure the air in the manufacture of fertilizers	Mar. 29, 1870
107,164	Same.....Coffin	Sept. 6, 1870
99,064	Cox, John, Lane County, Oregon. Mortising-machine	Jan. 25, 1870
	Same.....(*See* Horner, James, assignor.)	
99,536	Cox, John and Solomon, Eugene City, Oregon. Gang-plow	Feb. 8, 1870
	Cox, John, and Cyrus Roberts. (*See* Roberts & Cox).....(Extension.)	
109,390	Cox, Kenyon, and Theodore. New York, N. Y. Water-wheel	Nov. 22, 1870
	Cox, Milton O., *et al.* (*See* Curtis, Briggs, & Cox.....(Design.)	
99,852	Cox, Richard D., Philadelphia, Pa. Brick-kiln	Feb. 15, 1870
101,714	Cox, William H. Knox County, Ill. Washing-machine	April 12, 1870
107,064	Coykendall, Jonathan, Farmington, Ill. Shoe-fastening	Sept. 6, 1870
108,774	Coyle, Patrick H., Newark, N. J. Boiler-tube cleaner	April 26, 1870
	Cozad, F. W. (*See* Chadwick, Thomas, assignor.)	
104,276	Crabtree, George W., and John G. Stokes, Chocoville, Ark. Composition for tanning	June 14, 1870
4,442	Crabtree, Jonathan, Philadelphia, Pa. Carpet-pattern.....(Design)	Nov. 1, 1870
3,837	Crabtree, Jonathan, assignor to William Hogg, jr., Philadelphia, Pa. Carpet-pattern.....(Design)	Feb. 8, 1870
3,838	Same.....Carpet-pattern.....(Design)	Feb. 8, 1870
4,026	Crabtree, Jonathan, assignor to James Bromley and Brothers, Philadelphia, Pa. Carpet-pattern.....(Design)	May 17, 1870
4,027	Same.....Carpet-pattern.....(Design)	May 17, 1870
4,303	Same.....same.....(Design)	Aug. 30, 1870

Alphabetical list of patentees for the year 1870—Continued.

No.	Name, residence, and invention or discovery.	Date.
4,253	Crabtree, Jonathan, assignor to John Gay, Philadelphia, Pa. Carpet-pattern. (Design)	July 19, 1870
4,398	Same.....Carpet-pattern .....(Design)	Oct. 11, 1870
4,420	Same.....same .....(Design)	Oct. 18, 1870
103,577	Craig, Isaac E., Camden, Ohio. Manufacture of sheet-iron	May 31, 1870
	Craig, James A. (*See* Douglas, Joseph V., assignor.)	
100,378	Craig, R. S., and A. H. Woodward, Dover, N. Y. Machine for sawing marble	Mar. 1, 1870
109,113	Craig, William, Newark, N. J., and Henry L. Brevoort, Brooklyn, N. Y. Condenser for steam-pumps	Nov. 8, 1870
103,721	Craigie, Hugh H., New York, N. Y. Water-closet valve	May 31, 1870
104,934	Same.....Automatic water-elevating apparatus. (Antedated June 20, 1870)	July 5, 1870
	Crailsheim, Charles Frederick, and John F. Kulby. (*See* Kulby & Crailsheim.)	
107,450	Cram, William, Millgrove, Ind. Device for balancing fanning-mill shoes	Sept. 20, 1870
108,974	Crallé, Edward A., jr., Brickland, Va. Straw-cutter	Nov. 8, 1870
109,182	Cram, Alonzo W., St. Louis, Mo. Lock for railroad-switches	Nov. 15, 1870
106,066	Cramer, Adon W., Honesdale, Pa. Bed-bottom	Aug. 23, 1870
104,834	Crandal, Edward M., Marshalltown, Iowa. Broom	June 28, 1870
108,006	Same.....Life-preserver. (Antedated Sept. 26, 1870)	Oct. 4, 1870
	Crandall, Amasa B., and Loren R. Witherell. (*See* Witherell and Crandall.)	
98,929	Crandall, Benjamin P., New York, N. Y. Rocking-horse	Jan. 18, 1870
3,971	Crandall, Benjamin P., assignor to self, William E., and Charles F. Crandall, New York, N. Y. Children's carriage	May 17, 1870
104,277	Crandall, Benjamin P., jr., Williamsburgh, N. Y. Spring for vehicles	June 14, 1870
106,196	Same.....Sleigh and carriage for children	Aug. 9, 1870
98,930	Crandall, Edwin G., Belfast, N. Y. Horse hay-fork	Jan. 18, 1870
98,670	Crandall, Jesse A., Brooklyn, N. Y. Children's carriage	Jan. 11, 1870
99,166	Same.....Velocipede	Jan. 25, 1870
100,263	Same.....Rocking-horse	Mar. 1, 1870
110,118	Crandall, Lucius, New York, N. Y. Furnace for burning shavings	Dec 13, 1870
109,121	Crandall, William E., New York, N. Y. Children's carriage	Feb. 22, 1870
3,972	Same.....same.....(Reissue)	May 17, 1870
106,033	Same.....Handle for children's carriages and perambulators	Aug. 2, 1870
99,853	Crandell, Germond, Washington, D. C. Instrument for describing spirals, &c.	Feb. 15, 1870
108,455	Same.....Pen	Oct. 18, 1870
109,301	Crane, Asahel G., and William T. Johnston, Ottumwa, Iowa. Harvester-rake	Nov. 15, 1870
102,918	Crane, Edwin J., La Porte, Ind. Paper-file	May 10, 1870
	Crane, Jason. (*See* Fowler, Henry, assignor.)	
	Crane, John E., *et al.* (*See* Abel, William H., assignor).....(Three cases.)	
	Crane, Jonathan T., and Joel Laforge. (*See* Laforge & Crane.)	
99,761	Crane, Moses G., Newton, and A. M. Polsey, Boston, Mass., assignors to William Smith Hall. Friction-clutch mechanism	Feb. 15, 1870
	Crane, Oscar N., *et al.* (*See* Morehouse, Clark, assignor.)	
	Crane, P. M., and Edward V. Gardner. (*See* Gardner & Crane.)	
100,731	Crane, Richard T., Chicago, Ill. Machine for drilling and tapping gas-fittings	Mar. 15, 1870
4,059	Cranford, Henry L., Brooklyn, N. Y. Composition pavement .....(Reissue)	July 5, 1870
100,122	Crannell, John N., Washington, D. C. Wagon-spring	Feb. 22, 1870
104,835	Crane, Peter, jr., deceased, by Robert McKinley, administrator, Philadelphia, Pa. Dental pin	June 28, 1870
101,220	Cranston, James F., Jeremiah H. Banks, and John M. Ingersoll, assignors to selves, Henry H. Banks and William H. Haley, Springfield, Mass. Manufacture of artificial fuel	April 12, 1870
106,256	Crary, John S., Salem, N. Y. Safety-shoe for railway-car truck	Aug. 9, 1870
108,765	Crawford, Archibald, Albany, N. Y. Soap-dish and brush-rack	Nov. 1, 1870
4,207	Crawford, A. B., assignor to John O'Ferrall and Thomas L. Daniels, Piqua, Ohio. Thrashing-machine .....(Reissue)	May 31, 1870
104,836	Crawford, James A., New Castle, Pa. Fire-place grate	June 28, 1870
98,671	Crawford, J. F., New York Mills, N. Y. Harvester	Jan. 11, 1870
107,667	Crawford, Lyman, Holyoke, Mass. Wiping-apparatus for feed and other rollers	Sept. 27, 1870
105,178	Crawford, Peter S., assignor to J. N. Whidden, Union, Ill. Thill-coupling	July 12, 1870
	Crawford, Samuel, *et al.* (*See* Bennor, Joseph, assignor.)	
	Crawford, Timothy B., *et al.* (*See* Battersby, William Augustus, assignor.)	
101,105	Crawford, William, and Samuel Clarke, assignors to selves and J. D. McDonald, Telford & Co., Attica, Ind. Stopping and starting mill-burrs	Mar. 22, 1870
3,883	Crawley, Edwin, and Thomas L. Bayliss, Richmond, Ind. Vise.....(Reissue)	Mar. 22, 1870
102,919	Same.....same	May, 10, 1870
100,264	Creamer, George N., Trenton, N. J. Safety-hatch for buildings	Mar. 1, 1870
100,265	Same.....Self-acting hatchway-hoist	Mar. 1, 1870
109,391	Same.....Lathing-machine	Nov. 22, 1870
108,557	Cree, James T., Worcester, Mass. Bottle-stopper	Aug. 23, 1870
98,744	Cremin, Joseph W., New York, N. Y. Gas-burner	Jan. 11, 1870
109,879	Creseon, Charles M., assignor to American Wood Protection Company, Philadelphia, Pa. Seasoning and preserving wood	Dec. 6, 1870
109,873	Same.....same	Dec. 6, 1870
109,874	Same.....Treating and recovering the liquids used in seasoning and preserving wood	Dec. 6, 1870
103,989	Creusbaur, Robert, Brooklyn, Eastern District, N. Y. Liquid-meter	June 7, 1870
103,990	Same.....same	June 7, 1870
109,183	Same.....Williamsburgh, N. Y. Steam-tiller	Nov. 15, 1870
108,456	Crihfield, Aylett, Lincoln, Ill. Wash-board	Oct. 18, 1870
100,987	Crinklaw, William S., Lanark, Ill. Mop-head	Mar. 22, 1870
103,231	Crippen, Warren S., Grand Rapids, Mich. Spring bed-bottom	April 26, 1870

Alphabetical list of patentees for the year 1870—Continued.

No.	Name, residence, and invention or discovery.	Date.
103,991	Cristy, Henry F., Charlestown, Mass. Penman's wrist-supporter	June 7, 1870
106,918	Croasdale, Benjamin R., Philadelphia, Pa. Fertilizer. (Antedated Aug. 19, 1870)	Aug. 30, 1870
100,732	Crocker, Eleazer F., Niles, Mich. Turbine water-wheel	Mar. 15, 1870
108,570	Crocker, George D., Virginia City, Nev. Stamp-battery	Oct. 25, 1870
99,854	Crocker, John D., Norwich, Conn. Picture-frame fastening	Feb. 15, 1870
106,332	Same.....Stretcher for picture-frames	Aug. 16, 1870
108,975	Crocket, Robert S., Rossville, S. C. Plow	Nov. 8, 1870
	Crockett, Seldon L. (*See* Bradshaw & Crockett, assignors.)	
100,123	Crofoot, Leonard, Pavilion, N. Y. Bag-holder	Feb. 22, 1870
109,392	Croft, Albert J., Williamsport, Pa. Bed-plate for saw-mills	Nov. 22, 1870
107,598	Croft, Edward, assignor to self and Henry Coulter, Philadelphia, Pa. Fruit-jar	Sept. 20, 1870
	Croft, Samuel, and John C. Schnellermann, executors. (*See* Liebrich, Conrad.) (Reissue.)	
102,232	Cronin, John, assignor to self and William Merrill, Richmond, Va. Machine for making wooden boxes	April 26, 1870
103,430	Cronkite, Nelson, Milford, N. Y. Wheel-barrow	May 24, 1870
107,340	Crooker, Matthew A., New York, N. Y. Paddle-wheel	Sept. 13, 1870
106,127	Crooker, Walter S., Shamburg, Pa. Medical compound and liniment	Aug. 9, 1870
	Crooks, James, and William Y. Warner. (*See* Warner & Crooks.)	
108,687	Crooks, John P., assignor through means assignments to Leonard Morris, Hopkinton, Mass. Machine for skiving leather	Oct. 25, 1870
101,232	Croom, William W., Gainesville, Ala. Cotton-seed planter, &c	Mar. 29, 1870
105,311	Crosby, Addison, Westfield, N. Y. Guard-finger for harvesters	July 12, 1870
	Crosby, Addison, *et al.* (*See* Birch, Crosby & Birch.)	
98,745	Crosby, Chauncey O., New Haven, Conn. Papering pins	Jan. 11, 1870
100,865	Same.....Paper-box	Mar. 15, 1870
101,354	Same.....Machinery for making paper-boxes	Mar. 29, 1870
3,911	Same.....Machine for making needles .....(Reissue)	April 12, 1870
101,829	Same.....Machine for arranging needles	April 12, 1870
104,278	Same.....Machine for making needles	June 14, 1870
105,319	Same.....Machine for polishing needles	July 12, 1870
105,313	Same.....Machine for papering needles	July 12, 1870
	Same.....Machine for folding paper .....(Extension)	Dec. 12, 1870
108,976	Crosby, Henry C., Chicago, Ill. Portable elevator and conveyor	Nov. 8, 1870
99,539	Crosby, Jay M., and William Ballard, Caroline, N. Y. Railway-car brake	Feb. 8, 1870
107,881	Crosby, Mark, Boston, Mass. Parlor-bedstead	Oct. 4, 1870
108,457	Same.....Folding-bedstead	Oct. 18, 1870
104,709	Crosby, Robert R., Boston, Mass. Lamp-burner	June 28, 1870
108,766	Crosby, Theophilus, Manchester, Iowa. Line and wire tightener	Nov. 1, 1870
4,505	Crossman, Charles P., assignor to self, D. Frank Hale, and Sidney Sanders, West Warren, Mass. Scythe .....(Design)	Dec. 13, 1870
	Crosman, John C., *et al.* (*See* Marland, Obadiah, assignor.)	
100,866	Cross, Daniel H., Bennington, Vt. Photographic-plate dipper	Mar. 15, 1870
104,432	Same.....Vial for filtering collodion	June 21, 1870
	Cross, William, and William J. Porter. (*See* Porter & Cross, assignors.)	
103,303	Crossley, Harry A., Cleveland, Ohio. Machine for beveling and crozing barrels	May 24, 1870
99,411	Crossley, Harry A., assignor to self and Ada D. Crossley, Cleveland, Ohio. Machine for jointing barrel-staves	Feb. 1, 1870
106,408	Crossley, Thomas, Bridgeport, Conn. Block for carpet-printing	Aug. 16, 1870
	Crossman, Edward J., and James V. Cook. (*See* Cook & Crossman.)	
	Crossman, Montgomery, and Pratt A. Spicer. (*See* Spicer & Crossman.)	
	Croswell, Caleb, *et al.* (*See* Coon, S. Park, assignor.)	
102,196	Crotzer, H. W., Philadelphia, Pa. Advertising-desk	April 19, 1870
109,114	Crouse, Rufus W., Westminster, Md. Horse-power. (Antedated Oct. 29, 1870)	Nov. 8, 1870
104,561	Crowe, John, Canada. Thread-cutter for sewing-machines	June 21, 1870
	Crowell, A. B., and William Bayley. (*See* Bayley & Crowell.)	
103,304	Crowell, H. C., Morgan, Ohio. Rotary injector for steam-boilers)	May 24, 1870
108,112	Crowell, Sommers, Philadelphia, Pa. Iron fence	Oct. 11, 1870
103,147	Crowley, John, Sparta, Wis. Beater for thrashing-machines	May 17, 1870
104,433	Crowson, Valenus W., assignor to self and Stephen Massey, Westfield, Mass. Method of covering whips	June 21, 1870
107,889	Crozier, Archibald H., Oswego, N. Y., and Martin Taylor, Hartford, Conn. Roulette	Oct. 4, 1870
107,883	Crumb, Wells, Coloma, Mich. Portable fence	Oct. 4, 1870
99,645	Crumbie, Alexander, Jersey City, N. J. Oven	Feb. 8, 1870
101,034	Crume, Jonathan W., Troy, Mo. Corn-planter	Aug. 2, 1870
100,733	Crummy, John C., and Albert A. Parsons, Pittsburgh, Pa. Folding-chair. (Antedated Feb. 23, 1870)	Mar. 15, 1870
	Crump, John W., *et al.* (*See* Wagner, Frans, assignor.)	
101,830	Crump, Samuel, New York, N. Y. Bronze-collecting attachment to bronzing-machines	April 12, 1870
106,667	Same.....Brooklyn, N. Y. Bronzing-machine	Aug. 23, 1870
98,746	Crutchfield, J. P., and C. T. Whitten, Longmire's Store, S. C. Machine for tenoning spokes	Jan. 11, 1870
	Cruthers, James. (*See* Price, Thomas, assignor.)	
102,778	Cruttenden, Alvah E., Canaseraga, N. Y. Poke	May 10, 1870
103,578	Cubley, Edwin J., Chicago, Ill. Embroidering-attachment for sewing-machines	May 31, 1870
105,431	Cuddy, James, Pittsburgh, Pa. Manufacture of white lead	July 19, 1870
104,434	Cuddy, James, Pittsburgh, and George Selden, Philadelphia, Pa. Manufacture of white lead	June 21, 1870
	Culbertson, C. A. (*See* Tinnell, Francis M., assignor.)	
98,567	Cullies, William, Philadelphia, Pa. Joint mold or flask	Jan. 4, 1870

Alphabetical list of patentees for the year 1870—Continued.

No.	Name, residence, and invention or discovery.	Date.
	Culp, George W. D., and John Dickason. (*See* Dickason & Culp.)	
4,365	Culver, Henry H., Kansas City, Mo. Cook-stove	Sept. 27, 1870
99,568	Culver, Jacob D., Bellmore, Ind. Sawing-machine	Jan. 4, 1870
99,855	Culver, J. E., Hudson, N. J. Steam-engine	Feb. 15, 1870
	Culver, John P., and G. H. Titcomb. (*See* Titcomb & Culver.)	
	Culver, Willard B., *et al.* (*See* Weston, Broadbent & Culver.)	
99,055	Culver, Williams, Vineland, N. J. Punching and shearing machine	Jan. 25, 1870
104,935	Cumings, David M., Newburyport, Mass. Bung	July 5, 1870
106,088	Cumming, David, jr., Brooklyn, N. Y. Nut-lock	Aug. 23, 1870
	Cummings, Emory. (*See* Miller, Charles H., assignor.)	
99,167	Cummings, George B., Cambridge, Mass. Sheet-gauge for printing-presses	Jan. 25, 1870
104,936	Cummings, James G., Columbus, Miss. Cotton and hay press	July 5, 1870
	Cummings, Nathaniel. (*See* Bourne, William, assignor.)	
	Same (*See* Oliver, Charles F., assignor) (Two cases.)	
108,977	Cummings, Perley D., Portland, Me. Device for keying paving-blocks	Nov. 8, 1870
109,301	Same Machine for making key-boards for wood-pavements	Nov. 29, 1870
110,440	Same Machine for grooving blocks for wood-pavements	Dec. 27, 1870
110,119	Cummings, Perley M., assignor to self and Joseph D. Clark, Cincinnati, Ohio. Head-block	Dec. 13, 1870
110,441	Cummings, Samuel M., and Henry Israel, assignors of one-third interest to Ransom C. Wright, Allegheny, Pa. Self-cleaning locomotive smoke-stack	Dec. 27, 1870
104,937	Cummings, Thomas, Lancaster, Pa. Composition for photographic purposes	July 5, 1870
	Cummings, W. (*See* Alleways, John, assignor.)	
4,433	Cummins, Erastus S., Clarence, Iowa. Well-casing (Design)	Nov. 22, 1870
103,505	Cummins, William G., Civil District No. 10, Tenn. Tailors' scale	May 3, 1870
108,688	Cumnock, John, Salmon Falls, N. H. Self-acting mule for spinning	Oct. 25, 1870
103,993	Cundiff, Richard Jackson, Lynchburg, Va. Combined abdominal and back supporter and truss	June 7, 1870
98,560	Cunningham, Arthur, Cincinnati, Ohio. Plowing and harrowing machine	Jan. 4, 1870
107,009	Cunningham, David H., Waltham, Mass. Button-hole cutter	Sept. 6, 1870
109,115	Cunningham, James, Rochester, N. Y. Apparatus for fitting and setting axles	Nov. 8, 1870
110,442	Cunningham, Matthew G., Corsicana, Texas. Press for hay, cotton, &c	Dec. 27, 1870
	Cunningham, William, *et al.* (*See* Many, McGinnis & Cunningham.)	
107,804	Cuppers, Gustavus, New York, N. Y. Street-lamp. (Antedated Sept. 21, 1870)	Oct. 4, 1870
108,886	Curell, James H., assignor to self and Jeremiah E. Morrisey, St. Louis, Mo. Sawing-machine	Nov. 1, 1870
103,148	Curkendall, George, Dixon, Ill. Plow-colter	May 17, 1870
103,579	Curley, Thomas, Wilmington, Del. Setting gas-retorts	May 31, 1870
105,438	Curnan, John J., Lyons, Iowa. Tenoning-machine	July 19, 1870
99,646	Curran, James, Baltimore, Md. Fire-plug	Feb. 8, 1870
100,897	Curran, William, St. Louis, Mo. Depurator	Mar. 15, 1870
99,856	Currey, Thomas H., Cincinnati, Ohio. Paint	Feb. 15, 1870
104,879	Currie, Daniel, assignor to self, Hiram K. Haslett, and Samuel L. Fisher, St. Louis, Mo. Lubricator	June 14, 1870
	Currie, John, and John Martino. (*See* Martino & Currie) (Design.)	
100,506	Currier, Arthur W., Grand Rapids, Mich. Paper-cutting machine	Mar. 8, 1870
108,332	Currier, Daniel G., Waltham, Mass. Construction of watches	Oct. 18, 1870
105,179	Currier, John, and Abiel Pevey, Lowell, Mass. Cylinder-stove	July 12, 1870
	Currier, John J. (*See* Mayo, Israel C., assignor.)	
100,808	Currier, John P., New York, N. Y. Railway reclining-chair	Dec. 6, 1870
101,333	Curry, Hugh E., Louisville, Ky. Steam-generator	Mar. 29, 1870
103,431	Curry, John Mayre, assignor to self, John McLaughlin, and Dennis Phalen, South Framingham, Mass. Steam-engine	May 24, 1870
106,786	Curry, John P., New York, N. Y. Railroad-car duster and ventilator	Aug. 30, 1870
105,047	Curryer, Joseph C. and William F., Thorntown, Ind. Tender for plows and cultivators. (Antedated June 30, 1870)	July 5, 1870
	Currier, Joseph C., and William Gause. (*See* Gause & Currier.)	
105,658	Curtin, William H., and William Lammers, Breese, Ill. Churn	July 26, 1870
	Curtis, Charles M., and Baxter Lyon. (*See* Lyon & Curtis.)	
103,433	Curtis, Charles R. S., Quincy, Ill. Needle for sewing-machines	July 19, 1870
102,607	Curtis, Dexter, Madison, Wis. Press. (Antedated February 2, 1870)	Mar. 8, 1870
105,917	Curtis, Dexter, Chicago, Ill. Horse-collar cap	Aug. 2, 1870
106,669	Curtis, Francis, Newburyport, Mass. Slide-valve for steam-engines	Aug. 23, 1870
108,607	Curtis, Francis, Brattleborough, Vt. Vegetable-cutter	Oct. 4, 1870
98,412	Curtis, Frederick, Boston, Mass. Water-proof stocking	Feb. 1, 1870
109,502	Curtis, George, assignor to self and E. Bigelow, Springfield, Mass. Filter same	Nov. 29, 1870
109,503	Same	Nov. 29, 1870
103,722	Curtis, Henry A., Richmond, Va. Railroad-car ventilator	May 31, 1870
104,710	Curtis, James P., Wytheville, Va. Churning-apparatus	June 28, 1870
108,887	Curtis, John F., Chicago, Ill. Card-rack	Nov. 1, 1870
	Curtis, John F., *et al.* (*See* Wardrobe, Fisk, Curtis & Fetley.)	
101,234	Curtis, John G., Emporium, Pa. Rolling-machine for leather	Mar. 29, 1870
101,984	Same Bark-mill	April 19, 1870
109,393	Same Operating hide-mills	Nov. 22, 1870
106,670	Curtis, J. W., Bath, N. Y. Portable gate-fence	Aug. 23, 1870
4,130	Curtis, John W., Franklin A. Briggs, and Milton O. Cox, Coldwater, Mich. Carriage-step (Design)	June 14, 1870
99,666	Curtis, N. W., Johnsburgh, N. Y. Horse hay-rake	Jan. 25, 1870
104,120	Curtis, Thomas, Holly, Mich. Butter-extractor	June 14, 1870
103,993	Curtis, William B., Bridgeport, Conn. Wick-adjuster for argand lamp-burners	June 7, 1870
109,164	Cushing, Alvin Matthew, Lynn, Mass. Sheave	Nov. 15, 1870
	Cushing, George S., *et al.* (*See* Dows, Gustavus D., assignor.)	

Alphabetical list of patentees for the year 1870—Continued.

No.	Name, residence, and invention or discovery.	Date.
	Cushing, George S., *et al.* (*See* Hallowell, Albert, assignor) (Reissue.)	
	Same same.	
99,702	Cushing, George W., assignor to self and Horatio Anderson, Chicago, Ill. Safety-valve	Feb. 15, 1870
109,809	Cushing, Milo A., and Otis R. Glover, Ottawa, Ill., Nut-lock. (Antedated November 26, 1870)	Dec. 6, 1870
100,868	Cushing, Royal J., Bowdoinham, Me. Vise	Mar. 15, 1870
	Cushing, Samuel B., assignor of one-half interest to Samuel Ashburner, Providence, R. I. Piles (Disclaimer filed December 29, 1870.)	
	Cushing, W. L. (*See* Bradley, Alfred, assignor.)	
106,333	Cushings, John, Wilmington, Ohio. Compound for cure of coughs, &c	Aug. 16, 1870
106,919	Cushman, Austin F., Hartford, Conn. Hollow-auger	Aug. 30, 1870
101,403	Cushman, Charles H., Alexandria, Va. Hose-coupling	Mar. 29, 1870
104,837	Same same	June 28, 1870
106,787	Cushman, Dwight, Hartford, Conn. Water-wheel	Aug. 30, 1870
99,168	Cushman, G. W., Aiken, S. C. Cheese-cutter	Jan. 25, 1870
103,140	Cushman, Henry T., North Bennington, Vt. Eraser	May 17, 1870
103,150	Cushman, Sylvanus D., assignor to Automatic Fire-Alarm Company, New Lisbon, Ohio. Signal-box for fire-alarm telegraphs	May 17, 1870
103,558	Same System of fire-alarm and police telegraphs	July 19, 1870
107,460	Same Signal-box for fire-alarm telegraphs	Sept. 20, 1870
107,668	Custer, Cornelius, Norristown, Pa. Carriage-gearing. (Antedated September 17, 1870)	Sept. 27, 1870
101,831	Custer, George, Monroe, Mich. Toe-calk for horseshoes	April 12, 1870
	Custer, Zora B., and Ralph Rockwell. (*See* Rockwell & Custer.)	
102,233	Cuthbert, John, Pittsburgh, Pa. Furnace, grate-bar, and grating	April 26, 1870
104,711	Cutler, George P., Lawrence, Mass. Moustache-shield for cups	June 28, 1870
	Cutler, John W. (*See* Mewes, Henry, assignor) (Two cases.)	
104,938	Cutler, Lewis, Springfield, Mass. Spring bed-bottom	July 5, 1870
103,151	Cutter, Amos, Boston, Mass. Stave-jointing machine	May 17, 1870
104,121	Same Machine for finishing staves	June 14, 1870
108,113	Same Machine for setting up barrels	Oct. 11, 1870
108,114	Same Machine for cutting locks in hoops	Oct. 11, 1870
108,115	Same Machine for making barrel-heads	Oct. 11, 1870
	Cutter, Ebenezer P. (*See* White, Morris W., assignor.)	
106,198	Cutter, John D., New York, N. Y. Spool-thread case	Aug. 9, 1870
107,763	Cutting, Lewis, San Francisco, Cal. Clothes-drier	Sept. 27, 1870
102,779	Daboll, Charles M., New London, Conn. Friction-roller bearing	May 10, 1870
	Daffin, Thomas, *et al.* (*See* Gerhardt, William, assignor.)	
	Dagea, John. (*See* Beales, Emanuel D., assignor.)	
110,519	Daggett, Frederick K., Boston, Mass. Trunk	Dec. 27, 1870
99,257	Daggett, John S., Hope, Me. Device for attaching spittoons to floors of railroad-cars	Feb. 15, 1870
	Daggett, Lorenzo V., and William La Banister. (*See* La Banister & Daggett.)	
108,008	Daggett, William A., Landis Township, N. J. Clothes-drier	Oct. 4, 1870
109,497	Daggett, William A., South Vineland, N. J. Bread-pan	Nov. 29, 1870
	Daggett, William A., and Allen Hemingway. (*See* Hemingway & Daggett.)	
109,875	Daggett, William H., South Vineland, N. J. Bread-pan	Dec. 6, 1870
100,860	Dahl, M. K., Waupun, Wis. Plow	Mar. 15, 1870
3,913	Dahlinger, Charles, Allegheny, Pa. Burial-casket (Design)	Mar. 22, 1870
107,228	Dailey, Albert A., Wilson, N. Y. Plow	Sept. 13, 1870
103,994	Dailey, John, St. Louis, Mo. Apparatus for the manufacture of illuminating gas	June 7, 1870
103,023	Dalbey, George W., Carrollton, Miss. One-armed man's assistant	May 17, 1870
	Dale, Abraham, and H. D. McMaster. (*See* McMaster & Dale.)	
	Dale, J. D. and J. H., *et al.* (*See* Holmes, Horace H., assignor.)	
98,472	Dale, Nicholas N., Plymouth, Ind. Switch-stand for railways	Jan. 4, 1870
105,314	Dale, Thomas, Russellville, Ky. Corn-planter	July 12, 1870
107,010	Dale, Thomas N., jr., and George Kraink, Paterson, N. J. Machine for covering cord	Sept. 6, 1870
109,185	Same Machine for spinning and doubling silk, &c	Nov. 15, 1870
	Daley, James. (*See* Sweetland, Anthony B., assignor.)	
106,920	Dallon, Joseph E., Brooklyn, N. Y. Fastening for garments	Aug. 30, 1870
	Dalrymple, Peter, and William Pickens. (*See* Pickens & Dalrymple.)	
98,473	Dalsell, David, South Egremont, Mass. Carriage-axle	Jan. 4, 1870
106,469	Same Axle-box	Aug. 16, 1870
106,470	Same Axle for vehicles	Aug. 16, 1870
102,658	Damerel, William, Brooklyn, N. Y. Sash-balance	May 3, 1870
101,965	Dames, William W., San José, Cal. Camera-stand	April 19, 1870
	Damon, Charles Edwin, and Edwin Lee Yancy. (*See* Yancy & Damon.)	
102,780	Damon, George L., Portland, Me. Bolt for safes, &c	May 10, 1870
102,920	Dana, Charles Henry, West Lebanon, N. H. Machine for the manufacture of trays	May 10, 1870
4,399	Dandre, Leonce F., France. Oil-cloth pattern (Design)	Oct. 11, 1870
	Daney, John C., *et al.* (*See* Hanchett, Daney & Stuart.)	
99,656	Danforth, D. A., Elkhart, Ind. Drive well-tube	Feb. 15, 1870
105,918	Danforth, George L., Lebanon, N. H. Shutter-worker	Aug. 2, 1870
110,209	Daniel, Charles, Brownsville, Mo. Vehicle	Dec. 20, 1870
98,672	Daniels, D. G., Chicago, Ill. Railway-car spring	Jan. 11, 1870
105,315	Daniels, Francis L., Boston, Mass. Dust-pan	July 12, 1870
4,131	Daniels, Henry A., assignor to the Daniels, Nichols & Gaylord Manufacturing Company, Waterbury, Conn. Lubricator (Reissue)	Sept. 27, 1870

Alphabetical list of patentees for the year 1870—Continued.

No.	Name, residence, and invention or discovery.	Date.
	Daniels, Horace, *et al.* (*See* Clarner, John E., assignor.)	
99,647	Daniels, John F., Lake Village, N. H. Knitting-machine needle	Feb. 8, 1870
103,152	Daniels, Levi, Oak Hill, N. Y. Bolt-cutting device	May 17, 1870
108,978	Daniels, Lewis S., Foxboro, Mass. Steam-radiator	Nov. 8, 1870
	Daniels, Thomas L., and John O'Farrall. (*See* Crawford, A. B., assignor.) (Reissue.)	Feb. 15, 1870
99,763	Daniels, W. H., Bryan, Ohio. Fruit-jar	Dec. 13, 1870
110,015	Daniels, William, T. H., Bellville, Ohio. Feed-regulator	
109,186	Danks, Samuel, assignor to self, Joseph C. Butler, and Lewis Worthington, Cincinnati, Ohio. Machine for squeezing puddlers' balls	Nov. 15, 1870
107,660	Dann, Christian, La Crosse, Wis. Jointed car	Sept. 27, 1870
107,401	Dann, Frank A., and James McKibbon, Wellsville, Mo. Combined harrow and roller	Sept. 20, 1870
109,876	Dann, Isaac N., assignor to the New Haven Folding-Chair Company, New Haven, Conn. Folding-chair, &c	Dec. 6, 1870
103,004	Dann, Jesse W., Columbus, Ohio. Seat-frame for vehicles	May 17, 1870
107,341	Darby, George W., and Amos S. Moon., Blanchester, Ohio. Water-regulator	Sept. 13, 1870
99,851	D'Arcus, C. H., Detroit, Mich. Adjustable reclining-chair	Jan. 18, 1870
108,898	Dare, Samuel G., New York, N. Y. Gas-heater	Nov. 1, 1870
107,165	Darley, William, England. Side-light for vessels	Sept. 6, 1870
105,653	D'Arlincourt, L. Guyot, France. Relay-magnet	July 26, 1870
107,229	Darling, Cook, Utica, N. Y. Potato-digger	Sept. 13, 1870
100,870	Darling, Samuel, Providence, R. I. Railroad-car ventilator	Mar. 15, 1870
106,558	Same.....Ventilating-window for railroad-cars	Aug. 23, 1870
4,197	Same.....Inkstand.....(Reissue)	Dec. 13, 1870
105,180	Darling, Samuel, assignor to Darling, Brown, & Sharpe, Providence, R. I. Process and apparatus for hardening files, &c	July 12, 1870
99,850	Darlington, Robert, and Elvy L. Watson, Auburn, N. J. Machine for digging sweet-potatoes	Feb. 15, 1870
109,720	Darnall, James E., Washington, D. C. Fly-brush	Nov. 29, 1870
102,650	Darnell, John T., Florence, N. J. Staple-machine	May 3, 1870
98,474	Darosir, Levi, assignor to self and Napoleon Nallette, Worcester, Mass. Ice-sled	Jan. 4, 1870
106,035	Darrach, Samuel, A., Newburgh, N. Y. Fence-post	Aug. 2, 1870
110,210	Darrow, Franklin E., assignor to Darrow Manufacturing Company, Bristol, Conn. Powder-flask. (Antedated Dec. 17, 1870)	Dec. 20, 1870
	Dart, Jonathan, *et al.* (*See* Harrington, Jackson, assignor.)	
101,438	Dashiell, John M., Decatur, Ill. Flour and meal chest	April 5, 1870
100,194	Dater, J. H., Eagle Mills, N. Y. Combined mowing-machine and hay-tedder	Feb. 22, 1870
105,181	Datichy, Jean Pierr, Florimond, Brooklyn, N. Y. Injector for steam-boilers	July 12, 1870
103,995	Daugherty, George W., Wilmington, Del. Spooling-machine	June 7, 1870
103,996	Same.....Spindle for spinning-machines	June 7, 1870
	Davenport, D. D., *et al.* (*See* Patterson, N. A., assignor.)	
	Davenport, Joseph D., and James T. Bliss. (*See* Bliss & Davenport.)	
105,919	Davids, John B., New York, N. Y. Tool-handle	Aug. 2, 1870
108,767	Davidson, John, Albany, N. Y. Lock for sliding-doors	Nov. 1, 1870
103,723	Davie, Charles H., and William Jackson, Chicago, Ill. Organ	May 31, 1870
98,673	Davies, Henry, Covington, Ky. Mold for casting metal	Jan. 11, 1870
103,305	Davies, Henry, Newport, Ky. Machine for cleaning cast pipes	May 24, 1870
104,930	Same.....Manufacture of iron by the Ellershausen process	July 5, 1870
98,475	Davies, Joshua, Muskegon, Mich., Spoke-shave	Jan. 4, 1870
109,877	Davies, Samuel M., Chicago, Ill. Locomotive head-light. (Antedated Nov. 23, 1870)	Dec. 6, 1870
101,108	Davis, Anthony G., and Charles W. Blakeslee, Watertown, and Alpheus N. Allen, Westville, Conn., assignors to Chapin Knitting-Machine Company. Knitting-machine	Mar. 22, 1870
105,048	Davis, Anthony G., and H. S. Frost, assignor to Davis and Woolson, Watertown, Conn. Mouse-trap	July 5, 1870
	Davis, Anthony, G., *et al.* (*See* Frost, Henry S., assignor.)	
110,311	Davis, Asahel, Lowell, Mass. Transplanting-implement. (Antedated Dec. 14, 1870)	Dec. 20, 1870
108,199	Davis, Augustus Ball, Philadelphia, Pa. Duplex-wrench	Aug. 9, 1870
103,153	Davis, Augustus C. L., St. Louis, Mo. Hand corn-planter	May 17, 1170
101,391	Davis, A. M., Washington, D. C. Garment-dummies	April 5, 1870
101,107	Davis, Biram C., Binghamton, N. Y. Machine for wiring window-blinds	Mar. 22, 1870
103,848	Same.....Machine for trimming blind-rods	June 7, 1870
107,166	Same.....Envelope. (Antedated Aug. 27, 1870)	Sept. 6, 1870
99,848	Davis, Biram C., assignor of two-thirds interest to William M. De Long and William F. Mills, Binghamton, N. Y. Mop and rubber-scrubber	Feb. 8, 1870
	Davis, Charles F., *et al.* (*See* Stearns, Caleb S., assignor.).....(Reissue.)	
107,011	Davis, Cornelius E., St. Helena, Cal. Maxilary compress	Sept. 6, 1870
107,013	Davis, Enos, Noblesville, Ind. Bee-hive	Sept. 6, 1870
100,370	Davis, Evan, Almond, N. Y. Grain-elevator	Mar. 15, 1870
108,689	Davis, Ezra, Keokuk, Iowa. Washing-machine	Oct. 25, 1870
106,130	Davis, George, and John R. Hoover, Elizabeth Port, N. J. Drawing-frame for hemp, &c	Aug. 9, 1870
3,836	Davis, George H., Boston, Mass. Piano-case.....(Design)	Feb. 22, 1870
100,226	Same.....Grand piano	Mar. 1, 1870
102,094	Davis, Hilas D., North Andover, Mass. Pattern-chair for looms	Apr. 19, 1870
106,334	Same.....Loom	Aug. 16, 1870
106,335	Same.....Loom	Aug. 16, 1870
107,492	Davis, Hiram B. S., Farmington, Me. Carriage-brake	Sept. 20, 1870

Alphabetical list of patentees for the year 1870—Continued.

No.	Name, residence, and invention or discovery.	Date.
105,434	Davis, Horace L., assignor to self and Gustavus W. Ingalls, Worcester, Mass. Roofing composition	July 19, 1870
105,182	Davis, Isaac A., Philadelphia, Pa. Apparatus for sponging cloth	July 12, 1870
106,131	Davis, James, New Orleans, La. Railway-switch	Aug. 9, 1870
4,068	Davis, James, assignor of part interest to Ford W. Davis, Philadelphia, Pa. Saw.....(Reissue)	July 12, 1870
101,430	Davis, James, jr., and David Scott, jr., Greenborough, N. C. Cotton-harvester	Apr. 5, 1870
	Davis, James A., *et al.* (*See* Guseman, Davis & McGeorge.)	
108,721	Davis, James B. and Seth M., Harrisonville, Mo. Oscillating-piston engine	Nov. 29, 1870
	Davis, James H., and Zephaniah A. F. Lefebere. (*See* Lefebere & Davis.)	
105,789	Davis, James N., assignor to self and J. C. Grannon, Cincinnati, Ohio. Water-closet	July 26, 1870
103,154	Davis, Jarvis, assignor to P. Smith, Buffalo, N. Y. Breech-loading fire-arm	May 17, 1870
99,067	Davis, Job A., Watertown, N. Y. Sewing-machine	Jan. 25, 1870
106,788	Same.....Gathering device for sewing-machines	Aug. 30, 1870
106,789	Same.....Crossing attachment for sewing-machines	Aug. 30, 1870
104,712	Davis, John, Terre Haute, Ind. Knob-latch	June 28, 1870
104,713	Davis, John Boon, Cleveland, Ohio. Metallic roofing	June 28, 1870
107,013	Davis, John R., and Frederick Rominger, Bloomfield, Iowa. Wardrobe, bedstead, and bureau	Sept. 6, 1870
98,747	Davis, Jonathan Dunlap, Fitchburgh, Mass. Pipe-tongs	Jan. 11, 1870
103,155	Davis, Joseph, Harrisburgh, Pa. Clothes-line holder	May 17, 1870
105,316	Davis, J. Addison, Verona, Miss. Corn-planter	July 12, 1870
3,823	Davis, Joseph H., Allegheny, Pa. Stop-valve.....(Reissue)	Feb. 8, 1870
99,649	Same.....Bib-cock	Feb. 8, 1870
99,650	Same.....Angle valve-cock	Feb. 8, 1870
99,651	Same.....Globe valve-cock	Feb. 8, 1870
99,652	Same.....Check valve-cock	Feb. 8, 1870
99,653	Same.....Valve-cock made of cast iron, and subsequently annealed	Feb. 8, 1870
110,016	Davis, Joseph H., Chillicothe, Mo. Arm-attachment for clocks	Dec. 13, 1870
110,443	Davis, Joseph K., Monticello, S. C. Hay and cotton press	Dec. 27, 1870
105,654	Davis, Joseph Watts, Dublin, Ohio. Adjustable reel-post for harvesters	July 26, 1870
	Davis, Lawrence & Co. (*See* Fulgum, Jesse P., assignor.)	
	Davis, Luke K., *et al.* (*See* Fifield, Levi W., assignor.)	
104,289	Davis, Nathan C., assignor to I. N. Hobill, Worthington, Ohio. Corn-planter	June 14, 1870
110,017	Davis, Noah, Boston, Mass. Coffee-roaster	Dec. 13, 1870
99,540	Davis, Oliver A., Brooklyn, N. Y. Floating velocipede	Feb. 8, 1870
107,230	Davis, Owen, New Lebanon, Ind. Knitting-machine	Sept. 13, 1870
106,132	Davis, Perry W., Portland, Oregon. Automatically-operated water-closet seat. (Antedated August 4, 1870)	Aug. 9, 1870
102,781	Davis, R. T., Canton, Ohio. Chill for casting toothed gear	May 3, 1870
98,852	Davis, S. H. and D. W., Detroit, Mich. Ice-crushing table	Jan. 18, 1870
110,212	Davis, Thomas, Detroit, Mich. Motive-power apparatus	Dec. 20, 1870
101,715	Davis, Thomas H., St. Joseph, Mo. Sash-holder. (Antedated April 6, 1870)	Apr. 19, 1870
102,660	Davis, Thomas Hale, assignor to Cheney Kilburn and Joel Hale Gates, Philadelphia, Pa. Composition for and mode of ornamenting wood	May 3, 1870
	Davis, Thomas M., and William High Kern. (*See* Kern & Davis.)	
100,016	Davis, Thomas S., Lancaster, Pa. Grate-bar	Feb. 22, 1870
100,125	Davis, William, and Joseph While, Cleveland, Ohio. Machine for rolling car-coupling pins	Feb. 22, 1870
109,878	Davis, William A., Salem, Ohio. Rotary engine	Dec. 6, 1870
3,951	Davis, William C., Cincinnati, Ohio. Cooking-stove.....(Design)	Apr. 5, 1870
	Same.....(*See* Van Deursen, William P., assignor.)	
108,240	Same.....Cook-stove	Oct. 11, 1870
109,167	Same.....Oven-plate for cooking-stoves	Nov. 15, 1870
4,469	Same.....Stove-shelf.....(Design)	Nov. 15, 1870
103,206	Davis, William C., and John W. Garrison, Philadelphia, Pa. Cooking-stove	May 24, 1870
	Davis, William C., and William P. Van Deursen. (*See* Stewart & Bradley, assignors.....(Reissue.)	
	Same.....(*See* Van Deursen & Davis.)	
106,071	Davis, William H., assignor to self and Joseph Harlan, Lexington, Ind. Machine for cutting hoops	Aug. 23, 1870
108,458	Davis, William M., assignor to self and Sidney S. Norton, Brook Haven, N. Y. Machine for ornamenting and lettering looking-glasses, signs, &c	Oct. 18, 1870
99,860	Davison, Darius, New York, N. Y. Apparatus for generating illuminating gas	Feb. 15, 1870
108,060	Same.....Gas retort	Oct. 4, 1870
	Davison, Henry J. (*See* Duffins, George H. S., assignor.)	
108,889	Davison, J. Ham, and Thomas J. Sasher, Mound Station, Ill. Hay-press	Nov. 1, 1870
	Davison, John S., and Nicholas Lorton. (*See* Lorton & Davison.)	
	Dawley, Benjamin G., North Providence, R. I. Loom.....(Extension)	Dec. 22, 1870
109,496	Dawson, Charles W., Painesville, Mo. Combined pruning-implement	Nov. 22, 1870
108,690	Dawson, James, Greenwood, Ill. Harrow	Oct. 25, 1870
105,783	Dawson, Joseph, Alexandria, Va. Alcohol and spirit still	July 26, 1870
108,979	Day, Andrew, Crystal Springs, Miss. Plow	Nov. 8, 1870
104,123	Day, Augustus, Detroit, Mich. Paper-file. (Antedated May 27, 1870)	June 14, 1870
104,569	Day, Austin G., Seymour, Conn. Asphaltum or concrete pavement	June 21, 1870
110,213	Day, Benjamin, West Hoboken, N. J. Sectional image	Dec. 20, 1870
101,108	Day, Charles T., Newark, N. J. Skate	Mar. 22, 1870
	Day, E. P. (*See* Winslow, Charles P., assignor.)	
	Day, Frederick K., *et al.* (*See* Campbell, Alexander McDonald, assignor.)	

Alphabetical list of patentees for the year 1870—Continued.

No.	Name, residence, and invention or discovery.	Date.
	Day, Henry C., *et al.* (*See* Hulbert, Steel & Day .....(Design.)	
102,095	Day, John, Buffalo, N. Y. Horseshoe blank	Apr. 19, 1870
102,506	Day, John, Paterson, N. J. Let-off mechanism for looms	May 3, 1870
100,380	Day, J. C., Hackettstown, N. J. Seasoning and preserving wood	Mar. 1, 1870
98,748	Day, S. Allan, Bowling Green, Ohio. Cartridge-box	Jan. 11, 1870
102,375	Same.....Cartridge-case	Apr. 26, 1870
	Day, Theodore D. (*See* Smith, Charles H., assignor.)	
107,342	Day, Willard G., Baltimore, Md. Transposing mechanism for organs	Sept. 13, 1870
110,190	Same.....Piano-forte action	Dec. 13, 1870
3,924	Dayton, Edwin, Meriden, Conn. Cement water-pipe .....(Reissue) ..	Feb. 8, 1870
98,853	Dayton Henry G., Dayton, Ohio. Still for whisky and other spirits	Jan. 18, 1870
103,840	Dayton, John W., assignor to American Suspender Company, Waterbury, Conn. Rosette	June 7, 1870
101,831	Deacon, Benjamin Richard, Canada. Coal-box	Apr. 12, 1870
3,837	Deacon, Joseph H., Lumberton, N. J. Alcoholic liquor from the rhubarb plant. (Reissue)	Feb. 15, 1870
109,728	Deacon, Samuel, and John Russell, Lawrence, Mass. Packing-box for rotary steam-cylinders	Nov. 29, 1870
98,570	Dean, Charles L., assignor to self and Francis B. Ray, Franklin, Mass. Guard for machine for picking waste	Jan. 4, 1870
100,734	Dean, Charles L., Newark, N. J. Combined latch and lock	Mar. 15, 1870
101,509	Dean, Cyrus, Buffalo, N. Y. Washing-machine	Apr. 5, 1870
106,673	Dean, Edmund W., Norwich, Conn. Stop-motion for braiding-machines	Aug. 23, 1870
104,563	Dean, Edward L., Newburgh, Ohio. Street and station indicator for railroad-cars	June 21, 1870
102,507	Dean, Ephraim K., assignor to William C. Lovering, Bangor, Me. Cover for kettles and other vessels	May 3, 1870
	Dean, John. (*See* Patterson, Andrew, assignor.)	
106,133	Dean, Lorenzo, Fort Edward, N. Y. Apparatus for reducing fibrous material to a textile stock	Aug. 9, 1870
106,134	Same.....Attachment to paper-machines to prevent the straining and breaking of the paper during manufacture	Aug. 9, 1870
109,585	Same.....Boiler for preparing paper-pulp	Nov. 29, 1870
109,586	Same.....Preparation of straw for the manufacture of paper	Nov. 29, 1870
102,981	Dean, Marcus E., Foxborough, Mass. Sawing-machine	May 10, 1870
	Dean, Mary E. (*See* Clarke, William E., assignor.)	
109,594	Dean, Otis, Richmond, Va. Combined vise and drill	Nov. 29, 1870
104,714	Dean, Portius Festus, Watsonville, Cal. Seat for vehicles	June 28, 1870
	Dean, R. L., *et al.* (*See* Clark, George, assignor.)	
102,234	Deane, Charles P., Springfield, Mass. Direct-acting engine	Apr. 26, 1870
108,691	Deane, Royal E., New York, N. Y. Cooking-range	Oct. 25, 1870
101,235	Dearborn, Gilbert K., assignor to Timothy Earle, Pawtucket, R. I. Knife-guard	Mar. 29, 1870
105,655	Same.....Egg-beater	July 26, 1870
	Same.....(*See* Earle and Dearborn, assignors.)	
110,214	Dearborn, John C., Candia, N. H. Car-coupling	Dec. 20, 1870
108,890	Deatrick, William H., Heidlersburgh, Pa. Boring-machine	Nov. 1, 1870
105,435	Deava, Charles, assignor to the Archer and Pancoast Manufacturing Company, New York, N. Y. Drop-light gasolier	July 19, 1870
107,885	De Bare, Reuben B., Philadelphia, Pa. Barrel-head	Oct. 4, 1870
	De Barry, James J., and William Sanderson. (*See* Sanderson and De Barry.) (Two cases.)	
	De Beaumont, Edward. (*See* Closs, John Joseph, assignor.)	
107,463	Debsell, Martin, Wabash, Indiana. Extension-table and settee	Sept. 20, 1870
103,025	Decelle, Maxime, Newburgh, Ohio. Spike, bolt, and rivet machine	May 17, 1870
105,636	Dechant, William H., assignor to David Brooks, Philadelphia, Pa. Cramp-hook for telegraphic-wire insulators	July 26, 1870
105,040	Decker, David, New York, N. Y. Former for bending and gluing the cases of grand pianos	July 5, 1870
105,920	Decker, Frederick, Delaware, Ohio. Seed-harvester	Aug. 2, 1870
102,702	De Dartein, Charles Felix, and Jules Edouard, France. Revolving fire-arm	May 10, 1870
103,026	Dederick, Levi, New York, N. Y. Sleeping-collar	May 17, 1870
107,464	Same.....Churn	Sept. 20, 1870
4,193	Same.....Sleeping-collar .....(Reissue) ..	Dec. 6, 1870
99,295	Dederick, Peter K., Greenbush, N. Y. Baling-press. (Antedated Aug. 1, 1870) ..	Feb. 1, 1870
99,296	Same ..... same	Feb. 1, 1870
99,297	Same ..... same	Feb. 1, 1870
102,376	Dedorick, Peter, Albany, N. Y. Coal-barrow	Apr. 26, 1870
109,189	Same.....Dumping-car	Nov. 15, 1870
105,317	Dee, Lon Hen, Grand Junction, Iowa. Ash-pan for locomotives	July 12, 1870
98,931	Deeble, John, Plantsville, Conn. Method of forming T-bolts	Jan. 18, 1870
99,413	Same.....Spring-bolt and clip	Feb. 1, 1870
101,834	Same.....Berch-spring clip	Apr. 12, 1870
105,533	Deeds, William S., assignor to self, John H. Baer, and George Koch, Baltimore, Md. Kettle for melting, mixing, and casting metals	July 19, 1870
100,257	Deey, Edward Mortimer, New York, N. Y. Ventilator	Mar. 1, 1870
100,988	Same.....Fastenings for studs or buttons	Mar. 22, 1870
100,989	Same.....Fluting-machine	Mar. 22, 1870
101,440	De Forest, David W., assignor to Richard Oliver, Brooklyn, N. Y. Window-shade fixture	Apr. 5, 1870
103,850	Defrees, Thomas W., South Bend, Ind. Car-coupling	June 7, 1870
105,784	De Freitas, John J., Springfield, Ill. Corn-harvester cutter	July 26, 1870
	Degen, Francis, and A. Pelise. (*See* Pelise and Degen.)	

Alphabetical list of patentees for the year 1870—Continued.

No.	Name, residence, and invention or discovery.	Date.
110,018	Degener, Fred. Otto, Brooklyn, E. D., N. Y. Inking apparatus for printing-presses	Dec. 13, 1870
	Deggeller, John, and William Landert. (*See* Landert & Deggeller.)	
99,068	De Grath, Marinus, Chicago, Ill. Coffee-pot attachment	Jan. 25, 1870
99,654	De Guinon, R. V., South Bergen, N. J. Machine for making paper twine	Feb. 8, 1870
105,436	De Haven, David, New Orleans, La. Steering apparatus	July 19, 1870
105,437	Same.....Hull of vessels	July 19, 1870
105,438	Same.....Arrangement of upper works in river steamers	July 19, 1870
107,014	Same.....Paddle-wheel	Sept. 6, 1870
108,450	De Haven, Isaac, Allegheny City, Pa. Heating-stove	Oct. 18, 1870
108,841	Deininger, August H. F., Prussia. Disintegrating fibrous material for paper-pulp, &c	Oct. 11, 1870
108,842	Dekle, Isaiah, Thomasville, Ga. Water-elevator	Oct. 11, 1870
106,136	De Knight, Charles H., Pittsburgh, Pa. Clothes-wringer	Aug. 9, 1870
100,017	De Lacy, Joseph M., Trenton, N. J. Steam-heater for burnishing-irons	Feb. 22, 1870
108,116	De La Mar, Joseph, assignor to self and John De Vries Eckhoff, Brooklyn, N. Y. Machine for blocking and stretching hats	Oct. 11, 1870
109,901	Delamarre, Charles, assignor to self, John A. Thurber, and Robert R. Benson, New York, N. Y. Manufacture of sugar or sirup from sweet-potatoes	Dec. 6, 1870
	De Lamater, C. H., *et al.* (*See* Rider, Alexander K., assignor.) (Two cases.)	
	Delana, Lark, and J. G. Sisson. (*See* Sisson & Delana.)	
100,966	De Landsee, A., France. Hydrocarbon burner	Mar. 1, 1870
	De Lang, John C., and George Smith. (*See* Powell, Thomas J., assignor.)	
100,735	Delano, S. G., Argentine, Mich. Automatic cradle	Mar. 15, 1870
103,156	Delany, Thomas J., assignor to self and Clinton Lloyd, Loudoun County, Va. Railway-car coupling	May 17, 1870
	Delap, J. D., *et al.* (*See* Duskin & Sledge.)	
108,980	De La Pena, Manoel, assignor to J. G. O. Guimarnes, New York, N. Y. Type-setting machine	Nov. 8, 1870
110,345	Delker, Frederick J., Ashland, Pa. Compound for purifying mine-water	Dec. 20, 1870
	Dell, William, and John Schroeffel. (*See* Schroeffel & Dell.)	
	De Long, William M., *et al.* (*See* Davis, Biram C., assignor.)	
108,981	Delude, Moses, Carrollton, Mich. Saw-mill	Nov. 8, 1870
4,216	Demarest, David M., New York, N. Y., John J. Demarest, Jersey City, and Nicholas H. Joralemon, Hoboken, N. J. Trade-mark .....(Design) ..	July 12, 1870
101,503	Demarest, William P., Brooklyn, N. Y. Shoe-trimming	Apr. 5, 1870
103,734	De Meanil, Oscar, Belgium, and M. Eyth, Wurtemberg. Machinery for towing canal-boats	May 31, 1870
	Deming, John. (*See* Silver, Albert R., assignor.) .....(Two cases.)	
103,157	Deming, John, assignor to self and A. R. Silver, Salem, Ohio. Spoke-tenoning and hub-boring machine	May 17, 1870
	Demmen, Charles F., and James Thornton. (*See* Thornton & Demmen.)	
100,879	De Montufar, Manuel, New York, N. Y. Insulator for telegraph-wires	Dec. 6, 1870
103,307	Dempsey, Price, Erie, Pa. Stove-grate	May 24, 1870
	De Navarro, José Francisco. (*See* Sergeant, Henry C., assignor.)	
	Same.....(*See* Wagner, Franz, assignor .....(Reissue.)	
	Same.....(*See* Moore, Charles, assignor.)	
	Denise, Tunis, *et al.* (*See* Vanderver & Denise.)	
	Denison, Russell A., *et al.* (*See* Young, Solomon W., assignor.)	
101,236	Denman, Daniel W., and William Tillotson, Detroit, Mich. Broiler	Mar. 29, 1870
103,790	Denn, Clayton, Philadelphia, Pa. Musical rocking-chair	Aug. 30, 1870
98,571	Dennett, Charles Colton, England. Construction of concrete arches for buildings, &c	Jan. 4, 1870
109,180	Dennett, Charles N., Amesbury, Mass. Carriage	Nov. 15, 1870
106,336	Denney, Samuel L., Christiana, Pa. Horse hay-rake. (Antedated Aug. 5, 1870.)	Aug. 16, 1870
	Same.....(*See* Randolph, James L., assignor.)	
106,138	Dennis, James, Churchville, N. Y. Nut-lock	Aug. 9, 1870
	Dennis, John, and Charles H. Weston. (*See* Weston & Dennis.)	
	Dennis, William P. (*See* Matteson, Francis B., assignor.)	
	Denny, A. D., *et al.* (*See* Bradley & Phillips, assignor.)	
108,891	Denny, Saint Clair, Pittsburgh, Pa., and Israel L. G. Rice, Cambridge, Mass. Paper-cutting machine	Nov. 1, 1870
106,791	Densmore, Byron, New York, N. Y. Adjustment for pump-rods. (Antedated Aug. 24, 1870	Aug. 30, 1870
106,792	Same.....Water-meter. (Antedated Aug. 24, 1870)	Aug. 30, 1870
108,333	Same.....Sectional steam-generator	Oct. 18, 1870
	Densmore, J. D., and Peter A. La France. (*See* La France & Densmore.)	
	Dent, Henry S., George W., and Frederick T., *et al.* (*See* Samuels, John L., assignor) .....(Reissue.)	
	Denton, Albert A. and D. G. (*See* Stevens, Charles L., assignor.)	
	Denton, Dallas S., and William M. Wilson. (*See* Wilson & Denton.)	
108,334	Denton, Drake W., Ithaca, N. Y. Roofing-fabric	Oct. 18, 1870
105,554	Denton, Eben, Braintree, Mass. Ships' topmast	July 19, 1870
104,940	De Poe, James H., Boonton, N. J. Meat-chopper	July 5, 1870
106,981	De Puy, Alexander T., assignor to R. Hoe & Co. Case-stand	Aug. 31, 1870
101,441	Derby, John K., Jamestown, N. Y. Washing-machine	April 5, 1870
104,123	Derham, Richard, England. Vegetable-washer	June 14, 1870
98,932	Derone, Louis, San Francisco, Cal. Inclosed folding spring-bed	Jan. 18, 1870
104,124	Derrick, William E., assignor to self and George R. Garrison, Jordan, N. Y. Horse hay-fork	June 14, 1870
	De Rush, D. R., and W. P. Callahan. (*See* Callahan & De Rush.)	

Alphabetical list of patentees for the year 1870—Continued.

No.	Name, residence, and invention or discovery.	Date.
110,346	Desgoffe, Jules Auguste, France. Hydraulic-press. (Antedated Dec. 9, 1870)	Dec. 20, 1870
98,476	Desky, Isaac, and Thomas A. Jennings, Seneca Falls, N. Y. Garment-hanger and size-ticket holder combined. (Antedated Dec. 24, 1869)	Jan. 4, 1870
100,209	De Smedt, E. J., assignor to New York Improved Anthracite Coal Company, New York, N. Y. Composition for roofing, paving, &c	Mar. 1, 1870
100,608	Same.....Composition for preserving timber and wood	Mar. 8, 1870
101,594	Same.....Composition for roofing, paving, &c	April 5, 1870
103,580	Same.....Manufacture of artificial fuel	May 31, 1870
103,581	Same.....Laying asphalt or concrete pavements or roads	May 31, 1870
103,582	Same.....Asphalt road and pavement	May 31, 1870
109,597	Same.....Asphalt pavement	Nov. 29, 1870
110,121	Same.....Asphalt road and pavement	Dec. 13, 1870
99,655	Dessau, Andreas F., Washington, D. C. Piano	Feb. 8, 1870
105,183	Deutschel, Abraham, Cleveland, Ohio. Ice-cutting machine	July 12, 1870
106,337	Deutz, Joseph, San Antonio, Tex. Gun-lock	Aug. 16, 1870
102,508	Devault, Michael, Charleston, Ill. Plow-grinder and polisher	May 3, 1870
105,439	De Veau, Samuel, Syracuse, N. Y. Washing-machine	July 19, 1870
103,922	Devlan, Patrick S., Jersey City, N. J. Composition for coating wood, metal, &c.	May 10, 1870
	Devlin, Lewis. (*See* Gotham, James M., assignor.)	
	Devoe, B. G., *et al.* (*See* Fitch, Devoe & McLellan.)	
	Devoe Manufacturing Company. (*See* Miller, Herman, assignor.)	
109,190	Devoge, Justin, Meadville, Pa. Miter-box	Nov. 15, 1870
102,509	Devol, Jonathan L., Parkersburgh, W. Va. Churn. (Antedated April 29, 1870)	May 3, 1870
106,471	Devol, Jonathan L., and Atwell L. Peadro, Parkersburgh, W. Va. Railway-car coupling. (Antedated Aug. 4, 1870)	Aug. 16, 1870
100,126	Dew, James M. A., Chicago, Ill. Faucet	Feb. 22, 1870
102,661	Same.....Padlock	May 3, 1870
109,394	Dewe, John, Toronto, Canada. Car-seal	Nov. 22, 1870
99,169	Dewey, Daniel H., Canton, Ill. Platform-scale for hay or cattle	Jan. 25, 1870
	Dewey, George H., *et al.* (*See* Dunbar & Fellows, assignors.)	
4,165	Dewey, R. H., and Eliphalet N. Tillotson, assignors to Eliphalet N. and William E. Tillotson, Pittsfield, Mass. Reservoir for wells (Reissue)	Oct. 25, 1870
	Dewey, Rodney H., and Almon N. Allen. (*See* Allen & Dewey.)	
	Dewhurst, James E., *et al.* (*See* Snyder, William B., assignor.)	
100,270	De Witt, H. C., Waukegan, Ill. Vapor-burner	Mar. 1, 1870
102,510	De Witt, Thomas, assignor to John T. Maxson, Detroit, Mich. Punching apparatus	May 3, 1870
102,511	Same.....Pump	May 3, 1870
102,512	Same.....Washing-machine	May 3, 1870
102,377	De Witt, Wellman, Tallmadge, Mich. Conveyer-blank	April 26, 1870
105,555	Dexter, Andrew J., North Foster, R. I. Blacksmiths' tongs	July 19, 1870
105,921	Same.....Adjustable-link	Aug. 2, 1870
	Dexter, Chauncey, and Job Smythe. (*See* Smythe & Dexter.)	
109,305	Dexter, Henry R., Putnam, Conn. Window screen-frame	Nov. 22, 1870
	Dexter, Lambert & Co. (*See* Barton, Charles, assignor.)	
	Dexter, Lambert & Co. (*See* Lambert, Catholina, assignor.)	
107,670	Dexter, Norman, Bower Hill, Pa. Machinery for shaping the heads of horse-shoe-nails	Sept. 27, 1870
	Dexter, William S., and Thomas William Clark, trustees. (*See* Whelpley & Storer, assignors) (Reissue.)	
	Dexter, William S., and Thomas William Clark, trustees. (*See* Whelpley & Storer, assignors) (Disclaimer.)	
108,010	Deyo, Abram, Rockford, Ill. Clapboard-gauge	Oct. 4, 1870
106,673	De Zavala, Henry, New York, N. Y. Pump-rod connection for deep wells. (Antedated Aug. 11, 1870)	Aug. 23, 1870
99,341	D'Hereuse, Rudolph, New York, N. Y. Malting grain	Feb. 8, 1870
3,921	Same.....Treating organic materials with air (Reissue)	April 19, 1870
100,571	Diaz, Juan Y., Cuba. Manufacture of fertilizers	Mar. 15, 1870
99,861	Dibble, A. J., Franklin, N. Y. Flour-bolt	Feb. 15, 1870
98,573	Dice, Noah, Xenia, Ind. Buckle	Jan. 4, 1870
108,335	Dick, Alexander, Buffalo, N. Y. Vise	Oct. 18, 1870
108,768	Same.....Broiler	Nov. 1, 1870
110,553	Dick, Charles James Adolph, France. Preventing incrustation of steam-boilers	Dec. 27, 1870
105,922	Dick, James M., assignor to self and William H. Albro, Buffalo, N. Y. Frame for potato-digger and shovel-plows	Aug. 2, 1870
4,216	Same.....Shovel-plow and potato-digger combined (Reissue)	Dec. 27, 1870
	Dick, W. C. (*See* McIntire, James, assignor.)	
104,433	Dickason, John, Vevay, Ind. Farm-gate	June 21, 1870
98,573	Dickason, John, Vevay, and George W. D. Kulp, Moore's Hill, Ind., assignors to John Dickason. Farm-gate	Jan. 4, 1870
100,499	Dickason, John S., Sulphur Well, Tenn. Cotton-planter	Nov. 22, 1870
110,123	Dickens, Simon, jr., Milwaukee, Wis. Oat-cleaner	Dec. 13, 1870
101,355	Dickerman, Charles C., Boston, Mass. Lock	Mar. 29, 1870
108,770	Same.....same. (Antedated Oct. 28, 1870)	Nov. 1, 1870
	Same.....(*See* Read & Clapp, assignors.)	
	Same.....(*See* Bancroft, C. R., assignor.)	
100,600	Dickerson, Samuel H., Hudson, Mich. Well-borer	Mar. 8, 1870
103,602	Dickerson, Thomas S., and Rodney M. Whipple, Chicago, Ill. Process and apparatus for using liquid fuel for producing heat and light	May 3, 1870
109,286	Dickey, Andrew, assignor to John S. Perry, trustee and executor, Andrew Dickey, and Nathan B. Perry, Albany, N. Y. Heating-stove	Nov. 22, 1870

Alphabetical list of patentees for the year 1870—Continued.

No.	Name, residence, and invention or discovery.	Date.
	Dickey, Andrew, and John S. Perry. (*See* Perry & Dickey.)	
102,783	Dickey, Benjamin F., Marshall Township, Mich. Gate	May 10, 1870
103,583	Same.....same	May 31, 1870
106,793	Dickey, James, Venango City, Pa. Removing deposits from oil-wells	Aug. 30, 1870
106,794	Same.....Torpedo for oil-wells	Aug. 30, 1870
103,851	Dickey, John T., Farmington, Ill. Saw-set	June 7, 1870
109,880	Dickey, Julius C., Titusville, Pa. Casing T for oil-wells	Dec. 6, 1870
106,559	Dickie, Robert, and Hugh K. Johnston, Bunker Hill, Ill. Plow	Aug. 23, 1870
100,507	Dickinson, Charles B., New York, N. Y. Slate-frame	Mar. 8, 1870
103,584	Dickinson, David A., Baltimore, Md. Preventing reverse motion in sewing-machines	May 31, 1870
108,460	Same.....Car-starter	Oct. 18, 1870
	Dickinson, Frederick Z., *et al.* (*See* Kehoe, Edward J., assignor.)	
106,560	Dickinson, George W., Charleston, Ill. Weighing-scale	Aug. 23, 1870
109,810	Dickinson, Henry, Marlborough, Conn. Washing-machine	Dec. 6, 1870
110,215	Dickinson, Joseph L., Dubuque, Iowa. Lubricator	Dec. 20, 1870
106,036	Dickson, Walter, Albany, N. Y. Corkscrew	Aug. 2, 1870
	Dickson, William, *et al.* (*See* Duskin & Sledge.)	
	Diebold, Charles, *et al.* (*See* Hintz, John C., assignor.)	
	Same.....(*See* Haile, Robert, assignor.)	
101,835	Diebold, Charles, assignor to E. L. Butterfield, Lebanon, Pa. Manufacture of building-blocks from slag	April 12, 1870
106,472	Diebold, Charles, and Jacob Obernesser, assignors to Charles Diebold and Jacob Kienzle, Cincinnati, Ohio. Permutation lock	Aug. 16, 1870
	Diehl, H. P., & Co. (*See* Johnson, Thomas J., assignor.)	
99,656	Diehl, Joseph, Clayton, Pa. Sheet-metal roofing	Feb. 8, 1870
102,235	Dietsch, Anton, Franklin Station, Ill. Extension-table	April 26, 1870
108,892	Dietsch, Edward, assignor to self and Jacob C. Powell, Finley, Ohio. Plow	Nov. 1, 1870
103,852	Diets, Andrew, New York, N. Y. Manufacture of glue	June 7, 1870
108,760	Same.....Machine for breaking stone	Nov. 1, 1870
	Dietzel, George, and John H. Vogt. (*See* Vogt & Dietzel.)	
103,027	Dieulafoy, George, France. Subcutaneous exhauster	May 17, 1870
100,508	Diffenderfer, J. D., Lewisburgh, Pa. School desk and seat	Mar. 8, 1870
99,862	Diggins, Henry M., Philadelphia, Pa. Refrigerator	Feb. 15, 1870
104,941	Dilger, Andrew, St. Louis, Mo. Pavement	July 5, 1870
104,942	Same.....Street-pavement	July 5, 1870
104,943	Dill, Joseph, Grand Rapids, Mich. Table for dovetailing-machines	July 5, 1870
106,922	Same.....Dovetailing-machine	Aug. 30, 1870
110,123	Same.....Grooving-tool	Dec. 13, 1870
	Dill, Joseph, and Dedrick Jordan. (*See* Jordan & Dill.)	
106,037	Dill, Richard M., Morgantown, Ind. Trace-holder for harness	Aug. 2, 1870
106,561	Dill, Thomas Bradford, Boston, Mass. Machine for manufacturing watch-cases	Aug. 23, 1870
100,127	Dillaway, Hiram, Sandwich, Mass. Mold for forming blown glassware	Feb. 22, 1870
109,733	Dille, James Madison, Cooperstown, Pa. Electro-magnetic burglar-alarm	Nov. 29, 1870
102,663	Dillen, Jonathan, Petroleum Centre, Pa. Safety derrick-lamp	May 3, 1870
108,771	Dillenback, Daniel, Galesburgh, Mich. Plow-jointer	Nov. 1, 1870
106,318	Diller, George W., Odell, Ill. Spring-seat for vehicles	Aug. 16, 1870
110,554	Dilley, J. W., Macomb, Ill. Land-roller	Dec. 27, 1870
101,836	Dillier, Joseph, Greensburgh, Ind. Wheat-drill	April 12, 1870
105,440	Dillingham, Moses W., Amsterdam, N. Y. Pencil-sharpener	July 19, 1870
106,795	Same.....same	Aug. 30, 1870
104,715	Dillon, William, Wheeling, West Va. Balance slide-valve	June 28, 1870
108,117	Dillon, William, Sonoma, Cal. Potato-digger	Oct. 11, 1870
107,343	Dimock, Ira, Florence, Mass. Spool show-case	Sept. 13, 1870
	Dingee, Montgomery, and Samuel D. Roberts. (*See* Roberts & Dingee.)	
107,344	Dingman, James, Decatur, Ill. Harrow	Sept. 13, 1870
105,785	Dinsmore, Warren A., assignor to self and Emily L. Geer, South Boston, Mass. Catamenial sack	July 26, 1870
108,336	Dion, Charles, New York, N. Y. Fluting-machine	Oct. 18, 1870
101,966	Disser, Caspar, West Union, Ohio. Shifting rail carriage-seat	April 19, 1870
102,923	Diston, Henry, Philadelphia, Pa. Packing-case for saws	May 10, 1870
107,509	Same.....Combined furnace or oven and tempering die	Sept. 20, 1870
108,011	Same.....Saw	Oct. 4, 1870
	Diston, Henry, & Son. (*See* Taylor, Thomas, assignor.)	
	Same.....(*See* Rhodes, Edward, assignor.)	
	Same.....(*See* Rhodes, Edward, assignor.) (Two cases) ..... (Design.)	
	Same.....(*See* Milliman, William F., assignor.)	
	Diston, Henry and Hamilton. (*See* Smith, John, assignor.)	
103,433	Diston, Mary, Philadelphia, Pa. Wall-paper protector	May 24, 1870
100,881	Diston, Thomas S., assignor to self, and Henry Diston & Sons, Philadelphia, Pa. Process for making concave circular saws	Dec. 6, 1870
4,168	Dithridge, Edward and Edward D., Pittsburgh, Pa. Lamp-chimney (Reissue)	Nov. 22, 1870
98,854	Dittmar, Carl, Prussia. Explosive compound	Jan. 18, 1870
99,069	Same.....Explosive agent, called xyloglodine	Jan. 25, 1870
99,070	Same.....Manufacture of xyloglodine and other explosive agents	Jan. 25, 1870
103,308	Dittman, Casper, Leacock, Pa. Nut-lock	May 24, 1870
105,050	Dittman, Casper, assignor to self and Graybill B. Swope, Upper Leacock Township, Pa. Hay-knife	July 5, 1870
103,997	Diven, Robert, New York, N. Y. Laundry-iron heater	June 7, 1870
104,125	Divine, Thomas, Charleston, S. C. Hair brush or comb	June 14, 1870
101,837	Dix, Samuel C., Neponset, Ill. Bag-fastener	April 12, 1870

Alphabetical list of patentees for the year 1870—Continued.

No.	Name, residence, and invention or discovery.	Date.
106,562	Dixon, David B., Unionville, Mo. Grass-seed separator for mangers	Aug. 23, 1870
	Dixon, James R., *et al.* (*See* Hailock, Valentine H., assignor.)	
106,330	Dixon, Joseph, and Matthew B. Sampson, Eddyville, Iowa. Pitman connection for harvesters	Aug. 16, 1870
110,586	Dixon, Joseph A., New York, N. Y. Hook-attachment for seats	Nov. 29, 1870
	Dixon, William, and James T. Harvey. (*See* Harvey & Dixon.)	
	Dixson, A. H. (*See* Brattan, Thomas, assignor.)	
98,477	Doan, David Willson, Rochester, N. Y. Ash-sifter, leach, and smoke-house	Jan. 4, 1870
	Doane, Truman P. (*See* Wellington, Henry, assignor.)	
	Same.....same.	
108,012	Dobbins, David P., and James Sangster, Buffalo, N. Y. Brick-machine	Oct. 4, 1870
109,589	Dobbins, Robert, Binghamton, N. Y. Healing-salve	Nov. 29, 1870
103,309	Dockham, George F., Lynn, Mass. Machine for burring wool, &c., on the skin	May 24, 1870
102,378	Dockstader, Lansing, assignor to Bradley & Hubbard, West Meriden, Conn. Coating and bronzing iron	April 26, 1870
4,302	Dodd, Amzi S., New York, N. Y. Carriage	(Design).. Aug. 30, 1870
	Dodd, C. B., *et al.* (*See* Meredith, Samuel, assignor.)	
101,838	Dodd, Robert J., Orth, Ind. Apple corer and slicer	April 12, 1870
103,158	Doddridge, Loyal M., Mt. Pleasant, Ind. Milk-pail with strainer attached	May 17, 1870
108,993	Doddridge, William B., Hebron, Ind. Valve-gear for steam-engines	Nov. 8, 1870
106,259	Dodge, Charles C., Marshall, Mich. Switch-stand	Aug. 9, 1870
	Dodge, C. G., *et al.* (*See* Burridge, William H., assignor.)	
	Dodge, Daniel, Keeseville, N. Y. Nail-machine	(Extension).. May 24, 1870
107,015	Dodge, Eliza D., Worcester, Mass. Cooking-table	Sept. 6, 1870
99,071	Dodge, Hezekiah, Albany, N. Y. Machine for disintegrating wood for paper-pulp	Jan. 25, 1870
101,716	Same.....Mop-head. (Antedated April 4, 1870)	April 12, 1870
105,556	Dodge, James F., Nashua, N. H. Wardrobe-bedstead	July 19, 1870
	Dodge, John H., and L. M. Ham. (*See* Ham & Dodge)	(Reissue.)
105,051	Dodge, Johnson, New Orleans, La. Coffee-pot	July 5, 1870
104,281	Dodge, Levi, Waterford, N. Y. Manufacture of paper	June 14, 1870
104,282	Same.....same	June 14, 1870
103,028	Dodge, Lewis, Chicago, Ill. Construction of tunnels and dams. (Antedated May 14, 1870)	May 17, 1870
109,397	Same.....Press for the manufacture of artificial stone	Nov. 22, 1870
103,853	Dodge, Robert L., Gallatin, Mo. Book-repository	June 7, 1870
	Dodge, Thomas H. (*See* Taft, George C., assignor.)	
	Same.....(*See* Greeley & Buxton, assignors)	(Reissue.)
103,150	Dodge, William C., Washington, D. C. Guide for sewing-machines	May 17, 1870
	Same.....(*See* Hailer, Lewis, assignor.)	
105,786	Dodge, William James, Syracuse, N. Y. Furnace for salt-boiling	July 26, 1870
110,355	Same.....Washing-machine	Dec. 27, 1870
102,379	Doe, William H., Oshkosh, Wis. Sash balance and lock	April 26, 1870
99,704	Doering, Charles, Charlestown, Mass. Tobacco-box	Feb. 15, 1870
	Doering, Justus, and William P. Uhlinger. (*See* Uhlinger & Doering.)	
101,237	Doerr, Heinrich, Milwaukee, Wis. Trunk	Mar. 29, 1870
99,298	Doerr, John H., Philadelphia, Pa. Chain or band	Feb. 1, 1870
	Doggett, W. F., *et al.* (*See* Bond, Thomas, assignor.)	
110,444	Dohan, James F., Binghamton, N. Y. Carriage-window. (Antedated Dec. 15, 1870)	Dec. 27, 1870
103,585	Dohn, George, Sacramento, Cal. Tongs for rigging	May 31, 1870
3,881	Dolan, Thomas, Philadelphia, Pa. Bedouin or Arab	(Design).. Mar. 8, 1870
3,882	Same.....same	(Design).. Mar. 8, 1870
3,964	Same.....Knitted fabric	(Design).. April 12, 1870
3,965	Same.....Stocking-fabric	(Design).. April 12, 1870
3,966	Same.....same	(Design).. April 12, 1870
4,003	Same.....same	(Design).. May 3, 1870
103,586	Same.....Latch. (Antedated May 20, 1870)	May 31, 1870
4,157	Same.....Stocking-fabric	(Design).. June 21, 1870
4,158	Same.....Bedouin or Arab	(Design).. June 21, 1870
4,300	Same.....Persian cloak	(Design).. Aug. 23, 1870
4,301	Same.....same	(Design).. Aug. 23, 1870
4,334	Same.....Knitted fabric	(Design).. Sept. 6, 1870
	Same.....(*See* Hodgson, Joseph, assignor.) (Three cases)	(Design.)
	Dole, L. A., deceased, by Richard H. Garrigues, Salem, Ohio. Saw-gummer. (Extension)	Sept. 5, 1870
	Doll, Michael. (*See* Miller, Charles H., assignor.) (Two cases.)	
	Doll, Theodore, and Oliver C. Smith. (*See* Smith & Doll.)	
	Dolloff, Alpheus. (*See* Nelson, Hiram, assignor.)	
110,019	Dolph, George C., West Andover, Ohio. Land-roller	Dec. 13, 1870
	Dolph, George C., and Theodore E. King. (*See* King & Dolph.)	
104,283	Dolson, William B., Waterloo, Iowa. Millstone balance and cooler	June 14, 1870
109,110	Dom, Alexander, Mt. Healthy, Ohio. Supporting-prop for folding buggy-tops	Nov. 8, 1870
110,445	Donaldson, James W., Fairfield, Cal. Grain-separator	Dec. 27, 1870
102,380	Donaldson, James W., and Daniel Sheets, Suisun, Cal. Needle	April 26, 1870
	Donaldson, James W., and Matthew M. Cooper. (*See* Cooper & Donaldson.)	
	Donaldson, John. (*See* Fahrney, William H., assignor)	(Two cases.)
103,854	Donato, Thomas, New York, N. Y. Window-blind	June 7, 1870
108,998	Donavan, Eliza Jane, assignor to self and W. T. Gibson, Indianapolis, Ind. Bee-hive	Nov. 1, 1870
109,980	Donnell, Samuel L., Humboldt, Tenn. Combined corn and cotton-seed planter and guano-distributer	Mar. 22, 1870

Alphabetical list of patentees for the year 1870—Continued.

No.	Name, residence, and invention or discovery.	Date.
109,882	Donnellan, Charles E., assignor to self and McCord & Wheatley, Indianapolis, Ind. Postmarking stamp-canceling machine	Dec. 6, 1870
101,442	Donnellan, Charles E., Indianapolis, Ind. Tape-line box	April 5, 1870
109,302	Same.....Canceling-stamp	Nov. 15, 1870
104,284	Donnelly, Thomas, Pittsburgh, and James H. and Allen Anchors, Bear Creek Station, Pa. Conveying liquids	June 14, 1870
108,118	Donner, Carles R., Sonora, Cal. Feed-cutter	Oct. 11, 1870
106,340	Donoghue, William, Philadelphia, Pa. Extension-table slide	Aug. 16, 1870
100,271	Donor, H. E., assignor to self and Robert E. Brett, New York, N. Y. Umbrella-frame. (Antedated Feb. 17, 1870)	Mar. 1, 1870
	Donor, H. E., *et al.* (*See* Howe, Albert K., assignor.)	
	Doolittle, Thomas B. (*See* Taft, George C., assignor)	(Reissue.)
	Same.....(*See* Adams, Samuel W., assignor.)	
105,032	Dopp, H. William, assignor to self and James E. Thomson, Buffalo, N. Y. Stamp-canceler	July 5, 1870
98,574	Doremus, Edmund, Rondout, N. Y. Clamp for holding staves	Jan. 4, 1870
4,217	Dorflinger, Chretian, Bryan, Pa. Glass lamp-shade	(Design).. July 12, 1870
4,294	Dornan, John, Philadelphia, Pa. Carpet-pattern	(Design).. Aug. 16, 1870
99,863	Dorr, Arthur W., Lake Valley, Cal. Tool for checking timber	Feb. 15, 1870
107,886	Dorr, Jesse A., Williamsport, Pa. Saw-mill	Oct. 4, 1870
	Dorré, Louis Phillipe, and Désire Parfait Lefevre. (*See* Lefevre & Dorré.)	
	Dorsey, Owen, Newark, Ohio. Harvester-rake	(Extension).. Mar. 3, 1870
110,216	Dorsey, William D., Decatur, Ill. Portable loading and dumping machine	Dec. 20, 1870
98,749	Dorst, John H., New Albany, Ind. Faucet	Jan. 11, 1870
100,991	Dorton, James T., and Stephen G. Eubank, Wellington, Mo. Washing-machine	Mar. 22, 1870
	Dorwin, Thomas. (*See* Du Bois, Joseph S., assignor.)	
108,983	Dotch, Julius Edmund, Washington, D. C. Preserving meat, fish, oysters, &c. (Antedated, Oct. 29, 1870)	Nov. 8, 1870
	Doty, Chambers S. (*See* Keith, E. H., assignor.)	
107,231	Doty, Edgar F., Ravenna, Ohio. Ladies' boot	Sept. 13, 1870
108,674	Doty, Edward M., Joel L. Little, and Peter A. Schmidler, assignors to Edward M. Doty, Springfield, Ohio. Revolving road-scraper	Aug. 23, 1870
102,924	Doty, Ellis, Janesville, Wis. Machine for punching metal	May 10, 1870
101,356	Doty, Ellis, and H. Richardson, assignors to Doty Manufacturing Company, Janesville, Wis. Machine for shearing metal	Mar. 29, 1870
102,784	Doty, Ellis, assignor of one-half interest to Thomas Judd, Janesville, Wis. Gas-generator	May 10, 1870
109,303	Doty, Henry Harrison, England. Apparatus for burning paraffine and other hydrocarbon oils	Nov. 15, 1870
103,310	Doty, James, and Asa H., West Falls, N. Y. Towing-hooks for canal-boats	May 24, 1870
4,017	Doty, J. W., Lockport, N. Y. Pitman connection for harvesters	(Division B, reissue) June 7, 1870
98,575	Doty, William M., Woodbridge, N. J. Pruning-hook	Jan. 4, 1870
100,272	Doubler, John W. H., assignor to self, J. M. Clendening, S. G. Hayes, and Thomas F. Rooney, Chicago, Ill. Railway-car coupling. (Antedated Feb. 16, 1870)	Mar. 1, 1870
105,184	Doud, Elihu, Oshkosh, Wis. Mower and reaper sickle sharpener	July 12, 1870
109,273	Douden, Edwin, assignor to self and Charles Broome, Lykens, Pa. Breaker-roller	Mar. 1, 1870
101,100	Dougherty, Eliphalet, assignor to self and J. M. Flood, North Lewisburgh, Ohio. Step-spindle	Mar. 22, 1870
103,725	Same.....Water-wheel	May 31, 1870
105,318	Dougherty, James, Philadelphia, Pa. Blowing-machine	July 12, 1870
106,260	Dougherty, John B., assignor to self, Robert E. Sherlock, Joseph C. Schauch, Albert G. Wheeler, and Patrick H. Lawler, Rochester, N. Y. Machine for manufacturing hoops	Aug. 9, 1870
110,217	Dougherty, Joseph W., Chicago, Ill. Water-filter	Dec. 20, 1870
110,446	Dougherty, Tiberius, Philadelphia, Pa. Snow-plow for railways	Dec. 27, 1870
103,726	Douglas, Anson B., Clyde, Ohio. Saw-gummer	May 31, 1870
104,126	Douglas, Bailey B., Newark, N. J. Hydrocarbon vapor machine for illuminating purposes	June 14, 1870
109,191	Douglas, Charles A., Franklin, N. Y. Faucet	Nov. 15, 1870
107,345	Douglas, Charles H., Hartford, Conn. Sled	Sept. 13, 1870
107,346	Same.....Saw-table	Sept. 13, 1870
105,657	Douglas, Frank, Norwich, Conn. Planing and molding machine	July 26, 1870
106,139	Same.....Planing-machine	Aug. 9, 1870
107,671	Same.....Blind-slat tenoning-machine	Sept. 27, 1870
107,238	Douglas, Joseph V., assignor to self and James A. Craig, Philadelphia, Pa. Roofing compound	Sept. 13, 1870
98,674	Douglas, Joseph W., assignor to W. and B. Douglas, Middletown, Conn. Adjustable attachment of pump-barrels to their bases	Jan. 11, 1870
102,664	Same.....Pump-valve	May 3, 1870
101,443	Douglas, Nathan, assignor to self and Frank Douglas, Goshen, Ind. Chimney-cowl	April 5, 1870
102,665	Douglas, Richard A., Philadelphia, Pa. Seasoning wood	May 3, 1870
110,194	Douglas, William G., and Hugh T., Warrenton, Va., and John Milton Reed, Omaha, Neb. Machine for separating cockle from wheat	Dec. 13, 1870
108,984	Douglass, James A., Altoona, Pa. Bee-hive	Nov. 8, 1870
	Douglass, Richard A. (*See* Jerome, Chauncey, assignor.)	
102,785	Douglass, Samuel, Kalamazoo, Mich. Fire-tongs	May 10, 1870
	Douk, Horace, and Isaac C. Downes. (*See* Abbott, Downes, and Douk, assignors.)	

Alphabetical list of patentees for the year 1870—Continued.

No.	Name, residence, and invention or discovery.	Date.
107,233	Douthett, William C., Chicago, Ill. Traction-engine. (Antedated Sept. 1, 1870.)	Sept. 13, 1870
	Dow, Edward C., and Gilbert B. Hill. (*See* Hill and Dow.)	
100,509	Dow, Edwin O., Chicago, Ill. Stop for billiard-wires	Mar. 8, 1870
	Dow, John M. (*See* Girond, Victor, assignor.)	
102,096	Dow, Joseph H., assignor to self and Darius Wilcox, Birmingham, Conn. Operating fan-tremolos	April 19, 1870
101,444	Dow, O. L., Hancock, N. H. Butter-worker	April 5, 1870
102,513	Downer, Andrew, Hammondsville, Ohio. Pruning-hook	May 3, 1870
107,673	Downes, Charles H., Hudson City, N. J. Pencil-case	Sept. 27, 1870
101,110	Downes, Isaac C., and Horace Douk, assignors to selves and Stephen J. Abbott, Lewiston, Me. Drop-wire supporting bar or plates of warping-machines	Mar. 22, 1870
99,073	Downie, Hay, and Isaac Blue Harris, Scotland. Shoe for horses	Jan. 25, 1870
	Downing, B., and N. L. Brundage. (*See* Brundage & Downing.)	
4,918	Downing, George W., assignor to Redfield & Rice, Manufacturing Co., New York, N. Y. Handle of spoons, forks, ladles, &c. (Design)	July 12, 1870
101,595	Downing, William H., Pioneer, Pa. Lifting-clamp for pumps. (Antedated Mar. 29, 1870.)	April 5, 1870
106,563	Same.....Tubing-clamp	Aug. 23, 1870
102,097	Downs, Nelson H., Birmingham, Conn. Concrete pavement	April 19, 1870
99,170	Dows, Gustavus D., assignor to self, Calvin D. Dows, and George S. Cushing, Boston, Mass. Soda-fountain	Jan. 25, 1870
	Dows, Gustavus D., and Calvin, *et al.* (*See* Hallowell, Albert, assignor.) (Reissue.)	
	Same.....same.	
105,658	Dowson, Henry, Springfield, Ill. Wood-pavement	July 26, 1870
107,764	Doyle, John, Hoboken, N. J. Curtain-fixture	Sept. 27, 1870
109,117	Doyle, John, Hoboken, N. J., and Timothy A. Martin, New York, N. Y. Rotary pump	Nov. 8, 1870
99,299	Doyle, Patrick, Newark, N. J. Mold for making combined ingots of steel and iron	Feb. 1, 1870
104,265	Doyle, Peter, and Frederick P. Colton, Hartford, Conn. Compound for polishing and cleaning marble	June 14, 1870
100,991	Doyle, William, Albany, N. Y. Base-burning parlor cooking-stove	Mar. 22, 1870
4,960	Same.....Birmingham, Pa. Jelly-glass (Design)	July 26, 1870
	Same.....(*See* Atterbury, Thomas B., assignor.)	
109,304	Doyle, William E., Eaton, Ohio. School-desk	Nov. 15, 1870
110,020	Drahota, Rudolf, Philadelphia, Pa. Hinge	Dec. 13, 1870
109,600	Drake, Ellis, Stoughton, Mass. Projectile	Nov. 29, 1870
101,717	Drake, James A., and William R. C. Clark, New Orleans, La. Earth-closet	April 12, 1870
103,089	Same.....same	May 17, 1870
105,053	Same.....same	July 5, 1870
106,564	Drake, James A., assignor to self and Mary R. B. Clark, New Orleans, La. Earth-closet	Aug. 23, 1870
106,565	Same.....same	Aug. 23, 1870
106,566	Same.....same	Aug. 23, 1870
105,185	Same	July 12, 1870
	Drake, Jasper N., Liberty, Mich. Snow-plow	
107,765	Drake, John Robert. (*See* Valentine, William P., assignor.)	Sept. 27, 1870
99,542	Drake, Philander N., and David Drummond, McGregor, Iowa. Splint-piano	Feb. 8, 1870
103,998	Drake, Robert, Newark, N. J. Sadiron-heater	June 7, 1870
109,398	Drake, Thomas, Philadelphia, Pa. Combined rooster and boiler	Nov. 22, 1870
	Drake, Whitfield H., Musconetcong, N. J. Lawn-mower	
110,021	Draper, F., & Co. (*See* Sawyer, Joseph W., assignor.)	Dec. 13, 1870
110,218	Draper, George, Hopedale, Mass. Trumpet for spinning-machines	Dec. 20, 1870
110,556	Same.....Machine for beaming yarn or warp	Dec. 27, 1870
	Same.....Drawing-frame	
	Draper, George, & Son. (*See* Richards, Isaac P., assignor.)	
3,856	Same.....(*See* Knight, George W., assignor.)	
	Draper, Virgil, assignor to Oscar M. Draper, North Attleborough, Mass. Device for swaging chain-links (Reissue)	Mar. 1, 1870
105,054	Same.....Machine for attaching ornaments to chain-links	July 5, 1870
106,140	Draper, William F., Hopedale, Mass. Spinning-ring	Aug. 9, 1870
106,567	Same.....Spindle-bolster	Aug. 23, 1870
102,514	Draper, William F., and Joseph B. Bancroft, Hopedale, Mass. Spindle-step cap	May 3, 1870
108,461	Dreeson, Bartholdt L., Marion County, Tex. Cotton-picker	Oct. 18, 1870
108,119	Dreher, Jurias G., Pine Grove, Pa. Tobacco-cutter	Oct. 11, 1870
99,414	Drescher, Louis, New York, N. Y. Electro-magnetic machine for medical purposes	Feb. 1, 1870
4,939	Drew, Charles B., assignor to Underhill Edge Tool Company, Boston, Mass. Ax. (Design)	May 17, 1870
	Drew, Charles H., *et al.* (*See* Wright & Rowe, assignors.)	
99,073	Drew, David A., Philadelphia, Pa. Carpet-cleaning machine	Jan. 25, 1870
	Drew, William H., and Joseph Paradis. (*See* Paradis & Drew.)	
106,361	Dreyfus, Isidore, New York, N. Y. Lubricator	Aug. 9, 1870
	Same.....same	Nov. 8, 1870
	Dreyfoos, Klein & Company. (*See* Klein & Jacobs, assignors.)	
98,675	Drippe, Isaac, Fort Wayne, Ind. Railway-car truck	Jan. 11, 1870
	Driscoll, J. W., and William G. Schmidlin. (*See* Schmidlin & Driscoll.) (Reissue.)	
	Same.....same	
	Same.....same. (Reissue.)	
104,944	Drisko, Alonzo S. and Ormander H., Boston, Mass. Slat for bedsteads	July 5, 1870
	Drisko, Perrin C. (*See* Chase, Andrew J., assignor.)	
	Drogat, Jean, and Pierre François Ramel. (*See* Ramel & Drogat.)	

Alphabetical list of patentees for the year 1870—Continued.

No.	Name, residence, and invention or discovery.	Date.
103,236	Dronsfield, Joseph S., England. Card-grinder	April 26, 1870
99,171	Drown, Thomas M., assignor to W. A. Drown, Philadelphia, Pa. Water-proof fabric	Jan. 25, 1870
	Drown, William A., & Co. (*See* Tate, William J., assignor.)	
	Drown, William A., jr. (*See* Plumb, H., assignor.)	
	Same.....(*See* Martin, James W., assignor.)	
	Same.....(*See* Plumb, Hiram, assignor.)	
100,572	Drowne, Simeon W., Norwich, Conn. Latch	Mar. 15, 1870
104,838	Same.....Key-hole escutcheon	June 28, 1870
98,933	Drummond, David, McGregor, Iowa. Screw-driver	Jan. 18, 1870
	Drummond, David, and Philander N. Drake. (*See* Drake & Drummond.)	
109,883	Dubois, George S., Jersey City, N. J. Steam-boiler	Dec. 6, 1870
109,192	Dubois, Isaac, Boonesborough, Iowa. Device for cutting and shearing metals	Nov. 15, 1870
101,228	Du Bois, John, and Edwin F. Beugler, Williamsport, Pa. Fastening for cutter-heads, pulleys, &c	Mar. 29, 1870
4,047	Du Bois, John, assignor to Joseph C. Du Bois, Millerton, Cal. Cotton-gin. (Reissue)	June 28, 1870
109,119	Du Bois, Joseph S., assignor to self and Thomas Dorwin, St. Louis, Mo. Railway sleeping-car	Nov. 8, 1870
102,098	Du Bois, Richard C., Washington, D. C. Trunk-bedstead	April 19, 1870
	Dubrul, Napoleon, and Emery E. Hardy. (*See* Hardy & Dubrul.)	
102,099	Dubuisson, George W., Norwich, Conn. Thill-coupling	April 19, 1870
105,786	Same.....Sash-lock	July 26, 1870
100,321	Ducastel, Arsene, New York, N. Y. Horse-collar	Mar. 1, 1870
102,786	Duchemin, William, assignor to George B. Bigelow, trustee, Boston, Mass. Method of making turned sewed shoes	May 10, 1870
109,500	Same.....Machine for molding, rounding, and channeling boot and shoe soles	Nov. 22, 1870
	Duchman, George. (*See* Geahr, William, assignor.)	
109,884	Duckworth, John C., Pittsfield, Mass. Harness-operating mechanism for looms	Dec. 6, 1870
108,692	Ducsh, Henry, Baltimore, Md. Rotary disintegrator	Oct. 25, 1870
110,022	Dudgeon, Richard, New York, N. Y. Rotary engine	Dec. 13, 1870
108,337	Dudley, Benjamin F., Boston, Mass. Finishing copper-plates	Oct. 18, 1870
102,515	Dudley, Charles G., and Jacob Gulden, Keyport, N. J. Shaft or pole coupling for carriages	May 3, 1870
	Dudley, George D., *et al.* (*See* Sherwood, Woods & Dudley, assignors). (Two cases.)	
	Dudley, George D., and Daniel Sherwood. (*See* Sherwood & Dudley). (Design.)	
	Dudley, William J., *et al.* (*See* Bollivant, Josiah, assignor.)	
106,923	Dudley, William W., Centreville, Ind. Liquid slating for forming blackboards, &c	Aug. 30, 1870
109,734	Duempelmann, Edward, Washington, D. C. Concrete for paving and roofing	Nov. 29, 1870
102,198	Duffee, John L., Washington, D. C. Bronzing and gilding	April 19, 1870
3,902	Duffee, John L., assignor of one-third interest to John H. Johnson, Washington, D. C. Bronzing and gilding (Reissue)	May 3, 1870
99,172	Duffey, M. C., Washington, D. C. Flexible joint for water-pipes	Jan. 25, 1870
	Duffield, Divie Bethune. (*See* Mack, William B., assignor.)	
106,673	Duffner, William, Petersburgh, Ind. Spinning-machine	Aug. 23, 1870
108,693	Duffus, George H. S., assignor to self and Henry J. Davison, Baltimore, Md. Concrete for pavements, &c	Oct. 25, 1870
	Duffy, James. (*See* Grogan, John W., assignor.)	
103,030	Duffy, James F., and William P. Fraley, said Fraley assignor to said Duffy, Chicago, Ill. Spring bed-bottom	May 17, 1870
101,239	Duffy, J. S., Battle Ground, Ind. Cotton and hay press	Mar. 29, 1870
98,855	Dugdale, James K., White Water, Ind. Clothes-washer	Jan. 18, 1870
98,856	Same.....same	Jan. 18, 1870
101,987	Dugdale, Samuel G., Richmond, Ind. Slate-washer	April 19, 1870
	Dugdale, Thomas A., and William P. Erwin. (*See* Erwin & Dugdale.)	
	Same.....same.	
3,825	Dulaney, George L., Mechanicsburgh, Pa. Sewing-machine (Reissue)	Feb. 8, 1870
102,787	Same.....Tension-device for thread in sewing-machines	May 10, 1870
106,796	Same.....Tension-device for sewing-machines	Aug. 13, 1870
103,311	Du Laney, George L., and James S. Huston, Mechanicsburgh, Pa. Loop for harness	May 24, 1870
105,055	Dull, Joseph H., assignor to Blymyer, Day & Co., Mansfield, Ohio. Tread-power	July 5, 1870
97,750	Duly, Albert A., New York, N. Y. Step for street-car	Jan. 11, 1870
103,433	Du Motay, Cyprien Marie Tessie, France. Process for the treatment of ore	May 24, 1870
103,434	Same.....Process of extracting silver and gold from arseni-sulphurets of lead, copper, &c	May 24, 1870
108,462	Same.....Treating copper pyrites	Oct. 18, 1870
100,873	Dump, Jacob, Kingston, Ohio. Carriage-wheel hub	Mar. 15, 1870
108,338	Dunbar, Alexander, New York, N. Y. Snow-plow	Oct. 18, 1870
109,305	Dunbar, Alvin T., and James H. Fellows, assignors to A. T. Dunbar and George H. Dewey, Alba, Pa. Horse hay-fork	Nov. 15, 1870
108,985	Dunbrack, Charles S., Swampscott, Mass. Insole for manufacturing shoes. (Antedated November 7, 1870)	Nov. 8, 1870
109,389	Same.....Last	Nov. 22, 1870
108,772	Duncan, George, assignor to self and William Blackmore, San Francisco, Cal. Baling-press	Nov. 1, 1870
104,564	Duncan, Thomas, Brookville, Md. Buckle	June 21, 1870
109,193	Duncan, William, and Calvin C. Rowell, Lebanon, N. H. Electro-magnetic apparatus for protecting safes	Nov. 15, 1870

Alphabetical list of patentees for the year 1870—Continued.

No.	Name, residence, and invention or discovery.	Date.
106,341	Duncan, William, Spring Hill, Ind. Hames for harness	Aug. 16, 1870
100,274	Dunderdale, Cleaveland F., New York, N. Y. Carburéter	Mar. 1, 1870
100,736	Same. Apparatus for the production of ozone	Mar. 15, 1870
100,737	Same. Apparatus for forcing air into carburetors or railroad-cars	Mar. 15, 1870
109,601	Same. Apparatus for the manufacture of ozone	Nov. 29, 1870
101,111	Dunham, German D., Chicago, Ill. Holder for diamonds	Mar. 22, 1870
	Dunham, Isaac A., North Bridgewater, Mass. Shoemakers' edge-plane. (Extension)	June 28, 1870
4,630	Dunham, John S., St. Louis, Mo. Label (Design)	May 17, 1870
98,416	Dunham, Theodore R., Newark, N. J. Clasp for trunks, &c	Feb. 1, 1870
	Dunham, William C. (*See* Eaton, Ithamar F., assignor.)	
103,160	Dunkerly, Walter, Woonsocket, R. I. Forge-bonnet	May 17, 1870
102,925	Dunklee, B. Wells, Boston, Mass. Cooking-range	May 10, 1870
99,765	Dunks, Charles H., Detroit, Mich. Spring bed-bottom	Feb. 15, 1870
	Dunlap, Charles W. (*See* Murray, Edgar, assignor.)	
	Dunlap, William R., and James D. Bryson. (*See* Bryson & Dunlap.)	
108,986	Dunn, Alpheus C. and Isaac L., New York, N. Y. Screw spike for railroads. (Antedated October 28, 1870)	Nov. 8, 1870
100,382	Dunn, Frederick, Pulaski, N. Y. Barley-fork	Mar. 1, 1870
98,934	Dunn, John, assignor to self and Jonathan Stone, Charlestown, Mass. Reclining and extension chair	Jan. 18, 1870
108,339	Dunn, John, assignor to Holmes, Booth & Haydens, Waterbury, Conn. Lamp	Oct. 18, 1870
100,128	Dunn, John D., Griffin, Ga. Combined cotton-chopper and cultivator	Feb. 22, 1870
101,357	Dunn, McCann, Bloomington, Ill. Oven	Mar. 29, 1870
4,307	Dunn, Robert, assignor to Waterbury Clock Company, Brooklyn N. Y. Clock-case (Design)	Aug. 30, 1870
4,308	Same. Clock case (Design)	Aug. 30, 1870
4,309	Same. same (Design)	Aug. 30, 1870
4,421	Same. same (Design)	Oct. 18, 1870
4,524	Same. same (Design)	Dec. 20, 1870
	Dunn, R. A. (*See* Guttridge, D. L., assignor.)	
102,686	Dunn, William R., assignor to self, R. T. Nelson, and Joseph Williams, Alton, Ind. Machine for cutting vegetables	May 3, 1870
103,031	Dunnigan, Joseph A., Mexico, Mo. Saddle-stirrup	May 17, 1870
98,935	Dunning, William B., Geneva, N. Y. Compound railway-rail	Jan. 18, 1870
101,718	Same. Base-burning stove for steam-heating boiler	April 12, 1870
105,186	Dunniway, William G., and Harrison Osborn, New Cumberland, Ind. Millstone dress	July 12, 1870
	Duparquet, Louis, and Elie Monceaux. (*See* Monceaux & Duparquet) (Reissue.)	
99,309	Dupas, A. E., New Orleans, La. Electro-magnetic machine	Feb. 1, 1870
107,234	Same. Gas-burner	Sept. 13, 1870
104,716	Dupas, Antoine E., and Arthur Barbarin, New Orleans, La. Apparatus for carbureting air	June 28, 1870
106,473	Durand, Fred, and William F. Gilbert, Derby, Conn. Vegetable knife	Aug. 16, 1870
108,463	Durant, Edward G., Northampton, Mass. Table-cutlery	Oct. 18, 1870
108,464	Durant, Edward J., Lebanon, N. H. Ventilator	Oct. 18, 1870
107,706	Durfee, Z. S., Troy, N. Y. Ingot-mold	Sept. 27, 1870
101,596	Durgin, H. J., assignor to James Chase, Rochester, N. Y. Revolving centerrest for wood-lathes	April 5, 1870
	Durgin, Horace T., *et al.* (*See* Hallowell, Albert, assignor.)	
104,436	Durham, Charles T., James Wood, and Theodore Hair, Norristown, Pa. Gauge-knife for cutting leather	June 21, 1870
103,161	Durkee, George B., Alden, New York. Axle-box for carriages	May 17, 1870
100,510	Durran, John H., assignor to self and William Lombard, Aurora, Ill. Ratchet and pawl. (Antedated February 26, 1870)	Mar. 8, 1870
106,141	Duryea, Wright, Glen Cove, N. Y. Electro-magnetic low-water alarm for steam-boilers	Aug. 9, 1870
106,143	Same. Electro-magnetic low-water detector for steam-boilers	Aug. 9, 1870
	Duryee, Henry W., *et al.* (*See* Jennings, Frederick S., assignor.)	
107,167	Duskin, Lindsay, and Benjamin Sledge; said Duskin assignor to William Dickson and J. D. Delap, Thomasville, N. C. Fan-blower for blacksmiths' forges	Sept. 6, 1870
109,501	Dustan, John H., Spartansburgh, Pa. Washing-machine. (Antedated November 19, 1870)	Nov. 22, 1870
106,038	Dutcher, Warren Whitney, Hopedale, Mass. Loom-temple	Aug. 2, 1870
106,797	Dutcher, Warren W., assignor to the Dutcher Temple Company, Hopedale, Mass. Roller-temple for looms	Aug. 30, 1870
107,166	Same. Loom-temple	Sept. 6, 1870
	Duthie, James, and John De Witt Brinckerhoff. (*See* Brinckerhoff & Duthie.)	
4,198	Dutton, Joseph M., Rochester, N. Y. Boot and shoe pattern (Reissue)	July 5, 1870
4,124	Dutton, Rufus, Yonkers, N. Y. Harvester (Division A, reissue)	Sept. 20, 1870
4,125	Same. same (Division B, reissue)	Sept. 20, 1870
4,139	Same. same (Reissue)	Oct. 4, 1870
4,317	Same. same (Reissue)	Dec. 27, 1870
108,120	Duus, Anthony, San Francisco, Cal. Grain-separator	Oct. 11, 1870
100,383	Duval, George R., Salem, Oregon. Gang-plow	Mar. 1, 1870
105,923	Duval, Jules, assignor to Richard T. and Charles D. Sprague, New Orleans, La. Process of separating fibers from cotton-seed	Aug. 2, 1870
105,319	Duvall, Alfred, Baltimore, Md. Treating vitriolized phosphates	July 12, 1870
107,169	Same. Machine for washing and screening ores and fertilizers	Sept. 6, 1870
107,699	Same. Apparatus for roasting and drying ores and other materials	Sept. 20, 1870
99,657	Duvall, Charles F., Milwaukee, Wis. Shaft-coupling. (Antedated Feb. 5, 1870)	Feb. 8, 1870

Alphabetical list of patentees for the year 1870—Continued.

No.	Name, residence, and invention or discovery.	Date.
103,038	Duvall, Joseph, and John Winterbottom, Kewanee, Wis. Head-block for saw-mills	May 17, 1870
99,543	Duvall, Lewis, Big Spring, Ky. Hand-cultivator	Feb. 8, 1870
103,162	Duvall, William T., Georgetown, D. C. Water-wheel	May 17, 1870
105,924	Same. Machinery for the manufacture of ice	Aug. 2, 1870
108,571	Dwelle, Charles W., St. Louis, Mo. Manufacture of white lead	Oct. 25, 1870
103,033	Dwelley, Lucius H., Dorchester, Mass. Wood-lathe	May 17, 1870
100,738	Dwight, Edmund P., Philadelphia, Pa. Railway-rail joint	Mar. 15, 1870
101,940	Dwight, Solomon, and William B. Chambers, Decatur, Ill. Wheeled cultivator	Mar. 29, 1870
	Dwyer, John, administrator. (*See* McLaughlin, Francis, deceased.)	
101,839	Dwyer, Patrick J., Elizabeth Port, N. J. Oil-can	April 12, 1870
108,572	Dyatt, William, New York, N. Y. Device for operating skylights	Oct. 25, 1870
101,112	Dye, A. J., New Orleans, La. Steam ditching-machine	Mar. 22, 1870
107,170	Dye, Lewis R., Cranberry, N. J. Axle-box for carriages	Sept. 6, 1870
	Dyer, Elisha. (*See* Young, Solomon W., assignor.)	
106,568	Dyer, Hugh, Fort Scott, Kansas. Hand corn-planter	Aug. 23, 1870
4,057	Dyer, Morgan, Elmira, N. Y. Step and hitching-post (Design)	May 24, 1870
108,987	Dyer, Philip, jr., Abram Parker, and William R. Way, Pontiac, Mich. Lock-nut	Nov. 8, 1870
105,056	Eads, James B., St. Louis, Mo. Pump	July 5, 1870
102,381	Eager, Charles P., Boston, Mass. Ventilated horse-cover	April 26, 1870
3,936	Eager, Charles P., assignor to Pennel B. Eager, Boston, Mass. Ventilated horse-cover (Reissue)	April 26, 1870
98,936	Eagle, Robert N., Washington, D. C. Lamp-chimney	Jan. 18, 1870
98,937	Same. same	Jan. 18, 1870
107,465	Same. Opelousas, La. Electro gas-lighting apparatus	Sept. 20, 1870
102,788	Eames, Charles J., New York, N. Y. Medical compound	May 10, 1870
	Eames, Charles J., *et al.* (*See* Lister, Lister & Eames.)	
	Eames, Charles T., Milford, Mass. Boot-tree (Extension)	May 24, 1870
100,384	Eames, Horace N., Newport, N. Y. Harness-ring	Mar. 1, 1870
	Eames, Moses. (*See* Leclerc, François, assignor.)	
104,226	Eames, William M., Ashtabula, Ohio. Ventilating-attachment for stoves	June 14, 1870
	Earl, William. (*See* Barbour, Joseph W., assignor.)	
	Earl, William, *et al.* (*See* Smith & Priest, assignors) (Reissue.)	
	Same. (*See* Smith, Priest & Earl.)	
	Earle, Enoch, *et al.* (*See* Fifield, Levi W., assignor.)	
110,125	Earle, James M., Springfield, Mass. Coffee, tea, and spice can	Dec. 13, 1870
107,887	Earle, John T., Danbury, Conn. Machine for felting and hardening hat-bodies	Oct. 4, 1870
	Earle, Oscar F. (*See* Bisbee, Albert, assignor) (Reissue.)	
99,173	Earle, Timothy, Washington, D. C. Egg-beater	Jan. 25, 1870
104,839	Same. Valley Falls, R. I. Fruit-jar	June 28, 1870
105,057	Same. Smithfield, R. I. Egg-beater	July 5, 1870
	Same. (*See* Dearborn, Gilbert K., assignor) (Two cases.)	
107,673	Earle, Timothy, Valley Falls, Smithfield, and Gilbert K. Dearborn, Pawtucket, R. I., assignors by mesne assignments to Timothy Earle and E. D. Goodrich. Egg-beater	Sept. 27, 1870
104,287	Earll, E. Edward, Brooklyn, and J. B. Hunter, New York, N. Y. Gate-latch	June 14, 1870
107,235	Earlywine, Nathan, Centreville, Iowa. Planter and cultivator	Sept. 13, 1870
104,298	Earnest, William H., assignor of one-half interest to Jacob Fromer, Parkersburgh, W. Va. Crib and cradle	June 14, 1870
	Earth-Closet Company. (*See* Girdlestone, Henry J. and John W., assignors.)	
	Same. (*See* Moule & Girdlestone, assignors) (Two cases) (Reissue.)	
102,516	Eason, James M., Charleston, S. C. Stump-extractor	May 3, 1870
102,100	Easte, Charles H., South Boston, Mass. Hames-attachment	April 19, 1870
106,342	Eastes, William T., Summitville, Ind. Harvester-rake	Aug. 16, 1870
106,343	Same. Invalids' chair and lounge	Aug. 16, 1870
	Eastham, William W. (*See* Morris, George G., assignor.)	
109,120	Eastman, Albert P., Washington, D. C. Apparatus for parlor croquet	Nov. 8, 1870
	Eastman, C. H., *et al.* (*See* Barlow, Ashbell P., assignor) (Reissue.)	
105,925	Eastman, James C., Nashua, N. H. Stop-plate for hydrants	Aug. 2, 1870
103,587	Eastman, William W., Meadville, Pa. Bearing for sheaves	May 31, 1870
104,945	Eastman, William W., and Francis B. Mardon, Meadville, Pa. Jar for well-drills	July 5, 1870
99,417	Eastwood, C. W., New York, N. Y. Milk-box	Feb. 1, 1870
106,344	Eastwood, Isaac, Lanark, Ill. Plow	Aug. 9, 1870
108,243	Same. same	Oct. 11, 1870
103,312	Eaton, Asahel K., Piermont, N. Y. Tool and wheel for cutting and polishing iron, steel, and other materials	May 24, 1870
105,320	Same. Manufacture of tools for cutting, grinding, and polishing	July 12, 1870
106,143	Same. Manufacture of paper-pulp	Aug. 9, 1870
4,203	Same. New York, N. Y. Manufacture of paper-pulp from straw, &c. (Reissue)	Dec. 20, 1870
108,573	Eaton, Charles A., assignor to self and George F. Bolles, Minneapolis, Minn. Pencil-holder	Oct. 25, 1870
	Eaton, Edwin A. (*See* Hamilton, L. B., assignor.)	
	Eaton, G. S., and P. R. Walsh. (*See* Walsh & Eaton.)	
	Eaton, George F. (*See* Ricard, Hubert, assignor.)	
103,034	Eaton, Ithamar F., assignor to self and William C. Dunham, Boston, Mass. Composition to prevent the slipping of machine-belts	May 17, 1870
102,101	Eaton, Norman, Woburn, Mass. Lawn-mower	April 19, 1870
98,938	Eaton, N. J., Montana, Iowa. Batter-excavator	Jan. 18, 1870

Alphabetical list of patentees for the year 1870—Continued.

No.	Name, residence, and invention or discovery.	Date.
99,418	Eaton, Richard, assignor to James M. Foss, England. Adjustment of wheels on the axles of railway-cars	Feb. 1, 1870
106,144	Eaton, William, Norwich, N. Y. Washing-machine	Aug. 9, 1870
101,445	Eaton, William, Benn Ainsworth, and George W. Scott, Blackstone, Mass. Hydraulic engine	April 5, 1870
	Eau Claire Lumber Company. (*See* Pond, Levi W., assignor) ....(Two cases.)	
105,630	Ebaugh, David C., Charleston, S. C. Machine for crushing mineral and other hard substances	July 26, 1870
107,836	Eberhard, William, assignor to self and J. P. Alexander, Akron, Ohio. Carpet-rag cutter	Sept. 13, 1870
107,466	Eberly, John A., assignor to self and Abraham Godshalk, Reamstown, Pa. Meat-chopper	Sept. 20, 1870
99,864	Ebert, Octavius A., Baltimore, Md. Attachment for hot-air registers	Feb. 15, 1870
102,936	Ebert, William C., Hannibal, Mo. Lamp-extinguisher	May 10, 1870
	Eberts, Herman F., *et al.* (*See* Howell, Daniel Y., assignor.)	
100,811	Eberts, Herman F., assignor to self, Daniel Y. Howell, and Thomas S. Sprague, Detroit, Mich. Refrigerator	Dec. 6, 1870
	Eby, S. J., *et al.* (*See* Hand, Benjamin R., assignor.)	
103,441	Eccard, Adolf, Washington, D. C. Hinge for blinds	July 19, 1870
109,503	Eccles, Samuel, Philadelphia, Pa. Winding-machine	Nov. 22, 1870
105,660	Eccles, William M., St. Louis, Mo. Device for preventing plows from choking	July 26, 1870
96,478	Eccleston, Charles H., Oxford, N. Y. Automatic vaccinating instrument. (Antedated Dec. 24, 1869)	Jan. 4, 1870
4,470	Same.....Face-plate of a lock.....(Design)	Nov. 15, 1870
101,446	Eck, J. L., assignor to self and S. S. Schmehl, Kutztown, Pa. Ruffling-attachment for sewing-machines	April 5, 1870
104,946	Eck, Samuel T., Taneytown, Md. Grinding-mill	July 5, 1870
108,340	Eckert, Augustus, Trenton, Ohio. Mechanical movement	Oct. 18, 1870
99,419	Eckert, George M., St. Louis, Mo. Cooking-stove	Feb. 1, 1870
	Eckert, William H. (*See* Armstrong, George, assignor.)	
101,840	Eckford, Peter and James, Cincinnati, Ohio. Piston-rod packing	April 12, 1870
	Eckhart, Charles, and Edwin F. Lenox. (*See* Lenox & Eckhart.)	
	Eckhoff, John De Vries. (*See* De La Mar, Joseph, assignor.)	
99,766	Eddelman, Daniel and Amos, Madison, Ind. Hay-drag	Feb. 15, 1870
103,853	Eddleman, James P., Pilot Point, Texas. Combined sower, planter, cultivator, scraper, and gang-plow	June 7, 1870
4,347	Eddy, George W., Waterford, N. Y. Stove-plate.....(Design)	Sept. 13, 1870
	Eddy, J. D. (*See* Stuart, Addison, assignor.)	
	Edelin, William, *et al.* (*See* Russell, James F., assignor.)	
	Edgar, James. (*See* Miller, William, assignor) .....(Reissue.)	
104,187	Edgarton, Philip, Rutland, Vt. Churn-dasher	June 14, 1870
109 400	Edgerton, Daniel D., Ava, N. Y. Milk-can fastener	Nov. 22, 1870
103,035	Edison, Thomas A., New York, N. Y. Electro-motor escapement	May 17, 1870
3,890	Edison, Thomas A., assignor through mesne assignments to the Gold and Stock Telegraph Company, New York, N. Y. Printing-telegraph. (Reissue)	Feb. 1, 1870
4,108	Same.....Newark, N. J. Printing-telegraph .....(Reissue)	Oct. 25, 1870
	Edison, Thomas A., and Frank L. Pope. (*See* Pope & Edison) ....(Two cases.)	
	Edler, F. A., and Eli L. Nichols. (*See* Nichols & Edler) .....(Design.)	
103,900	Edmund, Henry V., Norwich, Conn. Manufacture of frosted plush paper, &c.	June 7, 1870
	Edmonston, C. A. (*See* Jones, William F., assignor.)	
101,841	Edson, Jacob, Boston, Mass. Hose-coupling	April 12, 1870
101,842	Same.....Mold for casting pipe	April 12, 1870
103,856	Same.....Ventilator or cowl	June 7, 1870
104,437	Same.....Vise	June 21, 1870
106,345	Edson, Jarvis B., Brooklyn, N. Y. Recording pressure-gauge	Aug. 16, 1870
	Edstrom, E. P., jr., *et al.* (*See* Flynn, William H., assignor.)	
107,467	Edwards, Clements R., Bowling Green, Ky. Seed-planter	Sept. 20, 1870
107,347	Edwards, Eben, assignor to self and Ebenezer Sanborn, South Boston, Mass. Combined furnace and range	Sept. 13, 1870
104,260	Edwards, Edward, England. Pump. (Patented in England Aug. 6, 1868)	June 14, 1870
100,874	Edwards, Joseph B., North Greenbush, N. Y. Still for distilling hydrocarbons	Mar. 15, 1870
105,561	Edwards, Nelson, Jericho, Vt. Carpet-underlie	July 26, 1870
100,018	Efner, Henry A., and Charles Boynton, Marshall, Mich. Switch signal	Feb. 22, 1870
	Egery, T. N. (*See* Richardson, Simon H., assignor.)	
3,880	Eggo, Frederick, assignor to F. W. Smith, jr., George W. Bassett, and S. R. Wilmot, Bridgeport, Conn. Padlock.....Reissue	Mar. 15, 1870
107,016	Eggo, Frederick, and Robert W. Churchill, Bridgeport, Conn. Implement for cutting thread	Sept. 6, 1870
107,860	Eggert, John, New York, N. Y. Velocipede	Oct. 4, 1870
104,129	Eggleston, Asa, Fall River, Mass. Faucet	June 14, 1870
100,129	Eggleston, Charles H., Marshall, Mich. Gate	Feb. 22, 1870
110,119	Eggo, James, Jersey City, N. J. Shell-fuse	Dec. 20, 1870
	Egli, Benedic, and Timothy Coffield. (*See* Coffield & Egli.)	
106,790	Egnor, Charles, Catskill, N. Y. Trap for lowering ice	Aug. 30, 1870
105,936	Ehlers, William F., Pottsville, Pa. Wheel-hub	Aug. 2, 1870
98,751	Ehrhardt, Ferdinand, assignor to Paul Sipos, Washington, D. C. Kitchen-table	Jan. 11, 1870
3,791	Eiberweiser, John, assignor to John S. Hall, J. A. Moore, H. Burkhardt, and Abel W. Hall, Cincinnati, Ohio. Cider-mill.....(Reissue)	Jan. 11, 1870
104,717	Eich, Stephen, East Toledo, Ohio. Window-blind	June 28, 1870
99,544	Eickemeyer, R., Yonkers, N. Y. Machine for embossing hats	Feb. 8, 1870

Alphabetical list of patentees for the year 1870—Continued.

No.	Name, residence, and invention or discovery.	Date.
101,447	Eickemeyer, R., Yonkers, N. Y. Lathe for turning ovals	April 5, 1870
101,719	Same.....Harvester	April 12, 1870
3,916	Eickemeyer, Rudolph, assignor to John T. Waring, Yonkers, N. Y. Felting-machine.....(Reissue)	April 12, 1870
108,121	Same.....Machine for felting	Oct. 11, 1870
108,122	Eilers, Henry, Cincinnati, Ohio. Adjustable pillow	Oct. 11, 1870
3,958	Eisle, Charles, Newark, N. J. Harness-mounting .....(Design)	April 5, 1870
102,667	Eisenhower, William A., Friedensburgh, Pa. Sash-holder	May 3, 1870
104,840	Eiswald, Theodor G., Providence, R. I. Breastpin	June 28, 1870
106,474	Same.....Medical compound for the cure of gravel	Aug. 16, 1870
109,306	Same.....Sad-iron	Nov. 15, 1870
103,588	Elbel, Gustavus, Pittsburgh, Pa. Revolving back-band-hook for harness-saddles	May 31, 1870
107,601	Elder, Alexander J., Chicago, Ill. Electro-magnetic railroad signal apparatus	Sept. 20, 1870
99,545	Elder, Daniel M., Monmouth, Ill. Railway-car brake	Feb. 8, 1870
	Elder, F. W. & Co. (*See* Randall, John T., assignor.)	
	Elder, L. R., and J. S. Hobb. (*See* Hobbs & Elder.)	
99,420	Elder, R. G., New York, N. Y. Handle for children's carriages	Feb. 1, 1870
99,421	Same.....Four-wheeled propeller	Feb. 1, 1870
102,927	Same.....Children's carriage	May 10, 1870
110,557	Elder, Wilson, Mill Hall, Pa. Fastening carriage-wheels	Dec. 27, 1870
100,130	Eldredge, D. W., Boston, Mass. Watch-regulator	Feb. 22, 1870
	Eldredge, Daniel W., and John Logan. (*See* Logan & Eldredge.)	
101,988	Eldredge, John V. D., Detroit, Mich. Sewing-machine	April 19, 1870
107,889	Same.....Hemmer for sewing-machines	Oct. 4, 1870
99,865	Eldridge, David, Salem, Ohio. Shifting buggy-top	Feb. 15, 1870
101,597	Eldridge, George W., South Chatham, Mass. Fire-kindling	April 5, 1870
103,163	Same.....same	May 17, 1870
100,019	Eldridge, H. K., Cambridge, Mass. Jib-hank for vessels	Feb. 22, 1870
102,517	Eliason, Ola L., Salt Lake City, Utah Ter. Main-spring barrel attachment for watches	May 3, 1870
102,928	Elicker, Daniel, Mulberry, Pa. Washing-machine	May 10, 1870
100,020	Elkins, Thomas, Albany, N. Y. Dining and ironing table and quilting-frame	Feb. 22, 1880
100,131	Elkington, James Balleny, England. Manufacture of copper, and in separating other metals therefrom. (Patented in England Nov. 3, 1865)	Feb. 22, 1870
	Elkinton, Joseph R. (*See* Flanigin, Henry M., assignor.)	
	Ellenbogen, M., and Julius Wilcke. (*See* Wilcke & Ellenbogen, assignors.)	
	Ellerby, John, and John A. Spooner. (*See* Spooner & Ellerby.)	
108,773	Ellingwood, Joshua, Owensboro', Ky. Fermenting alcoholic liquor from grain	Nov. 1, 1870
4,383	Elliot, Alfred L., Boston, Mass. Collar-box.....(Design)	Oct. 4, 1870
104,718	Elliot, George, St. Louis, Mo. End-fastener for car-springs	June 28, 1870
108,894	Elliot, John W., Toronto, Canada. Railway snow-shovel	Nov. 1, 1870
102,383	Elliot, William H., New York, N. Y. Machine for drilling rock	April 26, 1870
110,024	Same.....Breech-loading fire-arm	Dec. 13, 1870
102,518	Elliott, Arthur H., Albion, Mich. Churn	May 3, 1870
	Elliott, A. J. (*See* Morrison, James A., assignor.)	
101,941	Elliott, Asahel N., Barre, Mass. Material for chair-seats	Mar. 29, 1870
	Elliott, Clark. (*See* Hiller, John R., assignor.)	
105,927	Elliott, Ephraim K., Cuyahoga Falls, Ohio, and Uri J. Baxter, Washington, D. C., Clothes-line fastener	Aug. 2, 1870
98,857	Elliott, George W., Rocheport, Mo. Saddle-bag	Jan. 18, 1870
108,988	Elliott, James M., Winnsborough, S. C. Seed-planter	Nov. 8, 1870
110,347	Elliott, John T., Grand Rapids, Mich. Clothes-drier	Dec. 20, 1870
107,017	Elliott, Josiah S., assignor to Union Stone Company, Boston, Mass. Brick-machine	Sept. 6, 1870
110,023	Same.....Machine for mixing the material to form artificial stone, &c.	Dec. 13, 1870
106,346	Elliott, Lewis, jr., and George H. Fowler, assignors to L. Candee & Co., New Haven, Conn. India-rubber shoe	Aug. 16, 1870
101,942	Elliott, William B., Corning, N. Y. Apparatus for setting up barrels	Mar. 29, 1870
103,313	Elliott, William H., Boston, Mass. Dumb-waiter	May 24, 1870
105,391	Elliott, William H., Beardstown, Ill. Seat for vehicles	July 12, 1870
101,843	Elliott, William P., assignor to self and Leverett F. Goodyear, New Haven, Conn. Caster for sewing-machines	April 12, 1870
101,844	Same.....same	April 12, 1870
103,727	Elliott, William T., assignor of one-half interest to William H. Speers, Metamora, Ill. Ratchet-power	May 31, 1870
108,465	Ellis, Augustin, and Oliver Albertson, Salem, Ind. Hoe	Oct. 18, 1870
101,845	Ellis, Darwin, Whitestone, N. Y. Magazine fire-arm	April 12, 1870
106,676	Ellis, Edward J., Lewiston, Me. Machine for varnishing and dressing loom-harness	Aug. 23, 1870
106,677	Ellis, George M., Huntertown, Ind. Harrow	Aug. 23, 1870
4,056	Ellis, Joel A. H., Springfield, Vt. Toy-block.....(Design)	May 24, 1870
108,574	Same.....Combined steam and gas engine	Oct. 25, 1870
104,438	Ellis, John H., Peoria, Ill. Machine for canning fruit	June 21, 1870
107,018	Ellis, Minot, Greenfield, Mass. Hand-rake	Sept. 6, 1870
99,422	Ellis, Seth C., New York, N. Y. Journal-box	Feb. 1, 1870
99,866	Same.....Machine for laying out doors and sash	Feb. 15, 1870
100,610	Same.....Jersey City, N. J. Machine for making sash	Mar. 8, 1870
104,129	Ellis, Theodore W., Macon, Ga. Liquid-measure	June 14, 1870
99,656	Ellis, Thomas and William A., Philadelphia, Pa. Brick-machine	Feb. 8, 1870
98,676	Ellis, Zabina, Philadelphia, Pa. Anchor for securing cores in molds	Jan. 11, 1870

Alphabetical list of patentees for the year 1870—Continued.

No.	Name, residence, and invention or discovery.	Date.
106,709	Ellison, Abram, Marysville, Cal. Gang-plow	Aug. 30, 1870
100,739	Ellison, Thomas, Abington, Ill. Gate	Mar. 15, 1870
110,220	Ellison, Thomas C., Albany, N. Y. Extension-table	Dec. 20, 1870
100,385	Ells, Benjamin F., Dayton, Ohio. Spring bed-bottom	Mar. 1, 1870
	Ells, Edgar S., and Sidney W. Park. (*See* Park & Ells) (Extension.)	
105,557	Ells, Josiah W., assignor to self and S. M. Kier, Pittsburgh, Pa. Apparatus for generating and burning gas in metallurgic furnaces. (Antedated July 6, 1870)	July 19, 1870
105,558	Same. Gas and air-heating apparatus for metallurgic furnaces. (Antedated July 6, 1870)	July 19, 1870
4,449	Ellsworth, Edward A., Washington, D. C. Group of tools, machinery, &c. (Design)	Oct. 25, 1870
106,560	Elmer, William, New York, N. Y. Manufacture of inflammable gases for fuel, &c. (Antedated Aug. 12, 1870)	Aug. 23, 1870
100,885	Elmer, William H., Berlin, Wis. Water-wheel. (Antedated Nov. 26, 1870)	Dec. 6, 1870
	Elmore, Riverious P. (*See* French, John A., assignor.)	
108,989	Elson, James, Northampton, Mass. Lunch-box	Nov. 8, 1870
100,511	Elson, Julius, Boston, Mass. Watch-regulator	Mar. 8, 1870
105,928	Elston, James, Anthony Elston Station, Mo. Sewing-machine	Aug. 2, 1870
103,510	Elton, William H., Baltimore, Md. Coffee-cleaning machine	May 3, 1870
104,290	Elward, John H., Polo, Ill. Harvester	June 14, 1870
3,942	Elwell, Henry H., South Norwalk, Conn. Folding-door key (Design)	Mar. 29, 1870
105,328	Same. Key	July 12, 1870
109,466	Same. New Haven, Conn. Key for doors, &c	Oct. 18, 1870
4,429	Same. Keeper for door-locks (Design)	Oct. 25, 1870
4,430	Same. Face-plate for locks (Design)	Oct. 25, 1870
4,431	Same. same (Design)	Oct. 25, 1870
4,432	Same. Keeper for door-locks (Design)	Oct. 25, 1870
3,900	Elwell, Henry H., assignor to the Norwalk Lock Company, South Norwalk, Conn. Reversible knob-latch (Reissue)	April 5, 1870
4,196	Elwell, Henry H., assignor through mesne assignments to the Russell & Erwin Manufacturing Company, South Norwalk, Conn. Reversible knob-latch. (Reissue)	Sept. 20, 1870
102,262	Ely, Alfred B., Newton, Mass. Refrigerator and cooling apparatus	April 26, 1870
	Same. (*See* Hall, Luther, assignor.)	
105,058	Ely, A. B., and E. C. Clay; said Clay assignor to said Ely, Newton, Mass. Breech-loading fire-arm. (Antedated Jan. 5, 1870)	July 5, 1870
102,608	Ely, George, New York, N. Y. Piano-forte	May 3, 1870
109,875	Ely, Stephen D., Millstone, N. J. Mode of lubricating the wheels in tread-powers	Mar. 15, 1870
102,609	Ely, William, New York, N. Y. Bottle-stopper	May 3, 1870
	Ely, William N., trustee. (*See* Symmes, John Cleves, assignor) (Reissue)	
108,944	Embrey, Charles, Williamsport, Md. Bee-hive	Oct. 11, 1870
105,920	Emerson, Enos, Smithport, Pa. Turbine water-wheel	Aug. 2, 1870
90,546	Emerson, George D., Calumet, Mich. Velocipede	Feb. 8, 1870
101,846	Emerson, George D., Calumet, Mich. Friction-clutch for engaging and disengaging gearing	April 12, 1870
108,123	Same. Apparatus for bending railroad-rails	Oct. 11, 1870
98,479	Emerson, George W., Chicago, Ill. Paper-clip	Jan. 4, 1870
102,237	Emerson, George W., assignor to John R. Barrett, Chicago, Ill. Paper-file. (Antedated April 23, 1870)	April 26, 1870
102,560	Emerson, James E., Trenton, N. J. Saw	May 3, 1870
108,990	Same. Blank for saw-teeth	Nov. 8, 1870
108,694	Emerson, John W., Milbury, Mass. Hollow wick lamp-burner	Oct. 25, 1870
99,301	Emerson, S. F., Seville, Ohio. Meat and vegetable chopper	Feb. 1, 1870
	Emerson, Samuel P., and Amos White. (*See* Cole, J. H., assignor.)	
	Emerson, William P., *et al.* (*See* Kerigan, Michael J., assignor.)	
104,430	Emery, Albert H., and Gabriel Leverich, New York, N. Y. Apparatus for towing canal-boats	June 21, 1870
	Same. (*See* Leverich & Emery.)	
100,513	Emery, Charles E., Brooklyn, N. Y. Steam and water separator for steam-engines	Mar. 8, 1870
	Emery, Charles E., and Sidney F. Shelbourne. (*See* Shelbourne & Emery.)	
105,442	Emery, Harriet Godfrey, and Margaret Cato Fuller, Boston, Mass. Collar	July 19, 1870
3,838	Emery, John J., assignor of part interest to E. R. Cheney, Owl's Head, Me. Surge-reliever (Reissue)	Feb. 15, 1870
	Emery, John J., and Ethan R. Cheney. (*See* Cheney & Emery) (Two cases.)	
102,920	Emery, Titus S., Philadelphia, Pa. Brick-machine	May 10, 1870
106,678	Emmerich, John M., New Haven, Conn. Hub for carriage-wheels	Aug. 23, 1870
108,575	Emmert, John, Dunkeith, Ill. Clothes-drier	Oct. 25, 1870
	Emmons, Lucina H., and Ephraim Barks. (*See* Barks & Emmons.)	
	Emmons, Theodore P. and Lester S. (*See* Miskel, William, assignor.)	
3,937	Emmons, William, Sandwich, Ill. Horse hay-rake (Reissue)	April 26, 1870
	Empire Transportation Company. (*See* Potts & Lamason, assignors.)	
102,238	Emrick, David S., Fayette, N. Y. Horse hay-rake	April 26, 1870
103,798	Endemann, Hermann, New York, N. Y. Preparing and preserving meat	May 31, 1870
101,500	Engels, Robert, Philadelphia, Pa. Ticket-punch	April 5, 1870
104,060	Englaender, Joseph, assignor to self and Eugene Langstrus, Sedalia, Mo. Horse-collar	June 7, 1870
105,443	Same. same	July 19, 1870
101,243	England, Elihu, Mossy Creek, Tenn. Tanning	Mar. 29, 1870

Alphabetical list of patentees for the year 1870—Continued.

No.	Name, residence, and invention or discovery.	Date.
104,719	England, Elihu, Mossy Creek, Tenn. Compound for stuffing and tanning hides	June 28, 1870
98,677	Engle, S. D., Hasleton, Pa. Dust-ring for watch-frames	Jan. 11, 1870
100,513	English, Francis M., Evansville, Ind. Washing-machine	Mar. 8, 1870
	English, Richard, and James D. Ackley. (*See* Ackley & English.)	
4,502	English, Richard W., Buffalo, N. Y. Broom (Design)	Dec. 13, 1870
98,930	Ennes, Homer L., Birmingham, Ohio. Washing-machine	Jan. 18, 1870
109,307	Same. Mop-wringer	Nov. 15, 1870
104,291	Ennett, Thomas, Rockford, Ill. Lime-kiln	June 14, 1870
	Ennis, George Movier, and Ansel Granville Baker. (*See* Baker & Ennis.)	
108,341	Ennis, James, Columbus, Ohio. Wheelbarrow	Oct. 18, 1870
99,174	Ennis, William, Philadelphia, Pa. Brick-kiln	Jan. 25, 1870
106,347	Same. Manufacture of wrought and puddled iron	Aug. 1, 1870
104,397	Enright, John, assignor to self, William Wall, and Thomas Enright, Louisville, Ky. Core-bar for casting pipe	June 14, 1870
106,924	Ensign, Charles A., Naugatuck, Conn. Apparatus for the manufacture of elastic fabrics	Aug. 30, 1870
109,795	Same. Machine for cutting sheets of India-rubber	Nov. 29, 1870
109,796	Same. Machine for joining irregular seams in India-rubber work	Nov. 29, 1870
98,576	Ensigner, Jacob, and Lewis Fertig, Dauphin, Pa. Bread and meat slicer	Jan. 4, 1870
104,947	Enseminger, Henry H., Buffalo, N. Y. Hay-unloader	July 5, 1870
106,467	Entwistle, James, assignor to self and John Parkinson, Conshohocken, Pa. Self-acting mule, &c., for spinning	Oct. 18, 1870
102,789	Eppes, Andrew F., Stony Creek, Va. Plow	May 10, 1870
108,468	Erdley, Robert, Selin's Grove, Pa. Corn-planter	Oct. 18, 1870
98,940	Ericsson, John, New York, N. Y. Capstan	Jan. 18, 1870
100,514	Same. Gun-carriage	Mar. 8, 1870
106,348	Same. Fan-blower	Aug. 16, 1870
106,800	Same. Marine-engine	Aug. 30, 1870
103,857	Ernst, Philipp M., assignor to self and Ernst Schmidt, New York, N. Y. Insole for boots and shoes	June 7, 1870
101,113	Erpelding, John, Chicago, Ill. Lunch-box	Mar. 22, 1870
	Erpelding, L., *et al.* (*See* McCormick, Baker, and Erpelding, assignors.)	
107,237	Erskine, Masecna B., Racine, Wis. Mounted horse-power	Sept. 13, 1870
100,275	Erwin, William P., and Thomas A. Dugdale, Richmond, Ind. School-desk	Mar. 1, 1870
100,276	Same. School-desk and seat	Mar. 1, 1870
100,277	Erwood, John C., Vernon, Ind. Corn-cultivator	Mar. 1, 1870
109,812	Eshleman, Abraham, Martinsville, Pa. Cultivator	Dec. 6, 1870
106,039	Eshleman, Jefferson, assignor to self and Levi E. Miller, Canaan Centre, Ohio. Wheel-cultivator	Aug. 2, 1870
	Eshleman, Samuel. (*See* Sweigert, George D., assignor.)	
108,774	Eskrett, Cyrus, and Henry Searle, England. Oil-cake envelope	Nov. 1, 1870
107,238	Essex, James J., Newport, R. I. Elastic nasal plug	Sept. 13, 1870
101,244	Estabrooks, Charles, Calais, Me. Culinary vessel	Mar. 29, 1870
98,678	Estell, Samuel F., Richmond, Ind. Programme-clock	Jan. 11, 1870
	Estep, David P., Pittsburgh, Pa. Making ax-polls (Extension)	Sept. 30, 1870
3,955	Esterly, George, assignor to George F. Seiberling, White Water, Mich. Harvester (Division A, reissue)	May 3, 1870
3,956	Same. same (Division B, reissue)	May 3, 1870
3,957	Same. same (Division C, reissue)	May 3, 1870
108,576	Estes, Philip, Leavenworth, Kans. Steam-engine	Oct. 25, 1870
103,521	Estes, William J., Penn Township, Ill. Steam-boiler for cooking food for stock	May 3, 1870
106,991	Estey, William S., and Isaac S. Clough, Brooklyn, N. Y. Ash-sifter	Nov. 8, 1870
	Eubank, Stephen G., and James T. Dorson. (*See* Dorson & Eubank.)	
	Eunson, Robert G., and John Myers. (*See* Myers & Eunson) (Disclaimer.)	
109,813	Evans, Benjamin Franklin, Newburyport, Mass. Barrel safety-valve or vent	Dec. 6, 1870
106,040	Evans, Edward, Philadelphia, Pa. Portable cooking-stove	Aug. 2, 1870
103,930	Evans, Elijah, Sparta, Ohio. Stove-leg	May 10, 1870
	Evans, Evan T. (*See* Black, Henry W., assignor.)	
106,340	Evans, George M., Pittsburgh, Pa. Bench-vise	Aug. 16, 1870
103,523	Evans, Hampton W., Philadelphia, Pa. Sectional steam-generator	May 3, 1870
	Evans, Isaac I. (*See* Hill, Daniel, assignor.)	
103,589	Evans, James, Philadelphia, Pa. Brick-cart	May 31, 1870
103,102	Evans, James C., Delaware, Ohio. Road-scraper	April 19, 1870
103,590	Evans, John, New Haven, Conn. Attaching door-knobs to their spindles	May 31, 1870
104,292	Same. Die for forging ears for carriage-spring heads	June 14, 1870
104,440	Same. same	June 21, 1870
108,577	Evans, John G., Orville, Ohio. Grain-separator	Oct. 25, 1870
108,194	Evans, Lewis A., assignor to self and W. E. Boatwright, Chester, Pa. Car-coupling	Oct. 11, 1870
109,002	Evans, Louis, Pittsburgh, Pa. Castor and spoon-holder combined	Nov. 29, 1870
107,890	Evans, Philip Charles, England, and Henry James Hogg King, Scotland, Weighing-attachment for carding-machine feeders	Oct. 4, 1870
3,806	Evans, Stockton H., and Ludwig Gentsch, assignors through mesne assignments to Harshaw Scott, New York, N. Y. Skate (Reissue)	Jan. 25, 1870
98,679	Evans, Thomas, Newark, N. J. Wash-boiler	Jan. 11, 1870
98,941	Evans, Thomas R., Blacksburgh, Va. Washing-machine	Jan. 18, 1870
101,509	Same. Churn	April 5, 1870
103,164	Evans, Thomas R., Philadelphia, Pa. Shoe	May 17, 1870
	Evans, Walter W., and Norman W. Wheeler. (*See* Wheeler & Evans.)	
109,308	Evans, Washington, Ontario, Ohio. Stone-truck	Nov. 15, 1870
99,867	Evans, William, Eureka, Wis. Spring-brace for carriages	Feb. 15, 1870

Alphabetical list of patentees for the year 1870—Continued.

No.	Name, residence, and invention or discovery.	Date.
108,013	Evans, William, New Haven, Conn. Machine for milling carriage-spring heads	Oct. 4, 1870
99,074	Evans, William, assignor to self and William Coleman, Pittsburgh, Pa. Clip for elliptic springs	Jan. 25, 1870
		May 10, 1870
103,780	Evans, William D., Philadelphia, Pa. Razor-strap	Mar. 8, 1870
100,515	Evans, William J., assignor to self and Charles Warner, Homer, Iowa. Railway-car coupling	Feb. 22, 1870
		May 17, 1870
100,132	Evarts, Harry H., Chicago, Ill. Construction of chairs (Design)	June 7, 1870
4,031	Same. Dovetail	Feb. 8, 1870
104,001	Same. Dovetailing-machine (Design)	April 19, 1870
3,839	Everett, Horace, Philadelphia, Pa. Metal can	Mar. 1, 1870
101,847	Same. Sheet-metal can	June 14, 1870
100,386	Evereknx, C. J., France. Camp-bedstead	Sept. 27, 1870
104,293	Everitt, Edwin Bronson, West Meriden, Conn. Animal-trap	Mar. 15, 1870
107,707	Everts, Henry A., Sedan Falls, Iowa. Removable shoe-lining	June 28, 1870
100,740	Evinger, N., Sandford, Ind. Corn-husker	Mar. 15, 1870
104,841	Ewing, James, New York, N. Y. Cork-presser	
100,741	Ewing, Joseph M., Hastings, Mich. Burglar-proof safe	
99,866	Excelsior Needle Company. (*See* Fowler, Francis, assignor.)	
	Eynon, David, Richmond, Va. Machine for rolling railroad-chairs. (Antedated Feb. 7, 1870)	Feb. 15, 1870
99,869	Same. Machine for rolling railroad-chairs. (Antedated Feb. 7, 1870)	Feb. 15, 1870
102,670	Eynon, David, assignor to Tredegar Company, Richmond, Va. Roughing-rolls	May 3, 1870
107,009	Same. Art of manufacturing spikes	Sept. 20, 1870
104,130	Eyster, Christian S., Denver, Col. Ter. Separating and refining metals	June 14, 1870
	Eyth, M., and Oscar De Mesnil. (*See* De Mesnil & Eyth.)	
	Faber, Eberhard. (*See* Warth, Hufeland & Brown, assignors.)	
99,415	Faber du Faur, Adolph, New York, N. Y. Furnace for melting and refining iron and other metals	Feb. 1, 1870
		Sept. 20, 1870
107,033	Same. Exhaust-nozzle	
106,695	Faber du Faur, Adolph, assignor to self and Edward Balbach, jr., Newark, N. J. Retort-furnace	Oct. 25, 1870
		May 31, 1870
103,591	Fabre, Francis, France. Manufacture of bricks, tiles, &c., from slag	Mar. 29, 1870
101,114	Faessler, John, Bloomington, Ill. Wrench	
	Fagan, John, and William Velte. (*See* Velte & Fagan.)	
104,642	Fagan, Michel G., assignor to self and Albert C. Corse, Troy, N. Y. Hot-air furnace	June 28, 1870
		June 7, 1870
104,002	Fahnestock, Thomas C., Cincinnati, Ohio. Paper-file	
110,045	Fahrney, Peter, Chicago, Ill. Medical compound, and apparatus for making the same	Dec. 13, 1870
103,729	Fahrney, William H., assignor to self and John Donaldson, Rockford, Ill. Door-stop	May 31, 1870
		Dec. 13, 1870
110,036	Same. same	
	Fairbank, N. K. (*See* Gilbert, William, assignor.)	
	Fairbanks, Franklin. (*See* Paddock, Harvlin, assignor.)	Sept. 13, 1870
107,239	Fairbanks, Henry, St. Johnsbury, Vt. Self-registering weighing-scale	Sept. 13, 1870
107,240	Same. Recording weighing-scale	May 10, 1870
102,791	Fairbanks, Thaddeus, St. Johnsbury, Vt. Weighing-scale	May 3, 1870
102,583	Fairchild, Francis Theodore, Sheboygan, Wis. Churn	April 5, 1870
101,448	Fairfield, George A., Hartford, Conn. Knife, nut-cracker, and picker	Sept. 6, 1870
107,010	Fairfield, George A., Glenwood, Mo. Feeding-mechanism for sewing-machines	Dec. 13, 1870
110,126	Fairley, James and Alfred, England. Hoe	
99,175	Fake, Henry, assignor to self and Charles A. Todd, Williamsburgh, N. Y. Rectifying whisky during distillation	Jan. 25, 1870
105,788	Fake, Henry, assignor to self and Charles A. Todd, Brooklyn, N. Y. Rectifying whisky, &c	July 26, 1870
99,870	Falardo, Peter, Newark, N. J., and George H. Snow, New Haven, Conn. Hand clothes-washer	Feb. 15, 1870
		Sept. 6, 1870
107,050	Falea, Edward, Glenwood, Mo. Fence	April 5, 1870
101,600	Falcon, Matthew, Bloomington, Ill. Spring bed-bottom	Feb. 15, 1870
99,871	Fanning, D. H., Worcester, Mass. Skeleton-corsets	Mar. 1, 1840
100,278	Same. Corset	Sept. 27, 1870
4,306	Same. same (Design)	Sept. 27, 1870
4,307	Same. same (Design)	Nov. 15, 1870
109,300	Same. Skirt-supporting hook for corsets	April 5, 1870
101,601	Fanning, F., Atchison, Kans. Wire-tightener for wire-fence	
	Fanning, John, and Julian Allen. (*See* Allen & Fanning, assignors.)	
101,602	Fanyon, Joseph, Bridgeport, Conn. Galvanic shoe-sole	April 5, 1870
110,447	Fargo, Joseph E., Lake Mills, Wis. Combined broadcast seeder and cultivator	Dec. 27, 1870
	Faris, Uriah, and Abraham Miller. (*See* Miller & Faris.)	
107,788	Faris, Uriah, and Abraham Miller, Red Rock, Iowa. Grindstone, or tool-sharpener	Sept. 27, 1870
108,578	Farjeon, Israel, New York, N. Y., and William H. Horton, Jersey City, N. J. Jewelry-pin	Oct. 25, 1870
		Aug. 9, 1870
106,041	Farjon, Louis Alexander, Belgium. Pipe-coupling	May 31, 1870
103,730	Farmer, David J., Wheeling, West Va. Machine for making nails	Nov. 1, 1870
108,895	Same. Machine for cutting nails	
108,931	Farmer, George Penrice, Philadelphia, Pa. Machine for folding or winding and measuring cords, &c	May 10, 1870
		Aug. 30, 1870
106,923	Same. Combined spool and needle-threader	May 10, 1870
103,793	Farmer, John, Rockport, Ohio. Washing-machine	Nov. 29, 1870
100,693	Farmer, Moses G., Salem, Mass. Thermo-electric battery	June 7, 1870
104,003	Farnsworth, Enoch, Sabbath Rest, Pa. Stump-extractor	Aug. 30, 1870
106,926	Same. Stump-extractor	

Alphabetical list of patentees for the year 1870—Continued.

No.	Name, residence, and invention or discovery.	Date.
101,720	Farnsworth, Frank, Frankfort, Ill. Sulky-cultivator	April 19, 1870
106,145	Farnsworth, Loring, assignor to self and William H. Flinn, Nashua, N. H. Piano-forte	Aug. 9, 1870
104,004	Farquhar, Arthur B., York, Pa. Tailing-elevator for separators	June 7, 1870
102,071	Farquhar, Francis, Richmond, Ind. Agricultural boiler	May 3, 1870
99,659	Farr, Henry L., assignor to C. A. Greenleaf, J. L. Mothershead, and Edwin J. Peck, Indianapolis, Ind. Sectional fly-wheel	Feb. 8, 1870
	Farra, Lorenzo D., and George H. Hall. (*See* Hall & Farra.)	
106,146	Farrah, William, Des Moines, Iowa. Automatic reel for clothes-lines	Aug. 9, 1870
98,480	Farrar, Alonzo, Longwood, Mass. Cast-iron pavement	Jan. 4, 1870
100,876	Same. Brookline, Mass. Process of treating acid residuum from oil refineries	Mar. 15, 1870
100,877	Same. Composition to be used for printing and painting on surfaces	Mar. 15, 1870
109,310	Farrar, John N., Pepperell, Mass. Railway-car wheel	Nov. 15, 1870
99,547	Farrar, John N., assignor to self and George E. Brown, Pepperell, Mass. Railway-car wheel	Feb. 8, 1870
108,349	Farrar, John N., and Jacob Stone, Pepperell, Mass. Railway-track	Oct. 18, 1870
	Farrar, Oliver W. (*See* Loftus, Robert W., assignor.)	
102,793	Farrel, John, New York, N. Y. Bolt for safes	May 10, 1870
107,021	Same. Burglar-proof safe	Sept. 6, 1870
107,022	Same. Filling for fire-proof safes	Sept. 6, 1870
107,023	Same. Mechanism for opening and closing safe-doors	Sept. 6, 1870
101,345	Farrel, John, and Jacob Weimar, New York, N. Y. Safe	Mar. 29, 1870
104,790	Farrington, George K., Alcatras Island, Cal. Clothes-pin	June 28, 1870
99,873	Farrington, George K., assignor to self and Frederick and Victor Schuls, Alcatras Island, Cal. Combination-padlock	Feb. 15, 1870
110,948	Farrington, George K., assignor to self, Lorenzo Hubbard, and C. W. M. Smith, Alcatras Island, Cal. Device for sighting and firing ordnance	Dec. 27, 1870
101,246	Farrington, Joel, assignor to self and F. H. W. Gregg, Corry, Pa. Harvester-rake	Mar. 29, 1870
	Farris, Francis, *et al.* (*See* Valentine, Jacob, *et al.*)	
103,592	Farson, Enoch S., Philadelphia, Pa. Filter. (Antedated May 17, 1870)	May 31, 1870
98,858	Farson, William, Philadelphia, Pa. Sofa-bedstead	Jan. 18, 1870
98,943	Same. Extension-table	Jan. 18, 1870
100,611	Fasig, Daniel, Rowsbury, Ohio. Combined hay-knife and pruning-hook	Mar. 8, 1870
102,594	Same. West Salem, Ohio. Combined hay and pruning knife	May 3, 1870
100,878	Fassler, Jerome, Springfield, Ohio. Machine for manufacturing harvester-guard fingers	Mar. 15, 1870
105,383	Same. Machine for sawing the slot in harvester-guard fingers	July 12, 1870
98,859	Fast, Edward G., Washington, D. C. Traveling sleeping-cushion	Jan. 18, 1870
107,348	Fatzinger, Alexander H., New York, N. Y. Spring-bed bottom	Sept. 13, 1870
4,471	Faul, George, assignor to Samuel F. Hilton, Boston, Mass. Box for putting up paper cuffs (Design)	Nov. 15, 1870
	Faulkner, Edward H. (*See* Porter & Cross, assignors.)	
99,176	Faulkner, George S., Indianapolis, Ind. Harness-operating mechanism for looms	Jan. 25, 1870
99,177	Same. same	Jan. 25, 1870
99,545	Faulkner, James J., McMinnville, Tenn. Turbine water-wheel	Feb. 8, 1870
100,401	Faulkner, Robert, Erie, Pa. Uterine supporter	Nov. 22, 1870
100,021	Faunce, John, Washington, D. C. Marine drag	Feb. 22, 1870
106,927	Faus, Joshua R., Espy, Pa. Apparatus for saturating fellies with oil	Aug. 30, 1870
103,314	Favor, M. Proctor, East Northwood, N. H. Latch	May 24, 1870
	Fawcett, John J., and George A. Jenks. (*See* Jenks & Fawcett.)	
3,840	Fawcett, Samuel, and Henry R. Corkhill, Rochester, N. Y. Bread-toaster. (Design)	Feb. 8, 1870
	Faxon, Edwin, *et al.* (*See* Kerigan, Michael J., assignor.)	
	Faxon, Oron J. (*See* Murphy, John, assignor.)	
98,577	Fay, Edward, assignor to self and Louis C. Gury, Washington, D. C. Lock	Jan. 4, 1870
	Fay, J. A., & Co. (*See* Richards, John, assignor.)	
	Fay, Samuel B., New York, N. Y. Metallic hook for labels (Extension)	June 29, 1870
104,131	Fay, William H., Camden, N. J. Horse hay-rake	June 14, 1870
	Fayerweather, John S. (*See* Wildman, Frederick M., assignor.)	
104,781	Fearis, George L., Connersville, Ind. Liniment for treating neuralgia, &c	June 28, 1870
108,125	Feasel, Franklin, Lacon, Ill. Washing-machine	Oct. 11, 1870
107,349	Fee, William R., Cincinnati, Ohio. Cotton-seed huller	Sept. 13, 1870
108,896	Same. same	Nov. 1, 1870
108,945	Feemster, John U. L., assignor to self and George W. Scott, Greencastle, Ind. Casting dental plates	Oct. 11, 1870
98,943	Fehrenson, Christian L., New York, N. Y. Screw-tap	Jan. 18, 1870
101,848	Same. Perfume-ejector	April 19, 1870
	Feiock, Caspar, and Joseph F. Applegate. (*See* Applegate & Feiock.)	
	Feiss, Julius, and Henry V. Harts. (*See* Harts & Feiss.)	
102,939	Felker, Philip, Providence, R. I. Brush-wheel	May 10, 1870
106,570	Fell, Thomas L., Glastonbury, Conn. Truss	Aug. 23, 1870
	Fell, William Jenks, *et al.* (*See* Pepper, Daniel Webster, assignor.)	
99,549	Fellman, B. F., Sellersville, Pa. Washing-machine	Feb. 8, 1870
102,673	Same. same	May 3, 1870
99,767	Fellows, Henry, Bloomington, Ind. Stirrup and spur for saddles. (Antedated Dec. 20, 1869.)	Feb. 15, 1870
105,789	Fellows, James H., Alba, Pa. Seat-fastening for carriages	July 26, 1870
	Fellows, James H., and Alvin T. Dunbar. (*See* Dunbar & Fellows, assignors.)	
	Fellows, John. (*See* Lyon, James W., assignor.)	
103,859	Felt, Luther W., Keene, N. H. Spinning-machine	June 7, 1870

Alphabetical list of patentees for the year 1870—Continued.

No.	Name, residence, and invention or discovery.	Date.
102,525	Felt, Vanderlyn Howard, Kendall, N. Y. Harvester-rake	May 3, 1870
103,435	Felthousen, Barrent W., Milwaukee, Wis. Pump	May 24, 1870
110,440	Felthousen, Henry C., Buffalo, N. Y. Lens or glass for head-lights	Dec. 27, 1870
	Fenlin, Thomas F., and Albert H. Ladner. (*See* Ladner & Fenlin.)	
	Fenner, Benjamin F., *et al.* (*See* Tuell, Melzer, assignor.)	
	Fenner, Edward C., *et al.* (*See* Horter, George, assignor) (Two cases.)	
	Fenner, H. N. (*See* Bradford, Horace C., assignor.)	
	Fenton, Albert, and William Avery. (*See* Avery & Fenton) (Two cases.)	
	Fenton, Carnot F., *et al.* (*See* Rigg, Hall & Fenton.)	
105,550	Fenton, Eben B., and Henry S. Penfield, Chicago, Ill. Spool-stand and show-case	July 19, 1870
102,704	Ferguson, Charles W., Jackson, Tenn. Brick-machine	May 10, 1870
101,449	Ferguson, Edmund M., Brady's Bend, Pa. Hot-blast oven or furnace	April 5, 1870
100,028	Ferguson, James H., Greenville, Ind. Collar and harness for harness	Feb. 22, 1870
107,891	Ferguson, James M., Summit, Miss. Stump-puller	Oct. 4, 1870
	Ferguson, Marcus E., and H. H. Heskett. (*See* Heskett & Ferguson.)	
110,450	Ferguson, Richard, Louisville, Ky. Bushing for warp-beams	Dec. 27, 1870
107,893	Ferguson, Robert E., Chicago, Ill. Lumber-drier	Oct. 4, 1870
107,893	Same Clothes-wringer	Oct. 4, 1870
107,468	Ferguson, William, and James Anderson, New York, N. Y. Molding sash-weights	Sept. 20, 1870
107,894	Fernald, Edward S. M., Saco Me. Knife-grinding machine	Oct. 4, 1870
104,843	Ferris, Gilbert H., Brooklyn, N. Y. Dry-dock	June 28, 1870
104,948	Ferris, Oscar C., and Frederick B. Miles, Philadelphia, Pa. Steam-hammer	July 5, 1870
107,941	Ferris, Smith, New York, N. Y. Device for molding plastic cornices	Sept. 13, 1870
107,024	Ferro, Meichele, Iuka, Miss. Medical compound for the cure of fever and ague	Sept. 6, 1870
106,679	Ferry, Thomas, Wilmington, Del. Carpet-duster	Aug. 23, 1870
	Fertig, Lewis, and Jacob Ensigner. (*See* Ensigner & Fertig.)	
	Fessel, Herman E., and James O. Heyworth. (*See* Heyworth & Fessel.)	
100,983	Fessenden, C. H., Candor, N. Y. Bedstead-fastening	Mar. 22, 1870
106,475	Fessler, Henry, and Robert V. Jones, assignors to selves and John D. Graber, Canton, Ohio. Wrench	Aug. 16, 1870
103,436	Fetherolf, Benesville L., Tamaqua, Pa. Tatting-shuttle	May 24, 1870
104,565	Same same	June 21, 1870
	Fetley, George, *et al.* (*See* Wardrobe, Fisk, Curtis & Fetley.)	
98,681	Fetter, David F., New York, N. Y. Railway-car axle-coupling	Jan. 11, 1870
110,127	Same Bung-elevator	Dec. 13, 1870
103,315	Fetzer, John G., assignor to self and A. H. Fetzer, Brunswick, Mo. Corn-planter	May 24, 1870
102,103	Feust, Sigmund, New York, N. Y. Lunch-valise	April 19, 1870
107,350	Feyh, Henry, New York, N. Y. Locking-bolt	Sept. 13, 1870
104,138	Ficht, Frank, Dyckesville, Wis. Wood-pavement	June 14, 1870
106,928	Ficker, Henry, assignor to self and David G. Brown, Dayton, Ohio. Sash-fastener	Aug. 30, 1870
103,230	Fickett, Albert, assignor to self, Isaac Butts, and Charles T. Moore, Rochester, N. Y. Apparatus for separating wood-fiber for paper, &c	April 26, 1870
108,246	Fickinger, Jacob, Kingsville, Ohio. Flour-bolt	Oct. 11, 1870
105,682	Fiedler, George J., Danby, Ill. Farm-gate	July 26, 1870
101,989	Field, Albert E., Central Falls, Ohio. Loom	April 19, 1870
106,571	Same Harness-operating mechanism for looms	Aug. 23, 1870
	Field, Alfred E. (*See* Lewis, Joseph H., assignor.)	
	Field, Alonzo R., and Joseph B. Wakeman. (*See* Wakeman & Field.)	
105,790	Field, B. F., Beloit, Wis. Manufacture of straw and other paper board	July 26, 1870
110,558	Field, Charles H., Providence, R. I. Carriage-button	Dec. 27, 1870
99,708	Field, D. E., assignor to self and Collett Leventhorpe, Leaksville, N. C. Corn-sheller	Feb. 15, 1870
98,860	Field, Franklin, Troy, N. Y. Paper box	Jan. 18, 1870
3,869	Same Paper-collar box (Design)	Mar. 1, 1870
3,870	Same Collar and cuff box (Design)	Mar. 1, 1870
3,883	Field, George A., assignor to the Albert Field Tack Company, Taunton, Mass. Tack-head (Design)	Mar. 8, 1870
3,884	Same same (Design)	Mar. 8, 1870
100,516	Field, George D., New Orleans, La. Medical compound or ointment	Mar. 8, 1870
109,604	Field, George W., assignor to self and Robert H. Butcher, Lowell, Mass. Reversible butt. (Antedated Nov. 12, 1870)	Nov. 29, 1870
102,795	Field, James W., Marysville, Ohio. Needle-setter for sewing-machines	May 10, 1870
103,316	Field, John Bentley, Detroit, Mich. Shutter-fastener	May 24, 1870
100,742	Field, Joseph C., Chicago, Ill. Lawn-mower	Mar. 15, 1870
101,669	Field, J. D., Watapa, Ill. Adjustable elbow-joint for water-pipes. (Antedated April 1, 1870)	April 5, 1870
101,840	Same Keokuk, Iowa. Combined harvester and thrasher	April 12, 1870
98,944	Field, Samuel, Oakham, Mass. Corn-sheller	Jan. 18, 1870
	Field Tack Company, Albert. (*See* Wright, Howell W., assignor.)	
100,879	Field, Woren B., Rockville, and Burroughs Beach, Meriden, Conn. Needle-case	Mar. 15, 1870
102,796	Fields, William, Wilmington, Del. Manufacture of iron	May 10, 1870
102,797	Same Manufacture of steel	May 10, 1870
103,437	Same Furnace for treating cast iron to convert the same into iron and steel	May 24, 1870
4,060	Same Manufacture of steel (Reissue)	July 12, 1870
105,059	Fieta, Wilhelm C., Boston, Mass. Cornet and other wind-instruments	July 5, 1870
99,550	Fife, A. E., Rochester, N. Y. Fruit-jar	Feb. 8, 1870
102,933	Fife, James M., Beaver Falls, Pa. Casting lugs on stove-plates	May 10, 1870
107,895	Fifield, J. Ward, Franklin, N. H. Safety-latch	Oct. 4, 1870

Alphabetical list of patentees for the year 1870—Continued.

No.	Name, residence, and invention or discovery.	Date.
101,450	Fifield, Levi W., assignor to Enoch Earle and Luke K. Davis, Worcester, Mass. Lifting-jack	April 5, 1870
98,758	Fifield, Winslow W., Medford, Mass. Sash-rope guide	Jan. 11, 1870
108,606	Filbert, Lewis S., Philadelphia, Pa. Pavement	Oct. 25, 1870
102,788	Fillion, Octave Eugene, France. Manufacture of artificial flowers	May 10, 1870
104,005	Fillmore, Charles W., Marengo, and Thomas M. Jones, Chicago, Ill. Wagon-axle	June 7, 1870
	Same (*See* Jones & Fillmore.)	
110,348	Fillmore, George Millard, St. Paul, Minn. Milk-receptacle	Dec. 20, 1870
110,221	Filson, Robert M., Willsborough, N. Y. Fence-post	Dec. 20, 1870
110,559	Filson, Ruth and Robert D. S., and John D. Cope, Xenia, Ill. Dish-washer	Dec. 27, 1870
99,303	Finch, Amasa J., assignor to Margaret A. C. Finch, New York, N. Y. Printers' chair	Feb. 1, 1870
102,384	Finch, Amon L., Sing Sing, N. Y. Pattern for casting	April 26, 1870
105,324	Finch, Eugene, Albion, N. Y. Potato-digger	July 12, 1870
109,121	Findlay, James, assignor to self and William Smellie, Toronto, Canada. Vise	Nov. 8, 1870
106,262	Fine, John G., Cincinnati, Ohio. Toy	Aug. 9, 1870
105,663	Finger, Louis, Cambridge, Mass. Electro-magnetic motor	July 26, 1870
105,664	Same Electro-magnetic apparatus for moving panoramas	July 26, 1870
4,003	Fink, Albert, Louisville, Ky. Bridge (Reissue)	Aug. 9, 1870
	Finkle & Lyon Manufacturing Company. (*See* Wendell, Washington, assignor.)	
	Same (*See* Johnson, Albert W., assignor.)	
98,620	Finley, John E., Memphis, Tenn. Vapor-burner	Jan. 11, 1870
108,126	Same Hand corn-sheller	Oct. 11, 1870
99,873	Finley, Stephen L., assignor to self and Marshall Lefferts, Morrisania, N. Y. Insulator for telegraphs	Feb. 15, 1870
	Finn, Archibald T. (*See* Surens & Behrens.)	
102,526	Finn, Charles, Des Moines, Iowa. Bee-hive	May 3, 1870
109,747	Finnell, Francis M., assignor to self and C. A. Culbertson, Covington, Ky. Railway-car brake	Nov. 29, 1870
101,247	Finney, Joseph R., Youngstown, Ohio. Whip-socket and rein-holder	Mar. 29, 1870
108,993	Fippa, Joshua, New Albany, Ind. Wood-bending machine	Nov. 8, 1870
104,133	Firey, Milton J., Mansfield, Ohio. Bridle-bit	June 14, 1870
104,134	Same same	June 14, 1870
106,660	Firey, Samuel M., Clear Spring, Md. Hair-brush	Aug. 23, 1870
109,503	Same Seeding-machine	Nov. 22, 1870
106,801	Firmin, George J., England. Maximum and minimum water-gauge. (Patented in England April 25, 1870)	Aug. 30, 1870
4,060	Fishbeck, Fredrick, Chicago, Ill. Traveling-bag (Reissue)	July 5, 1870
106,476	Fischer, Adolph, New York, N. Y. Brush for cleaning tumblers	Aug. 16, 1870
110,128	Fischer, Frank, Quincy, Ill. Cut-off for cisterns	Dec. 13, 1870
104,294	Fischer, Gottlieb Friderich, and Alexander Whelan, assignors to selves and Joseph Kelley, Washington, D. C. Hinge	June 14, 1870
108,807	Fischer, Hermann, Lanesville, Ind. Bung-lock	Nov. 1, 1870
108,808	Same Bottle-faucet	Nov. 1, 1870
107,469	Fischer, Jacob, Pittsburgh, Pa. Ironing-board	Sept. 20, 1870
105,791	Fischer, Jean C., and William E. Kittredge, Milwaukee, Wis. Railway-car coupling	July 26, 1870
107,709	Fischer, Wilhelm, assignor to Fischer & Stiehl, Prussia. Liquid-meter	Sept. 27, 1870
102,385	Fiscus, Elias, and Solomon Arney, Albion, Iowa. Washing-machine	April 26, 1870
109,814	Fish, Daniel W., Brooklyn, N. Y. Hand-stamp	Dec. 6, 1870
	Fish, Daniel W. (*See* Lehman, Louis, assignor.)	
	Fish, Henry H., *et al.* (*See* Parkin, William, assignor) (Design.)	
	Same (*See* Leach, Thomas, assignor.)	
102,240	Fish, John S., Cleveland, Ohio. Lamp	April 26, 1870
102,241	Same Oil-well pump. (Antedated April 23, 1870)	April 26, 1870
101,451	Fish, R. M., Glenwood, Iowa. Dumping-platform	April 5, 1870
98,481	Fish, Warren L., Springfield, Mass. Sprinkling-pot	Jan. 4, 1870
106,802	Same Portable sprinkler. (Antedated Aug. 18, 1870)	Aug. 30, 1870
103,317	Fisher, Charles A., Philadelphia, Pa. Cherry-stoner	May 24, 1870
	Fisher, Charles G., *et al.* (*See* McDaniel, George W., assignor.)	
3,900	Fisher, Charles R., assignor to Russell & Erwin Manufacturing Company, New Britain, Conn. Reversible knob-latch (Reissue)	May 24, 1870
109,504	Fisher, Cyrus, assignor to self and Augustus G. Fisher, Canton, Mass. Metallic sleeper for railways	Nov. 22, 1870
102,790	Fisher, Elam, Detroit, Mich. Duck-call	May 10, 1870
110,222	Fisher, Frank H., Nevada City, Cal. Hydraulic-mining apparatus	Dec. 20, 1870
110,223	Fisher, George W., and Hugh Reid, assignors to Gerard B. Allen & Co., and Hugh Reid, St. Louis, Mo. Cut-off valve-gear	Dec. 20, 1870
103,318	Fisher, Hart A., Elyria, Ohio. Gathering-attachment for sewing-machines	May 24, 1870
102,800	Fisher, Henry, assignor to self and William H. Williams, Canton, Ohio. Tag-fastener	May 10, 1870
101,990	Fisher, John F., assignor to self and Daniel Breed, Greencastle, Pa. Wheat-drill	April 19, 1870
101,991	Same Axle for wheat-drills	April 19, 1870
	Fisher, John L., *et al.* (*See* Heing, Adam, assignor.)	
101,948	Fisher, John T., assignor to James B. Clow, Pittsburgh, Pa. Preventing the incrustation of steam-boilers	Mar. 29, 1870
109,720	Fisher, John W., Albany, N. Y. Shoe	Nov. 29, 1870
	Fisher, Levi. (*See* Thrift, David V., assignor.)	
	Fisher, Samuel L., *et al.* (*See* Currie, Daniel, assignor.)	
106,042	Fisher, Stephen D., Normal, Ill. Seed-marker	Aug. 2, 1870

Alphabetical list of patentees for the year 1870—Continued.

No.	Name, residence, and invention or discovery.	Date.
	Fisher, Warren, and John Baird. (*See* Baird & Fisher.)	
107,025	Fisher, Willet, Marathon, N. Y. Corner-support for carriage box and seat	Sept. 6, 1870
	Fisher, Willet, and Orson A. Smith. (*See* Smith & Fisher.)	
	Fisk, Charles D. B., *et al.* (*See* Wardrobe, Fisk, Curtis & Fetley.)	
	Fisk, George A., *et al.* (*See* Walker, Albert A., assignor.)	
106,803	Fiske, Henry G., San Francisco, Cal. Machine for forming sheet-metal moldings	Aug. 30, 1870
106,350	Fiske, Henry G., assignor to George L. Taylor and Dwight Holland, Springfield, Mass. Raisin-seeder	Aug. 16, 1870
	Fiske, Isaac. (*See* Holden, Cyrus B., assignor.)	
100,994	Fitch, Charles A., San Francisco, and William O. St. John, Oakland, Cal. Ledger-index	Mar. 29, 1870
109,122	Fitch, Charles H., Worcester, Mass. Boot	Nov. 8, 1870
104,566	Fitch, Eugene L., assignor to self and Carlos Clough, West Eau Claire, Wis. Passenger-register for horse-cars. (Antedated June 17, 1870)	June 21, 1870
100,890	Fitch, James F., B. G. Devoe, and R. W. B. McLellan, said McLellan assignor to said Fitch and Devoe, Vandalia, Ill. Coffee-pot	Mar. 15, 1870
	Fitch, M. S., *et al.* (*See* Van Patten & Clapp, assignors.)	
	Same (*See* Van Patten, Frederick, assignor.)	
107,351	Fitch, Seymour B., Walton, N. Y. Sheet-metal cutting-machine	Sept. 13, 1870
	Fitts, Benaiah, and Phinehas Ball. (*See* Ball & Fitts.)	
109,605	Fitts, Benjamin, Toledo, Ohio. Log-guide for circular saw-mills	Nov. 29, 1870
106,477	Fitts, Samuel E., assignor to George L. Winchester, Ashburnham, Mass. Loom for weaving rattan	Aug. 16, 1870
101,850	Fitts, Thomas B., and Augustus D. Cooke, New York, N. Y. Ice-pitcher	April 12, 1870
104,006	Fitzgerald, Cyrenius C., New York, N. Y. Coloring and dyeing paper	June 7, 1870
104,007	Fitzgerald, Cyrenius C., assignor to Fletcher Marble Company, New York, N. Y. Treating marble to preserve it	June 7, 1870
104,008	Same Producing mosaics upon marble	June 7, 1870
100,613	Fitzgerald, James, Brooklyn, N. Y. Balance slide-valve	Mar. 8, 1870
	Fitzgerald, J., and T. L. Johnson. (*See* Johnson & Fitzgerald.)	
99,493	Fitzgerald, Walter, Boston, Mass. Valve of rotary engines	Feb. 1, 1870
103,319	Fitzgibbons, Maurice, Brooklyn, N. Y. Machine for attaching thin paper to straw-boards	May 24, 1870
107,359	Fitzgibbons, Maurice, New York, N. Y. Wood-pavement	Sept. 13, 1870
100,367	Fitzhenry, Edward, Boston, Mass. Machine for dressing leather	Mar. 1, 1870
104,732	Fitzhugh, Benjamin G., Frederick, Md. Wash-boiler	June 28, 1870
100,366	Fitzhugh, Benjamin G., assignor to Jacob Byerly, Frederick, Md. Door-spring	Mar. 1, 1870
110,349	Fitzhugh, Charles L., Pittsburgh, Pa. Roll for forming horseshoe-blanks	Dec. 20, 1870
4,160	Fitzmaier, Louis, assignor to Atwater, Benham & Co., New York, N. Y. Method of ornamenting tin, &c. (Reissue)	Oct. 25, 1870
109,505	Flad, Henry, St. Louis, Mo. Dumb-waiter for caissons	Nov. 22, 1870
	Flagg & Osgood. (*See* Osgood, James M., assignor.)	
	Flagg, Lysander, *et al.* (*See* Buffington, Nathaniel K., assignor.)	
	Flagler, Harvey K. (*See* Cassidy, James, assignor.)	
100,881	Flammer, Christian, Chicago, Ill. Process of making glass signs, show-cards, &c.	Mar. 15, 1870
99,178	Flanagin, Henry M., assignor to self and Joseph R. Elkinton, Penn's Grove, N. Y. Key-hole guard and protector	Jan. 25, 1870
109,194	Flanders, John P., Vergennes, Vt. Dove-tailing machine	Nov. 15, 1870
105,444	Flanders, Martin P., Jay, N. Y. Washing-machine	July 19, 1870
102,366	Flanigan, Mark, Detroit, Mich. Spring-seat and bed-bottom	April 26, 1870
	Same (*See* Mitzelfeld, Charles, assignor.)	
	Flanigan, Owen, and John Hall, jr. (*See* Hall & Flanigan.)	
100,880	Flanigan, William H., Philadelphia, Pa. Combined carriage, cradle, swing, and baby-walker	Mar. 15, 1870
	Flanigan, William H., and William Haslet. (*See* Haslet & Flanigan.)	
109,606	Flanner, Rodolphus J., Plainfield Township, Mich. Fence	Nov. 29, 1870
4,400	Flansburg, John D., assignor to Seymour Raymond and Joseph Campbell, Philadelphia, Pa. Stove (Design)	Oct. 11, 1870
102,801	Flansburgh, P. H., Haywards, Cal. Gang-plow	May 10, 1870
99,075	Fleck, Michael, Milwaukee, Wis. Extension-table slide	Jan. 25, 1870
103,390	Fleischmann, Charles L., Cincinnati, Ohio. Apparatus for rectifying alcoholic liquors	May 24, 1870
106,530	Same Apparatus for rectifying alcoholic liquors	Aug. 16, 1870
102,387	Fleischmann, Henry, New York, N. Y. Manufacture of yeast	April 26, 1870
4,384	Fleisher, Simon B., Philadelphia, Pa. Box for holding and displaying braids, tapes, &c (Design)	Oct. 4, 1870
100,613	Fleming, George, New York, N. Y. Pole-ascending apparatus	Mar. 8, 1870
98,579	Fleming, Leonard A., West Mt. Vernon, N. Y. Wooden pail	Jan. 4, 1870
	Flender, William H. B., and Jacob Miller. (*See* Miller & Flender.)	
110,560	Flesch, Charles, Rochester, N. Y. Permutation-lock	Dec. 27, 1870
101,721	Flesher, Henry, Springfield Ill. Corn-harvester	April 12, 1870
101,604	Fletcher, Addison C., New York, N. Y. Adhesive postal and revenue stamp. (Antedated October 5, 1869)	April 5, 1870
101,722	Fletcher, Andrew J., Red Bluff, Cal. Hair-medicine	April 12, 1870
104,000	Fletcher, David E., assignor to self and Samuel T. Harrison, Covington, Ky. Vapor-burner	June 7, 1870
4,178	Fletcher, Henry, assignor to Fletcher Manufacturing Company, Providence, R. I. Trade-mark (Design)	June 28, 1870
	Fletcher, John, *et al.* (*See* McGowan, Robert L., assignor.)	
	Fletcher, John B. (*See* Boynton, C. B., assignor) (Reissue.)	
	Same same (Disclaimer.)	

Alphabetical list of patentees for the year 1870—Continued.

No.	Name, residence, and invention or discovery.	Date.
106,043	Fletcher, Joseph A., Eyota, Minn. Snap-hook	Aug. 9, 1870
107,604	Same Washing-machine	Sept. 20, 1870
104,949	Fletcher, Louis N., and Ira M. Page, Lowell, Mass. Let-off mechanism for looms	July 5, 1870
	Flickinger, Abram M. (*See* Ward, Wesley G., assignor.)	
	Flinn, William H. (*See* Farnsworth, Loring, assignor.)	
103,593	Flint, Andrew C., Chelsea, Mass. Reading-stand	May 31, 1870
110,451	Flint, Charles M., Hancock, N. H. Saw-mill	Dec. 27, 1870
	Flint, David B., *et al.* (*See* Waite, James H., assignor.)	
	Flood, J. M. (*See* Dougherty, Eliphalet, assignor.)	
104,567	Flook, Oliver H., Middletown, Md. Hoisting-apparatus	June 21, 1870
	Florentin, Michel, *et al.* (*See* Lutz, Schultheis & Florentin.)	
101,249	Flower, James, Detroit, Mich. Lathe for squaring nuts, &c	Mar. 29, 1870
104,568	Same Stop-valve	June 21, 1870
104,569	Floyd, Martin C., Bloomfield, Iowa. Wagon-step	June 21, 1870
3,987	Fluck, Eberhard, Fort Washington, Pa. Shawl-mantle (Design)	April 26, 1870
3,988	Same same (Design)	April 26, 1870
	Fluhrer, William F., and Charles M. Vandervoort. (*See* Manson, George W., assignor) (Design.)	
109,195	Flynn, Daniel, Fall River, Mass. Steam-boiler	Nov. 15, 1870
103,504	Flynn, Francis, assignor to Woonsocket Rubber Company, Smithfield, R. I. Tap for rubber-boots	May 31, 1870
99,660	Flynn, William H., assignor to self, Thomas J. McCormick, and E. P. Edstrom, jr., Somerville, Mass. Machine for measuring horses for collars	Feb. 8, 1870
102,527	Flint, James H., South Bend, Ind. Dust-ring for watch-frames	May 3, 1870
103,036	Fogarty, Thomas B., New York, N. Y. Gas-generator. (Antedated May 12, 1870)	May 17, 1870
101,452	Fogelberg, Carl, Boston, Mass. Melody-attachment	April 5, 1870
101,605	Same Melody-attachment for organs, &c	April 5, 1870
4,472	Fogelstrand, Ferdinand, assignor to Sargent & Co., New Haven, Conn. (Door-bolt (Design)	Nov. 15, 1870
4,473	Same Thumb-latch (Design)	Nov. 15, 1870
105,930	Foland, Valentine, Indianapolis, Ind. Traversing-machine	Aug. 2, 1870
98,945	Foley, D. D., Washington, D. C. Pen	Jan. 18, 1870
102,461	Same Tag-label	April 26, 1870
	Same (*See* Miller, James M., assignor) (Extension.)	
106,804	Follansbee, George Stores, assignor to self and John Rosencrants, Philadelphia, Pa. Rotary steam-engine or pump	Aug. 30, 1870
108,697	Follansbee, Lambert T., assignor to self and George W. Linville, Washington, D. C. Wood pavement	Oct. 25, 1870
110,330	Follensbee, George S., assignor to self and John Rosencrants, Philadelphia, Pa. Rotary steam-engine	Dec. 20, 1870
107,096	Foller, John, Washington, D. C. Lamp-shade holder	Sept. 6, 1870
	Follett, Francis P., and Hiram W. Hubbard. (*See* Hubbard & Follett). (Design.)	
105,560	Follett, Oscar S., New York, N. Y. Preserving and beautifying crystallized salts upon glass, mica, &c. (Antedated July 2, 1870)	July 19, 1870
110,331	Follett, Thomas, Clermont, Iowa. Grain-sieve and oat-extractor	Dec. 20, 1870
107,027	Folliet, Claude Paul, France. Compound for destroying the oidium in vines, plants, &c	Sept. 6, 1870
110,120	Folsom, Charles, New York, N. Y. Note, check, &c., to prevent alteration	Dec. 13, 1870
101,250	Folsom, Hiram C., Bangor, Me. Converting articles made of iron into steel	Mar. 29, 1870
	Folsom, John G. (*See* Kendall, George F., assignor.)	
	Folsom, John T. and John S. (*See* Marshall, Moses S., assignor.)	
100,279	Folsom, Joseph L., East Boston, Mass. Oil-can	Mar. 1, 1870
109,517	Foltz, W. K., and William A. McCool, Ashland, Ohio. Wine and cider mill	Mar. 8, 1870
103,830	Folwell, John T., Camden, N. J. Door-spring	June 7, 1870
108,889	Fontaine, Eugene, assignor to self and William A. Roberts, Fort Wayne, Ind. Locomotive smoke-stack	Nov. 1, 1870
	Foos, William and Lamar, *et al.* (*See* Kraatz, David K., assignor) (Reissue.)	
	Foote, E. L., *et al.* (*See* Camp, M. M., assignor.)	
	Same (*See* Phippa, D. Goffe, assignor.)	
101,992	Foote, Lucas, Fairfield, Ohio. Boiler-feeder	April 19, 1870
105,060	Foote, Theodore M., and Charles A. Randall, Brooklyn, E. D., N. Y. Telegraphic printing-apparatus	July 5, 1870
102,942	Forbes, Charles Henry, and William Forbes Rutter, Philadelphia, Pa. Hinge for shutters	April 26, 1870
98,753	Forbes, Isaac W., Laporte, Ind. Oscillating steam-valve	Jan. 11, 1870
98,754	Same Steam-engine valve-gear	Jan. 11, 1870
98,755	Same Balance slide-valve	Jan. 11, 1870
101,851	Forbes, Robert B., Boston, Mass. Rigging for vessels	April 12, 1870
107,470	Ford, Charles, and Frank C. Gorbutt, Mason, Ill. Washing-machine	Sept. 20, 1870
104,723	Ford, Charles S., assignor to self and Charles Young, Philadelphia, Pa. Gas-burner	June 28, 1870
108,579	Ford, Charles S., assignor to Charles Young, Philadelphia, Pa. Gas-burner	Oct. 25, 1870
103,165	Ford, Frederic G., New York, N. Y. Furniture-caster	May 17, 1870
101,358	Ford, John C., assignor to William A. Ives, Cambridgeport, Mass. Plumbago-press	Mar. 29, 1870
107,471	Ford, John D., Baltimore, Md. Propeller	Sept. 20, 1870
107,243	Ford, Omri C., assignor to self and N. C. Stiles, Burlington, Conn. Hand-punch	Sept. 13, 1870
	Ford, Samuel S., and Austin Sly. (*See* Sly & Ford.)	
107,243	Ford, Walter J., Chicago, Ill. Piston-packing	Sept. 13, 1870
103,860	Ford, William S., Evansville, Ind. Portable tobacco-press	June 7, 1870
106,044	Forecare, Masculine, New Harrisburg, Ohio. Bridle-bit	Aug. 2, 1870

Alphabetical list of patentees for the year 1870—Continued.

No.	Name, residence, and invention or discovery.	Date.
107,028	Foreman, Charles R., West Branch, N. Y. Elevator	Sept. 6, 1870
107,029	Foreman, Charles V., Washington, D. C. Balancing millstone	Sept. 6, 1870
102,388	Foreman, John, Pottstown, Pa. Device for moving cars	April 26, 1870
104,295	Same.....Truss-frame bridge	June 14, 1870
99,303	Forest, Demsey, Mottomosa, Texas. Machine for bending stirrups	Feb. 1, 1870
98,946	Forney, Emanuel, and Jonas Swab, Elizabethville, Pa. Horse hay-fork	Jan. 18, 1870
102,598	Forrest, Asa, assignor to self and O. L. French, Moingona, Iowa. Table-leaf support	May 3, 1870
101,350	Forrest, Curtis T., San Francisco, Cal. Water-closet valve	Mar. 29, 1870
108,993	Forrester, Isaac N., Bridgeport, Conn. Children's carriage	Nov. 8, 1870
110,359	Same.....Oscillating steam-engine	Dec. 20, 1870
110,561	Same.....Children's carriage	Dec. 27, 1870
3,888	Forrester, I. N., and James H. Luddington, assignors through mesne assignments to the Forrester Manufacturing Company, Bridgeport, Conn. Pump. (Reissue)	Mar. 22, 1870
	Forsaith, S. C. (*See* Milliken, William H. and John, assignors.) (Two cases.) (Reissue.)	
109,506	Forshaw, William, Chicago, Ill. Die for making chord-bars	Nov. 22, 1870
107,353	Forsman, Joseph A., Chicago, Ill. Grinding-mill	Sept. 13, 1870
104,011	Forster, Thomas H., Indianapolis, Ind. Bee-hive	June 7, 1870
101,993	Forsyth, Frederick J., Bay City, Mich. Velocipede	April 19, 1870
101,994	Forsyth, James B., Boston, Mass. Manufacture of elastic rolls	April 19, 1870
102,104	Forsyth, James B.; and John J. Haley, Philadelphia, Pa. Elastic roll	April 19, 1870
	Forsyth, James B., *et al.* (*See* Kaye, William, assignor.)	
103,595	Forsyth, Robert G., Clayton, Ind. Ditching-machine	May 31, 1870
100,389	Fort, Alexander S., Cincinnati, Ohio. Hydrant	Mar. 1, 1870
100,743	Fort, Miranda, Talbotton, Ga. Plow	Mar. 15, 1870
101,360	Fortney, William H., and William E. Sheaffer, Middletown, Pa. Shoe-fastening	Mar. 29, 1870
105,665	Foss, Eliphalet J., Cambridge, Mass. Movable screen for photographers	July 26, 1870
	Foss, James M. (*See* Eaton, Richard, assignor.)	
108,520	Foster, Abraham G. W., Franklin, Ga. Cotton-planter	Oct. 25, 1870
101,453	Foster, A. W., Millbridge, Me. Churn	April 5, 1870
102,105	Foster, Calvin A., Fitchburg, Mass. Scissors-sharpener	April 19, 1870
102,106	Same.....Combination-tool	April 19, 1870
101,251	Foster, Dan. P., Waltham, Mass. Bit-stock	Mar. 29, 1870
3,857	Foster, Edward, Boston, Mass. Lamp-chimney.....(Design)	Feb. 22, 1870
102,673	Foster, Hickman E., assignor to self, D. J. Block, and J. T. Gates, Decatur, Ill. Spring-seat for wagons	May 3, 1870
100,744	Foster, Horace N., East Greenwich, R. I. Cigar piercer	Mar. 15, 1870
4,033	Foster, Israel, Philadelphia, Pa. Carpet-pattern.....(Design)	May 17, 1870
	Same.....(*See* Crabtree, Jonathan, assignor).....(Design.)	
	Same.....(*See* Kerr, William, assignor).....(Three cases.) (Design.)	
	Same.....(*See* Christie, Hugh, assignor).....(Three cases.) (Design.)	
	Same.....(*See* Kerr, Hugh S., assignor).....(Three cases.) (Design.)	
105,931	Foster, James, jr., Camden, N. J. Boat-detaching apparatus	Aug. 2, 1870
	Same.....(*See* Wesner, Samuel F., assignor.)	
105,385	Foster, James D., Montgomery, Ala. Ox-yoke	July 12, 1870
98,492	Foster, John P., New York, N. Y. Rotary pump	Jan. 4, 1870
108,994	Foster, John T., assignor to William Stanley, Jersey City, N. J. Window-sash weight	Nov. 8, 1870
104,135	Foster, Joseph S., Salem, Mass. Carriage-spring	June 14, 1870
99,304	Foster, Lionel, Burlington, Iowa. Thatch-roof	Feb. 1, 1870
99,070	Foster, R. S., Madison, N. J. Night-latch	Jan. 25, 1870
105,939	Foster, S. Conant, New York, N. Y. Mode of operating sewing and other machines	Aug. 2, 1870
105,561	Foster, William, jr., New York, N. Y., and George P. Ganster, Reading, Pa. Gas-apparatus for railroads, &c	July 19, 1870
107,472	Foster, William A., Fitchburg, Mass. Locomotive	Sept. 20, 1870
107,605	Same.....Exhaust-nozzle for steam-engines	Sept. 20, 1870
100,995	Foster, William F., Chicago, Ill. Spool-case	Mar. 22, 1870
99,494	Foster, William G., Apalachin, N. Y. Railway-car brake	Feb. 1, 1870
	Foth, Albert E., *et al.* (*See* Bemis, Foth & Goodrich.)	
108,014	Fouche, Nelson, New Orleans, La. Flue	Oct. 4, 1870
105,562	Foucout, Alfred, France. Electro-magnetic attachment to ships' compasses	July 19, 1870
107,473	Fountain, Vincent, jr., West New Brighton, N. Y. Bung	Sept. 20, 1870
100,134	Fowler, Edgar M., assignor to Henry G. McGonegal, New York, N. Y. Street-pavement	Feb. 22, 1870
105,933	Fowler, Elisha M., assignor to self and Andrew McCallum, Washington, D. C. Soda-fountain	Aug. 2, 1870
98,483	Fowler, F. G., Norwalk, Conn. Steering-propeller	Jan. 4, 1870
107,030	Fowler, George B., Brooklyn, N. Y. Game-box for ten-pins	Sept. 6, 1870
	Fowler, George H., and Lewis J. Elliott. (*See* Elliott & Fowler, assignors.)	
107,474	Fowler, Harvey, Washington, D. C. Mechanical hand-motor	Sept. 20, 1870
107,475	Same.....same	Sept. 20, 1870
100,703	Fowler, Henry, assignor to Jason Crane, Detroit, Mich. Muff and collar box	Mar. 8, 1870
104,794	Fowler, Joinville F., Alliance, Ohio. Bow for carriage-tops	June 28, 1870
	Fowler, Joseph W., and Thomas Sandbach. (*See* Sandbach & Fowler.)	
98,484	Fowler, Samuel W., Brooklyn, N. Y. Lamp-chimney	Jan. 4, 1870
101,723	Same.....Lamp	April 12, 1870
102,674	Fowler, Samuel W., assignor to Alfred C. Hodgeman, Brooklyn, N. Y. Lamp-burner	May 3, 1870

Alphabetical list of patentees for the year 1870—Continued.

No.	Name, residence, and invention or discovery.	Date.
102,389	Fowler, Thaddeus, Seymour, Conn. Machine for rolling metal bars	April 26, 1870
103,861	Same.....Tottensville, N. Y. Method of binding grain	June 7, 1870
103,862	Same.....Machine for binding grain	June 7, 1870
110,432	Same.....Drip-attachment for umbrellas	Dec. 27, 1870
107,896	Fowler, Thaddeus, assignor to Excelsior Needle Company, Tottensville, N. Y. Machine for polishing the eyes of sewing-machine needles	Oct. 4, 1870
	Fowler, William H. (*See* Smith and Pettingell, assignors.)	
104,570	Fox, Francis, Meadville, Pa. Animal-trap	June 21, 1870
98,579	Fox, George H., Philadelphia, Pa. Breech-loading fire-arm	Jan. 4, 1870
107,244	Fox, George, Wakefield, England. Manner of treating cod-liver and castor oils	Sept. 13, 1870
98,683	Fox, Jacob, Bucyrus, Ohio. Fence	Jan. 11, 1870
99,179	Fox, Joseph G., Oregon, Wis. Lever and stamp-puller	Jan. 25, 1860
	Fox, Lewis, and John S. Kenyon. (*See* Kenyon and Fox).....(Two cases.)	
106,681	Fox, Samuel, England. Umbrella. (Patented in England, Sept. 21, 1868)	Aug. 23, 1870
107,031	Fox, William J., Morrisania, N. Y. Self-winding counter-spool	Sept. 6, 1870
109,607	Foye, William H., San Francisco, Cal. Manufacture of artificial stone	Nov. 29, 1870
3,803	Fracker, F. T., assignor to P. and F. Corbin, New Britain, Conn. Hinge. Reissue of design)	Jan. 18, 1870
	Frailey, William P., and James F. Duffy. (*See* Duffy & Frailey.)	
103,166	Frakes, Thomas A., Middletown, Ill. Bee-hive	May 17, 1870
	Fraley, John U., and Pres Moulding. (*See* Moulding & Fraley.)	
100,518	Frame, Roland S., Washington, Ohio. Horse hay-fork. (Antedated Dec. 31, 1869.)	Mar. 8, 1870
107,354	Franco, Albert L., Wilmington, Del. Shutter fastener	Sept. 13, 1870
	Francis, C. S. and Henry, *et al.* (*See* Smith & Brown, assignors.) (Two cases.) (Design.)	
102,943	Francis, Lewis, New York, N. Y. Ink for printing and other purposes	April 26, 1870
	Francis, Lewis, and Frederick W. Lotmate, assignors to Lewis Francis and Cyrus H. Loutrel, New York, N. Y. Composition for inking-rollers, pads, and other printing purposes.....(Disclaimer)	Mar. 28, 1870
109,311	Francis, Russel, Woodstock, Wis. Water-engine	Nov. 15, 1870
106,147	Frank, Ernst, and John B. Adt, Baltimore, Md. Apparatus for drying phosphates	Aug. 9, 1870
100,745	Franke, Henry, Brooklyn, N. Y. Gravel-pan	Mar. 15, 1870
202,244	Franke, L. Ottmar, Baltimore, Md. Rainbow spinning-top	April 26, 1870
105,798	Franke, Ludwig O., Baltimore, Md. Chameleon-whirligig	July 26, 1870
	Frankfurth, William. (*See* Kroeger, Werner, assignor.)	
108,247	Franklin, Asahel and Francis M., Springfield, Ohio. Plow	Oct. 11, 1870
107,606	Franklin, Francis M., assignor to self and Asahel Franklin, Springfield, Ohio. Plow	Sept. 20, 1870
	Franklin, George E. (*See* Crooks, John P., assignor.)	
98,750	Franklin, Henry L., and Eugene Clark, Nashua, N. H. Holder for brooms and mops	Jan. 11, 1870
	Franklin, H. W., and C. R. Morris. (*See* Morris & Franklin.)	
107,032	Franklin, Jonathan H., assignor to self and J. P. McCallister, Avoca, Wis. Adjustable die for bending mold-boards	Sept. 6, 1870
102,945	Frantz, Oliver P., St. Anthony, Minn. Device for boring wells	April 26, 1870
99,425	Franz, William, and William Pope, Crestline, Ohio. Circular knitting-machine	Feb. 1, 1870
99,426	Same.....same	Feb. 1, 1870
102,520	Same.....Setting-up device for circular knitting-machine	May 3, 1870
105,187	Same.....Knitting-machine	July 12, 1870
98,947	Fraser, James, and William Thomas, New York, N. Y. Horse-power	Jan. 18, 1870
101,252	Fraser, John, Dowagiac, Mich. Horse-collar pad-press	Mar. 29, 1870
108,995	Same.....Horse-collar pad	Nov. 8, 1870
4,159	Fraser, John, Frank Furness, and George W. Hewitt, Philadelphia, Pa. Building-front.....(Design)	June 21, 1870
108,469	Fraser, Spencer L., West Town, N. Y. Manure-distributer and seed-sower	Oct. 18, 1870
105,188	Frazee, Joshua W., Peoria, Ill. Boring-machine	July 12, 1870
110,130	Frazee, Lawrence F., Jersey City, N. J. Coal-barge	Dec. 13, 1870
103,436	Frazee, William L., St. Louis, Mo. Washing-machine	May 24, 1870
110,615	Fraser, Clinton W., Brooklyn, N. Y. Fur-set box	Dec. 27, 1870
106,759	Frazer, Kesson, Syracuse, N. Y. Device for removing lime from hard water	Aug. 23, 1870
4,059	Frazier, Thomas J., Clinton, Iowa. Emery-wheel.....(Design)	May 24, 1870
101,253	Frear, Aaron H., Chicago, Ill. Manufacture of artificial stone	Mar. 29, 1870
106,263	Frear, George A., Chicago, Ill. Manufacture of artificial marble	Aug. 9, 1870
106,682	Frebault, Gilbert A., France. Ballot-box	Aug. 23, 1870
	Fredericks, Charles D. (*See* Brower, Henry L., assignor.)	
100,996	Freeland, John, and Daniel Ward, New York, N. Y. Railway-rail joint	Mar. 22, 1870
100,023	Freeland, Oswald S., Newport, R. I. Nut-lock	Feb. 22, 1870
	Freeman, Albert A. (*See* Zitzman, E. H., assignor.)	
98,603	Freeman, Alfred, Peoria, Ill. Railroad pushing-jack	Jan. 11, 1870
109,402	Freeman, Augustus M., Charles P. Idell, and Bergen Vanderhoven, Metuchen, N. J. Picket-fence post	Nov. 22, 1870
103,731	Freeman, Benjamin P., and Pat Payton, Macon, Ga. Locomotive spark-arrester. (Antedated April 1, 1870)	May 31, 1870
	Freeman, John C., and John T. Gathright. (*See* Gathright & Freeman.) (Reissue.)	
98,948	Freeman, Lambert, New York, N. Y. Table	Jan. 18, 1870
105,793	Freeman, Matthew R., Macon, Ga. Carriage-axle	July 26, 1870
109,886	Freeman, Moody G., Wenona, Ill. Iron culvert	Dec. 6, 1870
108,470	Freeman, Safford B., Burlington, Iowa. Bed-bottom	Oct. 18, 1870
105,794	Freet, Christian R., Upper Strasburgh, Pa. Dish-fastener	July 26, 1870

Alphabetical list of patentees for the year 1870—Continued.

No.	Name, residence, and invention or discovery.	Date.
106,045	Fremon, James A., and James H. Carkeet, Montgomery, Ala. Roller-skate	Aug. 2, 1870
103,430	French, Abel, Central City, Iowa. Water-power mechanism	May 24, 1870
3,812	French, Alonzo, Philadelphia, Pa. Inkstand (Design)	Jan. 11, 1870
3,871	Same. Ink-bottle (Design)	Mar. 1, 1870
105,061	Same. Mode of securing glass vessels to metal bases	July 5, 1870
	French, Arasmus, New Haven, and Charles Frost, Waterbury, Conn. Making boxes of paper-pulp (Extension)	June 28, 1870
101,734	French, Carlos, Seymour, Conn. Car-spring	April 12, 1870
106,805	French, Charles A., Lowell, Mass. Folding-seat	Aug. 30, 1870
108,015	French, Erastus S., Westminster, Mass. Machine for scraping chair-backs	Oct. 4, 1870
98,485	French, Evelyn F., New York, N. Y. Cover for sewing-machines	Jan. 4, 1870
103,883	Same. same	June 7, 1870
107,674	French, Henry E., Unity, N. H. Knife-scourer	Sept. 27, 1870
107,675	French, James E., and James M. Stephenson, Pendleton, Ind. Machine for sawing marble	Sept. 27, 1870
103,107	French, James S., Alexandria, Va. Wheel for locomotive land-conveyance and coal-hoisting apparatus	April 19, 1870
96,861	French, Jerome, Independence, Iowa. Harvester-rake	Jan. 18, 1870
104,296	French, John A., assignor to self and Riverious P. Elmore, Milwaukee, Wis. Earth-closet	June 14, 1870
105,563	French, John F., Boston, Mass. Blotting-pad	July 19, 1870
99,661	French, John H., Albany, N. Y. Writing-slate	Feb. 8, 1870
	French, John M., jr. (*See* Stiles, David L., assignor.) (Reissue)	
	French, O. L. (*See* Forrest, Asa, assignor.)	
109,403	French, William and James, assignors to William French, Keokuk, Iowa. Corn-planter	Nov. 22, 1870
	French, W. H. (*See* Reeves, Joseph W., assignor) (Two cases) (Design.)	
90,427	Freudeneau, William, St. Louis, Mo. Manufacture of flour	Feb. 1, 1870
105,068	Frey, Franklin, assignor of three-fourths interest to A. H. Butts, jr., William H. Meacham, and Charles J. Karney, Liberty, Ill. Hay-press	July 5, 1870
103,300	Frey, Louis, Newark, N. J., and George Macardle, Brooklyn, N. Y. Pipe and bolt wrench	April 26, 1870
108,127	Frick, George P., Baltimore, Md. Device for starting street-cars	Oct. 11, 1870
107,171	Frick, Jacob G., Pottsville, Pa. Wire cloth for coal screens	Sept. 6, 1870
108,808	Fricke, William E., Mexico, Mo. Combined planter and seeder	Aug. 30, 1870
104,012	Fricker, Jacob, and Americus Warder, Cincinnati, Ohio. Hydrant	June 7, 1870
106,046	Friedemann, August, Waverly, Iowa. Harrow	Aug. 2, 1870
106,663	Friedmann, Alexander, Austria. Steam-pump	Aug. 23, 1870
100,319	Friend, John P., and Benjamin R. Annable, Salem, Mass. Hide-mill	Mar. 8, 1870
102,946	Fries, Karolina, West Zanesville, Ohio. Compound for cleaning silk	April 26, 1870
	Fringer, Jacob. (*See* Hildebrand, John, assignor.)	
109,887	Fringe, Charles H., assignor to self and Charles Braches, Centerton, Mo. Sacharifying mash from grain	Dec. 6, 1870
98,486	Frink, C. R. Norwich, N. Y. Hay-spreader	Jan. 4, 1870
3,826	Frink, Isaac P., New York, N. Y. Reflector (Division A, reissue)	Feb. 8, 1870
3,827	Same. same (Division B, reissue)	Feb. 8, 1870
104,735	Frink, Samuel C., Indianapolis, Ind. Washing-machine	June 28, 1870
105,666	Same. Depurator	July 26, 1870
	Frisbee, William B., and Gustav A. Scott. (*See* Scott & Frisbee.)	
103,596	Frisbie, Charles H., Chicago, Ill. Exhaust-nozzle	May 31, 1870
101,725	Frisbie, John L., Hillsdale, Mich. Water-wheel	April 12, 1870
	Frisby, Abram C., *et al.* (*See* West, Thomas J., assignor.)	
4,365	Fritsch, Hugo O., New York, N. Y. Plate for pitcher-stands (Design)	Oct. 4, 1870
	Frizell, John C. (*See* Hollenberry, Frank, assignor.)	
98,560	Frizelle, H. J., East Saginaw, Mich. Coal-stove	Jan. 4, 1870
	Froggatt, Cephas, *et al.* (*See* Kirk, Shelmerdine & Froggatt.)	
103,597	Froggett, Job, Youngstown, Ohio. Hot-blast oven	May 31, 1870
100,024	Frob, George, Philadelphia, Pa. Stove-grate	Feb. 22, 1870
106,807	Froman, James H., Plattsburgh, Mo. Car-coupling	Aug. 30, 1870
	Fromer, Jacob. (*See* Earnest, William H., assignor.)	
	Frost, Charles and Erasmus French. (*See* French & Frost) (Extension)	
102,108	Frost, Frederick W., Somerville, Mass. Shutter-fastener	April 19, 1870
101,858	Frost, Frederick W., and Stephen L. Hayward, Somerville, Mass. Rotary blotter	April 12, 1870
103,884	Frost, Henry S., assignor to self, Anthony G. Davis, and Augustus N. Woolson, Watertown, Conn. Umbrella-rib	June 7, 1870
	Frost, Henry S., and Anthony G. Davis. (*See* Davis & Frost, assignors.)	
107,345	Frost, Isaac H., Bristol, Conn. Bracket-shelf	Sept. 13, 1870
103,440	Frost, Mahlon S., New York, N. Y. Electro-magnet	May 24, 1870
	Same. (*See* Paine, Henry M., assignor) (Six cases.)	
	Same. (*See* Hill, Joseph, assignor.)	
101,115	Frue, William B., Houghton, Mich. Car, track, and operating apparatus for mines	Mar. 22, 1870
107,607	Fruen, William Henry, Boston, Mass. Liquid-meter	Sept. 20, 1870
	Fry, Samuel H., and George Hollinger. (*See* Hollinger & Fry.)	
100,907	Frye, Edward S., Salem, Mass. Removing colors from leather	Mar. 22, 1870
103,441	Frye, William H. H., North Fryeburgh, Me. Hay-spreader	May 24, 1870
108,478	Fugate, Thomas, Cincinnati, Ohio. Box-stereoscope	Sept. 20, 1870
100,998	Fulghum, Jesse P., assignor to self and Davis, Lawrence & Co., Dublin, Ind. Grain-drill	Mar. 22, 1870
107,770	Fulkerson, William, Three Rivers, Mich. Setting of fence-posts	Sept. 27, 1870

Alphabetical list of patentees for the year 1870—Continued.

No.	Name, residence, and invention or discovery.	Date.
103,865	Fullagar, William, Brooklyn, N. Y. Shade for gas-lights	June 7, 1870
108,996	Fuller, David, Fullersburgh, Ill. Attachment of cultivator-frames to wagon axle-trees	Nov. 8, 1870
	Fuller, Erwin J., and Frederick S. Nettleton. (*See* Nettleton & Fuller.)	
101,853	Fuller, Frederic, Providence, R. I. Apparatus for molding pipe	April 12, 1870
103,167	Fuller, George Pliny, Humphrey, N. Y. Curtain-fixture	May 17, 1870
105,063	Same. Lamp	July 5, 1870
106,149	Fuller, Henry, Cattaraugus, N. Y. Truss	Aug. 9, 1870
103,442	Fuller, Jim B., Norwich, Conn. Lamp	May 24, 1870
103,598	Same. Lamp-burner	May 31, 1870
105,795	Same. Argand lamp-burner	July 26, 1870
100,746	Fuller, John and Herbert, Lockington, Ohio. Combination water-wheel	Mar. 15, 1870
	Fuller, Margaret Cate, and Harriet Godfrey Emery. (*See* Emery & Fuller.)	
104,726	Fuller, Olney, Bennington, Vt. Water-wheel	June 28, 1870
	Fuller, Warren & Co. (*See* Harwood, Luther W., assignor.) (Design.)	
104,950	Fuller, Willard M., New York, N. Y. Water-meter	July 5, 1870
105,796	Same. Rotary engine	July 26, 1870
110,562	Fuller, William H., assignor to self and Gilbert J. Kingsbury, Brockport, N. Y. Treating hides and manufacturing leather	Dec. 27, 1870
100,500	Fullmer, A. D., Buffalo, N. Y. Tanning	Mar. 8, 1870
109,404	Fulton, Andrew, Albany, N. Y. Gas-burner	Nov. 22, 1870
108,123	Fulton, Charles, New York, N. Y. Spring-mattress	Oct. 11, 1870
107,676	Fulton, David, St. Helena, Cal. Plow	Sept. 27, 1870
103,168	Fulton, Jefferson L., and Julius Brace, Covington, Ky. Bituminous-rock pavement	May 17, 1870
103,169	Same. Material for roofing and paving	May 17, 1870
103,866	Fulton, John S., Gallatin, N. Y. Thrashing-machine	June 7, 1870
100,390	Funk, John S., Marysville, Pa. Jack for removing the cross-heads of locomotives	Mar. 1, 1870
103,037	Funk, Peter, and J. Nicodemus Boader, Buffalo, N. Y. Insect-trap	May 17, 1870
108,572	Funk, William, and George W. Port, Warrensburgh, Mo. Coffee-pot	Aug. 23, 1870
107,355	Fuos, Matthias, Castroville, Texas. Thrashing-machine	Sept. 13, 1870
104,727	Furber, George C., Yreka, Cal. Medical compound	June 28, 1870
106,149	Same. Device for packing bottles	Aug. 9, 1870
103,732	Furbish, Isaiah M., Augusta, Me. Washing-machine	May 31, 1870
110,234	Furness, Robert, Friendswood, Ill. Hay-elevator	Dec. 20, 1870
	Furness, Frank, *et al.* (*See* Fraser, Furness & Hewitt.) (Design.)	
110,225	Furrer, Jacob, New York, N. Y. Warping-machine. (Antedated Dec. 9, 1870)	Dec. 20, 1870
108,120	Fyans, Thomas, assignor to self and A. T. Thomson, Taunton, Mass. Composition for welding and restoring steel	Oct. 11, 1870
106,979	Gear, Abraham, Richmond, Ind. Horse-power apparatus	Aug. 30, 1870
	Gear, Abraham, *et al.* (*See* Shearson, Andrew, assignor.)	
104,571	Gear, Abraham, Richmond, Ind. Grain-separator	June 21, 1870
98,521	Gabel, Nelson, Minneapolis, Minn. Hay-rake and loader	Jan. 4, 1870
108,893	Gabelmann, Henry, Fort Scott, Kansas. Bench-pin	May 10, 1870
108,997	Gabrion, Gilbert G., Olive, Mich. Bee-hive	Nov. 8, 1870
100,391	Gage, H. A., Manchester, N. H. Paper-cutting machine	Mar. 1, 1870
106,684	Gage, William, Buffalo, N. Y. Combined mop-head and wringer	Aug. 23, 1870
99,180	Gahn, Henrik, Sweden. Preserving meat	Jan. 25, 1870
103,321	Gahr, Conrad, Newark, N. J. Pad-plate for harness	May 24, 1870
99,874	Gaillac, Eugene G., Cutler, Me. Boom for vessels	Feb. 15, 1870
	Gaines, Richard, and Robert Skinner. (*See* Skinner & Gaines.)	
99,769	Gair, John, assignor to self and Joseph J. Walton, New York, N. Y. Gas-carbureting apparatus	Feb. 15, 1870
110,296	Gale, Anthony, and Henry R. Johnson, Shelby County, Ky. Hame-fastener	Dec. 20, 1870
104,441	Gale, Charles C., Indianapolis, Ind. Shield for padlocks	June 21, 1870
99,538	Gale, D'Alembert T., Poughkeepsie, N. Y. Washer and wringer	Feb. 8, 1870
108,998	Same. Fort Wayne, Ind. Bed-spring	Nov. 8, 1870
107,246	Gale, Henry H., Eugene City, Oregon. Galley-rest	Sept. 13, 1870
103,038	Gale, Horatio, Albion, Mich. Plow	May 17, 1870
107,033	Same. same	Sept. 6, 1870
3,872	Gale, L. D., assignor through mesne assignments to William J. Nichols, Alden B. Rand, and Richard H. Brown, Washington, D. C. Apparatus for the manufacture of gas (Reissue)	Mar. 8, 1870
3,873	Same. Manufacture of gas (Reissue)	Mar. 8, 1870
3,912	Gale, Warren, assignor to self and B. B. Belcher, Peekskill, N. Y. Straw-cutter. (Reissue)	April 12, 1870
105,189	Gallaer, Peter N., and Isaac C. Tate, New London, Conn. Machine for making horseshoe-nails	July 12, 1870
108,561	Gallagher, Bernard, St. John's, N. B. Skate-fastening	Oct. 25, 1870
102,247	Gallagher, Henry N., Worcester, Mass. Revolving-bar toy	April 26, 1870
107,477	Gallagher, John, Cleveland, Ohio. Cooking-apparatus	Sept. 20, 1870
105,190	Gallagher, Joseph P., St. Louis, Mo. Gas-machine	July 12, 1870
4,140	Same. Cock (Reissue)	Oct. 4, 1870
108,343	Gallagher, Owen, Boston, Mass. Socket for lock-spindles	Oct. 18, 1870
100,135	Gallipo, Joseph, Cohoes, N. Y. Machine for cutting soap into slabs	Feb. 22, 1870
99,662	Galloway, William, Philadelphia, Pa. Fruit-jar	Feb. 15, 1870
101,606	Same. Fastening for fruit-jars	April 5, 1870
109,507	Galloway, William, Philadelphia, Pa. Securing the tops of jars	Nov. 22, 1870
	Gallup, Henry H. (*See* Hunter, Edward, assignor.)	
99,551	Gally, Merritt, assignor to Allen Carpenter, Rochester, N. Y. Printing-press	Feb. 8, 1870

Alphabetical list of patentees for the year 1870—Continued.

No.	Name, residence, and invention or discovery.	Date.
101,254	Gally, Merritt, assignor to Allen Carpenter, Rochester, N. Y. Printing-press	Mar. 29, 1870
99,305	Galmann, H., and Charles R. Uhe, Buchanan, Pa. Joist-protector	Feb. 1, 1870
	Gamage, Gideon L. (*See* Goodwin, Gamage & Goodwin.)	
102,530	Gammel, William F., assignor to self and Jacob Weible, Elizabeth, N. J. Lap-board	May 3, 1870
98,684	Gammell, Frederick W., Spring Valley, Iowa. Latch	Jan. 11, 1870
107,178	Gamwell, Samuel, Wayland, Mich. Pruning-tool	Sept. 6, 1870
105,336	Ganoug, Luther M., Friar's Point, Miss. Cotton-cultivator	July 12, 1870
	Ganster, George P., and William Foster, jr. (*See* Foster & Ganster.)	
4,073	Ganta, George F., New York, N. Y. Label (Design)	May 31, 1870
100,521	Ganyard, Henry O., assignor to Ami Hills, Rochester, N. Y. Die for forming shovels	Mar. 8, 1870
	Garbutt, Frank C., and Charles Ford. (*See* Ford & Garbutt.)	
101,454	Garcin, Leon Paul, assignor to self and John D. Hooker, San Francisco, Cal. Lifting-jack	April 5, 1870
100,136	Gard, Benjamin M., Urbana, Ohio, and Emery R., Chicago, Ill. Brick-machine	Feb. 22, 1870
4,109	Gard, Benjamin, M., Urbana, Ohio, and Emery R., Chicago, Ill., assignors to the United States Brick-Machine Company. Brick-machine (Reissue)	Aug. 23, 1870
108,248	Gard, Samuel P., New Orleans, La. Ditching-machine	Oct. 11, 1870
100,392	Gardiner, Charles O., Springfield, Ohio. Sickle-bar	Mar. 1, 1870
	Gardiner, Charles O., *et al.* (*See* Thomas, Mast & Gardiner) (Reissue)	
100,025	Gardiner, H., New York, N. Y. Churn. (Antedated Feb. 5, 1870)	Feb. 22, 1870
109,319	Gardiner, Heman, New York, N. Y. Railway-car coupling. (Antedated Nov. 12, 1870)	Nov. 15, 1870
	Gardiner, J. B. (*See* Colley, Archibald H., assignor.)	
107,034	Gardiner, Perry G., New York, N. Y. Car-spring	Sept. 6, 1870
107,035	Same same	Sept. 6, 1870
107,036	Same same	Sept. 6, 1870
108,698	Same Railway-car coupler and buffer	Oct. 25, 1870
99,875	Gardiner, Samuel, jr., New York, N. Y. Candlestick	Feb. 15, 1870
110,453	Gardner, Abram A., Savannah, Mo. Washing-machine	Dec. 27, 1870
108,775	Gardner, Charles J., Philadelphia, Pa. Machine for grinding saw-blades	Nov. 1, 1870
98,883	Gardner, Edward V., and P. M. Crane, England. Composition for coating ships, boats, &c	Jan. 18, 1870
102,531	Gardner, Franklin, Carlisle, Pa. Fastening tubes in grain-drills. (Antedated April 18, 1870)	May 3, 1870
102,249	Gardner, George, assignor to self, Oliver L., and William Gardner, Clarksville, N. J. Book rack and stand	April 26, 1870
103,867	Gardner, Joseph W., Shelburne Falls, Mass. Attaching handles to cutlery	June 7, 1870
105,934	Gardner, Mitchell C., Rochester, N. Y. Mode of and device for making gaskets for steam-packings	Aug. 2, 1870
99,306	Gardner, Smith, assignor to the International Marble Coloring Company, New York, N. Y. Coloring marble	Feb. 1, 1870
107,608	Gardner, Smith, assignor to self and Ephraim Howe, New York, N. Y. Protecting dikes and embankments against the ravages of animals, &c	Sept. 20, 1870
103,599	Gardner, William, San Francisco, Cal. Percussion-fuse	May 31, 1870
104,728	Same Catalpa, Ky. Grain cleaner and separator	June 28, 1870
101,116	Gardner, William and George, assignors to selves, Oliver L. Gardner, and R. Westbrook Myers, Glen Gardner Station, N. J. Cooking stove and range	Mar. 22, 1870
105,191	Gardner, William R., Leonardsville, N. Y. Pessary	July 12, 1870
99,770	Garland, John P., Newbury, Vt. Sleigh-knee	Feb. 15, 1870
106,808	Garland, Michael, West Eau Claire, Wis. Plane-guide	Aug. 30, 1870
99,181	Garlinghouse, Cyrus B., assignor to self, Samuel F. Bateman, and Byrdine Harris, Carpentersville, Ind. Hay-loader	Jan. 25, 1870
99,307	Garlington, J. L., Snapping Shoals, Ga. Apparatus for raising water	Feb. 1, 1870
105,935	Garlington, Thomas C., Chambers C. H., Ala. Cotton-seed planter	Aug. 2, 1870
108,349	Garner, Frank E., Cornwall, Conn. Feed-cutter	Oct. 11, 1870
3,926	Garnhart, John H., St. Louis, Mo. Bottle (Design)	Mar. 22, 1870
3,943	Same Trade-mark (Design)	Mar. 29, 1870
109,608	Garretson, George E., Russellville, Ky. Elastic running-gear for carriages	Nov. 29, 1870
98,757	Garretson, O. S., Buffalo, N. Y. Cider-mill	Jan. 11, 1870
101,854	Same Sash-pulley	April 12, 1870
107,897	Garretson, Oliver S. and Joel G., Buffalo, N. Y. Mop-head	Oct. 4, 1870
3,854	Garrett, George B., Philadelphia, Pa. Caster (Design)	Feb. 22, 1870
99,193	Garrett, Henry, Linneus, Mo. Drier	Jan. 25, 1870
108,900	Garrett, James H., Greencastle, Ind. Plate for harness-saddle	Nov. 1, 1870
	Garrett, Peter C., and Israel Snyder. (*See* Snyder & Garrett.)	
	Garrett, William, *et al.* (*See* Reece, William R., assignor.)	
104,013	Garrick, Thomas, Providence, R. I. Eyelet	June 7, 1870
104,442	Same Machine for forming eyelet-stock	June 21, 1870
104,443	Same Machine for feeding stock to eyelet-machines	June 21, 1870
	Garrigues, Richard H., administrator. (*See* Dole, L. A.) (Extension.)	
	Garrison, George B. (*See* Derrick, William E., assignor.)	
109,196	Garrison, Herod D., assignor to Garrison & Murray, Chicago, Ill. Mill for powdering roots, &c	Nov. 15, 1870
	Garrison, John W., and William C. Davis. (*See* Davis & Garrison.)	
100,747	Garrison, William, Clarkstown, N. Y. Mechanical movement	Mar. 15, 1870
	Garrison, William F., and William H. Guild. (*See* Hubbard & Conant, assignors) (Reissue.)	
	Garrus, Joseph. (*See* Semeló, Jules, assignor) (Two cases) (Design.)	
108,130	Garry, John, Cleveland, Ohio. Car-roof	Oct. 11, 1870

Alphabetical list of patentees for the year 1870—Continued.

No.	Name, residence, and invention or discovery.	Date.
99,308	Garth, George S., Mill Hall, Pa. Straw-cutter. (Antedated Dec. 1, 1869)	Feb. 1, 1870
109,197	Same same	Nov. 15, 1870
	Garver, John W., and Oscar Bellman. (*See* Bellman & Garver.)	
108,776	Garvey, James, and Matthew H. Kimball, San Francisco, Cal. Clothes-line hook	Nov. 1, 1870
107,356	Garvin, Benjamin, and Rush J. Pettibone, Oshkosh, Wis. Tubular grate	Sept. 13, 1870
106,920	Gascon, Moses, Malvern, Ohio. Churn	Aug. 30, 1870
104,014	Gaskill, William, Philadelphia, Pa. Setting-up and tension-comb for knitting-machines	June 7, 1870
	Gaston, John C., and Ralph Lawyer. (*See* Lawyer & Gaston.)	
103,443	Gaston, Jeremiah C., Cincinnati, Ohio. Button-fastening	May 24, 1870
104,444	Same Hand-stamp	June 21, 1870
104,445	Gates, Artemas W., New York, N. Y. Card-clothing	June 21, 1870
101,455	Gates, Frederick, assignor to William Gates, Vineland, N. J. Machinery for making paper boxes	April 5, 1870
	Gates, Joel Hale, *et al.* (*See* Davis, Thomas Hale, assignor.)	
107,478	Gates, John, Portland, Oregon. Lubricator	Sept. 20, 1870
108,900	Same Piston-packing	Nov. 8, 1870
	Gates, J. T., *et al.* (*See* Foster, Hickman E., assignor.)	
98,863	Gates, Reuben, Parma, Ohio. Saw-handle	Jan. 18, 1870
4,041	Gathright, John T., and John C. Freeman, assignors to John T. Gathright, Louisville, Ky. Side-saddle (Reissue)	June 21, 1870
3,989	Gathright, Joseph B., Louisville, Ky. Tree for side-saddles (Reissue)	May 24, 1870
	Gathright, Joseph B., Louisville, Ky. Tree for side-saddles (Disclaimer)	Aug. 29, 1870
102,675	Gatling, Richard J., Hartford, Conn. Metallic cartridge	May 3, 1870
	Gause, William, and Albert W. Cox. (*See* Cox & Gause.)	
109,198	Gause, William, Indianapolis, Ind., and Joseph C. Curryer, Thorntown, Ind. Gate	Nov. 15, 1870
	Gautschi, Charles, and Charles Arlen. (*See* Arlen & Gautschi.)	
102,109	Gavard, Adonis Nicolas Cristin, France. Metallic cartridge	April 19, 1870
104,446	Gavron, Otto, New York, N. Y. Preparation of mineral bath to imitate mineral waters	June 21, 1870
	Gay, Albert, and H. D. Lathrop. (*See* Lathrop & Gay.)	
108,250	Gay, David G., Eugene City, Oregon. Saw-mill	Oct. 11, 1870
108,251	Same Mail-bag fastener	Oct. 11, 1870
	Gay, John. (*See* Crabtree, Jonathan, assignor) (Three cases.) (Design.)	
	Gay, Stephen. (*See* Smith, George Hamilton, assignor.)	
99,077	Gay, William A., Newark, N. J. Gravel-heater	Jan. 25, 1870
4,033	Gayle, Judson B., Raleigh, N. C. Grate (Design)	May 17, 1870
106,351	Gaylord, Charles, Washington, D. C. Hinge	Aug. 16, 1870
99,553	Gaylord, E. L., Terryville, Conn. Trunk-lock	Feb. 8, 1870
104,573	Same Padlock	June 21, 1870
108,582	Gaytes, Carol, Chicago, Ill. Wood-pavement	Oct. 25, 1870
98,487	Geahr, William, assignor to self and George Duchman, East Earl Township, Pa. Manure-drag	Jan. 4, 1870
106,685	Gear, Alonzo S., New Haven, Conn. Wood-molding machine	Aug. 23, 1870
	Gear, A. S. and J., & Co. (*See* Jordan, Detrick, assignor) (Three cases.)	
106,573	Gebhardt, Lewis L., North Providence, Ind. Medical compound	Aug. 23, 1870
	Geddes, William B., and Elisha Meta. (*See* Meta & Geddes.)	
104,015	Gee, John H., assignor to George T. Chapman, New York, N. Y. Thill-coupling	June 7, 1870
106,150	Gee, William, New York, N. Y. Lubricator	Aug. 9, 1870
106,686	Same Apparatus for cooling beer	Aug. 23, 1870
	Geer, Emily L. (*See* Dinsmore, Warren A., assignor.)	
102,676	Geer, George, assignor to Charles Parker, Meriden, Conn. Match-safe	May 3, 1870
4,105	Geer, George, assignor to self, T. G. Hadley, and William Hamilton, Galesburg, Ill. Cherry-stoner (Reissue)	Aug. 23, 1870
106,687	Geer, Willis S., Marshall, Mich. Thill-coupling	Aug. 23, 1870
100,529	Gehlen, Louis, New York, N. Y. Handle for folding umbrellas	Mar. 8, 1870
	Geiselman, Daniel, *et al.* (*See* Martin & Offineer, assignors.)	
106,930	Geiser, Peter, and L. P. Thompson; said Thompson assignor to said Geiser, Waynesborough, Pa. Machine for tonguing and grooving	Aug. 30, 1870
100,999	Geiss, Adolph, Buffalo, N. Y. Railway-car coupling	Mar. 22, 1870
108,258	Geiss, Jacob, Belleville, Ill. Truss	Oct. 11, 1870
109,000	Geller, William, New York, N. Y. Composition for pencils	Nov. 8, 1870
109,600	Gemberling, Elijah, Elkhart, Ind. Gate	Nov. 29, 1870
	Gentner, Frederick. (*See* Bauschtliker, Frederick, assignor.)	
	Gentsch, Ludwig, and Stockton H. Evans. (*See* Evans & Gentsch.) (Reissue.)	
106,352	George, David J., assignor to self, Mary R. George, and George G. F. Boswell, Arcade, Ind. Oven	Aug. 16, 1870
108,583	George, Richard, England. Gas-heater	Oct. 25, 1870
106,047	George, Robert, Denver City, Col. Ter. Machine for separating mineral and fossil substances	Aug. 2, 1870
106,048	Same Machine for separating and concentrating ores and other materials of different specific gravity	Aug. 2, 1870
106,049	Same Apparatus for separating and concentrating ore	Aug. 2, 1870
105,064	George, Robert W., Boston, Mass. Stave-jointer	July 5, 1870
108,584	George, William Freeman, New York, N. Y. Putting up soap. (Antedated Oct. 8, 1870)	Oct. 25, 1870
104,297	Gephart, Jacob C., Dowagiac, Mich. Bag-filler for fanning-mills	June 14, 1870
103,444	Geraghty, Michael F., assignor to Thomas J. McArthur and Isaac W. Parmenter, Jersey City, N. J. Sewing-machine	May 24, 1870

Alphabetical list of patentees for the year 1870—Continued.

No.	Name, residence, and invention or discovery.	Date.
108,333	Gerard, George L., New Haven, Conn. Table-leaf supporter	Aug. 16, 1870
4,146	Same.....same.....(Reissue)	Oct. 4, 1870
103,866	Gerard, John, Trenton, N. J. Lock	June 7, 1870
	Gerber, Julius. (*See* Smith, Irulus R., assignor)	(Reissue.)
106,478	Gerber, Julius, Rockford, Ill. Cultivator	Aug. 16, 1870
108,471	Same.....same	Oct. 18, 1870
110,027	Gerdes, Frederick W., Allegheny City, Pa. Manufacture of paint	Dec. 13, 1870
102,391	Gerdom, Gregory, New York, N. Y. Lubricator	April 26, 1870
103,170	Gerdom, Gregory, Albany, N. Y. Lubricator	May 17, 1870
	Gereeke, Henry. (*See* Murray, Edgar, assignor.)	
103,839	Gereeke, Henry, assignor to self, Augustus Gereeke, and Jacob Stahl, Carlstadt, N. J. Fruiting-tongs	May 17, 1870
98,949	Gerelds, Sela W., Worcester, Mass. Putty-knife	Jan. 18, 1870
100,280	Gerhard, M., Newark, N. J. Vegetable-cutter	Mar. 1, 1870
90,554	Gerhardt, William, assignor to self, Thomas Daffin, and Thomas Banes, New York, N. Y. Gas-producing furnace	Feb. 8, 1870
98,592	Gerhart, John H., and Joseph S. McCord, Middletown, Pa. Stove-pipe shelf	Jan. 4, 1870
110,038	Germain, George C., Cuyahoga Falls, Ohio. Pipe-coupling	Dec. 13, 1870
	Germain, Rollin, *et al.* (*See* Westcott, Charles S., assignor.)	
104,573	Gerner, Henry, New York, N. Y. Apparatus for utilising the exhaust-steam of steam-engines	June 21, 1870
4,166	Gerner, Henry, assignor to American Gerner Boiler Company, New York, N. Y. Steam-generator	Nov. 29, 1870 (Reissue)
103,171	Gernes, Charles, and John H. Gruenhagen, Winona, Minn. Stump-extractor	May 17, 1870
110,353	Gerngross, Stephan, St. Louis, Mo. Breech-loading fire-arms	Dec. 20, 1870
	Gerow, Henry S. (*See* Jarrold, Edgar T., assignor.)	
98,685	Gerrard, Frank, Kansas City, Mo. Water-supply pipes for locomotives	Jan. 11, 1870
105,936	Gerrish, William H., Boston, Mass. Reed musical instrument	Aug. 2, 1870
107,898	Geuer, John F., West Farms, N. Y. Manufacture of ice	Oct. 4, 1870
105,667	Gessert, George, Edwardsville, Ill. Flour-sifter	July 26, 1870
102,533	Getzendaner, Marshall A., Polo, Ill. Corn-harvester	May 3, 1870
	Geyer, Richard B. (*See* Morgan, William H., assignor) (Three cases.)	
103,040	Ghisi, Joseph, Italy Propelling vessel	May 17, 1870
104,574	Gibbons, Thomas P., Philadelphia, Pa. Fruit-jar	June 21, 1870
102,803	Gibbs, Charles Edward, Boston, Mass. Comb-cleaner	May 10, 1870
104,298	Gibbs, Edwin, Richland Centre, Wis. Plate-lifter	June 14, 1870
99,300	Gibbs, John, assignor to self and Calvin H. Carter, Brooklyn, E. D., N. Y. Punch and die for punching tubes	Feb. 1, 1870
108,029	Gibbs, Martin L., Canton, Ohio. Plow	Oct. 25, 1870
107,037	Gibbs, Robert, Brunswick, Mo. Plow	Sept. 6, 1870
105,797	Gibbs, William H., Philadelphia, Pa. Bottle-stopper	July 26, 1870
99,498	Gibson, C. D. P., Boston, Mass. Attaching the main-spring of watches	Feb. 1, 1870
101,607	Gibson, Charles T., assignor to self and Samuel E. Kirk, Baltimore, Md. Padlock. (Antedated March 29, 1870)	April 5, 1870
	Gibson, George M., *et al.* (*See* Marden, Jeremiah A., assignor.)	
108,901	Gibson, Lyman B., South Addison, N. Y. Stump-extractor	Nov. 1, 1870
4,012	Gibson, Paris, and Alexander Tyler, Minneapolis, Minn. Trade-mark (Design)	May 10, 1870
	Gibson, Thomas Emerson, and Thomas Rose. (*See* Rose & Gibson.)	
108,016	Gibson, Samuel, assignor to self and I. W. G. Wierman, Lancaster, Pa. Rotary engine	Oct. 4, 1870
	Gibson, W. T. (*See* Donavan, Eliza Jane, assignor.)	
104,999	Giddings, Erastus W., Johnstown, Pa. Window	June 14, 1870
108,131	Gies, Christian, New York, N. Y. Sash-cord fastener	Oct. 11, 1870
99,535	Gifford, C. H., Potsdam Junction, N. Y. Horse-power	Feb. 8, 1870
	Gifford, Ira M., *et al.* (*See* Harrah, Gifford & Johnston.)	
108,777	Gifford, Thomas J., Salem, Mass. Spring-seat for railway-cars	Nov. 1, 1870
102,804	Gifford, Walter C., Jamestown, N. Y. Stanchion for cattle	May 10, 1870
105,445	Same.....Swinging-stanchion	July 19, 1870
	Gigon, Gustavus. (*See* Humbert, Alfred, assignor.)	
103,609	Gilbert, Charles W., Worcester, Mass. Loom	May 31, 1870
	Same.....(*See* Bleakie, Robert, assignor.)	
108,471	Gilbert, Edward F., Lyons, N. Y. Bedstead-fastening	Oct. 18, 1870
107,771	Gilbert, Harlow M., Ada, Ill. Coffee-roaster	Sept. 27, 1870
98,950	Gilbert, Joseph, Philadelphia, Pa. Portable water-closet	Jan. 18, 1870
106,800	Gilbert, Lucien M., Cow Run, Ohio. Loom	Aug. 30, 1870
99,663	Gilbert, Rufus H., Washington, D. C. Atmospheric transportation	Feb. 8, 1870
99,876	Same.....Blowing-apparatus	Feb. 15, 1870
99,664	Gilbert, Thomas S., Birmingham, Conn. Corset	Feb. 8, 1870
109,815	Gilbert, William, Detroit, Mich. Perpetual brick-burning kiln	Dec. 6, 1870
108,700	Gilbert, William, assignor to N. K. Fairbank, Catskill, N. Y. Wooden box	Oct. 25, 1870
	Gilbert, William F., and Fred. Durand. (*See* Durand & Gilbert.)	
103,733	Gilchrist, James N., assignor to self and John L. Gilchrist, Connersville, Ind. Blower	May 31, 1870
108,050	Giles, Abner R., Adams, N. Y. Carriage-jack	Aug. 2, 1870
3,885	Giles, Fayette S., assignor to Giles, Wales & Co., New York, N. Y. Top-plate, barrel-bridge, and cock for watches (Design)	Mar. 8, 1870
3,886	Same.....Barrel-bridge, ratchet cap-base, and arbor-cap for watches. (Design)	Mar. 8, 1870
99,536	Giles, Henry G., Troy, N. Y. Fastening stove-door linings. (Antedated Feb. 5, 1870)	Feb. 8, 1870
101,000	Same.....Base-burning stove	Mar. 22, 1870

Alphabetical list of patentees for the year 1870—Continued.

No.	Name, residence, and invention or discovery.	Date.
101,001	Giles, Henry G., Troy, N. Y. Base-burning stove	Mar. 22, 1870
102,533	Same.....Cooking-stove	May 3, 1870
	Same.....(*See* Kingsbury, Gilbert J., assignor.) (Reissue.)	
106,051	Gill, George, Taunton, Mass. Stand and waiter	Aug. 2, 1870
3,878	Gill, George, assignor to Reed & Barton, Taunton, Mass. Tea-service (Design)	Mar. 1, 1870
3,969	Same.....Cake-dish (Design)	April 26, 1870
110,131	Gill, Henry, Mansfield, Ohio. Grain thrasher and separator	Dec. 13, 1870
106,574	Gillert, Ernest, St. Louis, Mo. Vapor-burner	Aug. 23, 1870
101,118	Gilles, Ernst W., and Jules Wendell, assignors of one-third interest to Abraham P. Grant, Oswego, N. Y. Folding-desk	Mar. 22, 1870
101,117	Gillespie, Hoffman D., Huntington, Ind. Sawing-machine	Mar. 22, 1870
101,255	Gillespie, James E., and Horatio B. Weaver, Hartford, Conn. Water-wheel	Mar. 29, 1870
104,136	Gillespie, Joseph W., and William Hughes, assignors to selves and Isaac N. Webb, Alliance, Ohio. Combined grate-front and oven	June 14, 1870
102,249	Gillet, Henry E., assignor to self and E. Bickford, Oswego, N. Y. Folding-desk	April 26, 1870
99,557	Gillette, C. F., Sparta, Wis. Gun-wiper	Feb. 8, 1870
104,016	Gilliland, Lewis L., Dayton, Ohio. Fruit-box	June 7, 1870
107,609	Gilliland, Robert, Hudson, Mich. Nut-lock	Sept. 20, 1870
3,914	Gillinder, William T., Philadelphia, Pa. Ornamenting glass-ware (Design)	Mar. 22, 1870
110,029	Same.....Machine for mixing "batch" for glass	Dec. 13, 1870
102,805	Gillispie, John N., Waltham, Mass. Device for hanging picture-frames, &c	May 10, 1870
104,137	Gilman, Albert H., Boston, Mass. Loom-temple	June 14, 1870
4,094	Same.....Spindle for spinning (Reissue)	Aug. 9, 1870
102,534	Gilman, Jane E., Hartford, Conn. Work-holder	May 3, 1870
107,479	Same.....Combined dressing-bureau and bath-tub	Sept. 20, 1870
101,002	Gilman, L. D., Lansingburgh, N. Y. Stop-valve	Mar. 22, 1870
102,806	Gilman, Samuel H., Galveston, Texas. Refining and aging liquors	May 10, 1870
104,138	Same.....Treating grain to obtain extractive matter for coloring and flavoring spirits	June 14, 1870
100,748	Gilman, William, Ottawa, Ill. Corn-planter	Mar. 15, 1870
105,668	Same.....Machine for rolling plow-beams	July 26, 1870
107,357	Same.....Corn-cultivator	Sept. 13, 1870
98,686	Gilmore, Othniel, Raynham, Mass. Water-meter	Jan. 11, 1870
108,344	Same.....same	Oct. 18, 1870
100,137	Gilpatric, C. L., Hyde Park, Mass. Strainer for coffee-pots	Feb. 22, 1870
109,199	Gilpin, Charles, Cumberland, Md. Feed-rolls for roosing-machines	Nov. 15, 1870
98,758	Gilroy, W. L., Philadelphia, Pa. Process of preserving green corn. (Antedated Jan. 1, 1870)	Jan. 11, 1870
103,734	Gilson, John, assignor to Gordon McKay, trustee, Stoneham, Mass. Machine for heeling boots and shoes	May 31, 1870
105,564	Gilson, Leonard, assignor to self and E. Stone Goodwin, Boston, Mass. Hand-truck	July 19, 1870
103,869	Gilson, Samuel D., Syracuse, N. Y. Rotary engine	June 7, 1870
108,701	Same.....Evaporating-apparatus	Oct. 25, 1870
100,740	Giraudat, Ambrose, New York, N. Y. Machine for stamping lace-paper	Mar. 15, 1870
102,110	Same.....Wire-covering machine	April 19, 1870
102,111	Gird, Edward D., Syracuse, N. Y. Screw-propulsion for tug-boats	April 19, 1870
109,816	Same.....Sewing-machine for making puffing	Dec. 6, 1870
107,358	Girdlestone, Henry J. and John W., assignors to the Earth-Closet Company, England. Earth-closet	Sept. 13, 1870
	Girdlestone, Henry John and Henry Moule. (*See* Moule & Girdlestone. (Two cases) (Reissue)	
108,585	Girdlestone, John Ward, England. Preventing the deviation of ships' compasses	Oct. 25, 1870
107,359	Gire, John, Sipton, Ill. Combined cultivator and grain-drill	Sept. 13, 1870
108,902	Giroud, Victor, assignor to John M. Dow, New York, N. Y. Apparatus for operating sewing-machines	Nov. 1, 1870
110,030	Giroux, Benjamin, Chicago, Ill. Mode of attaching boot and shoe heels	Dec. 13, 1870
108,903	Glad, George H., and John C. Becker, Boston, Mass. Wagon-axle	Nov. 1, 1870
100,614	Gladding, George S., Chester, Conn. Cord-holder for windows, &c	Mar. 8, 1870
109,888	Gladding, James W., Normal, Ill. Bee-hive	Dec. 6, 1870
	Glafche, Herman. (*See* Kluck, Martin M., assignor.)	
107,480	Glas, Anton Joseph, England. Apparatus for decorticating, separating, and drying grain, &c. (Patented in England, December 17, 1869)	Sept. 20, 1870
109,001	Glass, William, Brooklyn, N. Y. Laterally-sliding throttle-valve	Nov. 8, 1870
107,947	Glasser, Francis, Mystic Bridge, Conn. Clamp	Sept. 13, 1870
	Glazier, Theodore C. (*See* Plagge, Charles, assignor.)	
	Same.....(*See* Weld, Edwin, assignor.)	
105,182	Gleason, Joel, Whitestone, N. Y. Sad-iron handle	July 12, 1870
104,844	Gleason, Milford, Mass. Stove	June 28, 1870
101,119	Gleason, William B., Boston, Mass. Composition handle or pull	Mar. 22, 1870
101,995	Gleim, John H., Tipton Mo. Pump-spout	April 19, 1870
	Glen & Hall Manufacturing Company. (*See* Smeed, William, assignor.)	
	Glen & Wright. (*See* Utley, Grey, assignor.)	
101,996	Glendinning, D. W., Detroit, Mich. Turbine water-wheel	April 19, 1870
109,889	Glenn, Charles, Allegheny City, Pa. Spring bed-bottom	Dec. 6, 1870
	Glenn, Joshua B. (*See* Spencer, George H., assignor) (Two cases.)	
107,860	Glick, Francis, and Uriah Keck, Allentown, Pa. Grate	Oct. 4, 1870
103,735	Gliddon, Charles W., assignor to Gordon McKay, trustee, Lynn, Mass. Machine for heeling boots	May 31, 1870
101,008	Glimsdal, M. T., Rockford, Ill. Brick-mold	April 5, 1870
	Globe Sewing Machine Company. (*See* Meyers, Nicholas, assignor.)	
	Same.....same.....(Reissue.)	

Alphabetical list of patentees for the year 1870—Continued.

No.	Name, residence, and invention or discovery.	Date.
103,445	Glover, John Jefferson, Quincy, Mass. Picture-poise	May 24, 1870
	Glover, Otis R., and Milo A. Cushing. (*See* Cushing & Glover.)	
106,964	Glover, Thomas, assignor to Morris, Tasker & Co., Philadelphia, Pa. Molding-machine	Aug. 9, 1870
108,386	Glover, Winslow B., Boston, Mass. Piano	Oct. 25, 1870
98,583	Gluck, William, Baltimore, Md. Automatic coal-sifter	Jan. 4, 1870
109,300	Gnau, Joseph and William, Louisville, Ky. Clothes-drier	Nov. 15, 1870
	Goble, George, *et al.*, (*See* Brokenshire, John, assignor.) (Two cases.) (Reissue.)	
107,036	Gockley, Henry L., Jackson, Ill. Hay-loader	Sept. 6, 1870
	Goddard, E., and S. M. Perry. (*See* Perry & Goddard, assignors.)	
4,073	Goddard, Emerson, assignor to Thomas P. Milligan and Thomas Higgins, New York, N. Y. Manufacture of glue	July 12, 1870
	Goddard, Thomas. (*See* Clingen, Robert, assignor.)	
	Godfrey, Cornelius. (*See* Lighthall, Reuben, assignor) (Reissue.)	
109,508	Same.....New York, N. Y. Protecting iron against corrosion	Nov. 22, 1870
109,003	Godfrey, James P., Manchester, N. H. Roofing-composition	Nov. 8, 1870
101,256	Godfrey, Joseph S., assignor to self and Sears M. Loveridge, Leslie, Mich. Plow	Mar. 29, 1870
105,446	Same	same. July 19, 1870
98,687	Godfrey, S. T., Seaville, N. J. Potato-planter	Jan. 11, 1870
107,677	Godown, Charles W., Lambertville, N. J. Sewing-machine	Sept. 27, 1870
	Godshalk, Abraham. (*See* Eberly, John A., assignor.)	
101,257	Godwin, Joshua B., Williamston, N. C. Cotton-seed and corn planter	Mar. 29, 1870
104,720	Goff, Marcellus B., Delavan, Wis. Corn-plow	June 28, 1870
	Gold and Stock Telegraph Company. (*See* Laws, Samuel S., assignor.)	
	Same.....(*See* Calahan, Edward A., assignor) (Reissue.)	
	Same.....(*See* Baker, Henry N., assignor.)	
	Same.....(*See* Edison, Thomas A.) (Two cases.)	
	Gold, Stephen J., West Cornwall, Conn. Apparatus for heating buildings by steam (Extension)	Jan. 13, 1870
104,573	Golden, William, Flint, Mich. Beer-funnel	June 21, 1870
100,883	Goldman, Elisha H., Clayton, Ind. Automatic boiler-feeder	Mar. 15, 1870
103,446	Goldman, Elisha H., and David W. Hisey, Kansas, Ill. Door-bell	May 24, 1870
110,227	Goldsborough, John, Philadelphia, Pa. Stamp-canceler	Dec. 20, 1870
101,855	Goldsmith, Gustavus Adolphus, New York, N. Y. Paper collar	April 12, 1870
	Goldsmith, Nathan, and Solomon Rose. (*See* Rose & Goldsmith.)	
	Goldthorp, Samuel H., and George Lowen. (*See* Lowen & Goldthorp.)	
108,346	Goldthwait, Charles, South Weymouth, Mass. Match-safe	Oct. 18, 1870
108 345	Goll, Henry A., Chicago, Ill. Safety-valve	Oct. 18, 1870
108,347	Golladay, Jacob H., assignor to self and J. W. Whidden, New Lisbon, Ohio. Clover-hulling attachment to thrashing-machines	Oct. 18, 1870
99,558	Goller, John, Los Angeles, Cal. Vehicle-spring	Feb. 8, 1870
103,041	Same.....Thorough-brace spring	May 3, 1870
99,078	Gomes, Edwin, New York, N. Y. Cartridge	Jan. 25, 1870
99,079	Same.....same	Jan. 25, 1870
99,665	Same.....Exploding compressed powder	Feb. 8, 1870
99,666	Same.....Metallic cartridge	Feb. 8, 1870
100,884	Same.....Torpedo and cartridge	Mar. 15, 1870
102,350	Same.....Tamping-plug for blasting	April 26, 1870
100,981	Gommenginger, Bartholomew, Rochester, N. Y. Hot-air furnace	Mar. 1, 1870
99,080	Gooch, Charles, Cincinnati, Ohio. Cork-extractor	Jan. 25, 1870
99,907	Good, Adam, jr., Titusville, Pa. Pump-rod coupling	Feb. 15, 1870
103,447	Same.....Adjustable connection of sucker-rods to walking-beams	May 24, 1870
104,576	Same.....Sucker-rod joint	June 21, 1870
108,473	Good, John, Brooklyn, N. Y. Chain	Oct. 18, 1870
101,083	Goodaire, William, and George Stead, assignors to Ovander J. Benham, Cleveland, Ohio. Restoring waste alkali used in oil-refineries	Mar. 22, 1870
110,226	Goodale, John, Boston, Mass. Toy-gun. (Antedated Dec. 9, 1870)	Dec. 20, 1870
	Goodell, Anthony W., and Thomas W. Johnson, jr. (*See* Johnson & Goodell.)	
103,934	Goodell, D. H., Antrim, N. H. Fork for peach-parers	May 10, 1870
	Goodell, Joseph H., Logansport, Ind. Machine for cutting veneers from the log (Extension)	Dec. 16, 1870
109,610	Gooden, John, Lockport, N. Y. Polishing-machine. (Antedated Nov. 20, 1870)	Nov. 29, 1870
96,750	Goodenough, M. A., New York, N. Y. Feather duster	Jan. 11, 1870
96,951	Goodes, E. A., assignor to the Philadelphia Patent and Novelty Company, Philadelphia, Pa. Thrashing-machine	Jan. 18, 1870
104,577	Same.....Combined rule, level, clinometer, &c	June 21, 1870
106,668	Goodfellow, John H., Troy, N. Y. Cooking-stove	Aug. 23, 1870
100,138	Goodfellow, John H., assignor to self and R. S. Goodfellow, Troy, N. Y. Base-burning stove	Feb. 22, 1870
107,848	Same.....Bias-cutter	Sept. 13, 1870
102,807	Goodfellow, John H., and Martin Russell, jr., Troy, N. Y. Match-box	May 10, 1870
	Goodhue, David P., *et al.* (*See* Squires & Clinton, assignors.)	
108,253	Goodier, John, Philadelphia, Pa. Truss	Oct. 11, 1870
102,112	Goodman, Allen and Hardin, Williamsburgh, Mo. Sawing-machine	April 19, 1870
110,031	Goodman, Edward S., New Orleans, La. Hand-stamp	Dec. 13, 1870
106,038	Goodman, Henry A., assignor to self and Ernest Voor Jeinsen, Omaha, Nebr. Car-brake	Aug. 2, 1870
103,448	Goodman, Horatio N., Syracuse, N. Y. Organ	May 24, 1870
109,003	Same.....Reed-organ	Nov. 8, 1870
99,559	Goodman, O. P., Chillicothe, Ohio. Nose-ring for hogs	Feb. 8, 1870
110,563	Goodman, William, Boston, Mass. Car-wheel	Dec. 27, 1870

Alphabetical list of patentees for the year 1870—Continued.

No.	Name, residence, and invention or discovery.	Date.
101,258	Goodnow, George R., Detroit, Mich. Saw	Mar. 29, 1870
	Goodrich, A. E. (*See* Guthrie, Alfred, assignor.)	
	Goodrich, E. D. (*See* Williams, Turner, assignor.)	
	Goodrich, E. D., *et al.* (*See* Earl & Dearborn, assignors.)	
104,017	Goodrich, Harry C., Chicago, Ill. Embroidering attachment for sewing-machines	June 7, 1870
106,151	Same.....Tuck-creasing attachment for sewing-machines	Aug. 9, 1870
	Goodrich, James W., *et al.* (*See* Bemis, Foth, & Goodrich.)	
104,447	Goodrich, William R., Whitestown, N. Y. Latch for gates	June 21, 1870
4,310	Same.....Utica, N. Y. Coat and hat hook (Design)	Aug. 30, 1870
109,405	Goodrich, William W., Rondout, N. Y. Anchor-beam support for brick walls	Nov. 22, 1870
99,569	Goodsell, George D., and Noyes E. Babcock, Rockford, Ill. Corn-stalk cutting-knife	Feb. 8, 1870
103,601	Same.....Bread-cutter	May 31, 1870
	Same.....(*See* Babcock & Goodsell.)	
	Goodsell, Samuel R., and John Q. Adams. (*See* Adams & Goodsell.)	
108,348	Goodwillie, David, Chicago, Ill. Window and door screen	Oct. 18, 1870
	Goodwin, Benjamin S., *et al.* (*See* McGill, John, assignor.)	
99,561	Goodwin, Caleb, Chicago, Ill. Scientific playing-cards	Feb. 8, 1870
	Goodwin, Charles Rhodes. (*See* Ulmann, Gustave, assignor.)	
	Goodwin, E. Stone. (*See* Gilson, Leonard, assignor.)	
109,201	Goodwin, Lawson S., Toronto, Ind. Bee-hive	Nov. 15, 1870
98,468	Goodwin, Richard H., Boston, Gideon L. Gamage, Lynn, Mass., and Richard J. P. Goodwin, Manchester, N. H. Guard for carriage-steps	Jan. 4, 1870
	Goodwin, William C. (*See* Taylor, Edwin L., assignor.)	
4,368	Goodwin, William C., Hamden, Conn. Figure of a mechanical toy (Design)	Sept. 27, 1870
4,369	Same.....Mechanical-toy figure (Design)	Sept. 27, 1870
4,370	Same.....Figure of a mechanical toy (Design)	Sept. 27, 1870
101,004	Goodwin, William F., Metuchen, N. J. Propelling canal-boats	Mar. 22, 1870
101,005	Same.....Washing-machine	Mar. 22, 1870
101,120	Same.....Harvester	Mar. 22, 1870
101,856	Same.....Churn	April 12, 1870
98,760	Goodwin, William F., assignor to self, James T. and George W. Sanford. Metuchen, N. J. Propelling boats on canals	Jan. 11, 1870
100,282	Goodwyn, George W. W., New Orleans, La. Compressed-air cylinder	Mar. 1, 1870
100,523	Goodwyn, John W., Petersburgh, Va. Process of pulping and bleaching paper-stock. (Antedated Feb. 26, 1870.)	Mar. 8, 1870
	Goodyear, Leverett F. (*See* Elliott, William P., assignor.) (Two cases.)	
99,429	Goodyear, R. A., Binghamton, N. Y. Ventilator	Feb. 1, 1870
	Goodyear's India Rubber Glove Manufacturing Company. (*See* Hotchkiss, Burritt M., assignor.)	
	Same.....same.	
107,491	Gordon, Charles M., La Porte, Ind. Plow	Sept. 20, 1870
110,139	Gordon, James W. W., Newport, Ky. Treadle for sewing-machines	Dec. 13, 1870
99,771	Gordon, Lewis L., Detroit, Mich. Wagon-spring	Feb. 15, 1870
99,772	Gordon, Lewis L., assignor to Richard W. Hutchinson, Detroit, Mich. Mop-wringer and scrubbing-brush	Feb. 15, 1870
107,240	Gordon, Matthew W., assignor to self and James S. Gordon, Foster's Crossing, Ohio. Apparatus for moving buildings	Sept. 13, 1870
4,276	Gordon, Robert, Peoria, N. Y. Spool-stand (Design)	Aug. 9, 1870
	Gordon, Thomas, *et al.* (*See* Averell, Higgins & Gordon, assignors.)	
104,578	Gore, Henry A., Goshen, Ind. Machine for rounding and dressing irregular and regular forms	June 21, 1870
106,931	Same.....Machine for rounding fellies for wheels	Aug. 30, 1870
103,870	Gore, Myron, Batavia, Ill. Boiler	June 7, 1870
	Gorham Manufacturing Company. (*See* Wilkinson, George, assignor.) (Four cases) (Design.)	
102,535	Gorham, M. L., Rockford, Ill. Seeding-machine. (Antedated April 29, 1870.)	May 3, 1870
106,575	Gorham, William H. H., and Burett H. Williams, Greenwich, Ohio. Churn-dasher	Aug. 23, 1870
110,038	Gorman, John, Portland, Me. Tympan-sheet for printing-presses	Dec. 13, 1870
4,160	Gorman, William, New Britain, Conn. Sash-fastener (Design)	June 21, 1870
3,873	Gorman, William, assignor to Russell and Erwin Manufacturing Company, New Britain, Conn. Outside-door latch (Design)	Mar. 1, 1870
3,915	Same.....Drawer-pull (Design)	Mar. 22, 1870
3,916	Same.....Escutcheon for doors (Design)	Mar. 22, 1870
4,034	Same.....Face-plate for locks for sliding-doors (Design)	May 17, 1870
4,335	Same.....Cupboard-latch (Design)	Sept. 6, 1870
108,778	Same.....Sash-fastener	Nov. 1, 1870
4,474	Same.....Car-lock (Design)	Nov. 15, 1870
100,885	Gorton, Daniel J., assignor to self and W. E. Gorton, West Eau Claire, Wis. Pump	Mar. 15, 1870
105,327	Gorton, Robert B., Niantic, Conn. Stove-pipe shelf	July 12, 1870
106,910	Gosler, Orias W., Glastenbury, Conn. Tobacco-ridger	Aug. 30, 1870
107,772	Gotham, James M., assignor to self and Lewis Devlin, Blackstone, Mass. Picker-collar	Sept. 27, 1870
101,857	Gottstein, Peter R., Houghton, Mich. Candle for miners' use	April 12, 1870
105,089	Gouch, Lyman A., Yonkers, N. Y. Vapor-burner	July 26, 1870
107,482	Gould, Charles H., assignor to self and William Lumb, Boston, Mass. Shield for carriage-steps	Sept. 20, 1870

Alphabetical list of patentees for the year 1870—Continued.

No.	Name, residence, and invention or discovery.	Date.
	Gould, Charles S., and Joseph King. (*See* King & Gould, assignors.)	
107,173	Gould, Demon R., and Warren S. Wickham, assignors to selves and Nelson B. Mallory, Chestertown, N. Y. Spring-carriage	Sept. 6, 1870
98,088	Gould, E. J., Milwaukee, Wis. Globe-valve	Jan. 11, 1870
101,251	Gould, Franklin, assignor to self and William C. Gould, Paterson, N. J. Vapor-burner	April 26, 1870
109,406	Gould, Jacob H., assignor to self and John J. Campbell, Burlingham, Ohio. Vehicle-spring	Nov. 22, 1870
98,761	Gould, Joseph, Grinnell, Iowa. Bee-hive	Jan. 11, 1870
99,877	Gould, Roscoe J., Newark, N. J. Pump	Feb. 15, 1870
106,811	Gould, Warren H., Manchester, N. H. Milk-cooler	Aug. 30, 1870
100,615	Goulding, William F., Providence, R. I. Harvester-rake	Mar. 8, 1870
101,006	Goulliond, Alphonse, Spain. Loom for weaving irregular fabrics	Mar. 22, 1870
	Govan, Alexander, and Charles M. Atkins. (*See* Govan & Atkins.)	
109,004	Gove, Morrill C., Lowell, Mass. Steam-trap	Nov. 8, 1870
104,808	Gowen, James E., assignor to self and Charles H. Wetherell, Stoneham, Mass. Feeding-mechanism for sewing-machines	May 3, 1870
110,564	Gowen, John Emery, Boston, Mass. Apparatus for raising vessels	Dec. 27, 1870
	Graber, D., *et al.* (*See* Fessler & Jones, assignors.)	
102,259	Grace, Frederick J., Coytesville, N. J. System of telegraphing	April 26, 1870
99,041	Gracie, John, Pittsburgh, Pa. Still for hydrocarbon and other substances	Jan. 25, 1870
100,313	Graessle, Gottlieb, assignor to self and L. E. White, Hamilton, Ohio. Brick-mold	Nov. 15, 1870
104,800	Graf, George S., Pittsburgh, Pa. Bureau	May 10, 1870
105,193	Graffam, Isaiah W., New Bedford, Mass. Washing-machine	July 14, 1870
	Graffin, S. D., *et al.* (*See* Miller & Kersting.)	
	Graham, A. D. (*See* Kearney, William, assignor.)	
101,361	Graham, Ann L. H., Chester, Pa. Broiler	Mar. 29, 1870
100,383	Graham, Christopher, New York, N. Y. Breast-plate for the breast-collar of double-harness	Mar. 1, 1870
	Graham, E. G. (*See* Swift, George W., assignor.)	
	Graham, George H., and H. H. Taylor. (*See* Taylor & Graham.)	
	Graham, George H., and Alvin C. Beckwith. (*See* Beckwith & Graham.)	
	Graham, H. J., *et al.* (*See* Pattee & Nye, assignors.)	
	Graham, James Lorimer. (*See* Wurts, Henry, assignor) (Four cases.)	
102,113	Graham, John, New York, N. Y. Fly-net for horses	April 19, 1870
	Graham, John H. (*See* Roberts, George W., assignor.)	
100,354	Graham, John L., Bentley Station, Ill. Cultivator	Aug. 16, 1870
107,360	Graham, Simon P., Columbus, Ohio. Carriage	Sept. 13, 1870
101,798	Graham, Thomas, Shamburgh, Pa. Swivel for temper-screws	April 12, 1870
	Graham, William, and Edwin B. Roberts. (*See* Roberts & Graham.)	
	Graham, William W., and Thomas Ross. (*See* Ross & Graham.)	
	Grahamite Asphalt Company. (*See* De Smedt, E. G., assignor) (Two cases.)	
108,702	Grandjean, Pierre, France. Railroad-car heater	Oct. 25, 1870
100,284	Grandjon, Joseph, France. Violin	Mar. 1, 1870
103,871	Grandy, Cyrus E., assignor to S. Heald & Sons, Upton, Mass. Head-block for saw-mills	June 7, 1870
	Grannan, J. C. (*See* Davis, James N., assignor.)	
	Grant, Abraham P. (*See* Gillee & Wendell, assignors.)	
	Same (*See* King, George W., assignor.)	
107,610	Grant, John James, assignor to self and Luther C. Pratt, Greenfield, Mass. Machine for drilling and cutting screw-threads	Sept. 20, 1870
101,456	Grassau, Karl, Virginia City, Nev. Lasting-machine	April 5, 1870
103,173	Grassler, William F., Muncy, Pa. Railway-car coupling	May 17, 1870
108,254	Same Car-coupling	Oct. 11, 1870
106,479	Graupner, Franz, Evansville, Ind. Composition to be used in dyeing	Aug. 16, 1870
100,616	Gravatt, Charles T., Philadelphia, Pa. Door-retainer	Mar. 8, 1870
101,609	Graves, Almeron, Roscoe, Ill. Revolving-swing	April 5, 1870
107,301	Graves, George W., Chicago, Ill. Harness-pad	Sept. 13, 1870
110,454	Graves, Jacob and Henry, Boston, Mass. Incubator	Dec. 27, 1870
	Graves, James, and Abel D. Cook. (*See* Cook & Graves.)	
108,349	Graves, James T., Wilson, N. C. Cotton-seed and guano distributer	Oct. 18, 1870
108,255	Grawitz, Charles, Buffalo, N. Y. Rocking-chair	Oct. 11, 1870
	Gray, Gardner B., *et al.* (*See* Simpson, Gray & Romans.)	
103,602	Gray, George F., Brooklyn, N. Y. Apparatus for evaporating liquids	May 31, 1870
100,285	Gray, James H., Boston, Mass. Wick-tube for lamps. (Antedated Feb. 21, 1870)	Mar. 1, 1870
110,565	Gray, James Madison, Louisville, Ky. Hand corn husker and sheller	Dec. 27, 1870
	Gray, James M., and William C. Coombs. (*See* Coombs & Gray.)	
104,448	Gray, Jerome M., Hamilton, N. Y. Weather-strip for doors	June 21, 1870
100,333	Gray, John D., Philadelphia, Pa. Oil-can	Mar. 1, 1870
99,952	Gray, Matthew D., Terre Haute, Ind. Water-elevator	Jan. 18, 1870
107,678	Gray, Solomon S., Philadelphia, Pa. Machine for jointing staves	Sept. 27, 1870
106,355	Gray, William H., Ashfield, Mass. Hay-loader	Aug. 16, 1870
	Gray, William T., *et al.* (*See* Wright and Rowe, assignors.)	
4,396	Greasly, Edmund, Philadelphia, Pa. Knitted fabric (Design)	Oct. 4, 1870
109,611	Greeley, John P., assignor to self and Benjamin Greeley, Boston, Mass. Apparatus for aging whisky and other spirits. (Antedated November 17, 1870)	Nov. 29, 1870
3,947	Greeley, John P., Boston, and Levi W. Barton, Lynn, Mass., assignors of part interest to Thomas H. Dodge. Mowing-machine (Reissue)	May 3, 1870
108,133	Greeley, John P., assignor to self, Joseph B. Leonard, and Benjamin Greely, Boston, Mass. Sole-sewing machine	Oct. 11, 1870
108,256	Greely, Benjamin J., Boston, Mass. Buckle with button-hole attachment	Aug. 16, 1870

Alphabetical list of patentees for the year 1870—Continued.

No.	Name, residence, and invention or discovery.	Date.
100,826	Greely, B. J., assignor to Thomas O. Potter and Joseph W. Smith, Boston, Mass. Suspender	Mar. 15, 1870
	Greely, Samuel M., *et al.* (*See* Smith, Greely & Campaigne.)	
98,584	Greely, W. Q., St. Anthony, Minn. Cant-hook	Jan. 4, 1870
100,268	Green, Charles, Wilmington, Del. Construction of barrels and packages	Mar. 1, 1870
109,890	Green, Charles, assignor to Charles Parker, Rochester, N. Y. Breech-loading fire-arm	Dec. 6, 1870
	Green, David N., and John C. Bennett. (*See* Bennett & Green.)	
100,750	Green, Ebenezer G., East Gloucester, Mass. Steering-apparatus	Mar. 15, 1870
104,449	Green, George B., Philadelphia, Pa. Bolt for doors and shutters	June 21, 1870
96,864	Green, G. F., Kalamazoo, Mich. Universal geared-joint	Jan. 18, 1870
	Green, Henry, and Alexander F. Murray. (*See* Murray & Green.)	
109,509	Green, Henry H., Fort Wayne, Ind. Horse hay-rake	Nov. 22, 1870
98,489	Green, Hiram, Norwalk, Conn. Burglar-alarm	Jan. 4, 1870
101,250	Green, Jeremiah D., Troy, N. Y. Wheel for railway-cars	Mar. 29, 1870
105,194	Green, John, Boston, Mass. Boiler-tube cleaner	July 12, 1870
101,007	Green, Melvin R., assignor to self, Benjamin P. Clemenco, and Grinnell Burt, Warwick, N. Y. Sash-balance	Mar. 22, 1870
108,017	Green, Melvin R., Warwick, N. Y. Bolt for barn-doors, &c.	Oct. 4, 1870
98,680	Green, Oliver C., Dublin, Ind. Dropping-device for harvesters	Jan. 11, 1870
99,562	Green, Robert, Boonton, N. J. Railway-car coupling	Feb. 8, 1870
108,779	Green, Thomas G., England. Machine for molding earthenware	Nov. 1, 1870
99,563	Green, William, Ashland, Ohio. Mode of connecting pitmen to cutter-bars	Feb. 8, 1870
107,250	Green, William H., assignor to self and Frederick McH. Kitching, New York, N. Y. Marking pots	Sept. 13, 1870
	Green, William H., and Samuel S. Vollum. (*See* Vollum & Green.)	
99,678	Greene, B. D., Sturgis, Mich. Vapor-burner	Feb. 15, 1870
106,680	Same same	Aug. 23, 1870
	Greene, Benjamin F., *et al.* (*See* Clarner, John E., assignor.)	
	Greene, Calvin P., and Roderick F. Stocking. (*See* Stocking & Greene.) (Two cases.)	
4,161	Greene, Chauncey O., Troy, N. Y. Water-reservoir for cooking-stoves. (Reissue.)	Oct. 25, 1870
103,879	Greene, Darwin A., New York, N. Y. Check-valve	June 7, 1870
104,130	Same Lubricator	June 14, 1870
	Greene, F., *et al.* (*See* Strong, R. H., assignor.)	
	Greene, John N., *et al.* (*See* Russell, Erastus T., assignor.)	
101,121	Greene, Samuel C., Vicksburgh, Miss. Holder for metallic cartridge-cases	Mar. 22, 1870
4,013	Greene, Sylvester S., Henrietta, N. Y. Fire-tongs (Design)	May 10, 1870
99,879	Greenfield, Ernest, New York, N. Y. Manufacture of lozenges and confectionery	Feb. 15, 1870
99,880	Same Crackers or meat-biscuit	Feb. 15, 1870
99,667	Greenleaf, Clemments A., Indianapolis, Ind. Turn-table	Feb. 8, 1870
	Same (*See* Farr, Henry L., assignor.)	
105,065	Greenman, Arthur, Dorset, Ill. Whiffletree	July 5, 1870
	Greenwalt, W. H. (*See* Pennock, W. H., assignor.)	
104,579	Greenwell, William, Ripley, Ill. Water-wheel	June 21, 1870
	Greenwood, Calvin S. (*See* Watkins, Gardner A., assignor.)	
	Greenwood, M., & Co. (*See* Roux, Benoit, assignor.)	
	Same same (Design.)	
105,066	Greenwood, Nathan S., East Kendall, N. Y. Grain and seed sieve	July 5, 1870
	Greenwood, Peter, and Henry Bottomley. (*See* Bottomley & Greenwood.)	
107,773	Greenwood, Prentice W., Peterborough, N. H. Sash-holder	Sept. 27, 1870
	Greenwood Scythe Company. (*See* Stimson, Lovitt, assignor.)	
103,449	Greer, James, and Rufus J. King, Dayton, Ohio. Cooking-stove	May 24, 1870
101,962	Greeson, E. M., Americus, Ga. Cotton-thinning machine	April 12, 1870
106,576	Gregg, Allen, assignor to self and Perry Gregg, Springborough, Ohio. Washing-machine	Aug. 23, 1870
	Gregg, A. H. (*See* Clinton, Charles M., assignor.)	
108,018	Gregg, Benjamin, Bennington, Vt. Bed-bottom	Oct. 4, 1870
	Gregg, Erastus C., and Chauncey P. (*See* Clapp, Charles, assignor.)	
	Gregg, F. H. W. (*See* Farrington, Joel, assignor.)	
109,891	Gregg, Mahlon, Rochester, N. Y. Water-wheel	Dec. 6, 1870
105,328	Gregory, Charles A., Poughkeepsie, N. Y. Bottle-filling apparatus	July 12, 1870
102,677	Gregory, George W., New York, N. Y. Combination-tool	May 3, 1870
104,140	Same Shovel	June 14, 1870
103,736	Gregory, Seth, Galesburgh, Mich. Portable furnace	May 31, 1870
105,195	Gregory, Thomas Briggs, Champaign, Ill. Bridge	July 12, 1870
107,774	Same Bedstead-clamp	Sept. 27, 1870
100,524	Grems, Henry, Westmoreland, N. Y. Bee-hive	Mar. 8, 1870
101,858	Gresham, James, England. Giffard injector	April 12, 1870
101,997	Grove, Herman, Sparta, Wis. Gun-wiper	April 19, 1870
	Same. (*See* Smith, William, assignor.)	
103,323	Grey, John D., assignor to self and John Lippincott, Pittsburgh, Pa. Manufacture of sheet-iron. (Antedated May 7, 1870)	May 24, 1870
3,848	Gridley, F. C., Hudson, Wis. Weather-strip (Reissue)	Feb. 22, 1870
108,932	Gridley, Henry H., Auburn, N. Y. Head-block	Aug. 30, 1870
109,123	Griffin, Crawford S., and Josiah W. Wilkins, Stockton, Me. Dovetailing-machine	Nov. 8, 1870
98,762	Griffin, E. J., Hart's Falls, N. Y. Adjustable lettering-block	Jan. 11, 1870
99,310	Griffin, E. W., assignor to self and F. S. Brown, Pepperell, Mass. Thrashing-machine	Feb. 1, 1870
	Griffin, L. H., *et al.* (*See* Humes, James H., assignor.)	

Alphabetical list of patentees for the year 1870—Continued.

No.	Name, residence, and invention or discovery.	Date.
	Griffin, Thaddeus F., and William R. Call. (*See* Call & Griffin.)	
106,474	Griffin, Thaddeus F., and Robert Farr, jr., Gloucester, Mass. Copper paint for ships' bottoms	Oct. 18, 1870
109,898	Griffin, William H., Springfield, Mass. Window-frame	Dec. 6, 1870
	Griffing, Charles S. S., and Thomas Sharp. (*See* Sharp & Griffing.)	
	Griffith, Frederick W., *et al.* (*See* Stephenson, Thompson & Blake, assignors.)	
108,350	Griffith, Howard V., assignor to self, D. W. A. Belford, and J. M. Hileman, Altoona, Pa. Corpse-preserver	Oct. 18, 1870
98,490	Griffith, John, G. W. Wundram, and T. H. Muller, New York, N. Y. Sectional steam-generator	Jan. 4, 1870
108,703	Griffith, John, and George W. Wundram, New York, N. Y. Sectional steam-generator	Oct. 25, 1870
	Griffith, John, *et al.* (*See* Muller, T. H., assignor) (Reissue.)	Mar. 1, 1870
100,297	Griffith, Patrick, Brooklyn, N. Y. Parlor hot-house	
	Griffith, Samuel R. and Albert R., *et al.* (*See* Rider, Samuel, assignor.)	
	Griffith, Thomas. (*See* Wedge, Francis, assignor.)	
106,357	Griffith, Thomas K., Redstone, Pa. Apparatus for raking and binding grain. (Antedated Aug. 4, 1870)	Aug. 16, 1870
98,680	Grigg, Horace H., Philadelphia, Pa. Medical compound	Jan. 11, 1870
104,560	Griggs, George H., Worcester, Mass. Car-truck	June 21, 1870
103,196	Grigsby, Mary E., Putnamville, Ind. Fruit-straining apparatus	July 12, 1870
108,133	Grill, Louis A., New York, N. Y. Neck-tie	Oct. 11, 1870
105,798	Grillet, Alexander, Philadelphia, Pa. Bedstead-fastening	July 26, 1870
101,470	Grim, Abraham Keefer, and Austin D. Moore, San Francisco, Cal. Reflector for streets	April 5, 1870
	Grim, David, and Alonzo Hanmer. (*See* Hanmer & Grim, assignors.)	
101,122	Grimes, Charles T., Lancaster, Ky. Horse hay-fork	Mar. 22, 1870
	Grimes, Franklin P., and Bartholomew Wilson. (*See* Wilson & Grimes.)	
104,300	Grimes, Franklin T., Liberty, Mo. Inkstand	June 14, 1870
109,613	Same ..... Attachment for sewing-machines	Nov. 29, 1870
99,430	Grimm, Richard, New York, N. Y. Spring-motor	Feb. 1, 1870
110,354	Grimshaw, William D., Newark, N. J. Machine for cutting sheet-metal to an oval form	Dec. 20, 1870
100,751	Grindrod, John, Albany, N. Y. Coping for walls	Mar. 15, 1870
103,737	Grinter, Thomas W., Russellville, Ky. Fountain-pen	May 31, 1870
4,204	Griscom, Chalkley, Lewis, and John P., Mahonoy Plane, Pa. Pump (Reissue)	Dec. 20, 1870
4,475	Griscom, William M., assignor to Harbster Brothers & Co., Reading, Pa. Sad-iron (Design)	Nov. 15, 1870
106,812	Griswold, John A., assignor to self and Phineas E. Merrihew, Chicago, Ill. Fire-escape	Aug. 30, 1870
	Griswold, M., and Samuel Selden. (*See* Selden & Griswold.)	
106,152	Griswold, Merritt W., New York, N. Y. Car-brake	Aug. 9, 1870
105,565	Griswold, Pardon H., Grand Rapids, Mich. Barrel	July 19, 1870
107,900	Groat, John W., New York, N. Y. Water-meter	Oct. 4, 1870
100,289	Groesbeck, John, Philadelphia, Pa. Adding-machine	Mar. 1, 1870
102,935	Groesbeck, William H., Saratoga Springs, N. Y. Hold-back for vehicles	May 10, 1870
106,053	Grogan, Henry, Flatbush, N. Y. Lubricating compound	Aug. 9, 1870
100,026	Grogan, John W., assignor to self and James Duffy, Brooklyn, N. Y. Door-knob	Feb. 22, 1870
98,585	Grose, John T., assignor to self and William E. Kinnear, Upper Sandusky, Ohio. Washing-apparatus	Jan. 4, 1870
4,141	Same ..... same (Reissue)	Oct. 4, 1870
101,362	Gross, Henry, Tiffin, Ohio. Permutation-lock	Mar. 29, 1870
103,450	Same ..... same	May 24, 1870
108,134	Gross, Henry, Cincinnati, Ohio. Permutation-lock	Oct. 11, 1870
107,174	Gross, Henry, and Joseph L. Hall, Cincinnati, Ohio. Permutation-lock	Sept. 6, 1870
102,253	Grosse, Guy E., Massillon, Ohio. Caster	April 26, 1870
104,581	Grosslus, John, Cincinnati, Ohio. Heating-stove	June 21, 1870
108,351	Grosskopp, Henry H. H., Philadelphia, Pa. Hand-stamp	Oct. 18, 1870
	Grossmann, John, and Paul Boufila. (*See* Boufila & Grossmann.)	
	Grosvenor, Jonathan P., Lowell, Mass. Method of clamping cutters in cutter-heads for planing-machines (Extension)	Nov. 25, 1870
99,668	Grout, Selim Elijah, West Concord, Vt. Towel-drier	Feb. 8, 1870
105,670	Groux, Louis, New York, N. Y. Manufacture of soap	July 26, 1870
4,477	Grove, William Henry, Philadelphia, Pa. Show-case	Nov. 15, 1870
103,873	Grover, Manasseh, Clyde, Ohio. Pruning-knife	June 7, 1870
	Grover, Oliver F., Middletown, Conn. Printers' composing-stick (Extension)	July 6, 1870
	Same ..... (*See* Young, Robert Clark, assignor.)	
	Grover, T. E., *et al.* (*See* Howard, James Spooner, assignor.)	
	Same ..... (*See* Perkins, Howard, assignor.)	
	Same ..... (*See* Howard, James S., assignor.)	
100,130	Grover, William O., Boston, Mass. Sewing-machine	Feb. 22, 1870
	Groves, Harrison, *et al.* (*See* Thomas, John, assignor.)	
108,256	Grow, Henry, assignor to self and William Grow Smith, Philadelphia, Pa. Shutter-fastener	Oct. 11, 1870
99,364	Grube, Amos, West Hempfield Township, Pa. Ventilating milldome	Feb. 8, 1870
108,690	Grube, Tobias K., Napoleon, Ohio. Construction of ditches	Aug. 23, 1870
100,087	Gruber, John P., New York, N. Y. Apparatus for cooling and purifying beer, water, and other liquids	Feb. 22, 1870
104,391	Same ..... Pneumatic liquid-elevator	June 14, 1870
	Gruenhagen, John H., and Charles Gernes. (*See* Gernes & Gruenhagen.)	

Alphabetical list of patentees for the year 1870—Continued.

No.	Name, residence, and invention or discovery.	Date.
104,018	Gruger, John F., assignor to self and Frederick Rotrigo, Philadelphia, Pa. Envelope-opener	June 7, 1870
109,732	Grundmann, Theodore, Cleveland, Ohio. Apparatus for coloring beer and other liquids. (Antedated March 5, 1870)	Mar. 15, 1870
110,229	Grundmann, Theodore, Cincinnati, Ohio. Apparatus for the manufacture of vinegar	Dec. 20, 1870
102,254	Grüneberg, John D., Camden, N. J. Coating metal	April 26, 1870
103,042	Gschwind, Charles William, Port Republic, N. J. Door-guard	May 17, 1870
108,780	Gudge, Benjamin B., Chicago, Ill. Milk-wagon	Nov. 1, 1870
104,562	Gue, Albert F., East Manville, Mich. Machine for cutting levels on the tenons of spokes	June 21, 1870
109,617	Same ..... Wagon-tongue support	Dec. 6, 1870
3,884	Guenther, George, assignor to self and E. H. Neymann, Chicago, Ill. Manufacture of glue (Reissue)	Mar. 22, 1870
102,257	Guernsey, William B., Jersey City, N. J. Electro-magnetic burglar-alarm	Oct. 11, 1870
106,613	Guess, Charles M., New Orleans, La. Treadle-motion	Aug. 30, 1870
108,352	Guest, Augusta, Brooklyn, N. Y. Fire-alarm thermometer	Oct. 18, 1870
109,893	Guice, Thomas, Mt. Andrew, Ala. Cotton-plow	Dec. 6, 1870
106,054	Guichard, Pierre Jacques Gerbault, France. Lime-kiln	Aug. 9, 1870
101,560	Guider, John William, St. Joseph, Mo. Carriage-wheel	April 12, 1870
4,106	Guidet, Charles, New York, N. Y. Street-pavement (Reissue)	Aug. 23, 1870
108,353	Guild, Augustus, and William H. Pierce, Middletown, Conn. Self-releasing davit-ring	Oct. 18, 1870
	Guild, Chester, jr. (*See* Williams, Theron R., assignor.)	
3,797	Guild, William H., Brooklyn, N. Y. Purging and graining sugar (Reissue)	Jan. 18, 1870
3,928	Guild, William H., Williamsburgh, N. Y. Pneumatic pump (Reissue)	Feb. 8, 1870
	Guild, William H., and William F. Garrison. (*See* Hubbard & Conant, assignors.)	
	Guilderalieve, Henry C., and James B. Cleveland. (*See* Cleveland & Guilderalieve.)	
103,451	Guilford, Ralph, assignor to Cheshire Manufacturing Company, West Cheshire, Conn. Button	May 24, 1870
	Guimaraes, J. G. O. (*See* De La Peña, Manoel, assignor.)	
103,603	Gulden, Jacob, Keyport, N. J. Soldering-apparatus	May 31, 1870
	Gulden, Jacob, and Charles G. Dudley. (*See* Dudley & Gulden.)	
99,311	Gummer, Albert, Omro, Wis. Stump-extractor. (Antedated Jan. 29, 1870)	Feb. 1, 1870
106,358	Gumpel, Charles Godfrey, England. Steering-apparatus	Aug. 16, 1870
102,536	Gundaker, Henry, Lancaster, Pa. Embroidery-holder	May 3, 1870
	Gunn, Daniel A., and Elisha Whitcomb. (*See* Whitcomb & Gunn.)	
	Gunn, Levi J., and Charles H Amidon. (*See* Moore, A. C., assignor) (Reissue.)	
105,671	Gunn, Timothy, Hamilton County, Ind. Boot-jack and spur	July 26, 1870
101,998	Gunshennan, Michael, New York, N. Y. Farm-gate	April 19, 1870
99,773	Gunther, Carl, assignor to Frederick Volkman, Prussia. Process and material for ornamenting textile fabrics	Feb. 15, 1870
100,407	Gurney, Francis, Newburyport, Mass. Shoe	Nov. 22, 1870
	Gury, Louis C. (*See* Fay, Edward, assignor.)	
104,302	Guseman, William D., James A. Davis, and H. D. McGeorge, Morgantown, W. Va. Seed-sower	June 14, 1870
102,199	Gustin, Benjamin F., Middletown, Ind. Pump	April 19, 1870
105,067	Gustin, Isaac H., Middletown, Ind. Gate	July 5, 1870
98,953	Gutekunst, Louis, Philadelphia, Pa. Breakwater	Jan. 18, 1870
99,881	Guthrie, Alfred, assignor to self and A. E. Goodrich, Chicago, Ill. Apparatus for refrigerating	Feb. 15, 1870
106,480	Guthrie, James T., and Louis Pausch, Leesburgh, Ohio. Railway-switch	Aug. 16, 1870
103,874	Gutierrez, Joseph Justinius, Jefferson Parish, La. Street-railway car	June 7, 1870
	Gutta Percha and Rubber Manufacturing Company *et al.* (*See* Perry & Manheim, assignors) (Reissue.)	
99,431	Guttridge, D. C., assignor to self and R. A. Dunn, Pittsburgh, Pa. Leather-sammier	Feb. 1, 1870
103,604	Gutzkow, Frederic, San Francisco, Cal. Method of distilling in vacuo	May 31, 1870
100,028	Guy, C. B., Postville, Iowa. Fire setting and cooling apparatus	Feb. 22, 1870
	Guyon, Jacob N., and Henry L. Sprague. (*See* Sprague & Guyon.)	
101,850	Guyot, A. Etienne, Switzerland. Winding watches	April 12, 1870
101,610	Gwathmey, Richard E., assignor to self and Charles W. Matthews, Philadelphia, Pa. Cotton-gin	April 5, 1870
100,394	Gwyn, Edward, Tiffin, Ohio. Clamped mold for making lead-joints in pipe-connections	Mar. 1, 1870
101,861	Gwynn, Stuart, assignor to American Metaline Company, New York, N. Y. Composition of matter called metaline, for journals, bearings, &c. (Antedated March 30, 1870)	April 12, 1870
101,862	Same ..... same	April 12, 1870
101,863	Same ..... same	April 12, 1870
101,864	Same ..... same	April 12, 1870
101,865	Same ..... same	April 12, 1870
101,866	Same ..... same	April 12, 1870
101,867	Same ..... same	April 12, 1870
101,868	Same ..... same	April 12, 1870
101,869	Same ..... Process of forming compositions of matter called metaline, for journal-bearings, steps, and other articles liable to friction. (Antedated March 30, 1870)	April 12, 1870
102,810	Haack, Henry F., New York, N. Y. Padlock	May 10, 1870
104,563	Haas, Christian, Chicago, Ill. Buggy-seat	June 21, 1870

Alphabetical list of patentees for the year 1870—Continued.

No.	Name, residence, and invention or discovery.	Date.
102,678	Haass, Daniel F., assignor to self and Emilius Nicholas Scherr, jr., Philadelphia, Pa. Spring-seat	May 3, 1870
107,679	Haberland, Gottfried, Bloomington, Ill. Ear-ring	Sept. 27, 1870
98,763	Habermehl, John, Allegheny, Pa. Washing-machine	Jan. 11, 1870
102,255	Same. same	April 26, 1870
98,954	Hackett, George H., assignor to self and Wallace W. Swan, North Tunbridge, Vt. Drag-rake	Jan. 18, 1870
105,672	Hackett, Joseph, Louisville, Ky. Coal-stove	July 26, 1870
107,483	Same. Fire-place grate	Sept. 20, 1870
102,537	Hackley, William, assignor to self and Charles T. Almy, Moosup, Conn. Self-acting mule for spinning	May 3, 1870
103,173	Hackney, John M., Danville, Ky. Filter	May 17, 1870
4,020	Hadfield, John G., Philadelphia, Pa. Medical vacuum-apparatus (Reissue)	July 26, 1870
	Hadley, Amos, *et al.* (*See* Perham, Aurestus S., assignor.)	
100,305	Hadley, Charles F., assignor to Amos Manufacturing Company, Chicopee, Mass. Device for reversing motion	Mar. 1, 1870
	Hadley, George W., and T. C. Page. (*See* Page & Hadley.)	
106,153	Hadley, Nicholas B., Providence, R. I. Scroll-saw	Aug. 9, 1870
	Hadley, T. G., *et al.* (*See* Geer, George, assignor) (Reissue.)	
105,068	Haedrich, Henry G. and Edward M., Philadelphia, Pa. Combined boot and shoe for horses	July 5, 1870
105,506	Same. Combined horseshoe and boot	July 19, 1870
102,256	Haefely, Edward, Lowell, Mass. Yarn-washing machine	April 26, 1870
110,355	Hafenegger, Joseph, San Francisco, Cal. Explosive compound	Dec. 20, 1870
	Hafkemeyer, Frederick W., and Robert Terry. (*See* Terry & Hafkemeyer.)	
109,202	Hagan, Edward, New York, N. Y. Chair and lounge	Nov. 15, 1870
101,611	Hagan, John C., Nashville, Tenn. Railway-rail	April 5, 1870
104,019	Same. Water-supplying apparatus	June 7, 1870
108,904	Same. Pressure-regulator for water and steam apparatus	Nov. 1, 1870
108,905	Same. Steam and water supply and pressure-regulator	Nov. 1, 1870
4,167	Hagan, John C., assignor of one-half interest to James, Isaiah D., and Ivan N. Walker, Nashville, Tenn. Water-supplying apparatus (Reissue)	Oct. 25, 1870
	Hagar & Co. (*See* Cash, Thomas M., assignor) (Design.)	
	Hagerstown Agricultural Implement Manufacturing Company. (*See* Cook, John H., assignor.)	
99,892	Hagerty, John T., Camp Point, Ill. Railway-car axle-box	Feb. 15, 1870
103,324	Hagstroem, Charles John, Chicago, Ill. Steam-boiler furnace	May 24, 1870
101,123	Hahn, David, Reserve, Ind. Chimney-cowl	Mar. 22, 1870
109,314	Hahn, John William, San Francisco, Cal. Apparatus for the manufacture of sugar	Nov. 15, 1870
105,197	Hahn, Theodor, New York, N. Y. Combined latch and lock. (Antedated June 30, 1870)	July 12, 1870
	Same. (*See* Hoppe, F., assignor.)	
104,020	Haile, Robert, assignor to Charles Diebold and Jacob Kienzle, Cincinnati, Ohio. Spindle for safe-locks	June 7, 1870
105,790	Hailer, Lewis, assignor to William C. Dodge, Washington, D. C. Gun-lock	July 26, 1870
104,021	Hailes, William, Albany, N. Y. Cooking-stove	June 7, 1870
4,433	Same. same (Design)	Oct. 25, 1870
4,434	Same. Parlor-stove (Design)	Oct. 25, 1870
110,230	Same. Cooking-stove	Dec. 20, 1870
	Haines, Elijah M. (*See* Shatswell, George, assignor.)	
106,055	Haines, Henry, Cedarville, Ill. Combined seeder and cultivator	Aug. 2, 1870
107,611	Haines, James W., Genoa, Nev. Chute for delivering timber	Sept. 20, 1870
100,306	Haines, Joel, West Middlebury, Ohio. Fruit-jar	Mar. 1, 1870
101,908	Haines, Joseph C., West Philadelphia, Pa. Clothes-drier	April 19, 1870
106,691	Haines, Lewis A., Wakefield, Md. Time-lock	Aug. 23, 1870
99,863	Haines, W. H., assignor of one-half interest to Thomas Albert Sandford, Newark, N. J. Egg-beater, &c	Feb. 15, 1870
	Haines, William H., *et al.* (*See* Newsham, Haines & Henson.)	
107,251	Hainque, Martial, assignor to self and Alexander Steiger, San Francisco, Cal. Permutation-lock	Sept. 13, 1870
109,804	Hainsworth, William, Allegheny City, Pa. Mold and core for metallic castings	Dec. 6, 1870
	Hair, Theodore, *et al.* (*See* Durham, Wood & Hair.)	
109,618	Hair, Theodore, and James Wood, Norristown, Pa. Shutter-fastener	Dec. 6, 1870
	Haldeman, John. (*See* Kneass, Strickland, assignor.)	
98,491	Hale, Bernice S. and James B., Lowell, Mass. Machine for making rope	Jan. 4, 1870
102,538	Hale, D. Frank, Chicopee, Mass. Reversible butt-hinge	May 3, 1870
108,587	Same. Game	Oct. 25, 1870
	Hale, D. Frank, *et al.* (*See* Crossman, Charles P., assignor) (Design.)	
108,588	Hale, Heman B., Rockford, Ill. Fastening artificial tooth to metallic plates. (Antedated Oct. 21, 1870)	Oct. 25, 1870
108,019	Hale, Luke, Hollis, N. H. Washing-machine	Oct. 4, 1870
109,194	Hale, Nathan M., Cleborne, Texas. Cotton-scraper and chopper	Nov. 8, 1870
	Hale, Perly, jr. (*See* Morrell, Albert W., assignor.)	
99,432	Hale, W. E., Chicago, Ill. Sheathing-boards for buildings. (Antedated Aug. 1, 1869)	Feb. 1, 1870
98,955	Hale, William P., assignor to self and H. Miller, Ionia, Mich. Machine for finishing spokes	Jan. 18, 1870
107,388	Haley, Chauncey O., Westfield, Mass. Spittoon-holder	Sept. 13, 1870
	Haley, John J., and James B. Forsyth. (*See* Forsyth & Haley.)	
	Haley, William H., *et al.* (*See* Cranston, Banks & Ingersoll, assignors.)	

Alphabetical list of patentees for the year 1870—Continued.

No.	Name, residence, and invention or discovery.	Date.
109,510	Hall, Alexander W., assignor to self and Edwin R. Warrer, New York, N. Y. Apparatus for the manufacture of illuminating-gas	Nov. 22, 1870
98,764	Hall, Alfred, Perth Amboy N. J. Clay-crusher	Jan. 11, 1870
101,457	Hall, Annie J., San Francisco, Cal. Pencil-holder	April 5, 1870
4,348	Hall, Charles D., assignor to the Bristol Brass and Clock Company, Bristol, Conn. Handle of spoons, forks, &c (Design)	Sept. 13, 1870
100,617	Hall, C. F., Brooklyn, N. Y. Machine for refitting conical valves	Mar. 8, 1870
	Hall, Daniel, and William Harris. (*See* Harris & Hall.)	
100,753	Hall, Edgar R., and William H. Town; said Hall assignor to said Town, Syracuse, N. Y. Device for operating churns	Mar. 15, 1870
109,114	Hall, Edward, Beloit, Wis., and Francis D. Sill, Rockton, Ill. Stove-pipe shelf, heater, and damper	April 19, 1870
103,043	Hall, Elias P., assignor to self and Ozro W. Clapp, Chicago, Ill. Padlock	May 17, 1870
104,1 2	Hall, Francis L., Oneida, N. Y. Adjustable shed	June 14, 1870
104,951	Hall, Gardiner, jr., South Willington, Conn. Machine for printing labels on spools	July 5, 1870
102,257	Hall, Gardiner, jr., and George W. Averell, South Willington, Conn. Machine for printing on spools	April 26, 1870
98,765	Hall, George H., and Lorenzo D. Farra, Germantown, Pa. Sash and door clamp. (Antedated Jan. 7, 1870)	Jan. 11, 1870
109,613	Hall, Henry L., Woodbridge, Iowa. Combined seed-sower and cultivator	Nov. 29, 1870
106,481	Hall, Henry M., New York, N. Y. Ruffling attachment for sewing-machines	Aug. 16, 1870
104,141	Hall, Herman L., Buffalo, N. Y. Portable self-elevator	June 14, 1870
108,258	Hall, James, Cincinnati, Ohio. Bake-oven	Oct. 11, 1870
104,450	Hall, James C., Battle Creek, Mich. Rain-water conductor and filter	June 21, 1870
109,005	Hall, James T., assignor to self and Isaac Pierce, Alma, Mich. Lath-machine	Nov. 8, 1870
102,812	Hall, John, jr., Temperanceville, Pa. Potato-digger	May 10, 1870
102,813	Same. Agitator-wheel for potato-diggers	May 10, 1870
102,814	Same. Potato-digger	May 10, 1870
102,811	Hall, John, jr., and Owen Flanigan, Temperanceville, Pa. Potato-digger. (Antedated Dec. 20, 1869)	May 10, 1870
98,956	Hall, J. A., Raleigh, Ind. Combined seeder and cultivator	Jan. 18, 1870
101,727	Hall, John A., Canada. Washing-machine	April 12, 1870
105,069	Hall, John C., and Allan C. Richards, Philadelphia, Pa. Folding-bedstead	July 5, 1870
99,183	Hall, John D., assignor to James A. Largay, Philadelphia, Pa. Machine for grinding pearl-button blanks	Jan. 25, 1870
107,901	Hall, John S., Pittsburgh, Pa. Machine for making clevises	Oct. 4, 1870
	Hall, John S. and Abel W., *et al.* (*See* Eiberweiser, John, assignor) (Reissue)	
105,673	Hall, Joseph D., assignor to William Kingsworth, Canton, Ohio. Plow	July 26, 1870
105,800	Hall, Joseph L., Cincinnati, Ohio. Lock-spindle	July 26, 1870
4,018	Hall, Joseph L., assignor to Hall's Safe and Lock Company, Cincinnati, Ohio. Lock (Reissue)	June 7, 1870
	Hall, Joseph L., and Henry Gross. (*See* Gross & Hall.)	
	Hall, Joshua E., and L. Austin. (*See* Austin & Hall.)	
	Hall, Joshua E., *et al.* (*See* Rigg, Hall & Fenton.)	
107,030	Hall, Lewis, Metamora, Ill. Harvester	Sept. 6, 1870
105,389	Hall, Luther, assignor to Alfred B. Ely, Boston, Mass. Machine for sewing books	July 12, 1870
99,884	Hall, Morgan P., Gayville, Ill. Pump	Feb. 15, 1870
106,577	Hall, Moses P., Hinsdale, N. Y. Traction-engine	Aug. 23, 1870
105,070	Hall, Samuel Z., assignor to self, Starkes W. Lewis, and Elias B. Brown, Ossining, N. Y. Cotton-gin	July 5, 1870
101,363	Hall, Thomas, Brooklyn, N. Y. Cover for sewing-machines	Mar. 29, 1870
104,845	Hall, Thomas F., Omaha, Neb. Traction-engine	June 28, 1870
104,143	Hall, Thomas Q., Indianapolis, Ind. Bedstead	June 14, 1870
103,174	Hall, Thomas S., Stamford, Conn. Electro-circuit instrument for railway-signals	May 17, 1870
3,859	Hall, Thomas S., assignor to Hall's Patent Electric Railway Switch and Drawbridge Signal Company, New Haven, Conn. Electro-magnetic alarm for railroad-switches (Reissue)	Mar. 1, 1870
103,875	Same. Electro-magnetic signal-apparatus for railroads	June 7, 1870
105,447	Hall, Thomas S., assignor to Hall's Patent Electric Railway Switch and Drawbridge Signal Company, Stamford, Conn. Electro-magnetic alarm	July 19, 1870
110,566	Hall, William, Quincy, Ill. Cooking-range	Dec. 27, 1870
100,618	Hall, William H., assignor to self and Joseph W. Haskins, Boston, Mass. Elastic protector for horses' feet	Mar. 8, 1870
107,040	Hall, William M., jr., Bloomington, Ill. Grain-dump	Sept. 6, 1870
105,801	Hall, William N., Springfield, Tex. Carriage-axle	July 26, 1870
107,775	Same. Permutation-lock	Sept. 27, 1870
101,870	Hall, William Samuel, assignor to Henry W. Adams, New York, N. Y. Kiln for burning bricks, &c	April 12, 1870
	Hall, William Smith. (*See* Crane & Polsey, assignors.)	
104,448	Halladay, Daniel, Batavia, Ill. Grinding-mill	July 19, 1870
4,064	Halladay, Daniel, assignor to the United States Wind Engine and Pump Company, Batavia, Ill. Windmill (Reissue)	July 5, 1870
99,660	Hallam, A. C., and James W. McKee, New York, N. Y. Spring-power	Feb. 8, 1870
101,612	Halliberg, Frederick Pontus, Sweden. Steam-heater	April 5, 1870
	Halle, William, and Frank Z. Overmeyer. (*See* Overmeyer & Halle.)	
99,566	Haller, William L., Philadelphia, Pa. Fruit-jar	Jan. 4, 1870
99,885	Halliday, John, Lynn, Mass. Coloring matter to be used in vulcanizing rubber	Feb. 15, 1870
100,140	Hallidie, A. S., San Francisco, Cal. Grip-pulley	Feb. 22, 1870
101,613	Hallock, Valentine H., assignor to self, Curtis Stanton, and James R. Dixon, Queens, N. Y. Ice-cutting machine	April 5, 1870

Alphabetical list of patentees for the year 1870—Continued.

No.	Name, residence, and invention or discovery.	Date.
3,870	Hallowell, Albert, assignor, through mesne assignments, to Gustavus D. and Calvin Dows and George S. Cushing, Lowell, Mass. Tumbler-washer.....(Reissue)..	Mar. 8, 1870
109,754	Hallowell, Albert, assignor to self, Abel T. Atherton, and Horace T. Durgin, Lowell, Mass. Method of strengthening bobbins or spools.....	Mar. 15, 1870
110,231	Hallowell, Albert, assignor to Gustavus D. and Calvin Dows and George S. Cushing, Lowell, Mass. Tumbler-washer.....	Dec. 20, 1870
	Hall's Safe and Lock Company. (*See* Kistler, Willoughby F., assignor.)	
3,973	Halsey, William H., assignor to Halsey's Patent Box and Case Company, New York, N. Y. Molding watch-cases, lockets, and other articles from hard rubber, &c.....(Div. 1, reissue)..	May 17, 1870
3,974	Same.....New articles of manufacture from hard rubber..(Div. 2, reissue)..	May 17, 1870
103,458	Halstead, John E. and Colope C., Bloomvale, N. Y. Combined seeder and harrow..	May 24, 1870
4,183	Halsted, Griffin B., Brooklyn, N. Y. Stove-pipe damper.....(Reissue)..	Nov. 22, 1870
107,258	Ham, George W., Parsonfield, Me. Carriage.....	Sept. 13, 1870
103,695	Ham, John C., New York, N. Y. Pony carriage-phaeton.....	May 31, 1870
105,674	Ham, John D., assignor to Eli McCroan and W. A. Wilkins, Bethany, Ga. Wagon-hub.....	July 26, 1870
3,975	Ham, L. M., Boston, Mass., and John H. Dodge, Chelsea, Mass. Wagon..(Reissue)..	May 17, 1870
106,154	Ham, Robert, assignor to Cox, Church & Co., Troy, N. Y. Stove-grate.....	Aug. 9, 1870
99,312	Hamblin, Floyd, Madrid Springs, N. Y. Churn.....	Feb. 1, 1870
101,269	Hamblin, Sylvanus, Taunton, Mass. Bait-mill for fishermen.....	Mar. 29, 1870
104,144	Hamel, Gustavus, De Soto, Mo. Washing-machine.....	June 14, 1870
103,175	Hamel, Richard B., and James B. Holden, assignors to selves, Arthur M. Smith, and Henry H. Newkirk, Jersey City, N. J. Mechanical movement.....	May 17, 1870
108,704	Hamer, Thomas J., and Martin Wells, Sunbury, Pa. Balance slide-valve.....	Oct. 25, 1870
	Hamilton, Henry G. (*See* Sintzenich, Edwin B., assignor.)	
103,876	Hamilton, Henry J., Brooklyn, N. Y. Compound troches of buchu.....	June 7, 1870
105,339	Hamilton, James C. M., Shaver's Creek, Pa. Sash-balance.....	July 12, 1870
101,728	Hamilton, James H., Sioux City, Iowa. Photographic-printing apparatus.....	April 12, 1870
107,424	Hamilton, James H., Stevenson, Ala. Cultivator.....	Sept. 20, 1870
	Hamilton, James Shockey, and L. F. C. Moore. (*See* Moore & Hamilton.)	
100,060	Hamilton, John, and Robert Patterson, Scotland. Cask for containing fermentable beverages.....	Feb. 22, 1870
3,948	Hamilton, John, George W. and Joseph, and L. E. Hanson; said Hanson assignor to Joseph Hamilton, Wheeling, W. Va. Ore-crusher.....(Reissue)..	May 3, 1870
108,475	Hamilton, Jonas, and George F. Morse, Portland, Me. Changeable-gauge car-wheel.....	Oct. 18, 1870
109,315	Hamilton, Jonathan R., Kingston, Minn. Corn-sheller.....	Nov. 15, 1870
108,781	Hamilton, Lavinus B., Boston, Mass. Tesselated floor.....	Nov. 1, 1870
103,258	Hamilton, Lavinus Bush, assignor to Edwin A. Eaton, Boston, Mass. Gas-heater.	April 26, 1870
103,453	Hamilton, Nathan T., Cedar Falls, Iowa. Soda-fountain.....	May 24, 1870
98,937	Hamilton, Robert, Franklin, Ind. Road-scraper.....	Jan. 18, 1870
105,567	Same.....same.....	July 19, 1870
99,896	Hamilton, Silas M., Baltimore, Md. Brick-kiln.....	Feb. 15, 1870
99,897	Same.....same.....	Feb. 15, 1870
101,124	Same.....same.....	Mar. 29, 1870
100,307	Hamilton, Thomas Foster, Genesee, Ill. Combined spider, skillet, and gridiron.	Mar. 1, 1870
104,730	Hamilton, William, Allegheny City, Pa. Coffin-fastening.....	June 28, 1870
104,731	Same.....Elevator.....	June 28, 1870
107,253	Same.....Lid-fastening for burial-caskets.....	Sept. 13, 1870
	Hamilton, William, *et al.* (*See* Geer, George, assignor).....(Reissue.)	
99,313	Hamilton, W. G., Milton, Wis. Water-elevator.....	Feb. 1, 1870
103,738	Hamilton, William M., Jacksonville, Ill. Pump.....	May 31, 1870
101,871	Hamilton, William R., Oakland, Pa. Tube-well.....	April 12, 1870
107,363	Hamlin, Albert, assignor to Mays & Bliss, Brooklyn, N. Y. Trip-motion for presses, &c. (Antedated Sept. 5, 1870).....	Sept. 13, 1870
110,455	Hamlin, Albert D., assignor to Mays & Bliss, Brooklyn, N. Y. Power-press. (Antedated Dec. 22, 1870).....	Dec. 27, 1870
4,161	Hamlin, Emmons, assignor to Mason and Hamlin Organ Company, Winchester, Mass. Organ.....(Design)..	June 21, 1870
106,692	Same.....Parlor-organ.....	Aug. 23, 1870
99,866	Hamlin, George B., Willimantic, Conn. Thrashing-machine.....	Feb. 15, 1870
101,672	Same.....Driving-gearing.....	April 12, 1870
104,846	Same.....Corn-harvester.....	June 28, 1870
106,359	Same.....Machine for preparing apples for the manufacture of cider.....	Aug. 16, 1870
106,360	Same.....Gearing and self-adjusting shaft.....	Aug. 16, 1870
106,402	Same.....Stalk and kindling-wood cutter.....	Aug. 16, 1870
106,403	Same.....Horse-power.....	Aug. 16, 1870
108,239	Same.....Belt-gearing.....	Oct. 11, 1870
105,568	Hamlin, Mahlon, assignor to self and Benjamin G. Welch, Catawissa, Pa. Bolt-threading machine.....	July 19, 1870
105,569	Same.....same.....	July 19, 1870
100,398	Hammer, T. F., Branford, Conn. Cast-metal lamp.....	Mar. 1, 1870
104,451	Hammill, William, Parma, Mich. Mechanical movement.....	June 21, 1870
	Hammond, Alexander H. (*See* White, Alexander, assignor.)	
102,302	Hammond, David, and Job Abbott, Canton, Ohio. Tubular-arch girder for bridges and other structures.....	April 26, 1870
102,303	Same.....Tubular-arch girder.....	April 26, 1870
102,304	Same.....Truss-girder bridge.....	April 26, 1870
101,981	Hammond, E. C., Oswego, N. Y. Pump.....	Mar. 29, 1870

Alphabetical list of patentees for the year 1870—Continued.

No.	Name, residence, and invention or discovery.	Date.
99,662	Hammond, Henry, Hartford, Conn. Portable lubricator.....	Jan. 25, 1870
	Hampson, Joseph. (*See* Jenks & Fawcett, assignors.)	
103,614	Hampton, William R., Fairfield, Ill. Animal-trap.....	Nov. 29, 1870
104,023	Hanauer, Joseph, and Nicholas Sartor, New York, N. Y. Corset-spring.....	June 7, 1870
109,408	Hanchett, Daniel, John C. Dana, and Reuben Stuart, Smithfield, Ill. Velocipede..	Nov. 22, 1870
107,175	Hanchett, Nelson, Leslie, Mich. Whip-holder.....	Sept. 6, 1870
105,937	Hancock, Henry J., New York, N. Y. Device for transmitting rotary motion..	Aug. 2, 1870
105,198	Hancock, John C., Charlestown, and Edward P. Richardson, Somerville, Mass. Horse-detaching apparatus.....	July 12, 1870
102,936	Hancock, William S., Chicago, Ill. Broom.....	May 10, 1870
102,395	Hand, Benjamin R., assignor to self, S. J. Eby, and B. S. Trout, Lancaster, Pa. Washing-machine.....	April 26, 1870
108,578	Handaby, Jacob W., Zanesville, Ohio. Head-block for saw-mills.....	Aug. 23, 1870
101,614	Hanes, Joseph H., Cape May, N. J. Self-feeding drill.....	April 5, 1870
	Hanford, J. M. (*See* Nanny, Oliver T., assignor.)	
99,433	Hanford, Melancthon, Boston, Mass. Elevator.....	Feb. 1, 1870
98,958	Hanger, Jacob A. and George C., Churchville, Va. Churn.....	Jan. 18, 1870
99,184	Hankenson, James W., assignor to self and Winslow Baker, Minneapolis, Minn. Lightning-rod and conductor.....	Jan. 25, 1870
108,254	Hankenson, James W., and Winslow Baker, Minneapolis, Minn. Combined eaves-trough and lightning-rod.....	Oct. 18, 1870
101,008	Hankey, Anthony, assignor to self and George A. Corser, Leicester, Mass. Bed-plate for rag and paper engines.....	Mar. 22, 1870
104,847	Hankin, William, assignor to self and William Henry Hankin, Williamsburgh, N. Y. Saw-frame.....	June 28, 1870
108,580	Hankinson, William H., New York, N. Y. Carpet-beater.....	Oct. 25, 1870
100,525	Hanks, Gordon O., Addison, Vt. Sad-iron heater.....	Mar. 8, 1870
103,730	Hanks, O., Cincinnati, Ohio. Tool-holder.....	May 31, 1870
109,730	Same.....Faucet.....	Nov. 29, 1870
98,587	Hanlon, William, assignor to self, George, Alfred, Frederick, and Edward Hanlon, New York, N. Y. Gymnastic apparatus.....	Jan. 4, 1870
98,588	Same.....same.....	Jan. 4, 1870
100,030	Hanmer, Alonzo, and David Grim; said Hanmer assignor to Philip L. Grim, Pittsburgh, Pa. Railway-rail.....	Feb. 22, 1870
109,903	Hanmer, Horace H., Nashville, Tenn. Horse and cattle liniment.....	Nov. 15, 1870
102,000	Hanna, Andrew J., New Garden Township, Pa. Single-tree.....	April 19, 1870
107,660	Hanna, Cyrus T., Keokuk, Iowa. Wheat steamer and drier.....	Sept. 27, 1870
110,456	Same.....Flour-bolt.....	Dec. 27, 1870
105,199	Hanna, Francis J., Petroleum Centre, Pa. Rod-coupling.....	July 12, 1870
106,056	Hannaha, James M., Chicago, Ill. Elevated railway.....	Aug. 9, 1870
4,074	Hannen, H. S., assignor to Daniel C. Colby, Thomas Woods, and Benjamin F. Pine, Philadelphia, Pa. Manufacture of white lead.....(Reisaue)..	July 19, 1870
	Hannen Lead Company. (*See* Hatfield, Robert F., assignor.)	
103,325	Hanning, John G., assignor to self and Rowell R. Rouse, Indianapolis, Ind. Anti-freezing device for pumps.....	May 24, 1870
108,476	Hannon, John H., Halifax, N. C. Cotton plow and planter.....	Oct. 18, 1870
104,145	Hannum, Joseph L., and Samuel H. Stebbins, Berea, Ohio. Fire-kindling.....	June 14, 1870
103,740	Hansen, Andrew M., Stockton, Cal. Excavating-machine.....	May 31, 1870
98,580	Hansen, August, San Francisco, Cal. Lounge-bed.....	Jan. 4, 1870
105,449	Hanson, David D., Weare, N. H. Elevator.....	July 19, 1870
100,731	Hanson, John, England. Breech-loading fire-arm.....	Nov. 29, 1870
103,454	Hanson, John F., and John E. Callaway, Barnesville, Ga. Seed-dropper.....	May 24, 1870
	Hanson, L. E., *et al.* (*See* Hamilton & Hanson).....(Reissue.)	
98,930	Hanson, Mary J., Mauston, Wis. Medical compound.....	Jan. 18, 1870
110,232	Harvey, Thomas, Elma, N. Y. Barrel.....	Dec. 20, 1870
	Hapgood & Co. (*See* Lane, John, assignor.)	
	Hapgood, Charles H., *et al.* (*See* Lane, John, assignor.).....(Two cases.)	
	Harbster Brothers & Co. (*See* Griscom, William M., assignor.).....(Design.)	
	Harbster, Matthew, and C. Blust. (*See* Blust & Harbster, assignors.)	
105,675	Harbster, Matthew, assignor to Harbster Brothers & Co., Reading, Pa. Bolt...	July 26, 1870
106,933	Harcourt, Joseph F., Cincinnati, Ohio. Tackle-block.....	Aug. 30, 1870
104,952	Harding, E. B., Northampton, Mass. Trues.....	July 5, 1870
	Harding, George Ed. (*See* Philip, Frank, assignor.)	
	Harding, James. (*See* Keefer, William M., assignor.)	
98,492	Harding, Jones, Detroit, Mich. Rein-holder.....	Jan. 4, 1870
105,570	Harding, Thomas, La Fayette, Ind. Shovel-tooth for cultivator.....	July 19, 1870
100,755	Harding, William W., Philadelphia, Pa. Paper-making machine.....	Mar. 15, 1870
106,361	Hards, John B., Chicago, Ill. Wheel-hub.....	Aug. 16, 1870
106,057	Hards, John B., and William Hodnett, Chicago, Ill. Car-coupling.....	Aug. 2, 1870
101,873	Hardy, Anson, Boston, Mass. Paper-cutting machine.....	April 12, 1870
104,584	Hardy, Charles, Biddeford, Me. Grinding ledger and fly-blades, planer-knives, &c.....	June 21, 1870
105,808	Hardy, Charles C., Rutland, N. Y. Machine for sharpening reaper-knives.....	July 26, 1870
104,585	Hardy, Dexter D., and Ed. E. Wood, assignors to Philander H. and Francis M. Roots, Cincinnati, Ohio. Blower.....	June 21, 1870
104,023	Hardy, Emery E., Joliet, Ill. Harness-saddle.....	June 7, 1870
104,303	Hardy, Emery E., and Napoleon Dubrul, Joliet, Ill. Corn-planter.....	June 14, 1870
102,001	Hare, C. C., Kansas City, Mo. Sheet-metal bending-machine.....	April 19, 1870
	Hare, John H., *et al.* (*See* Hitchcock, Robert, assignor.).....(Reissue.)	
104,146	Hare, Otway P., Petersburgh, Va. Liniment.....	June 14, 1870
106,934	Hares, Thomas A., assignor to self and Cornelious Van Ness. New York, N. Y. Corset-spring.....	Aug. 30, 1870

Alphabetical list of patentees for the year 1870—Continued.

No.	Name, residence, and invention or discovery.	Date.
101,125	Hargrave, Thomas C., Boston, Mass. Liquid-meter. (Antedated March 15, 1870.)	Mar. 22, 1870
	Hargraves, George and Samuel. (*See* Warren, John L., assignor.)	
4,076	Harington, Charles G., Northville, Mich. School seat and desk ..... (Design)	May 31, 1870
105,676	Harington, Charles G., and David Mills, Northville, Mich. School-seat	July 26, 1870
104,176	Harkinson, Charles, Philadelphia, Pa. Radiator for heating-furnaces	May 17, 1870
98,590	Harkness, Hiram W., assignor to Saunders, Froy & Clark, New Britain, Conn. Lawn-mower	Jan. 4, 1870
104,586	Harlan, Aaron W., Croton, Iowa. Device for forming channels in rivers	June 21, 1870
102,115	Harlan, George W., Cincinnati, Ohio. Brick-machine	April 19, 1870
	Harlan, Joseph. (*See* Davis, William H., assignor.)	
100,399	Harley, Joseph L., Washington, D. C. Plate-printing register	Mar. 1, 1870
107,176	Same ..... Baltimore, Md. Lock for securing stamps upon barrels	Sept. 6, 1870
105,677	Harley, Milton P., Philadelphia, Pa. Chair and lounge	July 26, 1870
107,041	Harlow, Charles F., Boston, Mass. Sewing-machine. (Antedated Aug. 27, 1870)	Sept. 6, 1870
110,033	Harlow, DeWitt Clinton, Hannibal, Mo. Washing-machine	Dec. 13, 1870
106,058	Harlow, Uriah R., Farmersville, Cal. Potato-digger	Aug. 9, 1870
99,314	Harly, J. F., Tipton Station, Ohio. Street-lamp	Feb. 1, 1870
99,434	Harman, Jacob M., Orangeville, Pa. Fly-net for horses	Feb. 1, 1870
109,316	Harman, Samuel, La Porte, Ind. Stump-extractor	Nov. 15, 1870
101,789	Harmon, Daniel, Coles County, Ill. Ditching-plow and hedge-grader	April 12, 1870
	Harms, Amos G., and Laurence Morrison. (*See* Morrison & Harms.)	
104,953	Harner, David S., assignor to self and William T. Carey, Xenia, Ohio. Harvester-dropper	July 5, 1870
	Harner, Matthew, and Rudolph Martin. (*See* Martin & Harner.)	
107,254	Harnly, Jacob H., assignor to self and Ellis L. Spickler, Penn Township, Pa. Gate	Sept. 13, 1870
107,681	Harper, Elijah S., Sutherland Springs, Texas. Washing-machine	Sept. 27, 1870
110,133	Harper, James M., El Paso, Ill. Harrow	Dec. 13, 1870
108,030	Harper, Thomas J., Atlanta, Ga. Sewing-machine	Oct. 4, 1870
	Harpin, Herbert, and James Coulter. (*See* Coulter & Harpin.)	
109,511	Harpster, Reuben, West Cairo, Ohio. Clod-fender	Nov. 22, 1870
102,815	Harrah, William D., Ira M. Gifford, and Edward T. Johnston, Davenport, Iowa. Grain-binder	May 10, 1870
106,693	Harrier, Henry, Indianapolis, Ind. Corn-plow	Aug. 23, 1870
	Harrington, Daniel. (*See* Williams, William, assignor.)	
101,730	Harrington, Edward F., assignor to self and John L. Monroe, Boston, Mass. Cork-cutting machine	April 12, 1870
110,134	Harrington, Jackson, assignor to self, Ralph Wheeler, and Jonathan Dart, New London, Conn. Cotton-seed huller	Dec. 13, 1870
107,668	Harrington, John R., assignor to George E. Harrington, Brooklyn, N. Y. Carpet-lining	Sept. 27, 1870
109,518	Harrington, Melvin, Waupun, Wis. Gate and door spring	Nov. 22, 1870
110,034	Harris, Abraham W., Providence, R. I. Device for driving sewing-machines	Dec. 13, 1870
104,954	Harris, Alfred L., Kent, Ohio. Fruit-coring knife	July 5, 1870
105,071	Harris, Andrew R., St. Louis, Mo. Apparatus for signaling the direction of motion of marine engines	July 5, 1870
105,351	Harris, Arthur, New York, N. Y. Washing-machine	July 12, 1870
	Harris, Asa L., *et al.* (*See* Lee, La Fontaine & Harris.)	
	Harris, Burdine, *et al.* (*See* Harlingbouse, Cyrus B., assignor.)	
99,565	Harris, Conrad, and Paul W. Zoiner, Cincinnati, Ohio. Door for cannon-stove	Feb. 8, 1870
4,340	Same ..... Coal and wood cooking-stove ..... (Design)	Sept. 13, 1870
104,304	Harris, Francis M., Winnamac, Ind. Churn	June 14, 1870
105,939	Harris, George, Weedsport, N. Y. Wheelbarrow-wheel	Aug. 2, 1870
	Harris, George W., and Wilson W. Carey. (*See* Carey & Harris.) (Three cases.)	
99,869	Harris, H. A., Centre, Texas. Saw-set	Feb. 15, 1870
100,596	Harris, Henry C., Fort Valley, Ga. Cotton-seed planter and fertilizer	Mar. 8, 1870
106,814	Harris, Henry F., and Gaylord P. Pinney, Chicago, Ill. Boot and shoe heel	Aug. 30, 1870
107,255	Harris, Henry J., assignor of one-half interest to Charles F. Harris, Shreveport, La. Multiple-tool	Sept. 13, 1870
	Harris, Isaac Blue, and Hay Downie. (*See* Downie & Harris.)	
	Harris, I. Campbell, and Benjamin R. Smith. (*See* Smith & Harris)	
103,450	Harris, James, Boston, Mass. Hydraulic motor	July 19, 1870
110,350	Harris, James, San Francisco, Cal. Gang-plow	Dec. 20, 1870
106,935	Harris, John, Palestine, Ill. Churn-dasher	Aug. 30, 1870
106,155	Harris, Milo, Jamestown, N. Y. Hemmer for sewing-machines	Aug. 9, 1870
109,893	Harris, Orrin F., Norwich, Conn. Medical compound	Dec. 6, 1870
107,485	Harris, Robert Carr, Maple Green, N. B. Snow-plow	Sept. 20, 1870
107,042	Harris, Samuel H., Chicago, Ill. Safe-case for books	Sept. 6, 1870
107,043	Same ..... Frame for safe-cases for papers	Sept. 6, 1870
103,877	Harris, Thomas J., Guntown, Miss. Cotton-scraper or cultivator	June 7, 1870
108,260	Harris, Venando P., Greensburgh, Ind. Cultivator	Oct. 11, 1870
	Harris, V. P. (*See* Weathers, James, assignor.)	
98,863	Harris, Washington, Philadelphia, Pa. Non-conducting covering for boilers, steam-pipes, &c.	Jan. 18, 1870
102,116	Harris, Washington, and William Howell, Philadelphia, Pa. Non-conducting covering for steam-boilers	April 19, 1870
101,963	Harris, William, and Adam Woolever, Allentown, Pa. Converting cast iron into steel	April 12, 1870
103,741	Harris, William, and Daniel Hall, Chicago, Ill. Apparatus for enameling sheet-iron	May 31, 1870
109,031	Harris, William M., Dixon, Ill. Halter	Feb. 22, 1870

Alphabetical list of patentees for the year 1870—Continued.

No.	Name, residence, invention or discovery.	Date.
	Harrison, Charles, *et al.* (*See* Jones, Henry, assignor.)	
	Harrison, Edward, and Joseph Leffel. (*See* Leffel & Harrison.)	
	Harrison, George W., and James T. Mathis. (*See* Mathis & Harrison.)	
103,396	Harrison, John, and Caleb Low, Fawn Grove, Pa. Condenser for stills	May 24, 1870
105,209	Harrison, John D., Middletown, Ohio. Seeding-machine	July 12, 1870
100,141	Harrison, Joseph, jr., Philadelphia, Pa. Steam-generator	Feb. 22, 1870
	Harrison, Samuel T. (*See* Fletcher, David R., assignor.)	
101,458	Harrison, Thomas S., Philadelphia, Pa. Drier. (Antedated March 25, 1870.)	April 5, 1870
98,960	Harrison, W. H., Philadelphia, Pa. Joint for metal pipes	Jan. 18, 1870
98,961	Same ..... Connection for pipes of malleable metal	Jan. 18, 1870
	Harrison, William H. (*See* Rhoads, John, assignor.)	
3,903	Harrop, Henry, Hoboken, N. J. Mode of ornamenting ..... (Reissue)	April 5, 1870
99,590	Harry, Albert S., Wooster, Ohio. Thill-coupling	Feb. 15, 1870
109,619	Harsen, William, Greenpoint, N. Y. Variable cut-off valve-gear	Mar. 8, 1870
106,059	Harsha, Mortimer S., and William M. Van Nortwick, Batavia, Ill. Portable stove	Aug. 2, 1870
107,486	Harshbarger, Isaac N., Bloomington, Wis. Grain-scourer	Sept. 20, 1870
109,992	Hart, Amos W., assignor to self and William M. Tileston, Washington, D. C. Aquatic toy	Dec. 6, 1870
100,620	Hart, Calvin, Farmington, Ill. Farm-gate	Mar. 8, 1870
100,389	Hart, Charles, Wakefield, Mass. Lantern	Mar. 1, 1870
104,024	Hart, Daniel, assignor to self and Jesse Yerks, Romulus, N. Y. Railway-car coupling	June 7, 1870
106,368	Hart, Daniel R., St. Louis, Mo. Door for street-cars	Aug. 16, 1870
	Hart, George E. (*See* Kline, Calvin, assignor.)	
110,357	Hart, Hubert C., Unionville, Conn. Mouse-trap	Dec. 20, 1870
110,457	Same ..... Lawn-mower	Dec. 27, 1870
100,756	Hart, Jacob, Savannah, Mo. Rock-drilling machine	Mar. 15, 1870
109,006	Hart, James, Sweden Centre, N. Y. Pendulum crushing-mill	Nov. 8, 1870
	Hart, James C., and Robert Boyd. (*See* Boyd & Hart) ..... (Design.)	
100,757	Hart, Lewis, Unionville, Conn. Screw-driver	Mar. 15, 1870
102,396	Hart, Matthew, Boston, Mich. Machine for sawing shingle-bolts	April 26, 1870
99,185	Hart, Robert, Dunkirk, N. Y. Harness-saddle hook	Jan. 25, 1870
99,083	Hart, Samuel, Marietta, Ohio. Molding and glazing forms made of plastic materials	Jan. 25, 1870
103,044	Hart, Samuel L., Menasha, Wis. Door check and holder	May 17, 1870
106,815	Hart, William, Kirksville, Mo. Escapement for watches, &c.	Aug. 30, 1870
102,259	Hart, William Henry, Philadelphia, Pa. Holder for neck-ties	Apr. 26, 1870
103,606	Hart, William H., New Britain, Conn. Door-bolt	May 31, 1870
	Same ..... (*See* Hurford, George S., assignor.)	
4,162	Hart, William H., jr., Philadelphia, Pa. Holder for neck-ties. (Division A, reissue)	Oct. 25, 1870
4,163	Same ..... Box for packing neck-ties. (Division B, reissue)	Oct. 25, 1870
105,072	Hart, William H., jr., and Hiram H. Thayer, Philadelphia, Pa. Neck-tie holder	Oct. 25, 1870
103,455	Harte, Thomas J., assignor to self and James Brandon, New York, N. Y. Detaching-block	July 5, 1870
	Hartell & Letchworth. (*See* Letchworth, John, assignor.) (Three cases.) (Design.)	May 24, 1870
	Same ..... (*See* Lair, Philip, assignor.)	
98,706	Harter, John, Colfax, Iowa. Driven well. (Antedated Jan. 6, 1870)	Jan. 11, 1870
	Harter, Louis. (*See* Miner, Henry, assignor.)	
	Hartford Carpet Company. (*See* Malkin, Levi G., assignor) ... (Two cases.) (Design.)	
	Same ..... (*See* Smith, John, assignor) ..... (Two cases.) (Design.)	
	Same ..... (*See* Thompson, Henry G. assignor) ..... (Nine cases.)	
105,901	Hartje, George, New York, N. Y. Combined hinge and ring for lockets	July 12, 1870
103,607	Hartley, Roger, assignor to the American Coal Barge Company, Pittsburgh, Pa. Coal-barge	May 31, 1870
107,364	Hartley, Thomas, Bridgeport, Ohio. Meat-cutter	Sept. 13, 1870
109,896	Hartley, William, Durand, Ill. Pump	Dec. 6, 1870
110,035	Same ..... Rockford, Ill. Piston-rod packing	Dec. 13, 1870
	Hartley, William H. (*See* Propst & Avis, assignors.)	
	Hartman, John E., and Jacob Mickley. (*See* Mickley & Hartman.) (Two cases.)	
105,672	Hartman, John M., assignor to George W. Whitaker, Philadelphia, Pa. Oven or stove for heating the blast of blast-furnaces	July 26, 1870
100,142	Hartmann, C. F., Nazareth, Pa. Wine-press	Feb. 22, 1870
102,260	Hartmann, Joachim F., assignor to self and William Morningstave, Richmond, Ind. Converting reciprocating into rotary motion	Apr. 26, 1870
105,936	Hartmann, John R., and Martan Kais, Peoria, Ill. Hat and cap holder and bracket. (Antedated July 28, 1870)	Aug. 2, 1870
	Harton, John, and Peter Shellenback. (*See* Shellenback & Harton.)	
	Harton, Robert S., and John H. Ormsby. (*See* Ormsby & Harton.)	
3,866	Hartshorn, Sheldon S., assignor to the West Haven Buckle Company, New Haven, Conn. Buckle ..... (Reissue)	Mar. 1, 1870
98,591	Hartt, Lionel B., Detroit, Mich. Washing-machine	Jan. 4, 1870
	Hartwell, Abraham V., and Insley D. Johnson. (*See* Johnson & Hartwell.)	
	Hartwell, H. C., *et al.* (*See* Burridge, William H., assignor.)	
	Hartwell, John B., *et al.* (*See* Perkins, Howard, assignor.)	
109,204	Hartz, George, New York, N. Y. Toy-ball. (Antedated Nov. 3, 1870)	Nov. 15, 1870
99,670	Hartz, Henry V., and Julius Feiss, Cleveland, Ohio. Knitting-machine	Feb. 8, 1870
99,435	Harvey, Charles T., Tarrytown, N. Y. Supporting column for elevated railways	Feb. 1, 1870
104,025	Harvey, Irus W., Norwich, Conn. Faucet	June 7, 1870

Alphabetical list of patentees for the year 1870—Continued.

No.	Name, residence, and invention or discovery.	Date.
108,021	Harvey, James T., and William Dixon, Marysville, Pa. Meat-mangler	Oct. 4, 1870
103,608	Harvey, John H., Chanticleer, Ohio. Log-loader	May 31, 1870
107,765	Harvey, Moses B., assignor to self and Harrison F. Cook, Stafford, Conn. Hay-tedder	Sept. 11, 1870
107,366	Harvie, William, Scotland. Lamp and lantern	Sept. 13, 1870
99,024	Harwood, John, Albany, N. Y. Boot-stretcher	Jan. 25, 1870
4,376	Harwood, Luther W., assignor to Fuller, Warren & Co., Troy, N. Y. Stove-plate (Design)	Oct. 4, 1870
100,887	Hasbrouck, John S., Tyre, N. Y. Apparatus for elevating and bagging grain	Mar. 15, 1870
	Hasbrouck, W. L. (*See* Tromly, Michael, assignor.)	
105,940	Haskell, Andrew W., Boston, Mass. Lamp-shade	Aug. 2, 1870
110,438	Haskell, Charles Allen, Galena, Ill. Corn-planter	Dec. 27, 1870
98,862	Haskell, E. F., Sherman, Me. Lantern	Jan. 18, 1870
101,000	Haskell, Nathaniel, assignor to self and Joseph F. Steen, San Francisco, Cal. Extracting copper from its ore	Mar. 22, 1870
98,767	Haskins, David G., Cambridge, Mass. Gas-heater	Jan. 11, 1870
105,073	Haskins, John Brightman, Brooklyn, N. Y. Medical compound	July 5, 1870
109,732	Haskins, John F., Fitchburgh, Mass. Air-pump	Nov. 29, 1870
110,036	Same ..... same ..... Nautical alarm	Dec. 13, 1870
	Haskins, John P., and A. W. Boomer. (*See* Boomer & Haskins.)	
	Haskins, Joseph W. (*See* Hall, William H., assignor.)	
3,903	Haslam, William, assignor to Henry Froemner, Philadelphia, Pa. Spice-mill. (Design)	Mar. 8, 1870
104,026	Haslup, William, Sidney, Ohio. Water-wheel	June 7, 1870
101,010	Hasslock, Hermann W., Nashville, Tenn. Horse-hoe	Mar. 22, 1870
100,888	Hastings, A. H., New York, N. Y. Damper for piano-fortes. (Antedated March 5, 1870)	Mar. 15, 1870
107,903	Hastings, E. Warren, Boston, Mass. Adjustable window-shade	Oct. 4, 1870
102,816	Hastings, John B., Ironton, Ohio, and George Hastings, jr., Wheeling, West Va. Rolling-machine	May 10, 1870
	Hastings, William A., and Albert Thayer. (*See* Thayer & Hastings.)	
107,467	Haswell, Andrew J., and John W. Irwin, assignors to selves, Charles E. Wright, and Palmer C. Smith, Circleville, Ohio. Harvester	Sept. 20, 1870
106,579	Hatch, Edwin D., Oconomowoc, Wis. Wheel-cultivator	Aug. 23, 1870
107,367	Hatch, Francis H., New Orleans, La., and Benjamin R. Hawley, Normal, Ill. Preserving meat	Sept. 13, 1870
	Hatch, James H. (*See* Palmer, Jay R., assignor.)	
108,477	Hatch, William B., Elmira, N. Y. Cushion for car-seats	Oct. 18, 1870
104,848	Hatcher, William Z., assignor to self and William L. Lance, Plymouth, Pa. Safety dumping-cage for mines	June 28, 1870
104,849	Hatcher, William Z., and William L. Lance, Plymouth, Pa. Rock-drill	June 28, 1870
	Hatchman, William, and Frederick Johnson. (*See* Johnson & Hatchman, assignors.)	
103,327	Hatfield, Aaron L., Clyde, Ohio. Pruning-shears	May 24, 1870
100,631	Hatfield, Charles B., assignor to self, Horace B. Hillman, and Joseph and Henry B. Willcox, Philadelphia, Pa. Paper-box machine	Mar. 8, 1870
100,125	Hatfield, Robert F., assignor to Hannen Lead Company, New York, N. Y. Manufacture of white lead	Nov. 8, 1870
99,506	Hatfield, R. G., New York, N. Y. Anti-friction journal-bearing	Feb. 8, 1870
106,156	Hathaway, Amasa, Prairie du Sac, Wisconsin. Farm-gate	Aug. 9, 1870
	Hathaway, A., *et al.* (*See* Blood, Hathaway & Beach) (Reissue.)	
103,178	Hathaway, Baylies, Elizabeth Port, N. J. Spring-balance stop for safety-valves,	May 17, 1870
	Hathaway, C. (*See* Wormood, W. W., assignor.)	
107,903	Hathaway, James L., Norfolk, Va. Machine for finishing wheels for watches	Oct. 4, 1870
100,758	Hathorn, George C., New York, N. Y. Fare-box for railroad-cars	Mar. 15, 1870
103,580	Hathorn, Samuel R., Worcester, Mass. Guard for roofs	Aug. 23, 1870
101,011	Hatschek, Moritz, Hungary. Apparatus for producing sulphurous acid	Mar. 22, 1870
103,456	Hattersley, Charles, Trenton, N. J. Piano	May 24, 1870
99,891	Hattersley, T. S., Trenton, N. J. Split-ring	Feb. 15, 1870
104,567	Hatting, John R., assignor to self and Stephen Sherlock, New York, N. Y. Apparatus for treating diseases by means of galvanism	June 21, 1870
107,936	Hauck, George, Mechanicsburgh, Pa. Horse hay-rake	Sept. 13, 1870
101,450	Haughwout, Eder E., New York, N. Y. Animal-trap	April 5, 1870
99,186	Haupt, Herman, Philadelphia, Pa. Drying, preserving, and coloring wood or other fibrous material	Jan. 25, 1870
103,398	Same ..... Wood-pavement	May 24, 1870
99,567	Hausknecht, Gustavus L., Brooklyn, N. Y. Velocipede. (Antedated Aug. 27, 1869)	Feb. 8, 1870
108,783	Havemeyer, Hector C., and David P. Burdon, New York, N. Y. Leather-scouring machine	Nov. 1, 1870
108,783	Same ..... Leather-scouring machine	Nov. 1, 1870
109,305	Same ..... Attaching dicing-stones to wheels for polishing leather	Nov. 15, 1870
4,199	Haven, Ezra W., Brandon, Vt. Picture-frame (Design)	July 5, 1870
	Haven, James L., & Co. (*See* Shannon, Thomas J., assignor.)	
	Same ..... (*See* Lemman, John, assignor) (Reissue.)	
108,478	Havens, Abraham, Trenton, N. J. Adjustable harrow	Oct. 18, 1870
99,671	Havermale, Noah, Canton, Ill. Shipping and unshipping hooks	Feb. 8, 1870
110,350	Same ..... Pile and post driver	Dec. 20, 1870
104,438	Haviland, George W., Fort Dodge, Iowa. Milking-stool	June 21, 1870
104,453	Haviland, John T., San Francisco, California. Instrument for removing twine and wire from bottles	June 21, 1870

Alphabetical list of patentees for the year 1870—Continued.

No.	Name, residence, and invention or discovery.	Date.
110,358	Haviland, John T., San Francisco, Cal. Handle for cutlery, tools, &c	Dec. 20, 1870
101,731	Haviland, Richard, assignor to self and Charles Ware, North Branch, Md. Potato-separator	April 12, 1870
	Hawes, James, jr. (*See* Beard, Henry J., assignor.)	
108,032	Hawes, James H., and Orville W. Brock, assignors to James H Hawes, Monroeton, Pa. Revolving fire-cracker pistol	Oct. 4, 1870
103,389	Hawes, John H. G., Newark, N. J. Confluent cock	May 24, 1870
109,200	Hawes, Washington, Port Richmond, N. Y. Oil-cake packing-apparatus	Nov. 15, 1870
102,117	Hawkes, Allen, assignor of one-half interest to Oliver E. Bigelow, Providence, R. I. Pie stamper and cutter	April 19, 1870
98,691	Hawkins, Ebenezer, Islip, N. Y. Paper-engine	Jan. 11, 1870
	Hawkins, James P. (*See* Johnson, George W., assignor.)	
101,615	Hawkins, John E., Lansingburgh, N. Y. Bread-machine	April 5, 1870
103,000	Hawkins, Moses C., Edinborough, Pa. Tension-device for needle-thread in sewing-machines	May 31, 1870
103,610	Same ..... Shuttle for sewing-machines	May 31, 1870
103,611	Same ..... Hemmer for sewing-machine	May 31, 1870
104,305	Hawkins, N. F., Chicot County, Ark. Railway-switch	June 14, 1870
105,451	Hawkins, Reason, Sugar Creek, Ind. Grain and seed separator	July 19, 1870
	Hawkins, Samuel K., and Jacob C. Horton. (*See* Horton & Hawkins.) (Reissue.)	
101,969	Hawkins, William H., Cleveland, Ohio. Copying-press	Mar. 29, 1870
	Hawks, Elizabeth, assignor to George W. Sweet, Julius F. Quimby, Samuel W. Perry, and William E. Marston, Troy, N. Y. Auxiliary air-chamber for stoves, heaters, and furnaces (Disclaimer)	June 6, 1870
107,612	Hawley, Benjamin R., Normal, Ill. Kiln	Sept. 20, 1870
	Hawley, Benjamin R., and Francis H. Hatch. (*See* Hatch & Hawley.)	
110,568	Hawley, George F., Grand Rapids, Mich. Harvester	Dec. 27, 1870
	Hawley, Warren G., and George B. Ferry. (*See* Ferry & Hawley.)	
106,265	Hawley, William H., Utica, N. Y. Bore for casting axle-boxes	Aug. 9, 1870
100,022	Hawley, W. W., Mount Morris, N. Y. Self-waiting table	Mar. 8, 1870
	Hawn, Guilford, and Abram I. Quackenbush. (*See* Quackenbush & Hawn.)	
100,032	Haworth, George D., Decatur, Ill. Corn-planter	Feb. 22, 1870
109,615	Haworth, John, Philadelphia, Pa. Photographic-print cutter	Nov. 29, 1870
	Hax, John P., *et al.* (*See* Voss, Hax & Krug.)	
	Hay & Co. (*See* Woodward, Theodore F., assignor.) (Two cases.)	
102,937	Hay, David B., Dayton, Ohio. Scaffold-supporter	May 10, 1870
	Hay, James, and John C. Butterfield. (*See* Butterfield & Hay.)	
107,366	Hay, Randall D., Crooked Creek, N. C. Process for manufacturing tobacco-plugs	Sept. 13, 1870
109,513	Same ..... Safety-guard for pistols	Nov. 22, 1870
109,514	Same ..... Gun-lock	Nov. 22, 1870
104,955	Hayden, Charles M., South Thomaston, Me. Steering-apparatus	July 5, 1870
	Hayden, Charles W., *et al.* (*See* Torney, P. J., assignor) (Reissue.)	
3,995	Hayden, Hiram W., assignor to the Waterbury Brass Company, Waterbury, Conn. Machine for making kettles (Division A, reissue)	May 24, 1870
3,996	Same ..... Brass kettle (Division B, reissue)	May 24, 1870
106,353	Hayden, Hiram W., assignor to Holmes, Booth & Hayden, Waterbury, Conn. Lamp-burner	Aug. 16, 1870
104,027	Hayden, Joel B., Schaghticoke, N. Y. Rubber door-spring	June 7, 1870
	Hayden, Jasper, *et al.* (*See* Allen, Record, Rood & Hayden.)	
100,033	Hayden, Martin, Dowagiac, Mich. Grain-drill. (Antedated Feb. 19, 1870)	Feb. 22, 1870
108,500	Hayden, Nathan, Chicago, Ill. Extension hat-rack. (Antedated Oct., 11, 1870.)	Oct. 25, 1870
107,488	Hayden, Peter, Pittsburgh, Pa. Washing-machine	Sept. 20, 1870
105,679	Hayden, William B., Columbus, Ohio. Mode of attaching hold-back rings to hames	July 26, 1870
107,613	Same ..... Machine for welding chain-links	Sept. 20, 1870
101,126	Hayes, E. B., Vergennes, Vt. Clamp	Mar. 22, 1870
100,143	Hayes, George, New York, N. Y. Skylight	Feb. 22, 1870
108,157	Same ..... same	Aug. 9, 1870
107,449	Hayes, Joshua R., New York, N. Y. Composition for pavements	Sept. 20, 1870
107,490	Same ..... Preparation of composition for pavements	Sept. 20, 1870
107,904	Same ..... Washington, D. C. Preserving wood	Oct. 4, 1870
	Hayes, S. C., *et al.* (*See* Doubler, John W. H., assignor.)	
101,012	Hayford, Ira, Boston, Mass. Process and apparatus for treating wood	Mar. 22, 1870
110,135	Haymond, Thomas E., Morris, Ill. Hay elevator and conveyor	Dec. 13, 1870
100,899	Haynes, Cornelius E., Boston, Mass. Packing apparatus	Mar. 15, 1870
104,568	Same ..... Cooling and producing ice	June 21, 1870
109,196	Same ..... Preserving beer and ale on draught	Nov. 8, 1870
104,738	Haynes, Edgar K., Boston, Mass. Needle-sharpener	June 28, 1870
	Haynes, Edgar K., and William C. Murdock. (*See* Murdock & Haynes.)	
98,398	Haynes, John H., Boston, Mass. Velocipede	Jan. 4, 1870
100,897	Haynie, William, Memphis, Tenn. Cotton-press	Dec. 6, 1870
109,759	Hays, James, Fostoria, Ohio. Gate	Mar. 15, 1870
100,693	Hays, Marshall, Fostoria, Ohio. Water-gate	Mar. 8, 1870
105,893	Hays, Thomas S., assignor to self and Philip Miller, Williamsport, Pa. Clip for harness	July 12, 1870
	Hayward, Stephen L., and F. W. Frost. (*See* Frost & Hayward.)	
	Hayward, W. H. (*See* Perkins, R. W., assignor.)	
110,567	Haywood, John S., Rochester, Minn. Metal roof for buildings	Dec. 27, 1870
105,458	Hazard, Arthur P., North Bridgewater, Mass. Shoemakers' edge-plane	July 19, 1870
107,491	Same ..... same	Sept. 20, 1870

Alphabetical list of patentees for the year 1870—Continued.

No.	Name, residence, and invention or discovery.	Date.
100,760	Hazard, Thomas H., Richmond, Va. Medical compound from chloral	Mar. 15, 1870
104,580	Hazelton, George H., Philadelphia, Pa. Bottom for wash-boilers and similar vessels	June 21, 1870
	Hazen, N. M. (*See* Collinson, Henry, assignor.)	May 31, 1870
103,612	Hazen, Nathan S., La Fayette, Ind. Churn	
102,679	Hazlet, William, and William H. Flanigan, Philadelphia, Pa. Coal scuttle and sifter	May 3, 1870
100,144	Hazlett, H. K., St. Louis, Mo. Feed-water purifier for steam-generators	Feb. 22, 1870
	Hazlett, Hiram K., *et al.* (*See* Currie, Daniel, assignor.)	Mar. 8, 1870
100,527	Hazlett, James W., New York, N. Y. Ice-chamber for refrigerators	May 31, 1870
103,613	Heady, Morrison, Spencer County, Ky. Water-elevator	
4,311	Heald, Alfred, assignor to McCallum, Crease & Sloan, Philadelphia, Pa. Carpet-pattern (Design)	Aug. 30, 1870
4,312	Same .....Carpet-pattern (Design)	Aug. 30, 1870
4,313	Same.....same (Design)	Aug. 30, 1870
4,314	Same.....same (Design)	Aug. 30, 1870
4,493	Same.....same (Design)	Nov. 29, 1870
4,494	Same.....same (Design)	Nov. 29, 1870
106,581	Heald, George W., and Lorenzo D. Sisco, Baldwinsville, N. Y. Rotary pump	Aug. 23, 1870
100,290	Heald, H. J., assignor to self and Henry Somers, Birmingham, Conn. Toy	Mar. 1, 1870
109,893	Heald, James B., Milford, N. H. Collar for circular saws	Dec. 6, 1870
103,742	Heald, Peter, Troy, Me. Wind-wheel	May 31, 1870
	Heald, S., and Sons. (*See* Grandy, Cyrus E., assignor.)	June 7, 1870
103,878	Healey, Benjamin W., Providence, R. I. Iron fender-frame	
108,479	Healy, Albert M., Berlin, Conn., and Charles H. Raymond, Woodstock, Vt., assignors to the Southington Cutlery Company. Machine for marking carpenters' squares	Oct. 18, 1870
100,145	Healy, Caleb E., New London, Ohio. Hedge and tree trimmer	Feb. 24, 1870
	Heaney, Alfred G., and T. G. Liebenau. (*See* Liebenau & Heaney.)	May 24, 1870
103,457	Heard, Joseph M., Aberdeen, Miss. Hat	June 14, 1870
104,147	Heath, Elander, San Francisco, Cal. Dovetailing-machine	Dec. 6, 1870
109,899	Heath, George, Annapolis, Md. Canal-lock	Dec. 27, 1870
110,450	Same.....Canal-lock mechanism	Nov. 15, 1870
109,307	Heath, William M., Watago, Ill. Grape-trellis	July 26, 1870
4,081	Heaton, Edward, New Haven, Conn. Shank-spring (Reissue)	July 19, 1870
105,571	Hebard, Albert K., Boston, Mass. Organ-stop	
	Hebard, Benjamin F., and John T. Kimball. (*See* Kimball & Hebard.)	Mar. 1, 1870
100,400	Hebbard, Albert, Springfield, Mass. Machine for making car-springs	April 5, 1870
101,460	Hebbard, Ira A., assignor to E. F. Hebbard, Rochester, N. Y. Harvester-cutter	May 17, 1870
103,179	Hebdon, William, New York, N. Y. Station-indicator for railroad-cars	Nov. 15, 1870
109,308	Same.....Advertising-apparatus	Aug. 23, 1870
106,582	Hebel, Charles, Louisville, Ky. Ink or writing-fluid	June 7, 1870
104,028	Heberling, John, Mount Pleasant, Ohio. Hand seed-planter	June 14, 1870
104,300	Hebert, Alexis, Malone, N. Y. Railway-car coupling	April 26, 1870
3,933	Hebron, Stephen, Buffalo, N. Y. Window-blind (Reissue)	June 7, 1870
104,020	Hecht, Ansel, New York, N. Y. Machine for shirring fabrics	Dec. 20, 1870
4,325	Same.....shirred goods (Design)	April 19, 1870
102,118	Heckel, Edward B., Vincent, Pa. Mineral paint	Mar. 1, 1870
100,291	Hedden, Horace M., Worcester, Mass. Ferrotype plate	April 12, 1870
102,903	Hedell, Christer L., Galesburgh, Ill. Sink and wash-stand	
105,060	Hedges, John R., assignor to self and Valentine & Sparks, Glenwood, N. Y. Horse-power	July 25, 1870
	Hedley, Edward, Philadelphia, Pa. Shingle-machine (Extension)	May 16, 1870
110,233	Hedrick, James H., assignor of one-third interest to J. B. Barrett, Wythe County, Va. Repeating cannon	Dec. 20, 1870
106,153	Heebner, Josiah D., assignor to self and David S. Heebner, Norristonville, Pa. Manure-drag	Aug. 9, 1870
90,315	Hermance, Garet G., Claverack, N. Y. Lock-nut	Feb. 1, 1870
3,792	Hermance, Henry S., Lenox, Mass. Umbrella-supporter for vehicles. (Reissue)	Jan. 11, 1870
106,364	Heffley, William H., assignor to self and David Bark, Rochester, Ind. Machine for turning axletrees	Aug. 16, 1870
	Heffly, Joseph, and Thomas B. Penicka. (*See* Penicka & Heffly.)	July 12, 1870
4,219	Hegarty, John, Jersey City, N. J. Fountain (Design)	Oct. 11, 1870
108,135	Hege, Constantine A., Friedburg, N. C. Cane-stripper	
107,663	Hegeler, Edward C., assignor to F. W. Matthiessen & Hegeler, La Salle, Ill. Dumping-car	Sept. 27, 1870
103,119	Heger, Jacob, Jefferson, Wis. Stove-pipe drum	April 19, 1870
100,024	Heiges, Daniel, Cashtown, Pa. Plow	Mar. 8, 1870
	Heilman, Horace B., *et al.* (*See* Hatfield, Charles B., assignor.)	Jan. 4, 1870
98,493	Heilman, Moses, Lebanon, Pa. Modes of securing lashes in fly-nets	Mar. 8, 1870
100,598	Heim, Jacob, New York, N. Y. Evaporating salt brine and other liquids	April 19, 1870
103,120	Heine, Joseph, and John Von Ficht, Toledo, Ohio. Faucet	
104,307	Heine, Louis, and Charles Schofield, Philadelphia, Pa. Medicated steam-bath apparatus	June 14, 1870
105,572	Heinig, Gustav E., Louisville, Ky. Fruit-can	July 19, 1870
102,261	Heinrich, Philip, Allegheny, Pa. Life-boat	April 26, 1870
100,035	Heintze, William B., New London, Ohio. Meat-cutter	Feb. 22, 1870
103,879	Heintzelman, Nicholas, New York, N. Y. Process for making molds for castings of alto-relievo figures, &c	June 7, 1870
	Heintzle, Ludwig, *et al.* (*See* Wahler, Metz & Heintzle.)	Feb. 22, 1870
100,034	Heinz, Adam, assignor to self, John L. Fisher, and George J. Munschauer, Buffalo, N. Y. Refrigerator	

Alphabetical list of patentees for the year 1870—Continued.

No.	Name, residence, and invention or discovery.	Date.
106,816	Heiser, Francis C., Brooklyn, N. Y. Measuring-faucet	Aug. 30, 1870
	Heissenbuttler, W., *et al.* (*See* Himmer, Vitalis, assignor) (Two cases.)	
101,738	Heist, John, assignor to self, C. Zink, and H. Speehrer, New York, N. Y. Machine for coloring paper-hangings	April 12, 1870
4,014	Heistad, Hans Christian, Brooklyn, N. Y. Calendar (Design)	May 10, 1870
	Heister, Tobias S., and Nicholas S. Vedder. (*See* Vedder & Heister) (Fourteen cases.) (Design.)	
	Heister, Tobias S., *et al.* (*See* Vedder, Ritchie, and Heister) (Design.)	
100,761	Heitmann, August G., assignor to self and James Kelly, Brooklyn, N. Y. Floating mill-power	Mar. 15, 1870
100,401	Held, Frederic E., Chicago, Ill. Combination of billiard and dining tables	Mar. 1, 1870
106,694	Helder, John W., assignor to self and Luther Trescott, Shannon, Ill. Machine for cutting blind-slats	Aug. 23, 1870
105,074	Heliker, George, and Abram Burlew, Greenwich, Ohio. Churn-dasher	July 5, 1870
109,900	Heller, Daniel, Milton Center, Ohio. Sawing-machine	Dec. 6, 1870
	Heller, Jonathan M., *et al.* (*See* Taylor, Robert R., assignor.)	
	Helm, John, and Henry G. Tyer. (*See* Tyer & Helm) (Extension.)	
100,890	Helms, Charles H., Poughkeepsie, N. Y. Leather-scarfing machine	Mar. 15, 1870
107,369	Same.....Machine for fastening soles	Sept. 13, 1870
110,037	Same.....Mode of attaching composition-heels to boots and shoes	Dec. 13, 1870
107,614	Helwig, Edward J., assignor to R. M. Robinson & Co., Philadelphia, Pa. Fastening for epaulettes	Sept. 20, 1870
101,616	Hemenway, Collier V., assignor to self and A. A. Powers, New London, Ohio. Brick-machine	April 5, 1870
110,136	Hemenway, George W., Elmira, N. Y. Well-tubing	Dec. 13, 1870
100,625	Hemingway, Abraham, New York, N. Y. Slide-valve	Mar. 8, 1870
107,776	Hemingway, Benjamin E., assignor to self and William L. Prince, Portland, Me. Sled	Sept. 27, 1870
102,938	Heminway, Allen, and William A. Daggett, Lanais Township, N. J. Baking-pan	May 10, 1870
110,360	Hendee, Edwin B., San Francisco, Cal. Gun-lock	Dec. 20, 1870
104,733	Henderson, Frederick, assignor to self and George H. Bell, Marietta, Ohio. Shank laster and punch. (Antedated June 23, 1870)	June 28, 1870
110,400	Henderson, Harry T., and James E. Ladd, Bristol, Conn. Gauge for turning clock-work. (Antedated Dec. 24, 1870)	Dec. 27, 1870
101,363	Henderson, James, New York, N. Y. Manufacture of iron and steel	Mar. 29, 1870
106,365	Same.....same	Aug. 16, 1870
	Henderson, James, and Jasper M. Lawford. (*See* Player, John, assignor.) (Two cases) (Reissue.)	
98,963	Henderson, John, Wheeling, West Va. Glass-furnace	Jan. 18, 1870
108,121	Same.....Albion, N. Y. Horseshoe	April 19, 1870
4,015	Same.....Breast-strap slide (Design)	May 10, 1870
109,409	Henderson, John J., New York, N. Y. Roses for door-knobs	Nov. 22, 1870
106,583	Henderson, Leonard, Manson, N. C. Potato-digger	Aug. 23, 1870
107,357	Henderson, William H., and Walter S. Jones, Faxton's Switch, Va. Revolving-table	Sept. 13, 1870
101,617	Henderson, William M., Philadelphia, Pa. Direct-acting compound steam-engine.	April 5, 1870
105,941	Same.....same	Aug. 2, 1870
104,030	Hendrick, Eli E., Carbondale, Pa. Setter-gauge and case for sewing-machine needles	June 7, 1870
104,148	Same.....Stamp-canceler	June 14, 1870
107,044	Hendrick, Joseph E., assignor to self and Philo Brown, Waterbury, Conn. Lubricator	Sept. 6, 1870
99,085	Hendrickson, E. M., Brooklyn, N. Y. Burglar-proof safe	Jan. 25, 1870
107,498	Hendrickson, Hubbard, Red Bank, N. J. Adjustable arm for working slide-valves	Sept. 20, 1870
105,681	Henkel, Eugen, North Scituate, R. I. Cigar-box	July 26, 1870
107,258	Henkel, George H., Hartford City, Ind. Table	Sept. 13, 1870
106,484	Henley, Henry, Shoals, Ind. Fruit-drier	Aug. 16, 1870
108,906	Henney, Michael, and William B. Bager, North Manchester, Ind. Eaves-trough fastener. (Antedated Oct. 29, 1870)	Nov. 1, 1870
104,500	Henriksen, Hans Peter, assignor to Charles Edward Brosser, Denmark. Sewing-machine	June 21, 1870
103,696	Henry, Benjamin T., New Haven, Conn. Carriage-spring	Mar. 8, 1870
	Henry, E. T. (*See* Nolan, James, assignor.)	
101,013	Henry, John, Suisun, Cal. Bolster and axle bed-plate for vehicles. (Antedated March 1, 1870)	Mar. 22, 1870
101,014	Same.....Wagon-standard. (Antedated Mar. 1, 1870)	Mar. 22, 1870
4,162	Same.....Millburn, N. J. Frame of a printing-press (Design)	June 21, 1870
104,734	Same.....New York, N. Y. Depilating and tanning hides and skins	June 28, 1870
102,003	Henry, Samuel, Genoa, Ill. Gate	April 19, 1870
	Henry, Samuel B. (*See* Wheeler, Sylvester P., assignor) (Two cases.)	
	Henson, William S., *et al.* (*See* Newsham, Haines, and Henson.)	
106,060	Heptonstall, Charles, assignor to self and Pardon M. Stone, Providence, R. I. Steam-former for shaping and finishing corsets	Aug. 2, 1870
104,149	Hepworth, Samuel S., Cold Spring, N. Y. Centrifugal machine	June 14, 1870
110,038	Herald, John, Unadilla, N. Y. Core for casting	Dec. 13, 1870
103,880	Herbert, John Jacob, Philadelphia, Pa. Loom	June 7, 1870
108,391	Herbert, Theodore, Philadelphia, Pa. Potato-planter	Oct. 25, 1870
107,493	Herbster, Edward, Chicago, Ill. Stand for cleaning windows	Sept. 20, 1870
100,146	Herd, Thomas R., Allegheny, Pa. Railway-car coupling	Feb. 22, 1870

Alphabetical list of patentees for the year 1870—Continued.

No.	Name, residence, and invention or discovery.	Date.
99,316	Heritage, John H., Wilmington, Del. Culinary steamer	Feb. 1, 1870
104,308	Herkimer, Jacob, San Francisco, Cal. Rein-holder	June 14, 1870
103,816	Herkner, Henry F., New York, N. Y. Device for closing the ends of coat-sleeves	May 31, 1870
105,366	Herman, Ludwig, Detroit, Mich. Fire-extinguisher	July 12, 1870
98,961	Hermance, Charles W., Schuylerville, N. Y. Cooking-stove	Jan. 18, 1870
103,180	Same.....Culinary vessel	May 17, 1870
99,436	Hermance, Levi, Lansingburgh, N. Y. Cooking-stove	Feb. 1, 1870
103,881	Hermance, Lewis N., Kingston, N. Y. Bark-mill	June 7, 1870
103,530	Hermance, Richard M., Half Moon, N. Y. Stovepipe-damper	May 3, 1870
110,030	Same.....Troy, N. Y. Culinary vessel. (Antedated Dec. 1, 1870)	Dec. 13, 1870
102,469	Hermance, Richard M., assignor to Joseph B. Wilkinson, Troy, N. Y. Cooking-stove	April 26, 1870
101,461	Herold, John, Omaha, Neb. Water-proof composition for harness, leather, &c.	April 5, 1870
99,566	Herpers, F. J., and M. M. Sommer, Newark, N. Y. Sheet-music turner and holder	Feb. 8, 1870
	Herr, Christian G. (*See* Baker, Henry, assignor.)	
102,817	Herr, Cyrus N., Lampeter, Pa. Adjustable shutter-holder	May 10, 1870
100,627	Herresboff, James B., assignor to Gustavus A. Williamson and Samuel T. Shuttuck, Bristol, R. I. Shuttle for sewing-machines	Mar. 8, 1870
100,733	Herrick, Bryant B., assignor of one-half interest to John H. Wallace, Decatur, Mich. Clothes-line fastener	Nov. 29, 1870
105,075	Herrick, Charles F., Independence, Iowa. Reversible latch	July 5, 1870
102,909	Herrick, Gardner, Albion, Mich. Acupuncture-instrument	April 26, 1870
	Same.....(*See* Burt, Calvin C., assignor.)	
4,401	Herriet, Julius, assignor to David Wolfe Bruce, New York, N. Y. Type	Oct. 11, 1870 (Design).
4,402	Same.....same	Oct. 11, 1870 (Design).
4,117	Herriott, Thomas M., and Samuel Myers, South Pittsburgh, Pa. Balance slide-valve	Sept. 13, 1870 (Reissue).
106,366	Herron, James P., Atlanta, Ga. Railway-switch	Aug. 9, 1870
107,370	Same.....Seal for metal straps on boxes	Sept. 13, 1870
107,371	Same.....Cotton and hay press	Sept. 13, 1870
99,187	Hersee, William, Buffalo, N. Y. Slate-frame	Jan. 25, 1870
107,045	Hersey, Thomas, Bangor, Me. Moccasin boots and shoes	Sept. 6, 1870
104,031	Hersh, Noah F., assignor to self and A. B. Lerow, Round Hill, Pa. Animal-trap	June 7, 1870
98,886	Herthel, George P., jr., St. Louis, Mo. Bridge	Jan. 18, 1870
101,187	Hertick, Philip W., Louisville, Ky. Cooking-stove	Mar. 22, 1870
102,193	Hertle, Emil T., and Richard Thompson, New York, N. Y. Mechanism for making wire heddles	April 19, 1870
102,123	Herzog, August, New York, N. Y. Cover for tables, floors, &c.	April 19, 1870
100,891	Heskett, H. H., McLean County, Ill. Lathe for setting jewels in time-pieces	Mar. 15, 1870
104,033	Haskett, Harrison H., LeRoy, Ill. Spring-closing cap for oil-cups and ink-stands	June 7, 1870
99,686	Heskett, H. H., and Marcus E. Ferguson, McLean County, Ill. Combined base-knob and door-fastener	Jan. 25, 1870
106,159	Hess, Jacob Wilson, Montandon, Pa. Railway-car coupling	Aug. 9, 1870
108,593	Hess, John M., Philadelphia, Pa. Flower-casket	Oct. 25, 1870
99,188	Hess, Solomon F., Rochester, N. Y. Packing-case for tobacco	Jan. 25, 1870
3,971	Same.....same	Mar. 8, 1870 (Reissue).
100,147	Hess, Thomas, West Penn, Pa. Coupling cars	Feb. 22, 1870
104,150	Hessemer, Philipp, Washington, D. C. Toy-hoop	June 14, 1870
110,461	Hessing, John, Paterson, N. J. Non-conducting compound for coating steam-boilers, &c.	Dec. 27, 1870
	Heusner, Emil. (*See* Moog, Julius, assignor.)	
103,330	Heusser, Albert, Ellington, Conn. Box-opener	May 24, 1870
110,462	Hewes, Lorenzo N., Swanzey, N. H. Machine for cutting the ends of hoops	Dec. 27, 1870
110,463	Hewett, J. Austin, Nora Springs, Iowa. Compound and process of removing incrustations of lime from steam-boilers, metals, &c.	Dec. 27, 1870
100,898	Hewitt, George S., Boston, Mass. Manufacture of bricks	Mar. 15, 1870
	Hewitt, George W., *et al.* (*See* Fraser, Furness & Hewitt)	(Design.)
	Hewitt, Horatio J., and William Braidwood. (*See* Braidwood & Hewitt.)	
	Hewitt, John. (*See* Miller, Edgar T., assignor.)	
	Hewitt, S. B., jr., and L. P. Jones. (*See* Usher, Charles, assignor)	(Reissue.)
	Hewson, William. (*See* Miller, Michael, assignor.)	
102,597	Hey, Michael, Philadelphia, Pa., Hydraulic air-compressing apparatus	April 26, 1870
104,151	Heyl, Henry R., Philadelphia, Pa. Means for mounting croquet-boards. (Antedated May 30, 1870)	June 14, 1870
4,118	Same.....Croquet-table	Sept. 13, 1870 (Reissue).
102,200	Heywood, Edwin C., Worcester, Mass. Spool-stand	Nov. 15, 1870
107,372	Heyworth, James O., Chicago, Ill. Wind-wheel	Sept. 13, 1870
108,593	Heyworth, James O., and Herman E. Fessel, Chicago, Ill. Wind-wheel	Oct. 25, 1870
	Hiatt, Jesse. (*See* Ward, Aaron, assignor.)	
	Hiatt, Nicholas, and Franklin M. Hindman. (*See* Hindman & Hiatt.)	
106,594	Hibbard, Hermon A., Augusta, Mich. Dressing or tawing skins	Aug. 23, 1870
108,705	Hibbard, George, Wheeling, W. Va. Pump	Oct. 25, 1870
102,396	Hibbs, Adaline D., Trenton, N. J. Stationery-furniture	April 26, 1870
100,149	Hickcox, T. N., Brooklyn, N. Y. Metallic roofing	Feb. 22, 1870
102,818	Hickman, Henry, Omaha, Neb. Hand corn-planter	May 10, 1870
103,743	Hickok, William O., Harrisburgh, Pa. Ruling-machine	May 31, 1870

Alphabetical list of patentees for the year 1870—Continued.

No.	Name, residence, and invention or discovery.	Date.
104,152	Hickok, William O., Harrisburgh, Pa. Paper-ruling machine	June 14, 1870
107,046	Same.....Pen for ruling-machines	Sept. 6, 1870
108,480	Hicks, Coleman, Lancaster, Ky. Weather-strip	Oct. 18, 1870
103,458	Hicks, Horatio F., Grand View, Ind. Steam-steering apparatus	May 24, 1870
107,905	Hicks, Isaac, assignor to self and James O. Kendall, Hartford, Wis. Horse-collar top	Oct. 4, 1870
107,647	Hicks, Joseph M., Indianapolis, Ind. Bee-hive	Sept. 6, 1870
3,798	Hicks, William Cleveland, Summit, N. J. Breech-loading fire-arm	Jan. 18, 1870 (Reissue).
3,860	Same.....same	Mar. 1, 1870 (Reissue).
99,602	Hidden, E. J., Millburn, N. J. Relay for telegraph-instruments	Feb. 15, 1870
99,437	Higgins, George A., New York, N. Y. Chamber-pail	Feb. 1, 1870
101,618	Same.....Closet for cake	April 5, 1870
	Higgins, George A., *et al.* (*See* Averell, Higgins & Gordon, assignors.)	
103,862	Higgins, James, assignor to self and William S. Medaras, Salem Crossing, Ind. Baby-carriage	June 7, 1870
108,023	Higgins, John C., Skowhegan, Me. Trip-hammer and anvil-stock	Oct. 4, 1870
99,189	Higgins, John H., New York, N. Y. Apparatus for steaming yarn	Jan. 25, 1870
100,529	Higgins, Johnson, Friendship, N. Y. Stump-extractor	Mar. 8, 1870
107,906	Same.....same	Oct. 4, 1870
104,153	Higgins, Mahlon C. and Gilbert B., Flemington, N. J. Ditching-machine	June 14, 1870
	Higgins, Thomas, and Thomas P. Milligan. (*See* Goddard, Emerson, assignor.)	
105,573	Higham, Enos T., assignor to self and Daniel Higham, Philadelphia, Pa. Shade-cord retainer. (Antedated July 9, 1870)	July 19, 1870
	Highfield, Edward. (*See* Bentley, George J., assignor.)	
102,263	Highley, Enoch, Beechy Mire, Ind. Saw-mill	April 26, 1870
99,774	Higley, Aaron, Cleveland, Ohio. Car-truck	Feb. 15, 1870
101,674	Same.....Railway-car brake	April 12, 1870
99,190	Hildebrand, Henry F., Baltimore, Md. Double wash-board	Jan. 25, 1870
103,744	Hildebrand, John, assignor to self and Jacob Fringer, Taneytown, Md. Fruit-drier	May 31, 1870
109,007	Hildebrand, William, Fort Wayne, Ind. Awning	Nov. 8, 1870
109,991	Hildenbrand, Louis, Michigan City, Ind. Coffee-pot	Dec. 6, 1870
	Hildreth, Edwin A., and George E. Burt. (*See* Burt & Hildreth.)	
107,048	Hildreth, George W., Lockport, N. Y. School-seat	Sept. 6, 1870
4,228	Same.....Gang-plow	Dec. 27, 1870 (Reissue).
	Hildreth, Henry A., and William J. Johnson. (*See* Johnson & Hildreth.) (Design.)	
104,454	Hildreth, Joseph W., Boston, Mass. Machine for boarding leather	June 21, 1870
99,317	Hildreth, Royall S., South Adams, Mass. Bit-stock	Feb. 1, 1870
108,784	Same.....Vise	Nov. 1, 1870
98,655	Hildreth, Royall S., assignor to self and Rufus B. Richmond, South Adams, Mass. Lubricator	Jan. 4, 1870
103,045	Hiles, George L., Chicago, Ill. Saw-teeth	May 17, 1870
108,261	Hill, Albert M., New Haven, Conn. Reversible knob-latch	Oct. 11, 1870
3,937	Hill, B. B., Chicopee, Mass. Hand-stamp	April 19, 1870 (Reissue).
99,693	Hill, Byron R., Cranston, R. I. Revolving fire-arm	Feb. 15, 1870
102,264	Hill, Cyrus, Foxcroft, Me. Washing-machine	April 26, 1870
100,702	Hill, Daniel, assignor to self and Isaac L. Evans, New Vienna, Ohio. Manure-spreader	Mar. 15, 1870
110,361	Hill, David R. P., assignor to self, E. F. and H. H. Weaver, Fredericktown, Pa. Lubricating oil	Dec. 20, 1870
101,364	Hill, Edwin H., Worcester, Mass. Tinning and galvanising wire	Mar. 29, 1870
109,515	Hill, Elias, Hamilton, Ill. Baling-press	Nov. 22, 1870
109,009	Hill, Frederick B., East New York, N. Y. Box-scraper	Nov. 8, 1870
	Hill, George W., Olean, N. Y. Saw-mill dog	(Extension). May 2, 1870
103,459	Hill, Gilbert P., and Edward C. Dow, East Deering, N. H. Sawing-machine	May 24, 1870
100,149	Hill, Jacob W., Jefferson, and Thomas Roberts, Panora, Iowa. Rotary engine	Feb. 22, 1870
105,338	Hill, James M., Fairfield, Ill. Churn-dasher	July 12, 1870
	Hill, John B., and George S. Koontz. (*See* Koontz & Hill.)	
103,046	Hill, John R., assignor to self and Henry E. Hill, Hyde Park, Mass. Music-rack	May 17, 1870
103,331	Hill, Joseph, assignor to self, M. S. Frost, and E. P. Huyler, New York, N. Y. Galvanic battery	May 24, 1870
99,191	Hill, Lysander S., Grand Rapids, Mich. Jewelers' chuck	Jan. 25, 1870
107,494	Hill, Nathan H., Cincinnati, Ohio. Extension-lounge	Sept. 20, 1870
	Hill, Nathan H., and John K. Coolidge. (*See* Coolidge & Hill.)	
109,210	Hill, Noah, Leavenworth City, Kans. Railway-rail joint	Nov. 15, 1870
3,899	Hill, R. A., assignor of part interest to H. C. Lape, Washington, D. C. Branch stop-cock for mains	Feb. 8, 1870 (Reissue).
	Hill, Samuel. (*See* Mooney, John H., assignor.)	
101,364	Hill, Samuel A., and Charles F. Thumm, assignors to selves and Oliver P. Scaife, Oil City, Pa. Still for hydrocarbons. (Antedated Jan. 18, 1870)	Mar. 29, 1870
101,365	Same.....Still for hydrocarbons. (Antedated Jan. 18, 1870)	Mar. 29, 1870
102,819	Same.....Apparatus for distilling hydrocarbon oils	May 10, 1870
103,893	Hill, Thomas, Vallejo, Cal. Steam-ram	June 7, 1870
105,204	Same.....Oscillating-engine	July 12, 1870
108,136	Same.....Trunnion for steam-engines and calenders	Oct. 11, 1870
108,137	Same.....Valve for steam-engines	Oct. 11, 1870
103,338	Hill, Warren S., Manchester, N. H. Knitting-machine	May 24, 1870
104,455	Hill, William, New York, N. Y. Side-saddle tree	June 21, 1870
104,456	Same.....Side-saddle	June 21, 1870
108,594	Hill, William, Pottsville, Pa. Machine for securing heads to metallic kegs	Oct. 25, 1870

Alphabetical list of patentees for the year 1870—Continued.

No.	Name, residence, and invention or discovery.	Date.
	Hill, W. F. (*See* Thomas, William K., assignor.)	
106,180	Hill, William E., Erie, Pa. Machine for turning logs	Aug. 9, 1870
99,667	Hilliard, James F., Fall River, Mass. Step for spindles for spinning-machines	Jan. 25, 1870
100,498	Hillebrand, Louis, Philadelphia, Pa. Padlock	Mar. 1, 1870
100,499	Same. same	Mar. 1, 1870
103,403	Same. Stay for trunks	May 17, 1870
103,181	Same. Hasp for trunk-locks (Reissue)	May 17, 1870
4,395	Same.	Dec. 20, 1870
106,817	Hiller, John R., assignor to self and Clark Elliott, Woodland, Cal. Carriage	Aug. 30, 1870
103,198	Hilliar, Bindless H., New London, Conn. Ice-cream freezer	May 17, 1870
105,076	Hilliard, Henry, Brooklyn, N. Y. Awning-frame	July 5, 1870
110,384	Hillis, William D., Elgin, Ill. Fence	Dec. 20, 1870
105,374	Hillman, John J., Philadelphia, Pa. Whip-socket ring	July 19, 1870
101,493	Hills, Alfred M., Lowell, Mass. Planing-machine	April 5, 1870
	Hills, Ami. (*See* Ganyard, Henry O., assignor.)	
106,519	Hills, David, Richville, N. Y. Lime-kiln	Aug. 30, 1870
105,077	Hills, George, Plainville, Conn. Setting clock-dials	July 5, 1870
109,908	Hillis, Jacob, Haydensville, Mass. Faucet	Dec. 6, 1870
103,884	Hillson, Robert, Albany, N. Y. Heating-stove	June 7, 1870
103,514	Hillstream, Francis M., Lawrence, Kans. Composition made from coal-tar	May 31, 1870
	Hilsman, J. M., *et al.* (*See* Griffith, Howard V., assignor.)	
4,277	Hilton, Samuel F., Providence, R. I. Collar-box (Design)	Aug. 9, 1870
4,336	Same. same (Design)	Sept. 6, 1870
	Same. (*See* Faul, George, assignor) (Design.)	
110,335	Hilton, Alexander, Strathroy, Canada. Washing-machine	Dec. 20, 1870
101,128	Himmer, Vitalis, New York, N. Y. Lemon-squeezer	Mar. 22, 1870
98,560	Himmer, Vitalis, assignor to self, W. Heissenbuttle, and James McMullen, New York, N. Y. Electric clock	Jan. 4, 1870
98,594	Same. same	Jan. 4, 1870
	Hinchman, Joseph C. (*See* Prickett, Joshua P., assignor.)	
109,734	Hinckley, Nathaniel, Marston's Hill, Mass. Flood-gate	Nov. 29, 1870
108,136	Hindemeyer, Anthony J., assignor to Samuel C. Collins, Philadelphia, Pa. Composition for welding, puddling, and brazing metals	Oct. 11, 1870
106,693	Hindman, Franklin M., and Nicholas Hiatt, Sidney, Iowa. Churn	Aug. 23, 1870
101,306	Hine, Merrit, assignor to C. Cowles & Co., New Haven, Conn. Machine for threading bolts	Mar. 29, 1870
106,365	Hingher, Constantine, New Brunswick, N. J. Coating metal articles with India-rubber	Aug. 23, 1870
106,819	Same. Covering metal articles with India-rubber	Aug. 30, 1870
108,139	Same. Apparatus for finishing terrets	Oct. 11, 1870
108,263	Hinkley, Benjamin F., Baltimore, Md. Guano-distributer and seed-sower	Oct. 11, 1870
108,149	Hinkley, George M., Milwaukee, Wis. Swaging-machine	Oct. 11, 1870
101,575	Hinkley, Jonas, assignor to Hinkley Knitting-Machine Company, Norwalk, Ohio. Knitting-machine	April 12, 1870
	Hinkley Knitting-Machine Company. (*See* Morse, Edward, assignor.)	
99,666	Hinman, C. F., Chicago, Ill. Manufacture of composition roofs	Jan. 25, 1870
106,606	Hinman, George C., assignor to Levi S. Tower, Boston, Mass. Blotting-pad	Aug. 23, 1870
110,040	Hinman, Milan, assignor to self and Robert M. Stone, West Stockbridge, Mass. Lubricator	Dec. 13, 1870
110,464	Hinrichs, Charles F. A., New York, N. Y. Lamp	Dec. 27, 1870
	Hinsdale, Ezra M., and William Quay. (*See* Quay & Hinsdale.)	
98,494	Hintz, John C., assignor to Charles Dieboid and Jacob Kienglo, Cincinnati, Ohio. Bolt-work and door for safes	Jan. 4, 1870
103,183	Hintz, Julius C., jr., Cincinnati, Ohio. Permutation-lock	May 17, 1870
108,481	Same. same	Oct. 18, 1870
3,979	Hipkins, Stephen, jr., assignor to the Belmont Glass Works, Bellair, Ohio. Ornamenting glassware (Design)	April 12, 1870
102,004	Hippensteel, C., Lee's Cross Roads, Pa. Corn-planter	April 19, 1870
	Hird, Isaac, and James T. Brown. (*See* Brown & Hird.)	
102,399	Hirsch, Hermann, France. Screw-propeller. (Patented in France Dec. 16, 1865)	April 26, 1870
101,265	Hirschbühl, Joseph Ignatz, Louisville, Ky. Sewing-machine	Mar. 29, 1870
	Hisey, David W., and Elisha H. Goldman. (*See* Goldman & Hisey.)	
105,693	Hitchcock, Alonzo, New York, N. Y. Windlass	July 26, 1870
100,127	Hitchcock, Charles Nelson, and Henry Pendleton Taylor Wilson, Canton, Miss. Fence. (Antedated Oct. 29, 1870)	Nov. 8, 1870
	Hitchcock, Jason, and William Workman. (*See* Workman & Hitchcock.)	
107,907	Hitchcock, John G., New York, N. Y. Neck-tie	Oct. 4, 1870
	Hitchcock, John G., and Hiram P. Wetmore. (*See* Wetmore & Hitchcock.)	
98,965	Hitchcock, M. T., assignor to self and J. W. Labaree, Springfield, Mass. Railroad-car ventilator	Jan. 18, 1870
100,404	Same. Stove for railroad-cars	Mar. 1, 1870
4,005	Same, assignor to J. W. Labaree, Springfield, Mass. Car-ventilator (Reissue)	May 31, 1870
3,910	Hitchcock, Robert, assignor to self, Henry D. Carroll, and John H. Hare, Springfield, Mass. Railroad-car ventilator (Reissue)	April 12, 1870
107,495	Hitselberger, Charles F., Libertytown, Md. Smoking-pipe	Sept. 20, 1870
100,150	Hitt, Edgar, Poundridge, N. Y. Lock for wagon-seats	Feb. 22, 1870
107,049	Hitselberger, Christopher, South Orange, N. J. Hobby-horse	Sept. 6, 1870
100,530	Hix, Wiley B., Rome, Ga. Flue for dry-houses. (Antedated March 2, 1870)	Mar. 8, 1870
105,078	Hoadley, John C., Lawrence, Mass. Steam-engine	July 5, 1870
109,211	Hoag, George M., Muscatine, Iowa. Potato-digger	Nov. 15, 1870
	Hoagland, Abraham. (*See* Matteson, Elisha, assignor.)	
	Hoagland, William C., *et al.* (*See* Reed, Hoagland & Nowsom.)	

Alphabetical list of patentees for the year 1870—Continued.

No.	Name, residence, and invention or discovery.	Date.
108,585	Hoard, Isaac L., Bristol, R. I. Thread-spool	Oct. 25, 1870
	Hoard, John W. (*See* Wiggin, George R., assignor.)	
108,937	Hobart, Randolph D., assignor to self and J. V. Simmons, Binghamton, N. Y. Sash and blind machine	Aug. 30, 1870
3,898	Hobbs, J. H., Wheeling, W. Va. Ornamenting glassware (Design)	Feb. 1, 1870
102,194	Same. Sirup-pitcher	April 19, 1870
103,460	Same. Lamp	May 24, 1870
98,495	Hobbs, J. S., and L. R. Elder, West Falmouth, Me. Brick-machine	Jan. 4, 1870
	Hobill, I. N. (*See* Davis, N. C., assignor.)	
101,129	Hobson, Mary, Williamsburgh, Mo. Dish-washer	Mar. 22, 1870
105,493	Hockabout, Benjamin, Antioch, Cal. Washing-machine	July 19, 1870
101,130	Hockett, Amos, Wilmington, Ohio. Paper-filo	Mar. 22, 1870
108,907	Hodge, Ephraim C., Onconta, N. Y. Reversible plow	Nov. 1, 1870
108,963	Hodge, Perry, Seneca Falls, N. Y. Dry gas-meter	Oct. 11, 1870
103,184	Hodges, James Wilson, Baltimore, Md. Steam-trap	May 17, 1870
103,185	Hodges, Pliny F., Moline, Ill. Combined rake and reel for harvesters	May 17, 1870
103,186	Same. same	May 17, 1870
103,615	Hodgetts, Charles, Williamsburgh, N. Y. Coal-scuttle	May 31, 1870
	Hodgkin, John Eliot. (*See* Brasier, Edward, assignor.)	
	Hodgkins, Samuel T. (*See* Purchase, Thomas E., assignor.)	
	Hodgman, Alfred C. (*See* Fowler, Samuel W., assignor.)	
	Hodgman, M. M., and A. Van Camp. (*See* Van Camp & Hodgman.) (Two cases.)	
109,317	Hodgson, Charles, England. Apparatus for transporting loads on wire-rope	Nov. 15, 1870
4,526	Hodgson, Joseph, assignor to Thomas Dolan, Philadelphia, Pa. Woven shawl-fabric (Design)	Dec. 20, 1870
4,527	Same. Woven shawl-fabric (Design)	Dec. 20, 1870
4,528	Same. same (Design)	Dec. 20, 1870
105,943	Hodgson, Mark, Saginaw, Mich. Grate-bar. (Antedated July 19, 1870)	Aug. 2, 1870
	Hodnett, William, and John B. Harda. (*See* Harda & Hodnett.)	
99,192	Hoe, Peter S., New York, N. Y. Battery for electrotyping	Jan. 25, 1870
	Hoe, R., & Co. (*See* Tucker, Stephen D., assignor) (Reissue.)	
	Same. (*See* De Puy, Alexander T., assignor.)	
	Hoe, Richard M., New York, N. Y. Printing-press (Disclaimer)	July 22, 1870
	Same. same (Extension)	July 23, 1870
3,893	Hoe, Richard M., assignor to R. Hoe & Co., New York, N. Y. Printing-press. (Reissue)	Mar. 22, 1870
108,785	Hoe, Richard M., and Stephen D. Tucker, New York, N. Y. Printing-press	Nov. 1, 1870
109,212	Hoefer, William L., Jeffersonville, N. Y. Bottle-stopper	Nov. 15, 1870
3,934	Hoeller, C., assignor to self and Henry Samuel Hoeller, Cincinnati, Ohio. Stove-pipe elbow (Reissue)	April 26, 1870
102,125	Hof, Johann, and Philipp Brennein, Baltimore, Md. Hinge for shutters	April 19, 1870
99,672	Hofer, William, New Haven, Conn. Writing-desk	Feb. 8, 1870
105,683	Hofferberth, John, Baltimore, Md. Oil-still	July 26, 1870
4,004	Hoffheimer, Max, Philadelphia, Pa. Brand (Design)	May 3, 1870
100,026	Hoffman, Austin D., assignor to self and Charles H. Morse, Chicago, Ill. Registering-punch for railroad-conductors	Feb. 22, 1870
100,037	Hoffman, Austin D., assignor to Charles H. Morse, Chicago, Ill. Till-alarm	Feb. 22, 1870
104,033	Hoffman, Daniel, Noblestown, and William Johnston, Havelock, Pa. Nut-lock	June 7, 1870
102,965	Hoffman, Isaac, assignor to Mary and Mary C. Hoffman, Oregon, N. Y. Manufacture of paper	April 26, 1870
110,936	Hoffman, Jacob R., Fort Wayne, Ind. Saw-mill	Dec. 20, 1870
104,735	Hoffman, Lewis G., Albany, N. Y. Ash-sifter	June 28, 1870
100,763	Hoffman, Robert N., Chicago, Ill. Window-cornice	Mar. 15, 1870
100,698	Hoffmann, Theodore A., Beardstown, Ill. Aspirator for preventing overheating of grain, &c	Mar. 8, 1870
98,769	Hofmann, Ernst F., New York, N. Y. Pessary	Jan. 11, 1870
102,400	Hogan, Patrick J., Cincinnati, Ohio. Detachable saw-teeth	April 26, 1870
100,639	Hogel, Hascal A., assignor to self and Cosmore G. Bruce, New York, N. Y. Treating blood for the preparation of fertilizers and for other purposes	Mar. 8, 1870
101,131	Same. Brooklyn, N. Y. Fertilizer	Mar. 22, 1870
110,137	Hogeland, Israel, Indianapolis, Ind. Clothes-drier	Dec. 13, 1870
	Hogg, William, jr. (*See* Crabtree, Jonathan, assignor) (Two cases) (Design.)	
4,142	Hoggson, Samuel J., New Haven, Conn. Hand-stamp (Design)	June 7, 1870
	Hoglin, George W., *et al.* (*See* Miller, Charles G., deceased, by Christina Julia Miller, his administratrix, and Benjamin Kersting.)	
	Hogoboom, Peter, and William Pearson. (*See* Pearson & Hogoboom) (Design.)	
106,161	Hoisington, Seth B., Galesburgh, Ill. Cultivator	Aug. 9, 1870
105,205	Hoit, Lara B., Cedar Falls, Iowa. Guard for ax-handles	July 12, 1870
109,213	Holbrook, Charles W., and E. Frederick Butler, Windsor Locks, Conn. Portable book-clamp	Nov. 15, 1870
108,355	Holbrook, Edward, jr., Louisville, Ky. Tobacco-casing machine	Oct. 18, 1870
	Holbrook, Franklin F. (*See* Matthews, Elbridge G., assignor) (Two cases.)	
103,187	Holbrook, Frederick, Brattleborough, Vt., James A. Howe and Joel Nourse, Boston, Mass., assignors to Joel Nourse, Boston, Mass. Swivel-plow	May 17, 1870
103,461	Holbrook, Samuel Elliot, jr., Charlestown, Mass. Countersink	May 24, 1870
104,501	Holcomb, Andrew L., Hopewell, N. J. Corn-planter and fertilizer	June 21, 1870
110,465	Holcomb, Frederick A., assignor to self and Samuel B. Jenks, Grand Rapids, Mich. Manufacture of leather	Dec. 27, 1870
109,198	Holden, Cyrus B., assignor to self and Isaac Fiske, Worcester, Mass. Gun-lock	Nov. 8, 1870

Alphabetical list of patentees for the year 1870—Continued.

No.	Name, residence, and invention or discovery.	Date.
101,876	Holden, D. L., New Orleans, La. Apparatus for the manufacture of ice	April 12, 1870
98,906	Holden, Edward, England. Apparatus for combing and preparing wool, &c	Jan. 18, 1870
	Holden, James B., and Richard B. Hamel. (*See* Hamel & Holden, assignors.)	
	Holden, Joel M. (*See* Simonds, Warren A., assignor.)	
	Holder, Luther L. and Stoughton B. (*See* Smith, Timothy, assignor.)	
	Holden, Stoughton B. and Luther L. (*See* Keller, Matthias, assignor.)	
102,660	Holden, William G., jr., Covington, Ky. Refrigerator	May 3, 1870
104,309	Holdiman, Daniel, Waterloo, Iowa. Metal sleigh-runner	June 14, 1870
	Holland, Dwight, *et al.* (*See* Fiske, Henry J., assignor.)	
102,540	Holland, Frank D., assignor to Henry J. Holland, Lewiston, Me. Shoe-brush	May 3, 1870
107,908	Holland, Hezekiah R., Wilmington, Va. Corn-planter	Oct. 4, 1870
99,894	Holland, Timothy, New York, N. Y. Lubricator	Feb. 15, 1870
105,943	Holland, William H., Boston, Mass. Paddle-wheel	Aug. 2, 1870
105,575	Hollar, Caswell, Abingdon, Ind. Combined corn-plow and grain-drill	July 19, 1870
104,850	Hollely, John H., Brooklyn, N. Y. Tobacco-pipe machine	June 28, 1870
105,454	Hollen, Joseph, Festoria, Pa. Knitting-machine	July 19, 1870
107,684	Hollenbeck, Charles F., Kirkville, Mo. Wagon-seat	Sept. 27, 1870
106,485	Hollenberry, Frank, assignor to self and John C. Frizell, Frizellburgh, Md. Hoisting-jack	Aug. 16, 1870
104,502	Holley, Alexander L., Brooklyn, N. Y. Lining Bessemer converters	June 21, 1870
106,182	Same.....Apparatus for the manufacture of Bessemer steel	Aug. 9, 1870
100,151	Holley, Edgar E., New York, N. Y. Mast of vessels	Feb. 22, 1870
103,462	Holliday, Isaac, assignor to self and Gevert Papo, Brooklyn, N. Y. Bit-stock	May 24, 1870
108,706	Holling, Armine A., Pultneyville, N. Y. Square-sail for fore-and-aft vessels	Oct. 25, 1870
102,266	Hollinger, George, and Samuel H. Fry, Rothsville, Pa. Stove-pipe damper	April 26, 1870
101,877	Hollingsworth, John W., Mount Vernon, Ind. Mold for metals	April 12, 1870
103,188	Same.....Metal-injector	May 17, 1870
103,189	Same.....Artificial teeth	May 17, 1870
103,333	Hollmann, Charles, Union Hill, N. J. Laying melting-floors	May 24, 1870
109,903	Holloway, George P., and William J. Huey, Portland, Ind. Machine for beating and cleaning hair	Dec. 6, 1870
110,041	Holloway, Josephus F., Cleveland, Ohio. Semi-rotary valve	Dec. 13, 1870
4,085	Holly, Birdsill, Lockport, N. Y. Water-supply regulator for water-works. (Division A, reissue)	Aug. 2, 1870
4,086	Same.....Water-supply regulator for water-works. (Division B, reissue)	Aug. 2, 1870
4,087	Same.....same.....(Division C, reissue)	Aug. 2, 1870
108,264	Holman, David O., assignor of one-half interest to T. P. Saunders, Adams, N. Y. Pump	Oct. 11, 1870
108,265	Holman, David O., Adams, N. Y. Pump	Oct. 11, 1870
108,482	Same.....Water-wheel	Oct. 18, 1870
109,319	Holman, George, Waterville, N. Y. Clothes-line reel	Nov. 15, 1870
	Holmes, Booth & Hayden. (*See* Atwood, Lewis J., assignor.)	
	Same.....(*See* Johnson, James H., assignor.)	
	Same.....(*See* Hayden, Hiram W., assignor.)	
	Same.....(*See* Dunn, John, assignor.)	
105,684	Holmes, Britain, Buffalo, N. Y. Dumping-wagon	July 26, 1870
103,463	Holmes, Charles and Frank E., Boston, Mass. Machine for scouring or dressing hides	May 24, 1870
109,000	Holmes, Charles E. L., New York, N. Y. Preparation of peat	Nov. 8, 1870
100,405	Holmes, Charles E. L., assignor to George Hovey & Son, New York, N. Y. Fluting-machine	Mar. 1, 1870
100,200	Holmes, Charles Patterson, Governeur, N. Y., and Albert L. Howell, Mohawk, N. Y. Churn	Mar. 1, 1870
110,362	Holmes, Edwin, New York, N. Y., and Henry C. Roome, Jersey City, N. J. Electro-magnetic envelope for safes, vaults, &c	Dec. 20, 1870
104,851	Holmes, Francis M., Boston, Mass. Folding-chair	June 28, 1870
105,079	Same.....same	July 5, 1870
	Holmes, Henry L., and John R. Jernauld. (*See* Jernauld & Holmes.).....(Design.)	
99,310	Holmes, Horace H., assignor to self, J. D. Dale, Ira S. Beers, and J. H. Dale, Elmira, N. Y. Railway-car replacer	Feb. 1, 1870
98,887	Holmes, James G., Charleston, S. C. Stop for the hinged frame of reclining-chairs	Jan. 18, 1870
106,566	Holmes, John A., Shopierre, Wis. Show-case	Aug. 23, 1870
	Same.....(*See* Wright, Thomas, assignor.)	
107,050	Holmes, Thomas, Williamsburgh, N. Y. Dough and cake mixer	Sept. 6, 1870
106,587	Holmes, Thomas J., Malden, Mass. Atomizing-tube	Aug. 23, 1870
	Holmes, William, *et al.* (*See* Leake, James, assignor.) (Two cases).....(Design.)	
	Holmes, W. S. and Robert H., *et al.* (*See* Stuart, William M., assignor.)	
101,015	Holms, Laurence, Paterson, N. J. Metallic beam. (Antedated March 5, 1870)	Mar. 22, 1870
103,885	Holt, Edward W., Corinna, Me. Lamp-shade supporter	June 7, 1870
	Holt, James D. (*See* Casseday, James, assignor.)	
108,267	Holt, John, Lowell, Mass. Signal and other flags	April 26, 1870
105,455	Same.....Press-dyeing	July 19, 1870
3,930	Holt, John F., assignor to Woonsocket Rubber Company, Woonsocket, R. I. Roller for clothes-wringers (Reissue)	April 19, 1870
105,685	Holt, John P., Cleveland, Ohio. Steam-gauge	July 26, 1870
99,895	Holt, M. L., and L. C. Abbott, Eaton, Ohio. School desk and seat	Feb. 15, 1870
104,154	Holt, Rufus C., Morehouse Parish, La. Cotton-chopper	June 14, 1870
3,949	Holt, Walter, Brooklyn, N. Y. Toy steam-engine	Feb. 15, 1870
	Holt, Warren H. (*See* Parkhurst, Stephen K., assignor).....(Two cases.)	
102,541	Holt, Wilson, Dawson, Ga. Cotton-chopper	May 3, 1870

Alphabetical list of patentees for the year 1870—Continued.

No.	Name, residence, and invention or discovery.	Date.
107,685	Holton, Francis H., Brooklyn, N. Y. Chair and furniture tips	Sept. 27, 1870
100,152	Holzach, Frederick, New Orleans, La. Quadrant and sextant	Feb. 22, 1870
105,686	Holzberger, John, Newark, N. J. Mitering-machine	July 26, 1870
102,542	Holzer, Edward R., Philadelphia, Pa. Scaffold. (Antedated April 29, 1870)	May 3, 1870
	Homire, Daniel. (*See* King, Norman, assignor.)	
102,543	Homrighouse, Louis, Fairfield County, Ohio. Cultivator-plow	May 3, 1870
107,777	Homrighouse, Louis, Baltimore, Ohio. Cultivator	Sept. 27, 1870
98,486	Honsinger, Abram W., Rome, N. Y. Furnace for deoxidizing iron ore	Jan. 4, 1870
105,906	Honsinger, Josiah, assignor to Benjamin Honsinger, Harrisburgh, Pa. Sash-holder	July 12, 1870
100,893	Hood, Benjamin L. and Henry O., and Ezra W. Clark, jr., Washington, D. C. Elevated railway	Mar. 15, 1870
	Hood, Cornelius. (*See* Pencille, Jethro, assignor.)	
107,959	Hood, Joel, Milwaukee, Wis. Machine for husking corn	Sept. 13, 1870
	Hood, J. M. (*See* Dougherty, Eliphalet, assignor.)	
102,268	Hook, Albert H., New York, N. Y. Manufacture of India-rubber belts	April 26, 1870
102,269	Hooker, Horace B., Rochester, N. Y. Skate-fastening	April 26, 1870
	Hooker, John D. (*See* Garcin, Leon Paul, assignor.)	
108,786	Hooker, William C., Abington, Ill. Gate	Nov. 1, 1870
109,904	Hooker, William Davis, San Francisco, Cal. Direct-acting steam-engine	Dec. 6, 1870
101,132	Hooper, William, Ticonderoga, N. Y. Ore-separator	Mar. 22, 1870
99,673	Hooper, William J. and Theodore, and Orazio Lugo, Baltimore, Md. Apparatus for drying fish and other substances	Feb. 8, 1870
99,896	Hooper, William J. and Theodore, Baltimore, Md. Treating fish and animal matter to obtain oils, fats, and other products	Feb. 15, 1870
105,207	Hooton, James S., New Carlisle, Ind. Feed-water heater for locomotives	July 12, 1870
105,208	Same.....Crab for hand-hole plates	July 12, 1870
105,209	Same.....Feed-water filter	July 12, 1870
105,333	Hooton, Marsena M., assignor to self and Burden Pullen, Clinton County, Ill. Apparatus for catching curculios	July 12, 1870
	Hoover, John R., and George Davis. (*See* Davis & Hoover.)	
107,260	Hoover, Reuben, Vernon Centre, Minn. Stove-pipe band and shelf	Sept. 13, 1870
107,909	Hope, James G., Topeka, Kans. Projectile	Oct. 4, 1870
3,849	Hope, John and Thomas, assignors through mesne assignments to selves and Heber Le Favour, Providence, R. I. Machine for engraving calico-printers' rollers (Reissue)	Feb. 22, 1870
98,497	Hopkins, C., Philadelphia, Pa. Drilling, riveting, and watch-jeweling apparatus. (Antedated Dec. 30, 1869)	Jan. 4, 1870
109,319	Hopkins, D. A., Jersey City, N. J. Journal-bearing	Nov. 15, 1870
104,310	Hopkins, Enoch, Newaygo, Mich. Bed-bottom	June 14, 1870
110,237	Hopkins, George E., and William B. Shedd, Boston, Mass. Machine for preparing fiber from sisal grass and like substances	Dec. 20, 1870
106,820	Hopkins, George M., and John A. Straight, Albion, N. Y. Low-water indicator	Aug. 30, 1870
106,821	Same.....Low-water and high-pressure indicator	Aug. 30, 1870
109,735	Same.....Safety-tube for lamps	Nov. 29, 1870
106,822	Hopkins, Hiram, Wellfleet, Mass. Broom-crotch supporter	Aug. 30, 1870
99,193	Hopkins, Joseph W., assignor to self and William H. M. Pye, Brooklyn, N. Y. Air-pump	Jan. 25, 1870
104,457	Hopkins, Richard H., Hinsdale, N. H. Anger	June 21, 1870
105,334	Hopkins, William A., New York, N. Y. Reversible knob-latch	July 12, 1870
	Hopkins, William A., *et al.* (*See* Kehoe, Edward J., assignor.)	
108,890	Hoppe, F., assignor to Theodor Kahn, Germany. Combined latch and lock	May 10, 1870
103,886	Hopper, Thomas and Hatfield, and Chandler C. Coats, Newark, N. J. Railway-car brake	June 7, 1870
105,944	Hopson, Alfred Henry, Taylorville, Ill. Trace-buckle	Aug. 2, 1870
100,630	Hopson, George, Bridgeport, Conn. Machine for punching the leaves of elliptic springs	Mar. 8, 1870
	Hormann, Ferdinand, and Frederick Rohrbacher. (*See* Rohrbacher & Hormann.)	
98,770	Hornbeck, Cornelius F., Slatersville, N. Y. Car-coupling	Jan. 11, 1870
109,819	Hornbeck, Cornelius F., and William J. Carus, Slatersville, N. Y. Snow-plow	Dec. 6, 1870
104,956	Horne, William E., Decatur, Ill. Hedge-trimmer	July 5, 1870
104,957	Horner, James, assignor to self and John Cox, New York, N. Y. Method of rolling metal-bars	July 5, 1870
101,463	Hornfager, William C., and Edmond A. Warren, Brooklyn, N. Y. Reclining-chair	April 5, 1870
110,466	Hornig, Julius L., Chicago, Ill. Propulsion of canal-boats	Dec. 20, 1870
106,061	Horning, Robert A., Lanark, Ill. Rotary pump	Aug. 2, 1870
107,496	Hornsby, John, Woodbridge, N. J. Kiln for burning tiles, pipes, &c	Sept. 20, 1870
	Horsford, E. N., Cambridge, Mass. Pulverulent acid for use in the preparation of soda powders, farinaceous food, and for other purposes. (Extension)	April 12, 1870
104,034	Same.....Manufacture of a non-hygroscopic pulverulent acid phosphate	June 7, 1870
104,311	Same.....Manufacture of beverages for medicinal and other purposes	June 14, 1870
100,894	Horter, George, assignor to self, Thomas K. Peterson, and Edward C. Fenner, New Orleans, La. Saddle	Mar. 15, 1870
101,619	Same.....Horse-collar	April 5, 1870
105,080	Same.....Riding-saddle	July 5, 1870
105,081	Same.....Bridle for harness	July 5, 1870
99,897	Horton, B. F., Ithaca, N. Y. Horse hay-rake	Feb. 15, 1870
105,910	Horton, Emmet, Dundee, N. Y. Clapboard-gauge	July 12, 1870
	Horton, E. B., *et al.* (*See* Wells, William, assignor.)	
98,498	Horton, Henry B., assignor to self and Hervey Platte, Ithaca, N. Y. Arrangement of pendulum in calendar-clocks	Jan. 4, 1870

Alphabetical list of patentees for the year 1870—Continued.

No.	Name, residence, and invention or discovery.	Date.
4,206	Horton, Jacob C., New York, N. Y., and Samuel K. Hawkins, Lansingburgh, N. Y., assignors to the Manhattan Meter Company. Meter ..... (Reissue)	Dec. 20, 1870
4,187	Horton, James M., assignor to the Miller's Falls Manufacturing Company, Chicago, Ill. Auger-handle ..... (Reissue)	Nov. 29, 1870
104,153	Horton, John, New York, N. Y. Standard for drop-lights	June 14, 1870
109,406	Horton, Marcus L., Windsor, Vt. Coal-stove	Mar. 1, 1870
110,467	Same. Fire-box for stoves and ranges	Dec. 27, 1870
103,190	Horton, William H., Jersey City, N. J. Compensating-regulator for watches	May 17, 1870
	Horton, William H., and Israel Farjeon. (*See* Farjeon & Horton.)	
109,010	Horwitz, William, New York, N. Y. Liquid glue. (Antedated Oct. 28, 1870)	Nov. 8, 1870
105,456	Hoskin, Richard, Dutch Flat, Cal. Pipe-coupling	July 19, 1870
107,261	Hoskins, Darlington, Philadelphia, Pa. Bed-bottom	Sept. 13, 1870
110,363	Hoskins, Henry R., Harlan, Ind. Gate	Dec. 20, 1870
104,958	Hotchkiss, Albert G., Wolcottville, Conn. Boring-tool	July 5, 1870
101,620	Hotchkiss, Isahel A., Sharon, Conn. Mouse-trap	April 5, 1870
108,094	Same. Snap-hook	Oct. 4, 1870
98,499	Hotchkiss, Bennet, assignor to self and W. J. Clark & Co., Fair Haven, Conn. Thill-coupling	Jan. 4, 1870
99,898	Hotchkiss, B. B., New York, N. Y. Breech-loading fire-arm	Feb. 15, 1870
99,899	Same. Primer for cartridges	Feb. 15, 1870
105,335	Hotchkiss, Burritt M., assignor to Goodyear India-Rubber Glove Manufacturing Company, Naugatuck, Conn. Machine for making tubes and stripe of India-rubber	July 12, 1870
108,909	Same. Dress-shield	Nov. 1, 1870
	Hotchkiss, Julius. (*See* Savage, Elliot, assignor.)	
99,438	Hotte, George, New York, N. Y. Coffee-pot	Feb. 1, 1870
104,312	Hotz, Conrad, assignor to Paul Corbet & Lecoieux, Switzerland. Machine for making paper tubes	June 14, 1870
98,505	Houel, Jules César, and Ferdinand Louis Felix Caillet, France. Gun-carriage	Jan. 4, 1870
104,736	Hough, George W. and William S., Galva, Ill. Dumping-machine	June 28, 1870
107,778	Hough, James T., New York, N. Y. Locking-cap for bottles. (Antedated Sept. 26, 1870)	Sept. 27, 1870
98,868	Hough, William J., Martinez, Cal. Oar	Jan. 18, 1870
108,900	Houghton, Carlos P., Georgetown, D. C. Manufacture of fertilizers	Nov. 1, 1870
	Houghton, Charles, *et al.* (*See* Palmer, Palmer & Houghton.)	
	Houghton, Charles, and Charles W. Palmer. (*See* Palmer & Houghton.)	
102,401	Houghton, George, Stephen Moore, and Homer Rogers, assignors to Stephen Moore and Homer Rogers, Sudbury, Mass. Shank-stiffener	April 26, 1870
110,364	Houlker, Christopher, Frankford, Pa. Purifying oil which has been used in lubricating machinery	Dec. 20, 1870
102,065	Houpt, John, Springtown, Pa. Steam-condenser	April 19, 1870
3,980	Same. Steam-condenser ..... (Reissue)	May 31, 1870
105,457	Same. Condenser for marine-engines	July 19, 1870
109,616	Same. Steam-generator	Nov. 29, 1870
99,674	House, Charles D., Lake Village, N. H. Twisting tubes for spinning	Feb. 8, 1870
98,500	House, Henry A., Fair Haven, Conn. Knitting-machine	Jan. 4, 1870
98,771	Same. Bridgeport, Conn. Sewing-machine	Jan. 11, 1870
109,617	Same. Adding and subtracting registers	Nov. 29, 1870
109,618	Same. Automaton rope-walker	Nov. 29, 1870
109,619	Same. Garter	Nov. 29, 1870
109,736	Same. same	Nov. 29, 1870
109,737	Same. same	Nov. 29, 1870
101,016	House, Henry A., assignor to self and Frank Armstrong, Bridgeport, Conn. Method of producing selvages on machine-knit stockings, &c.	Mar. 22, 1870
101,878	Same. Knitting-machine	April 12, 1870
100,704	House, James A., Bridgeport, Conn. Feeding-mechanism for sewing-machines	Mar. 15, 1870
101,366	House, Jonas, Howard, N. Y. Combined seeder and hay-tedder	Mar. 29, 1870
103,334	House, Mark W., Cleveland, Ohio. Feed-trap for lamps	May 24, 1870
107,051	Housel, Benjamin F., and Simeon O. Thayer, Winona, Minn. Machine for making tubular lightning-conductors	Sept. 6, 1870
108,141	Houseman, Peter, and Caleb C. Campbell, Smythe County, Va. Butchers' knife	Oct. 11, 1870
99,560	Houston, G. A., Beloit, Wis. Water-wheel	Feb. 8, 1870
107,910	Hover, Joseph Eves, Philadelphia, Pa. Cement for paving and building	Oct. 4, 1870
103,402	Hovey, Francis, New York, N. Y. Cider-press	April 26, 1870
	Hovey, George, & Son. (*See* Holmes, Charles E. L., assignor.)	
104,383	Hovey, Philo B., New London, Conn. Duplex pressure-gauge	June 21, 1870
106,163	How, Woodbury Storer, Cincinnati, Ohio. Balance	Aug. 9, 1870
100,393	Howard, Catherine E., San Gabriel, Cal. Manufacture of artificial flowers	Mar. 1, 1870
99,319	Howard, Charles, West Hurley, N. Y. Horse hay-rake	Feb. 1, 1870
108,787	Howard, Charles W., Philadelphia, Pa. Ruffler for sewing-machines	Nov. 1, 1870
104,504	Howard, D. S., Lyons Falls, N. Y. Dredging-machine	June 21, 1870
103,745	Howard, Edmund, Flushing, N. Y., and William H. Jackson, Brooklyn, N. Y. Button-holing and over-seaming attachment for sewing-machines	May 31, 1870
110,589	Howard, Elijah Leavitt, assignors to George Augustus Whiting, Malden, Mass. Mechanism for operating sewing-machines	Dec. 27, 1870
	Howard, E. L., and Thomas Leavitt. (*See* Leavitt & Howard.)	
102,066	Howard, Hiram L., Mendon, Mich. Bolt-cutter	April 19, 1870
98,967	Howard, James L., Hartford, Conn. Car-door lock	Jan. 18, 1870
102,036	Howard, James Spooner, assignor to self, E. Adams, jr., T. E. Grover, and N. Carpenter, Mansfield, Mass. Electro-plating with antimony	Feb. 22, 1870

Alphabetical list of patentees for the year 1870—Continued.

No.	Name, residence, and invention or discovery.	Date.
106,823	Howard, James S., assignor to T. E. Grover, E. Adams, jr., and N. Carpenter, Mansfield, Mass. Coloring gun-barrels	Aug. 30, 1870
103,335	Howard, Leonard D., St. Johnsbury, Vt. Saw-buck	May 24, 1870
106,894	Howard, Lewis and Charles, Watkins, N. Y. Propeller	Aug. 30, 1870
107,616	Howard, William H., Media, Pa. Temple for looms	May 31, 1870
94,900	Howard, W. T., and Oliver Reeder, assignors to Oliver Reeder and Samuel R. Waite, Baltimore, Md. Oyster-dredge windlass	Feb. 15, 1870
100,394	Howarth, John, Salem, Mass. Steam blower and exhauster	Mar. 1, 1870
108,788	Howe, Albert K., assignor to self, H. E. Donor, and Edward Purdy, New York, N. Y. Apparatus for drying and pressing lard-scraps	Nov. 1, 1870
	Howe, Bigelow & Co. (*See* Collier, William F., assignor.)	
3,835	Howe, Elias, jr., deceased, by Alden B. Stockwell, administrator, New York, N. Y. Medal of Elias Howe, jr ..... (Design)	Feb. 1, 1870
	Howe, Ephraim. (*See* Gardner, Smith, assignor.)	
100,407	Howe, Frederick Webster, assignor to Henry G. Thompson and Reune Martin, Providence, R. I. Machine for sewing books	Mar. 1, 1870
	Howe, George W., *et al.* (*See* Comstock, Francis M., assignor.)	
	Howe, Harry, and Frederick C. Poole. (*See* Poole & Howe.)	
103,047	Howe, Henry, Council Bluffs, Iowa. Truss	May 17, 1870
109,129	Howe, Henry, Oneonta, N. Y. Cultivator. (Antedated Oct. 29, 1870)	Nov. 8, 1870
	Howe, James A., *et al.* (*See* Holbrook, Howe & Nourse, assignors.)	
100,765	Howe, John M., Rochester, N. Y. Knitting-machine	Mar. 15, 1870
98,988	Howe, S. Charles, Allen's Prairie, Mich. Sawing-machine	Jan. 18, 1870
100,408	Howe, Tyler, assignor to self and Otis Howe, Cambridgeport, Mass. Spring bed-bottom	Mar. 1, 1870
103,617	Howe, William B., Troy, N. Y. Self-acting lubricator	May 31, 1870
	Howell, Albert L., and Charles P. Holmes. (*See* Holmes & Howell.)	
99,194	Howell, Charles M., Andover, N. J. Wagon-brake	Jan. 25, 1870
99,075	Howell, Daniel G., Danby, N. Y. Extensible advertising-frame	Feb. 8, 1870
	Howell, Daniel Y., *et al.* (*See* Eberts, Herman F., assignor.)	
109,830	Howell, Daniel Y., assignor to Thomas S. Sprague and Herman F. Eberts, Toledo, Ohio. Device for freezing fish, meats, &c.	Dec. 6, 1870
99,989	Howell, David, assignor to self and Charles A. Lowe, St. Helena, Cal. Combined harvester and thrasher	Jan. 25, 1870
98,869	Howell, George, Baltimore, Md. Reading and writing stand	Jan. 18, 1870
110,468	Howell, George, Philadelphia, Pa. Device for filling low lands. (Antedated Dec. 9, 1870)	Dec. 27, 1870
104,458	Howell, James R., assignor to Benjamin A. Stevens, Buffalo, N. Y. Miter-machine	June 21, 1870
104,156	Howell, Julius R., Atlanta, Ga. Railway-switch	June 14, 1870
103,464	Howell, Thomas, Morgantown, W. Va. Seed-sower	May 24, 1870
	Howell, William, and Washington Harris. (*See* Harris & Howell.)	
102,544	Howland, George L. and William M., Topsham, Me. Stump-extractor	May 3, 1870
98,969	Howland, James, Rock Falls, Ill. Road-scraper	Jan. 18, 1870
4,029	Howlett, Edwin J., and Susan Kirk, assignors to Edwin J. Howlett, Philadelphia, Pa. Tool for manufacturing paper bags ..... (Reissue)	June 14, 1870
106,938	Hoxsie, David K., deceased, by Esek Tallman and Nicholas G. Hoxsie, administrators, assignors to Waterbury Brass Company and American Flask and Cap Company, Providence, R. I. Die for forming eyelets	Aug. 30, 1870
106,939	Same. Machine for cutting out the ends of eyelets	Aug. 30, 1870
110,138	Hoyt, Albert S., Winona, Minn. Grain-binder. (Antedated Dec. 3, 1870)	Dec. 13, 1870
	Hoyt, Ezekiel B., *et al.* (*See* Wolcott, Henry E., assignor) ..... (Two cases.)	
103,465	Hoyt, Henry L., Norwalk, Conn. Machine for generating and carbureting hydrogen gas	May 24, 1870
98,501	Hoyt, Jacob, assignor to James O. Morse, New York, N. Y. Lead-pipe coupling	Jan. 4, 1870
99,370	Hoyt, Joseph B., New York, N. Y. Furnace	Feb. 8, 1870
	Hoyt, Rufus L. (*See* Mead, May & Hoyt.)	
107,052	Hubbard, Benjamin R., Hillsborough, Ill. Sulky-plow	Sept. 6, 1870
	Hubbard, Charles, jr. (*See* Jones, James O., assignor.)	
105,911	Hubbard, Duncan C., Point Coupee Parish, La. Cotton-harvester	July 12, 1870
	Hubbard, George M., and Frederick W. Judd. (*See* Judd & Hubbard.)	
3,865	Hubbard, George W., and William E. Conant, assignors to William H. Guild and William F. Garrison, Brooklyn, E. D., N. Y. Operating slide-valve in direct-acting engines ..... (Reissue)	Mar. 22, 1870
3,967	Hubbard, Hiram W., and Francis P. Follet, Hartford, Conn. Hand-stamp. (Design)	April 12, 1870
	Hubbard, Lorenzo, *et al.* (*See* Farrington, George K., assignor.)	
99,430	Hubbard, M. G., Syracuse, N. Y. Harvester-gearing for changing speed	Feb. 1, 1870
	Hubbard, Robert, *et al.* (*See* Snyder, William B., assignor.)	
	Hubbard, Robert, and William B. Snyder. (*See* Snyder & Hubbard.)	
102,939	Hubbard, William H., New Haven, Conn. Water-wheel	May 10, 1870
100,895	Hubbard, Wilson J., Ansonia, Conn. Joint for fishing-rods	Mar. 15, 1870
107,374	Hubbell, Algernon S., Providence, R. I. Umbrella-frame	Sept. 13, 1870
109,736	Hubbell, Arthur Y., Elmira, N. Y. Plating-machine	Nov. 29, 1870
107,497	Hubbell, Jerome B., Naugatuck, Conn. Wagon-hub	Sept. 20, 1870
99,676	Hubbell, John H., West Salem, Ohio. Wash-board	Feb. 8, 1870
105,945	Hubbell, Monroe, Reynoldsville, N. Y. Grain-thrashing and clover-hulling machine	Aug. 9, 1870
103,545	Hubbell, Saunders, jr., West Salem, Ohio. Wash-board	May 3, 1870
99,677	Hubbell, William W., Philadelphia, Pa. Smelting and refining iron	Feb. 8, 1870

Alphabetical list of patentees for the year 1870—Continued.

No.	Name, residence, and invention or discovery.	Date.
102,821	Huber, Joseph, assignor to self and Solomon Brunswick, St. Louis, Mo. Cue-cutting machine	May 10, 1870
108,142	Huddart, George Augustus, Wales. Railway-rail joint	Oct. 11, 1870
	Huddart, George Augustus, and Charles Eaton Spooner. (*See* Spooner & Huddart.)	
99,195	Hudner, Frank, New York, N. Y. Railway-car axle	Jan. 25, 1870
109,011	Hudson, Charles H., and Joel Bowker, assignors to Charles H. Hudson, New York, N. Y. Rocker-chair	Nov. 8, 1870
104,157	Hudson, Edward J., Golconda, Ill. Cotton-seed planter	June 14, 1870
107,686	Hudson, E. P., assignor to New York Water-Proof Paper Company, New York, N. Y. Apparatus for preparing parchment or water-proof paper	Sept. 27, 1870
107,687	Same.....Manufacture of rubber-coated parchment-paper	Sept. 27, 1870
4,132	Hudson, Edward P., assignor to the Hudson Ore-Refining Company, New York, N. Y. Furnace for roasting ores.....(Reissue)	Sept. 27, 1870
107,779	Hudson, Isaac, and William Minshall, Great Britain. Self-acting tilt for barrels	Sept. 27, 1870
	Hudson, Miller R., and Philip H. Rose. (*See* Rose & Hudson.)	
98,596	Hudson, Thomas Smith, East Cambridge, Mass. Filtering-apparatus for pipes	Jan. 4, 1870
3,964	Same.....Manufacture of inkstands.....(Reissue)	May 10, 1870
	Huey, William J., and Joshua Bishop. (*See* Adair, John J., assignor.)	
	Huey, William J., and George P. Holloway. (*See* Holloway & Huey.)	
103,191	Hufeland, Philip, New York, N. Y. Sand-papering machine	May 17, 1870
103,466	Same.....Strip-press	May 24, 1870
103,746	Same.....Machine for grooving lead-pencil blanks	May 31, 1870
	Hufeland, Philip, *et al.* (*See* Warth, Hufeland & Brann, assignors.)	
	Hufeland, Philip, and Philip Schrag. (*See* Schrag & Hufeland.)	
106,588	Huff, Joseph, Ironton, Mo. Liquid measure and funnel	Aug. 23, 1870
108,143	Huffer, Abraham, Hagerstown, Md. Hinge	Oct. 11, 1870
107,911	Huffman, John W., Fremont, Ind. Machine for tenoning spokes	Oct. 4, 1870
	Huffner, Abraham, *et al.* (*See* Schner, Nathaniel, assignor.)	
103,618	Hugg, George C., Berlin, N. J. Railway-car coupling	May 31, 1870
109,410	Hughes, Alice M., Hudson City, N. J. Diaper	Nov. 22, 1870
	Hughes, Edward J. (*See* Ramsey, Henry E., assignor.)	
104,950	Hughes, Frank C., Frankfort, Ky. Filter-supporter	July 5, 1870
99,901	Hughes, John, New Berne, N. C. Attachment for lamp-chimneys	Feb. 15, 1870
103,048	Same.....Lamp-extinguisher	May 17, 1870
106,486	Same.....Journal-box	Aug. 16, 1870
108,483	Same.....Laddder	Oct. 18, 1870
109,012	Same.....Extension-scaffold	Nov. 8, 1870
109,516	Same.....Sash-lock	Nov. 22, 1870
104,459	Hughes, John, Saxton, Pa. Piston-packing	June 21, 1870
104,313	Hughes, John A., Tindall, Mo. Hay shelf or rack for wagons	June 14, 1870
106,069	Hughes, John B., Terre Haute, Ind. Tile-machine	Aug. 2, 1870
106,589	Hughes, Joseph, Bloomington, Ill. Machine for repairing boiler-flues	Aug. 23, 1870
103,857	Hughes, Seymour, Hudson City, N. J. Metal-roofing	June 7, 1870
106,825	Same.....Roofing	Aug. 30, 1870
4,126	Same.....Metallic roofing.....(Reissue)	Dec. 13, 1870
100,409	Hughes, Thomas G., Elysian, Minn. Wash-boiler	Mar. 1, 1870
	Hughes, William, and Horace T. Smith. (*See* Smith & Hughes.)	
	Hughes, William, and Joseph W. Gillespie. (*See* Gillespie & Hughes.)	
100,486	Hagunin, Robert R., Cleveland, Ohio. Sash-holder	Mar. 1, 1870
104,314	Same.....same	June 14, 1870
110,365	Same.....New York, N. Y. Sash-supporter	Dec. 20, 1870
4,143	Hulbert, Edward, William F. Steele, and Henry C. Day, Gloversville, N. Y. Thumb of gloves	June 7, 1870
99,909	Hulbert, Edwin James, Portland, Conn., and N. Aubin, Canada. Adjustable dial for travelers' watches	Feb. 15, 1870
101,021	Hulbert, John, jr., Richmond, Ind. Portable furnace	April 5, 1870
105,087	Hulett, Daniel S., Gloversville, N. Y. Glove	July 26, 1870
100,410	Hull, Abraham C., assignor to self and J. C. Cameron, St. Louis, Mo. Broiler	Mar. 1, 1870
99,440	Hull, A. J., assignor to Novelty Iron-Works Manufacturing Company, Sterling, Ill. School-desk	Feb. 1, 1870
102,546	Hull, Charles Wager, New York, N. Y. Manufacture of soap	May 3, 1870
101,022	Hull, Daniel H., assignor to self and J. B. Savage, Plantsville, Conn. Boiler and washing-machine	April 5, 1870
110,049	Hull, Duane, Brooklyn, N. Y. Refining and decolorizing sirups and other liquids, and in material for the same	Dec. 13, 1870
101,464	Hull, Elias H., Warren, Ohio. Cannon-pinion for watches	April 5, 1870
101,465	Same.....Saw-mill	April 5, 1870
102,547	Hull, James H., Irasburg, Vt. Weather-strip	May 3, 1870
105,336	Hull, James J., Brooklyn, N. Y. Wrench	July 12, 1870
103,198	Hull, John W., Connersville, Ind. Horse hay-fork	May 17, 1870
108,144	Hull, Joseph Clark, Meadville, Pa. Window-washer and scrubbing-pad	Oct. 11, 1870
101,987	Hull, Liverus, assignor to Tucker Manufacturing Company, Charlestown, Mass. Spring-bed	Mar. 29, 1870
102,007	Hull, Liverus, assignor to American Whip Company, Charlestown, Mass. Whip	April 19, 1870
103,467	Same.....same	May 24, 1870
101,733	Hull, Maurice C., New York, N. Y. Heating-stove	April 12, 1870
107,375	Hull, William W., Ashland, N. Y. Irrigating-machine	Sept. 13, 1870
109,020	Humbert, Alfred, assignor to self and Gustavus Gigon, Philadelphia, Pa. Combining keys with watches	Nov. 22, 1870
107,919	Humble, Robert, Milwaukee, Wis. Life-boat	Oct. 4, 1870

Alphabetical list of patents for the year 1870—Continued.

No.	Name, residence, and invention or discovery.	Date.
104,315	Humes, James H., assignor to self, R. M. Thompson, and L. H. Griffin, East Saginaw, Mich. Clamping-machine	June 14, 1870
105,456	Humiston, Willis and Horace N., Troy, N. Y. Soap-cutting machine	July 19, 1870
99,903	Hummer, Herbert A., Frenchtown, N. J. Grain-separator	Feb. 15, 1870
	Humphrey, Eugene. (*See* Spear, Charles E., assignor.)	
4,086	Humphrey, Harriet A., Milwaukee, Wis. Hair-crimper.....(Design)	May 31, 1870
101,623	Humphrey, Robert, West Troy, N. Y. Horse-collar	April 5, 1870
4,144	Humphrey, William H., Lansingburgh, N. Y. Tile	June 7, 1870
108,586	Hundley, Daniel R., Mountain Home, Ala. Pocket-cutlery	Oct. 25, 1870
109,517	Hungerford, George W., Chicago, Ill. Washing-machine	Nov. 22, 1870
99,196	Hunlock, Jameson, Wyoming Valley, Pa. Hold-back for carriages	Jan. 25, 1870
	Hunt, Caleb C., *et al.* (*See* Van Slooten, Hunt & McCulloch.)	
	Hunt, Charles C. (*See* Rinkle, David, assignor.)	
	Hunt, David F. (*See* Woodbury, Leander S., assignor.)	
107,913	Hunt, Edmund S., Weymouth, Mass. Machine for making fan-sticks	Oct. 4, 1870
106,836	Hunt, Eli, Hartford, Ind. Portable fence	Aug. 30, 1870
103,336	Hunt, Francis W., Brooklyn, N. Y. Refrigerator	May 24, 1870
100,896	Hunt, Frederic R., Leavenworth, Kans. Pipe-coupling for heating and ventilating railroad-cars	Mar. 15, 1870
100,897	Same.....Package band and fastener	Mar. 15, 1870
103,619	Hunt, Frederick P., Northborough, Mass. Chain-pump bucket	May 31, 1870
3,965	Hunt, George G., Quincy, Ill. Base-burning stove.....(Reissue)	May 10, 1870
104,158	Same.....Bristol, Ill. Stove-illuminator	June 14, 1870
100,531	Hunt, George P., United States Navy. Tube-fastener for steam-generators	Mar. 8, 1870
107,498	Hunt, Henry C., Amboy, Ill. Sash-holder	Sept. 20, 1870
109,905	Hunt, Henry C., Indianapolis, Ind. Hay-press	Dec. 6, 1870
110,238	Hunt, Henry H., Saratoga Springs, N. Y. Hoisting-apparatus	Dec. 20, 1870
107,499	Hunt, Joshua, Providence, R. I. Life-preserving mattress	Sept. 20, 1870
101,734	Hunt, Joshua, and Albert Stockwell, Providence, R. I. Picker for looms	April 12, 1870
	Hunt, Joshua, and Hezekiah Macon. (*See* Macon & Hunt.)	
109,320	Hunt, Lewis B., New York, N. Y. Railway-car wheel	Nov. 15, 1870
110,043	Hunt, Marshall J., Rising Sun, Md. Burglar-alarm	Dec. 13, 1870
104,737	Hunt, Ralph, assignor to Daniel M. Strogle, Milford, N. J. Burial-case	June 28, 1870
109,411	Hunt, Robert Finley, Washington, D. C. Dentists' rest. (Antedated Nov. 5, 1870)	Nov. 22, 1870
105,089	Hunt, Rodney, assignor to Hunt, Waite & Flint, Orange, Mass. Machine for fulling cloth	July 5, 1870
	Hunt, Rodney, *et al.* (*See* Waite, James H., assignor.)	
	Hunt, Waite & Flint. (*See* Hunt, Rodney, assignor.)	
	Hunt, Walter, deceased, by Polly Hunt, Jersey City, N. J., and George W. Hunt, Newburgh, N. Y., administrators. Shirt-collar.....(Extension)	Mar. 31, 1870
107,500	Hunt, William, Oskaloosa, Iowa. Compound machine for upsetting, punching, and cutting metal	Sept. 20, 1870
106,940	Hunt, William H., Bolton, Conn. Railroad-car ventilator	Aug. 30, 1870
107,053	Hunter, David James, Boston, Mass. Separating stones, &c., from clay, &c.	Sept. 6, 1870
107,054	Hunter, Edward, assignor of one-half interest to Henry H. Gallup, Norwich, Conn. Tea-pot or water-heater	Sept. 6, 1870
99,904	Hunter, James, Philadelphia, Pa. Obtaining madder extract	Feb. 15, 1870
101,735	Same.....Apparatus for extracting madder	April 12, 1870
	Hunter, J. B., and E. Edward Earll. (*See* Earll & Hunter.)	
101,466	Hunter, James E., North Adams, Mass. Hand-drilling machine	April 5, 1870
110,130	Hunter, Joseph H., Pennington Point, Ill. Farmers' boiler	Dec. 13, 1870
101,634	Hunter, Oliver E., assignor to Thomas M. Jenkins, Key Port, N. J. Manufacture of steel	April 5, 1870
98,870	Hunter, Robert, Charleston, S. C. Wrecking-tongs or excavators	Jan. 18, 1870
107,376	Hunter, Robert, New York, N. Y. Propeller	Sept. 13, 1870
	Hunter, Susan M., *et al.* (*See* Coon, S. Park, assignor.)	
100,153	Huntington, Abel H., assignor to William McKee, Galesburgh, Ill. Signal-apparatus	Feb. 22, 1870
100,766	Huntington, John, Cleveland, Ohio. Condenser and lime-extracting heater	Mar. 15, 1870
101,736	Huntley, William W., and Alpheus Babcock, assignors to W. W. Huntley and Frank Swift, Silver Creek, N. Y. Machine for separating flour from bran	April 12, 1870
106,827	Huntley, George M., Grand Rapids, Mich. Barrow	Aug. 30, 1870
109,739	Same.....Package for lard, butter, &c.	Nov. 29, 1870
103,747	Huntoon, Franklin Truman, Fulton City, Ill. Compound for cleaning cloth and other fabrics	May 31, 1870
107,378	Huntoon, James W., Washington, D. C. Combined corn husker and sheller and grain thrasher and cleaner	Sept. 13, 1870
107,379	Huntoon, James W., Montgomery, Ala. Horse-power	Sept. 13, 1870
	Huntoon, Joseph W., *et al.* (*See* Lawrence, Walden & Huntoon.)	
109,013	Huntoon, Reuben K., assignor to J. Augustus Lynch, Wakefield, Mass. Governor for steam-engines	Nov. 8, 1870
99,670	Huntsman, E. N., assignor to self, William M. Claney, I. L. Miller, and James T. Blair, Allegheny, Pa. Railway-car brake. (Antedated Jan. 31, 1870)	Feb. 8, 1870
105,812	Hupp, George W., Elwood, Ind. Clasp for paint-brushes	July 12, 1870
102,008	Hurd, Artemas Bodman, Watkins, N. Y. Wagon-tree tightener	April 19, 1870
108,567	Hurd, Davis, Lockport, N. Y. Rein-holder	Oct. 25, 1870
4,089	Hurd, Edwards, Champaign County, Ohio. Ax.....(Design)	May 24, 1870
102,009	Hurd, Reuben, Morrison, Ill. Wagon-brake tightener	April 19, 1870
104,738	Same.....Car-brake	June 28, 1870
104,216	Hurford, George, assignor to self and William H. Hart, Canton, Ohio. Hinge	June 14, 1870

Alphabetical list of patentees for the year 1870—Continued.

No.	Name, residence, and invention or discovery.	Date.
99,197	Hurlbut, Daniel N., Chicago, Ill. Window-screen	Jan. 25, 1870
107,914	Hurlbut, Sidney S., Cordova, Ill. Wagon-lock	Oct. 4, 1870
105,337	Hurlbutt, James L., Norwalk, Ohio. Pump	July 12, 1870
	Hursh, Abraham, and Edgar S. Thomson. (*See* Thomson & Hursh, assignors.)	
102,548	Hurtt, Abel L., Monticello, Ind. Clothes-line holder	May 3, 1870
108,356	Huse, Warren D., Gilford, N. H. Spinning-machine	Oct. 18, 1870
109,413	Huson, Cornelius W., French Corral, Cal. Rope-holder	Nov. 22, 1870
	Hussey, Joseph L. (*See* Babbitt, Samuel, assignor.)	
110,044	Hussey, Roland C., assignor to self and Augustus O. Corbett, Milford, Mass. Steam-jet boiler-tube cleaner	Dec. 13, 1870
	Huson, Joseph R., *et al.* (*See* McCracken, Edwin D., assignor)..(Two cases.)	
108,145	Husted, Israel G., Brooklyn, N. Y. Composition for printing-rollers	Oct. 11, 1870
109,891	Huston, George W., Putnam, Ohio. Box for packing fruit, provisions, &c	Dec. 6, 1870
102,403	Huston, James S., Mechanicsburgh, Pa. Horse-collar pad	April 26, 1870
103,337	Same.....Fly-net for horses	May 24, 1870
	Huston, James S., and George L. Du Laney. (*See* Du Laney & Huston.)	
102,404	Huston, William C., assignor to self and Nelson J. Quinn, Eaton, Ohio. Alphabetical index	April 26, 1870
	Hutchins, Sabin. (*See* Leach, Sewall, assignor.)	
109,631	Hutchins, Carleton B., Ann Arbor, Mich. Manufacture of paper	Nov. 29, 1870
98,509	Hutchins, H. Wesley, Livermore Falls, Me. Box for coffee, spices, &c	Jan. 4, 1870
109,829	Hutchins, William, assignor to self and George G. Hutchins, Paw Paw, Mich. Feed-cutter	Dec. 6, 1870
3,830	Hutchinson, C. B., Auburn, N. Y. Machine for grinding and pressing apples, grapes, &c	Feb. 8, 1870
3,925	Hutchinson, Charles B., assignor to James B. Brown, Peekskill, N. Y. Mill. (Division A, reissue)	April 19, 1870
3,926	Same.....Mill	(Division B, reissue) April 19, 1870
105,688	Hutchinson, Elias S., Baltimore, Md. Apparatus for removing oil from seed, meal, &c	July 26, 1870
110,230	Hutchinson, Henry E., South Brooklyn, N. Y. Self-bracket and clothes-hook	Dec. 20, 1870
	Hutchinson, Jesse L. (*See* Sim, Thomas, assignor.)	
107,780	Hutchinson, Reuben A., Bergen, N. J. Grate for furnaces	Sept. 27, 1870
	Hutchinson, Richard W. (*See* Gordon, Lewis L., assignor.)	
109,614	Hutchinson, Robert, Newark, N. J. Fire-cracker pistol or holder	Nov. 8, 1870
102,970	Hutchinson, Samuel, England. Machinery for striking out leather	April 26, 1870
109,628	Hutchinson, Timothy H., Gorham, N. H. Water-elevator	Nov. 29, 1870
3,999	Hutchison, James, assignor to Deborah, Albert E., and Nathaniel B. Powers, Newark, N. J. Floor oil-cloth pattern	(Design). April 26, 1870
3,991	Same.....Floor oil-cloth pattern	(Design). April 26, 1870
4,404	Hutchison, James, assignor to Thomas Potter, Son & Co., Newark, N. J. Oil-cloth pattern	(Design). Oct. 11, 1870
100,631	Hutson, Charles E., Commerce, Mo. Hollow grate for steam-boilers	Mar. 8, 1870
109,906	Same.....Stop-valve	Dec. 6, 1870
109,623	Huy, Jacob, Whistler, Ala. Pile-driver	Nov. 29, 1870
	Huyler, E. P., *et al.* (*See* Hill, Joseph, assignor.)	
107,380	Hyams, Hyam J., Pittsburgh, Pa. Gas-meter	Sept. 13, 1870
106,164	Hyatt, Charles, Buffalo, N. Y. Sad and crimping iron	Aug. 9, 1870
106,899	Same.....Fluting and sad iron	Aug. 30, 1870
108,789	Hyatt, Charles, assignor of two-thirds interest to Joseph N. Mileham and Erhard Schlenker, Buffalo, N. Y. Railway-car axle-lubricator	Nov. 1, 1870
105,330	Hyatt, John W., jr., and Isaiah S., Albany, N. Y. Treating and molding pyroxyline	July 12, 1870
100,630	Hyatt, Theodore, New York, N. Y. Heat-resisting material for safes, bank-vaults, &c	Mar. 8, 1870
101,908	Same.....Combination asbestus-filling for fire-proof safes and other structures	Mar. 22, 1870
108,879	Same.....Lining and covering refrigerators and refrigerator-cars	April 12, 1870
99,571	Hyde, Edward A., Ann Arbor, Mich. Apparatus for separating gold and silver from pulverized quartz	Feb. 8, 1870
105,459	Hyde, Isaac, Oakland, Cal. Alarm for ticket-nippers for coupon-tickets	July 19, 1870
107,288	Hyde, J. Barrows, New York, N. Y. Apparatus for carbureting air and gas	Sept. 13, 1870
107,283	Same.....Blow-pipe	Sept. 13, 1870
107,284	Same.....Trap-attachment for gas-fixtures	Sept. 13, 1870
110,306	Same.....Utilizing sewerage matters	Dec. 20, 1870
109,331	Hyde, James C., assignor to West Haven Buckle Company, West Haven, Conn. Buckle	Nov. 15, 1870
102,126	Hyde, James P., New York, N. Y. Hydrant	April 19, 1870
104,730	Hyde, Moses and Francis, Baltimore, Md. Apparatus and process for the manufacture of soap	June 28, 1870
109,907	Hyde, Oliver, Oakland, Cal. Tire for traction-engines	Dec. 6, 1870
99,670	Hyde, Walter, assignor to self and Walton Townsend, New York, N. Y. Elevated railway	Feb. 8, 1870
101,017	Hydes, Thomas, and Joseph Bennett, England. Heating and other furnaces	Mar. 22, 1870
98,970	Hyers, Benjamin S., Pekin, Ill. Cultivator	Jan. 18, 1870
106,165	Hyndman, William G., Cincinnati, Ohio. Rotary blower	Aug. 9, 1870
106,306	Ibos, Eugene, France. Manufacture of boot and shoe soles	Aug. 16, 1870
109,694	Icard, Joseph, Donaldsonville, La. Pump	Nov. 29, 1870
	Idell, Charles P., *et al.* (*See* Freeman, Idell & Vanderboven.)	
103,049	Ihlenfeldt, Fred., Leroy, Ill. Snuff-machine	May 17, 1870
105,069	Ihrig, Charles, Jersey City, N. J. Railroad-car journal-box	July 26, 1870

Alphabetical list of patentees for the year 1870—Continued.

No.	Name, residence, and invention or discovery.	Date.
3,813	Ilenburg, Hermann, assignor to Mackellar, Smiths & Jordan, Philadelphia, Pa. Printers' type	(Design).. Jan. 11, 1870
4,061	Same.....Type	(Design).. May 24, 1870
107,688	Iler, William, Shreveport, La. Baling-press	Sept. 27, 1870
100,633	Illingworth, Benjamin, Freeport, Ill. Device for packing and transporting eggs	Mar. 8, 1870
108,266	Same.....Washing-machine	Oct. 11, 1870
109,322	Same.....Leroy, Minn. Mowing-machine	Nov. 15, 1870
	Ilsley, Silas A. (*See* Chase, John K., assignor.)	
109,625	Imlay, Charles G. and William L., Philadelphia, Pa. Fruit-jar	Nov. 29, 1870
	India Dye Company. (*See* Rowley, John, assignor.)	
	India-Rubber Comb Company. (*See* Schlesinger, A. D., assignor.)	
	Ingalls, Gustavus W. (*See* Davis, Horace L., assignor.)	
	Ingalls, Helen M. (*See* Norton, Marcus P., assignor.)	
	Same.....Same	(Reissue.)
101,269	Ingalls, Moses, Muscatine, Iowa. Washing-machine	Mar. 29, 1870
109,214	Ingels, James and Thomas J., Atchison, Kans. Well-auger	Nov. 15, 1870
99,198	Ingels, Joseph, Milton, Ind. Grain-drill and broadcast-sower	Jan. 25, 1870
102,405	Same.....Seeding-machine	April 26, 1870
102,940	Same.....Double and single tree fastening for carriages	May 10, 1870
102,941	Same.....School desk and seat	May 10, 1870
3,976	Same.....Grain-drill	(Reissue).. May 17, 1870
105,690	Same.....Grain-drilling machine	July 26, 1870
105,691	Same.....Padlock	July 26, 1870
107,915	Same.....Grain-drill	Oct. 4, 1870
	Ingersoll, A. M. (*See* McFarland, David, assignor.)	
	Ingersoll, John M., *et al.* (*See* Cranston, Banks & Ingersoll.)	
106,166	Ingersoll, Martin V., Norwalk Bridge, Conn. Billiard-cue	Aug. 9, 1870
99,441	Ingersoll, P. C., Greenpoint, N. Y. Chair-bottom	Feb. 1, 1870
99,190	Ingersoll, Simon, Brooklyn, N. Y. Friction-clutch	Jan. 25, 1870
104,317	Ingersoll, Simon, assignor to Samuel C. Ingersoll, Brooklyn, N. Y. Ratchet-drill	June 14, 1870
	Ingersoll, Simon, and Job Johnson. (*See* Johnson & Ingersoll, assignors.)	
101,270	Ingersoll, S. H., New York, N. Y. Wood-pavement	Mar. 29, 1870
100,767	Ingersoll, T. D., Monroe, Mich. Horse hay-fork	Mar. 15, 1870
	Ingham, Harvey B., Camptown, Pa. Smut-machine	(Extension).. Oct. 24, 1870
107,265	Inglis, William, and John Frederick Spencer, England. Steam-engine	Sept. 13, 1870
3,850	Ingraham, Elias, Bristol, Conn. Clock-case	(Design).. Feb. 15, 1870
3,851	Same.....same	(Design).. Feb. 15, 1870
109,626	Same.....Embellishment of glass	Nov. 29, 1870
4,207	Same.....Clock-case	(Reissue of design).. Dec. 20, 1870
109,413	Ingraham, Hanford, Naples, N. Y. Spring bed-bottom	Nov. 22, 1870
100,768	Ingraham, Hiram, Armada, Mich. Horseshoe	Mar. 15, 1870
99,573	Ingraham, James, Troy, N. Y. Method of attaching floats and sinkers to fishing-lines	Feb. 8, 1870
106,167	Ingraham, William S., Evanston, Ill. Harvester-cutter	Aug. 9, 1870
101,018	Ingstrum, William Miller, Hornellsville, N. Y. Car-coupling	Mar. 22, 1870
107,615	Inman, Stephen, Rockford, Ill. Device for moving buildings	Sept. 20, 1870
	International Marble-Coloring Company. (*See* Gardner, Smith, assignor.)	
	International Screw-Nail Company. (*See* Alden, James M., assignor.)	
107,501	Ireland, William A., New York, N. Y. Device for operating hand-fans	Sept. 20, 1870
106,487	Ireland, William Carleton, Boston, Mass. Coupling for wire-rigging	Aug. 16, 1870
108,596	Irish, George W., Memphis, N. Y. Car-coupling	Oct. 25, 1870
	Irvine, F. W., *et al.* (*See* Berkstresser, George, assignor)	(Design.)
	Irving, Charles, *et al.* (*See* Kay, William, assignor.)	
103,336	Irwin, James B., Newark, Ohio. Lamp-lighter, burglar and firearm	May 24, 1870
99,442	Irwin, John H., Philadelphia, Pa. Lantern	Feb. 1, 1870
99,443	Same.....Lamp-burner	Feb. 1, 1870
104,318	Same.....New York, N. Y. Lantern	June 14, 1870
105,663	Same.....same	July 5, 1870
105,330	Same.....same	July 5, 1870
	Irwin, John W., and Andrew J. Haswell. (*See* Haswell & Irwin.)	
100,039	Irwin, William H. H., Philadelphia, Pa. Compound for cure of coughs, colds, &c. (Antedated Feb. 5, 1870)	Feb. 22, 1870
98,773	Isbell, Charles W., New York, N. Y. Rotary pump. (Antedated Jan. 6, 1870)	Jan. 11, 1870
105,946	Isett, Franklin B., Hollidaysburg, Pa. Binding-attachment for harvesters	Aug. 2, 1870
100,040	Isgrigg, Nathan L., Moore's Hill, Ind. Cultivator	Feb. 22, 1870
109,627	Isham, George B., Burlington, Vt. Heating-stove. (Antedated Nov. 17, 1870)	Nov. 29, 1870
98,971	Isham, Henry, New Britain, Conn. Knob for permutation-locks	Jan. 18, 1870
98,972	Isham, Henry, deceased, by Frances E. Isham, administratrix, Hartford, Conn. Permutation-lock	Jan. 18, 1870
101,980	Isham, Sardis W., Hinckley, Ohio. Paint and pigment	April 12, 1870
	Isherwood, Thomas, *et al.* (*See* Nuttall, James, assignor.)	
	Israel, Henry, and Samuel W. Cummings. (*See* Cummings & Israel.)	
99,680	Ivens, William H., Trenton, N. J. Double-acting pump	Feb. 8, 1870
99,681	Same.....Double-cylinder force-pump	Feb. 8, 1870
108,411	Ivens, William H., Trenton, N. J. Steam-generator	Mar. 1, 1870
	Same.....(*See* Brooke, William E., assignor.)	
108,146	Ivers, Alfred, New York, N. Y. Water-closet hopper	Oct. 11, 1870
100,998	Iverson, Alfred, jr., Macon, Ga. Seed and grain drill	Mar. 15, 1870
	Ives & Allen. (*See* Young, Thomas, assignor.)	
	Ives, Franklin B., *et al.* (*See* Clark, George B., assignor.)	
	Ives, James, Mount Carmel, Conn. Mode of attaching pads to saddle-trees. (Extension)	June 6, 1870

Alphabetical list of patentees for the year 1870—Continued.

No.	Name, residence, and invention or discovery.	Date.
108,337	Ives, James, Mount Carmel, Conn. Whiffletree-coupling	Oct. 18, 1870
103,748	Ives, Oliver P., Syracuse, N. Y. Car-coupling	May 31, 1870
	Ives, William, and James D. Van Arnum. (*See* Van Arnum & Ives.)	
106,168	Ives, William A., New Haven, Conn. Bung-borer	Aug. 9, 1870
108,267	Same.....Auger-handle	Oct. 11, 1870
4,156	Same.....Auger.....(Reissue)	Oct. 18, 1870
	Same.....(*See* Ford, John C., assignor.)	
110,141	Jack, John, Fiskilwa, Ill. Vehicle	Dec. 13, 1870
104,595	Jackson, Abram, Lebanon, Tenn. Motive-power apparatus	June 21, 1870
100,532	Jackson, Byron and Benjamin F., Woodland, Cal. Grain and straw carrying attachment for separators	Mar. 8, 1870
102,549	Jackson, Charles Augustus, Petersburgh, Va. Tobacco-roller	May 3, 1870
109,215	Jackson, Cornelius L., Millersburgh, Ill. Adjustable draught-device for plows	Nov. 15, 1870
108,147	Jackson, Edward S., Bethel, Vt. Machine for manufacturing chair-seats	Oct. 11, 1870
109,908	Jackson, Francis, assignor to William Prosser, England. Lubricator for steam-engines	Dec. 6, 1870
99,905	Jackson, George H., College Corner, Ind. Clod and cornstalk fender. (Antedated Feb. 5, 1870)	Feb. 15, 1870
	Jackson, James, and Jeffrey O. Bentley. (*See* Bentley & Jackson.)	
103,868	Jackson, James L., New York, N. Y. Pattern for castings	June 7, 1870
4,377	Same.....Iron railing for horse-stalls.....(Design)	Oct. 4, 1870
4,378	Same.....same.....(Design)	Oct. 4, 1870
4,379	Same.....same.....(Design)	Oct. 4, 1870
103,620	Jackson, Jehiel, Columbus, Wis. Seat-holder	May 31, 1870
100,395	Jackson, Moses T., Montrose, Pa. Carriage-top	Mar. 1, 1870
	Jackson, R. (*See* Lidren, Christopher, assignor.)	
107,781	Jackson, Richard A., assignor to self, William Reynolds, Hugh Bleakly, Henry P. McIntosh, Frank M. Orr, and Peter Keplinger, Alliance, Ohio. Converting cast iron and cast-iron articles into steel	Sept. 27, 1870
102,822	Jackson, William, assignor to self and Henry C. Wilkins, Albany, N. Y. Church-organ	May 10, 1870
	Jackson, William, and Charles H. Davis. (*See* Davis & Jackson.)	
	Jackson, William H., and Edmund Howard. (*See* Howard & Jackson.)	
104,460	Jackson, William M., Woodland, Cal. Grain-lifter for harvesters	June 21, 1870
110,141	Jacob, James W., assignor to self and John J. O'Donnell, Jeffersonville, Ind. Brake for sewing-machines	Dec. 13, 1870
105,213	Jacobi, Clement R., Greenpoint, N. Y. Kindling-fagot	July 12, 1870
100,041	Jacobs, James, Marysville, Ky. Steam-generator	Feb. 22, 1870
100,412	Jacobs, J. N., Crittenden, Ky. Churn	Mar. 1, 1870
102,825	Jacobs, Lyman, Albion, Mich. Life-preserver	May 10, 1870
106,910	Jacobson, John, Austin, Minn. Harrow	Nov. 1, 1870
101,881	Jacot, Charles E., Switzerland. Stem-winding watches	April 12, 1870
102,942	Jaeger, Gustav L., New York, N. Y. Machine for lining and drying pasteboard, &c	May 10, 1870
105,084	Same.....Adhesive compound for preparing pasteboard	July 5, 1870
109,393	Same.....Muff and collar box	Nov. 15, 1870
109,900	Jaeger, Julius, Tompkinsville, N. Y. Base-burning fire-place heater	Dec. 6, 1870
	Jahne, Smith & Co. (*See* Pond, Robert James, assignor.)	
108,025	Jakob, Christian, New Orleans, La. Beer-faucet	Oct. 4, 1870
103,193	James, B., Worcester, Mass. Jack-spool	May 17, 1870
110,940	James, David H., Cincinnati, Ohio. Foot-rest and boot-jack combined	Dec. 20, 1870
107,916	James, Henry B., Trenton, N. J. Main spring barrel of watches	Oct. 4, 1870
100,413	James, John Dawson, jr., assignor to self, Adolf Bode, and Jacob D. C. Outwater, Washington, D. C. Tin-workers' tongs	Mar. 1, 1870
109,414	Same.....Machine for seaming metal roofs	Mar. 1, 1870
108,790	James, William, and William, jr., Canada. Hot-air furnace	Nov. 1, 1870
105,214	Jamieson, Egbert, Chicago, Ill. Station-indicator	July 12, 1870
108,149	Jamieson, Henry, Williamsburgh, N. Y. Rotary engine	Oct. 11, 1870
99,906	Jamison, S. W., New York, N. Y. Crimping-machine	Feb. 15, 1870
104,590	Jamison, Samuel W., Newark, N. J. Boot-crimper	June 21, 1870
	Jamison, Samuel W., *et al.* (*See* Bullivant, Josiah, assignor.)	
105,315	James, Henry S., Oshkosh, Wis. Ventilator	July 12, 1870
110,143	Jaques, David L., Hudson, Mich. Harrow	Dec. 13, 1870
107,689	Jaques, George, Boston, Mass. Method of preserving fruit	Sept. 27, 1870
107,690	Same.....Composition of matter for preserving fruit from decay	Sept. 27, 1870
103,860	Jaquith, Gilman, Concord, Mass. Carding-machine	June 7, 1870
99,200	Jarboe, John W., Greenpoint, N. Y. Paper pan, bowl, box, and dish	Jan. 25, 1870
	Jarecki, Hayes & Co. (*See* Kenyon, Henry K., assignor.)	
	Jarecki, Metz & Co. (*See* Kenyon, Henry K., assignor.)	
110,469	Jarrold, Edgar T., assignor through mesne assignments to self, Henry S. Gerow, and Henry McLean, Tottenville, N. Y. Refining oils from cotton-waste, &c	Dec. 27, 1870
101,019	Jasper, Gustavus A., Charlestown, Mass. Apparatus for cooling and saving charcoal	Mar. 22, 1870
	Jaynes, John Q. (*See* Shay, James, assignor.)	
110,143	Jeavons, Joshua, England. Pile for armor-plates	Dec. 13, 1870
	Jefferies, Edwin A., and Austin S. Moore. (*See* Moore & Jefferies.)	
99,822	Jeffers, Albert, Lynn, Mass. Machine for molding, rounding, channeling, and stamping soles of boots and shoes	Feb. 8, 1870
98,773	Jeffers, A. Perley M., Allegan, Mich. Spelling-box	Jan. 11, 1870
108,494	Jeffers, Milton C., New York, N. Y. Corn-husking machine	Oct. 18, 1870
108,350	Jefferson, Stillman A., Franklin, Tenn. Self-adjusting rotary cotton-chopper	Oct. 18, 1870

Alphabetical list of patentees for the year 1870—Continued.

No.	Name, residence, and invention or discovery.	Date.
4,147	Jeffery, Edwin A., New Haven, Conn. Coal-hod.....(Reissue)	Oct. 4, 1870
4,228	Jefford, Robert H., assignor to Abraham G. Jennings, New York, N. Y. Net-fabric.....(Design)	July 19, 1870
4,337	Same.....Net-fabric.....(Design)	Sept. 6, 1870
99,444	Jeffries, Cyreneus D., Wooster, Ohio. Harvester-dropper	Feb. 1, 1870
107,782	Jennings, J. Henry, New Bedford, Mass. Thill-coupling	Sept. 27, 1870
109,216	Jenkins, Andrew J., Virginia City, Nev. Medical compound for cure of rheumatism	Nov. 15, 1870
101,737	Jenkins, Charles H., Boston, Mass. Manufacture of glass	April 12, 1870
107,177	Jenkins, Clarence L., Omaha, Nebr. Tanning leather	Sept. 6, 1870
103,550	Jenkins, Jabez, Philadelphia, Pa. Process for tempering steel	May 3, 1870
109,015	Jenkins, James A., Clarksville, Mo. Machine for extracting stumps	Nov. 8, 1870
108,911	Jenkins, Jesse, Sligo, Md. Sulky	Nov. 1, 1870
110,470	Jenkins, Nathaniel, New Orleans, La. Medical compound for the cure of rheumatism	Dec. 27, 1870
99,201	Jenkins, Nicholas, New York, N. Y. Method of wood-working	Jan. 25, 1870
99,202	Same.....Variety molding-machine	Jan. 25, 1870
105,216	Same.....Template for paneling-machine. (Antedated June 20, 1870)	July 12, 1870
108,026	Same.....Molding-cutter	Oct. 4, 1870
108,027	Same.....Paneling-machine. (Antedated Sept. 24, 1870)	Oct. 4, 1870
	Jenkins, Thomas H., deceased. (*See* Hunter, Oliver E., assignor.)	
99,203	Jenks, Barton H., Bridesburg, Pa. Ring-spinning frame	Jan. 25, 1870
108,791	Jenks, George A., and John J. Fawcett, assignors to selves and Joseph Hampson, Chicago, Ill. Street and station indicator	Nov. 1, 1870
109,943	Jenks, Lemuel P., assignor to self and Aaron Kingsbury, Boston, Mass. Bread-machine	May 10, 1870
	Jenks, Samuel B. (*See* Holcomb, Frederick A., assignor.)	
102,551	Jenness, Joseph M., assignor to self, James D. and Samuel D. Jenness, Boston, Mass. Lantern	May 3, 1870
110,941	Jenney, Walter P., and George W. Taylor, Fair Haven, Mass. Lamp-burner. (Antedated Dec. 15, 1870)	Dec. 20, 1870
	Same.....(*See* Taylor & Jenney.)	
4,229	Jenninga, Abraham G., New York, N. Y. Net-fabric.....(Design)	July 19, 1870
	Same.....(*See* Jefford, Robert H., assignor.).....(Two cases.)	
98,871	Jenninga, Frederick S., assignor to self, Morgan Chittenden, and Henry W. Duryee, Danbury, Conn. Felting-machine	Jan. 18, 1870
	Jenninga, George T., *et al.* (*See* Bicknell, Joseph G., assignor.)	
100,634	Jenninga, John H., New Bedford, Mass. Check for gas-burners	Mar. 8, 1870
99,204	Jenninga, Ralph S., assignor to self and Charles F. Jones, New York, N. Y. Perforated cigar-box	Jan. 25, 1870
103,817	Jennings, Silas T., Cincinnati, Ohio. Box-stereoscope	May 31, 1870
	Jennings, Thomas A., and Isaac Desky. (*See* Desky & Jennings.)	
104,139	Jensen, James L., Brooklyn, N. Y. Lemon-squeezer	June 14, 1870
110,045	Jensen, John C., Chicago, Ill. Tuck-creasing attachment for sewing-machines	Dec. 13, 1870
99,445	Jenson, Olaus, Norway. Rocking-chair	Feb. 1, 1870
98,597	Jepson, John Vivian, Brooklyn, N. Y. Pipe-coupling	Jan. 4, 1870
4,096	Jerald, Bennett, assignor to Charles Parker, Meriden, Conn. Spoon.....(Design)	June 7, 1870
3,994	Jerauld, John R., and Henry L. Holmes, Providence, R. I. Collar-box.(Design)	Mar. 8, 1870
100,296	Jerome, Chauncey, assignor through mesne assignments to Richard A. Douglas, New Haven, Conn. Cigar-box	Mar. 1, 1870
4,378	Jerome, Samuel B., assignor to Samuel Peck & Co., New Haven, Conn. Clock-case front.....(Design)	Aug. 9, 1870
4,336	Same.....Clock-case front.....(Design)	Sept. 6, 1870
107,966	Same.....Mold for drying cigar-fillings	Sept. 13, 1870
4,423	Same.....Clock-case sash.....(Design)	Oct. 18, 1870
109,740	Jerome, Walter W., Samuel B. Alger, and Clinton H. Page, Norwich, Conn. Friction-clutch	Nov. 29, 1870
4,200	Jessup, William S., Newark, N. J. Trunk-corner clamp.....(Design)	July 5, 1870
105,085	Same.....Trunk-handle cap	July 5, 1870
108,149	Jett, John R. P., Knoxville, Tenn. Plow	Oct. 11, 1870
110,046	Jewell, Freeman C., Rahway, N. J. Cultivator	Dec. 13, 1870
101,882	Jewell, Robert, New York, N. Y. Bedstead and lounge. (Antedated April 4, 1870)	April 12, 1870
	Jewett & Root. (*See* Ritchie, Francis, assignor).....(Reissue.)	
	Same.....(*See* Ritchie, Francis, assignor.)	
102,127	Jewett, David, Lynn, Mass. Axle-box for carriages	April 19, 1870
110,367	Jewett, Frederic A., Grafton, Mass. Thill-coupling	Dec. 20, 1870
102,128	Jewett, George Baker, Salem, Mass. Earth-closet	April 19, 1870
104,319	Same.....same	June 14, 1870
105,803	Same.....same	July 26, 1870
	Jewett, John, & Sons. (*See* Meyer, Jeremiah, assignor.)	
	Jewett, Joseph F., and Alfred Adams. (*See* Adams & Jewett.)	
104,461	Jewett, Sherman S., and Francis H. Root, Buffalo, N. Y. Cooking-stove	June 21, 1870
100,769	Jewsbury, Joseph, assignor to Henry A. Clarke, England. Hoisting-machine	Mar. 15, 1870
110,368	Jillson, William C., and Amos B. Palmer, Willimantic, Conn. Machine for opening cotton	Dec. 20, 1870
107,616	Jincks, Melvin, Wallace, N. Y. Door-spring	Sept. 20, 1870
98,598	Jobson, Giles T., Macon, Ga. Hoe	Jan. 4, 1870
105,804	Jobson, Philip and Michael C., Lock Haven, Pa. Saw-mill	July 26, 1870
104,100	Jochum, John, Brooklyn, N. Y. Spring-scale	June 14, 1870
98,973	Joeckel, William H., New York, N. Y. Chair	Jan. 18, 1870

Alphabetical list of patentees for the year 1870—Continued.

No.	Name, residence, and invention or discovery.	Date.
102,894	Johns, Henry W., New York, N. Y. Acid and water-proof composition for coating cloth, &c	May 10, 1870
104,858	Johns, William B., Georgetown, D. C., and William J. Read, Cumberland, Md. Harvester	June 28, 1870
108,159	Johnson, Albert W., Middletown, Conn. Embroidering-attachment for sewing-machines	Oct. 11, 1870
100,414	Johnson, Albert W., assignor to the Finkle and Lyon Manufacturing Company, Middletown, Conn. Shuttle for sewing-machines	Nov. 23, 1870
105,806	Johnson, Anson B., Washington, Ind. Fire-place	July 26, 1870
99,683	Johnson, Asa, Brooklyn, N. Y. Method of forming teeth on rollers	Feb. 8, 1870
105,805	Same.....Machine for bending corrugated metal plates	July 26, 1870
99,684	Johnson, Asa, assignor to self and William H. Johnson, Brooklyn, N. Y. Machine for corrugating and molding sheet-metal	Feb. 8, 1870
4,171	Johnson, Asa, assignor of part interest to William H. Johnson, Cairo, N. Y. Machine for rolling cornices.....(Reissue)	Nov. 1, 1870
103,631	Johnson, Benjamin F., Troy, N. Y. Cooking-stove	May 31, 1870
102,944	Johnson, Charles C., Springfield, Vt. Shears and scissors	May 10, 1870
99,503	Johnson, Edward C., Williamsport, N. Y. Sand-chamber for well-pumps. (Antedated Dec. 24, 1869)	Jan. 4, 1870
99,573	Johnson, Enos B., Chicago, Ill. Feed-water heater for steam-generators	Feb. 8, 1870
108,151	Johnson, Frederick, and William Hutchman, assignors to Thomas C. Morton Paton, England. Umbrella	Oct. 11, 1870
101,367	Johnson, George, Cincinnati, Ohio. Hoisting-machine	Mar. 29, 1870
110,570	Johnson, George, Philadelphia, Pa. Hat	Dec. 27, 1870
	Johnson, George, administrator, (*See* Cawood, Joseph D., assignor.) (Extension.)	
	Johnson, George A., and William F. Rippon. (*See* Rippon & Johnson. (Reissue.)	
101,863	Johnson, George W., assignor to James P. Hawkins, Danville, Va. Tobacco-bag	April 12, 1870
	Johnson, Grove H., and Dennis G. Littlefield. (*See* Littlefield & Johnson.)	
	Johnson, Henry R., and Anthony Gale. (*See* Gale & Johnson.)	
100,636	Johnson, Insley D., and Abraham V. Hartwell, Chicago, Ill. Furnace for drying sand	Mar. 8, 1870
100,415	Johnson, Isaac A., assignor to self and Frederick H. Manny, Rockford, Ill. Harvester-rake	Nov. 29, 1870
	Johnson, James H., *et al.* (*See* Barlow, Ashbell P., assignor).....(Reissue.)	
102,538	Johnson, James H., assignor to Holmes, Booth & Hayden, Newark, N. J. Lamp-burner	May 3, 1870
4,371	Johnson, Job, Brooklyn, N. Y. Cradle-plate of gate-latches.....(Design)	Sept. 27, 1870
104,200	Johnson, Job, and Simon Ingersoll, assignors to Job Johnson, Brooklyn, N. Y. Gate-latch	June 14, 1870
3,961	Johnson, John, Hartford, Conn. Construction of sewing-machine covers. (Reissue)	May 3, 1870
108,798	Johnson, John Garner, England. Time-signaling apparatus for railroads	Nov. 1, 1870
	Johnson, John H. (*See* Duffee, John L., assignor).....(Reissue.)	
106,367	Same.....Dresden, Mo. Railway-car coupling	Aug. 16, 1870
108,485	Same.....Bentonville, Ark. Subsoil-plow	Oct. 18, 1870
104,960	Johnson, Jonathan, Lowell, Mass. Pad for horses' feet	July 5, 1870
105,086	Johnson, Josee, New York, N. Y. Clothes-rack	July 5, 1870
99,685	Johnson, Josee, assignor to self and Joseph W. Oakman, New York, N. Y. Power washing-machine	Feb. 8, 1870
103,329	Johnson, Joseph, Boston, Mass. Washing-machine	May 24, 1870
106,829	Johnson, Joseph, Marshalltown, Iowa. Wire-cutter	Aug. 30, 1870
4,037	Johnson, Joseph B., assignor to Charles Buffum, Lynn, Mass. Shoe.....(Reissue)	June 21, 1870
108,599	Johnson, Joseph H., Griffin, Ga. Hay and cotton press	Oct. 25, 1870
104,161	Johnson, Joseph McGinnis, Chillicothe, Ohio. School-furniture	June 14, 1870
101,467	Johnson, Leonard A., Candor, N. Y. Carriage-clip	April 5, 1870
101,738	Same.....Tug-fastening for whiffletrees	April 12, 1870
106,580	Same.....Furniture-fastening	Aug. 23, 1870
102,553	Johnson, Luther A., New York, N. Y. Caul for laying veneers	May 3, 1870
	Johnson, Marcus M. (*See* Whiting, William H., assignor.)	
103,468	Johnson, Martin Van B., Holden, Mo. Cooking-vessel	May 24, 1870
103,194	Johnson, Moses, Three Rivers, Mich. Potato-digger	May 17, 1870
103,460	Same.....same	May 24, 1870
105,460	Same.....Cultivator	July 19, 1870
109,518	Johnson, Nathaniel, New York, N. Y. School desk and seat	Nov. 22, 1870
107,035	Johnson, Obadiah, Lascellsville, N. Y. Sleigh-knee. (Antedated Aug. 25, 1870)	Sept. 6, 1870
100,154	Johnson, Olof, and Carl O. Wall, Galva, Ill. Grain-conveyor	Feb. 22, 1870
109,910	Johnson, Per, Columbia, Cal. Sewing-machine	Dec. 6, 1870
107,957	Johnson, Powell, Des Moines, Iowa. Washing-machine	Sept. 13, 1870
102,825	Johnson, Ross, Lawrence, Kans. Subsoil-attachment for plows	May 10, 1870
105,807	Johnson, Russell P., Griffin, Ga. Hopper for mills and grain-drills	July 5, 1870
108,022	Johnson, Thomas J., assignor to H. P. Diehl & Co., Cincinnati, Ohio. Torpedo	Oct. 4, 1870
98,774	Johnson, T. L., and J. Fitzgerald, Rochester, N. Y. Hose-coupling	Jan. 11, 1870
99,090	Johnson, Thomas W., Richmond, Me. Carriage-jack	Jan. 25, 1870
108,790	Johnson, Thomas W., jr., and Anthony W. Goodell, New York, N. Y. Apparatus for evaporating and concentrating bark-extracts, &c	Nov. 1, 1870
106,159	Johnson, William, Milwaukee, Wis. Hinge	Aug. 9, 1870
108,628	Johnson, William, Lambertville, N. J. Truss-bridge	Nov. 29, 1870
100,533	Johnson, William H., Springfield, Mass. Lamp-shade	Mar. 8, 1870
104,462	Johnson, William J., New Orleans, La. Car-coupling	June 21, 1870

Alphabetical list of patentees for the year 1870—Continued.

No.	Name, residence, and invention or discovery.	Date.
4,163	Johnson, William J., Newton, Mass., and Henry A. Hildreth, Lowell, Mass. Wire broiler.....(Design)	June 21, 1870
100,770	Johnson, W. G., Alma, Mich. Stump-extractor	Mar. 15, 1870
104,486	Johnston, Allen, Ottumwa, Iowa. Ruffling-attachment for sewing-machines	Oct. 18, 1870
101,468	Johnston, Benjamin, New Iberia, La. Finishing-cultivator	April 5, 1870
	Johnston, Edward T., *et al.* (*See* Harrah, Gifford & Johnston.)	
98,974	Johnston, Henry M., New York, N. Y. Lambrequin	Jan. 18, 1870
99,907	Same.....Pigment for distemper-painting	Feb. 15, 1870
105,576	Same.....Protecting and beautifying crystallized metallic surfaces. (Antedated July 6, 1870)	July 19, 1870
105,688	Same.....Lambrequin. (Antedated July 11, 1870)	July 19, 1870
105,693	Same.....same	July 19, 1870
109,416	Johnston, Henry M., and Frederick Beck, New York, N. Y. Preparation of mica	Nov. 22, 1870
	Johnston, Hugh K., and Robert Dickey. (*See* Dickey & Johnston.)	
99,205	Johnston, James J., assignor to self and John Lockie, Allegheny, Pa. Mill for grinding corn, &c	Jan. 25, 1870
101,739	Johnston, John S., Rockford, Ill. Vibrating-coulter for plows. (Antedated April 1, 1870)	April 19, 1870
104,321	Johnston, Joseph, and Edmund O. Marlow, Brodhead, Wis. Door-sill	June 14, 1870
99,906	Johnston, Joseph B., St. Matthew's, Ky. Churn	Jan. 25, 1870
	Johnston, Nathaniel B., *et al.* (*See* Langhorne & Johnston.) (Two cases.) (Design.)	
	Johnston, Peter. (*See* Stamp, John Mitchell, assignor.)	
	Johnston, Thomas, *et al.* (*See* McGowan, Robert L., assignor.)	
109,016	Johnston, Thomas, assignor to self and George Adams, Ruby, Mich. Spinning-wheel	Nov. 8, 1870
	Johnston, Thomas A., *et al.* (*See* Marden, Jeremiah A., assignor.)	
100,635	Johnston, Thomas W., Richmond, Me. Spring bed-bottom	Mar. 4, 1870
	Johnston, William, and Daniel Hoffman. (*See* Hoffman & Johnston.)	
103,340	Johnston, William R., Memphis, Tenn. Manufacture of citric acid	May 14, 1870
105,087	Johnston, William T. and Allen, Ottumwa, Iowa. Embroidering-attachment for sewing-machines	July 5, 1870
	Johnston, William T., and Asahel G. Crane. (*See* Crane & Johnston.)	
107,381	Johnston, George, Philadelphia, Pa. Knitting-machine	Sept. 13, 1870
	Joithe, Godfrey, and John Smith. (*See* Smith & Joithe.)	
110,571	Jones, Alvarado, Randolph, Wis. Sleigh	Dec. 27, 1870
98,693	Jones, A. B., Lowell, Wis. Sickle-grinder	Jan. 11, 1870
	Jones, Barton H., *et al.* (*See* Conrad, Ernst Eustach, assignor.)	
98,975	Jones, Charles, De Soto, Ill. Grain-cleaner	Jan. 18, 1870
101,469	Jones, C. C., Portland, Me. Well-point	April 5, 1870
	Jones, Charles F. (*See* Jennings, Ralph S., assignor.)	
104,162	Jones, Daniel B., Wood Station, Ohio. Road-scraper	June 14, 1870
106,963	Jones, David L., Newbury, Ohio. Rolling-mill	Aug. 2, 1870
100,637	Jones, Edward, South Boston, Mass. Lamp-chimney	Mar. 8, 1870
100,890	Jones, Edward P., Shell Mound, Miss. Hasp and staple fastening	Mar. 15, 1870
100,900	Same.....Railway-car brake	Mar. 15, 1870
100,901	Same.....Wagon-brake	Mar. 15, 1870
100,900	Same.....Car brake and starter	Mar. 15, 1870
108,600	Same.....Sunflower County. Cotton-bale tie	Oct. 25, 1870
	Same.....(*See* Jordan, William A., assignor.)	
4,450	Jones, Florentine A., Boston, Mass. Watch-plate.....(Design)	Nov. 8, 1870
	Jones, Florentine A., and Charles L. Kidder. (*See* Kidder & Jones, assignors.)	
103,341	Jones, Francis Carter, Ouachita Parish, La. Miter-machine	May 24, 1870
106,170	Jones, Frank B., Louisville, Ky. Hinge	Aug. 9, 1870
103,749	Jones, George, assignor to Eliza Jones, Peekskill, N. Y. Door-knob	May 31, 1870
105,694	Jones, George H., Rose, N. Y. Water-wheel	July 26, 1870
102,871	Jones, George H., and Louis D. Boyce, Rochester, N. Y. Car-coupling	April 26, 1870
105,461	Jones, George N., Chicago, Ill. High and low water alarm	July 19, 1870
101,740	Jones, George R. G., Memphis, Tenn. Fan rocking-chair	April 12, 1870
101,020	Jones, George T., Cincinnati, Ohio. Manufacture of revenue and other stamps	Mar. 22, 1870
99,574	Jones, G. W., Ormsby, Pa. Working of scrap and other iron	Feb. 8, 1870
101,894	Jones, Henry, Philadelphia, Pa. Confluent pipe for baths	April 12, 1870
98,509	Jones, Henry, assignor to self, James Jones, and Charles Harrison, Philadelphia, Pa. Cock for water-closets	Jan. 4, 1870
100,638	Jones, Henry A., Brooklyn, N. Y. Table, token, or check to be used in life-insurance	Mar. 8, 1870
100,902	Jones, Horace C., Dowagiac, Mich. Manufacture of stave-baskets	Mar. 15, 1870
103,195	Jones, James A., assignor of one-half interest to William S. Teel, Washington, D. C. Combined shirt and collar	May 17, 1870
106,697	Jones, James H., Yellow Springs, Ohio. Flour-bolt. (Antedated Aug. 12, 1870)	Aug. 23, 1870
107,056	Jones, J. Herva, Rockford, Ill. Seeding-machine	Sept. 6, 1870
	Same.....Hand seed-planter.....(Extension)	Aug. 22, 1870
106,368	Jones, J. Hilton, Binghamton, N. Y. Key-hole guard	Aug. 16, 1870
	Jones, James M., and Edmund Trowbridge. (*See* Trowbridge & Jones.)	
98,976	Jones, James O., assignor to self and Charles Hubbard, jr., Brooklyn, E. D., N. Y. Tuyere	Jan. 18, 1870
102,681	Jones, Jenkin B., Laurel Run, Pa. Ventilator for mines	May 3, 1870
99,330	Jones, John E., Wiretown, N. J. Elastic lanyard	Feb. 1, 1870
107,917	Same.....Surge-reliever	Oct. 4, 1870
102,010	Jones, J. Evans, Tidioute, Pa. Expansion-joint for pipes	April 19, 1870
108,152	Jones, John H., Memphis, Tenn. Cooking-stove	Oct. 11, 1870
110,209	Same.....Knoxville, Tenn. Rolling-mill	Dec. 20, 1870

Alphabetical list of patentees for the year 1870—Continued.

No.	Name, residence, and invention or discovery.	Date.
101,741	Jones, John S., Covington, Ind. Straw-cutter	April 12, 1870
	Jones, L. P., and S. B. Hewitt, jr. (*See* Usher, Charles, assignor) (Reissue.)	
105,693	Jones, Marquis R., Darien, Wis. Boxing for covering the shafting of machinery	July 26, 1870
3,953	Jones, Melville D., Somerville, Mass. Bracket (Design)	April 5, 1870
105,402	Jones, Nathaniel, Chicago, Ill. Tuck-marker for sewing-machines	July 12, 1870
106,591	Same. Syracuse, N. Y. Last	Aug. 23, 1870
110,370	Same. New York, N. Y. Truss and supporter	Dec. 20, 1870
107,918	Jones, Octavous, Troy, N. Y. Machine for turning or planing the inside of bells or other hollow castings	Oct. 4, 1870
	Jones, Reuben, and Edwin F. Whitney. (*See* Whitney & Jones.)	
	Jones, Robert V., and Henry Fessler. (*See* Fessler & Jones, assignors.)	
105,066	Jones, Solomon, and Bernard Terfloth, New Orleans, La. Device for propelling street-cars	July 5, 1870
109,630	Jones, Thomas F., Hicksford, Va. Cultivator plow	Nov. 29, 1870
	Jones, T. H., & Co. (*See* Osborn, Benjamin F., assignor.)	
102,272	Jones, Thomas L., assignor to self and Dennis Long, Natchez, Miss. Steam-condenser. (Antedated Oct. 26, 1869)	April 26, 1870
	Jones, Thomas M., and Charles W. Fillmore. (*See* Fillmore & Jones.)	
108,794	Same. Chicago, Ill. Carriage-wheel	Nov. 1, 1870
	Jones, Walter S., and William H. Henderson. (*See* Henderson & Jones.)	
102,554	Jones, William, New York, N. Y. Dry-dock	May 3, 1870
104,740	Jones, William, Oshkosh, Wis. Ironing-machine	June 28, 1870
106,171	Jones, William, New York, N. Y. Process of removing nails from felt	Aug. 9, 1870
	Jones, William F. (*See* Ward, John D., assignor.)	
106,153	Jones, William F., assignor to self and C. A. Edmonston, Baltimore, Md. Permutation-lock faucet	Oct. 11, 1870
107,389	Jones, William H., assignor to self and D. G. Brumback, Newport, Ky. Roofing-compound	Sept. 13, 1870
107,637	Jones, William P., Arcade, N. Y. Harrow	Sept. 6, 1870
	Jonson, Solon. (*See* Pettengill, Manasseh, assignor.)	
99,775	Jope, George W., assignor to self and William Bunton, Pittsburgh, Pa. Shovel-blank	Feb. 15, 1870
110,371	Jope, George W., and William Bunton, Pittsburgh, Pa. Rolled bar for plow-beam blanks	Dec. 20, 1870
	Joralemon, Nicholas H., *et al.* (*See* Demorest & Joralemon) (Design.)	
101,021	Jordan, Charles, Wrentham, Mass. Machine for cutting basket-stuff	Mar. 22, 1870
99,446	Jordan, Dedrick, assignor to A. S. and J. Gill & Co. Charlestown, Mass. Dovetailing-machine	Feb. 1, 1870
103,750	Same. Cutter for dovetailing-machines	May 31, 1870
103,890	Same. Cutter for wood-molding machines	June 7, 1870
102,011	Jordan, Dedrick, Charlestown, Mass, and Joseph Dill, Grand Rapids, Mich. Dovetailing-machine	April 19, 1870
107,910	Jordan, Elbert, Pickens County, Ala. Corn-sheller	Oct. 4, 1870
103,891	Jordan, John W., Lexington, Va. Motive mechanism for sewing-machines	June 7, 1870
110,047	Same. Churn	Dec. 13, 1870
3,852	Jordan, Lucius, and Leander E. Smith, assignors to the Collins Company, Collinsville, Conn. Wrench (Reissue)	Feb. 22, 1870
107,058	Jordan, William A., New Orleans, La. Bale-tie	Sept. 6, 1870
106,698	Jordan, William A., assignor to Edward P. Jones, New Orleans, La. Bale-tie	Aug. 23, 1870
100,903	Jordan, William J., New Lisbon, Ohio. Machine for bending fifth-wheel	Mar. 15, 1870
107,030	Jordan, William N., assignor to self, Porter M. Smart, and Henry W. Cook, Cambridge, Mass. Paint-compound	Sept. 6, 1870
	Jordan, William W., *et al.* (*See* Sinclair, James A., assignor.)	
106,369	Joseff, Edward E., St. Louis, Mo. Egg-carrier	Aug. 16, 1870
	Joseph, Edward, and Daniel Williams. (*See* Williams & Joseph.)	
109,217	Joseph, William, Quincy, Mich. Potato-digger. (Antedated Nov. 5, 1870)	Nov. 15, 1870
109,316	Joslyn, Benjamin Franklin, New York, N. Y. Breech-loading fire-arm	Nov. 15, 1870
109,417	Same. Revolving fire-arm	Nov. 22, 1870
	Josselyn, Benjamin F. and Joel S., *et al.* (*See* Samuels, John L., assignor.)	
	Joy, Henry S., *et al.* (*See* Burbank, Abner, assignor.)	
	Joy, Robert D., William D., and Robert F. (*See* Rigell, Mark, assignor.) (Two cases.)	
99,686	Joyce, Charles R., Alexandria, Va. Cross-head shifter	Feb. 8, 1870
109,418	Joyce, Charles R., assignor to self and Edwin Receide, Alexandria, Va. Railway-rail chair	Nov. 22, 1870
102,826	Joyce, George F., Boston, Mass. Drawer for furniture	May 10, 1870
102,827	Same. Sash-supporter	May 10, 1870
105,808	Joyce, Jacob O., Dayton, Ohio. Case for turbine water-wheels	July 26, 1870
106,486	Joyce, Joseph L., New Haven, Conn. Shoe	Aug. 16, 1870
3,999	Judd, Albert D., New Haven, Conn. Bracket (Design)	April 26, 1870
4,000	Same. Drawer-pull (Design)	April 26, 1870
102,838	Same. Match safe	May 10, 1870
4,016	Same. Drawer-pull (Design)	May 10, 1870
4,077	Same. Metallic bracket (Design)	May 31, 1870
104,483	Same. same	June 21, 1870
104,484	Judd, Albert D., and Edward M., New Haven, Conn. Metallic bracket	June 21, 1870
109,823	Judd, Edward M., New Haven, Conn. Head-rest for car-seats	Dec. 6, 1870
106,830	Judd, Frederick W., and George M. Hubbard, New Haven, Conn. Lock for the meeting-rail of sashes	Aug. 30, 1870
104,168	Judd, Hubert L., Brooklyn, N. Y. Nail for pictures, &c	June 14, 1870
104,164	Same. Tassel-hook	June 14, 1870

Alphabetical list of patentees for the year 1870—Continued.

No.	Name, residence, and invention or discovery.	Date.
	Judd Manufacturing Company. (*See* Adt, John, assignor.)	
104,465	Judd, Morton, New Haven, Conn. Spring-bolt for windows	June 21, 1870
3,915	Judd, Morton, assignor to the Judd Manufacturing Company, New Haven, Conn. Sash-fastener (Reissue)	April 12, 1870
98,694	Judd, Morton and Albert D., New Haven, Conn. Window-button	Jan. 11, 1870
102,945	Judd, Morton, New Haven, Conn., and Hubert L., Brooklyn, N. Y. Coat and hat hook	May 10, 1870
109,741	Judd, Nelson T., Washington, D. C. Rotary plow	Nov. 29, 1870
	Judd, Thor. (*See* Doty, Ellis, assignor.)	
107,069	Judson, Alonzo C., Grand Rapids, Ohio. Garden-hoe	Sept. 6, 1870
100,042	Judson, A. C., assignor to E. O. Judson, Grand Rapids, Ohio. Plow	Feb. 22, 1870
107,508	Judson, Anson, Brooklyn, N. Y. Planing-machine	Sept. 20, 1870
99,908	Judson, Frederick, Castleton, N. Y. Reflector for lamps	Feb. 15, 1870
107,383	Judson, William B., Poughkeepsie, N. Y. Spring-mattress	Sept. 13, 1870
3,874	June, Joseph W., Wheeling, W. Va. Inkstand (Design)	Mar. 1, 1870
	Jungbluth, Julius, and Otto Kornemann. (*See* Kornemann & Jungbluth.)	
105,089	Kaempfe, Daniel, and Carl List, Germany. Compounding china clay to imitate marble, mother-of-pearl, &c	July 5, 1870
4,404	Kagy, Henry, assignor to Thomas Potter, Son & Co., Philadelphia, Pa. Oil-cloth pattern (Design)	Oct. 11, 1870
4,405	Same. same (Design)	Oct. 11, 1870
4,406	Same. same (Design)	Oct. 11, 1870
4,538	Same. same (Design)	Dec. 27, 1870
4,539	Same. same (Design)	Dec. 27, 1870
108,359	Kahn, Herman, Troy, N. Y. Gun-charger	Oct. 18, 1870
101,871	Kahnweiler, David, New York, N. Y. Hulling-machine	Mar. 29, 1870
	Kais, Martan, and John R. Hartmann. (*See* Hartmann & Kais.)	
110,472	Kaiser, William, Wilkesbarre, Pa. Base-burning stove. (Antedated Dec. 17, 1870)	Dec. 27, 1870
106,172	Kaiser, William C., Louisville, Ky. Machine for bending clevises, stirrups, &c	Aug. 9, 1870
104,597	Kalck, Carl A., Philadelphia, Pa. Clothes-line holder	June 21, 1870
108,360	Kalkbrenner, Frederick B., Clinton, Mo. Combination-lock	Oct. 18, 1870
108,795	Same. Bridle-bit	Nov. 1, 1870
106,831	Kane, Daniel, Tivoli, Iowa. Fanning-mill	Aug. 30, 1870
4,179	Kappelhoff, John H., and Samuel Rauh, New York, N. Y. Fur-collar (Design)	June 28, 1870
105,340	Same. same	July 12, 1870
3,854	Same. Muff (Design)	July 19, 1870
101,695	Karlen, John Jacob, Switzerland. Composition for the manufacture of friction-matches	April 5, 1870
	Karney, Charles J., *et al.* (*See* Frey, Franklin, assignor.)	
106,489	Karr, Jacob, Washington, D. C. Hemming and felling device for sewing-machines	Aug. 16, 1870
110,144	Same. Needle-setter for sewing-machines	Dec. 13, 1870
109,219	Kaspar, John, Pomeroy, Ohio. Clothes-drier	Nov. 15, 1870
100,904	Kasson, Amasa C., Milwaukee, Wis. Binding-attachment for sewing-machines	Mar. 15, 1870
105,577	Same. Binding and hemming sewing-machines	July 19, 1870
4,407	Same. Hinge (Design)	Oct. 11, 1870
102,406	Kata, Julius, Cincinnati, Ohio. Plane-stock	April 26, 1870
105,402	Katzenstein, Leopold, New York, N. Y. Packing	July 19, 1870
103,892	Kauffman, Jacob, Gilboa, Ohio. Sawing-machine	June 7, 1870
105,947	Kauffman, Jacob J., Ashland, Ohio. Eaves-trough hanger	Aug. 2, 1870
107,061	Kaufman, Joseph, New York, N. Y. Can-opener	Sept. 6, 1870
	Kaufmann Brothers. (*See* Pinover, Simon, assignor.)	
104,853	Kaufmann, Saloman, assignor to Metropolitan Collar Company, New York, N. Y. Paper-collar box	June 28, 1870
100,771	Kavanagh, John, Providence, R. I., and Moses S. Moulton, Boston, Mass. Skiving-machine	Mar. 15, 1870
109,419	Kay, Allen B., Newark, N. J. Breech-loading fire-arm	Nov. 22, 1870
109,420	Kaye, John, jr., Setzler's Store, Pa. Preserving eggs	Nov. 22, 1870
106,502	Kaylor, Edward, Pittsburg, Pa. Screw-cutting machine	Aug. 23, 1870
104,035	Kaya, William, assignor to self, Charles Irving, and James B. Forsyth, Boston, Mass. Horse-collar	June 7, 1870
103,050	Keables, Michael Ash, Brattleborough, Vt. Looping-hook for sewing-machines	May 17, 1870
98,600	Keagey, Franklin, Chambersburg, Pa. Guide for planing-machines	Jan. 4, 1870
101,626	Keagy, A. S., Harristown, Ill. Field-roller	April 5, 1870
103,196	Kealy, Thomas, Lewisville, Texas. Pitman	May 17, 1870
107,178	Keane, John, New York, N. Y. Water-closet	Sept. 6, 1870
105,217	Keane, John, assignor to self and George H. Brown, New York, N. Y. Water-closet valvular apparatus	July 12, 1870
	Kear, George W., and John K. Sax. (*See* Sax & Kear.)	
107,384	Kearney, Richard, Havre de Grace, N. F. Propelling-apparatus	Sept. 13, 1870
105,948	Kearney, William, Belleville, N. J. Grate bar	Aug. 2, 1870
108,796	Kearney, William, assignor to self and A. D. Graham, Belleville, N. J. Grate-bar and bearer	Nov. 1, 1870
108,797	Kearns, George W., Lilleyville, Pa. Sawing-machine	Nov. 1, 1870
110,242	Keating, Ambrose, assignor to Benjamin F. Stephenson, Boston, Mass. Hooded garment	Dec. 20, 1870
100,639	Keating, John M., Norfolk, Va. Peanut cleaning and polishing machine	Mar. 8, 1870
	Keck, Uriah, and Francis Glick. (*See* Glick & Keck.)	
104,598	Keefer, William M., assignor to self and James Harding, Chicago, Ill. Lock	June 21, 1870

Alphabetical list of patentees for the year 1870—Continued.

No.	Name, residence, and invention or discovery.	Date.
110,943	Keeffer, Governeur M., assignor to self and William U. Barry, Birmingham, Pa. Tool for forming mouths of glass jars	Dec. 20, 1870
99,776	Keeler, Frank, assignor to Tomlinson Spring and Axle Company, Bridgeport, Conn. Elliptic spring	Feb. 15, 1870
103,579	Keeler, Isaac A., Middleville, Mich. Hand corn-planter	July 19, 1870
103,470	Keeling, John T., Hibernia, Mo. Grain-meter	May 24, 1870
	Keely, Oliver B., *et al.* (*See* Coulston, Thomas J., assignor.)	
109,630	Keen, Jacob M., assignor to self and Charles C. G. Armeling, Philadelphia, Pa. Machine for cutting, scoring, and cornering paper for boxes	Nov. 29, 1870
108,487	Keen, Morris L., assignor to self and Samuel A. Walsh, Jersey City, N. J. Manufacture of paper-stock	Oct. 18, 1870
	Same.....Paper-stock	Nov. 29, 1870
110,742	Keen, Samuel, East Bridgewater, Mass. Knife holder and grinder for heel-cutting machines	Oct. 25, 1870
108,691	Keen, William T., *et al.* (*See* Monroe, Nathaniel, assignor.)	Nov. 1, 1870
108,798	Keenan, Hugh, Worcester, Mass. Drip-catch for umbrellas	
	Keene, John W. (*See* Vivarttoa, Aloha, assignor.)	
	Keeney, Ira, and Uel W. Armstrong. (*See* Armstrong, U. W., assignor.)	
	Same.....(*See* Armstrong and Keeney, assignors.)	Mar. 8, 1870
100,640	Keep, James M., New York, N. Y. Mucilage-holder	April 5, 1870
101,627	Same.....Blotting-pad	May 31, 1870
103,751	Same.....Towel or clothes rack	May 31, 1870
103,752	Same.....Twine-holder	Nov. 8, 1870
109,017	Same.....Coat and hat rack	Mar. 8, 1870
100,641	Keep, William J., Troy, N. Y. Stove-pipe damper	Mar. 29, 1870
101,368	Same.....Base-burning stove	April 26, 1870
102,407	Same.....Stove-pipe damper	May 3, 1870
102,682	Same.....Base-burning stove	Sept. 6, 1870
	Keeports, A. L., *et al.* (*See* Yount, Reister, Keeports & Yount.)	
107,062	Keesey, John, Chester, Pa. Piston-packing	July 5, 1870
105,090	Keethler, Daniel, Mount Oreb, Ohio. Corn-planter	
	Keeton, Charles. (*See* Nutter, George W., assignor.)	Jan. 18, 1870
98,977	Kegg, William, Lasalleville, N. Y. Spike-extractor	
109,230	Kehoe, Edward J., assignor to William A. Hopkins and Frederick Z. Dickinson, New York, N. Y. Combined lock and latch for sliding-doors	Nov. 15, 1870
103,809	Kehrwieder, William H. F., Philadelphia, Pa. Composition for encaustic painting	July 26, 1870
104,509	Keith, Arza B., North Bridgewater, Mass., and Timothy K. Reed, East Bridgewater, Mass., assignors to Arza B. Keith. Machine for shaving heels of boots and shoes	June 21, 1870
	Keith, Arza B., and Timothy K. Reed. (*See* Reed & Keith.)	Mar. 1, 1870
100,415	Keith, A. P., Easton, Mass. Aerial car	
107,385	Keith, Charles A., Danvers, Mass., Jeremiah Keith, Charlton, Mass., and Thomas K. Keith, Lynn, Mass. Device for folding and ironing shoe-upper edges	Sept. 13, 1870
109,519	Keith, David B., East Boston, Mass. Combined stocking-last and yarn and needle holder	Nov. 22, 1870
98,775	Keith, Ethan B., Galesburgh, Mich. Car-coupling	Jan. 11, 1870
	Keith, Ethan B., and Henry A. Brown. (*See* Brown & Keith.)	
101,133	Keith, E. H., assignor of one-half interest to Chambers S. Doty, Peoria, Ill. Game-register	Mar. 22, 1870
107,063	Keith, Horace M., Commerce, Mich. Plow for cutting potato-roots	Sept. 6, 1870
108,488	Same.....Plow	Oct. 18, 1870
	Keizer, Lewis R. (*See* Murrill, James H., assignor.)	Dec. 20, 1870
110,944	Kellberg, John W., Philadelphia, Pa. Printing-press	Aug. 16, 1870
106,490	Keller, John, Paducah, Ky. Brick-machine	June 28, 1870
104,854	Keller, John F., Hagerstown, Md. Machine for distributing fertilizers	
105,810	Keller, John F., assignor to self and William Updegraff, Hagerstown, Md. Drill for seed-planters	July 26, 1870
105,811	Same.....Fertilizer-attachment to seeding-machines	July 26, 1870
	Keller, John F., *et al.* (*See* Schner, Nathaniel, assignor.)	Nov. 1, 1870
103,913	Keller, John F., Boalsburgh, Pa. Harvester-reel	
105,218	Keller, Matthias, assignor to self, Stoughton B., and Luther L. Holden, Boston, Mass. Kaleidoscope	July 12, 1870
105,696	Keller, Moses A., Littletown, Pa. Shaft-coupling	July 26, 1870
106,370	Same.....Separator-attachment to thrashing-machines	Aug. 16, 1870
98,776	Keller, Peter, New York, N. Y. Gas-regulator	June 11, 1870
109,029	Same.....same	Oct. 4, 1870
98,777	Keller, Victor, Allegheny, Pa. Enameling-oven	Jan. 11, 1870
107,303	Kellet, John, Elizabethport, N. J. Mud and ore mill	Sept. 20, 1870
4,478	Kellett, Samuel, San Francisco, Cal. Center-piece	Nov. 15, 1870
4,479	Same.....same	(Design) Nov. 15, 1870
99,900	Kelley, Joseph F., Washington, D. C. Water-meter	(Design) Feb. 15, 1870
102,013	Kellogg, Anson N., and J. James Schock, Chicago, Ill. Printers' furniture	April 19, 1870
110,945	Kellogg, Augustus Burr, Buffalo, N. Y. Blotting-pad	Dec. 20, 1870
104,036	Kellogg, Charles, Athens, Pa. Truss-frame bridge	June 7, 1870
103,197	Kellogg, Clement A., Elyria, Ohio. Pruning-shears	May 17, 1870
	Kellogg, E. H., *et al.* (*See* Bigard, Kellogg & Prentiss.)	
3,993	Kellogg, Henry, Chicago, Ill. Trade-mark	(Design) April 26, 1870
101,878	Kellogg, James Franklin, North Bridgewater, Mass. Tuck-crossing attachment for sewing-machines	Mar. 29, 1870

Alphabetical list of patentees for the year 1870—Continued.

No.	Name, residence, and invention or discovery.	Date.
102,873	Kellogg, James Franklin, North Bridgewater, Mass. Binding-guide for sewing-machines	April 26, 1870
103,342	Same.....Tuck-marker for sewing-machines	May 24, 1870
101,885	Kellogg, Milo F., Pittsfield, Ohio. Lubricating-axle	April 12, 1870
99,777	Kells, Oliver, Steubenville, Ohio. Metallic hearth	Feb. 15, 1870
107,691	Kells, William F., San Francisco, Cal. Sash-holder	Sept. 27, 1870
108,268	Same.....Door-spring	Oct. 11, 1870
102,839	Kelly, Daniel, Muskegon, Mich. Boring-bit	May 10, 1870
100,772	Kelly, Daniel, assignor to self and Walter K. Ludwig, Philadelphia, Pa. Centering-attachment for lathes	Mar. 15, 1870
	Kelly, James. (*See* Heitmann, August G., assignor.)	
104,600	Kelly, James C., Groveland, N. Y. Water-wheel	June 21, 1870
106,838	Kelly, John Stafford, New York, N. Y. Pavement	Aug. 30, 1870
	Kelly, Joseph. (*See* Paine, Henry J., assignor.)	
	Kelly, Joseph, *et al.* (*See* Fischer & Whelan, assignors.)	
105,219	Kelly, Michael D., Cadiz, Ky. Soldering-kit	July 12, 1870
106,371	Same.....Watch-making tool	Aug. 16, 1870
106,372	Same.....Device for winding the main-spring of watches	Aug. 16, 1870
3,994	Kelly, Patrick, assignor to Benjamin Best, Dayton, Ohio. Gas-generator (Reissue)	April 19, 1870
109,018	Kelly, Peter J., assignor to Elizabeth Thompson, New York, N. Y. Composition for coating bearings	Nov. 8, 1870
106,373	Kelly, Rollin C., Brandon, Wis. Axle-gauge	Aug. 16, 1870
102,012	Kelly, William, Bath, Me. Closet and bed	April 19, 1870
105,579	Kelly, William, Saranac, Mich. Animal-poke	July 19, 1870
100,773	Kelly, William H., New York, N. Y. Apparatus for lighting gas by electricity	Mar. 15, 1870
	Kelly, William J., and J. Cone. (*See* Cone & Kelly.)	
	Kelsey, H. O., *et al.* (*See* Selden, George, assignor.)	
99,910	Kelsey, James E., Brooklyn, N. Y. Kindling-wood elevator	Feb. 15, 1870
	Kelsey, J. F., and A. Van Patten. (*See* Van Patten & Kelsey.)	
103,343	Kelsey, Orlando, Worcester, Mass. Piston-packing	May 24, 1870
105,341	Kelsey, William, assignor of one-half interest to Henry Augustus Clark, England. Double-gripping flange-drum, pulley, and wheel	July 12, 1870
98,978	Kemp, Charles E., and Joseph N. Pattison, Philadelphia, Pa. Covering for steps	Jan. 18, 1870
102,830	Kemper, Simon, Berger, Mo. Mosquito-bar	May 10, 1870
107,386	Kenan, George W., Upper Sandusky, Ohio. Buggy-spring	Sept. 13, 1870
101,886	Kendall, Adoniram, Cleveland, Ohio. Cut-off and steam-valve	April 12, 1870
109,421	Kendall, Fernando C., assignor to self and Gilbert R. Barney, Hartford, Wis. Mop-head	Nov. 22, 1870
101,887	Kendall, George F., assignor to self and John G. Folsom, Fitchburgh, Mass. Sewing-machine	April 12, 1870
103,471	Kendall, James N., Nashua, N. H. Transferring and loop-retaining comb for knitting-machines	May 24, 1870
	Kendall, James O. (*See* Hicks, Isaac, assignor.)	
104,466	Kendall, John, New Lebanon, N. Y. Thermometer	June 21, 1870
103,198	Kendall, John L., Foxborough, Mass., and Richard H. Trested, New York, N. Y. Fabric for carpet-lining, &c	May 17, 1870
	Kendall, Joseph W. (*See* Wood, George W., assignor.)	
98,778	Kendall, Richard A. Mineral Point, Wis. Seat-cushions	Jan. 11, 1870
102,274	Kendall, Richard A. and William, Mineral Point, Wis. Hoisting-machine	April 26, 1870
102,831	Kendrick, Hiland H., Fulton, N. Y. Clothes-drier	May 10, 1870
109,130	Same.....Flower-stand	Nov. 8, 1870
109,131	Kendrick, Isaac, Philadelphia, Pa. Burning hydrocarbons	Nov. 8, 1870
106,173	Kenerson, James M., assignor to self and Edmund Burke, Newport, N. H. Lamp-shade and reflector	Aug. 9, 1870
	Keniston, C., and J. H. Sawyer. (*See* Sawyer & Keniston.)	
109,019	Kennedy, Alfred Lafayette, Philadelphia, Pa. Digging-machine for agricultural purposes. (Antedated Oct. 22, 1870)	Nov. 8, 1870
101,471	Kennedy, Charles W., Williamsburgh, N. Y. Staple-machine	April 5, 1870
110,473	Kennedy, Edward S., Birmingham, Pa. Spice-box	Dec. 27, 1870
103,051	Kennedy, George R., Worcester, Mass. Machine for stretching silk, &c	May 17, 1870
106,174	Kennedy, Michael, New York, N. Y. Platform-scale	Aug. 9, 1870
102,014	Kennedy, Samuel, Rochester, Pa. Bootjack and brush	April 19, 1870
99,321	Kennedy, Samuel A., assignor to the Kennedy Electric Clock Company, Attleborough, Pa. Electric clock	Feb. 1, 1870
102,832	Kennedy, Simon H., assignor to self and F. G. Macomber, New York, N. Y. Apparatus for obtaining tanning-extracts	May 10, 1870
109,231	Kennett, John R., Geddes, N. Y. Scaffold-bracket for roofing	Nov. 15, 1870
109,324	Kenney, Jeremiah, sr., Baltimore, Md. Fire-kindler	Nov. 15, 1870
107,580	Kenney, Lester B., Charlotte, Mich. Horse-collar	July 19, 1870
110,145	Kenning, James W., Quincy, Mich. Clothes-drier	Dec. 13, 1870
98,504	Kenny, George, Nashua, N. H. Gauge and divider	Jan. 4, 1870
107,920	Kenny, John W., and John H. Adams, Albany, N. Y. Hair-curler	Oct. 4, 1870
103,893	Kent, Artemus A., Lyons, Iowa. Pressure-gauge and safety-valve	June 7, 1870
107,179	Same.....Machine for shearing metal	Sept. 6, 1870
108,361	Kent, Edward H., New York, N. Y. Guard-bolt for latches	Oct. 18, 1870
102,275	Kent, Joseph C., and Henry C. Rich, Phillipsburgh, N. J. Pneumatic hoist	April 26, 1870
105,812	Kent, Prentiss J., and Nathan W. Bancroft, assignors to selves, J. Rich Kent, and John G. Avery, Worcester, Mass. Self-acting mule for spinning	July 26, 1870
	Kent, William, and Theodore C. Van Wyck. (*See* Van Wyck & Kent.)	

Alphabetical list of patentees for the year 1870—Continued.

No.	Name, residence, and invention or discovery.	Date.
104,853	Kenyon, Henry K., assignor to self and Jarecki, Metz & Co., Steubenville, Ohio. Deep-well pump	June 28, 1870
109,631	Kenyon, Henry K., assignor to self and Jarecki, Hayes & Co., Steubenville, Ohio. Pump	Nov. 29, 1870
108,913	Kenyon, John S., and Lewis Fox, Baldwinsville, N. Y. Manufacture of paper	Nov. 1, 1870
108,914	Same.....Mineral paint	Nov. 1, 1870
106,175	Kenyon, Silas R., assignor to self and William D. Vernam, Greenville, R. I. Attaching rubber to wringer-shafts	Aug. 9, 1870
4,230	Kenyon, William G., Wakefield, R. I. Frame for mowing-machines ..(Design)..	July 12, 1870
105,220	Keplinger, Jacob, Farmersville, Ohio. Automatic sluice-gate	July 12, 1870
	Keplinger, Peter, *et al.* (*See* Jackson, Richard A., assignor.)	
108,030	Kepner, Solomon, Pottstown, Pa. Composition for destroying worms in fruit-trees	Oct. 4, 1870
108,031	Same.....Gate	Oct. 4, 1870
99,328	Kerigan, Michael James, Boston, Mass. Blowing-apparatus for organs, &c. (Antedated Oct. 21, 1869)	Feb. 1, 1870
101,742	Same.....Tremolo-attachment for reed or pipe organs	April 12, 1870
103,472	Kerigan, Michael J., assignor to self, William P. Emerson, and Edwin Faxon, Boston, Mass. Sewing-machine table	May 24, 1870
107,180	Kern, William High, and Thomas M. Davis, Philadelphia, Pa. Refrigerator and side-board	Sept. 6, 1870
4,307	Kerr, Hugh S., assignor to Israel Foster, Philadelphia, Pa. Carpet-pattern. (Design)	Dec. 13, 1870
4,540	Kerr, Hugh S., assignor to Israel Foster, Philadelphia, Pa. Carpet-pattern. (Design)	Dec. 27, 1870
99,911	Kerr, James, Corsicana, Texas. Fence	Feb. 15, 1870
3,819	Kerr, Robert, and John P., Scotland. Trade-mark .....(Design)..	Jan. 18, 1870
4,035	Kerr, William, assignor to Israel Foster, Philadelphia, Pa. Carpet-pattern. (Design)	May 17, 1870
4,180	Kerr, William, assignor to Israel Foster, Philadelphia, Pa. Carpet-pattern. (Design)	June 28, 1870
4,181	Kerr, William, assignor to Israel Foster, Philadelphia, Pa. Carpet-pattern. (Design)	June 28, 1870
4,315	Kerr, William, assignor to James Bromley & Brothers, Philadelphia, Pa. Carpet-pattern .....(Design)..	Aug. 30, 1870
103,994	Kerr, William Anderson, Easton, Pa. Printing-press	June 7, 1870
	Kershaw, John, and August Wernet. (*See* Wernet & Kershaw.)	
	Kersting, Benjamin, and Charles G. Miller. (*See* Miller & Kersting, assignors.)	
	Kesseberger, August. (*See* Robinson, John G., assignor.)	
102,833	Kessler, Herman H., Detroit, Mich. Manufacture of medicated malt liquors	May 10, 1870
102,129	Ketcham, Henry W., New York, N. Y. Stopper for jars and bottles	April 19, 1870
99,912	Ketcham, Lewis Y., and James Taynton, Port Jervis, N. Y. Yard and tank-crane	Feb. 15, 1870
101,273	Ketchum, Nathaniel S., Marshalltown, Iowa. Harvester-dropper	Mar. 29, 1870
102,130	Kewin, Charles, San Francisco, Cal. Machine for rolling conical and other tubes	April 19, 1870
99,813	Keyes, Horatio, Terre Haute, Ind. Machine for smoothing spokes	Feb. 15, 1870
99,091	Keyser, John H., New York, N. Y. Base-burning stove	Jan. 25, 1870
99,092	Same.....Coal-stove	Jan. 25, 1870
108,154	Kibler, Nathan, Milton, Ill. Feeding-device for fanning-mills	Oct. 11, 1870
106,699	Kidd, Joshua, New York, N. Y. Manufacture of gas for illumination, &c. (Patented in England Jan. 5, 1864)	Aug. 23, 1870
4,168	Same.....Manufacture of gas from hydrocarbon.....(Reissue)..	Oct. 25, 1870
110,946	Kidd, Thomas W. S., Springfield, Ill. Harvester-dropper	Dec. 20, 1870
104,856	Kidder, Charles L., and Florentine A. Jones; said Kidder assignor to said Jones, Boston, Mass. Stem-winding and hand-setting watch	June 28, 1870
104,741	Kidder, James, assignor to self and James F. Shumate, Urbana, Ohio. Tanning. (Design)	June 28, 1870
105,697	Kidder, Jerome, New York, N. Y. Compound switch for electric batteries	July 26, 1870
108,602	Same.....Galvanic battery	Oct. 25, 1870
107,968	Kidder, Moses W., Lowell, Mass. Carbureting-apparatus	Sept. 13, 1870
106,001	Kidder, William B., Pike Township, Ind. Clod-fender for plows	Aug. 2, 1870
107,221	Kidney, Peter, Olmsted Falls, Ohio. Farm-fence	July 12, 1870
107,692	Kidwell, George W., Elwood, Ind. Attaching draught to plows	Sept. 27, 1870
	Kidwell, John L., *et al.* (*See* Forney, P. J., assignor) .....(Reissue.)	
108,591	Kieffer, Christian, and Joseph R. D. Seeds, Wilmington, Del. Earth-closet	Aug. 23, 1870
108,303	Kienast, Friederich, Ansonia, Conn. Striking movement of clocks	Oct. 18, 1870
	Kienzle, Jacob, *et al.* (*See* Hintz, John C., assignor.)	
	Same.....(*See* Haile, Robert, assignor.)	
	Same.....(*See* Diebold & Obernesser, assignors.)	
	Kier, Samuel M., (*See* Stewart, David, assignor).....(Two cases.)	
	Same..... (*See* Ells, Josiah W., assignor).....(Two cases.)	
103,052	Kilbourn, Edward E., New Brunswick, N. J. Machine for spinning wool	May 17, 1870
107,693	Kilbourn, Weston W., Sanford, N. Y. Chewing gum	Sept. 27, 1870
4,151	Kilburn, Cheney, assignor to Kilburn & Gates, Philadelphia, Pa. Box for the top of bureaus.....(Design)..	June 14, 1870
4,201	Kilburn, Cheney, assignor to Kilburn & Gates, Philadelphia, Pa. Box for the top of bureaus.....(Design)..	July 5, 1870
106,045	Kilburn, Cheney, assignor to Kilburn & Gates, Philadelphia, Pa. Mode of attaching looking-glass frames to bureaus	Aug. 2, 1870
4,316	Kilburn, Cheney, assignor to Kilburn & Gates, Philadelphia, Pa. Box for the top of bureaus.....(Design)..	Aug. 30, 1870

Alphabetical list of patentees for the year 1870—Continued.

No.	Name, residence, and invention or discovery.	Date.
106,941	Kilburn, Cheney, assignor to Kilburn & Gates, Philadelphia, Pa. Box for the top of bureaus	Aug. 30, 1870
4,350	Kilburn, Cheney, assignor to Kilburn & Gates, Philadelphia, Pa. Box for the top of bureaus.....(Design)..	Sept. 13, 1870
4,351	Kilburn, Cheney, assignor to Kilburn & Gates, Philadelphia, Pa. Box for the top of bureaus.....(Design)..	Sept. 13, 1870
4,356	Kilburn, Cheney, assignor to Kilburn & Gates, Philadelphia, Pa. Box for the top of bureaus.....(Design)..	Sept. 13, 1870
4,357	Kilburn, Cheney, assignor to Kilburn & Gates, Philadelphia, Pa. Box for the top of bureaus.....(Design)..	Sept. 20, 1870
4,423	Kilburn, Cheney, assignor to Kilburn & Gates, Philadelphia, Pa. Box for bureaus.....(Design)..	Oct. 18, 1870
4,460	Kilburn, Cheney, assignor to Kilburn & Gates, Philadelphia, Pa. Box for the top of bureaus.....(Design)..	Nov. 8, 1870
	Kilburn, Cheney, *et al.* (*See* Davis, Thomas Hale, assignor.)	
107,181	Kilgore, John C., Philadelphia, Pa. Steam-generator	Sept. 6, 1870
101,698	Kilian, Frederick, New York, N. Y. Folding-chair	April 5, 1870
98,779	Killam, Henry, New Haven, Conn. Whiffle-tree coupling	Jan. 11, 1870
4,070	Same.....Machine for compressing carriage-wheels .....(Reissue)..	July 12, 1870
107,783	Same.....Carriage-axle	Sept. 27, 1870
4,435	Same.....Carriage-bed.....(Design)..	Oct. 25, 1870
102,408	Killefer, John, West Richfield, Ohio. Carriage-axle lubricator	April 26, 1870
103,595	Kilner, George, and Francis H. Simmons, Sullivan, Ill. Motive mechanism for carriages	June 7, 1870
102,946	Kilsheimer, Ferdinand, Cincinnati, Ohio. Shoe	May 10, 1870
99,807	Kimball, C. P., Portland, Me. Sleigh	Jan. 25, 1870
102,553	Kimball, Elias W., Hudson, N. Y. Soldering fire-pot	May 3, 1770
108,363	Kimball, George, Cleveland, Ohio. Alarm-lock for money-drawers	Oct. 18, 1870
105,949	Kimball, George R., Middleton, N. Y. Buck-saw frame	Aug. 2, 1870
98,979	Kimball, John J., Naperville, Ill. Flood-gate	Jan. 18, 1870
98,601	Kimball, John T., and Benjamin F. Hebard, Boston, Mass. Extension window-screen	Jan. 4, 1870
	Kimball, Matthew H., and James Garvey. (*See* Garvey & Kimball.)	
101,472	Kimball, William B, Peterborough, N. H. Folding convertible-chair	April 5, 1870
109,423	Kimberly, Lewis A., assignor of one-half interest to George E. Kimberly, New Haven, Conn. Coal-hole cover	Nov. 22, 1870
109,911	Kimble, John H., Samuel, and George W., Fox Lake, Wis. Wind-wheel	Dec. 6, 1870
100,043	Kimm, Martinus B., assignor to self and George C. Steketee, Grand Rapids, Mich. Compound to remove grease from cloth, silk, paper, &c	Feb. 22, 1870
100,044	Kindel, James, Wilmington, Ohio. Latch for gates	Feb. 22, 1870
3,821	Kindermann, A., Cleveland, Ohio. Wrench .....(Design)..	Jan. 25, 1870
	Kindleberger, Tobias J., Eaton, Ohio. Cider-mill.....(Disclaimer)..	Oct. 17, 1870
	Same.....same .....(Extension)..	Oct. 20, 1870
104,322	King, Charles A., Springfield, Mass. Oiler for loose pulleys	June 14, 1870
3,928	King, Charles A., assignor to self and Daniel B. Wesson, Springfield, Mass. Oiler for loose pulleys .....(Reissue)..	April 19, 1870
108,155	King, George, Frederick, Md. Sash-holder	Oct. 11, 1870
101,743	King, George S., Washington, D. C. Splint for fractured limbs	April 12, 1870
107,182	King, George W., Georgetown, D. C. Balance	Sept. 6, 1870
105,281	King, George W., assignor of one-third interest to A. P. Grant, Oswego, N. Y. Folding-seat	July 12, 1870
	King, Harvey, *et al.* (*See* Calef, Joseph W., assignor.)	
	King, Henry James Hogg, and Philip Charles Evans. (*See* Evans & King.)	
109,222	King, John C., Spring Place, Ga. Cotton-seed planter	Nov. 15, 1810
107,504	King, John C., assignor to self, George M. Woodward, and George A. Blood, New York, N. Y. Valve-gear for steam-pumps, engines, &c	Sept. 20, 1870
107,505	Same.....Balance rock-valve	Sept. 20, 1870
106,170	King, John W., New York, N. Y. Shutter-fastener	Aug. 9, 1870
101,374	King, Joseph, and Charles S. Gould, Janesville, Wis. Neck-yoke	Mar. 29, 1870
109,365	King, Josiah R., assignor to William M. Tileston, Washington, D. C. Cartridge-box	Nov. 15, 1870
104,037	King, Norman, assignor to Daniel Homire, Etna, Pa. Globe-valve	June 7, 1870
102,015	King, Richard J. M., Ypsilanti, Mich. Sweep horse-power	April 19, 1870
	King, Rufus J., and James Greer. (*See* Greer & King.)	
108,260	King, Samuel M., Lancaster, Pa. Machine for cleaning and ditching rice-fields	Oct. 11, 1870
109,918	King, Samuel U., Windsor, Vt. Lathe	Dec. 6, 1870
110,474	Same.....Scythe-fastening	Dec. 27, 1870
106,594	King, Seth L., and William Ogden, Oswego, N. Y. Grain-drill	Aug. 23, 1870
109,020	King, Sidney D., assignor to self and James M. Welch, Middletown, N. Y. Dumping-car	Nov. 8, 1870
107,784	King, Theodore E., Cleveland, Ohio, and George C. Dolph, West Andover, Ohio. Harvester-cutter holder for grinders	Sept. 27, 1870
101,022	King, W. Haskell, Newark, N. J. Toilet-mirror	Mar. 22, 1870
109,423	King, William H., Newark, N. J. Lathe-chuck	Nov. 22, 1870
99,323	King, William R., Washington, D. C. Machine for moving boats on canals	Feb. 1, 1870
102,356	Same.....Submarine torpedo	May 3, 1870
	King, W. W., *et al.* (*See* Barlow, Ashbell P., assignor).....(Reissue.)	
	Kingan, Samuel. (*See* Anderson, James.)	
	Kingan, Samuel, administrator. (*See* Anderson, James.)	
103,053	Kinger, Jacob, Pittsburgh, Pa. Reversible latch	May 17, 1870
103,054	Same.....same	May 17, 1870

Alphabetical list of patentees for the year 1870—Continued.

No.	Name, residence, and invention or discovery.	Date.
103,655	Kinger, Jacob, Pittsburgh, Pa. Saucepan-handle	May 17, 1870
103,656	Same.....Stamp for fruit-cans	May 17, 1870
	Kingman, A. L., *et al.* (*See* Burridge, William H., assignor.)	
	Kingsbury, Aaron. (*See* Jenks, Samuel P., assignor.)	
	Kingsbury, Gilbert J. (*See* Fuller, William H., assignor.)	
3,897	Kingsbury, Gilbert J., assignor through mesne assignments to Henry G. Giles, Troy, N. Y. Coal-stove.....(Reissue)	Mar. 29, 1870
	Kingsland, Joseph, jr., Franklin, N. J. Paper-pulp engine.....(Extension)	Dec. 15, 1870
	Same.....Machinery for grinding paper-pulp.....(Extension)	Dec. 15, 1870
	Same.....Process of grinding paper-pulp.....(Extension)	Dec. 15, 1870
	Kingsland, W. W., *et al.* (*See* Ballantine, Alexander T., assignor.)	
	Kingsworth, William. (*See* Hall, Joseph D., assignor.)	
103,628	Kinkead, Isaac B., Watertown, Ohio. Drier	May 31, 1870
	Kinnear, William E. (*See* Gross, John T., assignor.)	
	Same.....same.....(Reissue.)	
101,373	Kinner, Royal G., Penn Yan, N. Y. Wrapper for seeds, &c	Mar. 29, 1870
107,506	Kinney, Henry E., Portsmouth, Ohio. Harrow-teeth	Sept. 20, 1870
98,695	Kinney, Simon, Bignellville, N. Y. Saw-swage	Jan. 11, 1870
	Kinsey, Joseph, *et al.* (*See* Tranter, Kinsey & Carr.)	
103,623	Kinsey, Moses, Newark, N. J. Skate-fastening	May 31, 1870
104,857	Kinta, Joseph, West Meriden, Conn. Lantern-guard	June 28, 1870
102,016	Kinta, Joseph, assignor to self and P. J. Clark, West Meriden, Conn. Bell	April 19, 1870
107,507	Same.....Caster	Sept. 20, 1870
101,023	Kinyon, Warren, and John Maxson, Scott, N. Y. Grater	Mar. 22, 1870
4,036	Kinzer, Jacob, Pittsburgh, Pa. Tobacco-knife.....(Design)	May 17, 1870
102,376	Kinzler, Charles, New York, N. Y. Propeller	April 26, 1870
108,603	Kipp, Jacob H., Millerstown, Pa. Medical compound for fowls	Oct. 25, 1870
103,037	Kipper, Nicholas, Seymour, Ind. Vegetable-cutter	May 17, 1870
	Kips, Francis, and William Morstatt. (*See* Morstatt & Kips.)	
103,017	Kiracofe, James M., Mount Solon, Va. Corn-planter	April 19, 1870
108,156	Kirby, Frank E., New York, N. Y. Steam-engine	Oct. 11, 1870
103,898	Kirby, Stephen R., East Saginaw, Mich. Adjustable curve for use of draughtsmen	June 7, 1870
102,131	Kirby, William A., Auburn, N. Y. Harvester	April 19, 1870
110,048	Kircher, Julius, Wurtemburg. Printing-ink	Dec. 13, 1870
109,884	Kirchner, William M., Pittsburgh, Pa. Jelly-glass	Dec. 6, 1870
109,925	Same.....Tool for forming screw-threads on glass jars	Dec. 6, 1870
3,954	Kirchner, William M., assignor to Bakewell, Peare & Co., Pittsburgh, Pa. Ornamentation of glassware.....(Design)	April 5, 1870
4,361	Kirchner, William M., assignor to the National Glass Company, Pittsburgh, Pa. Glassware.....(Design)	July 26, 1870
102,683	Kirk, Edward, Sharon, Pa. Cooking-stove	May 3, 1870
102,834	Same.....Fence	May 10, 1870
	Kirk, Herman. (*See* Troup, Abraham, assignor.)	
101,876	Kirk, James, Samuel Shelmerdine, and Cephas Froggatt, Great Britain. Machine for felting hat-bodies	Mar. 29, 1870
3,944	Kirk, James S., Chicago, Ill. Trade-mark.....(Design)	Mar. 29, 1870
	Kirk, Samuel E. (*See* Gibson, Charles T., assignor.)	
100,021	Kirk, Solomon W., assignor to self and Henry Thomas, Philadelphia, Pa. Flux for working metals and minerals	Nov. 8, 1870
109,743	Kirk, Solomon W., assignor to self and William Bailey, Philadelphia, Pa. Separating lead from the precious metals	Nov. 22, 1870
	Kirk, Susan, and Edwin J. Howlett. (*See* Howlett & Kirk).....(Reissue.)	
107,981	Kirkham, George Byron, New York, N. Y. Treadle for sewing and other machinery	Oct. 4, 1870
	Kirkland, Henry B., *et al.* (*See* McCracken, Edwin D., assignor).....(Two cases.)	
99,304	Kirkland, William P., San Francisco, Cal. Composition for the manufacture of water, gas, and drain pipes	Feb. 1, 1870
110,379	Kirkpatrick, J. M., Utica, Ohio. Machine for making post-holes. (Antedated Dec. 15, 1870)	Dec. 20, 1870
106,949	Kirkpatrick, Thomas, New York, N. Y. Fastening for policemen's badges	Aug. 30, 1870
	Kirkwood, Nathan, and William Merrington. (*See* Merrington & Kirkwood.)	
109,530	Kirsch, Michel, Chicago, Ill. Bridge-gate	Nov. 22, 1870
104,691	Kirtland, George, Westbrook, Conn. Hank for safe	June 21, 1870
	Kissam, Daniel W., and George L. Smith. (*See* Smith & Kissam).....(Design.)	
107,508	Kissell, Martin L. and Jacob B., Springfield, Ohio. Corn-planter	Sept. 20, 1870
105,091	Kistler, Willoughby F., assignor to Hall's Safe and Lock Company, Chicago, Ill. Permutation-lock	July 5, 1870
	Kitching, Frederick McH. (*See* Green, William H., assignor.)	
110,475	Kite, William H., and George S. Newman, Liberty Mills, Va. Smut-machine	Dec. 27, 1870
104,038	Kitson, George L., Joshua F. Laning, and Joseph Benner, assignors of half-interest to Cornelius Walborn, Philadelphia, Pa. Seal-lock	June 7, 1870
107,922	Kitson, Richard, Lowell, Mass. Cotton-opener	Oct. 4, 1870
110,347	Kitson, William, Lowell, Mass. Mode of balancing cylinders, pulleys, &c	Dec. 20, 1870
98,505	Kittle, S. P., Brooklyn, N. Y. Spiral spring for mattresses and furniture	Jan. 4, 1870
110,373	Kittleman, William W., Bloomfield, Iowa. Trace-buckle	Dec. 27, 1870
102,133	Kittredge, Joseph G., San Francisco, Cal. Knob for safe-doors	April 19, 1870
	Kittredge, William E., and Jean C. Fischer. (*See* Fischer & Kittredge.)	
104,467	Klahre, Morits T., Bloody Run, Pa. Saw-set	June 21, 1870
110,373	Klancke, Alexander A. C., assignor to Charles F. Smith and Henry C. Comegys, Washington, D. C. Apparatus for pitching barrels	Dec. 20, 1870

Alphabetical list of patentees for the year 1870—Continued.

No.	Name, residence, and invention or discovery.	Date.
100,705	Kleckner, Joseph, Mottville, Mich. Construction of chimneys and flues	Mar. 8, 1870
100,706	Same.....Cement to be used in sewers, drains, and in constructing flues and other parts of buildings	Mar. 8, 1870
103,473	Klee, Leopold and Andrew Patterson, Pittsburgh, Pa. Refrigerating-vessel	May 24, 1870
3,900	Kleemann, Carl A., Prussia. Lamp.....(Reissue)	Mar. 29, 1870
101,888	Kleemann, Rudolph, Chicago, Ill. Lamp for billiard-tables	April 12, 1870
105,463	Klees, Karl M., New York, N. Y. Machine for making printers' leads	July 19, 1870
105,464	Klein, Jakob, assignor to Dreyfoos, Klein & Co., Hesse-Darmstadt. Apparatus for the manufacture of albumenized paper	July 19, 1870
	Klinderman, Frederick, *et al.* (*See* Stewart, Klinderman & Lamb, assignors.)	
109,886	Kline, Calvin, assignor to self and George E. Hart, Brooklyn, N. Y. Hair-spring of watches, &c	Dec. 6, 1870
99,325	Kline, David R., Allentown, Pa. Sash-holder	Feb. 1, 1870
101,134	Kline, Jacob, assignor to self and George Winters, Mechanicsburgh, Pa. Harvester crank and pin	Mar. 22, 1870
108,835	Same.....Harvester	May 10, 1870
	Kline, Michael H., *et al.* (*See* Thompson, William, assignor.)	
104,039	Kline, Urias B., Reamstown, Pa. Jointed spring-guard	June 7, 1870
100,416	Kline, W. H., Eaton, Ohio. School desk and seat	Mar. 1, 1870
108,364	Kline, William H., Jersey Shore, Pa. Mop and scrubber head	Oct. 18, 1870
100,774	Kling, Isaac, Seymour, Ind. Vapor-burner	Mar. 15, 1870
100,775	Same.....Machine for making fruit-cans	Mar. 15, 1870
101,024	Same.....Fruit-can	Mar. 22, 1870
108,039	Kling, Peter, Springfield, Ill. Plow and planter	Oct. 4, 1870
	Klingman, Herman, *et al.* (*See* Phillips, David, assignor.)	
105,950	Kloman, Andrew, Pittsburgh, Pa. Machine for rolling metal	Aug. 2, 1870
105,951	Same.....Mechanical motion	Aug. 2, 1870
105,952	Kloman, Anthony C., Pittsburgh, Pa. Iron-rolling mill	Aug. 2, 1870
109,022	Klotz, Philip, assignor to Bentley C. Bibb, Baltimore, Md. Fire-place stove	Nov. 8, 1870
	Klotz, Philip, and Bentley C. Bibb. (*See* Bibb & Klotz, assignors.)	
99,687	Kluck, Martin M., assignor to self and Herman Glafcke, Hartford, Conn. Machine for spreading tobacco leaves	Feb. 8, 1870
101,744	Knacker, Adam, Meadville, Pa. Sink-apparatus for draining cellars	April 12, 1870
109,744	Knafl, Rudolph, Nashville, and Theodore M. Schleier, Knoxville, Tenn. Fan-attachment for rocking-chairs	Nov. 29, 1870
102,409	Knapp, A. Hayden, Newton Centre, and George W. Bailey, Boston, Mass.; said Bailey assignor to said Knapp. Curtain-fixture	July 26, 1870
4,302	Knapp, Charles B., Waterloo, Wis. Joining wood.....(Design)	Aug. 23, 1870
98,980	Knapp, George S., Winona, Minn. Chimney-cleaner	Jan. 18, 1870
98,981	Same.....Railroad-car window	Jan. 18, 1870
101,135	Knapp, Henry, Walworth, N. Y. Tree-protector	Mar. 22, 1870
105,342	Knapp, John, Prattsburg, N. Y. Preserving eggs	July 12, 1870
99,308	Knapp, Joseph G., Madison, and Samuel D. Libby, Blooming Grove, Wis. Cultivator	Jan. 25, 1870
100,417	Knapp, Lucien, Woodhaven, N. Y. Curry-comb	Mar. 1, 1870
105,953	Knapp, Myron H., Bay City, Mich. Fluting and sad iron	Aug. 2, 1870
105,698	Kneass, Alfred, Northumberland, Pa. Water-wheel	July 26, 1870
102,377	Kneass, Strickland, assignor to John Haldeman, Philadelphia, Pa. Wooden pavement	April 26, 1870
108,363	Knecht, Adam, assignor to Michael Knecht, Ilchester, Md. Pump	Oct. 18, 1870
103,624	Knecht, Charles L., Lower St. Clair Township, Pa. Cork-saving bottle-fastening	May 31, 1870
110,049	Knecht, Charles L., St. Clair, and Thomas Adams, Stow Township, Pa. Glassware and metal-stem connection	Dec. 13, 1870
103,474	Knecht, Victor, Cincinnati, Ohio. Pulley-sheave	May 24, 1870
100,905	Knell, George, Moorestown, N. J. Revolving rocking and reclining chair. (Antedated March 4, 1870)	Mar. 15, 1870
109,132	Kniffin, Oscar P., assignor to self and H. A. Lyne, Clinton, Conn. Excavating-scoop	Nov. 8, 1870
	Knight, Albert. (*See* Talbot, George W., assignor.) (Reissue.)	
103,344	Knight, Alfred J., New York, N. Y. Guard for carpet-sweepers	May 24, 1870
105,283	Same.....Brooklyn, N. Y. Driving gear-wheel for carpet-sweepers	July 12, 1870
	Knight, Daniel F. (*See* Stevens, Cyrus S., assignor.)	
99,575	Knight, George W., Camden, N. J. Potato-digger	Feb. 8, 1870
108,270	Knight, George W., assignor to George Draper & Son, Hopedale, Mass. Holder for spinning-rings	Oct. 11, 1870
105,954	Knight, Henry, Brooklyn, N. Y. Water-pipe mold	Aug. 2, 1870
108,480	Knight, Henry, England, instrument for clipping or shearing horses, &c	Oct. 18, 1870
109,325	Knight, Horatio D., Elgin, Ill. Machine for grinding and polishing lenses, &c	Nov. 15, 1870
103,625	Knight, James L., Tracy Creek, N. Y. Dining-table	May 31, 1870
107,785	Knight, Judson, Newark, N. J. Whiffletree-hook	Sept. 27, 1870
103,753	Knight, Judson, assignor to self and M. C. Brown, Whitestown, N. Y. Cow-tail holder	May 31, 1870
109,224	Knight, Margaret E., Boston, Mass. Paper-feeding machine	Nov. 15, 1870
104,858	Knight, William H., Boston Highlands, Mass. Securing veneers to wood	June 28, 1870
109,913	Knisely, Christian, Chicago, Ill. Wrench	Dec. 6, 1870
	Knitting-Machine Company. (*See* Davis, Blakeslee & Allen, assignors.)	
104,692	Knoche, John, assignor to self and Henry Varwig, Cincinnati, Ohio. Faucet	June 21, 1870
	Knowles & Brooker. (*See* Morris, David, assignor.)	
109,424	Knowles, David, Philadelphia, Pa. Cotton and hay press	Nov. 22, 1870
108,157	Knowles, Isaac W., East Liverpool, Ohio. Manufacture of pottery-ware	Oct. 11, 1870
103,754	Knowles, Joseph C., New Bedford, Mass. Cricket and commode	May 31, 1870

Alphabetical list of patentees for the year 1870—Continued.

No.	Name, residence, and invention or discovery.	Date.
105,465	Knowles, Lucius J., Worcester, Mass. Piston for steam-pumps	July 19, 1870
105,466	Same.....Piston-packing	July 19, 1870
105,813	Same.....Valve for steam and other pumps	July 26, 1870
106,287	Same.....Warren, Mass. Belt-shifting mechanism for looms	Aug. 9, 1870
110,146	Same.....Mechanism for operating shuttle-boxes in looms	Dec. 13, 1870
105,955	Knowles, Richmond O., Coolville, Ohio. Sliding wagon-seat	Aug. 9, 1870
99,914	Knowles, William R., Columbiana, Ohio. Trace-buckle for harness	Feb. 15, 1870
106,833	Knowles, William W., Bastrop, Texas. Cotton-press	Aug. 30, 1870
104,040	Knowles, Wilson W., Plantsville, Conn. Method of forming carriage-steps	June 7, 1870
105,876	Same.....Carriage-step	July 26, 1870
100,207	Knowlton, E. J., Ann Arbor, Mich. Portable bath	Mar. 1, 1870
99,915	Knowlton, George A., Natick, Mass. Black-ball for boot and shoe makers	Feb. 15, 1870
110,476	Knowlton, John C., Rockport, Mass. Attachment for rattlins	Dec. 27, 1870
106,374	Knowlton, John L., assignor to self and William H. Barr, Philadelphia, Pa. Lath-machine	Aug. 16, 1870
104,603	Knowlton, William F., assignor to self and William T. Clark, St. Cloud, Minn. Paddle-wheel	June 21, 1870
103,978	Knox, Charles, Chicopee, Mass. Tool-elevator for lathes	April 26, 1870
	Knox, John M. (*See* Shaw, Daniel, assignor) (Disclaimer.)	
101,474	Knox, Melvin W., Sheridan, N. Y. Potato-digger	April 5, 1870
108,490	Same.....same	Oct. 18, 1870
104,383	Knox, Richard F., and Joseph Osborne, San Francisco, Cal. Furnace and condenser for reducing cinnabar and other volatile ores	June 14, 1870
	Knox, Samuel A., and L. E. Sessions. (*See* Sessions & Knox.)	
3,938	Knox, Susan R., New York, N. Y. Fluting-machine (Reissue)	April 26, 1870
3,961	Knox, Susan R., and W. D. Corrister; said Corrister assignor to said Knox, New York, N. Y. Fluting-machine (Reissue)	Mar. 1, 1870
104,324	Knox, Thomas P., Boston, Mass. Violin	June 14, 1870
106,177	Knox, William C., Jacksonville, Ill. Grain separator and scourer	Aug. 9, 1870
105,092	Koch, George, New York, N. Y. Veneer-cutter	July 5, 1870
104,041	Koch, George and William, Franklin, Pa. Movable store-shelving	June 7, 1870
	Koch, George, *et al.* (*See* Deeds, William S., assignor.)	
107,786	Koch, John C., and Bernard J. Beck, assignors to Koch, Sons & Co., Brooklyn, N. Y. Spool-holder	Sept. 27, 1870
	Koch, John J., and D. F. Neikirk. (*See* Neikirk & Koch.)	
100,425	Kochensperger, Henry C., Thornville, Ohio. Wagon-iron	Nov. 22, 1870
104,961	Kock, William, Cincinnati, Ohio. Permutation-lock	July 5, 1870
99,576	Koechling, Bernhardt, New York, N. Y. Opera-chair	Feb. 8, 1870
99,200	Koehler, Charles, Rosiclare, Ill. Machine for rounding shot	Jan. 25, 1870
	Koehler, George. (*See* Behm, John S., assignor.)	
107,787	Koehler, Herrmann, New York, N. Y. Manufacture of spirits from starch	Sept. 27, 1870
102,684	Koeller, Hermann, Adams County, Ill. Seeding-machine	May 3, 1870
109,235	Same.....Camp Point, Ill. Corn-planter	Nov. 15, 1870
	Kohler, John F. (*See* Parrott, Charles F., assignor.)	
101,630	Kohn, Tobias, Hartford, Conn. Picture-cord	April 5, 1870
104,989	Koil, Benjamin S., Pittsburgh, Pa. Hot-air furnace	July 5, 1870
101,630	Koller, Benjamin F., Shrewsbury, Pa. Scrubbing-brush	April 5, 1870
99,210	Komp, A., New York, N. Y. Railway-car wheel	Jan. 25, 1870
108,033	Same.....Sewing-machine	Oct. 4, 1870
110,374	Same.....Braiding-guide for sewing-machines	Dec. 20, 1870
104,165	Konold, Christian, Pittsburgh, Pa. Die for forging vise-boxes	June 14, 1870
106,178	Koontz, George S., and John B. Hill, Washington, D. C. Sleeping-car	Aug. 9, 1870
101,277	Kopas, John O., Washington, D. C. Washing-machine	Mar. 29, 1870
102,133	Kopas, John O., and George W. Bauer, Washington, D. C. Animal-trap	April 19, 1870
102,134	Kopas, John O., assignor of one-half interest to Sydney Irving Wailes, Washington, D. C. Animal-trap	April 19, 1870
107,923	Korn, Charles, Wurtsborough, N. Y. Bark-mill	Oct. 4, 1870
4,005	Kornemann, Otto, and Julius Jungbluth, New York, N. Y. Trade-mark. Design	May 3, 1870
107,387	Kosinski, Wladyslaw T., Philadelphia, Pa. Coating for steam-pipes, boilers, &c.	Sept. 13, 1870
108,366	Same.....Brake for land-conveyance	Oct. 18, 1870
3,875	Kraatz, David K., assignor through mesne assignments to William Foos, John W. Bookwalter, Mary A. Leffel, and Lamar Foos, Ephrata, Pa. Water-wheel (Reissue)	Mar. 8, 1870
105,093	Kraffert, Julius, Prussia. Magazine fire-arm. (Patented in Belgium Jan. 20, 1868)	July 5, 1870
110,573	Same.....Hoboken, N. J. Machine for cooling air and for the manufacture of ice	Dec. 27, 1870
109,023	Krafft, Albert, assignor to F. G. Utassy & Co., Prussia. Medium for turning music-sheets	Nov. 8, 1870
106,934	Kraft, Joseph, Newark, N. J. Machinery for painting oil-cloth, &c	Aug. 30, 1870
	Kraink, George, and Thomas N. Dale, jr. (*See* Dale & Kraink) (Two cases.)	
103,473	Krall, Josse, Hall, Pa. Water-wheel	May 24, 1870
110,948	Kramer, Andrew J., Marion, Iowa. Sash-holder	Dec. 20, 1870
105,094	Kramer, Charles F., Mondovia, Wis. Settee, bed, and table	July 5, 1870
106,635	Kramer, John W., Bloomsburgh, Pa. Door-strip	Aug. 30, 1870
102,836	Kramer, William, New York, N. Y. Heating-plasters	May 10, 1870
109,155	Krandell, Frank, San Francisco, Cal. Egg-beater	Feb. 22, 1870
107,085	Krath, Conrad, and Gustav H. Moll, St. Louis, Mo. Combination game-board	Sept. 6, 1870
108,034	Kraus, Frederic, Cincinnati, Ohio. Putting-up medicine	Oct. 4, 1870
105,814	Kraus, John, assignor to self and Henry Lapp, Clarence, N. Y. Stall for preventing cribbing	July 26, 1870

Alphabetical list of patentees for the year 1870—Continued.

No.	Name, residence, and invention or discovery.	Date.
103,626	Kraus, Philip, Augusta, Ga. Grinding-mill	May 31, 1870
108,707	Krausch, Theodore, New York, N. Y. Cooling buildings	Oct. 25, 1870
110,949	Krause, Frederick C., assignor to Samuel A. Walsh, New York, N. Y. Clay retort for the manufacture of gas	Dec. 20, 1870
103,947	Krauser, Daniel H., Pottsville, Pa. Counter-seat	May 10, 1870
	Krebs, Fannie, and Annie Vogel. (*See* Vogel & Krebs.)	
103,038	Krehbiel, John, Clarence Centre, N. Y. Potato-planter	May 17, 1870
108,906	Krejci, Camille, Scranton, Pa. Life-preserver	Mar. 15, 1870
108,018	Kreppe, James William, Chicago, Ill. Apparatus for removing oils, grease, gums, and the like, from cotton and woolen waste, and recovering the same	April 19, 1870
107,768	Kretzer, Joel L., Tusten, Wis. Pitman-head	Sept. 27, 1870
4,097	Kreuzinger, Ludwig, assignor to the Metallic Compression Casting Company, assignor to the Russell & Erwin Manufacturing Company, Cambridge, Mass. Door-knob (Design)	June 7, 1870
4,098	Same.....same (Design)	June 7, 1870
4,099	Same.....same (Design)	June 7, 1870
4,100	Same.....same (Design)	June 7, 1870
4,101	Same.....Door-knob rose (Design)	June 7, 1870
4,102	Same.....same (Design)	June 7, 1870
4,103	Same.....same (Design)	June 7, 1870
4,104	Same.....Escutcheon (Design)	June 7, 1870
4,105	Same.....same (Design)	June 7, 1870
4,106	Same.....same (Design)	June 7, 1870
99,916	Krichbaum, John G., Youngstown, Ohio. Stove-shelf	Feb. 15, 1870
4,188	Kroeger, Werner, assignor to William Frankfurth, Milwaukee, Wis. Vessel for boiling (Reissue)	Nov. 29, 1870
102,557	Kröger, Albert E., Norwalk, Conn. Shoe-fastening	May 3, 1870
4,019	Kroh, Calvin Z., Tiffin, Ohio. Curtain-knob (Reissue)	June 7, 1870
101,389	Kruger, Henry, New York, N. Y. Extension gas-fixture	Mar. 29, 1870
101,631	Krumme, Henry F. C., Ridgway, Pa. Storing power in pneumatic locomotives	April 5, 1870
99,211	Krüss, A., Germany. Magic-lantern	Jan. 25, 1870
101,889	Kubby, John Frederic, New York, N. Y., and Charles Frederic Crailsheim, France. Bottle for gaseous liquids	April 12, 1870
103,200	Kuehnle, John, Cincinnati, Ohio. Cutter-head for planing-machines	May 17, 1870
106,636	Kuhlmann, Hermann, Cincinnati, Ohio. Churn	Aug. 30, 1870
103,201	Kuhns, William Jacob, Brooklyn, N. Y. Nickel plating	May 17, 1870
4,107	Kunze, Charles, assignor to the Metallic Compression Casting Company, assignor to the Russell & Erwin Manufacturing Company, Cambridge, Mass. Door-knob (Design)	June 7, 1870
109,521	Kunze, Lodwig O., Harrisonville, Mo. Apparatus for detaching poles and shafts from vehicles	Nov. 22, 1870
99,778	Kurfiss, Charles, Louisville, Ky. Sofa-lounge	Feb. 15, 1870
105,095	Kurtscedt, Frederic A., New York, N. Y. Plated trimmings	July 5, 1870
98,696	Kurtz, Henry, Washington, D. C. Machine for dressing felloes	Jan. 11, 1870
101,136	Kurtz, J. C., Wooster, Ohio. Broadcast-seeder	Mar. 22, 1870
103,202	Kurtz, Lewis E., Baltimore, Md. Automatic railway-switch	May 17, 1870
104,963	Kurtz, William, New York, N. Y. Photographic reflector	July 5, 1870
103,345	Kurtzmann, Christian, Buffalo, N. Y. Piano	May 24, 1870
105,815	La Banister, William, and Lorenzo V. Daggett, Pacific, Wis. Spinning-machine	July 26, 1870
98,872	Labar, James P., Milford, Mich. Sash stop and holder	Jan. 18, 1870
	Laberee, J. W. (*See* Hitchcock, M. T., assignor) (Two cases.)	
	Same.....same (Reissue.)	
	Same.....(*See* Sawyer, Charles B., assignor.)	
	Laberteaux, Tunis, and William J. Avery. (*See* Avery & Laberteaux.)	
109,024	La Boiteaux, Frank M., College Hill, Ohio. Button-fastening	Nov. 8, 1870
3,835	La Breche-Viger, Louis, assignor to William W. Averell, Montreal, Canada. Manufacture of cast steel (Reissue)	Feb. 15, 1870
4,153	Same.....same (Reissue)	Oct. 11, 1870
4,115	Lacy, Daniel B., assignor through mesne assignments to self, Isaac A., and Thomas T. Lacey, Mott Haven, N. Y. Weight for sashes, clocks, &c. (Reissue)	Sept. 6, 1870
107,183	Lackey, Garway O., Akron, Ohio. Horse hay-rake	Sept. 6, 1870
108,708	Same.....Door and alarm bell	Oct. 25, 1870
108,035	Ladd, Alexander, St. Lawrence, N. Y. Churn	Oct. 4, 1870
110,574	Ladd, Calvin P., assignor to self and James T. Sanford, New York, N. Y. Felting-machine	Dec. 27, 1870
99,093	Ladd, Dennis, Chicago, Ill. Grain-separator	Jan. 25, 1870
102,685	Ladd, George W., and F. W. Copcutt, New York, N. Y. Bottle-stopper	May 3, 1870
107,500	Ladd, Hermon W., Chelsea, Mass. Bedstead or cot. (Antedated Sept. 8, 1870)	Sept. 20, 1870
99,779	Ladd, Hermon W. and George F., Chelsea, Mass. Spring-bed	Feb. 15, 1870
	Ladd, James E., and Harry F. Henderson. (*See* Henderson & Ladd.)	
	Ladd, Nathaniel. (*See* Behr, Edward, assignor) (Reissue.)	
104,743	Ladner, Albert H., and Thomas F. Fenlin, Philadelphia, Pa. Apparatus for elevating beer	June 28, 1870
99,212	Ladow, Jacob S., Mechanicsville, N. Y. Clamp	Jan. 25, 1870
106,491	Lafferty, Hugh W. and Robert, Gloucester City, N. J. Centrifugal sugar-draining machine. (Antedated Aug. 5, 1870)	Aug. 16, 1870
104,604	Lafferty, Robert M., assignor to self and Edward P. Smith, Three Rivers, Mich. Pump	June 21, 1870
	Laflin, Joshua. (*See* Worst, Decatur, assignor.)	

Alphabetical list of patentees for the year 1870—Continued.

No.	Name, residence, and invention or discovery.	Date.
	Laflin, George L. (*See* Baker, Albert C., assignor.)	
104,166	Laflin, Matthew, and Enos Slocum, assignors to Matthew Laflin, Chicago, Ill. Plow	June 14, 1870
	La Fontaine, John A., *et al.* (*See* Lee, La Fontaine & Harris.)	
103,550	Laforge, Joel, and Jonathan T. Crane, Rahway, N. J. Coal-stove. (Antedated April 15, 1870)	May 3, 1870
101,025	La France, Peter A., and J. D. Densmore, Elmira, N. Y. Sign	Mar. 22, 1870
98,697	La France, T. S., Elmira, N. Y. Safety-valve	Jan. 11, 1870
104,167	Same.....Steam-generator	June 14, 1870
108,604	Same.....same	Oct. 25, 1870
105,096	Lahaye, John J., and John R. Wootten, Reading, Pa. Axle-box	July 5, 1870
105,294	Laighton, Samuel, Newark, N. J. Fever and ague medicine	July 12, 1870
102,158	Laighton, William S., Norwich, Conn. Apparatus for precipitating gold and silver from solutions	Oct. 11, 1870
3,908	Lair, Philip, assignor to Hartell & Letchworth, Philadelphia, Pa. Shade for gas or lamp burners (Design)	April 12, 1870
103,476	Laird, Hugh, Mechanicsburgh, Pa. Cultivator	May 24, 1870
105,956	Lake, James K., Chicago, Ill. Traction-engine	Aug. 2, 1870
106,943	Lake, Jennie L., Brooklyn, N. Y. Sewing-machine	Aug. 30, 1870
	Lake, William B., *et al.* (*See* Samuels, John L., assignor) (Reissue.)	
	Laman, Carrie R. (*See* Rapico, Abijah L., assignor.)	
	Lamason, R. P., and S. W. Murray. (*See* Murray & Lamason.)	
	Lamason, Benjamin P., and Joseph D. Potts. (*See* Potts & Lamason.)	
100,242	Lamb, Charles, Binghamton, N. Y. Grain-register	Nov. 23, 1870
103,027	Lamb, George, Boston, Mass. Picture-hanger	May 31, 1870
109,638	Lamb, Isaac W., Northville, Mich. (Sewing-machine)	Nov. 29, 1870
107,924	Lamb, James, Hubbardston, Mass. Rocking or tilting chair	Oct. 4, 1870
	Lamb, James, *et al.* (*See* Stewart, Klinderman & Lamb.)	
	Lamb, James C., and Erwin Lavens. (*See* Lavens & Lamb.)	
99,917	Lamb, Lysander L., Fitchburgh, Mass. Sliding-square and callpers	Feb. 15, 1870
100,156	Lamb, Martin T., Davenport, Iowa. Steam clothes-washer	Feb. 22, 1870
100,157	Lamb, Salem T., New Albany, Ind. Pitman-connection	Feb. 22, 1870
100,158	Same.....Pitman-joint for harvesters	Feb. 22, 1870
100,159	Same.....same	Feb. 22, 1870
105,343	Lamb, Salem T., and William N. Whiteley, Springfield, Ohio. Harvester	July 12, 1870
101,137	Lamb, Thomas, Philadelphia, Pa. Sewing-machine	Mar. 22, 1870
108,605	Lambert, Richard C., assignor to David Whittemore, South Abington, Mass. Machine for cutting heels of boots and shoes	Oct. 25, 1870
102,135	Lambe, Frederick, England. Treating paraffine and obtaining it in crystals	April 19, 1870
101,026	Lambert, Catholina, assignor to Dexter, Lambert & Co., Paterson, N. J. Woven trimming	Mar. 22, 1870
100,649	Lambert, George D., New Haven, Conn. Clamp	Mar. 8, 1870
109,436	Lambert, James R., sr., and James R., jr., Rockville, Ind. Sawing-machine	Nov. 22, 1870
109,095	Lambert, Jean, jr., assignor to Gustave Bourgade, New York, N. Y. Removing dyes made from aniline, &c., from portions of fabrics	Nov. 8, 1870
103,561	Lamm, Emile, New Orleans, La. Ammoniacal gas-engine	July 19, 1870
	Lammers, William, and William H. Curtin. (*See* Curtin & Lammers.)	
107,066	La Montague, George, Muskegon, Mich. Pectoral sirup or medicine	Sept. 6, 1870
105,699	La Mothe, Bernard J., New York, N. Y. Metallic railway-car	July 26, 1870
3,820	Lampert, Henry, Rochester, N. Y. Apparatus for scraping and working hides (Reissue)	Feb. 15, 1870
100,907	Same.....Apparatus for working hides	Mar. 15, 1870
101,183	Lamphear, Edson, Stepney, Conn. Pump	Mar. 22, 1870
	Lamson, Daniel, deceased, by Emily J. Lamson, administratrix, Weymouth, Mass. Machinery for notching hoops (Extension)	Sept. 13, 1870
	Lamson, Ebenezer G., and F. C. Treadwell, jr. (*See* Treadwell & Lamson.)	
101,130	Lamson, Ebenezer G., Windsor, Vt. Table-cutlery	Mar. 22, 1870
4,180	Same.....Stone-channeling machine (Reissue)	Nov. 29, 1870
110,375	Same.....Stone drilling and channeling machine	Dec. 29, 1870
110,376	Same.....Stone-channeling machine.	
	Same.....(*See* Moore, David M., assignor.)	
	Lance, William L. (*See* Hatcher, William Z., assignor) (Two cases.)	
4,164	Landenberger, Martin, Philadelphia, Pa. Baschlik (Design)	June 21, 1870
4,165	Same.....Shape for a hood (Design)	June 21, 1870
4,192	Same.....Trade-mark (Design)	June 28, 1870
4,196	Same.....same (Design)	June 28, 1870
4,221	Same.....Knit skating-cap (Design)	July 12, 1870
4,230	Same.....Knitted fabric (Design)	July 19, 1870
4,231	Same.....Knitted goods (Design)	July 19, 1870
4,232	Same.....same (Design)	July 19, 1870
4,233	Same.....Shawl (Design)	July 19, 1870
4,234	Same.....same (Design)	July 19, 1870
4,235	Same.....same (Design)	July 19, 1870
4,270	Same.....Knitted fabric (Design)	Aug. 2, 1870
4,271	Same.....Shawl fabric (Design)	Aug. 2, 1870
4,272	Same.....same (Design)	Aug. 2, 1870
4,358	Same.....same (Design)	Sept. 20, 1870
4,443	Same.....Dress-trimming (Design)	Oct. 25, 1870
	Landers, Fray & Clark. (*See* Harkness, Hiram W., assignor.)	
	Landert, William, and John Deggeller, Chicago, Ill. Compound for treating rheumatism	May 3, 1870

Alphabetical list of patentees for the year 1870—Continued.

No.	Name, residence, and invention or discovery.	Date.
106,837	Landes, Jacob M., Souders, Pa. Combined plow and cultivator	Aug. 30, 1870
109,427	Landfear, William R., Hartford, Conn. Sewing-machine	Nov. 22, 1870
99,447	Landis, Israel, St. Joseph, Mo. Saddle-tree	Feb. 1, 1870
109,428	Landis, Jacob S., Lancaster, Pa. Combined thrasher and grain-separator	Nov. 22, 1870
100,045	Landrine, G., Jersey City, N. J. Culinary vessel	Feb. 22, 1870
106,839	Landry, Aleide, East Baton Rouge, La. Sugar-cane scraper	Aug. 30, 1870
	Lane & Bodley. (*See* Schmackers, Anton, assignor.)	
107,789	Lane, Dennis, Montpelier, Vt. Water-wheel	Sept. 27, 1870
99,918	Lane, George, New York, N. Y. Neck-tie	Feb. 15, 1870
107,388	Lane, George M., DeGraff, Ohio. Papering-machine	Sept. 13, 1870
108,799	Lane, George W., assignor to Elisha R. Newell, Plantsville, Conn. Divider and callpers	Nov. 1, 1870
	Lane, H. C. (*See* Hill, R. A., assignor) (Reissue.)	
104,964	Lane, John, assignor to self, Charles H. Hapgood, William B. Young, and G. H. Laughton, Chicago, Ill. Plow	July 5, 1870
106,838	Same.....Manufacture of plow-shares	Aug. 30, 1870
107,925	Lane, John, assignor to Hapgood & Co., Chicago, Ill. Mold-board for plows	Oct. 4, 1870
110,575	Lane, John G., St. Louis, Mo. Trunk	Dec. 27, 1870
	Lane, Julius S., and Julian H. Pitkir. (*See* Pitkir & Lane.)	
107,926	Lane, Rufus, assignor of one-half interest to W. G. Moore, Freeport, Ill. Car-pusher	Oct. 4, 1870
103,589	Laney, Robert V., Cumberland, Md. Hook	July 19, 1870
	Lang, John H. B. (*See* Wiley, Moses H., assignor) (Two cases.)	
	Same.....same (Reissue.)	
	Same.....(*See* Wiley & Miller, assignors.)	
100,643	Langdon, Sylvester L., New Orleans, La. Motive power for carriages	Mar. 8, 1870
4,078	Langhorne, George W. and John D., and Nathaniel B. Johnston, Lynchburgh, Va. Trade-mark (Design)	May 31, 1870
4,079	Same.....same (Design)	May 31, 1870
99,919	Langhorne, M., Washington, D. C. Lock-nut	Feb. 15, 1870
	Langley, James, jr. (*See* Bean, Charles, assignor.)	
98,602	Langston, Thomas, Meriden, Conn. Lantern	Jan. 4, 1870
107,067	Langtree, John, New York, N. Y. Paper for printing, writing, and other purposes	Sept. 6, 1870
102,687	Lanham, William M., Noblesville, Ind. Plow	May 3, 1870
	Laning, Joseph H., and John S. Morton. (*See* Morton & Laning.)	
	Laning, Joshua F., *et al.* (*See* Kitson, Laning & Bennor.)	
103,903	Lannay, Edward, Mowrytown, Ohio. Clod-fender and pulverizing-attachment for plows	May 17, 1870
107,694	Lanphear, Albert N., Atchison, Kans. Chimney-attachment	Sept. 27, 1870
109,745	Lansing, Arthur Livingston, assignor to Henry Seymour Lansing, Philadelphia, Pa. Ramming-machine for wood and other pavements	Nov. 29, 1870
100,644	Lanston, Tolbert, Washington, D. C. Padlock	Mar. 8, 1870
	Lants, Samuel, and George Burket. (*See* Burket & Lants.)	
104,108	Lapham, Levi S., assignor to Mary S. Brown, Providence, R. I. Oil-pump	June 14, 1870
	Lapp, Henry. (*See* Kraus, John, assignor.)	
	Largay, James A. (*See* Hall, John D., assignor.)	
106,393	Larkin, George G., Portland, Me. Stay for carriages	Aug. 23, 1870
102,410	Larkin, James, Detroit, Mich. Slide-valve	April 26, 1870
	Larkin, James E. (*See* Varnum, Henry C., assignor.)	
106,975	Larkin, Orville L., Otto, N. Y. Fence-post	Aug. 16, 1870
106,492	La Rose, John L., Leavenworth, Kans. Washing-machine	Aug. 16, 1870
	Larru, Julien. (*See* Mauthi, Henry, assignor.)	
101,632	Larry, John H., Weston, Mass. Permutation-lock	April 5, 1870
103,804	La Rue, Silas Hoffman, Allentown, Pa. Cooking-stove	May 17, 1870
105,816	Same.....Heating-stove	July 26, 1870
4,157	Same.....Cooking-stove (Reissue)	Oct. 18, 1870
4,175	Same.....Heating-stove (Reissue)	Nov. 8, 1870
109,286	Lash, John Fannon, Toronto, Canada. Opening and shutting device for rail-road-car windows	Nov. 15, 1870
	La Société Central des Betons Systeme Coignet. (*See* Coignet, Francois, assignor.)	
99,004	Lassing, Henry, New York, N. Y. Mode of preparing seed for planting	Jan. 25, 1870
101,037	Lastreto, Luigi F., San Francisco, Cal. Medicinal beverage	Mar. 22, 1870
4,166	Latham, Cyrus H., Lowell, Mass. Table-caster (Design)	June 21, 1870
104,743	Latham, Cyrus H., assignor to Woods, Sherwood & Co., Lowell, Mass. Table-caster	June 28, 1870
4,206	Same.....same (Division A, reissue)	Dec. 20, 1870
4,209	Same.....Cup for casters, &c. (Division B, reissue)	Dec. 20, 1870
	Latham, C. H., *et al.* (*See* Sherwood, Daniel, assignor.)	
	Same.....same (Reissue.)	
99,396	Lathrop, H. D., and Albert Gay, Bedford, Ohio. Computing-arrangement for weighing-scales	Feb. 1, 1870
104,744	Lathrop, John D., assignor through mesne assignments to Lippiatt, Maltby & Morse, New York, N. Y. Engraving-machine	Jan. 28, 1870
108,915	Lathrop, Lebbeus W., Poughkeepsie, N. Y. Motive-power apparatus	Nov. 1, 1870
110,250	Same.....Sewing-machine	Dec. 20, 1870
108,367	Lathrop, William P., West Winsted, Conn. Boring-tool	Oct. 18, 1870
	Latimer, George W., and Peter McManus. (*See* McManus & Latimer.)	
104,695	Latimer, James F., Detroit, Mich. Water-elevator	June 21, 1870

Alphabetical list of patentees for the year 1870—Continued.

No.	Name, residence, and invention or discovery.	Date.
	Latrobe, C. H., *et al.* (*See* Smith, Latrobe & Smith.)	
101,278	Leubner, Joseph, Milwaukee, Wis. Ratchet-drill	Mar. 29, 1870
102,837	Lauer, Henry, and Henry C. Reichard, Pottsville, Pa. Vegetable-cutter	May 10, 1870
100,419	Laughlin, Patrick, Danville, Ky. Cistern-filter	Mar. 1, 1870
103,206	Same.....Filter for cisterns	May 17, 1870
	Laughton, G. H., *et al.* (*See* Lane, John, assignor).....(Two cases.)	
107,927	Lauritzen, Johan, Newark, N. J. Cigar-machine	Oct. 4, 1870
102,136	Lavens, Erwin, and James C. Lamb, Middletown, Conn. Rotary pump	April 19, 1870
103,205	Law, Albert H., San Francisco, Cal. Anchor	May 17, 1870
109,429	Same.....Sewing-thimble	Nov. 22, 1870
104,160	Law, Hervey, Chatham, N. J. Paper-bag machine	June 14, 1870
102,559	Law, William C., New York, N. Y. Boat's rudder	May 3, 1870
103,050	Law, William H., England. Steam-generator	May 17, 1870
100,398	Lawbaugh, G. W., Geneseo, Ill. Double-shovel plow. (Antedated Feb. 26, 1870).	Mar. 1, 1870
107,700	Lawbaugh, Orange C., Shanesville, Ohio. Wrench	Sept. 27, 1870
109,632	Lawe, Alexander, Kingston, Canada. Electro-plating iron and steel with silver	Nov. 29, 1870
	Lawford, Jasper M., and James Henderson. (*See* Player, John, assignor)..(Reissue).....(Two cases.)	
	Lawler, Patrick H., *et al.* (*See* Dougherty, John B., assignor.)	
	Lawrence & Cohen. (*See* Cohen, Solomon L., assignor)..(Two cases)..(Design.)	
110,147	Lawrence, Andrew, Louisville, Ky. Side-saddle tree	Dec. 13, 1870
100,534	Lawrence, Charles, Cincinnati, Ohio. Carbureting air	Mar. 8, 1870
110,477	Lawrence, Harry, New York, N. Y. Vine and weed cutter	Dec. 27, 1870
109,133	Lawrence, Henry, New Orleans, La. Neck-tie retainer	Nov. 8, 1870
	Lawrence, H. H. (*See* Nichols, William T., assignor.)	
	Lawrence, James, *et al.* (*See* Thomas, Daniel W., assignor).....(Design.)	
104,859	Lawrence, Nathan, Taunton, Mass. Call-bell and slop-bowl	June 28, 1870
106,840	Same.....Call-bell and vessel	Aug. 30, 1870
105,156	Lawrence, Perley H., Petroleum Centre, Pa. Apparatus for cutting the casings or tubes of oil-wells	July 5, 1870
	Lawrence, Philip W., *et al.* (*See* Wilson, Joseph B., assignor.)	
106,596	Lawrence, Robert B., Wheeling, W. Va. Pen-holder	Aug. 23, 1870
108,916	Same.....same	Nov. 1, 1870
108,700	Lawrence, Samuel W., Philo Walden, and Joseph W. Huntoon, West Eaton, N. Y. Drawing and twisting head for spinning-machines	Oct. 25, 1870
107,389	Lawrence, Theodore, assignor of one-half interest to Romeo Lawrence, Peoria, Ill. Hat and cap bracket. (Antedated Sept. 3, 1870)	Sept. 13, 1870
110,576	Lawrence, William R., New York, N. Y. Curry-comb	Dec. 27, 1870
102,948	Laws, Albert D., Bridgeport, Conn. Hydraulic-engine	May 10, 1870
99,373	Laws, Samuel S., assignor to Gold and Stock Telegraph Company, New York, N. Y. Printing-telegraph	Jan. 25, 1870
102,379	Lawsha, Arthur P., Harper's Ferry, W. Va. Mill-burr feeder	April 26, 1870
110,478	Lawson, Balaam C., Yolo County, Cal. Washing-machine	Dec. 27, 1870
106,841	Lawton, Alfred, Philadelphia, Pa. Elevator	Aug. 30, 1870
	Lawton, Edwin R., and Horace A. Nettleton. (*See* Nettleton & Lawton.)	
109,634	Lawton, Walter A., Providence, R. I. Feed-mechanism of carding-machines	Nov. 29, 1870
	Lawton, William H., and Theodore J. Southworth. (*See* Southworth & Lawton.)	
101,140	Lawyer, Ralph, and John C. Gasten, Pittsburgh, Pa. Sewing-machine	Nov. 22, 1870
106,843	Layaux, Francis, Monroe, La. Bedstead-tester	Aug. 30, 1870
110,050	Laycock, William S., England. Loom	Dec. 13, 1870
102,380	Leach, Adin H., Marathon, N. Y. Carriage-wheel	April 26, 1870
108,800	Leach, George, England. Shipping and unshipping screw-propellers	Nov. 1, 1870
110,149	Leach, Joseph, New Harmony, Ind. Cover for tea and coffee cups. (Antedated Dec. 6, 1870)	Dec. 13, 1870
102,381	Leach, Joseph D., Penobscot, Me. Navigators' bearing-indicator	April 26, 1870
100,419	Leach, Sewall, assignor to self, J. D. Leach, and Sabin Hutchings, Penobscot, Me. Rudder-collar. (Antedated Feb. 19, 1870)	Mar. 1, 1870
106,006	Leach, Thomas, assignor to Henry G. Reed, George Brabrook, and Henry H. Fish, Taunton, Mass. Cup and bell	Aug. 2, 1870
4,273	Leak, James, assignor to self, Thomas G. White, and William Holmes, Geddes, N. Y. Flower-pot.....(Design)	Aug. 2, 1870
4,449	Same.....same.....(Design)	Nov. 1, 1870
109,026	Leak, Tilman F., Montgomery, Ala. Parlor-skate	Nov. 8, 1870
103,207	Leaman, N. Edward, Dayton, Ohio. Car-coupling	May 17, 1870
109,027	Lear, Frederick, St. Louis, Mo. Coloring and preserving wood	Nov. 8, 1870
103,628	Leary, Lemuel W., Norfolk, Va. Lantern. (Antedated May 24, 1870)	May 31, 1870
104,745	Same.....same	June 28, 1870
107,617	Same.....Lamp-wick regulator	Sept. 20, 1870
	Leasure, Henry J., and Roy Combs. (*See* Combs & Leasure.)	
108,150	Leatherman, Peter R., Woodville, Miss. Cotton-cultivator	Oct. 11, 1870
	Leathery, Samuel. (*See* Mickley, Solomon, assignor.)	
106,179	Leavitt, Charles P., New York, N. Y. Belt-guide	Aug. 9, 1870
107,928	Same.....Hot-air engine	Oct. 4, 1870
109,430	Same.....Drawing-frame	Nov. 22, 1870
100,645	Leavitt, Thomas, and E. L. Howard, Malden, Mass. Fluting-machine	Mar. 8, 1870
110,051	Leavitt, Thomas, assignor to Sorrento Wood-Carving Company, Boston, Mass. Buhl-saw	Dec. 13, 1870
101,899	Lebby, N. H., Charleston, S. C. Ore-washing machine	April 12, 1870
104,606	Lebeau, John J., Cincinnati, Ohio. Clamp	June 21, 1870
4,113	Same.....Paring-knife.....(Reissue)	Aug. 30, 1870

Alphabetical list of patentees for the year 1870—Continued.

No.	Name, residence, and invention or discovery.	Date.
101,098	Le Blanc, Auguste, Louisiana, La. Cotton-plant protector	Mar. 22, 1870
107,510	Lebo, Isaac, Winterville, Pa. Thrashing-machine separator	Sept. 20, 1870
104,985	Lechler, Martin, New York, N. Y. Folding-chair	July 5, 1870
104,746	Leckenby, George, Western, Mo. Rotary steam-valve	June 28, 1870
99,357	Leclerc, François, assignor to Moses Eames, Watertown, N. Y. Blind-slat machine	Feb. 1, 1870
100,160	Le Comte, Joseph, Brooklyn, N. Y. Soldering-machine	Feb. 22, 1870
104,747	Le Comte, Joseph, and George H. Perkins, Brooklyn, N. Y. Sheet-metal can	June 28, 1870
	Lederle, Joseph and Anthony, *et al.* (*See* Bailey, John A., assignor.)	
100,480	Ledman, William E., Bridgeville, Del. Funnel	Mar. 1, 1870
98,603	Lee, Benjamin F., New York, N. Y. Hose	Jan. 4, 1870
109,134	Lee, Edwin F., New York, N. Y. Button-fastening	Nov. 8, 1870
104,980	Lee, George W., and John A. La Fontaine, Barlow County, and Asa I. Harris, Atlanta, Ga. Railway-switch	June 28, 1870
105,344	Lee, George W., assignor to self and C. Aultman, Homeworth, Ohio. Thrashing-machine	July 12, 1870
102,137	Lee, Harvey Thomas, Marysville, Cal. Piston-rod packing	April 19, 1870
102,283	Same.....Metallic packing for stationary joints	April 26, 1870
108,491	Same.....Shoe-fastening	Oct. 18, 1870
103,060	Lee, Henry, Washington, D. C. Corpse-preserver	May 17, 1870
102,263	Lee, Hugh, Beloit, Wis. Manufacture of railroad-rails	April 26, 1870
99,398	Lee, Joel, Galesburgh, Ill. Stalk-cutter	Feb. 1, 1870
110,479	Lee, John and Mark, and William Carter, Needham, Mass. Knitting-machine	Dec. 27, 1870
4,113	Lee, John A., assignor through mesne assignments to Robert D. Mann, Chattanooga, Tenn. Animal-trap.....(Reissue)	Aug. 30, 1870
101,279	Lee, Philester, and Lemuel Matthews, Lebanon, Oreg. Medical compound	Mar. 29, 1870
100,535	Lee, William, New Haven, Conn. Corrugation of boot and shoe uppers. (Antedated Feb. 26, 1870)	Mar. 8, 1870
	Leeds, Joseph. (*See* Coates, William B., assignor).....(Three cases.)	
108,036	Leedy, John K., Maurertown, Va. Hominy-mill	Oct. 4, 1870
108,710	Leete, Isaac P., Philadelphia, Pa. Steam-atomizer	Oct. 25, 1870
106,944	Leete, Ursala L., Owego, N. Y. Vapor-bath apparatus	Aug. 30, 1870
107,088	Same.....Instrument for draughting garments	Sept. 6, 1870
	Le Favour, Heber. (*See* Hope, John & Thomas, assignors).....(Reissue.)	
100,046	Lefebere, Zephaniah A. F., and James H. Davis, Plattsburgh, N. Y. Clasp for securing whip-sockets to dash-boards	Feb. 22, 1870
101,280	Lefevre, Desire Parfait, and Louis Phillipe Dorre, France. Railway-car brake	Mar. 29, 1870
	Leffel, James, & Co. (*See* Trump, Fuller, assignor.)	
107,702	Leffel, Joseph, and Edward Harrison, Springfield, Ohio. Bee-hive	Sept. 27, 1870
	Leffel, Mary A., *et al.* (*See* Kraets, David K., assignor).....(Reissue.)	
	Lefferts, Marshall. (*See* Finley, Stephen L., assignor.)	
99,448	Leforgee, James A., Decatur, Ill. Spring-holder for wagon-seats	Feb. 1, 1870
	Lefort, Henry. (*See* Cattaneo, Angelo, assignor.)	
106,700	Lefranc, Emile, and Joseph Nagoua, New Orleans, La. Machine for treating ramie and other textile plants	Aug. 23, 1870
4,108	Leger, Joseph L., assignor to the Metallic Compression Casting Company, assignor to the Russell & Erwin Manufacturing Company, Somerville, Mass. Door-knob.....(Design)	June 7, 1870
109,827	Lehman, Julius, New York, N. Y. Pocket-box	Dec. 6, 1870
104,966	Lehman, Louis, assignor to Daniel W. Fish, Buffalo, N. Y. Spike-extractor	July 5, 1870
104,967	Same.....Hand-stamp	July 5, 1870
101,281	Lehmann, Charles, Hartford, Conn. Stirrer and egg-beater	Mar. 29, 1870
102,940	Same.....Machine for cutting, stamping, and packing soap	May 10, 1870
109,230	Lehmann, Leopold, Monee, Ill. Combined agricultural implement	Nov. 15, 1870
107,791	Lehnert, Carl, assignor to Benjamin F. Richardson, West Roxbury, Mass. Music-stand	Sept. 27, 1870
	Lehr, Ferdinand A. (*See* Okey, Joseph B., assignor.)	
	Lehr, J. G., and H. D. Thorp. (*See* Thorp & Lehr.)	
102,088	Leidecker, Michael, Rochester, N. Y. Barber and dental chair	May 3, 1870
	Leighton, L. A. (*See* Sweet, D. F., assignor.)	
3,929	Leighton, William, jr., Wheeling, W. Va. Ornamenting glass-ware..(Design)	Feb. 1, 1870
101,745	Leighton, William R., Pembroke, Me. Belt-shifter	April 12, 1870
105,701	Leilich, Frank T., assignor to self and Michael Leilich, Frederick, Md. Adding-machine	Aug. 23, 1870
104,042	Leitch, J. Fred, Oxford, N. Y. Cultivating-hook	June 7, 1870
	Leitch, Robert. (*See* Somerville, Thomas, assignor.)	
	Le Lubez, P. A. Victor. (*See* Le Roy, Ferdinand, assignor).....(Reissue.)	
	Lemercier, Jacques Eugene, and Henri N. Moyon. (*See* Moyon & Lemercier.)	
103,346	Lemman, John, Cincinnati, Ohio. Parlor-skate	May 24, 1870
107,618	Same.....Bed-rail fastener	Sept. 20, 1870
4,028	Lemman, John, assignor to James L. Haven & Company, Cincinnati, Ohio. Bedstead-fastening.....(Reissue)	June 14, 1870
104,861	Lenhart, Philipp F., Brooklyn, N. Y. Water-proof sweat-band for hats and caps	June 28, 1870
	Lennox, C. S. S. (*See* Scott, Francis B., assignor.)	
109,135	Lennox, Patrick, Lynn, Mass. Hide-beaming machine. (Antedated Nov. 4, 1870)	Nov. 8, 1870
104,607	Lennox, Edwin F., and Charles Eckhart, Trenton, N. J. Corpse-preserver	June 21, 1870
102,284	Lenox, Hiram, Trenton, N. J. Mode of lighting street-lamps	April 26, 1870
100,776	Lenz, Charles Philipp, Poughkeepsie, N. Y. Extension-table	Mar. 15, 1870
3,949	Same.....same.....(Reissue)	May 3, 1870
	Lenzi, George A., and W. S. Burgess. (*See* Burgess & Lenzi.)	

Alphabetical list of patentees for the year 1870—Continued.

No.	Name, residence, and invention or discovery.	Date.
106,702	Leonard, Augustus, Newell's Run, Ohio. Potato-plow	Aug. 23, 1870
108,711	Leonard, Daniel, Chicago, Ill. Vaper-burner	Oct. 25, 1870
98,506	Leonard, Dennis, Winsted, Conn. Casket-handle	Jan. 4, 1870
98,993	Leonard, George D., New York, N. Y. Show-case for silks, cottons, &c.	Jan. 18, 1870
101,475	Same ....Counter show-case. (Antedated Jan. 6, 1870)	April 5, 1870
110,251	Leonard, John M., Marshall City, Mich. Adjustable plow-jointers	Dec. 20, 1870
	Leonard, Joseph B., *et al.* (*See* Greely, John P., assignor.)	
99,920	Leonard, J. N., Rockville, Conn. Show-case for spools and other articles. (Antedated Feb. 14, 1870)	Feb. 15, 1870
100,647	Leonard, Philip, Sharon, Pa. Tool-holder for grindstones	Feb. 22, 1870
109,635	Leonard, Stephen C., England. Lifting-jack	Nov. 22, 1870
106,377	Leonard, Volney, Springfield, Pa. Bee-hive	Aug. 16, 1870
110,377	Leonard, William E., Boston, Mass. Breast-collar for horses	Dec. 20, 1870
109,431	Le Plongeon, Augustus, San Francisco, Cal. Halter for horses	Nov. 22, 1870
103,347	Lepp, Mitchel, Albany, N. Y. Saw-table. (Antedated May 17, 1870)	May 24, 1870
103,897	Lepper, Benjamin, St. Louis, Mo. Street-car starter	June 7, 1870
106,376	Lerch, John, Uhlersville, Pa. Harrow and cultivator	Aug. 16, 1870
	Lerew, A. B. (*See* Hersh, Noah F., assignor.)	
	Le Row, William A., and J. William C. Peters. (*See* Peters & Le Row.)	
4,095	Leroy, Ferdinand, deceased, by Ferdinand Leroy, administrator, and P. A. Victor Le Lubez, assignee, England. Composition for covering steam-boilers, and for other purposes. (Reissue)	Aug. 9, 1870
100,636	Le Roy, Joseph, Marathon, N. Y. Fifth-wheel	Nov. 29, 1870
	Leseman, Ernest Henry, and William P. Walker. (*See* Walker & Leseman.)	
101,633	Lesh, Daniel, jr., Liverpool, Pa. Weighing-faucet	April 5, 1870
108,499	Leslie, Arthur M., Chicago, Ill. Ruffler for sewing-machines	Oct. 18, 1870
100,161	Leslie, Arthur M., assignor to self and Cornell, Ward & Comings, Chicago, Ill. Ruffling-attachment for sewing-machines	Feb. 22, 1870
103,735	Same.....same	May 31, 1870
4,107	Leslie, George M., assignor to self and Jesse Oakley, Northumberland, Pa. Apparatus for crutching soap. (Reissue)	Aug. 23, 1870
3,904	Leslie, Hugh, Jersey City, N. J. Steam-boiler. (Reissue)	April 5, 1870
4,359	Leslie, John W., South Paso, Ill. Berry-box. (Design)	Sept. 20, 1870
108,712	Leslie, William, Fort Madison, Iowa. Combined stalk and weed cutter and land-roller. (Antedated Oct. 15, 1870)	Oct. 25, 1870
100,268	Lester, James S., Knoxville, Tenn. Device for operating windows	Aug. 9, 1870
98,734	Letchworth, G. J., Auburn, N. Y. Hames	Jan. 11, 1870
3,852	Letchworth, John, assignor to Hartell & Letchworth, Philadelphia, Pa. Shade for gas or lamp burners. (Design)	Feb. 15, 1870
3,853	Same.....Shade for gas or lamp burners. (Design)	Feb. 15, 1870
4,295	Same.....same. (Design)	Aug. 16, 1870
102,138	Letchworth, Josiah, Buffalo, N. Y. Hames for harness	April 19, 1870
4,202	Same.....Trace-supporting stud. (Design)	July 5, 1870
105,700	Same.....same	July 26, 1870
3,850	Letchworth, William R., Buffalo, N. Y. Machine for bending wood. (Reissue)	May 10, 1870
102,838	Same.....Bridle-bit	May 10, 1870
	Letmate, Frederick W., and Lewis Francis. (*See* Francis & Letmate.) (Disclaimer.)	
104,908	Letort, James, Wytheville, Va. Churning-apparatus	July 5, 1870
	Letz, George F., and F. Baumann. (*See* Baumann & Letz.)	
98,604	Letz, John P., Lacon, Ill. Cultivator	Jan. 4, 1870
104,489	Leuchtweiss, August, Cincinnati, Ohio. Rotary pump	June 21, 1870
103,208	Leuffgen, Georg, Prussia. Tank-furnace for making glass	May 17, 1870
99,329	Levake, W. S., Cleveland, Ohio. Rolling-mill for rolling grooved-metal arches	Feb. 1, 1870
104,909	Same.....Tubular-arched bridge. (Antedated June 2, 1870)	July 5, 1870
	Leventhorpe, Collett. (*See* Field, D. E., assignor.)	
104,395	Leverich, Gabriel, and Albert H. Emery, New York, N. Y. Concrete pavement	June 14, 1870
	Same.....(*See* Emery & Leverich.)	
99,330	Levy, Jacob, New York, N. Y. Bolt for doors	Feb. 1, 1870
100,777	Lewes, Michel, and John C. Swenson, Williamsburgh, N. Y. Fire-escape	Mar. 15, 1870
109,583	Lewin, Stephen, England. Elevator for raising and stacking straw	Nov. 22, 1870
107,289	Lewis, Andrew, Hastings, Minn. Harrow	Sept. 13, 1870
108,843	Lewis, Benjamin R., assignor to self and Welch, Spring & Co., Bristol, Conn. Clock-escapement	Aug. 30, 1870
107,511	Lewis, Clark, Cassville, N. Y. Locomotive-attachment	Sept. 20, 1870
99,213	Lewis, Elliot, Lockport, N. Y. Sad-iron heater	Jan. 25, 1870
107,512	Lewis, Fitch B., Tiffin, Ohio. Bolting-reel	Sept. 20, 1870
	Lewis, George. (*See* Wyatt, John, assignor.)	
	Lewis, George B., and John B. Merriman. (*See* Merriman & Lewis.)	
	Lewis, George T. (*See* Balmain, William Henry, assignor.)	
105,097	Lewis, James, Marengo, Mich. Top-rest for carriages	July 5, 1870
103,898	Lewis, John S., Elkport, Iowa. Churn	June 7, 1870
105,225	Lewis, Jonathan, Washington, D. C. Cultivator	July 12, 1870
109,439	Lewis, Jonathan, Washington County, D. C. Cultivator and seeder combined	Nov. 22, 1870
109,227	Lewis, Joseph H., assignor to Alfred R. Field, Providence, R. I. Machine for attaching studs or tubular-shanked buttons to fabrics. (Antedated Nov. 5, 1870)	Nov. 15, 1870
99,307	Lewis, Joshua O., Worcester, Mass. Card-clothing clamp	Jan. 4, 1870
108,606	Lewis, Oscar P., Cincinnati, Ohio. Method of cooling beer-worts, &c.	Oct. 25, 1870
109,594	Lewis, Richard S., assignor to Jonathan H. Lewis, Rockville, Conn. Concrete composition for walks, flooring, &c.	Nov. 22, 1870
101,746	Lewis, Samuel, Williamsburgh, N. Y. Rock-drill	April 12, 1870

Alphabetical list of patentees for the year 1870—Continued.

No.	Name, residence, and invention or discovery.	Date.
103,899	Lewis, Samuel, Williamsburgh, N. Y. Submarine-drilling apparatus	June 7, 1870
108,160	Same.....Mat	Oct. 11, 1870
	Lewis, Samuel G., administrator. (*See* Pusey, Lea) (Extension.)	
	Lewis, William, Brooklyn, N. Y., and William H., New York, N. Y. Plate-holder for photographic cameras. (Extension)	Sept. 24, 1870
100,646	Lewis, William A., Joliet, Ill. Carriage-axle	Mar. 8, 1870
108,607	Same.....Wagon-axle	Oct. 25, 1870
108,608	Same.....same	Oct. 25, 1870
108,609	Same.....same	Oct. 25, 1870
99,214	Lewis, William H., assignor to Richard A. Lewis, New York, N. Y. Device for destroying insects. (Antedated Jan. 21, 1870)	Jan. 25, 1870
107,929	Lewis, William J., Pittsburgh, Pa. Hammer-strap	Oct. 4, 1870
107,930	Same.....Rack for wagon-brakes	Oct. 4, 1870
107,931	Same.....Blank for hammer-straps for wagons	Oct. 4, 1870
108,493	Lewis, William J., and Henry W. Oliver, jr., Pittsburgh, Pa. Strap-bolt for wagon-beds	Oct. 18, 1870
98,789	Lewis, W. M., New York, N. Y. Sheet-metal can	Jan. 11, 1870
106,989	Lewis, William P., and Silas L. Vera, Pittsburgh, Pa. Stove-pipe	Aug. 9, 1870
	Lewiston Machine Company. (*See* Abbott, Levi, assignor.)	
103,909	Lewthwaite, John, England. Coating fabrics with parkesine. (Patented in England March 4, 1868)	May 17, 1870
104,608	Leyburn, Edward J., Lexington, Va. Motive power for sewing-machines	June 21, 1870
	Leyburn, William C., *et al.* (*See* Walker, Albert A., assignor.)	
	Libby, Nelson F., *et al.* (*See* Stimson, L. S., assignor.)	
	Libby, Samuel D., and Joseph G. Knapp. (*See* Knapp & Libby.)	
102,285	Lichtenstadt, David, and Rafael Pentlarge, New York, N. Y. Bung	April 26, 1870
109,525	Lichtenstein, Joseph, assignor to self, Charles F. Smith, and William H. Peirce, Baltimore, Md. Car-axle lubricator	Nov. 22, 1870
102,839	Lidren, Christopher, assignor to self and R. Jackson, La Fayette, Ind. Platform for harvesters	May 10, 1870
107,793	Lieb, Gottlob, Coeymans Hollow, N. Y. Washing-machine	Sept. 27, 1870
101,891	Liebenau, T. Graham, and Alfred G. Haney, Plainville, Conn. Enamel for clock-dials	April 12, 1870
4,170	Liebrich, Conrad, deceased, by Samuel Croft and John C. Schuellermann, executors, Philadelphia, Pa. Hasp for trunk-locks. (Reissue)	Nov. 1, 1870
106,180	Liedke, Charles, Sandusky, Ohio. Pressure-gauge	Aug. 9, 1870
106,067	Lieseke, August, Syracuse, N. Y. Combined chair and step-ladder	Aug. 2, 1870
101,282	Light, Joseph F., *et al.* (*See* Taft, Timothy F., assignor.)	
	Lightfoot, John S., deceased, by William Lightfoot, administrator, Hamilton County, Tenn. Current-water wheel	Mar. 29, 1870
102,840	Lighthall, Almerin H., Albany, N. Y. Railway-car brake	May 10, 1870
101,892	Lighthall, Reuben, Brooklyn, N. Y. Surface-condenser	April 12, 1870
107,390	Same.....Washing-machine	Sept. 13, 1870
4,048	Lighthall, Reuben, assignor to self and Cornelius Godfrey, Brooklyn, N. Y. Preventing the corrosion of iron exposed to water or dampness. (Reissue)	June 28, 1870
	Lighthall, Reuben, and Cornelius Godfrey. (*See* Godfrey & Lighthall.)	
105,817	Lighthall, William A., New York, N. Y. Pipe-coupling	July 26, 1870
	Ligier, Joseph Z. (*See* Shellabarger, Amos, assignor.)	
103,348	Ligon, Edwin T., Demopolis, Ala. Lock-nut	May 24, 1870
105,098	Same.....Propelling-apparatus	July 5, 1870
102,540	Lilienthal, Christian H., Yonkers, N. Y. Machine for granulating tobacco	May 3, 1870
109,637	Same.....Pier for bridges	Nov. 29, 1870
108,494	Lillie, Lewis, Clinton, N. J. Iron safe	Oct. 18, 1870
104,170	Liming, John, Philadelphia, Pa. Hobby-horse	June 14, 1870
105,701	Same.....Combined hobby-horse and carriage-motor	July 26, 1870
109,914	Linberg, Charles J., and William J. Phillips, St. Louis, Mo. Revolving fire-arm	Dec. 6, 1870
	Lincoln, George S. and Charles L. (*See* Weaver, Horatio B., assignor.)	
105,957	Lincoln, George T., Providence, R. I. Round comb	Aug. 2, 1870
	Lincoln, Joseph, jr. (*See* Bacon, Robert, assignor.)	
104,748	Lincoln, Luther, Norton, Mass. Flat or sad iron. (Antedated June 9, 1870)	June 28, 1870
	Lincoln, William Stillwell, and William Anderson Rayer. (*See* Rayer & Lincoln.)	
4,380	Lindemann, Otto, New York, N. Y. Lid of a feed-cup in bird-cages. (Design)	Oct. 4, 1870
109,238	Linden, Nicholas, Chicago, Ill. Coffee-roaster	Nov. 15, 1870
99,577	Linder, Joseph, Seneca Falls, N. Y. Key	Feb. 8, 1870
104,749	Same.....Door-lock	June 28, 1870
107,695	Linderman, James, Bullville, N. Y. Hay-elevator	Sept. 27, 1870
104,171	Lindhorst, H. Henry, St. Louis, Mo. Carpet-cleaning machine	June 14, 1870
98,983	Lindley, N. H., Bridgeport, Conn. Horse-hoe	Jan. 18, 1870
109,028	Same.....Well-boring apparatus	Nov. 8, 1870
107,391	Lindsay, Charles M., Foreston, Ill. Screw-clamp for piano-pins	Sept. 13, 1870
100,299	Lindsey, L. A., Jackson, Miss. Folding-crate	Mar. 1, 1870
102,561	Lindsey, Landy Tunstall, Jackson, Tenn. Printing-telegraph instrument	May 3, 1870
102,562	Same.....Electro-magnetic motor	May 3, 1870
106,493	Same.....same	Aug. 16, 1870
107,932	Lindsey, Peter H., Lockport, N. Y. Meat and vegetable slicer	Oct. 4, 1870
	Lindsley, Isaac, and Olney Arnold. (*See* Arnold & Lindsley.)	
104,172	Lindsley, William D., Eudora, Kans. Animal-trap	June 14, 1870
103,477	Link, Joseph, United States Army. Projectile	May 24, 1870
	Link, Joseph, and Lionel V. Percival. (*See* Percival & Link.)	
	Linnell, Joseph D., and John J. Toffiemire. (*See* Toffiemire & Linnell.)	

Alphabetical list of patentees for the year 1870—Continued.

No.	Name, residence, and invention or discovery.	Date.
109,913	Linscott, Charles F., Chicago, Ill. Miter-box	Dec. 6, 1870
103,089	Lintner, John, Indianapolis, Ind. Fastening for gates	May 31, 1870
	Linville, George W. (*See* Follansbee, Lambert T., assignor.)	Mar. 1, 1870
100,421	Lipp, Francis X., Baltimore, Md. Ash-sifter	
	Lippiatt, Maltby & Morse. (*See* Lathrop, John D., assignor.)	
	Lippiatt Silver-Plate and Engraving Company. (*See* Rogers, John, assignor.)	
102,950	Lippiatt, Thomas, Orange, N. J. Machine for engraving and chasing articles of metal	May 10, 1870
	Lippincott, Edward, and George L. Sullivan. (*See* Sullivan & Lippincott.)	
	Lippincott, John. (*See* Grey, John D., assignor.)	Jan. 11, 1870
98,686	Lipsey, Andrew B., New York, N. Y. Wrench	Jan. 25, 1870
99,095	Lisbawa, George W., Cincinnati, Ohio. Blacking-brush	
	List, Carl, and Daniel Kaempfe. (*See* Kaempfe & List.)	Sept. 6, 1870
107,184	Lister, Alfred and Edwin, Newark, N. J. Mill for grinding bones	
100,636	Lister, Alfred and Edwin, and Charles J. Eames, Newark, N. J. Deodorizing the air and gases in fat-rendering, bone-boiling, &c	Nov. 29, 1870
	Liston, Robert, Albany, N. Y. Hawse-hole cover	May 31, 1870
103,830	Lithgow, Charles H., Chicago, Ill. Knife-polisher	May 17, 1870
103,910	Littel, William H., Prairie-du-Chien, Wis. Corn-planter	July 26, 1870
105,702	Little, Andrew, New York, N. Y. Printing-type (Design)	June 14, 1870
4,158	Same Type (Design)	July 5, 1870
4,203	Little, Benjamin, and John B. Lundberg, Coffee Creek, Ind. Sawing-machine	May 24, 1870
103,340	Little, Cyrus, Van Wert, Ohio. Road-scraper	Feb. 15, 1870
99,921	Little, George, Rutherford Park, N. J. Arrangement of electrical circuits for automatic transmitting-instruments	Oct. 18, 1870
108,495	Same Chemical telegraph	Oct. 18, 1870
108,496	Little, James R., Galesburgh, Ill. Cultivator	Sept. 6, 1870
107,069	Same same	Oct. 4, 1870
108,037	Little, Joel L., *et al.* (*See* Doty, Little & Schmidler.)	Jan. 18, 1870
	Little, Michael, Ashley, Ill. Fly-trap	
98,964	Little, Sherred S., and Henry P. Westcott, assignors to Smith, Westcott & Co., Macon, Ga. Harness-fastening	Mar. 22, 1870
101,141	Little, William S., and John K. Odell. (*See* Odell & Little.)	
	Littlefield, Dennis G., Albany, N. Y., and Grove H. Johnson, Erie, Pa. Base-burning stove	April 5, 1870
101,476	Littlefield, Dennis G., Albany, N. Y. Stove-door (Design)	May 24, 1870
	Same Cover for stoves (Reissue)	May 31, 1870
4,003	Littlefield, Horace, Lewis, Iowa. Fanning and smut mill	Mar. 15, 1870
4,006	Littlefield, J. A., Randolph, Mass. Combined square, protractor, level, &c	April 5, 1870
100,903	Littlejohn, Lomax, New York, N. Y. Carriage-axle	June 7, 1870
101,477	Littlepage, Caleb V., Austin, Texas. Saw	April 26, 1870
103,900	Same Electric foot-warmer	May 17, 1870
102,286	Same Head-rest	May 31, 1870
103,061	Same Saw-teeth	July 12, 1870
103,631	Livings, Francis, assignor to self and Peter Wycoff, East Enterprise, Ind. Gate	Oct. 18, 1870
105,345	Livingstone, William, assignor to John Roach, New York, N. Y. Steam-pump	May 31, 1870
108,368	Livsey, Thomas Lewis, Great Britain. Machine for filling or starching woven fabrics	Dec. 20, 1870
103,756	Llewellyn, Thomas, England. Planing-machine	Nov. 1, 1870
110,258	Lloyd, Clinton. (*See* Delany, Thomas J., assignor.)	Sept. 6, 1870
108,801	Lloyd, George A., San Francisco, Cal. Fruit-carrying box	
107,070	Lloyd, George A., assignor to self and Anthony Rosenfield, San Francisco, Cal. Carriage-axle	Mar. 29, 1870
101,370	Lloyd, George A., assignor to self, George W. Smiley, James McMechan, and Anthony Rosenfield, San Francisco, Cal. Needle and its carrying-arm for sewing-machines	Dec. 27, 1870
110,489	Loader, John, assignor to self, William Henry Child, and Aaron White Cook Williams, England. Packing for rotary engines	June 7, 1870
103,901	Loader, John, and William Henry Child, assignors of one-third interest to Aaron White Cook Williams, England. Steam-generator	June 7, 1870
103,902	Lobdell, George G., and William Stuart, Wilmington, Del. Casting chilled rolls	Dec. 20, 1870
110,378	Lobdell, George Granville, and Alexander McLeod. (*See* McLeod & Lobdell.)	Feb. 1, 1870
	Lobdell, James E., and Leroy H. Smith, Centre Lisle, N. Y. Hay-fork	Aug. 23, 1870
99,449	Locher, Conrad, Oroville, Cal. Baling-press	Dec. 20, 1870
106,703	Locher, Conrad, assignor to self and George C. Perkins, Oroville, Cal. Hose-coupling	Jan. 11, 1870
110,253	Lock, N. C., Salem, Mass. Gun-lock	Nov. 22, 1870
98,781	Same Water-pressure regulator	Aug. 16, 1870
109,520	Locke, Aaron R., Boston, Mass. Railway-carriage	Sept. 20, 1870
108,378	Locke, Harvey, Grand Rapids, Mich. Turning-lathe	May 31, 1870
107,513	Locke, Henry H., Pleasantville, Pa. Pump-rod attachment	Aug. 30, 1870
103,638	Locke, Sylvanus D., Janesville, Wis. Machine for cutting and binding grain	
108,945	Lockey, Joseph P., and Greenleaf L. Swett. (*See* Swett & Lockey.)	Mar. 1, 1870
	Lockhart, Miles, Isle of Man. Chimney-cowl	
109,422	Lockie, John. (*See* Johnston, James J., assignor.)	Feb. 1, 1870
	Lockie, Peter, Rochester, N. Y. Washing-machine	
99,450	Lockling, Lewis E., Perrysburgh, N. Y., and Nathaniel N. Whitaker, Sheridan, N. Y. Fence	June 7, 1870
103,903	Lockwood, Charles, Haverstraw, N. Y. Screen	June 14, 1870
104,173	Lockwood, H. C., Baltimore, Md. Coffee cleaner and polisher	Jan. 25, 1870
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Alphabetical list of patentees for the year 1870—Continued.

No.	Name, residence, and invention or discovery.	Date.
105,703	Lockwood, Wilber C., Spring Mills, Mich. Corn and seed planter	July 26, 1870
101,983	Lœffelholz, Adam, and Anton Prier, Milwaukee, Wis. Car-seat lock	Dec. 20, 1870
	Loew, Oscar, assignor to John M. Pendleton, New York, N. Y. Bleaching dark soaps and foots	Mar. 29, 1870
101,284	Same Method of bleaching and refining oil	Mar. 29, 1870
104,470	Same Bluing dark soaps and foots	June 21, 1870
107,071	Loew, Oscar, assignor to Reuben D. Turner and Wellwood Murray, New York, N. Y. Process of obtaining ozone or ozonized air	Sept. 6, 1870
104,802	Loewenberg, Henry, New York, N. Y. Compound for printers' ink	June 28, 1870
106,028	Same Manufacture of imitation-braids, trimmings, &c	Aug. 9, 1870
101,143	Loewenberg, Henry, assignor to Medena Hat Company, New York, N. Y. Die for the manufacture of imitation straw-goods	Mar. 22, 1870
102,363	Loewenstein, Joseph M., New Orleans, La. Fertilizing compound	Oct. 18, 1870
109,327	Loftus, Robert G., assignor to self and Oliver W. Farrar, Chelsea, Mass. Ink for writing	Nov. 15, 1870
183,757	Loffendahl, Joseph, assignor to self and Simeon S. Cook, Woonsocket, R. I. Shuttle for looms	May 31, 1870
103,211	Logan, James M., Springfield, Ill. Mill-spindle driver	May 17, 1870
105,467	Logan, John, Boston, Mass. Hair-spring testing-apparatus for watches	July 19 1870
108,917	Logan, John, Waterloo, Iowa. Sleigh-runner	Nov. 1, 1870
110,036	Logan, John, and Daniel W. Eldredge, Boston, Mass. Cartridge-cap extractor	Dec. 13, 1870
98,782	Logan, John F., Coal Bluffs, Pa. Car-loading device	Jan. 11, 1870
101,385	Logee, Edgar L., Central Falls, R. I. Window-guard against flies and mosquitos	Mar. 29, 1870
	Logee, Suel, and Charles Bean. (*See* Bean & Logee.)	
	Loiseau, Desire, and Jules Emile Boivin. (*See* Boivin & Loiseau.)	
104,471	Loiseau, Emile F., and Charles F. Requin, Nashville, Tenn. Artificial fuel	June 21, 1870
100,048	Lomas, John R., New Haven, Conn. Tremolo for organs	Feb. 22, 1870
107,514	Lomax, George Henry, Somerville, Mass. Lamp	Sept. 20, 1870
108,370	Lombard, George W., Westminster, Mass. Sawing-machine	Oct. 18, 1870
	Lombard, William. (*See* Durran, John H., assignor.)	
104,326	Long, Charles B., assignor to self and Jonathan Luther, Worcester, Mass. Steam and gas pipe hook	June 14, 1870
	Long, Charles L., *et al.* (*See* Maxwell, Neal & Long) (Design.)	
98,783	Long, Charles R., Louisville, Ky. Chair	Jan. 11, 1870
110,053	Same same	Dec. 13, 1870
99,044	Long, Daniel, and John Preston, Fairview, Pa. Let-off mechanism for looms	Jan. 18, 1870
103,756	Long, David W., Parkersburgh, W. Va. Hinge	May 31, 1870
	Long, Dennis. (*See* Jones, Thomas L., assignor.)	
	Long, Eli W., and Isaac N. Patten. (*See* Patten & Long.)	
101,747	Long, G. E., Harrisburgh, Pa. Steam-engine	April 12, 1870
104,904	Same Variable cut-off valve-gear	June 7, 1870
103,212	Long, H. E., Decatur, Ill. Steam-engine	May 17, 1870
	Long, John M., *et al.* (*See* Patton, Samuel, assignor.)	
	Long, Joseph and Carter. (*See* Staley, Franklin J., assignor.)	
99,331	Long, William H., Eddyville, Iowa. Horse hay-rake	Feb. 1, 1870
100,778	Longaker, Thomas F., Philadelphia, Pa. Machine for cleaning stables	Mar. 15, 1870
106,181	Same Stable-cleaner	Aug. 9, 1870
105,704	Longwell, Peter, Poplar, Ohio. Cross-cut saw	July 26, 1870
104,472	Loomis, Charles H., New Philadelphia, Ohio. Adjustable school-desk	June 21, 1870
4,190	Same School-desk (Reissue)	Nov. 29, 1870
101,027	Loomis, George W., Hartford, Conn. Spring bed-bottom	Mar. 22, 1870
102,019	Loomis, James Alanson, Carthage, Ill., and Charles Fredrich Moll, San Francisco, Cal. Dental apparatus for casting plates for artificial teeth	April 19, 1870
98,605	Loomis, S. P., Philadelphia, Pa. Window-jack	Jan. 4, 1870
102,411	Lord, James H., San Francisco, Cal. Animal-trap	April 26, 1870
105,818	Same Faucet	July 26, 1870
109,328	Lord, Joseph A., jr., Middletown, Conn. Detaching-hook	Nov. 15, 1870
99,922	Lord, Samuel L., Surry, Me. Boat-detaching apparatus	Feb. 15, 1870
106,069	Lord, William, San Francisco, Cal. Spring for beds, sofas, &c	Aug. 2, 1870
100,166	Lord, W. Stinson, Crawford, Miss. Punch and press	Feb. 22, 1870
107,165	Lordon, Daniel, assignor to self and James Shields, Memphis, Tenn. Feed-water heater for steam-boilers	Sept. 6, 1870
98,873	Lore, George W., Dexter, Mich. Stove-pipe drum	Jan. 18, 1870
	Lorillard, Peter. (*See* Spencer, Lewis W., assignor) (Two cases.)	
103,633	Loring, Thomas, Blackwoodtown, N. J. Harvester-knife grinder	May 31, 1870
105,099	Lorton, Nicholas, and John S. Davison, Cranberry, N. J. Paper-bag machine	July 5, 1870
	Losie, Thomas, and G. W. Corey. (*See* Corey & Losie.)	
107,933	Lottridge, William, Charles City, Iowa. Grain-binder	Oct. 4, 1870
	Lotz, William H. (*See* Markl, Johan Jakob, assignor) (Two cases.)	
107,096	Lotze, Adolphus, Cincinnati, Ohio. Heating-stove	Sept. 27, 1870
	Loucks, Peter, and Samuel Becker. (*See* Becker & Loucks.)	
102,747	Loud, A. C., San Francisco, Cal. Propelling-wheel	May 3, 1870
106,704	Loud, Alfred C., assignor to self and W. J. Miller, San Francisco, Cal. Bucket for paddle-wheels	Aug. 23, 1870
100,536	Loud, Erastus C., Springfield, Mass. Stove-grate	Mar. 8, 1870
	Loud, E. C., and Franklin Rowell. (*See* Rowell & Loud.)	
	Louis, La Fayette, deceased, by El Dora Louis, administratrix, New York, N. Y. Melodeon (Extension)	Dec. 3, 1870
	Loutrel, Cyrus H., and Lewis Francis. (*See* Francis & Lotmate, assignors) (Disclaimer.)	

Alphabetical list of patentees for the year 1870—Continued

No.	Name, residence, and invention or discovery.	Date.
99,668	Love, John C., Philadelphia, Pa. Vapor-burner	Feb. 8, 1870
99,669	Same.....same	Feb. 8, 1870
105,819	Same.....Vapor gas-burner	July 26, 1870
108,371	Love, John D., Harrisburgh, Oreg. Medical compound or liniment	Oct. 18, 1870
109,433	Love, Milton, Corry, Pa. Machine for threading bolts	Nov. 22, 1870
109,434	Same.....Chuck	Nov. 22, 1870
99,332	Love, Robert, New York, N. Y. Composition for paint	Feb. 1, 1870
103,905	Love, Roger W., Windsor, Vt. Locomotive head-light	June 7, 1870
100,423	Lovell, G. W. C., Clarksville, Tenn. Smoothing-iron	Mar. 1, 1870
98,508	Lovejoy, John S., Washington, D. C. Curtain-fixture	Jan. 4, 1870
98,509	Loveridge, Sears M. (*See* Godfrey, Joseph S., assignor)	(Two cases.)
	Lovering, William C., Taunton, Mass. Tea-kettle cover	Jan. 4, 1870
	Same.....(*See* Dean, Ephraim K., assignor.)	
	Low, Caleb, and John Harrison. (*See* Harrison & Low.)	
100,162	Low, G. W., Ravenna, Ohio. Pump	Feb. 22, 1870
109,280	Low, Isaac, assignor to self and Ephraim Phillips, East Fairfield, Ohio. Cultivator	Nov. 15, 1870
99,983	Low, Joseph M., Portlandville, N. Y. Rake and tedder combined	Feb. 15, 1870
4,183	Low, Peter, Cleveland, Ohio. Cooking-stove	June 28, 1870
99,451	Low, William R., and Augustus Adams, Sandwich, Ill. Harvester	(Design.) Feb. 1, 1870
	Lowe, Charles A. (*See* Howell, David, assignor.)	
	Lowe, David H., and Thomas Simmons. (*See* Simmons & Lowe.)	
100,030	Lowe, James F., Louisville, Ky. Double and single tree attachment for street-cars	Nov. 8, 1870
3,290	Lowe, John K., assignor to Valentine Wood, J. R. Suitterlin, and George W. Wood, Cleveland, Ohio. Inking-apparatus for printing-presses	(Reissue.) Mar. 22, 1870
99,096	Lowe, R. E., Upper Alton, Ill. Velocipede. (Antedated Jan. 9, 1870)	Jan. 25, 1870
4,000	Lowe, William, Bridgeport, Conn. Steam-generator	(Reissue.) May 31, 1870
	Lowell Manufacturing Company. (*See* Campbell, Robert R., assignor)	(Nineteen cases.) (Design.)
	Same.....(*See* Ney, Elemir J., assignor) (Twenty-three cases)	(Design.)
109,330	Lowen, George, and Samuel H. Goldthorp, Pittsburgh, Pa. Dry gas-meter	Nov. 15, 1870
	Löwenberg, Henry. (*See* Werrkmeister, A., assignor.)	
100,424	Lowry, Thomas, Pittsburgh, Pa. Kiln for annealing glass	Mar. 1, 1870
100,537	Loy, G. W., Nacogdoches, Texas. Mill-stone dress	Mar. 8, 1870
108,713	Lucas, John, Philadelphia, Pa. Apparatus for preparing lakes and colors	Oct. 25, 1870
108,271	Lucas, Joseph L., Saratoga Springs, N. Y. Manufacture of blacking	Oct. 11, 1870
102,413	Lucas, Robert A., assignor to self and Horace S. Weston, Wooster, Ohio. Eave-trough hanger	April 26, 1870
105,100	Luce, James R., Stevens Point, Wis. Circular-saw mill	July 5, 1870
	Luce, Thomas B., and Truman M. Annis. (*See* Annis & Luce.)	
100,425	Luckett, Samuel R., Corydon, Ind. Cloth-measuring apparatus	Mar. 1, 1870
109,916	Lucus, Samuel D., Winterpock, Va. Combined hand seed-drill and cultivator	Dec. 6, 1870
109,917	Ludde, Elard, New York, N. Y. Putting up pomatum	Dec. 6, 1870
	Luddington, James H., and Isaac N. Forrester. (*See* Forrester & Luddington.)	
	(Reissue.)	Dec. 20, 1870
110,379	Ludlam, John C., Brooklyn, N. Y. Cartridge-box	Sept. 6, 1870
107,206	Ludlow, Henry G., Troy, N. Y. Apparatus for the manufacture of illuminating-gas	Oct. 25, 1870
108,714	Ludlow, Henry G., Troy, and Jabez Stone, Waterford, N. Y., assignors to Henry G. Ludlow. Stop-valve	May 10, 1870
103,213	Ludlow, William D., New York, N. Y. Lamp-burner	Mar. 1, 1870
	Ludlow, William D., *et al.* (*See* Browne, A. W., assignor.)	April 26, 1870
100,300	Ludlum, M., Williston, Vt. Flower-pot	Nov. 15, 1870
108,287	Ludwig, John C., Stockton, Cal. Steam-generator	
	Ludwig, Julius. (*See* Smith, James E., assignor.)	
	Ludwig, Walter K. (*See* Kelly, Daniel, assignor.)	
109,329	Luey, Ira O., Bernardstown, Mass. Shutter-fastener	April 26, 1870
102,388	Luf berry, John H., Rahway, N. J. Rossing-machine	Sept. 13, 1870
107,393	Luf barry, Andrew Jackson, jr., Philadelphia, Pa. Outrigger for row-boats	Feb. 1, 1870
99,452	Lugo, Orazio, Baltimore, Md. Fertilizer or fish-guano	Feb. 15, 1870
99,924	Same.....Manufacture of fertilizers, and extracting oils and fats	Feb. 15, 1870
3,840	Same.....Manufacture of fertilizers or guano from fish	(Reissue.) Feb. 22, 1870
100,163	Same.....Manufacture of fertilizers from animal substances	Mar. 8, 1870
100,647	Same.....Treating liquors containing gelatine or glue	May 3, 1870
102,689	Same.....Manufacture of fertilizers and oil from fish	June 14, 1870
104,327	Same.....Manufacture of fertilizers from fish, &c	
	Lugo, Orazio, *et al.* (*See* Hooper, Hooper & Lugo.)	
	Lugo, Orazio, and David K. Tuttle. (*See* Tuttle & Lugo.)	
103,634	Lull, Orrin, Rochester, N. Y. Friction-clutch	May 31, 1870
	Lumb, William. (*See* Gould, Charles H., assignor.)	
	Lumbard, H. G. (*See* Bonnell, Isaac, jr., assignor.)	
102,161	Lumbard, William G., Georgetown, Ill. Feather-renovator	Oct. 11, 1870
	Lumsden, William C., *et al.* (*See* Tappey, Lumsden & Steel.)	
107,126	Lumsdon, Thomas, Waterford, Ohio. Combined adjustable cultivator and grain-drill	Sept. 6, 1870
	Lundberg, John B., and Benjamin Little. (*See* Little & Lundberg.)	
106,670	Lundgren, John, New York, N. Y. Gas-heater	Aug. 9, 1870
	Lungstras, Eugene. (*See* Englander, Joseph, assignor)	(Two cases.)
108,272	Luppen, Luppe, Pekin, Ill. Shovel-plow	Oct. 11, 1870
108,273	Same.....same	Oct. 11, 1870

Alphabetical list of patentees for the year 1870—Continued.

No.	Name, residence, and invention or discovery.	Date.
108,274	Luppen, Luppe, Pekin, Ill. Shovel-plow	Oct. 11, 1870
108,275	Same.....same	Oct. 11, 1870
108,276	Same.....same	Oct. 11, 1870
110,054	Lupton, George, Indianapolis, Ind. Purifying benzine	Dec. 13, 1870
110,055	Same.....Lamp-burner. (Antedated Nov. 26, 1870)	Dec. 13, 1870
105,958	Lusher, John, La Porte, Ind. Vegetable-cutter	Aug. 2, 1870
	Lusk, Andrew P., *et al.* (*See* Reinshagen, Peter W., assignor.)	
	Same.....(*See* Wichl, Daniel, assignor.)	
	Lusk, Salmon B. (*See* Mallory, Orson E., assignor.)	
104,609	Luther, Henry C., Providence, R. I., and Celius E. Richards, North Attleborough, Mass. Picture-knob	June 21, 1870
	Luther, Jonathan. (*See* Burns, W. H., assignor)	(Three cases.)
	Same.....(*See* Long, Charles B., assignor.)	
104,970	Luther, Justus P., and Solon K. Buck, Berlin, Wis. Clamp for making whips	July 5, 1870
99,780	Luther, L. T., Oak Grove, Pa. Match-machine	Feb. 15, 1870
102,413	Luther, Ormel E., Waterbury, Conn. Adjustable foot for clock-cases	April 26, 1870
100,049	Luts, Georg, John Schultheis, and Michel Florentin, Newark, N. J. Vegetable-cutter	Feb. 22, 1870
102,563	Luts, George, Danforth H. Royce, Michael Trenor, and Robert Chadwick, Columbus, Ohio. Policeman's nippers	May 3, 1870
108,918	Luts, John A., Waynesborough, Va. Cotton-chopper	Nov. 1, 1870
	Luts, Joseph F. C., and John W. Pearman. (*See* Pearman & Lutz.)	
102,932	Luts, Stimmel, Philadelphia, Pa. Fruit-can	May 10, 1870
101,478	Luxton, Charles, Hudson City, N. J. Peat-machine	April 5, 1870
	Lyman, Azel S., New York, N. Y. Method of cooling and ventilating rooms, &c	(Extension.) Mar. 24, 1870
103,478	Lyman, Chester C., Edinborough, Pa. Platform-scale	May 24, 1870
3,799	Lyman, John N., New York, N. Y. Stay-leg for cutting veneers	(Reissue.) Jan. 18, 1870
100,164	Same.....Clamp for stay-legs	Feb. 22, 1870
100,774	Lyman, Myron W., Chicago, Ill. Animal-trap	Mar. 15, 1870
102,951	Lyman, William W., Meriden, Conn. Apparatus for preserving fruit	May 10, 1870
105,346	Same.....Can-opener	July 12, 1870
105,583	Same.....West Meriden, Conn. Can-opener	July 19, 1870
108,802	Lynch, Charles S., Boston, Mass. "Fix" for puddling-furnaces	Nov. 1, 1870
108,277	Lynch, George F., Milwaukee, Wis. Railway-car axle-box	Oct. 11, 1870
	Lynch, J. Augustus. (*See* Huntoon, Reuben K., assignor.)	
105,101	Lynch, John H., New York, N. Y. Ice-chamber for refrigerators	July 5, 1870
99,578	Lynch, Matthew, New York, N. Y. Hoisting-machine	Feb. 8, 1870
101,634	Lynch, Nathaniel K., New York, N. Y. Variable cut-off valve-gear	April 5, 1870
102,690	Lynch, Stephen, New York, N. Y. Pipe-tongs	May 3, 1870
	Lynch, William A. (*See* Wagner, Frans, assignor.)	
99,606	Lynd, William John, Golden City, Col. Ter. Process of preparing coal for smelting ores	Jan. 4, 1870
99,607	Same.....Using Colorado and similar coal for metallurgical operations	Jan. 4, 1870
103,062	Lynde, John D., Philadelphia, Pa. Safety-valve. (Antedated May 2, 1870)	May 17, 1870
4,049	Same.....Water-indicator for boilers	(Reissue.) June 28, 1870
108,162	Same.....Governor for steam-engines	Oct. 11, 1870
	Lyne, H. A. (*See* Kniffen, Oscar P., assignor.)	
	Lynn, George L. (*See* Potter, Joseph, assignor.)	
	Lynn, Isaac V., *et al.* (*See* Snowdon, Snowdon & Lynn.)	
103,635	Lynn, Mirabeau N., New Albany, Ind. Steam-plow	May 31, 1870
107,934	Same.....Water-indicator and alarm	Oct. 4, 1870
104,473	Lyon, Baxter, and Charles M. Curtis, Springfield, Mass. Head-rest	June 21, 1870
101,748	Lyon, C. E., Worcester, Mass. Lamp	April 12, 1870
104,971	Lyon, George R., Waterbury, Conn. Lamp-burner	July 5, 1870
	Lyon, G. W., *et al.* (*See* Clark, L. S., assignor.)	
110,056	Lyon, James B., Pittsburgh, Pa. Mold for making glassware	Dec. 13, 1870
101,893	Lyon, James Hammond, Pittsburgh, Pa. Portable furnace	April 12, 1870
98,925	Lyon, James M., Watertown, N. Y. Braiding-attachment for sewing-machines	Jan. 18, 1870
102,691	Lyon, James W., assignor to self and John Fellows, Brooklyn, N. Y. Shade-holder for lamps	May 3, 1870
105,920	Lyon, Lucius, New York, N. Y. Shuttle for sewing-machines	July 26, 1870
101,030	Lyon, Virgil H., assignor to self and Jesse L. Snipes, Plainfield, Ind. Dumping-wagon	Mar. 22, 1870
100,165	Lyons, James B., Milton, Conn. Stone and stump extractor	Feb. 22, 1870
100,301	Same.....Floor for drying peat	Mar. 1, 1870
100,302	Same.....Peat-machine	Mar. 1, 1870
101,479	Same.....Machine for scouring and burnishing metals	April 5, 1870
110,149	Same.....Cotton-renovating machine	Dec. 13, 1870
102,414	Lyons, James B., assignor to Vulcan Peat-Manufacturing Company, New Haven, Conn. Peat-machine	April 26, 1870
103,750	Lytch, James, Laurinburgh, N. C. Cotton-seed planter	May 31, 1870
104,396	Same.....Cotton-scraper	June 14, 1870
109,327	Same.....Cider-mill	Nov. 22, 1870
102,841	Mabbett, Truman, sr., Vineland, N. J. Cultivator	May 10, 1870
	Macardle, George, and Louis Frey. (*See* Frey & Macardle.)	
100,909	Macaulay, T. A., Northampton, Mass. Needle-adjusting block for sewing-machines	Mar. 15, 1870
109,628	Same.....Sewing-machine	Dec. 6, 1870
107,697	Macdonald, John C., St. Louis, Mo. Valve-cock	Sept. 27, 1870

Alphabetical list of patentees for the year 1870—Continued.

No.	Name, residence, and invention or discovery.	Date.
	Macfarlane, J. D., *et al.* (*See* Brockenshire, John, assignor.) (Two cases.) (Reissue.)	
	Macferran, Samuel. (*See* Ommenetter, Ehanan, assignee.) (Eight cases.) (Design.)	
110,255	Macferran, Samuel, Philadelphia, Pa. Tightening-strap for barrels	Dec. 20, 1870
4,184	Macferran, Samuel and Ehanan Ommenetter, assignors to Samuel Macferran, Philadelphia, Pa. Gate (Design)	June 28, 1870
	MacGrove, William, and George M. Wyne. (*See* Wyne & MacGrove.)	
101,266	Mack, Ed. Elisha, Albany, N. Y. Paper collar	Mar. 29, 1870
109,899	Mack, William B., assignor to Divie Bethune Duffield, Detroit, Mich. Steam-boiler	Dec. 6, 1870
100,167	Mackay, Patrick N., Virginia City, Nev. Roofing and flooring	Feb. 22, 1870
	Mackellar, Smiths & Jordan. (*See* Ilenburg, Hermann, assignor.) (Two cases.) (Design.)	
	Mackellar, Smiths & Jordan. (*See* Smith, Richard, assignor.) (Four cases.) (Design.)	
106,948	Mackenzie, William B., Cincinnati, Ohio. Cooking-stove	Aug. 30, 1870
102,020	Mackinnon, Hector, Cleveland, Ohio. Smoke-stack	April 19, 1870
4,204	Mackintire, James, New York, N. Y. Bottle (Design)	July 5, 1870
4,205	Same. Bottle and cup (Design)	July 5, 1870
110,616	MaClaskey, Joseph O., assignor to self and James E. Tyrrell, Perth Amboy, N. J. Churn	Dec. 27, 1870
100,910	Macneale, Neil, Cincinnati, Ohio. Draw-bridge	Mar. 15, 1870
105,103	Same. Permutation-lock	July 5, 1870
100,436	Macomber, Charles E., and Corydon E. Whelpley, Minneapolis, Minn. Driven-well strainer	Mar. 1, 1870
	Macomber, F. G. (*See* Kennedy, Simon H., assignor.)	
101,499	Macomber, J. T., Grand Isle, Vt. Hand seed-planter	April 5, 1870
105,705	Macon, Hezekiah, and Joshua Hunt, Providence, R. I. Device for preventing the uncoupling of clutches in spinning-mules	July 26, 1870
	Macqueen, Charles D. (*See* McDaniels, Francis, assignor.)	
	Macy, Wendell, and Charles R. Sherman. (*See* Sherman & Macy.)	
	Madden, Edward M., *et al.* (*See* Tuttle, Joseph H., assignor) (Reissue.)	
109,330	Maddox, Joshua P., Belfast, Me. Vessel's hatch	Nov. 15, 1870
98,874	Madge, Simon L., Toledo, Ohio. Metallic alloy for plow mold-boards	Jan. 18, 1870
106,844	Mafat, Edward, New York, N. Y. Reel for dyeing and finishing silk and velvet woven fabrics. (Antedated Aug. 25, 1870)	Aug. 30, 1870
104,398	Magee, James, assignor to self, Stephen A. Aplin, and Elisha C. Clark, Usquepaugh, R. I. Let-off mechanism for looms	June 14, 1870
	Magee, John, Chelsea, Mass. Ventilating-damper for stoves (Extension)	May 19, 1870
102,564	Magers, James W., Reinersville, Ohio. Corn-planter	May 3, 1870
100,427	Magill, William, Port Deposit, Md. Base-burning stove	Mar. 1, 1870
108,163	Same. Heating-stove	Oct. 11, 1870
100,426	Maginnis, Arthur, and William McCormick, Philadelphia, Pa. Collecting waste spirits from breweries and bars	Mar. 1, 1870
101,227	Magoon, Israel P., St. Johnsbury, Vt. Feed-water heater for locomotives	Mar. 29, 1870
101,749	Magowan, Allen, Trenton, N. J. Clothes-wringer	April 12, 1870
102,565	Maguire, Patrick, New Boston, Mass. Composition for finishing wax-leather	May 3, 1870
105,236	Mahan, Schuyler W., Adrian, Mich. Lemon fruit-sirup	July 12, 1870
105,237	Same. Raspberry and strawberry fruit-sirup	July 12, 1870
	Maher, William T. (*See* Smith, William T., assignor.)	
100,538	Mahler, Charles, San Francisco, Cal. Wind-wheel	Mar. 8, 1870
109,746	Mahlon, James W., Brooklyn, N. Y. Device for cutting screw-threads and drilling metal	Nov. 29, 1870
109,747	Same. Device for clamping or cutting off tubes and rods	Nov. 29, 1870
110,256	Mahon, Isaac B., Dunkirk, Ohio. Cultivator	Dec. 20, 1870
110,257	Same. same. (Antedated Dec. 15, 1870)	Dec. 20, 1870
102,415	Mahon, Terrence P., New York, N. Y. Bakers' oven	April 26, 1870
	Mahone, William, *et al.* (*See* Robinett, James T., assignor.)	
	Mahoney, John, and L. J. Blades. (*See* Blades & Mahoney.)	
	Mahurin, Henry C., *et al.* (*See* Pike, Charles F., assignor.)	
100,830	Mahuring, Stephen, assignor to self, James W. Singleton, and William A. Richardson, Liberty, Ill. Car-coupling	Dec. 6, 1870
102,566	Maller, Alexander, assignor to George C. Bell and R. H. Plumb, Buffalo, N. Y. Manufacture of bolts	May 3, 1870
103,906	Main, William H., Marietta, Wis. Hand-spinning machine	June 7, 1870
100,439	Maine, Sebeus C., Boston, Mass. Ventilator for windows	Mar. 1, 1870
101,481	Major, Charles, Williamsburgh, N. Y. Saw-frame	April 5, 1870
	Major, John, *et al.* (*See* Weidman, Major & Sample.)	
101,635	Makibbin, Thomas A., assignor to self, William M. Pusey, and Seelye Richmond, Annapolis, Md. Roofing	April 5, 1870
	Malan, Joseph, and Ellicott D. Averell. (*See* Averell & Malan.)	
	Same (Reissue.)	
3,939	Males, Samuel, Cincinnati, Ohio. Urinal (Reissue)	April 26, 1870
102,416	Same. Public urinal	April 26, 1870
107,187	Same. Cider-mill	Sept. 6, 1870
107,188	Same. Urinal	Sept. 6, 1870
3,997	Malkin, Levi G., assignor to Hartford Carpet Company, New York, N. Y. Carpet-pattern (Design)	Mar. 22, 1870
3,998	Same. same. (Design)	Mar. 22, 1870
102,269	Mallett, Edward Jones, jr., and William S. Ward, New York, N. Y. Nursing-bottle	April 26, 1870

Alphabetical list of patentees for the year 1870—Continued.

No.	Name, residence, and invention or discovery.	Date.
107,935	Mallin, John, Chicago, Ill. Flour-bolt	Oct. 4, 1870
4,508	Mallinson, William, assignor to W. & J. Sloane, England. Carpet-pattern. (Design)	Dec. 13, 1870
4,509	Same same (Design)	Dec. 15, 1870
3,868	Mallory, Burton, New Haven, Conn. Reversible latch (Reissue)	Mar. 1, 1870
	Same (*See* Andrews, William H., assignor) (Two cases.)	
100,030	Mallory, David D., Mystic Bridge, Conn. Washing and transporting sand	Nov. 8, 1870
	Mallory, David S. (*See* Rich, Charles, assignor.)	
100,430	Mallory, James H., La Porte, Ind. Folding ironing-table	Mar. 1, 1870
109,918	Same. Ironing-table	Dec. 6, 1870
100,911	Mallory, John, Penn Yan, N. Y. Feather washer and drier	Mar. 15, 1870
107,270	Same. Saw-dressing machine	Sept. 13, 1870
	Mallory, Nelson B. (*See* Gould & Wickham, assignors.)	
104,863	Mallory, Orson E., Batavia, N. Y. Moving carriage-top	June 28, 1870
106,947	Same. Shifting carriage-top	Aug. 30, 1870
109,598	Same. same	Nov. 22, 1870
109,168	Mallory, Orson E., assignor of one-half interest to Selmon B. Lusk, Batavia, N. Y. Potato-digger	Feb. 22, 1870
105,706	Malott, Malanothon B., Richmond, Ind. Car-coupling	July 26, 1870
101,636	Maloy, James W., assignor to the Maloy Pressure-Gauge Company, Boston, Mass. Pressure-gauge	April 5, 1870
108,497	Maltby, Benjamin K., Cincinnati, Ohio. Wall-protector	Oct. 18, 1870
104,973	Maltby, Cyrus A., Roland, Ill. Churn	July 5, 1870
108,498	Maltby, Harriet S., Cincinnati, Ohio. Egg and cake beater	Oct. 18, 1870
110,057	Maltby, Henry A., Brownsville, Texas. Velocipede	Dec. 13, 1870
108,715	Mandeville, George A., assignor to self and Abram C. Wheaton, Newark, N. J. Machine for sizing and felting hat-bodies	Oct. 25, 1870
100,050	Mandlebaum, Samuel E., St. Louis, Mo. Commercial portfolio	Feb. 22, 1870
103,479	Manger, Henry, Philadelphia, Pa. Self-recording surveying-machine	May 24, 1870
	Manhattan Meter Company. (*See* Horton & Hawkins, assignors.) (Reissue.)	
	Manhattan Packing Manufacturing Company. (*See* Murfey, Eliza D., assignor.) (Ten cases.)	
	Same (*See* Murfey, Eliza D., assignor) (Reissue.)	
	Manheim, Charles, and Edward L. Perry. (*See* Perry & Manheim.) (Reissue.)	
	Manifold, B. F. (*See* Martin, Samuel, assignor.)	
101,143	Mann, Albert G., Worcester, Mass. Tuyere	Mar. 22, 1870
104,973	Mann, Charles Hulbrook, Orange, N. J. Lifting-machine	July 5, 1870
	Mann, C. J., and William A. Boyden. (*See* Boyden & Mann.)	
100,303	Mann, Henry F., Pittsburgh, Pa. Shaft-coupling	Mar. 1, 1870
	Mann, Jacob J., deceased, by William C. Martin, administrator, and Henry F. Mann, Pittsburgh, Pa. Reaping-machine (Extension)	June 1, 1870
	Mann, Robert D. (*See* Lee, John A., assignor) (Reissue.)	
106,597	Mann, Robert J., Dallas City, Ill. Sieves	Aug. 23, 1870
101,750	Mann, William, Newcastle, Pa. Machine for corrugating sheet-metal	April 12, 1870
103,350	Mann, W. Grayson, Savannah, Ga. Tubular submarine viaduct	May 24, 1870
109,435	Manneck, Henry, and Charles Strohmenger, New York, N. Y. Combined muff and porte-monnaie. (Antedated Nov. 5, 1870)	Nov. 22, 1870
106,494	Manneck, Henry, New York, N. Y. Combination of label-holder and handle	Aug. 16, 1870
104,974	Manning, Alfred C., Norwich, Conn. Sash-holder	July 5, 1870
105,347	Manning, Edward B., assignor to Manning, Bowman & Co., Middletown, Conn. Coffee-boiler	July 12, 1870
105,584	Same. Coffee or tea pot	July 19, 1870
109,529	Manning, William, Chelmsford, Mass. Machine for making corn-cake	Nov. 22, 1870
103,760	Manny, Frederick H., Rockford, Ill. Seed-sower	May 31, 1870
	Same. (*See* Workman, William, assignor) (Reissue.)	
	Same. (*See* Johnson, Isaac A., assignor.)	
99,097	Manny, Jacob R., Chicago, Ill. Hydrant. (Antedated Jan. 12, 1870)	Jan. 25, 1870
107,936	Same. Water cut-off for cisterns	Oct. 4, 1870
102,842	Mansfield, George H., Concord, N. H. Planing-machine	May 10, 1870
104,610	Manson, George W., assignor to self, Charles M. Vandervoort, and Richard B. Westbrook, Jersey City, N. J. Motive power for sewing-machines	June 21, 1870
4,303	Manson, George W., assignor to Charles M. Vandervoort and William F. Fluhrer, New York, N. Y. Hair-pin (Design)	Aug. 23, 1870
103,063	Manville, Eli J., Waterbury, Conn. Fluting-machine	May 17, 1870
101,966	Manz, Felix, Allegheny City, Pa. Beer-faucets	April 12, 1870
108,610	Mapes, Andrew J., Independence, Mo. Tongue, brace, and balance for wagons	Oct. 25, 1870
	Mapes, Smith H., *et al.* (*See* Voorhis, Mapes & Voorhis.)	
109,530	Marable, Thomas E., assignor to self and S. A. Plummer, Petersburgh, Va. Animal-trap	Nov. 22, 1870
105,468	Marais, Alexis, assignor to self and John O'Brien, St. Louis, Mo. Parlor-roulette	July 19, 1870
105,460	Marble, George W., assignor to self and Charles Way, Charlestown, N. H. Saw for making stuffing for upholstering	July 19, 1870
	Marble, James T., *et al.* (*See* Mickel, William, assignor.)	
110,258	March, Henry C., Limerick Station, Pa. Base-burning stove	Dec. 20, 1870
4,006	Marchal, Philipp J., Hartford, Conn. Burial-casket (Design)	May 3, 1870
102,021	Marchant, Jonah, Farmington, Ill. Cherry-stoner	April 19, 1870
110,380	Marchant, Robert M., England. Pump	Dec. 20, 1870
106,845	Marchbank, John, Lansingburgh, N. Y. Construction of brushes	Aug. 30, 1870
4,151	Marchbank, John, assignor to James McQuide, Lansingburgh, N. Y. Brush. (Reissue)	Oct. 11, 1870

Alphabetical list of patentees for the year 1870—Continued.

No.	Name, residence, and invention or discovery.	Date.
102,567	Marcus Moritz, New York, N. Y. Street-moistening compound	May 3, 1870
98,986	Marcy, J. J., assignor to self and E. Miller & Co., Meriden, Conn. Oil-can vent-spout	Jan. 18, 1870
100,912	Same. Machine for spinning sheet-metal	Mar. 15, 1870
	Marden, D. G., and I. N. Patten. (*See* Patten & Marden.)	
	Marden, Francis B., and William W. Eastman. (*See* Eastman & Marden.)	
98,510	Marden, Jeremiah A., assignor to George M. Gibson and Thomas A. Johnston, Boston, Mass. Stop-valve	Jan. 4, 1870
100,169	Margeson, Harris Harding, San Francisco, Cal. Fence	Feb. 22, 1870
108,893	Margeson, John B., Lynn, Mass. Machine for jointing stair-rails. (Antedated Oct. 29, 1870)	Nov. 1, 1870
	Mariner, Henry E. (*See* Waters, Alonzo M., assignor.)	
	Marker, George E., and William H. Misner. (*See* Misner & Marker.)	
104,864	Marki, John Jacob, assignor to self and William H. Lotz, Chicago, Ill. Carpet-fastening	June 28, 1870
110,377	Marki, Johan Jacob, assignor to self, William H. Lots, and Carl Beer, Chicago, Ill. Ironing-table	Dec. 27, 1870
105,470	Markley, Charles, New York, N. Y. Car-coupling	July 19, 1870
109,630	Same. Pump	Nov. 29, 1870
101,751	Markley, Edward G., Sunbury, Pa. Railway	April 12, 1870
107,698	Marks, George M., Half Moon, Pa. Potato-digger	Sept. 27, 1870
99,333	Marks, Joseph, Boston, Mass. Valve and piston packing	Feb. 1, 1870
110,481	Marks, Leo, Cincinnati, Ohio. Compound for cleaning carpets	Dec. 27, 1870
101,894	Marland, Obadiah, Boston, Mass. Safe	April 12, 1870
98,784	Marland, Obadiah, assignor to self, John C. Crosman, and Alfred E. Tilton, Boston, Mass. Treating whisky and other spirits	Jan. 11, 1870
99,680	Marlin, John M., Hartford, Conn. Cartridge-shell extractor	Feb. 8, 1870
101,637	Same. Cartridge-ejector	April 5, 1870
	Marlow, Edmund O., and Joseph Johnston. (*See* Johnston & Marlow.)	
100,913	Marmon, Daniel W., assignor to Nordyke, Marmon & Co., Richmond, Ind. Smut-machine	Mar. 15, 1870
100,304	Marquardt, Philip, Buffalo, N. Y. Manufacture of pottery, &c	Mar. 1, 1870
103,214	Marr, Alfred, assignor to self and George W. Buckman, Lewiston, Me. Varnish for surfacing railway-heads, drawing and spinning frames	May 17, 1870
	Marriam, John O. (*See* Chamberlain, Edwin, assignor.)	
103,761	Marsden, William, Newburgh, N. Y. Compound for cattle-food	May 31, 1870
106,846	Marsh, Ann Augusta, Frankfort, Mich. Medical compound	Aug. 30, 1870
104,043	Marsh, Edwin T., Rochester, N. Y. Letter-box	June 7, 1870
107,078	Marsh, Josiah F., Dubuque, Iowa. Vapor-burner	Sept. 6, 1870
107,699	Marsh, Riverius, New York, N. Y. Lamp-bracket	Sept. 27, 1870
101,895	Marsh, Sylvester, Littleton, N. H. Atmospheric brake for railway-cars	April 12, 1870
107,515	Marsh, Thomas, assignor of one-half interest to James Callaghan, Pawtucket, R. I. Egg-beater	Sept. 20, 1870
104,174	Marsh, Thomas, and James Berney, Pawtucket, R. I. Egg-beater	June 14, 1870
106,182	Same. same	Aug. 9, 1870
104,611	Marshall, Benjamin, Marietta, Ohio. Broiler	June 21, 1870
104,474	Marshall, Charles E., Chicago, Ill. Ship's port	June 21, 1870
101,288	Marshall, C. K., New Orleans, La. Apparatus for defecating cane-juice. (Antedated March 15, 1870)	Mar. 29, 1870
102,953	Same. Harness-saddle	May 10, 1870
103,636	Same. Cart-saddle	May 31, 1870
105,821	Marshall, Charles K., assignor to the Climax Horse-Collar Company, New Orleans, La. Horse-collar	July 26, 1870
106,370	Marshall, David, Northville, Mich. Carriage-jack	Aug. 16, 1870
	Marshall, Elisha G., *et al.* (*See* Porter, Alonzo, assignor.)	
105,583	Marshall, George E., Laurel, Ind. Process and apparatus for the manufacture of paper	July 19, 1870
100,170	Marshall, Joseph R., Marion, Pa. Sheep-shearing table	Feb. 22, 1870
110,488	Marshall, Moses S., assignor to John T. and John S. Folson, Somerville, Mass. Washing-machine	Dec. 27, 1870
	Marshall, Oliver W., and Nicholas Clute. (*See* Clute & Marshall.)	
106,380	Marshall, Thomas, Paterson, N. J. Portable gas-pipe vise	Aug. 16, 1870
110,578	Marso, Michael, Chicago, Ill. Folding-lounge	Dec. 27, 1870
103,907	Marstera, Enoch J., Shaw's Flats, Cal. Baling-press	June 7, 1870
106,705	Same. Pruning-shears	Aug. 23, 1870
106,706	Same. Fruit-corer	Aug. 23, 1870
	Marston, Charles L. (*See* Porter, T. W. and H. K., assignors.)	
106,381	Marston, Frank W., Philadelphia, Pa. Corset-spring	Aug. 16, 1870
99,334	Marston, T. P., assignor to self and N. M. Phillips, New York, N. Y. Tag-attachment	Feb. 1, 1870
	Marston, William E., *et al.* (*See* Hawks, Elizabeth, assignor) (Disclaimer.)	
	Martin, Andrew. (*See* Root, John, assignor) (Two cases.)	
106,847	Martin, Anthony S., Washington, D. C. Safety car-brake	Aug. 30, 1870
100,305	Martin, Benjamin Green, Williamsburgh, N. Y. Ice-cream freezer. (Antedated Feb. 14, 1870)	Mar. 1, 1870
4,177	Same. Ice-cream freezer (Reissue)	Nov. 15, 1870
105,348	Martin, Edwin, Springfield, Mass. Metallic cartridge	July 19, 1870
99,098	Martin, Ephraim, and Samuel M. Chittenden, assignors to Daniel D. Chittenden, Baldwinsville, N. Y. Milking-stool	Jan. 25, 1870
102,139	Martin, Eugene, assignor to self and Blaise Soulen, Waterbury, Conn. Coffee-urn	April 19, 1870
	Martin, Henry D., and Samuel Post. (*See* Post & Martin.)	

Alphabetical list of patentees for the year 1870—Continued.

No.	Name, residence, and invention or discovery.	Date.
109,331	Martin, James, Merencl, Mich. Sleigh	Nov. 22, 1870
99,925	Martin, James W., assignor to self and William A. Drown, jr., Philadelphia, Pa. Wood-bending machine	Feb. 15, 1870
107,271	Martin, John F., and William A. Schaffner, Harrisburgh, Pa. Ironing-table	Sept. 13, 1870
104,475	Martin, John H., Columbus, Ohio. Breast-strap fastening for harness	June 21, 1870
4,185	Martin, John H., Salem, N. Y. Sash-holder (Design)	June 28, 1870
107,393	Martin, John H., and Clinton D. Bradshaw, Danville, Ill. Ditcher and grader	Sept. 13, 1870
108,164	Martin, Lucian V. B., Tuscaloosa, Ala. Subsoil-plow	Oct. 11, 1870
	Martin, Lyman. (*See* Pollitt, John, assignor.)	
106,870	Martin, Norman R., Canandaigua, N. Y. Apparatus for evaporating	Aug. 9, 1870
3,631	Martin, Pierre Paul Joseph, France. Cotton-seed huller (Reissue)	Feb. 8, 1870
	Martin, Reune, and Henry G. Thompson. (*See* Howe, Frederic Webster, assignor.)	
104,476	Martin, Rudolph, and Matthew Harner, Taneytown, Md. Machine for boring posts and pointing rails	June 21, 1870
100,648	Martin, Samuel, assignor to self and B. F. Manifold, York, Pa. Water-wheel	Mar. 8, 1870
102,843	Martin, Thomas C., and James Offineer, assignors to Thomas C. Martin, John Taylor, and Daniel Geiselman, Perrysville, Ohio. Trace-buckle	May 10, 1870
	Martin, Timothy A., and John Doyle. (*See* Doyle & Martin.)	
	Martin, William C., administrator of Jacob J. Mann, deceased. (*See* Mann, Jacob J. and Henry F.) (Extension.)	
107,937	Martin, William E., assignor to James D. Martin, Oconee, Ga. Guano-distributor	Oct. 4, 1870
109,366	Martin, William Nelson, Boston, Mass. Binding-attachment for sewing-machines	Nov. 15, 1870
108,379	Martin, William V., Waverly, Ohio. Turbine water-wheel	Oct. 18, 1870
104,612	Martine, Charles F., Boston, Mass. Tuck-creasing mechanism for sewing-machines. (Antedated June 9, 1870)	June 21, 1870
99,579	Martino, John, Philadelphia, Pa. Fender for fire-place stoves	Feb. 8, 1870
99,580	Same. same	Feb. 8, 1870
100,539	Same. Base-burning fire-place heater	Mar. 8, 1870
4,167	Martino, John, and John Currie, assignors to Charles Noble & Co., Philadelphia, Pa. Plate and foot of a "Dexter" cooking-stove. (Antedated May 26, 1870.) (Design)	June 21, 1870
110,259	Martinson, Henry, Hawksville, Canada. Mode of balancing shafts	Dec. 20, 1870
99,781	Martyn, William H., Boston, Mass. Screw-driver	Feb. 15, 1870
108,278	Marvel, James E., Seaford, Del. Work-box	Oct. 11, 1870
101,489	Marvin, Matthias, Salem, Oreg. Self-tightening buckle	April 5, 1870
98,008	Marvin, Walter K., New York, N. Y. Safe	Jan. 4, 1870
109,331	Same. Elevator	Nov. 15, 1870
	Same. (*See* Parmelee, Dubois D., assignor.)	
103,637	Masac, Theophile, Good Hope Plantation, La. Life-boat	May 31, 1870
108,611	Same. Mosquito-bar	Oct. 25, 1870
	Mascroft, Henry C., and Thomas A. Clark. (*See* Clark & Mascroft) (Two cases)	
	Mason & Hamlin Organ Company. (*See* Hamlin, Emmons, assignor) (Design.)	
	Same. same.	
100,541	Mason, Austin Z., assignor to R. B. Robbins, Adrian, Mich. Bevel-jawed vise	Mar. 8, 1870
106,948	Mason, Henry W., Hagerstown, Md. Harvester-cutter	Aug. 30, 1870
107,938	Same. Sulky-plow	Oct. 4, 1870
103,064	Mason, James B., Chapel Hill, N. C. Cold cap-still for the distillation of alcoholic and other liquors	May 17, 1870
104,750	Mason, John A., Keokuk, Iowa. Car-coupling	June 28, 1870
100,306	Mason, John L., New York, N. Y. Fruit-jar	Mar. 1, 1870
102,417	Same. Nursing-bottle	April 26, 1870
102,913	Same. Fruit-jar	May 10, 1870
104,613	Mason, Sylvester G., Rochester, N. Y. Saw-hanging	June 21, 1870
104,044	Mason, Volney W., Providence, R. I. Adjustable hanger for shafting. (Antedated May 30, 1870)	June 7, 1870
109,136	Mason, William, Independence, Oregon. Gang-plow	Nov. 8, 1870
100,649	Mason, William B., Boston, Mass. Flat-iron polisher and holder	Mar. 8, 1870
105,959	Same. Refrigerator	Aug. 2, 1870
101,483	Mason, William D., and Arthur T. Rice, Chicago, Ill. Bail-eye	April 5, 1870
104,614	Mason, William S., Raleigh, N. C. Apparatus for cooling buildings and making ice	June 21, 1870
106,707	Massey, Albert P., Cleveland, Ohio. Straw-cutter	Aug. 23, 1870
106,598	Massey, Gideon B., assignor to Massey Low-Water Detector Company, New York, N. Y. Low-water detector and high-pressure alarm	Aug. 23, 1870
108,804	Massey, Gideon B., New York, N. Y. Liquid-meter	Nov. 1, 1870
	Massey, Stephen. (*See* Crowson, Valenna W., assignor.)	
104,045	Mast, Henry Z., Fork Meeting House, Md. Thill-coupling	June 7, 1870
	Mast, Phineas P., and John H. Thomas. (*See* Thomas & Mast) (Two cases.)	
	Mast, Phineas P., *et al.* (*See* Thomas, Mast & Gardiner) (Reissue.)	
	Masterman, William H., and Orrin Collier. (*See* Collier & Masterman.)	
4,136	Masters, W. H., Princeton, Ill. Solar camera (Reissue)	Sept. 27, 1870
107,936	Masury, John W., Brooklyn, N. Y. Paint-mill	Oct. 4, 1870
109,910	Matheny, Chelton, Greensburgh, Ind. Churn	Dec. 6, 1870
104,389	Mather, Colin, and William Rossetter, England. Warping-machine	June 14, 1870
108,805	Mather, George Radford, England. Apparatus for giving form to wood	Nov. 1, 1870
102,140	Mather, Henry W., New York, N. Y. Rotary pump	April 19, 1870
	Mathes, Philip P., and E. Voigt. (*See* Voigt & Mathes.)	
107,972	Matherrt, Jean Victor, Cleveland, Ohio. Spring-weighing scale	Sept. 13, 1870
107,973	Same. Reversible center-pinion for watches	Sept. 13, 1870
102,141	Mathews, William T., Negaunee, Mich. Brick-kiln	April 19, 1870
98,785	Mathieu, J., France. Casket for jewels, &c	Jan. 11, 1870

Alphabetical list of patentees for the year 1870—Continued.

No.	Name, residence, and invention or discovery.	Date.
107,189	Mathieu, J., France. Case for bottles and glasses	Sept. 6, 1870
105,103	Mathis, James T., and George W. Harrison, Attala County, Miss. Plow	July 5, 1870
105,828	Matteson, Elisha, assignor of two-thirds interest to Abraham Hoagland, Jersey City, N. J. Combined hair curler and crimper	July 26, 1870
	Matthews, Charles W. (*See* Gwathmey, Richard R., assignor.)	
103,915	Matthews, Elbridge G., assignor to F. F. Holbrook, Oakham, Mass. Cutter-stock for swivel-plow	May 17, 1870
108,919	Same.....Swivel-plow	Nov. 1, 1870
	Matthews, Elizabeth, John, jr., and George. (*See* Wilson, James, assignor.)	
	Matthews, Lemuel, and Philester Lee. (*See* Lee & Matthews.)	
	Matthiesson, F. W., & Hegeler. (*See* Hegeler, Edward C., assignor.)	
3,651	Mattice, F. M., Detroit, Mich. File-machine (Reissue)	Feb. 22, 1870
104,046	Mattice, Frederick M., Cleveland, Ohio. Socket-pipe machinery	June 7, 1870
104,615	Same.....Drain-tile machine	June 21, 1870
99,926	Mattison, Judson, Oswego, N. Y. Feed-hopper. (Antedated Feb. 5, 1870)	Feb. 15, 1870
100,780	Mattox, Thomas T., Griffin, Ga. Plow	Mar. 15, 1870
104,751	Matteson, Francis B., assignor to self and William P. Dennis, Rockford, Ill. Lathe	June 28, 1870
106,198	Maulding, Pres, and John U. Fraley, Marshall, Texas. Bedstead-fastening	Aug. 16, 1870
105,340	Maulick, Gottlieb, Trenton, N. J. Saw	July 12, 1870
101,371	Maund, W. L., Milan, Texas. Double pincers	Mar. 29, 1870
105,940	Mauran, William A., Providence, R. I. Manufacture of carpet-lining	Aug. 2, 1870
103,351	Maurice, Charles Camille, New York, N. Y. Printing-press	May 24, 1870
103,216	Maurin, Vve. Adrien, and Gustave Toiray, France. Calendar	May 17, 1870
104,330	Manthé, Henry, assignor to Julien Larru, New York, N. Y. Brick-machine	June 14, 1870
110,058	Maxfield, Allen C, Biddeford, Me. Hair-restorative	Dec. 13, 1870
104,477	Maxfield, Charles A., New York, N. Y. Paper-box machine	June 21, 1870
3,950	Maxim, Hiram S., New York, N. Y. Steam gas-generator (Reissue)	May 3, 1870
99,937	Maxim, Hiram S., assignor to Rodley, McAlister & Co., New York, N. Y. Apparatus for generating gas for head-lights	Feb. 15, 1870
	Maxson, Charles, and Thomas Isherwood. (*See* Nuttall, James, assignor.)	
	Maxson, John, and Warren Kinyon. (*See* Kinyon & Maxson.)	
	Maxson, John T. (*See* De Witt, Thomas, assignor) (Three cases.)	
108,373	Maxwell, Alonzo S., Dixon, Ill. Bakers' table	Oct. 18, 1870
104,616	Maxwell, James R., and Ezra Cope, Cincinnati, Ohio. Steam-pump	June 21, 1870
103,568	Maxwell, Joseph W., Louisville, Ky. Machine for folding powders	May 3, 1870
3,887	Maxwell, Obadiah C., Thomas L. Neal, and Charles L. Long, Dayton, Ohio. Trade-mark (Design)	Mar. 8, 1870
102,290	Maxwell, V. L., Wilkesbarre, Pa. Faucet-lock. (Antedated April 18, 1870)	April 26, 1870
110,483	May, Edwin, Indianapolis, Ind. Construction of prisons	Dec. 27, 1870
104,885	May, Edwin, Indianapolis, Ind. Construction of prison-walls	June 28, 1870
	May, Francis D., *et al.* (*See* Mead, May & Hoyt.)	
	May, George W. (*See* Smith, William James, assignor.)	
100,914	May, James B., Magnolia, Ohio. Fruit-drier	Mar. 15, 1870
99,216	May, Oliver T., Canastota, N. Y. Non-corrosive metallic roofing	Jan. 25, 1870
109,137	May, Thomas, Brooklyn, N. Y. Variable cut-off apparatus	Nov. 8, 1870
102,560	Mayben, John, Milroy, Pa. Farm-gate. (Antedated April 23, 1870)	May 3, 1870
108,495	Maydole, David, Norwich, N. Y. Spring for piston-packing	Aug. 16, 1870
105,471	Mayhew, James, West Tisbury, Mass. Churn	July 19, 1870
110,579	Mayhew, Lorenzo, Saratoga Springs, N. Y. Axle-skein	Dec. 27, 1870
107,516	Mayhew, William A., Peabody, Mass. Fruit and vegetable slicer	Sept. 20, 1870
	Maynard, Edward, Washington, D. C. Cartridge (Extension)	June 4, 1870
4,424	Maynard, George H., Berlin, Mass. Shoe (Design)	Oct. 18, 1870
105,228	Maynard, James A., Newtonville, Mass. Carriage and car wheel and axle-box	July 12, 1870
108,612	Same.....Hub for carriages	Oct. 25, 1870
109,436	Mayo, Charles H., Bath, Me. Sawing-machine	Nov. 22, 1870
104,153	Mayo, Israel C., Gloucester, Mass. Transparent shield	June 14, 1870
102,692	Mayo, Israel C., assignor to self and John J. Currier, Gloucester, Mass. Lantern-globe	May 3, 1870
101,280	Mayo, Robert H., Paris, Texas. Apparatus for separating the seed from fruit-pulp	Mar. 29, 1870
108,806	Mayo, Uriel K., Boston, Mass. Manufacture of gold foil for dental purposes	Nov. 1, 1870
102,291	Mayo, William S., Poughkeepsie, N. Y. Trunk	April 26, 1870
102,292	Same.....same	April 26, 1870
110,484	Mayor, Pierre A., New York, N. Y. Water-faucet	Dec. 27, 1870
110,360	Mayor, Thomas, Providence, R. I. Flier for spinning	Dec. 20, 1870
	Mayoux, A. (*See* Purington, Turner C., assignor.)	
	Maye & Bliss. (*See* Hamlin, Albert, assignor) (Two cases.)	
	Maye, Bliss & Co. (*See* Bliss, Eliphalet W., assignor.)	
98,975	Maye, Peter & Price, Clearfield, Pa. Medical compound	Jan. 18, 1870
99,453	McAdams, John, Brooklyn, N. Y. Hinge for show-cases	Feb. 1, 1870
104,047	Same.....Ruling-machine	June 7, 1870
104,478	McAdams, William, Newton, Mass. Journal-bearing for calendar-rolls	June 21, 1870
102,088	McAleer, George, Worcester, Mass. Folding-chair	April 19, 1870
105,478	Same.....same	July 19, 1870
101,638	McAlister, Charles J., Chicago, Ill. Flooring. (Antedated March 24, 1870)	April 5, 1870
104,175	Same.....Tassel. (Antedated June 8, 1870)	June 14, 1870
104,176	Same.....Sofa and bedstead	June 14, 1870
104,975	McAllaster, Daniel, Malden, Mass. Miter-box and miter-saw	July 5, 1870
	McAllister, Charles. (*See* Wallace, William, assignor.)	
	McAllister, Henry, jr., administrator. (*See* Player, John) (Two cases.)	

Alphabetical list of patentees for the year 1870—Continued.

No.	Name, residence, and invention or discovery.	Date.
109,930	McAllister, William, Lawrence, Mass. Flock-machine	Dec. 6, 1870
101,836	McAlpin, Angus, Savannah, Ga. Brick and other mold	April 12, 1870
107,517	McAnulty, Joseph, Bentley, Ill. Hedge-trimmer	Sept. 20, 1870
108,930	McArthur, Duncan, assignor to Sargent & Co., New Haven, Conn. Door-bolt	Nov. 1, 1870
	McArthur, Thomas J., and Isaac W. Parmenter. (*See* Geraghty, Michael F., assignor.)	
104,048	McArthur, William, assignor to self and James Akin Smith, Philadelphia, Pa. Spring bed-bottom	June 7, 1870
101,484	McAtee, Morton S., Chester, Ill. Water-elevator	April 5, 1870
102,613	McAuley, Henry W., Sterling, Wis. Nut-lock	Oct. 25, 1870
109,031	McAuliff, John D., St. Louis, Mo. Device for fastening desks, seats, &c., to floors. (Antedated Oct. 28, 1870)	Nov. 8, 1870
100,171	McAvoy, Hugh L., assignor to self and Samuel Ault, Baltimore, Md. Extensible gas-tube for chandeliers. (Antedated Feb. 10, 1870)	Feb. 22, 1870
	McBlair, J. E. (*See* Shiver, Elisha, assignor) (Two cases.)	
	McBride, William I. (*See* Cocker, Peter, assignor.)	
100,051	McCaffery, James, Waterloo, Iowa. Harvester	Feb. 22, 1870
103,217	McCall, Edwin R., Simcoe, Canada. Harvester-rake	May 17, 1870
	McCallister, J. P. (*See* Franklin, Jonathan H., assignor.)	
	McCallum, Andrew. (*See* Fowler, Elisha M., assignor.)	
	McCallum, Crease & Sloan. (*See* Heald, Alfred, assignor) (Six cases) (Design.)	
105,104	McCargar, Tyrus, assignor to self and Simeon P. Peters, Masonville, Iowa. Spring catch-bolt	July 5, 1870
104,049	McCarter, Arthur, Salem, Ohio. Meat-chopper	June 7, 1870
	McCarthy, Daniel O. (*See* Trump, Isaac, assignor.)	
103,218	McCarthy, Edmund P., San Francisco, Cal. Manufacture of illuminating-gas	May 17, 1870
104,866	McCarthy, William C., Pittsburgh, Pa. Apparatus for cleaning cess-pools, vaults, privies, &c	June 28, 1870
107,940	McCheaney, Henry, assignor to self and Joseph W. Clark, Buffalo, N. Y. Ironing-table	Oct. 4, 1870
101,897	McCheaney, Reuben, Birmingham, Conn. Scroll-saw	April 12, 1870
108,931	McCheaney, Reuben, assignor to self, Thomas L. and Sidney Cornell, Birmingham, Conn. Scroll-saw	Nov. 1, 1870
	McClary, T. J., and George O. Wickers. (*See* Wickers & McClary.)	
101,898	McClean, John, New Orleans, La. Dredging-machine	April 12, 1870
104,177	McCleane, George F., Pittsburgh, Pa. Four-high roll for rolling metal	June 14, 1870
	McCleery, Samuel, and E. H. Shoemaker. (*See* Shoemaker & McCleery.)	
102,023	McClellan, Felix G., Attica, Ohio. Combined hay-rack and wagon-box	April 19, 1870
109,640	McClelland, Felix G., Attica, Ohio. Bolt. (Antedated Nov. 19, 1870)	Nov. 29, 1870
104,479	McClelland, John, Washington, D. C. Device for molding and casting pipe	June 21, 1870
105,823	McClelland, John A., Louisville, Ky. Process for coating objects with collodion and its compounds. (Antedated July 23, 1870)	July 26, 1870
99,691	McClelland, Robert W., Springfield, Ill. Carriage-wheel	Feb. 8, 1870
101,752	Same.....Horse hay-rake. (Antedated April 4, 1870)	April 12, 1870
	McClintock, John A., and Henry Shoemaker. (*See* Shoemaker & McClintock.)	
107,073	McClunie, Thomas, Hartford, Conn. Flower-pot, vase, and basket	Sept. 6, 1870
	McClure, A. K., and James M. Sellers. (*See* Vaughn, Aaron C., assignor.)	
99,335	McClure, Jacob, assignor to C. D. and E. J. Copp, Nashua, N. H. Pencil-sharpener	Feb. 1, 1870
103,219	McClure, Jacob W., Jefferson City, Mo. Churn-dasher	May 17, 1870
105,220	McClure, Jones K., Cornersville, Miss. Combined seeder, harrow, cultivator, and planter	July 12, 1870
105,473	McClure, Joseph A., Mount Carroll, Ill. Corn-planter	July 19, 1870
108,614	McClure, William B., Alexandria, Va. Cart-saddle	Oct. 18, 1870
101,290	McClure, William D., Constitution, Ohio. Stone-drill	Mar. 29, 1870
99,928	McColl, Mary Jane, Chicago, Ill. Machine for cutting wax for artificial flowers, &c	Feb. 15, 1870
100,540	Same.....Compound for the manufacture of wax flowers	Mar. 8, 1870
109,437	McCollum, Peter, Fayette, Mo. Hand corn-planter. (Antedated Nov. 17, 1870)	Nov. 22, 1870
	McComb, David, deceased, by Mary Ann McComb, administratrix, Memphis, Tenn. Non-elastic band for bales of cotton and other fibrous materials. (Extension)	June 13, 1870
109,438	McComber, Joel, Rockport, Ill. Method of constructing boots and shoes	Nov. 22, 1870
	McCombs, Robert, and Philemon Merryman. (*See* Merryman & McCombs.)	
107,074	McConaughey, Robert A., assignor to James Reynolds, sr., Ripley, Ohio. Field-roller	Sept. 6, 1870
103,220	McConaughey, Thomas B., and James Adams, Newark, Del. Nut-lock	May 17, 1870
103,480	Same.....Railway-rail joint-fastening	May 24, 1870
107,274	McConnell, Franklin, Dowagiac, Mich. Piston-packing	Sept. 13, 1870
107,394	McConnell, James H., Beaver Falls, Pa. Cooking-stove	Sept. 13, 1870
100,431	McConnell, John, Tyro, Ohio. Fence	Mar. 1, 1870
104,617	McConnell, William, Clarksville, N. J. Mirror and picture frame	June 21, 1870
	McCool, W. L., and W. K. Folts. (*See* Folts & McCool.)	
	McCord & Wheatley. (*See* Donnellan, Charles E., assignor.)	
101,485	McCord, John, assignor to self and John Bryce, East Birmingham, Pa. Plunger for glass molds	April 5, 1870
	McCord, Joseph S., and John H. Gerhart. (*See* Gerhart & McCord.)	
	McCormick, C. H., & Brother. (*See* McCormick, Baker & Erpelding, assignors.)	
	McCormick, Cyrus H. and Leander J. (*See* Young, McClintock, jr., assignor) (Three cases) (Reissue.)	

Alphabetical list of patentees for the year 1870—Continued.

No.	Name, residence, and invention or discovery.	Date.
3,804	McCormick, James, Boston, Mass. Brewing ale, beer, &c. (Reissue)	Jan. 25, 1870
101,031	McCormick, John B., Dayton, Ohio. Harvester	Mar. 22, 1870
107,275	McCormick, John G., Louisville, Ky. Tight and loose pulley	Sept. 13, 1870
104,331	McCormick, L. J., William R. Baker, and L. Erpelding, assignors to C. H. McCormick & Brother, Chicago, Ill. Harvester	June 14, 1870
104,618	McCormick, Leander J., and William R. Baker, assignors to C. H. McCormick & Brother, Chicago, Ill. Harvester	June 21, 1870
108,922	Same. same	Nov. 1, 1870
107,700	McCormick, Patrick, New York, N. Y. Washer-cutter	Sept. 27, 1870
106,509	McCormick, Riley T., Green Castle Junction, Ind. Churn	Aug. 23, 1870
109,536	McCormick, Thomas J., *et al.* (*See* Flynn, William H., assignor.)	Nov. 22, 1870
108,897	McCormick, William, Philadelphia, Pa. Awning for horses	Nov. 1, 1870
90,929	McCormick, William, and Arthur Maginnis. (*See* Maginnis & McCormick.)	Feb. 15, 1870
110,485	McCormick, William H., assignor to self and John T. Williams, Muncie, Ind. Weighing-scale	Dec. 27, 1870
106,708	McCormick, J. B., Dayton, Ohio. Harvester	Aug. 23, 1870
106,383	McCoy, Amos D., Alexandria, La. Camp-bedstead. (Antedated Dec. 16, 1870)	Aug. 16, 1870
108,499	McCoy, John, assignor to self and Carbon Stove Company, Burlington, N. J. Hot-air furnace	Oct. 18, 1870
105,350	McCrackin, Edwin D., New York, N. Y. Galvanic battery	July 12, 1870
105,351	Same. Apparatus for separating gas-tar and ammoniacal liquors	July 12, 1870
4,101	McCracken, Edwin D., assignor to self, Henry J. Newton, Henry P. Kirkland, and Joseph R. Husson, New York, N. Y. Gas-retort	Aug. 16, 1870
104,332	Same. Manufacture of illuminating-gas	June 14, 1870
4,206	McCracken, Edwin D. (*See* Pierson, Edward M., assignor.)	July 5, 1870
102,024	McCreight, Alexander, Tranquility, Ohio. Saw-mill (Reissue)	April 19, 1870
102,844	McCrean, Eli, *et al.* (*See* Ham, John D., assignor.)	May 10, 1870
104,867	McCrory, Thomas, Fayette City, Pa. Coal-car	June 28, 1870
104,868	McCune, William A. (*See* Brewbaker, Isaac, assignor.)	June 28, 1870
104,869	McCulloch, William, *et al.* (*See* Van Slooten, Hunt & McCulloch.)	Aug. 9, 1870
105,183	McCullough, James K., and Frank W. Smith, Burlington, Iowa. Brace for school-desks (Design)	Mar. 22, 1870
101,144	McCully, Robert, Philadelphia, Pa. Fruit-jar. (Antedated April 2, 1870)	Sept. 13, 1870
107,276	McCune, Thomas W., Pittsburgh, Pa. Tuyere for blast-furnaces	May 3, 1870
104,693	McCurdy, David, Ottawa, Ohio. Bridge. (Antedated June 17, 1870)	June 28, 1870
100,307	Same. same. (Antedated June 17, 1870)	June 28, 1870
104,869	Same. same. (Antedated June 17, 1870)	Aug. 9, 1870
105,183	Same. Fence	Mar. 22, 1870
101,144	McDaniel, George W., assignor to self, Charles G. Fisher, and Nisbet Turnbull, Georgetown, D. C. Money-box, &c.	Sept. 13, 1870
107,276	McDaniels, Francis, assignor to Charles D. Macqueen, Philadelphia, Pa. Lamp	May 3, 1870
104,693	McDermott, James, Cleveland, Ohio. Machine for splitting grindstones	Mar. 1, 1870
100,307	McDevitt, Martin, Hampton, Va. Liquid-measure	Aug. 16, 1870
106,384	McDonald, Alvin, and James M. White, Washington, Ill. Paint-brush	Nov. 1, 1870
108,923	McDonald, Alvin, assignor of one-half interest to James M. White, Washington, Ill. Paint-brush	May 24, 1870
103,481	McDonald, Andrew Y., Dubuque, Iowa. Pump	Mar. 29, 1870
101,201	McDonald, Hugh, Pittsburgh, Pa. Manufacture of cast steel	Mar. 8, 1870
100,650	McDonald, J. M., McCoysville, Pa. Horse hay-fork	Aug. 23, 1870
106,600	McDonald, Telford & Co., J. D., *et al.* (*See* Crawford & Clarke, assignors.)	Nov. 22, 1870
109,533	McDonnell, Patrick E., Lyons, Ill. Motive power for driving street-cars	Jan. 11, 1870
98,699	McDongall, James T., San Francisco, Cal. Apparatus for collecting precious metals	Feb. 8, 1870
99,693	McDowell, H. S., Columbus, Texas. Bridge	Feb. 22, 1870
100,173	McDowell, William L., Philadelphia, Pa. Register for air-flues	Feb. 8, 1870
99,581	Same. Implement for under-cutting sand-cores and flasks	Dec. 20, 1870
110,381	McDowell, William P. (*See* Zantzinger, Augustus, assignor.)	Nov. 8, 1870
109,032	McElevey, G. H., New Castle, Pa. Fire-place grate	June 7, 1870
103,908	McEwen, Joseph C., Micanopy, Fla. Table-fan	Dec. 13, 1870
110,059	McFadden, William W., Ennisville, Pa. Horse hay-fork	Feb. 15, 1870
3,814	McFall, Hamilton Bell, Mount Solon, Va. Churn	May 17, 1870
100,781	McFarland, David, assignor to A. M. Ingersoll, New York, N. Y. Life-raft	Jan. 11, 1870
108,038	McFarland, John. (*See* Bishop, George W., assignor.)	Mar. 15, 1870
107,794	McFarland, William, Williamsburgh, N. Y. Safe (Design)	Oct. 4, 1870
99,939	Same. Burglar-proof safe	Sept. 27, 1870
103,065	McFarlane, Duncan, and Samuel Campbell. (*See* Campbell & McFarlane.)	Feb. 15, 1870
109,570	McFatrick, James, Lena, Ill. Addressing-machine	May 17, 1870
109,641	McFeely, Bernard J., Chestnut Spring, Pa. Apple corer and quarterer	May 3, 1870
99,780	McGeary, Thomas J., Newark, N. J. Ornamental cornice	Nov. 22, 1870
109,231	McGee, Joseph A., Sharpsville, Ind. Horse hay-rake	Jan. 11, 1870
109,571	McGeorge, H. D., *et al.* (*See* Guseman, Davis & McGeorge.)	May 3, 1870
106,848	McGhee, James. (*See* Whitker, Daniel D., assignor.)	Aug. 30, 1870
	McGill, John, assignor to Benjamin S. Goodwin and Hiram Whitney, Boston, Mass. Compound for dressing textile fabrics	Nov. 29, 1870
	McGill, John W., Washington, D. C. Hat	Jan. 11, 1870
	McGill, P. M., Washington, D. C. Artificial fuel	Nov. 15, 1870
	Same. same	May 3, 1870
	McGinnis, John, *et al.* (*See* Mealy, McGinnis & Cunningham.)	Aug. 30, 1870
	McGinniss, William, Auburn Township, Pa. Water-motor	
	McGlothlen, George H., Chariton, Iowa. Churn	

Alphabetical list of patentees for the year 1870—Continued.

No.	Name, residence, and invention or discovery.	Date.
101,486	McGlumphy, John S., Wind Ridge, Wis. Sash-fastener	April 5, 1870
	McGonegal, Henry G. (*See* Fowler, Edgar M., assignor.)	
	McGowan, John H. (*See* Caldwell, David B., assignor.)	
109,138	Same. Cincinnati, Ohio. Pitman	Nov. 8, 1870
109,339	Same. Pipe-coupling	Nov. 15, 1870
109,534	Same. Pump	Nov. 22, 1870
106,849	McGowan, Robert L., assignor to self, Charles A. Woods, John Fletcher, and Thomas Johnston, New Brighton, Pa. Combined lock-nut and splice-bar	Aug. 30, 1870
	McGrath, Theodore T., and John Russell. (*See* Russell & McGrath.)	
109,921	McGregor, France B., Pontiac, Mich. Piano-action	Dec. 6, 1870
102,025	McGregor, Rob Roy, Covington, Tenn. Axles and their boxing	April 19, 1870
103,066	McGregor, William, Chicago, Ill. Chair, bedstead, and crib	May 17, 1870
105,586	McGrew, John, West Columbia, W. Va. Machine for packing salt	July 19, 1870
108,496	McGuire, Alexander, Winchester, Conn. Handle for caskets	Aug. 16, 1870
102,845	McHench, William H., Cobleskill, N. Y. Ladder	May 10, 1870
107,795	McHenry, Green, Louisa, Ky. Machine for ruling and copying	Sept. 27, 1870
107,701	McIlhenny, Edmund, New Iberia, La. Pepper-sauce	Sept. 27, 1870
105,105	McIlhenny, George A., Washington, D. C. Lock for pipe-couplings	July 5, 1870
98,987	McIlvain, Jeremiah, Churchville, Md. Journal-box	Jan. 18, 1870
108,615	McIlvaine, Charles, Philadelphia, Pa. Copying-ink for printing	Oct. 25, 1870
103,482	McIlwain, Henry C., and Alonzo Brumfield, Connersville, Ind. Rotary blower	May 24, 1870
101,372	McInnis, William N., Northumberland, Pa. Electro-magnetic annunciator	Mar. 29, 1870
108,039	McInroy, Donald, Brooklyn, E. D., N. Y. Bustle	Oct. 4, 1870
99,099	McIntire, James, assignor to W. C. Dickey, Hopewell Cotton Works, Pa. Cord-making machine. (Antedated Jan. 14, 1870)	Jan. 25, 1870
101,039	McIntosh, Elmer D., Washington, D. C. Brake to prevent reverse motion of driving-wheels in sewing-machines	April 5, 1870
	McIntosh, Henry P., *et al.* (*See* Jackson, Richard A., assignor.)	
	McIntosh, Oliver T., *et al.* (*See* Ryerson, Stancliff & McIntosh.)	
	Same. (*See* Ryerson & Stancliff, assignors.)	
109,922	McIntyire, William, New York, N. Y. Padlock	Dec. 6, 1870
104,870	McIntyre, John, Syracuse, N. Y. Mortar-mill	June 28, 1870
110,486	McKay, Angus, Montreal, Canada. Automatic door-bolt	Dec. 27, 1870
102,393	McKay, Archibald L., Bolton, Miss. Gas-generator	April 26, 1870
102,142	McKay, Ferdinand C. D., Elmira, N. Y. Self-winding and balancing curtain-fixture	April 19, 1870
	McKay, Gordon, trustee of the McKay Sewing-Machine Association. (*See* Reed, T. K., assignor.)	
	McKay, Gordon, trustee. (*See* Gilson, John, assignor.)	
	Same. (*See* Glidden, Charles W., assignor.)	
	Same. (*See* Spinney, William F., assignor.)	
104,050	McKay, William, assignor to self and Charles E. Bayley, Newburyport, Mass. Faucets	June 7, 1870
100,173	McKean, Edward T., Hammonton, N. J. Car-coupling	Feb. 22, 1870
105,352	McKean, Edwin B., Nashville, Tenn. Cask-gauging instrument	July 12, 1870
	Same. (*See* Williamson, George S., assignor.)	
	McKee & Brothers. (*See* Ballinger, Charles, assignor.)	
103,483	McKee, James M., Hunt's Station, Ohio. Fence	May 24, 1870
	McKee, James W., and A. C. Hallam. (*See* Hallam & McKee.)	
107,075	McKee, Samuel, Pittsburgh, Pa. Telegraph-insulator	Sept. 6, 1860
	McKee, William. (*See* Huntington, Abel H., assignor.)	
109,535	McKee, William P., Cincinnati, Ohio. Fluting-machine	Nov. 22, 1870
	McKeen, Benjamin, and Handley Starratt. (*See* Starratt, James, assignor.)	
107,796	McKellar, Duncan, Selma, Ala. Planter and distributer	Sept. 27, 1870
101,640	McKelvey, S. P., assignor to self and G. W. Snook, Farmer City, Ill. Ditching-machine	April 5, 1870
105,106	McKenna, Alexander, John, and Thomas, Pittsburgh, Pa. Hydrant	July 5, 1870
103,638	McKenna, Robert, White's Station, Tenn. Cotton-gin	May 31, 1870
108,500	Same. same	Oct. 18, 1870
102,894	McKenney, Alondo, Portland, Me. Shoe-fastener	May 3, 1870
105,707	McKenzie, Duncan, Brooklyn, N. Y. Wood-pavement	July 26, 1870
109,139	Same. same	Nov. 8, 1870
3,929	McKenzie, Duncan, assignor to Mary Ann Elizabeth McKenzie, Brooklyn, N. Y. Bakers' oven (Reissue)	April 19, 1870
100,432	McKenzie, George, Scotland. Manufacture of illuminating-gas from coal and other materials	Mar. 1, 1870
100,433	Same. Compound for the manufacture of illuminating-gas	Mar. 1, 1870
109,238	McKenzie, George, Zanesville, Ohio. Elevator	Nov. 15, 1870
102,846	McKeon, Abram B., Rutherford Park, N. J. Pavement	May 10, 1870
109,333	Same. Concrete pavement. (Antedated Nov. 5, 1870.)	Nov. 15, 1870
110,261	McKeone, Richard J., Inverness, Mich. Platform weighing-scale	Dec. 20, 1870
	McKeone, Van Haagen & Co. (*See* Van Haagen, Anthony, assignor.) (Design.)	
102,934	McKernan, James H., Indianapolis, Ind. Mode of operating shutters for hatchways	May 10 1870
	McKibben, James, and Frank A. Dann. (*See* Dann & McKibben.)	
	McKinley, Robert, administrator. (*See* Crane, Peter, jr.)	
101,145	McKinnon, John A., Selma, Ala. Medical compound for the cure of colic	Mar. 22, 1870
109,033	McKown, Alexander W., Honesdale, Pa. Spring for wagons	Nov. 8, 1870
	McLagon & Stevens. (*See* Pfleghar, F. P., assignor) (Two cases.)	
	Same. (*See* Root, John, assignor.)	

Alphabetical list of patentees for the year 1870—Continued.

No.	Name, residence, and invention or discovery.	Date.
109,233	McLain, James B., assignor to Henry M. Wyeth, Newark, Ohio. Device for delivering mail-bags to cars	Nov. 15, 1870
	McLanahan, William W., and Georg. Thomas. (*See* Thomas & McLanahan.)	
	McLane, Daniel H., and John F. Thomas. (*See* Thomas & McLane.)	
110,060	McLaren, John C., Montreal, Canada. Belt-splice point-finisher	Dec. 13, 1870
	McLaughlin, Edward, and Ernest G. Chormann. (*See* Chormann & McLaughlin.)	
96,787	McLaughlin, Francis, deceased, (John Dwyer, administrator,) Boston, Mass. Brush	Jan. 11, 1870
108,374	McLaughlin, Ira, East Arlington, Vt. Drill and holder	Oct. 18, 1870
107,518	McLaughlin, John, Steubenville, Ohio. Clothes-wringer	Sept. 20, 1870
106,850	McLaughlin, John, assignor to self and Jacob Apple, Philadelphia, Pa. Molding-flask	Aug. 30, 1870
	McLaughlin, John, *et al.* (*See* Curry, John Mayre, assignor.)	
104,178	McLaughlin, John C., Pittsburgh, Pa. Steam-boiler blow-off pipe	June 14, 1870
108,501	McLaughlin, Samuel, Philadelphia, Pa. Slide-door for heating and puddling furnaces. (Antedated Oct. 8, 1870)	Oct. 18, 1870
100,300	McLaughlin, Samuel, assignor to self and Benjamin R. Caskey, Philadelphia, Pa. Puddling-furnace	Mar. 1, 1870
106,184	McLaughlin, William, Jersey City, N. J. Grain-scouring machine	Aug. 9, 1870
	McLean, Henry, *et al.* (*See* Jarrold, Edgar T., assignor.)	
105,961	McLean, John N., Philadelphia, Pa. Sewing-machine	Aug. 2, 1870
	McLean, John N., *et al.* (*See* Benner, Joseph, assignor.)	
	McLellan, George F., and George B. Armstrong. (*See* Armstrong & McLellan.)	
	McLellan, R. W. B., *et al.* (*See* Fitch, Devoe & McLellan.)	
103,067	McLendon, Willis M., Greenville, Ga. Combined cotton-seed planter and fertiliser-distributer	May 17, 1870
103,484	McLeod, Alexander, and George Granville Lobdell, Wilmington, Del. Securing car-wheels to axles	May 24, 1870
	McLeod, Charles A. (*See* Bussey, Enoch, assignor) (Reissue.)	
99,931	McLeod, Norman, Clio, S. C. Feed-cutter and thrasher	Feb. 15, 1870
	McLeod, William G., *et al.* (*See* Berry, William, assignor.)	
	McLure, John, and John B., *et al.* (*See* Baird, James M., assignor.)	
	McLure, John, and Joseph A. Connelly. (*See* Connelly & McLure.)	
99,434	McMahon, Thomas, Williamsburgh, N. Y. Combined faucet measure and funnel	Feb. 1, 1870
104,179	McManus, James C., Providence, R. I. Crucible-stand for fusing metals	June 14, 1870
103,900	McManus, Peter, and George W. Latimer, Detroit, Mich. Paste for polishing metals	June 7, 1870
101,497	McMaster, H. D., and Abraham Dale, Ireland. Governor for steam-engines	April 5, 1870
98,788	McMaster, J. M., Rochester, N. J. Car-brake and starter	Jan. 11, 1870
	McMeehan, James, *et al.* (*See* Lloyd, George A., assignor.)	
	McMeehan, James. (*See* Bidwell, James, assignor.)	
110,269	McMichael, John, assignor to Wright Brothers & Co., Philadelphia, Pa. Machine for bending wood	Dec. 20, 1870
102,573	McMillan, James, Fairport N. Y. Tube-well. (Antedated Feb. 15, 1870)	May 3, 1870
106,709	Same.....Perinton, N. Y. Drain-tube	Aug. 23, 1870
104,180	McMillan, James W., Granger, Ohio. Milk-cooler	June 14, 1870
105,824	McMillan, William H., and David Morris, assignors to Morris, Tasker & Co., Philadelphia, Pa. Turning-device	July 26, 1870
106,365	McMillen, G. M. L., Dayton, Ohio. Horse hay-rake	Aug. 16, 1870
100,309	McMillin, Emerson, Ironton, Ohio. Purification of coal-gas	Mar. 1, 1870
109,695	McMillin, James, Elploy, Ohio. Attachment of pole or shafts to wheeled vehicles	May 3, 1870
99,562	McMonnies, William, Brooklyn, N. Y. Grate-bar	Feb. 8, 1870
	McMullen, James, *et al.* (*See* Himmer, Vitalis, assignor) (Two cases.)	
104,619	McMurtry, John, Mount Sterling, Ky. Hardening magnesian limestone	June 21, 1870
102,696	McNair, David A., Washington, D. C. Seal-lock	May 3, 1870
103,221	McNary, William H., Brooklyn, N. Y. Counting-register	May 17, 1870
110,322	McNaughten, William, Utica, Ohio. Elevator for merchandise. (Antedated Dec. 9, 1870)	Dec. 20, 1870
100,543	McOmber, Abner, and Miss Ward, Schenectady, N. Y. Instrument for coupling railroad-cars	Mar. 8, 1870
100,434	McPhail, James, Charles City, Iowa. Grain-fan	Mar. 1, 1870
104,955	McPheeters, Archibald A. and Robert P., Arbor Hill, Va. Water elevator and carrier	May 10, 1870
107,737	McPherson, Daniel, Caledonia, N. Y. Grain-binder	Sept. 27, 1870
	McPherson, David, and Charles Thayer. (*See* Thayer & McPherson.)	
100,174	McPherson, John, Baltimore, Md. Soldering-furnace	Feb. 22, 1870
	McPherson, William, *et al.* (*See* Wood, Enoch, assignor.)	
	McQuide, James. (*See* Marchbank, John, assignor) (Reissue.)	
106,601	McRae, Daniel M., Webberville, Texas. Cotton-picker	Aug. 23, 1870
106,602	McSherry, Daniel R., Dayton, Ohio. Seeding-machine	Aug. 23, 1870
104,976	McSwain, Moses S., Pole Grove, Wis. Water-elevator	July 5, 1870
	Meacham, William H., *et al.* (*See* Frey, Franklin, assignor.)	
105,353	Mead, David, and Ezra W. Watson, Danversport, Mass. Pegging-jack	July 12, 1870
105,708	Mead, Edwin D., Shortsville, N. Y. Rotary engine	July 26, 1870
109,642	Mead, Melville E., Darien, Conn. Chimney-top	Nov. 29, 1870
98,511	Mead, Theodore H., Boston, Mass. Cruet	Jan. 4, 1870
107,395	Mead, Walt, and George E. Starbuck, Chestertown, N. Y. Provision-safe	Sept. 13, 1870
110,150	Mead, Walt, Francis D. May, and Rufus L. Hoyt, Chestertown, N. Y. Spring-seat for vehicles	Dec. 13, 1870

Alphabetical list of patentees for the year 1870—Continued.

No.	Name, residence, and invention or discovery.	Date.
101,292	Mead, William S., New York, N. Y. Sewing-machine. (Antedated March 17, 1870)	Mar 29, 1870
110,661	Meader, George and Charles, Prairie Center, Ill. Field corn-picking and husking machine	Dec. 13, 1870
104,499	Meaders, Galen, assignor to self and Esael Weissinger, Jeffersonville, Ky. Hay gatherer and carrier	June 21, 1870
110,580	Meadows, William Henry, McMinnville, Tenn. Car-coupling	Dec. 27, 1870
101,293	Meany, Michael, John McGinnis, and William Cunningham, Brooklyn, N. Y. Cornice-mold	Mar. 29, 1870
108,806	Mearns, Hugh, North Fork, Ky. Bleaching tobacco	Nov. 1, 1870
103,485	Mecay, Samuel P., Kilbourne, Ohio. Horse hay-fork	May 24, 1870
	Medaras, William S. (*See* Higgins, James, assignor.)	
101,294	Medbery, W. D., Bangor, Me. Press and strainer combined	Mar. 29, 1870
	Mee, Charles, and S. Bentley. (*See* Bentley & Mee.)	
106,710	Meech, Harrison B., Fort Edward, N. Y. Manufacture of paper-pulp from wood	Aug. 23, 1870
106,711	Same.....Reducing and bleaching paper-stock	Aug. 23, 1870
	Meech, William H., and James B. Slusser. (*See* Slusser & Meech.)	
106,712	Meehan, James, Covington, Ky. Lubricator	Aug. 23, 1870
	Meeker, William Lewis, and Andrew Jackson Wight. (*See* Wight & Jackson.)	
101,373	Mefford, David M., Norwalk, Ohio. Preserving vegetables, fruits, &c.	Mar. 29, 1870
106,071	Same.....Machine for grinding hand-saw blades	Aug. 2, 1870
105,107	Mehary, William James, Philadelphia, Pa. Locomotive smoke-stack	July 5, 1870
103,223	Meigs, George F., assignor to self and Retire C. Sturges, Boston, Mass. Gas-heater	May 17, 1870
104,630	Meigs, Edmund H., assignor to the Roys & Wilcox Company, East Berlin, Conn. Moulders' rammer	June 21, 1870
	Meigs, E. K. (*See* Richard, William, assignor.)	
103,223	Meigs, Nathan J., assignor to self and E. P. Merriman, West Haven, Conn. Sash-holder	May 17, 1870
109,643	Meigs, Oliver Carpenter, Dubuque, Iowa. Gauge for gang-saws	Nov. 29, 1870
108,502	Meikle, Thomas, Louisville, Ky. Die for swaging wrenches	Oct. 18, 1870
102,847	Meiners, Cornelius, Indianapolis, Ind. Head-block of saw mills	May 10, 1870
105,587	Meissner, Julius H., Pittsburgh, Pa. Base-burning stove	July 19, 1870
	Melcher, Charles, John, Charles H., George W., and William H. (*See* Scott, George, assignor.)	
103,068	Melendy, Bryant H., Manchester, N. H. Combined door-fastener and key-ring	May 17, 1870
105,474	Same.....Combined key-ring and door-fastener	July 19, 1870
3,899	Mellen, George H., New York, N. Y. Childrens' carriage (Design)	Mar. 15, 1870
101,295	Same.....same	Mar. 29, 1870
108,809	Same.....Meat-chopper	Nov. 1, 1870
105,108	Mellen, Henry H., Boonville, Ind. Saw-filing machine	July 5, 1870
102,294	Mellen, Joshua E., Elisha Van Sandt, Adrian, Mich., and Milton J. Palmer, Syracuse, N. Y., assignors to William Nixon, Elisha Van Sandt, and Milton J. Palmer. Attachment for sewing-machines	April 26, 1870
100,543	Meller, William, assignor to self and Joseph Sutton, McKeesport, Pa. Railroad-car heater	Mar. 8, 1870
108,279	Mellinger, John, Greensburgh, Pa. Harrow	Oct. 11, 1870
110,487	Mellor, James B., New Hope, Mo., Churn-dasher	Dec. 27, 1870
107,519	Mellor, James W., Philadelphia, Pa. Music-leaf turner	Sept. 20, 1870
104,871	Melone, Thomas L., Mount Gilead, Ohio. Sewing-machine	June 28, 1870
104,752	Melton, Elijah, Flemingsburgh, Ky. Still for spirits	June 28, 1870
104,977	Same.....Mechanical movement	July 5, 1870
	Menager, Roman. (*See* Shepard, Calvin A., assignor.)	
99,217	Mendenhall, Noah, Greensburgh, Ind. Seed-planter	Jan. 25, 1870
109,923	Same.....Corn-planter	Dec. 6, 1870
99,336	Mendham, William, Philadelphia, Pa. Paper-folding machine. (Antedated Jan. 15, 1870)	Feb. 1, 1870
102,036	Same.....Bolt-cutter. (Antedated April 4, 1870)	April 19, 1870
101,488	Mendham, William, assignor to Cyrus Chambers, jr., and Edwin Chambers, Philadelphia, Pa. Steam-heating pipe. (Antedated March 29, 1870)	April 5, 1870
104,631	Mendham, William, assignor to Edwin and Cyrus Chambers, jr., Philadelphia, Pa. Paper-folding machine	June 21, 1870
109,034	Mendham, William, and Cyrus Chambers, jr., assignors to Edwin and Cyrus Chambers, jr., Philadelphia, Pa. Brick-machine	Nov. 8, 1870
100,544	Mento, Sante, Alliance, Ohio. Coffee-pot	Mar. 8, 1870
99,455	Menzer, Frederick, San Francisco, Cal. Extension-bedstead	Feb. 1, 1870
101,489	Same.....same	April 5, 1870
105,475	Meranda, J. P., Springfield, Ohio. Churn	July 19, 1870
105,992	Meredith, Fenton A., Mount Airy, Md. Railway-rail	Aug. 2, 1870
101,753	Meredith, Samuel, assignor to self, John Wood, and C. B. Dodd, Philadelphia, Pa. Railroad-car stove	April 12, 1870
	Meriden Britannia Company. (*See* Wallace, Robert, assignor.) (Six cases.) (Design.)	
	Same.....(*See* Wilcox, H. C., assignor) (Design.)	
	Same.....(*See* Taylor, Thomas M., assignor.)	
	Merithew, Fitch, *et al.* (*See* Woodworth, Brawdy & Merithew.)	
105,963	Merk, Modest, Rochester, N. Y. Fly-trap	Aug. 2, 1870
104,622	Merlett, John, Bound Brook, N. J. Method of fastening leads	June 21, 1870
104,181	Merrell, Albert, Cincinnati, Ohio. Percolator for druggists and others	June 14, 1870

Alphabetical list of patentees for the year 1870—Continued.

No.	Name, residence, and invention or discovery.	Date.
	Merriam, John C., and Edwin Chamberlin. (*See* Morehouse, Charles B., assignor) ..... (Reissue.)	
3,966	Merriam, Joseph D., assignor to Edward W. Vaill, Worcester, Mass. Folding-chair ..... (Reissue)	May 17, 1870
106,185	Merriam, Joseph P., Sandusky, Ohio. Steam-engine	Aug. 9, 1870
106,924	Merriam, Lyman W., Fitchburgh, Mass. Roofing-bracket	Nov. 1, 1870
4,502	Merriam, Nelson, West Meriden, Conn. Drawer-pull ..... (Design)	Dec. 6, 1870
101,296	Merrick, E. D., New Brighton, Pa. Fire-place grate	Mar. 29, 1870
106,260	Merrick, Harry, Brooklyn, N. Y. Tree-box	Oct. 11, 1870
	Merrick, J. V. and W. H. (*See* Pollard, Thomas, assignor.)	
	Merrick, Silas, and John Minor. (*See* Minor & Merrick) ..... (Two cases.)	
	Merrick, Timothy. (*See* Church, D. M., assignor.)	
100,651	Merrick, William H., Philadelphia, Pa. Safety-mechanism for hoisting-apparatus	Mar. 8, 1870
103,354	Same ..... Preparing paper-pulp for packing and transportation	July 12, 1870
	Merrihew, Phineas E. (*See* Griswold, John A., assignor.)	
98,969	Merrill, Allan N., Batavia, Ill. Farmers' boiler	Jan. 18, 1870
103,639	Same ..... same	May 31, 1870
4,062	Same ..... same ..... (Reissue)	July 5, 1870
106,072	Merrill, Charles L., Watertown, N. Y. Pump	Aug. 2, 1870
100,536	Merrill, Helem, Brooklyn, N. Y. Grain-drier	Nov. 22, 1870
	Merrill, Herbert S. (*See* Whiting, George F., assignor.)	
	Same ..... (*See* Annan, Charles F., assignor) ..... (Two cases.)	
	Same ..... same ..... (Design.)	
105,109	Merrill, John F., Cincinnati, Ohio. Fruit-can	July 5, 1870
100,652	Merrill, Joshua, Boston, Mass. Compound for stuffing leather	Mar. 8, 1870
105,110	Same ..... Stave-bender	July 5, 1870
108,503	Merrill, Lowell G., Angels, Cal. Mortising-machine	Oct. 18, 1870
98,876	Merrill, Milo, Oneida County, N. Y. Hay-knife	Jan. 18, 1870
101,754	Merrill, Platt, Port Sanilac, Mich. Saw-clamp	April 12, 1870
4,089	Merrill, Rufus S., Hyde Park, Mass. Lamp ..... (Design)	May 31, 1870
100,653	Merrill, Rufus Spaulding, assignor to self, William B., and Joshua Merrill, Cambridge, Mass. Lamp-burner	Mar. 8, 1870
100,913	Same ..... Production of light from heavy hydrocarbons	Mar. 15, 1870
104,481	Same ..... Lamp	June 21, 1870
104,683	Same ..... same	June 21, 1870
104,684	Same ..... Lamp-burner	June 21, 1870
104,685	Same ..... same	June 21, 1870
107,277	Same ..... Boston, Mass. Lamp	Sept. 13, 1870
107,278	Same ..... same	Sept. 13, 1870
107,279	Same ..... Lamp-bracket	Sept. 13, 1870
109,537	Same ..... Lamp for railroad-cars	Nov. 22, 1870
	Merrill, William. (*See* Cronin, John, assignor.)	
3,955	Merriman, Anson, New York, N. Y. Brake-wheel ..... (Design)	April 5, 1870
90,218	Merriman, A. T., Chicago, Ill. Stone-planing machine	Jan. 25, 1870
	Merriman, E. P. (*See* Meigs, Nathan J., assignor.)	
100,035	Merriman, John B., and George B. Lewis; said Lewis assignor to said Merriman, Plantsville, Conn. Animal-trap	Nov. 8, 1870
108,810	Merrington, William, and Nathan Kirkwood, McKeesport, Pa. Dumping-car	Nov. 1, 1870
103,640	Merritt, Asa P., Charlotte, Mich. Apparatus for painting	May 31, 1870
4,408	Merritt, David, Philadelphia, Pa. Inkstand ..... (Design)	Oct. 11, 1870
104,192	Merritt, James C., West Point, N. Y. Bedstead	June 14, 1870
105,476	Merritt, Joseph B., Abington, Mass. Wheel-feed	July 19, 1870
99,219	Merritt, Samuel, Erie, Pa. Ironing-table	Jan. 25, 1870
	Merrow, Joseph B. (*See* Burke, Andrew J., assignor.)	
4,304	Merry, John, New York, N. Y. Ash-pail ..... (Design)	Aug. 23, 1870
100,916	Merryman, Philemon, and Robert McCombs, West Fairview, Pa. Puddling process for making wrought iron	Mar. 15, 1870
103,294	Mersereau, J. B., deceased, by Sarah E. Mersereau, administratrix, Binghamton, N. Y. Fluting-tongs	May 17, 1870
107,941	Mersereau, William T., Orange, N. J. Stair-rod	Oct. 4, 1870
98,519	Merveap, J. Johnson, New York, N. Y. Machine for attaching rivets to buttons	Jan. 4, 1870
109,538	Mets, Elisha, and William B. Geddes, Rochester, N. Y. Bedstead-fastening	Nov. 22, 1870
	Metz, Henry, *et al.* (*See* Wahler, Metz & Heintzle.)	
106,366	Messenger, Charles, Cleveland, Ohio. Mosquito-net holder	Aug. 16, 1870
101,899	Messenger, Levin Albert, Philadelphia, Pa. Paint or coating for ships' bottoms	April 12, 1870
	Messerly, Charles. (*See* Sinclair, James A., assignor.)	
	Metallic Compression Casting Company. (*See* Smith, John Joseph Charles, assignor.)	
	Metallic Compression Casting Company. (*See* Smith, John Joseph Charles, assignor ..... (Ten cases.) (Design.)	
	Same ..... (*See* Kreusinger, Ludwig, assignor) ... (Ten cases.) (Design.)	
	Same ..... (*See* Kunze, Charles, assignor) ..... (Design.)	
	Same ..... (*See* Leger, Joseph L., assignor) ..... (Design.)	
	Same ..... (*See* Raif, Joseph A., assignor) .... (Twenty cases.) (Design.)	
102,087	Metcalf, David H., and Daniel Squire, assignors to selves and Martin Metcalf, Battle Creek, Mich. Sheet-metal grooving-machine	April 19, 1870
107,396	Metcalf, Oliver, Orleans, Ind. Rotating fan and fly-brush	Sept. 13, 1870
	Metropolitan Collar Company. (*See* Kaufmann, Saloman, assignor.)	
	Meusy, Edward, and Simon Regan. (*See* Regan & Meusy.)	
104,978	Mewes, Henry, assignor to John W. Cutler, Binghamton, N. Y. Harvester	July 5, 1870

Alphabetical list of patentees for the year 1870—Continued.

No.	Name, residence, and invention or discovery.	Date.
105,111	Mewes, Henry, assignor to John W. Cutler, Binghamton, N. Y. Cutting apparatus for harvesters	July 5, 1870
109,644	Moy, F. H. C., Buffalo, N. Y. Vehicle. (Antedated Sept. 17, 1870)	Nov. 29, 1870
101,906	Meyer, E., France. Telegraph-apparatus	April 12, 1870
3,830	Meyer, Charles T., assignor to Edward C. Sampson, Newark, N. J. Carpet-pattern ..... (Design)	Feb. 1, 1870
3,831	Same ..... Carpet-pattern ..... (Design)	Feb. 1, 1870
3,832	Same ..... same ..... (Design)	Feb. 1, 1870
3,875	Same ..... Floor-cloth pattern ..... (Design)	Mar. 1, 1870
3,876	Same ..... Floor oil-cloth or carpet-pattern ..... (Design)	Mar. 1, 1870
3,956	Same ..... Floor-cloth pattern ..... (Design)	April 5, 1870
3,957	Same ..... same ..... (Design)	April 5, 1870
3,958	Same ..... same ..... (Design)	April 5, 1870
4,207	Same ..... same ..... (Design)	July 5, 1870
4,208	Same ..... same ..... (Design)	July 5, 1870
4,209	Same ..... same ..... (Design)	July 5, 1870
4,409	Same ..... same ..... (Design)	Oct. 11, 1870
4,410	Same ..... same ..... (Design)	Oct. 11, 1870
4,484	Same ..... Floor oil-cloth pattern ..... (Design)	Nov. 22, 1870
4,485	Same ..... same ..... (Design)	Nov. 22, 1870
4,486	Same ..... same ..... (Design)	Nov. 22, 1870
102,295	Meyer, Curt W., New York, N. Y. Pocket induction-apparatus	April 26, 1870
98,877	Meyer, F., and Henry Schild, assignors through mesne assignments to Lewis Prentice, New York, N. Y. Cigar-machine. (Antedated Jan. 10, 1870)	Jan. 18, 1870
4,444	Meyer, Jeremiah, assignor to John Jewett & Sons, Kearney, N. J. Floor oil-cloth pattern ..... (Design)	Oct. 25, 1870
101,641	Meyer, L. Otto P., Newtown, Conn. Manufacture of safety-matches	April 5, 1870
	Meyer, Philip, and John Thielemann. (*See* Thielemann & Meyer.)	
4,210	Meyer, Victor, assignor to Edward C. Sampson, Lansingburgh, N. Y. Floor-cloth pattern ..... (Design)	July 5, 1870
4,229	Meyer, Victor, Lansingburgh, N. Y., and Charles T., Newark, N. J., assignors to Edward C. Sampson. Floor-cloth pattern ..... (Design)	July 12, 1870
4,168	Meyers, Fred J., Covington, Ky. Dog-muzzle ..... (Design)	June 21, 1870
99,783	Meyers, Nicholas, assignor to Globe Sewing-Machine Company, Buffalo, N. Y. Sewing-machine	Feb. 15, 1870.
3,994	Same ..... same ..... (Reissue)	May 24, 1870
107,520	Meyers, William M., New Brunswick, N. J. Corn-planter	Sept. 20, 1870
101,146	Michael, George L., Farmersville, Ohio. Meat-safe	Mar. 22, 1870
98,609	Michael, J. D., Baltimore, Md. Egg-box	Jan. 4, 1870
103,910	Michael, William, Murrysville, Pa. Clutch-mechanism for harvesters	June 7, 1870
	Michigan Bolt and Nut Company. (*See* Scully, William, assignor.)	
104,333	Mickel, Peter, Milford, N. Y. Drier	June 14, 1870
103,702	Mickel, William, assignor to James T. Marble, Theodore P. and Lester S. Emmons, Oneonta, N. Y. Machinery for making barrel-heads	May 31, 1870
109,631	Mickley, Jacob, and John E. Hartman, Cashtown, Pa. Sausage-stuffer	Dec. 6, 1870
109,632	Same ..... Wagon-brake	Dec. 6, 1870
107,220	Mickley, Solomon, assignor to self and Samuel Leathery, York, Pa. Corn-planter	Sept. 13, 1870
106,367	Middlebrook, Alexander, assignor to self and John B. Ruthvin, Glasgow, Mo. Guide for circular saws	Aug. 16, 1870
109,934	Middlekauff, Samuel S., Hagerstown, Md. Washing-machine	Dec. 6, 1870
107,942	Middleton, John W., Philadelphia, Pa. Manufacture of purified cast iron from the ore. (Antedated Sept. 24, 1870)	Oct. 4, 1870
106,375	Same ..... Producing castings direct from the blast-furnace. (Antedated Oct. 8, 1870)	Oct. 18, 1870
101,901	Middleton, William A., Harrisburgh, Pa. Broom-head	April 12, 1870
105,825	Same ..... Hand corn-sheller	July 26, 1870
108,925	Same ..... Fence	Nov. 1, 1870
	Same ..... (*See* Reisinger, George W., assignor.)	
	Middleton, William A., and William P. Patton. (*See* Patton & Middleton.)	
	Middleton, William A., and Eugene Snyder. (*See* Reisinger, George W., assignor.)	
108,926	Middleton, William R., Cleveland, Ohio. Machine for separating middlings	Nov. 1 1870
102,296	Mignot, Paul, New York, N. Y. Frame for passe-partouts	April 26, 1870
108,036	Mihills, Uriah D., Fond du Lac, Wis. Fence	Nov. 8, 1870
99,220	Milbank, George, Chillicothe, Ohio. Steam-engine governor cut-off. (Antedated Jan. 14, 1870)	Jan. 25, 1870
103,641	Milbank, Isaac M., Greenfield, Conn. Primer for cartridges	May 31, 1870
105,709	Milburn, Robert, and Thomas Browning, Great Britain. Grain-drier	July 26, 1870
	Milcham, Joseph N., *et al.* (*See* Hyatt, Charles, assignor.)	
	Miles Alarm-Till Manufacturing Company. (*See* Baldwin, John F., assignor.)	
	Miles, Frederick B., and Oscar C. Ferris. (*See* Ferris and Miles.)	
104,482	Miles, Jesse C., Bloomington, Wis. Harvester	June 21, 1870
104,183	Miles, Purches, New York, N. Y. Double-pointed tack	June 14, 1870
104,184	Same ..... Machine for making double-pointed tacks	June 14, 1870
108,376	Milhollin, Jonathan M., Champlin, Minn. Weather-board gauges	Oct. 18, 1870
100,545	Mill, George B., Buffalo, N. Y. Meat-pounder, block, and chopping-bowl	Mar. 8, 1870
102,098	Millar, Henry W., Utica, N. Y. Agricultural steamer	April 19, 1870
103,763	Same ..... Ratchet-lever	May 31, 1870
103,149	Same ..... Cheese-vat	Nov. 8, 1870
4,461	Millar, John, Paterson, N. J. Rustic fence ..... (Design)	Nov. 8, 1870
107,281	Millard, Alonzo D., Canton, Ohio. Sash-holder	Sept. 13, 1870
109,925	Millard, Mordecai, Franklin, Ohio. Water-wheel. (Antedated Nov. 26, 1870)	Dec. 6, 1870
	Miller, A. (*See* Raymond, Fitch, assignor.)	

Alphabetical list of patentees for the year 1870—Continued.

No.	Name, residence, and invention or discovery.	Date.
	Miller, Aaron H. (*See* Boyd, James P., assignor.)	
105,828	Miller, Abraham, and Uriah Faris, Red Rock Township, Iowa. Weather-board scribe	July 26, 1870
	Same.....(*See* Faris & Miller.)	
107,288	Miller, Benjamin F. and Joseph G. New York, N. Y. Chimney-cap	Sept. 13, 1870
102,648	Miller, Carl, Sandoval, Ill. Self-packing bush for spindles	May 10, 1870
105,477	Miller, Charles A., Marengo Township, Mich. Hay elevator and conveyor	July 19, 1870
104,733	Miller, Charles G., Brattleborough, Vt. Carpenters' plane	June 28, 1870
98,700	Miller, Charles G., deceased, by Christina Julia Miller, administratrix; and Benjamin Kersting, assignor of one-half interest to George W. Hoglin and S. D. Graffin, Springfield, Ohio. Harvester	June 11, 1870
101,642	Miller, Charles H., Buffalo, N. Y. Hame-fastener. (Antedated April 1, 1870)	April 5, 1870
103,069	Miller, Charles H., assignor to self and Michael Doll, Buffalo, N. Y. Cord-tension device for window-shades	May 17, 1870
105,887	Same.....Wrench	July 26, 1870
105,964	Miller, Charles H., assignor to self and Emory Cummings, Buffalo, N. Y. Means for communicating motion to machinery	Aug. 2, 1870
105,230	Miller, Daniel J., assignor of one-half interest to Fielding Beeler, Indianapolis, Ind. Flood-fence	July 12, 1870
105,710	Miller, Daniel K., Reading, Pa. Padlock. (Antedated July 23, 1870)	July 26, 1870
106,196	Miller, Edgar T., assignor to self and John Howitt, Albany, N. Y. Metallic heel for boots and shoes	Aug. 9, 1870
100,052	Miller, Edward, Milwaukee, Wis. Dumping-wagon. (Antedated Feb. 11, 1870)	Feb. 22, 1870
	Miller, Edward L., and George A. Smith. (*See* Smith & Miller.)	
101,755	Miller, Ezra, New York, N. Y. Railway-car seat	April 12, 1870
105,965	Same.....Car-seat lock	Aug. 2, 1870
108,304	Same.....Medicine	Oct. 18, 1870
	Same.....(*See* Armstrong, William, assignor.)	
	Miller, E., & Co. (*See* Marcy, J. J., assignor).....(Two cases.)	
103,764	Miller, Gardner C., Rockford, Ill. Hand-punching machine	May 31, 1870
100,175	Miller, George, Johnston, R. I. Grinder or rattler for cleaning castings	Feb. 22, 1870
105,711	Same.....Providence, R. I. Grinder for cleaning castings	July 26, 1870
105,712	Same.....Water-wheel	July 26, 1870
108,505	Miller, George and Charles B., Philadelphia, Pa. Manufacture of confectionery	Oct. 18, 1870
100,788	Miller, George C., Goshen, N. Y., and Joseph H. Coates, New York, N. Y. Basin with waste-pipe attachment	Mar. 15, 1870
102,956	Miller, George H., Leavenworth, Kans. Hot-air furnace	May 10, 1870
108,377	Miller, George H., Dyersburgh, Tenn. Combined tool	Oct. 18, 1870
	Miller, George W., and Joseph Banigan. (*See* Banigan & Miller.)	
	Miller, George Y. (*See* Mosher, Levi P., assignor.)	
	Miller, H. (*See* Hale, William P., assignor.)	
102,573	Miller, Henry, Johnston, R. I. Bird-house	May 3, 1870
	Miller, Henry P., and Francis M. Patterson. (*See* Patterson & Miller.)	
105,713	Miller, Herman, New York, N. Y. Tap-nozzle for cans	July 26, 1870
3,993	Miller, Herman, assignor to the Devoe Manufacturing Company, Hoboken, N. J. Can for paint, fruit, &c	May 24, 1870
105,888	Miller, Isaac, Worcester, Mass. Cultivator	July 26, 1870
	Miller, I. L., *et al.* (*See* Huntsman, E. N., assignor.)	
105,231	Miller, Jacob, and William H. B. Flender, Washington, Pa. Combined fender and fire-screen	July 12, 1870
	Miller, James M., assignor through mesne assignments to D. D. Foley, Washington, D. C. Surface-condenser for steam-engines.....(Extension)	May 19, 1870
108,381	Miller, John, Elbridge, Ill. Loom	Oct. 11, 1870
101,643	Miller, John, Youngstown, Ohio. Washing-machine	April 5, 1870
108,927	Miller, John, jr., Marshalltown, Iowa. Lock-nut	Nov. 1, 1870
99,693	Miller, John O., Danville, Ky. Revolving fire-arm	Feb. 8, 1870
109,234	Miller, John P., Somerville, N. J. Drier	Nov. 15, 1870
105,356	Miller, Jonathan J., McAlavey's Fort, Pa. Applying measurements to and laying out garments	July 12, 1870
104,979	Miller, Joseph A., New York, N. Y. Steam-generator	July 5, 1870
106,368	Same.....same	Aug. 16, 1870
109,645	Same.....Boston, Mass. Steam-generator	Nov. 29, 1870
105,350	Miller, Lebbeus A., Sewickleyville, Pa. Envelope-opener	July 12, 1870
	Miller, Levi E. (*See* Eshleman, Jefferson, assignor.)	
107,190	Miller, Luke H., Baltimore, Md. Permutation-lock	Sept. 6, 1870
103,911	Miller, Mahlon, Cleveland, Ohio. Iron bridge	June 7, 1870
107,076	Miller, Michael, assignor to self and William Hewson, Buffalo, N. Y. Buck-board wagon	Sept. 6, 1870
99,337	Miller, Nathaniel C., Stroudsburgh, Pa. Egg-beater	Feb. 1, 1870
	Miller, Philip. (*See* Hays, Joseph S., assignor.)	
106,603	Miller, Reuben, Pittsburgh, Pa. Machine for bending volute-springs	Aug. 23, 1870
108,297	Miller, Robert A., assignor to self and Joseph C. Skinner, Boston, Mass. Boot and shoe	April 26, 1870
98,610	Miller, R. R., Plantsville, Conn. Die for forming carriage-shackles	Jan. 4, 1870
100,783	Same.....Die for forming perch-plates	Mar. 15, 1870
100,953	Miller, Robert R., assignor to self and J. B. Savage, Plantsville, Conn. Series of dies for forming the heads of bolts	Feb. 22, 1870
100,176	Miller, Robert R., assignor of one-half interest to J. B. Savage, Plantsville, Conn. Jack for carriage-springs	Feb. 22, 1870
100,177	Same.....Fifth-wheel head for carriages	Feb. 22, 1870
100,340	Miller, Samuel, Mount Union, Pa. Press for hay, cotton, &c	Mar. 8, 1870

Alphabetical list of patentees for the year 1870—Continued.

No.	Name, residence, and invention or discovery.	Date.
	Miller, Thomas, *et al.* (*See* Wiley, Moses H., assignor.)	
	Same.....same.....(Reissue.)	
	Miller, Thomas, and Moses H. Wiley. (*See* Wiley & Miller.)	
	Miller, Thomas Ferguson. (*See* Cerodo, Paul, assignor.)	
104,185	Miller, Warren, Granger, Ohio. Horse and cattle poke	June 14, 1870
99,932	Miller, William, Boston, Mass. Weather-strip	Feb. 15, 1870
107,077	Same.....Fire-escape	Sept. 6, 1870
110,983	Same.....Clothes-pin	Dec. 20, 1870
3,922	Miller, William, Cincinnati, Ohio. Hoisting-machine.....(Reissue)	April 19, 1870
105,232	Miller, William, Chicopee, Mass. Weather-strip	July 12, 1870
3,902	Miller, William, assignor to James Edgar, Newark, N. J. Coal-scuttle. (Reissue)	April 5, 1870
103,352	Miller, William H. and George W., Meriden, Conn. Pocket cutlery	May 24, 1870
106,073	Same.....Manufacture of blades of pocket-cutlery	Aug. 2, 1870
	Miller, W. J. (*See* Loud, Alfred C., assignor.)	
	Miller, William K., and Clement Russell. (*See* Russell & Miller.)	
108,716	Miller, William T., New Geneva, Pa. Harvester	Oct. 25, 1870
104,483	Miller, William W., Zionsville, Ind. Harvester-rake	June 21, 1870
	Miller's Falls Manufacturing Company. (*See* Horton, James M., assignor.) (Reissue.)	
110,151	Millett, Thomas M., sr., Savannah, Ga. Gearing for machinery	Dec. 13, 1870
100,917	Millholland, James, Reading, Pa. Railway-rail	Mar. 15, 1870
104,051	Milligan, Henry C., Brooklyn, N. Y. Handle of sheet-metal spoons, forks, &c	June 7, 1870
101,490	Milligan, John C., Brooklyn, N. Y. Biscuit-pan	April 5, 1870
105,906	Same.....Coffee-mill	Aug. 2, 1870
107,521	Same.....Milk-can	Sept. 20, 1870
109,748	Milligan, John F., assignor to Joseph W. Branch, St. Louis, Mo. Cotton-bale tie	Nov. 29, 1870
	Milligan, Thomas P., and Thomas Higgins. (*See* Goddard, Emerson, assignor.) (Reissue.)	
	Milliken, James, *et al.* (*See* Whitmore, Seth H., assignor.) (Two cases)	
3,785	Milliken, William H. and John, assignors through mesne assignments to S. C. Forsaith, Manchester, N. H. Paper-folding machine. (Division A, reissue)	Jan. 4, 1870
3,786	Same.....Combining paper-folding machines with printing-presses. (Division B, reissue)	Jan. 4, 1870
108,040	Milliman, William F., assignor to Henry Disston & Son, Philadelphia, Pa. Saw	Oct. 4, 1870
105,112	Millingar, James, assignor to self, Thomas Woods, and Benjamin F. Pine, Philadelphia, Pa. Machine for making sheet-lead	July 5, 1870
4,495	Million, John T., Fayette, Mo. Saddle-tree.....(Design)	Nov. 29, 1870
109,334	Millioru, George, assignor to self and P. T. Raiford, Pyhalla, Miss. Corn and cotton scraper	Nov. 15, 1870
101,297	Mills, Anson, U. S. Army. Bayonet	Mar. 29, 1870
101,644	Mills, Daniel, New York, N. Y. Sewing-machine for boots and shoes	April 5, 1870
	Mills, David, and Charles G. Harrington. (*See* Harrington & Mills.)	
106,949	Mills, Francis, Mount Vernon, Ind. Revolving grain-screen	Aug. 30, 1870
107,078	Mills, Francis E., San Francisco, Cal. Reaction rotary steam-engine. (Antedated Aug. 26, 1870)	Sept. 6, 1870
	Mills, George E., and Ransom Bullard. (*See* Bullard & Mills.)	
100,310	Mills, George S., Johnson, Vt. Fence	Mar. 1, 1870
	Mills, Ipswich. (*See* Pepper, John, assignor.)	
108,811	Mills, John J., and William Perry, Frederick's Hall, Va. Medicine or pain-remedy	Nov. 1, 1870
100,054	Mills, Jonathan, and A. G. Waldo, Milwaukee, Wis. Smut-mill and grain-separator	Feb. 22, 1870
100,784	Same.....Circular-saw mill. (Antedated Feb. 28, 1870)	Mar. 15, 1870
106,604	Mills, Joseph, Milan, Ind. Horse hay-rake	Aug. 23, 1870
	Mills, Lucien, and Alonzo T. Boon. (*See* Boon & Mills.)	
100,918	Mills, Thomas and George M., Philadelphia, Pa. Ice-cream freezer	Mar. 15, 1870
	Mills, William F., *et al.* (*See* Davis, Biram C., assignor.)	
106,369	Millward, Joseph, Fayetteville, N. Y. Carbureting-apparatus	Aug. 16, 1870
107,191	Milne, David, Norwich, N. Y. Gas-fixture	Sept. 6, 1870
101,296	Milner, Edward, Marquette, Mich. Sleigh-bench	Mar. 29, 1870
104,696	Same.....Spring-sulky	June 21, 1870
105,714	Same.....Metallic standard for wagon-boxes	July 26, 1870
105,113	Milward, Victor, assignor to Henry Milward, England. Needle-wrapper	July 5, 1870
107,207	Minderle, Damian, St. Louis, Mo. Scrubbing-brush	Sept. 13, 1870
	Miner, Harvey, and Henry M. Stevens, New York, N. Y., and William H. Saunders, deceased, by Mary Saunders, executrix, Hastings, N. Y. Coupling for vehicles.....(Extension)	May 23, 1870
102,143	Miner, Henry, assignor of one-half interest to Louis Harter, Green Island, N. Y. Stove-grate	April 19, 1870
104,754	Miner, James G., Nashville, Tenn. Plow-cultivator	June 28, 1870
105,257	Miner, John, and Silas Merrick, New Brighton, Pa. Railway splice and nut-lock	July 12, 1870
109,141	Same.....Railway-switch	Nov. 8, 1870
	Minetree, Joseph P., *et al.* (*See* Robinett, James T., assignor.)	
4,436	Mingis, Walter S., New York, N. Y. Head-band.....(Design)	Oct. 25, 1870
103,642	Mingus, Gideon W., Pomeroy, Ohio. Bolt-threader	May 31, 1870
4,353	Minnemeyer, Henry W., Allegheny City, Pa. Breast-slide for harness. (Design)	Sept. 13, 1870
100,311	Minnick, Simon B., Landisville, Pa. Manure-hook	Mar. 1, 1870

Alphabetical list of patentees for the year 1870—Continued.

No.	Name, residence, and invention or discovery.	Date.
107,702	Minnies, Thomas S., Meadville, Pa. Friction-locomotive. (Antedated September 17, 1870)	Sept. 27, 1870
107,703	Same....Grain-binding attachment for harvesters. (Antedated Sept. 17, 1870)	Sept. 27, 1870
	Minshall, William, and Isaac Hudson. (*See* Hudson & Minshall.)	
	Mischo, Hermann, and Philip Norden. (*See* Norden & Mischo.)	
102,020	Mishler, Abel, New York, N. Y. Door-spring	April 19, 1870
	Miskey, Merrill & Thackara. (*See* Thackara, Benjamin, assignor)....(Design.)	
105,967	Misner, William H., and George E. Markee, Heyworth, Ill. Hay-rake. (Antedated July 22, 1870)	Aug. 2, 1870
100,919	Mitchel, David, New Berlin, Pa. Fence	Mar. 15, 1870
	Mitchell, Charles M. (*See* Blake, William H., assignor.)	
104,484	Mitchell, David E., Rural Dale, Ohio. Double-lever master-wheel	June 21, 1870
	Mitchell, Ernest. (*See* Taft, Owen W., assignor.)	
105,589	Mitchell, George, Trenton, N. J. Vise	July 19, 1870
104,980	Mitchell, Gove, Philadelphia, Pa. Dredging-machine	July 5, 1870
106,271	Same....Grinding-mill	Aug. 9, 1870
	Mitchell, Henry R. (*See* Tate, William J., assignor.)	
	Mitchell, James, and T. Rice Smith. (*See* Smith & Mitchell.)	
105,478	Mitchell, Joseph, assignor to William Edward Newton, England. Railway-car spring. (Patented in England May 18, 1868)	July 19, 1870
103,912	Mitchell, Joseph E., Philadelphia, Pa. Machine for cutting out grindstones	June 7, 1870
106,605	Mitchell, Richard, Smyrna, Del. Fruit-basket	Aug. 23, 1870
107,079	Mitchell, Robert B., Chicago, Ill. Kerosene-stove	Sept. 6, 1870
104,334	Mitchell, Samuel H., El Paso, Ill. Cultivator	June 14, 1870
101,374	Mitchell, Thomas A., assignor to self and Daniel Breed, Washington, D. C. Carpet-tack	Mar. 29, 1870
103,913	Mitchell, Thomas M., Philadelphia, Pa. Fuel-press	June 7, 1870
106,187	Mitzelfeld, Charles, assignor to self and Mark Flanigan, Detroit, Mich. Saw	Aug. 9, 1870
98,513	Mix, E. M., and J. E., Westfield, N. Y. Indicator-lock. (Antedated July 27, 1869)	Jan. 4, 1870
	Modena Hat Company. (*See* Loewenberg, Henry, assignor.)	
	Moen, Augustus R., deceased, by Sophia A. Moen, Stamford, Conn., and Philip L. Moen, Worcester, Mass., administrators. Mode of constructing walls and floors of cellars.....(Extension)	Sept. 14, 1870
102,144	Moffat, David, and John Thomson, Philadelphia, Pa. Paving-brick	April 19, 1870
4,075	Moffatt, Arthur, Washington, D. C. Priming-cartridges....(Division 1, reissue)	July 19, 1870
4,076	Same.....same.....(Division 2, reissue)	July 19, 1870
108,616	Moff, Charles A., Indianapolis, Ind. Drier	Oct. 25, 1870
	Moffatt, Edgar R. (*See* Richards, Stephen M., assignor.)	
101,399	Moffatt, G. J., Brooklyn, N. Y. Machine for folding paper bags	Mar. 29, 1870
110,264	Moffatt, Richard R., Brooklyn, N. Y. Cartridge	Dec. 20, 1870
110,265	Same....Metallic cartridge	Dec. 20, 1870
110,266	Same....Percussion-primer for cartridges	Dec. 20, 1870
110,267	Same....Bobbin-winding and needle-sharpening attachment for sewing-machines	Dec. 20, 1870
110,268	Same....Mode of applying motive power to machinery	Dec. 20, 1870
110,383	Same....Shot-cartridge	Dec. 20, 1870
106,497	Mohr, Hermann, New York, N. Y. Steam-engine	Aug. 16, 1870
	Moll, Charles Frederick, and James Alanson Loomis. (*See* Loomis & Moll.)	
105,968	Moll, Conrad F., Kenton, Ohio. Manufacture of pure carbonate of potash	Aug. 2, 1870
	Moll, Gustar H., and Conrad Krath. (*See* Krath & Moll.)	
	Moll, Michael, *et al.* (*See* Reece, William R., assignor.)	
110,488	Moller, William, Irvington, N. Y. Filter-tank and other vessels used in refining sirups, sugar, &c.	Dec. 27, 1870
103,070	Molta, Adam, New York, N. Y. Sewing-machine	May 17, 1870
109,235	Monaghan, John, Tuckahoe, N. Y. Match-box	Nov. 15, 1870
105,929	Monce, James H., New York, N. Y. Awning for cars, &c	July 26, 1870
107,080	Same....Folding coat and hat rack	Sept. 6, 1870
3,800	Monceuse, Elie, and Louis Duparquet, New York, N. Y. Stove-grate. (Reissue)	Jan. 18, 1870
107,081	Money, David Smith, Valdosta, Ga. Rotating-engine	Sept. 6, 1870
106,390	Monfort, Oscar F., Dearborn, Mich. Tile-cutting machine	Aug. 16, 1870
102,208	Mongene, Joseph, Vincennes, Ind. Fruit-drier	April 26, 1870
100,547	Monroe, Halsey H., Thomaston, Maine. Revolving-harrow	Mar. 8, 1870
108,717	Monroe, Isaac N., Bridgeport, Ill. Corn-coverer	Oct. 25, 1870
103,071	Monroe, Nathaniel, assignor to self, William T. Keen, and Charles P. Stowe, Boston, Mass. Packing for the journal-boxes of railroad-cars	May 17, 1870
109,926	Monroe, Ransom, Hendrick's Creek, Pa. Turbine water-wheel	Dec. 6, 1870
	Monson, Benjamin F., and Alfred Ray. (*See* Ray & Monson.)	
	Monson, Charles. (*See* Bristol, Truman, assignor.)	
104,335	Monson, Christian, Moscow, Wis. Auger	June 14, 1870
104,052	Monson, Mads C., Chicago, Ill. Tubing and filtering arrangement for wells	June 7, 1870
98,611	Montague, Charles, assignor to Cyril C. Child, Boston, Mass. Paper-cutting machine	Jan. 4, 1870
104,627	Montague, George Threlkeld, Keokuk, Iowa. Churn-power	June 21, 1870
99,221	Montgomery, James, New York, N. Y. Rolling-mill	Jan. 25, 1870
99,456	Same....Sing Sing, N. Y. Metallurgic furnace	Feb. 1, 1870
100,035	Same....New York, N. Y. Spike for railways	Feb. 22, 1870
102,849	Same....Apparatus for corrugating metal	May 10, 1870
103,072	Same....Conductor for telegraphs. (Antedated April 30, 1870)	May 17, 1870
108,719	Same....Steam-engine	Oct. 25, 1870

Alphabetical list of patentees for the year 1870—Continued.

No.	Name, residence, and invention or discovery.	Date.
103,353	Montgomery, James, Marseilles, Ill. Curtain-fixture	May 24, 1870
98,619	Montgomery, John, Union City, Ind. Bee-hive	Jan. 4, 1870
106,713	Montgomery, Richard, New York, N. Y. Form of ingot for corrugated-metal beams	Aug. 23, 1870
107,798	Same....Railway-rail	Sept. 27, 1870
108,165	Same....Pile for corrugated beams	Oct. 11, 1870
4,172	Same....Corrugated-iron bridge.....(Reissue)	Nov. 1, 1870
102,145	Montgomery, William, Northampton, Mass. Picker-check for looms	April 19, 1870
4,236	Montross, Isaac T., Peekskill, N. Y. Stove.....(Design)	July 19, 1870
105,358	Moody, Joseph B., Louisville, Ky. Cultivator	July 12, 1870
98,701	Mooers, Thomas J., Blossburgh, Pa. Car-axle lubricator	Jan. 11, 1870
107,192	Same....Lubricator	Sept. 6, 1870
102,030	Moog, Julius, assignor to Emil Heusner, Germany. Method of treating tracing-paper	April 19, 1870
	Moon, Amos S., and George W. Darby. (*See* Darby & Moon.)	
103,354	Moon, Frank, Newberry Court-House, S. C. Stove-leg fastener	May 24, 1870
107,398	Mooney, John H., San Francisco, Cal. Device for securing covers upon sewing-machines	Sept. 13, 1870
103,643	Mooney, John H., assignor to Samuel Hill, San Francisco, Cal. Tension-wheel for sewing-machines	May 31, 1870
	Mooney, Samuel L., *et al.* (*See* Sinclair, James A., assignor.)	
4,199	Moore, A. C., assignor to Levi J. Gunn and Charles H. Amidon, Greenfield, Mass. Bit-stock.....(Reissue)	Dec. 13, 1870
108,719	Moore, Albert W., East Brimfield, Mass. Peg-box for pegging-machines	Oct. 25, 1870
103,355	Moore, Alfred L. D., Lagrange, Texas. Ox-bow	May 24, 1870
107,983	Same....Washing-machine	Sept. 13, 1870
	Moore, Austin D., and Abraham Keefer Grim. (*See* Grim & Moore.)	
102,574	Moore, Benjamin, Hart, Mich. Sash-clamp	May 3, 1870
110,062	Moore, Charles, assignor to José F. de Navarro, New York, N. Y. Liquid-meter	Dec. 13, 1870
107,082	Moore, Charles A., Akron, Ohio. Carriage-pole coupling	Sept. 6, 1870
109,646	Moore, Charles A., Westbrook, Conn. Manufacture of glass articles	Nov. 29, 1870
102,575	Moore, Charles C., New York, N. Y. Cord-catch	May 3, 1870
101,300	Moore, Charles D., Gilmanton, N. H. Saw-mill	Mar. 29, 1870
107,390	Moore, Charles E., Boston, Mass., and Martin L. Wyman, Melrose, Mass. Machine for making paper collars	Sept. 13, 1870
	Moore, Charles T., *et al.* (*See* Fickett, Albert, assignor.)	
99,094	Moore, Daniel, Davenport, Iowa. Oven	Feb. 8, 1870
98,989	Moore, Daniel O., and Frank Reid, Everton, Ind. Clod-fender	Jan. 18, 1870
102,957	Moore, David M., assignor to Ebenezer G. Lamson, Windsor, Vt. Universal square	May 10, 1870
3,917	Moore, Edward C., assignor to Tiffany & Company, Yonkers, N. Y. Handle for spoons.....(Design)	Mar. 22, 1870
4,476	Same....Spoon and fork handle.....(Design)	Nov. 15, 1870
3,994	Moore, Edwin, assignor to the Bissell & Moore Manufacturing Company, Brooklyn, E. D., N. Y. Shape of the slots between saw-teeth.....(Design)	April 26, 1870
	Moore, George. (*See* Chamberlain, Orange M., assignor.)	
99,100	Moore, George R., Philadelphia, Pa. Coal-stove	Jan. 25, 1870
100,036	Same....Balance slide-valve	Feb. 22, 1870
104,053	Moore, Hiram W., Jersey City, N. J. Car-wheel	June 7, 1870
101,645	Moore, James, Ireland. Heating-stove	Mar. 29, 1870
101,375	Same....Fire-place	April 5, 1870
	Moore, J. A., *et al.* (*See* Eiberweiser, John, assignor).....(Reissue.)	
105,830	Moore, James C., Philadelphia, Pa. Thawing device for hydrants and fire-plugs. (Antedated July 16, 1870)	July 26, 1870
	Moore, James L., and Charles Coester, jr. (*See* Coester & Moore.)	
98,990	Moore, J. W., Watseka, Ill. Runner-attachment for carriages	Jan. 18, 1870
104,054	Moore, John W., Bellefonte, Pa. Photographic plate-holder	June 7, 1870
101,902	Moore, Leon Eugene Cameron, and James Shockey Hamilton, Pittston, Pa. Lamp	April 12, 1870
102,850	Moore, Samuel J., and George A. Buckman, Ogdensburgh, N. Y. Tool for making slides for extension-tables	May 10, 1870
	Moore, Stephen, *et al.* (*See* Houghton, Moore & Rogers.)	
100,785	Moore, Thomas, Brooklyn, N. Y. Governor for steam-engines	Mar. 15, 1870
105,589	Moore, Thomas, Bloomfield, Ill. Vapor-burner	July 19, 1870
107,592	Moore, Thomas C., assignor to self and Joshua G. Wickersham, Dublin, Ind. Harvester-dropper	Sept. 20, 1870
105,114	Moore, Thomas E., Columbus, Ohio. Paper-file	July 5, 1870
98,514	Moore, T. G., Albia, Iowa. Leather-fastening for harness	Jan. 4, 1870
	Moore, W. G. (*See* Lane, Rufus, assignor.)	
109,647	Moore, William N. and Alexander K., Neenah, Wis. Clothes-drier	Nov. 29, 1870
105,115	Moorhead, Francis R., Chandlersville, Ohio. Safety-valve for dental vulcanizers	July 5, 1870
107,093	Morange, James K. and Napoleon B., Pittsburgh, Pa. Construction of car-wheels	Sept. 6, 1870
107,084	More, Ezekiel P., and Samuel J. Anderson, Cazenovia, N. Y. Folding-chair	Sept. 6, 1870
106,391	More, John, New York, N. Y. Veneering-press	Aug. 16, 1870
107,943	Same....Cutter-head for planers	Oct. 4, 1870
	Morehesse, Joel E. (*See* Burdick, Welcome J., assignor.)	
4,071	Morehouse, Charles B., assignor to John O. Merriam and Edwin Chamberlin, Troy, N. Y. Whip-socket.....(Reissue)	July 12, 1870
101,147	Morehouse, Clark, assignor to Seth A. Toser and Oscar N. Crane, Wayland, N. Y. Hemmer for sewing-machines	Mar. 22, 1870

Alphabetical list of patentees for the year 1870—Continued

No.	Name, residence, and invention or discovery.	Date.
101,376	Morehouse, Moses, Boscobel, Wis. Bed-bottom	Mar. 29, 1870
110,264	Morehouse, William, Buffalo, N. Y. Railway-rail joint	Dec. 20, 1870
	Morekess, Joel, *et al.* (*See* West, Thomas J., assignor.)	
105,831	Moreland, Henry J., Whitehall, Ill. Washing-machine	July 26, 1870
105,969	Morelock, Jeremiah A., Silver Run, Md. Washing-machine	Aug. 2, 1870
102,851	Morf, Ferdinand, Switzerland. Mechanism for stripping the top flats of carding-machines	May 10, 1870
106,651	Moritt, Campbell, New York, N. Y. Treatment of guano for the manufacture of fertilizers	Aug. 30, 1870
108,819	Morgan, Edward L., Riversville, W. Va. Sewing-machine table	Nov. 1, 1870
	Morgan, Eustis P., and William H. Thompson. (*See* Thompson & Morgan.)	
105,350	Morgan, George, Brooklyn, N. Y. Stone-sawing machine	July 12, 1870
104,186	Morgan, James, Pittsburgh, Pa. Machine for making harrow-teeth	June 14, 1870
99,457	Morgan, J., and William Cline, jr., Clayton, Ind. Horse hay-rake. (Antedated Jan. 24, 1870)	Feb. 1, 1870
109,335	Morgan, Jarvis A., Navasink, N. J. Water-wheel	Nov. 15, 1870
102,418	Morgan, John, jr., Wheeling, W. Va. Belt and rivet machine	April 26, 1870
108,166	Morgan, Joseph, New York, N. Y. Trunk-lock. (Antedated Sept. 24, 1870)	Oct. 11, 1870
104,628	Morgan, Thomas, Marquette, Mich. Bolster-plate	June 21, 1870
107,085	Morgan, William H., assignor to self and Richard B. Geyer, Alliance, Ohio. Trace-hook	Sept. 6, 1870
107,086	Same.....Trace-hook and clip for harness	Sept. 6, 1870
107,087	Same.....Harness-hook and loop-shield	Sept. 6, 1870
99,101	Morgans, William T., assignor to self, G. J. Coleman, and C. H. Sedgwick & Son, Youngsville, N. Y. Printing-press	Jan. 25, 1870
108,813	Morgans, William T., assignor to self and Isaac Anderson, Youngsville, N. Y. Machine for preparing stereotype matrices	Nov. 1, 1870
109,633	Morgeneier, Johan Wolfgang, Sheboygan, Wis. Varnish for coating photographic negatives	Dec. 6, 1870
105,300	Morgenstern, William, New York, N. Y. Faucet	July 12, 1870
108,508	Morgenstern, William, assignor to self and Frans Otto, New York, N. Y. Bottle-stopper	Oct. 18, 1870
	Morison, G. S., and O. Chanute. (*See* Chanute & Morison.)	
103,073	Morley, Franklin A., Syracuse, N. Y. Torch-light	May 17, 1870
107,206	Same.....Steam and vapor engine	Sept. 6, 1870
107,593	Same.....Evaporating salt-water and other liquids	Sept. 20, 1870
99,458	Moriot, J. P., France. Hat-shaping machine	Feb. 1, 1870
	Morningstave, William. (*See* Hartmann, Joachim F., assignor.)	
101,756	Morrell, Albert W., Niles, Mich. Feed-water regulator and low-water alarm	April 12, 1870
107,594	Morrell, Albert W., assignor of one-half interest to Perley Hale, jr., Niles, Mich. Double-piston engine	Sept. 20, 1870
110,063	Morrill, Charles, New York, N. Y. Truss	Dec. 13, 1870
101,149	Morrill, Robert M., Plymouth, Ind. Sand-screen for iron tube-wells	Mar. 22, 1870
	Morrill, Samuel, Andover, N. H. Clothes-drier.....(Extension)	Oct. 27, 1870
4,893	Morris, Almon T., Nevada, Ohio. Corn-husker.....(Design)	July 26, 1870
98,613	Morris, C. R., and H. W. Franklin, Bridgeport, Conn. Safety railway-truck	Jan. 4, 1870
107,705	Morris, David, Bunker Hill, Ill. Plow	Sept. 27, 1870
103,496	Morris, David, assignor to Knowles & Brooker, Cutler, Ohio. Clothes-drier	May 24, 1870
	Morris, David, and William H. McMillan. (*See* McMillan & Morris.)	
106,302	Morris, David A., New York, N. Y. Steam-generator	Aug. 16, 1870
106,188	Morris, David G., Catasauqua, Pa. Machine for bending and punching car-hooks	Aug. 9, 1870
109,037	Morris, Ellis H., Salem, Ohio. Planer	Nov. 8, 1870
99,338	Morris, George G., assignor to self and William W. Eastham, Boston, Mass. Paint-brush	Feb. 1, 1870
98,789	Morris, Henry D., Baldwinsville, N. Y. Manufacturing axles	Jan. 11, 1870
99,583	Morris, Jacob H., Eaton, Ohio. Medicine for cure of fever and ague	Feb. 8, 1870
110,389	Morris, James C., Greenville, Tenn. Car-coupling	Dec. 20, 1870
	Morris, John C., Cincinnati, Ohio. Wood-bending machine.....(Extension)	Mar. 7, 1870
101,646	Morris, John H., Maquoketa, Iowa. Horse hay-rake	April 5, 1870
101,965	Morris, Joseph R., Houston, Texas. Furnace. (Granted for 25 years, 10 months, and 4 days from June 8, 1861)	April 12, 1870
110,158	Morris, Lewis, assignor to self and George W. Baker, Havre de Grace, Md. Milk-carrier	Dec. 13, 1870
107,944	Morris, Matthias K., Council Bluffs, Iowa. Feather-renovator	Oct. 4, 1870
	Morris, Tasker & Co. (*See* Newsham, William, assignor).....(Four cases.)	
	Same.....(*See* Glover, Thomas, assignor.)	
	Same.....(*See* Tasker, Stephen P. M., assignor).....(Design.)	
	Same.....(*See* McMillan & Morris, assignors.)	
	Same.....(*See* Wolfkiel, Walter F., assignor.)	
106,180	Morris, Thomas L., Claypool, Ky. Water-elevator	Aug. 9, 1870
101,491	Morris, Walter J., and William J. Reid, New York, N. Y. Apparatus for lighting gas by electricity	April 5, 1870
108,419	Morris, William, Philadelphia, Pa. Life-preserving garment	April 26, 1870
104,629	Same.....Process and composition for water-proofing leather, &c	June 21, 1870
103,356	Morris, William H., Troy, Tenn. Cotton, hay, and hemp press	May 24, 1870
	Morris, William R. (*See* Robbins, Hiram, assignor.)	
	Morrisey, Jeremiah E. (*See* Curell, James H., assignor.)	
104,967	Morrison, Amos, and Rufus E. Rose, New Orleans, La. Submarine-plow	July 5, 1870
108,378	Morrison, David, and John D. Smith, New York, N. Y. Water-closet	Oct. 18, 1870
99,439	Morrison, H. B., Le Roy, N. Y. Stove-pipe joint	Feb. 1, 1870
101,757	Morrison, James A., Brady's Bend, Pa. Track-cleaner for street-cars	April 12, 1870

Alphabetical list of patentees for the year 1870—Continued.

No.	Name, residence, and invention or discovery.	Date.
102,031	Morrison, James A., assignor to self and A. J. Elliott, Brady's Bend, Pa. Cooking-utensil	April 19, 1870
106,496	Morrison, James B., St. Louis, Mo. Flexible shaft	Aug. 16, 1870
	Morrison, James W. (*See* Werni, Peleg, assignor.)	
101,492	Morrison, Lawrence, and Amos G. Harms, Allegheny City, Pa. Saw-hanging	April 5, 1870
98,515	Morrison, Robert, New York, N. Y. Wrench	Jan. 4, 1870
100,548	Same.....Yonkers, N. Y. Preparing button-hole twist	Mar. 8, 1870
106,850	Morse, Andrew, Skowhegan, Me. Water-meter	Aug. 30, 1870
103,818	Morse, Andrew, assignor to self and Thomas Odiorne, Skowhegan, Me. Spring weighing-apparatus	May 31, 1870
3,850	Morse, Andrew J., Boston Mass. Soda-water fountain.....(Design)	April 5, 1870
104,336	Morse, Austin S., and Edwin A. Jefferies, Fort Wayne, Ind. Fire-kindler	June 14, 1870
	Morse, Charles H. (*See* Hoffman, Austin D., assignor).....(Two cases.)	
106,490	Morse, Edward, assignor to Hinkley Knitting-Machine Company, Winchendon, Mass. Knitting-machine	Aug. 16, 1870
100,178	Morse, Francis B., Plantsville, Conn. Die for forming the heads of king-bolts	Feb. 22, 1870
106,190	Same.....Process of forging carriage-shackles	Aug. 9, 1870
108,282	Same.....King-bolt	Oct. 11, 1870
103,279	Morse, Francis B., assignor to self and H. D. Smith & Co., Plantsville, Conn. Felly-plate for carriage-wheels. (Antedated May 12, 1870)	May 17, 1870
103,274	Same.....King-bolt socket for carriages. (Antedated May 12, 1870)	May 17, 1870
101,149	Same.....Die for forming T-bolts for whiffletrees. (Antedated Feb. 22, 1870)	Mar. 12, 1870
101,150	Same.....Carriage step. (Antedated Feb. 23, 1870)	Mar. 12, 1870
108,283	Same.....Die for swaging carriage-clips	Oct. 11, 1870
108,790	Same.....Carriage-clip	Oct. 25, 1870
108,928	Same.....Shaft-iron for carriages	Nov. 1, 1870
108,929	Same.....Carriage-spring	Nov. 1, 1870
109,336	Same.....Die for forging carriage-clips	Nov. 15, 1870
109,927	Same.....Thill-coupling	Dec. 6, 1870
110,383	Same.....Method of forming shaft-irons for carriages	Dec. 20, 1870
110,386	Same.....Clip-bar for carriages	Dec. 20, 1870
110,581	Same.....Carriage-clip	Dec. 27, 1870
108,617	Morse, Frederick C., Buckskin, Col. Ter. Ore-pulverizer	Oct. 25, 1870
101,758	Morse, George F., Portland, Me. Table for changing gauge of railroad car-trucks	April 12, 1870
102,299	Same.....Foot-board for locomotives	April 26, 1870
104,485	Same.....Sleeping-car	June 21, 1870
107,945	Same.....Balanced slide-valve	Oct. 4, 1870
	Morse, George F., and Jonas Hamilton. (*See* Hamilton & Morse.)	
	Morse, James O. (*See* Hoyt, John, assignor.)	
104,187	Morse, John F., Oshkosh, Wis. Feed-water heating-apparatus	June 14, 1870
	Morse, Leonard. (*See* Crooks, John P., assignor.)	
109,749	Morse, Lyman A., Battle Creek, Mich. Heating-stove. (Antedated Nov. 21, 1870)	Nov. 29, 1870
101,493	Morse, Marcellus A., Titusville, Pa. Walking-beam and sucker-rod connections for deep wells	April 5, 1870
103,357	Morse, Russell S., Wilton, Me. Washing-machine	May 24, 1870
106,853	Same.....Chelsea, Mass. Washing-machine	Aug. 30, 1870
104,983	Morse, Stephen A., assignor to American Standard Tool Company, Newark, N. J. Grinding-rest for twist-drills	July 5, 1870
110,153	Morse, William S., Washington, D. C. Wood-pavement	Dec. 13, 1870
103,358	Morstatt, William, New York, N. Y. Folding-chair	May 24, 1870
104,337	Same.....Boring-machine	June 14, 1870
107,585	Morstatt, William, and Francis Kips; said Kips assignor to said Morstatt, New York, N. Y. Folding-chair	Sept. 20, 1870
4,037	Mortimer, Charles G., New York, N. Y. Hand-stamp.....(Design)	May 17, 1870
98,790	Mortimere, John R., New York, N. Y. Pneumatic-valve for organs, &c. (Antedated Jan. 3, 1870)	Jan. 11, 1870
102,697	Morton, Albanus W., Morrisania, N. Y. Transmitting power	May 3, 1870
103,914	Morton, Ephraim S., Plymouth, Mass. Nail-hammer	June 7, 1870
103,350	Morton, James, Philadelphia, Pa. Saw-set	May 24, 1870
102,300	Morton, John S., Philadelphia, Pa. Pneumatic vacuum-engine	April 26, 1870
102,301	Morton, John S., and Joseph H. Laning, assignors to John S. Morton, Philadelphia, Pa. Pneumatic vacuum-engine	April 26, 1870
101,647	Morton, Marcus, Gallatin, Mo. Bee-hive	April 5, 1870
	Morton, Nathaniel H. (*See* Bradford, Lewis G., assignor.)	
106,041	Morvan, Arthur Guy, New York, N. Y. Electro-photo damaskeening and enameling	Oct. 4, 1870
105,713	Moschowits, Schamu Morits, New York, N. Y. Attachment for sewing-machines	July 26, 1870
99,788	Moschowits, Schamu Morits, assignor to Wheeler & Wilson Sewing-Machine Company, New York, N. Y. Apparatus for frizzling cloth	Feb. 15, 1870
104,755	Moseley, Charles H., Elgin, Ill. Punching-machine	June 28, 1870
104,756	Same.....Safety-pinion for watches	June 28, 1870
109,337	Moseley, Thomas W., assignor to R. P., Samuel R., and Anna M. L. Moseley, Boston, Mass. Screw-pile	Nov. 15, 1870
103,765	Moseley, Thomas W. H., Boston, Mass. Tubular arch-bridge	May 31, 1870
106,854	Same.....Iron-building	Aug. 30, 1870
106,855	Same.....Bridge	Aug. 30, 1870
108,614	Same.....Pile for engineering purposes	Nov. 1, 1870

Alphabetical list of patentees for the year 1870—Continued.

No.	Name, residence, and invention or discovery.	Date.
103,467	Moses, Isaac, New York, N. Y. Tailors' measure. (Antedated May 19, 1870)	May 24, 1870
101,494	Moses, Myron, Malone, N. Y. Hop-picker. (Antedated April 1, 1870)	April 5, 1870
98,991	Moses, William, Buffalo, N. Y. Safety-valve	Jan. 18, 1870
101,048	Moses, William B., Washington, D. C. Furniture-pad	April 5, 1870
98,992	Mosher, Charles W., East Leon, N. Y. Lifting-jack	Jan. 18, 1870
98,993	Mosher, Levi P., assignor to self and George Y. Miller, Stony Creek, N. Y. Sled-brake	Jan. 18, 1870
98,994	Mosher, Martin J., Troy, N. Y. Cooking-stove	Jan. 18, 1870
109,539	Mosman, Martin H., Waterbury, Conn. Curtain-fixture	Nov. 29, 1870
	Moss, Lucien. (*See* Wiler, William, assignor.)	
102,420	Mossteller, William H., Sharonville, Ohio. Tool-rest for grindstones	April 26, 1870
106,714	Most, Charles, Bergen City, N. J. Fire-cracker holder	Aug. 23, 1870
105,479	Mot, Adolphe, Washington, D. C. Making butter	July 19, 1870
	Mothershead, J. L., *et al.* (*See* Farr, Henry L., assignor.)	
98,516	Mott, Abram C., Philadelphia, Pa. Iron-core for casting	Jan. 4, 1870
106,856	Mott, Barker D., assignor to self and Harcourt Mott, Green Island, N. Y. Hood for planing-machines	Aug. 30, 1870
100,179	Mott, John M., Chicago, Ill. Drive-well tube	Feb. 22, 1870
99,223	Mott, Jordan L., Mott Haven, N. Y. Boiler-stand	Jan. 25, 1870
	Same. (*See* Bosworth, Daniel, assignor.)	
	Same. (*See* Vedder & Helster, assignors) (Two cases) (Design.)	
4,137	Moule, Henry, and Henry John Girdlestone, assignors to the Earth-Closet Company, England. Deodorizing-apparatus for closets. (Division A, reissue)	Oct. 4, 1870
4,138	Same. Earth-closet (Division B, reissue)	Oct. 4, 1870
109,230	Moulton, Amos A., Providence, R. I. Water-elevator	Nov. 15, 1870
	Moulton, Joseph H., *et al.* (*See* Perkins, Moulton & Sawyer.)	
105,233	Moulton, Luther V., Muskegon, Mich. Frame for sensitizing photographic paper	July 12, 1870
	Moulton, Moses S., and John Kavanagh. (*See* Kavanagh & Moulton.)	
107,088	Mourles, Jean Joseph Auguste, France. Preserving bread	Sept. 6, 1870
107,400	Mourning, Felix G., Bascow, Ill. Corn-plow	Sept. 13, 1870
106,606	Mowbray, George M., North Adams, Mass. Apparatus for the manufacture of nitro-glycerine	Aug. 23, 1870
106,607	Same. Apparatus for the manufacture of nitro-glycerine, nitro-benzole, &c	Aug. 23, 1870
99,833	Mowrer, Jacob M., Milheim, Pa. Corn and cob crusher	Feb. 15, 1870
100,786	Moyer, Solomon S., Allentown, Pa. Siphon	Mar. 15, 1870
4,038	Moyers, George W., Gordonsville, Va. Lamp-chimney (Design)	May 17, 1870
107,284	Moyers, John, Hillsborough, Ohio. Churn	Sept. 13, 1870
103,644	Moyle, Samuel, jr., assignor to self and Ashbel J. Carrier, Bridgeport, Conn. Oil-can spout	May 31, 1870
101,151	Moyon, Henri Nicolas, and Jacques Eugene Lemercier, France. Lasting-machine	Mar. 22, 1870
107,706	Mudge, Charles, Ovid, Mich. Scaffold-bracket. (Antedated Sept. 17, 1870)	Sept. 27, 1870
	Mudge, Charles F., *et al.* (*See* Stedman, Nathan, assignor) (Reissue.)	
	Mueller, Urban, and Herman Bauman. (*See* Bauman & Mueller.)	
98,934	Muir, Christian, Lock Haven, Pa. Stove-lining and fire-brick	Feb. 15, 1870
102,576	Muirhead, Enoch, Greenfield, Ohio. Fence and gate	May 3, 1870
99,584	Mulford, Howell, Philadelphia, Pa. Grate	Feb. 8, 1870
	Mulford, John E. (*See* Steers, Thomas, jr., assignor.)	
100,057	Mulkey, J. T., Walton's Ford, Ga. Ointment for bruises, burns, &c	Feb. 22, 1870
99,469	Mullane, D. A., and I. O. L. Murray, New Orleans, La. Device for holding together the different parts of bureaus and other articles of furniture	Feb. 1, 1870
103,468	Muller, Aloyse, France. Breech-loading fire-arm	May 24, 1870
3,841	Muller, Nicholas, New York, N. Y. Statuette (Design)	Feb. 8, 1870
3,868	Same. Clock-front (Design)	Mar. 8, 1870
3,900	Same. same (Design)	Mar. 15, 1870
4,187	Same. Statuette (Design)	June 28, 1870
4,188	Same. Pair of statuettes (Design)	June 28, 1870
4,237	Same. Clock-case (Design)	July 19, 1870
4,450	Same. Clock-front (Design)	Nov. 1, 1870
4,496	Same. same (Design)	Nov. 29, 1870
102,852	Muller, Peter, Lancaster, Pa. Truss	May 10, 1870
99,223	Muller, T. H., New York, N. Y. Power-loom	Jan. 25, 1870
	Muller, T. H., *et al.* (*See* Griffith, Wundram & Muller.)	
3,853	Muller, T. H., assignor to self, W. P. Abendroth, John Griffith, and G. W. Wundram, New York, N. Y. Steam-generator (Reissue)	Mar. 1, 1870
108,721	Muller, Teilo H., and Henry C. Benson, assignors to Joseph Reckendorfer, New York, N. Y. Machine for cutting and smoothing the ends of pencils	Oct. 25, 1870
109,750	Same. Machine for varnishing pencils	Nov. 29, 1870
100,318	Munday, Gilbert, Montezuma, Ohio. Saw-gummer	Mar. 1, 1870
98,614	Munger, George, assignor to self and J. W. Schermerhorn & Co., Madison, Conn. Desk and book-rack	Jan. 4, 1870
101,377	Munger, George, and James W. Schermerhorn, New York, N. Y. Easel	Mar. 29, 1870
100,313	Munger, W. T., assignor to P. and F. Corbin, New Britain, Conn. Reversible latch	Mar. 1, 1870
100,314	Same. Rose for door-knobs	Mar. 1, 1870
3,918	Same. Key for locks (Design)	Mar. 22, 1870
109,834	Same. Door-latch	Dec. 6, 1870

Alphabetical list of patentees for the year 1870—Continued.

No.	Name, residence, and invention or discovery.	Date.
101,739	Munn, Ira Y., Chicago, Ill. Grain-drier	April 12, 1870
104,055	Munro, Archibald, and William B. Adamson, Scotland. Machine for cutting and dressing stone	June 7, 1870
	Munroe, C. W., and C. C. Dickerman. (*See* Bancroft, C. R., assignor.)	
102,302	Munroe, George H., New York, N. Y. Apparatus for cooking meat by steam	April 26, 1870
101,903	Munroe, John L., Woburn, Mass. Bung-cutter	April 12, 1870
101,904	Same. Horse hay-rake	April 12, 1870
	Same. (*See* Harrington, Edward F., assignor.)	
	Munschauer, George J., *et al.* (*See* Heinz, Adam, assignor.)	
101,649	Munson, Albert L., New Haven, Conn. Hand-stamp	April 5, 1870
4,017	Same. same (Design)	May 10, 1870
99,461	Munson, David, Indianapolis, Ind. Lightning-rods. (Antedated Jan. 26, 1870)	Feb. 1, 1870
100,549	Same. same	Mar. 8, 1870
	Same. same. (Extension)	Aug. 4, 1870
102,853	Munson, Ira F., Washington, D. C. Wheel for vehicles	May 10, 1870
104,056	Munson, John W., Bridgeport, Conn. Manufacture of rubber-coated carriage-trimmings	June 7, 1870
108,167	Munzinger, Peter, Philadelphia, Pa. Tray for gas-purifiers	Oct. 11, 1870
109,143	Same. Condenser for gas-works	Nov. 8, 1870
109,540	Same. Center-seal for gas-works	Nov. 22, 1870
106,191	Murdock, Andrew, Brooklyn, E. D., N. Y. Base-burning fire-place heater	Aug. 9, 1870
108,930	Murdock, Richard, Baltimore, Md. Shelving for stores	Nov. 1, 1870
98,615	Murdock, William C., and Edgar K. Haynes, Boston, Mass. Apparatus for the manufacture of chocolate-drops and other confections	Jan. 4, 1870
106,192	Murfee, James W., Havanna, Ala. Attachment to plows	Aug. 9, 1870
106,193	Same. Attaching the point to the shank of subsoil-plows	Aug. 9, 1870
102,958	Murfey, Eliza D., New York, N. Y. Material for packing journals and bearings	May 10, 1870
105,361	Same. Material for packings and bearings	July 12, 1870
108,284	Same. Impregnating fibrous material for packing, &c	Oct. 11, 1870
108,285	Same. Saturating fibrous materials with powdered substances for bearings and packings	Oct. 11, 1870
108,286	Same. Material for packing and bearings	Oct. 11, 1870
109,237	Same. Mode of preventing the heating of axles or journals	Nov. 15, 1870
108,079	Murfey, Eliza Dexter, assignor to Manhattan Packing Manufacturing Company, New York, N. Y. Journal-box	Oct. 4, 1870
108,080	Same. same	Oct. 4, 1870
108,081	Same. same	Oct. 4, 1870
108,722	Same. Material for journals and bearings	Oct. 25, 1870
108,931	Same. Composition for bearings	Nov. 1, 1870
109,238	Same. Spindle-step	Nov. 15, 1870
109,239	Same. Material for bearings and journals	Nov. 15, 1870
4,210	Same. same (Reissue)	Dec. 20, 1870
110,582	Same. same	Dec. 27, 1870
110,583	Same. Bearing and packing material	Dec. 27, 1870
110,584	Same. Manufacture of material for journals, bearings, and packings	Dec. 27, 1870
107,946	Murgatroyd, Frank, Cleveland, Ohio. Expanding-tap	Oct. 4, 1870
100,180	Murphy, Albert L., Philadelphia, Pa. Horseshoe	Feb. 22, 1870
99,935	Murphy, John, New York, N. Y. Manufacture of India-rubber and gutta-percha goods	Feb. 15, 1870
101,905	Same. Manufacture of India-rubber packing, belting, and hose	April 12, 1870
104,338	Murphy, John, assignor to self and Joseph F. Tobin, Green Point, N. Y. Rattan-cutter	June 14, 1870
107,947	Murphy, John, assignor to Oren J. Faxon, Roslindale, Mass. Piano-lock	Oct. 4, 1870
110,154	Murphy, John W., Philadelphia Pa. Wrought-iron column	Dec. 13, 1870
100,787	Murphy, Joseph H. and Patrick J., Abingdon, Ill. Farm-gate	Mar. 15, 1870
104,486	Murphy, Michael C., Boston, Mass. Ventilating-window for railroad-cars	June 21, 1870
99,462	Murphy, Peter, assignor to E. and H. T. Anthony & Co., New York, N. Y. Photographic-printing frame	Feb. 1, 1870
100,930	Murray, Alexander F., and Henry Green, Moline, Ill. Water-wheel	Mar. 15, 1870
105,116	Murray, Alexander R., New York, N. Y. Water-closet box	July 5, 1870
104,873	Murray, Edgar, assignor to Henry Gerecke, New York, N. Y. Wire-cutter	June 28, 1870
109,036	Murray, Edgar, assignor to Charles W. Dunlap, New York, N. Y. Tool-handle	Nov. 8, 1870
	Murray, I. O. L., and D. A. Mullane. (*See* Mullane & Murray.)	
100,058	Murray, S. W., and B. P. Lamason, Milton, Pa. Railway oil-car	Feb. 22, 1870
	Murray, Wellwood, and Reuben D. Turner. (*See* Loew, Oscar, assignor.)	
99,463	Murray, William, Alexandria, Va. Corn-harvester	Feb. 1, 1870
106,194	Murrell, James W., Eldorado, Ark. Horse-power	Aug. 9, 1870
	Murrill, James H., assignor to self and Lewis R. Keiser, Baltimore, Md. Damper-regulator	Oct. 4, 1870
103,645	Muscroft, Charles S., Cincinnati, Ohio. Spiral-fastening	May 31, 1870
	Musgrave, Hiram B., Cincinnati, Ohio. Gas-cooking stove (Extension)	Jan. 4, 1870
98,702	Musselman, Christian C., Somerset, Pa. Combined press for cheese, &c	Jan. 11, 1870
108,379	Mutchler, Joseph, Grand Rapids, Mich. Belt-shifter	Oct. 18, 1870
103,646	Mutell, Charles W., Springfield, Mass. Spring bed-bottom	May 31, 1870
107,707	Mutersbaugh, Abraham, Lewinsville, Va. Washing-machine	Sept. 27, 1870
99,695	Myers, C. K., assignor of one-half interest to Horace Turrell, Pekin, Ill. Harvester-cutter	Feb. 8, 1870
108,360	Myers, David, Chicago, Ill. Pneumatic street-car	Oct. 18, 1870
109,338	Same. Air-engine	Nov. 15, 1870
108,932	Myers, David, and Albert B. Pullman, Chicago, Ill. Pneumatic car-brake	Nov. 1, 1870
104,758	Myers, Edward, Davis, Ill. Medical compound	June 28, 1870

Alphabetical list of patentees for the year 1870—Continued.

No.	Name, residence, and invention or discovery.	Date.
100,151	Myers, Ephraim, Creagerstown, Md. Harvester-dropper	Feb. 22, 1870
108,381	Myers, Frederick, New York, N. Y. Nut-fastening	Oct. 18, 1870
108,382	Same.....same	Oct. 18, 1870
100,648	Same.....Towel-rack	Nov. 29, 1870
103,303	Myers, Harvey L., assignor to self, N. Traitegam, and T. Slag, Kingston, Ohio. Window-sash	April 26, 1870
	Myers, Jacob G. (*See* Caslow, Henry, assignor.)	
100,788	Myers, James, jr., Brooklyn, E. D., N. Y. Mode of preventing the stealing of bonds, &c	Mar. 15, 1870
108,042	Same.....Williamsburgh, N. Y. Metal-plate of iron and steel	Oct. 4, 1870
110,469	Same.....Treating Bessemer steel	Dec. 27, 1870
102,698	Myers, John, Cincinnati, Ohio. Hydrant	May 3, 1870
	Myers, John, and Robert G. Eunson, by Eugene S. Eunson and Margaret Myers, New York, N. Y. Machine for sawing thin boards.....(Disclaimer filed)	Dec. 21, 1870
108,723	Myers, John W., Lyons, Iowa. Earth-excavator	Oct. 25, 1870
105,117	Myers, Lorenzo, Ludlowville, N. Y. Horse hay-rake. (Antedated June 28, 1870)	July 5, 1870
100,315	Myers, M. D., Frankfort, N. Y. Ratchet and pawl mechanism	Mar. 1, 1870
	Myers, Philip. (*See* Barker, Joseph, assignor).....(Two cases.)	May 17, 1870
103,225	Myers, P. Andrew, Round Hill, Pa. Sawing-machine	
	Myers, R. Westbrook, *et al.* (*See* Gardner, William and George, assignors.)	
	Myers, Samuel, and Thomas M. Herriott. (*See* Herriott & Myers).....(Reissue.)	
108,500	Myers, Washington B., Hampton, Pa. Seeder and fertilizer combined	Aug. 16, 1870
103,074	Naftel, Joseph, Cleveland, Ohio. Compound for manufacture of varnish and paint	May 17, 1870
	Nagoua, Joseph, and Emile Lefranc. (*See* Lefranc & Nagoua.)	
	Nalette, Napoleon. (*See* Daronier, Levi, assignor.)	
	Nanerth, Jacob. (*See* Pfeifer, Rupert, assignor.)	
100,439	Nanny, Oliver T., assignor to self and J. M. Hanford, Amity, N. Y. Horse hay-rake	Nov. 22, 1870
	Napp, William, and William F. Class. (*See* Class & Napp.)	
104,630	Nasch, Isidor, Prussia. Button-hole sewing-machine	June 21, 1870
107,940	Nash, George A., Niles, Mich. Ice-cream pail	Oct. 4, 1870
107,060	Nash, Stephen S., New York, N. Y. School-register	Sept. 6, 1870
	Nash, William. (*See* Cheney, Chandler, assignor.)	
	Nash, William, and Robert I. Robeson. (*See* Robeson & Nash.)	
104,186	Nason, Joseph, and David Saunders, assignors to Joseph Nason and H. R. Worthington, New York, N. Y. Steam-generator	June 14, 1870
	National Glass Company. (*See* Kirchner, William M., assignor).....(Design.)	
	National Horse-Nail Company. (*See* Wills, Harry A., assignor.)	
	National Screw Company. (*See* Pierce, Elijah S., assignor) (Two cases) (Reissue.)	
	National Spring Company. (*See* Bussell, Erastus T., assignor).....(Reissue.)	
3,919	Natorp, Gustavus, New York, N. Y. Railway-car wheel.....(Reissue)	April 12, 1870
98,616	Nauen, H. O., New York, N. Y. Lock for sewing-machine cases	Jan. 4, 1870
107,401	Same.....same	Sept. 13, 1870
	Naylor & Co. (*See* Cheney, Edwin R., assignor.)	
	Neal, Thomas L., *et al.* (*See* Maxwell, Neal & Long.)	
	Nealey, John C., and Albion P. Clements. (*See* Clements & Nealey.)	
109,039	Neames, Charles, New Orleans, La. Setting boilers	Nov. 8, 1870
107,090	Nebergall, Andrew Jackson, Cedar County, Iowa. Corn-stalk cutter	Sept. 6, 1870
108,168	Nebinger, George R., Philadelphia, Pa. Washing-machine	Oct. 11, 1870
101,760	Neeb, Peter, Buffalo, N. Y. Circular-saw mill. (Antedated April 5, 1870)	April 12, 1870
100,789	Needham, John, Morrisania, N. Y. Sofa-bed	Mar. 15, 1870
101,158	Needham, Orwell H., New York, N. Y. Treadle	Mar. 22, 1870
107,619	Same.....Compound treadle	Sept. 20, 1870
109,649	Neefus, Peter W., New York, N. Y. Metallic and elastic stair-plate. (Antedated Nov. 26, 1870)	Nov. 22, 1870
109,650	Same.....Metallic and elastic door-mat. (Antedated Nov. 26, 1870)	Nov. 29, 1870
109,651	Same.....Stair and floor plate. (Antedated Nov. 26, 1870)	Nov. 29, 1870
102,950	Neely, Benjamin F., Daleville, Ind. Clod-fender and cultivator combined	May 10, 1870
107,596	Neff, John, jr., Pultney, N. Y. Cultivator	Sept. 20, 1870
102,600	Neff, Simon, Clymouth, Ind. Well-tube	May 3, 1870
101,301	Neikirk, D. F., and John J. Koch, Republic, Ohio. Washing-machine	Mar. 29, 1870
	Neill, Arthur, and John F. Collins. (*See* Collins & Neill.)	
100,550	Neill, George W., assignor to Chickering & Sons, Boston, Mass. Damper-action for upright piano-fortes	Mar. 8, 1870
104,736	Neill, Robert L., Paterson, N. J. Boiler-tube ping	June 28, 1870
110,370	Neisch, Robert, Allentown, Pa. Machine for making cigars	Dec. 20, 1870
109,751	Nelke, Louis, Chicago, Ill. Station-indicator	Nov. 29, 1870
108,857	Nelson, Charles, Brooklyn, E. D., N. Y. Lubricator	Aug. 30, 1870
101,650	Nelson, Hiram, assignor to self and Alpheus Dolloff, Lake Village, N. H. Machine for crozing barrels	April 5, 1870
108,383	Nelson, John, Rockford, Ill. Box	Aug. 16, 1870
	Nelson, John, and W. W. Burson. (*See* Burson & Nelson.)	
103,304	Nelson, Mortimer, New York, N. Y. Mold for stereotypes	April 26, 1870
108,815	Nelson, Nels, New York, N. Y. Screw-cutting die	Nov. 1, 1870
100,790	Nelson, Thomas, assignor to Newton Reynolds and Horace G. Nelson, Troy, N. Y. Buckwheat-hulling machine. (Antedated March 3, 1870)	Mar. 15, 1870
	Nelson, Thomas, Troy, N. Y. Machinery for weaving shade-cord.....(Extension)	Dec. 14, 1870
102,146	Nes, Charles Motier, York, Pa. Manufacture of steel	April 19, 1870
102,960	Same.....Reworking Bessemer steel	May 10, 1870
104,873	Same.....Manufacture of steel	June 28, 1870

Alphabetical list of patentees for the year 1870—Continued.

No.	Name, residence, and invention or discovery.	Date.
108,267	Nes, Charles Motier, York, Pa. Manufacture of steel	Oct. 11, 1870
109,752	Same.....Manufacture of iron and steel	Nov. 29, 1870
110,490	Nesbitt, John, Concord, N. H. Balanced slide-valve	Dec. 27, 1870
107,193	Nestester, Halvor H., Deerfield, Wis. Harvester	Sept. 6, 1870
107,527	Nettleton, David, Humbard, Wis. Floor-clamp	Sept. 20, 1870
101,153	Nettleton, Frederick S., and Erwin J. Fuller, Leominster, Mass. Clothes-dryer	Mar. 22, 1870
100,040	Nettleton, Horace A., and Edwin B. Lawton, West Cheshire, Conn. Machine for scouring the eyes of needles	Nov. 8, 1870
	Nettleton, Williford H., and Henry A. Seymour. (*See* Seymour & Nettleton.)	
109,639	Neumann, Eugen, assignor through mesne assignments to Charles D. Tyler, New York, N. Y. Steam-generator	Nov. 29, 1870
102,303	Neumann, Joseph, Philadelphia, Pa. Street-lantern	April 26, 1870
99,102	Nevill, G. W., Richmond, Va. Ditching-machine	Jan. 25, 1870
	Neville, John, Brooklyn, N. Y. Making steel.....(Extension)	Dec. 6, 1870
105,480	Nevin, David, Georgetown, Col. Ter. Ore-separator	July 19, 1870
106,978	Nevins, John H., assignor to William A. Bosman, Brooklyn, E. D., N. Y. Blind-fastening hinge	Aug. 9, 1870
4,510	Newberry, Richard W., New York, N. Y. Coal-box.....(Design)	Dec. 13, 1870
4,511	Same.....same.....(Design)	Dec. 13, 1870
100,435	Newbrough, John B., New York, N. Y. Manufacture of hard rubber	Mar. 1, 1870
108,189	Newby, Thomas J., Richmond, Ind. Apparatus for evaporating sorghum juice, cooking feed, &c. (Antedated Oct. 1, 1870)	Oct. 11, 1870
108,288	Same.....Apparatus for cooking and evaporating	Oct. 11, 1870
104,339	Newcomb, George F., New Haven, Conn. Baggage-check	June 14, 1870
102,961	Newcomb, Gideon E., Bucksport, Maine. Boot and shoe heels	May 10, 1870
101,906	Newcomer, George, Cleveland, Ohio. Stove-pipe shelf	April 12, 1870
102,577	Newell, Augustus, and William Pim, Chicago, Ill. Planing-chuck	May 3, 1870
99,163	Newell, Daniel P., assignor to self, S. Washburn, and Charles R. Otis, Chicago, Ill. Soldering-machine	Jan. 25, 1870
	Newell, Elisha R. (*See* Lane, George W., assignor.)	
103,226	Newell, Joseph N., Adrian, Mich. Bed-bottom	May 17, 1870
104,189	Newell, Lewis T., Geneva, Ohio. Churn-dasher. (Antedated May 20, 1870)	June 14, 1870
101,495	Newell, Lorenzo D., New York, N. Y. Marine furniture	April 5, 1870
3,960	Same.....Sprig of artificial flowers.....(Design)	April 5, 1870
	New England Pump-Manufacturing Company. (*See* Stedman, Nathan, assignor).....(Reissue.)	
	New England Toy Company. (*See* Barker, Stephen A., assignor.)	
	New Haven Folding-Chair Company. (*See* Dann, Isaac N., assignor.)	
98,995	Newhouse, Sewell, Oneida Community, Oneida, N. Y. Metallic cartridge	Jan. 18, 1870
	Newkirk, Henry H., *et al.* (*See* Hamel & Holden, assignors.)	
104,983	Newland, Albert M., Olivet, Mich. Combined cart, wheel-barrow, and turnip-drill	July 5, 1870
109,041	Same.....Combined barrow and turnip-drill	Nov. 8, 1870
106,734	Newlin, William, Attica, Ind. Gang-plow	Oct. 25, 1870
	Newman, George S., and William H. Kite. (*See* Kite & Newman.)	
106,074	Newman, Lane L., East Saginaw, Mich. Bed-bottom	Aug. 2, 1870
105,716	Newman, Nelson, Springfield, Ill. Corn-harvester	July 26, 1870
110,271	Newman, Samuel, deceased, by John Newman, administrator, Cleveland, Ohio. Stave-jointer	Dec. 20, 1870
109,653	Newman, William R., Galesburgh, Ill. Hand-power baling-press	Nov. 29, 1870
	New Orleans Pneumatic Propelling Company. (*See* Walley, C. W., assignor.)	
	Same.....(*See* Roberts, Franklin, assignor.)	
108,816	Newsham, Sydney James, Mont Clair, N. J., and William H. Haines and William S. Henson, Newark, N. J. Manufacture of ice	Nov. 1, 1870
109,654	Newsham, William, assignor to Morris, Tasker & Co., Philadelphia, Pa. Machine for turning balls or mandrels	Mar. 6, 1870
104,984	Same.....Tap for and mode of cutting dies	July 5, 1870
104,985	Same.....Machine for cutting dies	July 5, 1870
106,373	Same.....Molding and venting machine	Aug. 9, 1870
106,195	Newsom, Godfrey S., Nashville, Tenn. Subsoil-pulverizer	Aug. 9, 1870
	Newson, John J., *et al.* (*See* Reed, Heagland & Newson.)	
108,858	Newton, Abner, Darby Creek, Ohio. Animal-trap	Aug. 30, 1870
108,383	Same.....Screw-driver	Oct. 18, 1870
110,387	Newton, Charles A., Providence, R. I. Basin-cock	Dec. 20, 1870
	Newton, Henry J., *et al.* (*See* McCracken, Edwin D., assignor.) (Two cases.)	
103,915	Newton, Hial H., Cleveland, Ohio. Tidy-pin	June 7, 1870
	Newton, Isaac E. (*See* Stever, Jeremiah, assignor.)	
110,272	Newton, James, Hanover, N. H. Music-stand	Dec. 20, 1870
100,436	Newton, James H., Holyoke, Mass. Manufacture of combined cloth and paper fabric	Mar. 1, 1870
99,484	Newton, Jasper, and Ira Barfield, Richland Parish, La. Medical compound for the cure of dropsy	Feb. 1, 1870
109,654	Newton, William Edward, England. Apparatus for cleaning and preparing rags for the manufacture of paper	May 10, 1870
	Same.....(*See* Mitchell, Joseph, assignor.)	
107,799	Newton, William H., Newport, R. I. Earth-closet	Sept. 27, 1870
	New York Hat-Finishing Company. (*See* Stout, George W., assignor.)	
	New York Improved Anthracite Coal Company. (*See* De Smedt, E. J., assignor.) (Six cases.)	
	New York Laundry Manufacturing Company. (*See* Chamberlin, George E., assignor.)	

Alphabetical list of patentees for the year 1870—Continued.

No.	Name, residence, and invention or discovery.	Date.
	New York Rubber Company. (*See* Alden, Henry A., assignor.)	
	Same.....(*See* Rider & Bird, assignors.)	
	Same.....(*See* Smith, George C., assignor.)	
	New York Water-proof Paper Company. (*See* Hudson, E. P., assignor.) (Two cases.)	
3,977	Ney, Elemir J., assignor to Lowell Manufacturing Company, Dracut, Mass. Carpet-pattern.....(Design)..	April 19, 1870
3,978	Same.....same.....(Design)..	April 19, 1870
3,979	Same.....same.....(Design)..	April 19, 1870
3,980	Same.....same.....(Design)..	April 19, 1870
3,981	Same.....same.....(Design)..	April 19, 1870
3,982	Same.....same.....(Design)..	April 19, 1870
3,983	Same.....same.....(Design)..	April 19, 1870
4,039	Same.....same.....(Design)..	May 17, 1870
4,040	Same.....same.....(Design)..	May 17, 1870
4,090	Same.....same.....(Design)..	May 31, 1870
4,091	Same.....same.....(Design)..	May 31, 1870
4,092	Same.....same.....(Design)..	May 31, 1870
4,093	Same.....same.....(Design)..	May 31, 1870
4,094	Same.....same.....(Design)..	May 31, 1870
4,339	Same.....same.....(Design)..	Sept. 6, 1870
4,340	Same.....same.....(Design)..	Sept. 6, 1870
4,341	Same.....same.....(Design)..	Sept. 6, 1870
4,342	Same.....same.....(Design)..	Sept. 6, 1870
4,343	Same.....same.....(Design)..	Sept. 6, 1870
4,411	Same.....same.....(Design)..	Oct. 11, 1870
4,412	Same.....same.....(Design)..	Oct. 11, 1870
4,413	Same.....same.....(Design)..	Oct. 11, 1870
4,414	Same.....same.....(Design)..	Oct. 11, 1870
	Neymann, E. H. (*See* Guenther, George, assignor.).....(Reissue.)	
108,618	Neynaber, Adolphus F. W., Philadelphia, Pa. Low-water indicator. (Antedated Oct. 29, 1870)	Oct. 25, 1870
101,309	Niecum, Joel G., Indianapolis, Ind. Tie-bar for holding bent wood	Mar. 29, 1870
106,859	Nicholls, Henry, Fairfield, Ky. Cotton-seed planter	Aug. 30, 1870
107,402	Nicholls, Henry Austin, assignor to Alonzo B. Pearson, St. Louis, Mo. Corn-planter	Sept. 13, 1870
3,995	Nichols, Eli L., and F. A. Edgar, Folsom, Cal. Pruning-shears.....(Design)..	April 26, 1870
106,608	Nichols, Henry J., Searsport, Me. Cabin-table	Aug. 23, 1870
98,703	Nichols, John P., New Richmond, Ohio. Churn	Jan. 11, 1870
99,104	Nichols, Josiah H., and William Bower, assignors to Beaver Falls Cutlery Company, Beaver Falls, Pa. Table-cutlery	Jan. 25, 1870
100,921	Nichols, Josiah H., and William Bower, Beaver Falls, Pa. Handle for table-cutlery	Mar. 15, 1870
102,306	Same.....Cutlery	April 26, 1870
100,791	Nichols, M. S., and Reuben Weaver, Central Village, Conn. Screen coal-hod	Mar. 15, 1870
102,033	Nichols, William D., Chicago, Ill. Wind-mill	April 19, 1870
	Nichols, William J., *et al.* (*See* Gale, L. D., assignor)..(Two cases.) (Reissue.)	
	Same.....(*See* Rand, Alonzo C., assignor.)	
102,421	Nichols, William Rhoda, assignor, to Nichols, Pickering & Co., Philadelphia, Pa. Helical spring	April 26, 1870
102,422	Nichols, William Rhoda, and Charles Williams Pickering, Philadelphia, Pa. Spring for cars and other vehicles	April 26, 1870
100,440	Nichols, William T., assignor to self and H. H. Lawrence, Chicago, Ill. Road-scraper	Nov. 22, 1870
108,817	Nicholson, Ezra, Cleveland, Ohio. Clutch-gearing	Nov. 1, 1870
105,119	Nicholson, Frederic, assignor to Peter Arndt and Richard M. Tunks, Warsaw, N. Y. Tallying register for freight	July 5, 1870
	Nicholson, James H., and Alonzo Comstock. (*See* Comstock & Nicholson.)	
106,274	Nicholson, Jesse, Monticello, Ind. Apparatus for loading wood on railway-cars	Aug. 9, 1870
108,170	Nicholson, Oscar, New York, N. Y. Colortrope	Oct. 11, 1870
98,617	Nickason, Governour M., Ellenville, N. Y. Marker for carpenters	Jan. 4, 1870
100,551	Same.....Scroll-saw	Mar. 8, 1870
102,700	Same.....Sash-marker	May 3, 1870
107,091	Same.....Machine for boring and marking	Sept. 6, 1870
106,950	Nickels, Michael Lewis, assignor to self and Thomas Nickels, Dunlapsville, Ind. Feeder for grain-drills	Aug. 30, 1870
100,189	Nickels, William F., Philadelphia, Pa. Water-filter, liquor-cooler, and refrigerator. (Antedated Sept. 7, 1869)	Feb. 22, 1870
107,690	Nickerson, Benjamin R., San Francisco, Cal. Preserving and hardening wood	Sept. 20, 1870
	Nickerson, Benjamin R., *et al.* (*See* Samuels, John L., assignor).....(Reissue.)	
	Nicodemus, William H., and James I. Smith. (*See* Smith & Nicodemus.)	
98,878	Nicol, Joseph, assignor to Sheldon & Co., Auburn, N. Y. Series of dies for forming axles	Jan. 18, 1870
107,706	Nicolai, Julius, Boston, Mass. Folding-chair	Sept. 27, 1870
108,171	Nicolay, John G., Springfield, Ill. Sash-fastener	Oct. 11, 1870
108,173	Nielson, Alfred, New York, N. Y. Universal-jointed treadle	Oct. 11, 1870
109,835	Same.....Brooklyn, N. Y. Treadle for sewing-machines	Dec. 6, 1870
102,855	Niles, Peter H., Boston, Mass. Funnel	May 10, 1870
110,273	Same.....Corset-clamp and spring. (Antedated Dec. 9, 1870.)	Dec. 20, 1870
	Niles, Samuel D., *et al.* (*See* Bellamy, John H., assignor). (Three cases.) (Design.)	
107,586	Niles, Sinclair D. G., Helena, Ark. Hame-fastening	Sept. 20, 1870
106,715	Nipp, John, jr., Raleigh, Ind. Water-power wheel	Aug. 23, 1870

Alphabetical list of patentees for the year 1870—Continued.

No.	Name, residence, and invention or discovery.	Date.
	Nisbit, William A., and Hermann Stieren. (*See* Stieren & Nisbit.)	
102,423	Nisloeduff, Stas, Lowell, Mass. Velocipede	April 26, 1870
103,360	Nittinger, August, jr., Philadelphia, Pa. Meat-cutter	May 24, 1870
106,860	Same.....Oscillating steam-engine	Aug. 30, 1870
	Nixon & Co. (*See* Barber, Vincent S., assignor)	
104,986	Nixon, Joseph, Pittsburgh, Pa. Ejector	July 5, 1870
104,987	Same.....Filter	July 5, 1870
	Nixon, William, *et al.* (*See* Mellen, Van Sandt & Palmer, assignors.)	
104,190	Noah, George C., Boston, Mass. Manufacture of paste	June 14, 1870
101,651	Noble, A. E., La Motte, Iowa. Flood-gate	April 5, 1870
105,590	Noble, Butler G., Brooklyn, N. Y. Treating oil-wells to remove obstructions to the flow of oil	July 19, 1870
	Noble, Charles, & Co. (*See* Martino & Currie, assignors).....(Design.)	
106,394	Noble, Edward, North Haven, Conn. Self-closing compression-faucet	Aug. 16, 1870
104,631	Noble, L. D., Cerro Gordo, Ill. Ditching-machine	June 21, 1870
101,658	Nobles, M. V., Elmira, N. Y. Gridiron-case	April 5, 1870
108,507	Same.....Boat-detaching apparatus	Oct. 18, 1870
103,489	Nock, George, New Monmouth, N. J. Furnace for producing "sponge" from iron ore	May 24, 1870
100,792	Noé, Charles S., Bergen Point, N. J. Hotel and burglar alarm	Mar. 15, 1870
101,496	Nolan, James, assignor to self and R. T. Henry, Oxford, N. J. Feeding-apparatus for nail-machines	April 5, 1870
100,316	Nolan, John H., Waterville, N. Y. Children's horse and self-propeller. (Antedated Feb. 11, 1870)	Mar. 1, 1870
109,042	Nolan, Nicholas, New York, N. Y. Hydraulic apparatus. (Antedated Oct. 29, 1870)	Nov. 8, 1870
107,621	Nolden, Melchior, Prussia. Apparatus for mixing, heating, and cooling substances	Sept. 20, 1870
101,497	Nonnenbacher, John, New York, N. Y. Miter-machine	April 5, 1870
	Noraconk, Michael F., and Elias Bickel. (*See* Bickel & Noraconk.)	
99,585	Norcross, E. D., Augusta, Me. Hot-air furnace	Feb. 8, 1870
107,092	Nordell, Carl, New York, N. Y. Shingle-machine	Sept. 6, 1870
107,800	Norden, Philip, and Hermann Mischo, New York, N. Y. Dyeing furs	Sept. 27, 1870
	Nordmann Brothers. (*See* Stauffer, Henry, assignor.)	
102,307	Nordquist, Johan F., Sweden. Wrench	April 26, 1870
110,155	Nordyke, Addison H., Richmond, Ird. Flour-packer	Dec. 13, 1870
	Nordyke, Marmon & Co. (*See* Marmon, Daniel W., assignor.)	
100,059	Norelius, Oliver, Minneapolis, Minn. Paper-feeder	Feb. 22, 1870
99,586	Norfolk, John R., Salem, Mass. Loom	Feb. 8, 1870
105,970	Norgan, Anthony T., Pottsville, Pa. Car-coupling	Aug. 9, 1870
105,234	Norman, Emma, New Orleans, La. Fire-place grate	July 12, 1870
99,465	Norris, Fred, Freedom Plains, N. Y. Thill-coupling	Feb. 1, 1870
105,813	Same.....Wagon-seat fastening	July 26, 1870
103,075	Norris, George E., Glen Falls, N. Y. Saw-filing instrument	May 17, 1870
107,950	Norris, Nathan, Buchanan, Mich. Railway-car coupling	Oct. 4, 1870
99,606	Norris, Nathan, Charles S., and Horace S. Black, Buchanan, Mich. Wood-turning lathe	Feb. 8, 1870
99,784	Norris, Philetus W., Detroit, Mich. Grubbing ax and hook combined	Feb. 15, 1870
100,793	Norris, Richard H., Paterson, N. J. Spooling-gauge	Mar. 15, 1870
	Norris, Richard H., and Edward Watson. (*See* Watson & Norris.)	
	North, O. B., & Co. (*See* Stout, Stephen, assignor).....(Reissue.)	
	Same.....(*See* Roberts, Benjamin S., assignor.)	
110,585	Northrup, Moses V., Hornitas, Cal. Hay and other press	Dec. 27, 1870
108,324	Norton, Cicero P., Prairie City, Iowa. Cultivator	Oct. 18, 1870
109,928	Norton, James L., England. Apparatus for dressing and furrowing millstones	Dec. 6, 1870
110,064	Same.....same	Dec. 13, 1870
109,240	Norton, James W., Pioneer, Pa. Clothes-pounder	Nov. 15, 1870
99,224	Norton, Junius S., Hartford, Conn. Pocket-safe for friction-matches	Jan. 25, 1870
99,936	Norton, J. V., Plainville, N. Y. Whiffletree	Feb. 15, 1870
106,716	Norton, Marcus P., assignor to Helen M. Ingalls, Troy, N. Y. Hand-stamp	Aug. 23, 1870
4,143	Same.....Post-office post-marking and canceling hand-stamp. (Division A, reissue)	Oct. 4, 1870
4,144	Norton, Marcus P., assignor through mesne assignments to the Secombe Manufacturing Company, Troy, N. Y. Hand-canceling stamp. (Division B, reissue)	Oct. 4, 1870
106,951	Norton, Russell W., New Haven, Conn. Machine for making wire bells	Aug. 30, 1870
	Norton, Sidney S. (*See* Davis, William M., assignor.)	
	Norwalk Lock Company. (*See* Elwell, Henry H., assignor).....(Reissue.)	
	Norwood, Francis, 2d. (*See* Woodberry, Richard A., assignor.)	
108,173	Norwood, Richard W., Courtland, Ala. Transmitting power. (Antedated Oct. 1, 1870)	Oct. 11, 1870
98,971	Norwood, Rufus, Baltimore, Md. Concrete paving-block	Jan. 11, 1870
	Noss, Samuel. (*See* Brown, William, assignor.)	
102,033	Noteman, Alonzo, Toledo, Ohio. Apparatus for redistilling and rectifying spirits	April 19, 1870
102,578	Notman, George, Deerfield, Ohio. Horse hay-rake	May 3, 1870
100,655	Notman, Walter, Deerfield, Ohio. Cultivator	Mar. 8, 1870
98,870	Nott, Benjamin, Albany, N. Y. Illuminator for stoves	Jan. 18, 1870
99,330	Same.....Illuminator for stoves, &c.	Feb. 1, 1870
106,600	Same.....Base-burning stove	Aug. 23, 1870
100,437	Nottingham, Thomas J., Cincinnati, Ohio. Lubricator	Mar. 1, 1870
110,156	Same.....same	Dec. 13, 1870
	Nourse, Joel, *et al.* (*See* Holbrook, Howe & Nourse.)	
	Novelty Iron Works Manufacturing Company. (*See* Hull, A. J., assignor.)	

Alphabetical list of patentees for the year 1870—Continued.

No.	Name, residence, and invention or discovery.	Date.
106,174	Nowlan, Samuel B. B., New York, N. Y. Steam-generator	Oct. 11, 1870
103,916	Noyes, Alpheus P., assignor to John S. Andrews, Middleton, Mass. Door-mat	June 7, 1870
105,308	Noyes, Baxter D., and Oscar G. Stratton, Greenfield, Mass. Dash-rail for carriages	July 12, 1870
106,861	Noyes, Charles Horace, Brooklyn, N. Y. Combination side-comb	Aug. 30, 1870
101,154	Noyes, George, Washington, D. C. Pug mill	Mar. 22, 1870
105,119	Same. Cut-off valve-gear and valve	July 5, 1870
106,619	Noyes, George G., Worcester, Mass. Canceling-stamp	Oct. 25, 1870
104,632	Noyes, Horatio J., and Samuel C. Talcott, Ashtabula, Ohio. Portable apparatus for curing meats, and for other purposes	June 21, 1870
	Noyes, Joseph P., and John E. Plummer. (*See* Plummer & Noyes.)	
101,761	Noyes, Person, Lowell, Mass. Tank for storing oil	April 12, 1870
102,951	Same. Apparatus for drawing and measuring oil	Oct. 4, 1870
98,906	Noyes, Walter B., assignor to self and C. S. Baker, Manchester, N. H. Lath-machine	Jan. 18, 1870
110,567	Nuelle, William and Joseph F., St. Louis, Mo. Machine for dressing fence-pickets	Dec. 27, 1870
	Numsen, William N., and Julius Wolff. (*See* Wolff & Numsen.)	
100,183	Nusbaum, A. B. C., Sacramento, Cal. Cultivator	Feb. 22, 1870
107,093	Nute, James, Boston, Mass. Apparatus for attaching standing-rigging to masts	Sept. 6, 1870
107,094	Nute, James E., Lincoln, Maine. Hand-loom	Sept. 6, 1870
106,175	Nutt, Isaiah, assignor to self, John Wharton, and Abraham C. Wheaton, Newark, N. J. Machine for forming hat-bodies	Oct. 11, 1870
100,794	Nuttall, James, assignor to Thomas Isherwood and Charles Marson, England. Tappet-chain for looms. (Antedated March 4, 1870)	Mar. 15, 1870
106,075	Nutter, George W., assignor to self and Charles Keeton, Santa Cruz, Cal. Baling-press	Aug. 2, 1870
103,917	Nutting, Rufus, Randolph, Vt. Lamp gas-burner	June 7, 1870
	Nye, George H., and James H. Pattee. (*See* Pattee & Nye.)	
105,833	Nye, Sherman R., Barre, Mass. Horse hay-rake	July 26, 1870
106,862	Oakes, Edward, Richmond, Ind. Aërial-car. (Antedated Aug. 25, 1870)	Aug. 30, 1870
	Oakley, Jesse. (*See* Leslie, George M., assignor)	(Reissue.)
	Oakman, Joseph W. (*See* Johnson, Josee, assignor.)	
103,834	Oakman, Samuel, Boston, Mass. Telegraph-insulator	July 26, 1870
99,697	Oatley, William R., Rochester, N. Y. Stove-leg	Feb. 8, 1870
103,968	Obergfell, Dominick, Wheeling, W. Va. Needle-machine	May 10, 1870
	Oberly, C., and E. G. Shortt. (*See* Shortt & Oberly.)	
104,633	Obermann, August W., Chicago, Ill. Bed-spring	June 21, 1870
99,295	Obermeyer, Frank Z., and William Halle, Milwaukee, Wis. Base-burning stove. (Antedated Jan. 20, 1870)	Jan. 25, 1870
	Obermeyer, Jacob, and Charles Diebold. (*See* Diebold & Obermeyer.)	
109,541	Obitts, William H., Elyria, Ohio. Cheese-vat	Nov. 22, 1870
4,001	Oblinger, Christian, Camden, N. J. Lamp-chimney cleaner	(Design). April 26, 1870
102,579	O'Brien, James, Geneseo, Ill. Rosette for bridles	May 3, 1870
108,725	O'Brien, James, Cedar Rapids, Iowa. Rosette for bridles	Oct. 25, 1870
	O'Brien, John. (*See* Marais, Alexis, assignor.)	
105,591	O'Brien, Louis E., Latrobe, Pa. Check-valve	July 19, 1870
104,634	O'Brien, Thomas, Quincy, Mich. Running-gear for carriages	June 21, 1870
108,043	O'Brien, Thomas H., Providence, R. I. Cushion, mattress, &c.	Oct. 4, 1870
101,303	O'Brien, William, and Henry Wentworth, Omaha, Nebr. Collar and hames	Mar. 29, 1870
102,034	Ockerlund, Nels, New York, N. Y. Rule and calculator	April 19, 1870
105,717	Same. Adding-machine	July 26, 1870
104,968	Ockington, Benjamin Brooks, and Andrew J., Stratford, N. H. Arbor for turning clothes-pins	July 5, 1870
100,060	O'Connon, Daniel C., New York, N. Y. Stay for trunk-lids	Feb. 22, 1870
105,509	O'Connor, George and Haines, Mishawaka, Ind. Grinding-mill	July 19, 1870
109,542	Same. Millstone-dress	Nov. 22, 1870
102,580	O'Connor, James, Jackson, Mo. Carriage-hub	May 3, 1870
	O'Connor, Thomas J. (*See* Williams, William L., assignor)	(Reissue.)
108,680	O'Dell, Abiel, Napanee, Canada. Clothes-wringer	Oct. 25, 1870
108,816	Same. Clothes-drier	Nov. 1, 1870
105,335	Odell, Jacob, Petroleum Centre, Pa. Sucker-rod coupling	July 12, 1870
106,196	Same. Scrubbing-brush	Aug. 9, 1870
109,989	Odell, John K., and William S. Little, assignors to G. W. Coe, Deckertown, N. J. Cast-iron plow	Nov. 1, 1870
106,039	Odenkirchen, Henry, New Haven, Conn. Package for tea and coffee	Aug. 30, 1870
	Odiorne, Thomas. (*See* Morse, Andrew, assignor.)	
	O'Donnell, John J. (*See* Jacob, James W., assignor.)	
107,365	O'Donnell, Norman, Cincinnati, Ohio. Cutting or lap board	Sept. 13, 1870
99,937	Oehl, Charles A., Portsmouth, N. H. Lozenge-machine	Feb. 15, 1870
101,496	Oerlein, George, Utica, Minn. Horse-power	April 5, 1870
108,441	Same. Harvester-rake	Nov. 22, 1870
107,493	Oertel, Henry, Memphis, Tenn. Apparatus for carbureting air	Sept. 13, 1870
4,263	Oesterling, John, Wheeling, W. Va. Glass-ware	(Design). July 26, 1870
	Ofeldt, F. W., and A. W. Almqvist. (*See* Almqvist & Ofeldt)	(Two cases.)
	O'Ferrall, John, and Thomas L. Daniels. (*See* Crawford, A. B., assignee.	(Reissue.)
	Offineer, James, and Thomas C. Martin. (*See* Martin & Offineer.)	
106,717	O'Friel, James, Brooklyn, N. Y. Treating bituminous substances for pavements, &c	Aug. 23, 1870

Alphabetical list of patentees for the year 1870—Continued.

No.	Name, residence, and invention or discovery.	Date.
109,436	Ogborn, Harrison, Richmond, Ind. Clothes-line fastener. (Antedated Feb. 25, 1870)	Mar. 1, 1870
100,552	Same. Fanning-mill and grain-separator	Mar. 8, 1870
105,481	Same. Straw-cutter	July 19, 1870
106,395	Ogborn, Harrison, assignor to Samuel Watson, Richmond, Ind. Fanning-mill	Aug. 16, 1870
109,654	Ogden, Floyd, Fisherville, Ky. Churn-dasher	Nov. 29, 1870
108,044	Ogden, Floyd, assignor to self and J. T. Rose, Fisherville, Ky. Corn-planter and marker	Oct. 4, 1870
105,120	Ogden, Marcus G., Cincinnati, Ohio. Scroll-saw	July 5, 1870
	Ogden, Nathaniel, and Robert Potts. (*See* Potts & Ogden.)	
	Ogden, William, and Seth L. King. (*See* King & Ogden.)	
108,833	Ogden, Zina S., Glen's Falls, N. Y. Device for cutting screw-threads	Nov. 1, 1870
104,487	Oglesby, William B., Ridge Prairie, Ill. Grain-binder	June 21, 1870
108,508	Oglesby, William W., Benton County, Oregon. Medical compound. (Antedated Oct. 8, 1870)	Oct. 18, 1870
108,509	O'Hara, Charles E., New York, N. Y. Manufacture of paper	Oct. 18, 1870
105,936	O'Hara, Charles M., Bolivar, Tenn. Shoe-string fastener	July 12, 1870
106,076	Ohlsen, Henry Dietrich, Chicago, Ill. Coach-cleaning sponge	Aug. 2, 1870
110,369	Ohmer, Augustus J., Hamilton, Ohio. Lawn-mower	Dec. 20, 1870
108,989	Okey, Joseph B., assignor of one-half interest to Ferdinand A. Lehr, Indianapolis, Ind. Fruit-drier	Oct. 11, 1870
	Okra Paper Company. (*See* Read, John B., assignor)	(Reissue.)
4,042	Old, James, Pittsburgh, Pa. Grate	(Reissue) June 21, 1870
110,274	Same. Furnace-stove	Dec. 20, 1870
100,553	Olden, Thomas L., Brooklyn, N. Y. Purifying acetic acid	Mar. 8, 1870
102,424	Oldfield, Edwin, Norwich, Conn. Suspender	April 26, 1870
104,340	Olds, Henry, Syracuse, N. Y. Extension-table slide	June 14, 1870
109,339	Olds, Walker, Albany, Ill. Offbearing-truck for brick-machines. (Antedated Nov. 5, 1870)	Nov. 15, 1870
109,143	Oliphant, John, assignor to F. H. Oliphant, Spring Hill Furnace, Pa. Railroad-car stove	Nov. 8, 1870
104,341	Oliver, Charles F., assignor to Nathaniel Cummings, Lynn, Mass. Piano	June 14, 1870
106,390	Same. Piano-action	Aug. 16, 1870
109,449	Oliver, Daniel B., Cambria, N. Y. Grafting-awl	Nov. 22, 1870
99,938	Oliver, David, Galesburgh, Ill. Hedge-trimmer	Feb. 15, 1870
110,065	Oliver, Ebenezer, New York, N. Y. Animal-trap	Dec. 13, 1870
	Oliver, Henry W., jr., and William J. Lewis. (*See* Lewis & Oliver.)	
109,241	Oliver, James L., Boston, Mass. Curtain-fixture	Nov. 15, 1870
101,039	Oliver, Paul A., New York, N. Y. Machine for pressing and graining powder	Mar. 22, 1870
	Oliver, Richard. (*See* De Forest, David W., assignor.)	
106,397	Olleman, Ezra A., Mooresville, Ind. Ground-pulverizer	Aug. 16, 1870
98,880	Olmsted, Joseph, Knoxville, Ill. Electro-magnetic car-brake	Jan. 18, 1870
100,656	Olmsted, L. N., Brooklyn, N. Y. Card-rack	Mar. 8, 1870
4,169	Olmsted, William R., Fayette, N. Y. Breast-collar for harness	(Design). June 21, 1870
104,989	Olney, Hiram W., Pittsburgh, Pa. Method of hanging window-shades	July 5, 1870
109,043	O'Malley, Joseph, Montreal, Canada. Stove-pipe grate	Nov. 8, 1870
100,863	O'Meara, Timothy, assignor through mesne assignments to the United States Gas Company, Brooklyn, N. Y. Apparatus for producing gas from coal	Aug. 30, 1870
4,189	Omensetter, Elhanan, assignor to Samuel Macferran, Philadelphia, Pa. Iron-railing	(Design). June 28, 1870
4,190	Same. same	(Design). June 28, 1870
4,191	Same. same	(Design). June 28, 1870
4,192	Same. same	(Design). June 28, 1870
4,193	Same. same	(Design). June 28, 1870
4,194	Same. same	(Design). June 28, 1870
4,195	Same. same	(Design). June 28, 1870
4,196	Same. same	(Design). June 28, 1870
	Omensetter, Elhanan, and Samuel Macferran. (*See* Macferran & Omensetter.) (Design.)	
101,907	O'Neil, John H., Cleveland, Ohio. Hanging-basket	April 12, 1870
99,939	O'Neil, John K., Kingston, N. Y. Horse hay-rake	Feb. 15, 1870
3,876	Same. Horse hay-fork	(Reissue) Mar. 8, 1870
104,342	O'Neil, Nelson, assignor to self and Edward O'Neil, jr., Purchase Line, Pa. Straw-cutter	June 14, 1870
106,953	O'Neill, John M., Clinton, Iowa. Railway-car seat	Aug. 30, 1870
103,647	Onslow, Adolph, Jersey City, N. J. Disengaging valve-gear for locomotives	May 31, 1870
101,653	Oothoudt, Josiah, Minneapolis, Minn. Lath-machine	April 5, 1870
104,875	Same. Hitching-post	June 28, 1870
110,389	Orbeton, William W. S., Bradford, Mass. Combined parlor and cooking stove	Dec. 20, 1870
109,930	Orchard, Thomas, Lincoln, Cal. Coupling for earth-boring augers	Dec. 6, 1870
109,242	Ord, William, Brooklyn, N. Y. Piston-packing	Nov. 15, 1870
98,618	Ordway, Ira J., West Edmeston, N. Y. Device for measuring and laying out garments	Jan. 4, 1870
98,517	Ordway, John M., assignor to Sewell Brackett, Jamaica Plains, Mass. Manufacture of artificial stone. (Antedated Dec. 18, 1869)	Jan. 4, 1870
105,237	O'Reardon, Mathew, New York, N. Y. Pen-rack	July 12, 1870
110,275	O'Reilly, Michael, New York, N. Y. Preparation of cod-liver oil	Dec. 20, 1870
107,891	Orewiler, Michael, assignor to self and John R. Ancherman, Bucyrus, Ohio. Automatic gate	Sept. 27, 1870
106,970	Orn, John, Paducah, Ky. Machine for elongating and spreading saw-teeth	Aug. 30, 1870
	Ormrod, Ralph. (*See* Bothwell, Samuel, assignor.)	

Alphabetical list of patentees for the year 1870—Continued.

No.	Name, residence, and invention or discovery.	Date.
109,044	Ormsbee, Marcus, Brooklyn, N. Y. Pin-cushion	Nov. 8, 1870
104,191	Ormsby, John H., and Robert S. Harton, Holden, Mo. Churn	June 14, 1870
107,404	Ormsby, Justin H., Dixon, Ill. Thill-coupling	Sept. 13, 1870
	Orr, Frank M., *et al.* (*See* Jackson, Richard A., assignor.)	
	Orr, George W. (*See* Babbitt, Samuel, assignor.)	
104,837	Orr, John M., Leesburgh, Va. Railway-rail chair and joint	June 7, 1870
	Orr, William D., and Robert E. Tolar. (*See* Tolar & Orr.)	
	Orting, Sophus, and P. J. McK. (*See* Sorenson, Soren, assignor.)	
105,593	Ortiz, Carlos, and Hilario Valladares, Matanzas, Cuba. Railway-rail cleaner	July 19, 1870
98,619	Ortlieb, Frederick O., Green Point, N. Y. Rotary engine	Jan. 4, 1870
108,045	Ortlip, Andrew, East Vincent, Pa. Mill-stone bush and bearing	Oct. 4, 1870
100,657	Orton, Merrill S., and Peter B. Stiles, Galesburgh, Ill. Dish-washer	Mar. 8, 1870
101,304	Orton, M. S., assignor to Zimri Pond, Galesburgh, Ill. Pump	Mar. 22, 1870
107,864	Osborn, Benjamin F., assignor to T. H. Jones & Co., Nashville, Tenn. Cultivator	Aug. 30, 1870
100,658	Osborn, Bennet, New York, N. Y. Paper box	Mar. 8, 1870
103,766	Osborn, Charles K., Dixon, Ill. Shutter-fastener	May 31, 1870
104,674	Osborn, Francis M., Port Chester, N. Y. Tongue-holder for dentists	June 28, 1870
104,633	Osborn, George Kellogg, New York, N. Y. Argand oil-burner	June 21, 1870
107,892	Osborn, George R., Bridgeport, Conn. Bird-cage	Sept. 27, 1870
107,953	Osborn, George W., Parkville, Mich. Tie for bags, grain, &c	Oct. 4, 1870
107,709	Osborn, Henry Clay, Clark County, Ohio. Corn plow and planter	Sept. 27, 1870
109,340	Osborn, Ornan, Erie, Pa. Plow	Nov. 15, 1870
106,308	Osborn, William Edwin, Brooklyn, N. Y. Hand-stamp	Aug. 16, 1870
	Osborne, Joseph, and Richard F. Knox. (*See* Knox & Osburn.)	
	Osburn, Harrison, and William G. Dunniway. (*See* Dunniway & Osborne.)	
105,230	Osgood, Benjamin F., Coloma, Mich. Apparatus for staking horse-powers	July 12, 1870
108,819	Osgood, Franklin R., Grand Rapids, Mich. Folding window-blind	Nov. 1, 1870
105,971	Osgood, James M., assignor to self and Flagg & Osgood, Somerville, Mass. Apparatus for automatically regulating the flow of gas used in heating vulcanizers, &c	Aug. 2, 1870
107,710	Osgood, Jason C., Troy, N. Y. Ditching-machine	Sept. 27, 1870
101,654	Osgood, John Felt, Boston, Mass. Desulphurizing ores	April 5, 1870
109,836	Osgood, Luke B., Shelby, Mich. Washing-machine	Dec. 6, 1870
106,954	Osgood, Otis S., Burlington, Iowa. Bed-bottom	Aug. 30, 1870
104,757	Osgood, Ralph Robert, Troy, N. Y. Dredging-machine	June 28, 1870
107,599	Same.....Ditching-machine	Sept. 20, 1870
	Osgood, Smith & Co (*See* Smith, Samuel F., assignor.)	
	Same.....(*See* Woodburn & Smith, assignors.)	
99,785	Ost, Elias G., Shelburne Falls, Mass. Fastening handle to cutlery	Feb. 15, 1870
106,197	Osterkamp, Hermann, Prussia. Rock-drill	Aug. 9, 1870
103,918	Ostrom, Henry W., Grand Rapids, Mich. Cultivator	June 7, 1870
103,308	Otis, Charles R., Chicago, Ill. Paint-pail	April 26, 1870
	Otis, Charles R., *et al.* (*See* Newell, Daniel P., assignor.)	
104,488	Otis, Joel A., Rutland, N. Y. Pail-ear	June 21, 1870
100,659	Otis, John L., Leeds, Mass. Emery-wheel	Mar. 8, 1870
105,121	Otstot, John D., Springfield, Ohio. Combined bevel, square, rule, &c	July 5, 1870
107,711	Ott, Adolph, New York, N. Y. Treating tin scrap for the manufacture of stannate of potash, &c	Sept. 27, 1870
107,712	Same.....Furnace for smelting scrap-iron	Sept. 27, 1870
4,211	Otterson, Thomas Garrison, assignor to S. B. Rowley, Philadelphia, Pa. Fruit-jar	Dec. 20, 1870 (Reissue)
106,610	Ottinger, Charles, Philadelphia, Pa. Automatic passenger-register for vehicles	Aug. 23, 1870
	Otto, Franz. (*See* Morganstern, William, assignor.)	
101,305	Otto, H. C. S., New York, N. Y. Medical compound	Mar. 29, 1870
105,482	Otto, Julius E., Elmore, Ohio. Shoe-fastener	July 19, 1870
101,908	Outten, George Franklin, Norfolk, Va. Hinge	April 12, 1870
	Outwater, Jacob D. C., *et al.* (*See* James, John Dawson, jr., assignor.) (Two cases.)	
104,676	Overbagh, Addison, Scranton, Pa. Equalizing-bar for railway-car trucks	June 28, 1870
103,581	Overend, John A. T., San Francisco, Cal. Boiler-furnace. (Antedated April 23, 1870)	May 3, 1870
107,803	Oviatt, Luman B., Brooklyn Village, Ohio. Cover for cooking utensils	Sept. 27, 1870
103,919	Owen, Amos D., Thorntown, Ind. Brand for canceling stamps	June 7, 1870
103,490	Owen, Charles N., Salem, Ohio. Harvester	May 24, 1870
107,804	Same.....Harvester-reel	Sept. 27, 1870
103,767	Owen, Demus J., Springville, Pa. Animal-trap	May 31, 1870
3,815	Owen, George B., Winsted, Conn. Clock-frame (Design)	Jan. 11, 1870
106,865	Owen, Silas R., Stewartsville, Mo. Earth-scraper	Aug. 30, 1870
	Owen, William M., and George W. Sizer. (*See* Sizer & Owens.)	
105,230	Owens, Thomas W., Granville, Ohio. Farm-fence	July 12, 1870
105,483	Same.....Clothes-line clamp	July 19, 1870
107,093	Same.....Fence	Sept. 6, 1870
110,066	Owings, Wilson S., Pan Handle, W. Va. Hitching-post	Dec. 13, 1870
103,361	Oxer, William James, Williamsport, Ind. Cutter-bar for harvesters	May 24, 1870
	Pacific Pump-Manufacturing Company. (*See* Stedman, Nathan, assignor.) (Reissue.)	May 17, 1870
103,237	Pack, George J., New York, N. Y. Preparing gold for dentists' use	Oct. 18, 1870
108,383	Packard, Elizabeth L., assignor to Lucius H. Packard, Stoughton, Mass. Cooking utensil	

Alphabetical list of patentees for the year 1870—Continued.

No.	Name, residence, and invention or discovery.	Date.
105,718	Packard, Isaac T., Chicago, Ill. Reed musical instrument	July 26, 1870
99,406	Packard, Sumner, Grafton, Mass. Boot and shoe shave	Feb. 1, 1870
109,837	Paddington, George, Waubeck, Iowa. Corn-planter	Dec. 6, 1870
107,286	Paddock, Harvlin, assignor to self and Franklin Fairbanks, St. Johnsbury, Vt. Registering weighing-scale	Sept. 13, 1870
103,491	Padon, John B., Troy, Ill. Washing-machine	May 24, 1870
3,877	Page, Clark D., Rochester, N. Y. Lime-kiln (Reissue)	Mar. 8, 1870
3,924	Page, Daniel A., Dover, N. H. Trade-mark (Design)	April 19, 1870
104,760	Page, David B., Henry, Ill. Case for scissors. (Antedated June 16, 1870)	June 28, 1870
104,990	Page, Edwin K., Havana, N. Y. Folding-stereoscope	July 5, 1870
	Page, Ira M., and Louis N. Fletcher. (*See* Fletcher & Page.)	
106,280	Page, James T., Rochester, N. Y. Broiler	Aug. 9, 1870
4,218	Same.....same (Reissue)	Dec. 27, 1870
	Page, Philip S. (*See* Williams, Thomas S., assignor.)	
	Page, Philip Sidney, and Thomas Scott Williams. (*See* Taber, Freeman Augustus, assignor.)	
	Same.....(*See* Williams & Taber, assignors.)	
99,698	Page, T. C., and George W. Hadley, Chicopee, Mass. Calipers	Feb. 8, 1870
104,991	Page, Uriah, Ringgold, La. Press for pressing cotton or hay	July 5, 1870
	Page, Wilder & Co. (*See* Webster, John T., assignor).(Two cases.) (Design.)	
3,901	Page, William H., assignor to William H. Page & Co., Norwich, Conn. Type. Design	Mar. 15, 1870
3,902	Same.....Type (Design)	Mar. 15, 1870
3,903	Same.....same (Design)	Mar. 15, 1870
3,904	Same.....same (Design)	Mar. 15, 1870
3,905	Same.....same (Design)	Mar. 15, 1870
4,279	Same.....same (Design)	Aug. 9, 1870
4,280	Same.....same (Design)	Aug. 9, 1870
4,281	Same.....same (Design)	Aug. 9, 1870
4,282	Same.....same (Design)	Aug. 9, 1870
4,283	Same.....same (Design)	Aug. 9, 1870
4,284	Same.....Type-border (Design)	Aug. 9, 1870
4,285	Same.....same (Design)	Aug. 9, 1870
109,931	Page, William L., East Boston, Mass. Metallic cartridge. (Antedated Nov. 26, 1870)	Dec. 6, 1870
104,636	Page, William L., assignor to self and Charles E. Robinson, Boston, Mass. Revolving fire-arm	June 21, 1870
4,296	Pages, Jules F., San Francisco, Cal. Hand-stamp (Design)	Aug. 16, 1870
105,240	Paget, Arthur, England. Machine for tightening ropes, &c. (Patented in England April 21, 1868)	July 12, 1870
104,192	Pagett, Alexander W., Springfield, Ohio. Vegetable cutter and scraper	June 14, 1870
105,835	Pagett, George W., Oxford, Ind. Show-case for ribbons, &c	July 26, 1870
	Pahlman, H. J., *et al.* (*See* Wolff, Ludwig, assignor.)	
100,184	Paige, David O., Detroit, Mich. Safe	Feb. 22, 1870
103,492	Paige, James W., Rochester, N. Y., and Dexter Reynolds, Albany, N. Y. Boiler for steam-heaters	May 24, 1870
	Same.....(*See* Reynolds & Paige.)	
4,541	Paige, William H., Springfield, Mass. Railway-car seat-lock (Design)	Dec. 27, 1870
105,979	Paillard, Amedee, assignor to M. I. Paillard & Co., Switzerland. Musical box	Aug. 2, 1870
98,881	Paine, Clinton L., Young America, Ill. Steam culinary-apparatus	Jan. 18, 1870
100,317	Paine, Elias A., Grafton, Mass. Shuttle for looms	Mar. 1, 1870
98,793	Paine, Enoch H., Louisville, Ky. Suspending upper berth in sleeping-cars	Jan. 11, 1870
102,147	Paine, Henry J., assignor to self and Joseph Kelly, Providence, R. I. Safety-valve	April 19, 1870
101,306	Paine, Henry M., Newark, N. J. Rotary hydro-pneumatic pump. (Antedated Feb. 23, 1870)	Mar. 29, 1870
102,856	Paine, Henry M., assignor to self and M. S. Frost, Newark, N. J. Electro-magnet	May 10, 1870
103,228	Same.....Electro-magnetic engine	May 17, 1870
103,229	Same.....Magnetic engine	May 17, 1870
103,230	Same.....Electro-magnet	May 17, 1870
103,231	Paine, Henry M., assignor of one-half interest to M. S. Frost, Newark, N. J. Construction of electro-magnets	May 17, 1870
103,768	Same.....Sector electro-magnet	May 31, 1870
104,992	Painter, William, Baltimore, Md. Seed-sower. (Antedated June 23, 1870)	July 5, 1870
99,587	Pallicer, W., assignor to Joseph Valentine Smedley, England. Railway-rail fastening	Feb. 8, 1870
108,046	Palmenberg, Joseph R., New York, N. Y. Show-stand	Oct. 4, 1870
99,340	Palmer, Aaron and Charles W., Brockport, N. Y. Harvester-rake	Feb. 1, 1870
100,922	Same.....same	Mar. 15, 1870
	Palmer, Amos B., and William C. Jilleon. (*See* Jilleon & Palmer.)	
105,363	Palmer, Charles H., New York, N. Y. Bobbin-winder for sewing-machines	July 12, 1870
109,753	Palmer, Charles H., assignor to A. F. Sawyer, William H. Sharp, Jacob Regensburger, Charles D. Carter, and Mary P. Carpenter, New York, N. Y. Needle and its carrying-arm for sewing-machines	Nov. 29, 1870
98,793	Palmer, Charles W., Lynn, Mass., and Charles Houghton, Boston, Mass. Felt shoe	Jan. 11, 1870
105,836	Palmer, Charles W. and Henry R., Lynn, Mass., and Charles Houghton, Boston, Mass., assignors to Charles Houghton. Manufacture of hollow felted articles	July 26, 1870
101,655	Palmer, Frederic Ingersoll, Youngstown, Ohio. Belt-awl	April 5, 1870

Alphabetical list of patentees for the year 1870—Continued.

No.	Name, residence, and invention or discovery.	Date.
99,099	Palmer, George F., Rochester, N. H. Machine for picking cotton and other waste	Feb. 8, 1870
109,425	Palmer, George N., Greene, N. Y. Churn	April 26, 1870
105,484	Palmer, Henry L., Stillwater, N. Y. Preserving various articles of food	July 19, 1870
105,485	Same. Preserving vegetable extracts	July 19, 1870
108,726	Same. Flue-cleaner for cooking-stoves	Oct. 25, 1870
105,973	Palmer, Isaac H., Lodi, Wis. Harvester	Aug. 2, 1870
	Palmer, James. (*See* Powers, D. J., assignor) (Reissue.)	
110,276	Palmer, Jason J., Pittsburgh, Pa. Vapor-burner	Dec. 20, 1870
109,933	Palmer, Jay R., assignor to self and James H. Hatch, Mariposa, Cal. Car-coupling	Dec. 6, 1870
109,655	Palmer, John, Randolph, Mass. Sewing-machine	Nov. 29, 1870
110,567	Palmer, John S., Providence, R. I. Finger ring	Dec. 27, 1870
	Palmer, Milton J., *et al.* (*See* Mellen, Van Sandt & Palmer.)	
101,153	Palmer, Moses, jr., Lynn, Mass. Shirt-yoke	Mar. 22, 1870
103,239	Same. Boston, Mass. Shirt-bosom	May 17, 1870
105,486	Palmer, Moses, jr., Boston, Mass., and E. Willoughby Anderson, Washington, D. C. Pattern for measuring the body for garments	July 19, 1870
101,656	Palmer, Oliver, Cincinnati, Ohio. Trace-fastening	April 5, 1870
	Palmer, Orlando A. (*See* Stanley, Edgar A., assignor.)	
	Palmer, Philip A., and James Rigby. (*See* Rigby & Palmer) (Two cases.)	
104,637	Palmer, Samuel L. and George E., Sandy Hill, N. Y. Lath-machine	June 21, 1870
109,045	Palmer, Sidney W. and Josiah F., Auburn, N. Y. Apparatus for towing canal-boats	Nov. 8, 1870
102,701	Palmer, Theodore J., New York, N. Y. Rocking and reclining chair	May 3, 1870
99,940	Palmer, William H. H., Rockville, R. I. Shingle-machine	Feb. 15, 1870
103,709	Pampel, Frederick W., assignor to self and Thomas H. Schaeffer, Frederick, Md. Thrashing-machine	May 31, 1870
106,196	Panknin, Charles F., Charleston, S. C. Ink	Aug. 9, 1870
107,713	Same. Tanning	Sept. 27, 1870
109,656	Same. Compound for tating hides and skins. (Antedated Nov. 26, 1870)	Nov. 29, 1870
106,718	Pannetrat, Francois Martin, France. Solar-time instrument	Aug. 23, 1870
	Papo, Gevert. (*See* Holliday, Isaac, assignor.)	
104,058	Paradis, Joseph, and William H. Drew, Brooklyn, N. Y. Machine for untwisting and separating hair-rope	June 7, 1870
99,105	Paraf, Alfred, New York, N. Y. Method of fixing pigments to fibrous and textile materials	Jan. 25, 1870
109,341	Paraf, Alfred, assignor to Edward Sabine Renwick, New York, N. Y. Manufacture and application of colors for printing and dyeing	Nov. 15, 1870
110,277	Paraf, Alfred, assignor to Edward S. Renwick, trustee, New York, N. Y. Manufacture of colors, and their application to fabrics	Dec. 20, 1870
108,047	Parcell, Peter B., Ashmore, Ill. Shovel-plow	Oct. 4, 1870
109,443	Parham, Charles, Philadelphia, Pa. Sewing-machine	Nov. 22, 1870
103,770	Pariah, Edward W., assignor to self and John Parish, Boston, Mass. Inner sole for boots and shoes	May 31, 1870
100,660	Park, Andrew G., Leon, N. Y. Sawing-machine	Mar. 8, 1870
106,611	Park, Gilbert G., Xenia, N. Y. Hay-loader	Aug. 23, 1870
101,378	Park, Josiah B., North Platte, Nebr. Turbine water-wheel	Mar. 21, 1870
106,190	Park, Robert W., Philadelphia, Pa. Vapor-burner	Aug. 9, 1870
106,200	Same. same	Aug. 9, 1870
	Park, Sidney W., Albany, N. Y., and Edgar S. Ells, Tremont, N. Y. Rotary knitting-machine (Extension)	July 23, 1870
110,491	Park, Webster, Norwich, Conn. Key for locks. (Antedated Dec. 15, 1870)	Dec. 27, 1870
	Parker, Abram, *et al.* (*See* Dyer, Parker & Way.)	
	Parker, A. S. (*See* Beardsley, George F., assignor.)	
105,941	Parker, Caleb A., New Orleans, La. Brick-kiln	July 12, 1870
	Parker, Charles. (*See* Brown, Thomas W., assignor.)	
	Same. same (Reissue.)	
	Same. (*See* Boynton, Edward S., assignor.)	
	Same. (*See* Jerald, Bennet, assignor) (Design.)	
	Same. (*See* Geer, George, assignor.)	
	Same. (*See* Buckley, Chauncey, assignor.)	
	Same. (*See* Green, Charles, assignor.)	
102,426	Parker, Charles F., Greenfield, Ohio. Dumping-wagon	April 26, 1870
107,714	Parker, Charles F., assignor to Joseph Parker, Greenfield, Ohio. Ironing-machine	Sept. 27, 1870
98,830	Parker, Charles H., Boston, Mass. Bridge	Jan. 4, 1870
100,185	Same. same	Feb. 22, 1870
101,379	Same. Screw-piling	Mar. 29, 1870
103,233	Same. Bridge	May 17, 1870
99,941	Parker, Edward, Plymouth, Conn. Scaffold-bracket	Feb. 15, 1870
	Same. Buckle for wearing apparel (Extension)	Aug. 24, 1870
105,719	Parker, Eliphalet H., Bucksport, Maine. Planking-set. (Antedated July 18, 1870)	July 23, 1870
107,539	Parker, Emery, New Britain, Conn. Track-rail for sliding-doors	Sept. 20, 1870
3,833	Parker, Emery, assignor to the Russell & Erwin Manufacturing Company, New Britain, Conn. Sash or shutter lift (Design)	Feb. 1, 1870
105,497	Same. Machine for milling the knuckles of butt-hinges	July 19, 1870
105,498	Same. Machine for centering butts	July 19, 1870
107,895	Parker, Ezra, Beverly, Ohio. Water-wheel	Sept. 27, 1870

Alphabetical list of patentees for the year 1870—Continued.

No.	Name, residence, and invention or discovery.	Date.
105,837	Parker, Isaac J., Buffalo Grove, Iowa. Hay-loader	July 26, 1870
109,444	Parker, John, Dubuque, Iowa. Fly-trap	Nov. 22, 1870
110,493	Parker, La Fayette, Davenport, Iowa. Grain-binder	Dec. 27, 1870
	Parker, Le Grand. (*See* Taylor, Samuel H., assignor) (Two cases.)	
101,769	Parker, Samuel J., Williamsport, Pa. Boiler-feeder	April 12, 1870
4,041	Same. Wheel-holding block for a caster (Design)	May 17, 1870
106,612	Parker, Samuel W., Somerville, Mass. Piano	Aug. 23, 1870
107,623	Parker, Stillman, Altoona, Pa. Hoop-shaving machine	Sept. 20, 1870
108,176	Parker, Thomas B., Lincsville, Pa. Combined plow and scraper for roads	Oct. 11, 1870
102,582	Parker, William M., Boston, Mass. Fire-extinguisher. (Antedated April 19, 1870)	May 3, 1870
98,704	Parkhurst, Stephen R., assignor to Emily R. Parkhurst and Warren H. Holt, Mont Clair, N. J. Picker for wool	Jan. 11, 1870
98,705	Same. Cotton-gin	Jan. 11, 1870
	Parkhurst, Varanus P. (*See* Calnan, John B., assignor.)	
101,763	Parkhurst, Ziba, Milford, Mass. Machine for burring and cleaning wool, &c.	April 12, 1870
3,877	Parkin, William, assignor to Reed & Barton, Taunton, Mass. Cake-basket or fruit-tray (Design)	Mar. 1, 1870
4,911	Parkin, William, assignor to Henry G. Reed, George Brabrook, and Henry H. Fish, Taunton, Mass. Tea-service (Design)	July 5, 1870
4,437	Parkin, William, assignor to Reed & Barton, Taunton, Mass. Table caster. (Design)	Oct. 25, 1870
4,438	Same. Caster-bottle (Design)	Oct. 25, 1870
	Parkinson, John. (*See* Entwistle, James, assignor.)	
103,493	Parks, Austin S., Winchendon, Mass. Tool for fitting bottoms to fruit-baskets	May 24, 1870
102,309	Parks, Caroline, Milan, Ohio. Swift and reel	April 26, 1870
	Parkton, Charles H. (*See* Blake, William, assignor.)	
105,122	Parmele, William A., assignor to self and Philip P. Ahren, New Haven, Conn. Adjustable link for water-wheel gates	July 5, 1870
108,510	Parmelee, Dubois D., New York, N. Y. Coating the interior of pipes, tubes, &c., with silver or other metals, by the electro-depositing process	Oct. 18, 1870
102,148	Parmelee, Dubois D., assignor to Walter K. Marvin, New York, N. Y. Treating tin-scrap to obtain useful products	April 19, 1870
99,296	Parmelee, H., assignor to Edward D. Peck, Philadelphia, Pa. Adding-machine	Jan. 25, 1870
	Parmenter, Isaac W., and Thomas J. McArthur. (*See* Geraghty, Michael F., assignor.)	
98,997	Parnell, George, Ontario, N. Y. Feed-cutter	Jan. 18, 1870
107,806	Parrish, Nathan, Kalamazoo, Mich. Heating-stove. (Antedated Sept. 21, 1870)	Sept. 27, 1870
107,807	Same. Hoisting-machine	Sept. 27, 1870
105,720	Parrott, Charles F., assignor to self and John F. Kohler, New York, N. Y. Treating and preserving grain in bulk	July 26, 1870
	Parrott, George B. (*See* Warren, Sylvester W., assignor.)	
	Parsons, Albert A., and John C. Crummy. (*See* Crummy & Parsons.)	
101,900	Parsons, Albion, Burlington, Iowa. Spool-thread case	April 12, 1870
104,343	Parsons, Charles Chauncy, New York, N. Y. Purifying alcohol and spirits	June 14, 1870
	Parsons, James Seton. (*See* Winchester, Arthur St. Clair, assignor.)	
107,953	Parsons, James S., assignor to self and Arthur S. Winchester, Windham, Conn. Wire	Oct. 4, 1870
103,310	Parsons, John H., Jonesville, Mich. Broom	April 26, 1870
105,364	Parsons, Joseph A., Cleveland, Ohio. Ditching-machine	July 12, 1870
102,149	Parsons, William B., Short Tract, Pa. Car-coupling	April 19, 1870
103,648	Partridge, Benjamin S., assignor to self and William A. Stafford, Pilatka, Fla. Wheel for tinners' beading-machine. (Antedated May 19, 1870)	May 31, 1870
99,227	Partridge, Hiram C., and James Preston, Bainbridge, N. Y. Post-auger	Jan. 25, 1870
101,156	Partridge, William, deceased, by Marie A. Partridge, administratrix, assignor to Walter A. Wood Mowing and Reaping Machine Company, Philadelphia, Pa. Harvester-rake	Mar. 22, 1870
98,518	Partz, August F. W., Oakland, Cal. Collecting gold from ores	Jan. 4, 1870
104,761	Patch, Asahel H., Hamilton, Mass. Clothes-drier	June 28, 1870
110,067	Patch, John L., assignor to self and E. F. Tilden, Charlestown, Mass. Bobbin-winder for sewing-machines	Dec. 13, 1870
4,007	Paterson, James, assignor to R. H. & B. C. Reeve, Elizabeth, N. J. Floor-cloth pattern (Design)	May 3, 1870
4,415	Paterson, James, assignor to Thomas Potter, Son & Company, Elizabeth, N. J. Oil-cloth pattern (Design)	Oct. 11, 1870
4,416	Same. same (Design)	Oct. 11, 1870
	Paterson, Robert, and John Hamilton. (*See* Hamilton & Paterson.)	
	Paton, Thomas C. (*See* Root, John B., assignor) (Two cases.) (Reissue.)	
	Paton, Thomas C. Morton. (*See* Johnson & Hutchman, assignors.)	
99,467	Patric, C. E., Macedon, N. Y. Tooth for grain-drills	Feb. 1, 1870
110,300	Pattee, Gordon B., Ottawa, Canada. Saw-tooth swage	Dec. 20, 1870
103,076	Pattee, James H., and George H. Nye, assignors to selves, R. G. Graham, and H. H. Pattee, Monmouth, Ill. Steam vacuum-pump	May 17, 1870
109,933	Patten, Alphonso, assignor to self and Robert W. Ramsey, Biddeford, Me. Shoe-lacing hook	Dec. 6, 1870
99,288	Patten, I. N., and D. G. Marden, Memphis, Tenn. Hay and cotton press	Jan. 25, 1870
110,278	Patten, Isaac N., and Eli W. Long, Shelby County, Tenn. Cotton-press	Dec. 20, 1870
101,910	Patten, Julia W. D., Washington, D. C. Extension traveling-bag	April 12, 1870
104,919	Same. Strawberry-huller	June 28, 1870
	Patterson, Andrew, and Leopold Klee. (*See* Klee & Patterson.)	
108,501	Patterson, Andrew, assignor to John Dean, Worcester, Mass. Nail	Aug. 16, 1870
4,133	Patterson, Elias C., Rochester, N. Y. Rein-holder for carriages (Reissue)	Sept. 27, 1870

Alphabetical list of patentees for the year 1870—Continued.

No.	Name, residence, and invention or discovery.	Date.
105,948	Patterson, Francis M., and Henry P. Miller, Seymour, Ind. Harness-makers' edging-tool	July 12, 1870
99,241	Patterson, James, San Francisco, Cal. Table-fork. (Antedated Jan. 29, 1870)	Feb. 1, 1870
103,934	Patterson, James Willard, assignor to Sarah Ellen Patterson and John Ashcroft, New York, N. Y. Rendering lard	May 17, 1870
100,793	Patterson, John, Pittsburgh, Pa. Coal-car and truck-wheel	Mar. 15, 1870
96,794	Patterson, N. A., assignor to self, Thomas S. Ramsey, and D. E. Davenport, Nashville, Tenn. Communicating apparatus for hotels	Jan. 11, 1870
101,499	Patterson, Oliver, South Dansville, N. Y. Potato-digger	April 5, 1870
105,243	Patterson, Robert, Catskill, N. Y. Steam-generator	July 12, 1870
103,523	Patterson, William, and Andrew Brown. (*See* Brown & Patterson.)	May 3, 1870
103,524	Pattison, Gurney C., Baltimore, Md. Anchor	May 3, 1870
	Same.....same	
103,235	Pattison, Joseph N., and Charles E. Kemp. (*See* Kemp & Pattison.)	May 17, 1870
103,369	Patton, Alexander G., Troy, N. Y. Cooking-stove	May 24, 1870
106,955	Patton, Samuel, assignor to self, John M. Long and Robert Allstatter, Chatsworth, Ill. Combined corn harvester and husker	Aug. 30, 1870
99,106	Patton, William, Towanda, Pa. Latch for gates, &c. (Antedated Aug. 25, 1870)	Jan. 25, 1870
106,309	Patton, William P., and William A. Middleton; said Patton assignor to said Middleton, Harrisburgh, Pa. Corn-sheller	Aug. 16, 1870
103,585	Patton, William R., assignor of one-half interest to Denison Tisdale, Des Moines, Iowa. Car-coupling	May 3, 1870
101,500	Patzaner, Max, New York, N. Y. Fly-trap	April 5, 1870
102,857	Paul, Almaris B., San Francisco, Cal. Apparatus for disintegrating ores	May 10, 1870
99,342	Same.....Self-discharging pulverizing-barrel	Feb. 1, 1870
108,934	Paul, Seth D., Woonsocket, R. I. Self-acting mule for spinning	Nov. 1, 1870
	Paulin, Arthur M., Atlanta, Ill. Washing-machine	
104,638	Pausch, Louis, and James T. Guthrie. (*See* Guthrie & Pausch.)	June 21, 1870
	Pavy, Eugene, France. Manufacture of useful and ornamental fabrics from vegetable and animal fibers	
	Pawtucket Hair-Cloth Company. (*See* Arnold & Lindsley, assignors.)	
3,793	Payne, Brigham, South Coventry, Conn. Machine for necking cartridge-shells. (Reissue)	Jan. 11, 1870
	Payne, D. C., and Isaac Ayres. (*See* Ayres & Payne.)	
102,708	Payne, Frederick C., New York, N. Y. Sofa-bed	May 3, 1870
106,613	Payne, George W., Memphis, Tenn. Gin for linting cotton	Aug. 23, 1870
3,879	Payne, Ira T., Chester, Conn. Auger (Reissue)	Mar. 15, 1870
106,956	Payne, Reuben L., Riceville, Va. Cultivator	Aug. 30, 1870
100,719	Payne, Sanford D., Kasota, Minn. Fruit-basket	Aug. 23, 1870
105,974	Payne, William H., Janesville, Wis. Grain-binder	Aug. 2, 1870
	Payson, James G., and Lyman B. Stilson. (*See* Stilson & Payson.)	
	Payton, Pat, and Benjamin P. Freeman. (*See* Freeman & Payton.)	
	Peabody, Augustus, *et al.* (*See* Calef, Joseph W., assignor.)	Feb. 1, 1870
99,343	Peabody, F., Louisville, Ky. Camera-screen	
	Peabody, Henry W., & Co. (*See* Abbott, Dexter D. W., assignor.)	May 3, 1870
103,586	Peabody, Rufus H., Chelsea, Mass. Sewing-machine	Aug. 30, 1870
106,806	Peacock, Thomas Brower, Dresden, Ohio. Lamp-shade holder	
	Peadro, Atweel L., and Jonathan L. Devol. (*See* Devol & Peadro.)	July 26, 1870
105,636	Pearce, John W., Suisun, Cal. Spade and shovel	May 17, 1870
103,236	Pearl, Adolph, New York, N. Y. Manufacture of bunches for cigars	Oct. 11, 1870
108,280	Same.....Mold for shaping and drying cigar-bunches	May 3, 1870
103,587	Pearl, Oliver, Lawrence, Mass. Bobbin for spinning, &c	Nov. 15, 1870
108,943	Pearman, John W., and Joseph F. C. Lutz, Holden, Mo. Bolster for wagons	Aug. 9, 1870
108,281	Pearsall, George T., Apalachin, N. Y. Planing-machine	Feb. 15, 1870
99,948	Pearsall, William C., McMinnville, Tenn. Hub for carriage-wheels	
	Pearson, Alonzo B. (*See* Nicholls, Henry Austin, assignor.)	Mar. 29, 1870
101,307	Pearson, Samuel, Cincinnati, Ohio. Attachment for brushes	Mar. 22, 1870
101,157	Pearson, Walter H., Philadelphia, Pa. Dredging and excavating machine	Mar. 15, 1870
3,906	Pearson, William, and Peter Hogeboom, Ripon, Wis. Trade-mark.....(Design)	Aug. 23, 1870
106,614	Peart, Sylvanus E., McKeesport, Pa. Lubricator for loose wheels	May 3, 1870
102,703	Pease, Hart F., Brooklyn, N. Y. Piston connections	
110,279	Pease, Henry, assignor to self and Henry W. Seymour, Brockport, N. Y. Harvester-rake	Dec. 20, 1870
99,408	Pease, Henry A., Hartford, Conn. Manufacture of soap. (Antedated Jan. 21, 1870)	Feb. 1, 1870
107,954	Pease, Horatio Nelson, Toledo, Ohio. Cultivator	Oct. 4, 1870
106,615	Pease, John Ives, Stockbridge, Mass. Railway-car seat	Aug. 23, 1870
104,059	Pease, Oscar S., Xenia, Ohio. Fare-recorder for cars, &c	June 7, 1870
99,631	Pease, O. S., and L. E. Skinner, Cincinnati, Ohio. Railway-car brake. (Antedated Dec. 24, 1869)	Jan. 4, 1870
	Pease, Oscar S., and William M. Russell. (*See* Russell & Pease.)	
108,400	Peavey, Andrew J., assignor of three-fourths interest to George F. Pettis, Boston, Mass. Governor for steam-engines	Aug. 16, 1870
103,494	Peavey, Charles A., Joliet, Ill. Feed-water connecting-pipe for locomotives	May 24, 1870
110,269	Peck, Charles, assignor to self and Milo Peck, New Haven, Conn. Rock-drill	Dec. 20, 1870
108,437	Peck, Deon E., Burlington, Conn. Elastic door-guard	April 26, 1870
	Peck, Edward D. (*See* Parmelee, H., assignor.)	
	Peck, Edwin J., *et al.* (*See* Farr, Henry L., assignor.)	
	Peck, G. S., *et al.* (*See* Clark, L. S., assignor.)	
99,998	Peck, James L., Dansville, N. Y. Tongue and thill-coupling	Jan. 18, 1870
	Peck, Joseph. (*See* Blakeslee, Charles W., assignor.)	

Alphabetical list of patentees for the year 1870—Continued.

No.	Name, residence, and invention or discovery.	Date.
109,445	Peck, J. Franklin, Springfield, Mass. Spring bed-bottom	Nov. 22, 1870
106,957	Peck, Lowell L., Portland, Oreg. Washing-machine	Aug. 30, 1870
	Peck, Samuel & Co. (*See* Jerome, Samuel B., assignor.) (Four cases.) (Design.)	
100,061	Peck, Walter, Rockford, Ill. Wind-mill	Feb. 22, 1870
102,588	Same.....Grinding-mill	May 3, 1870
106,502	Peckham, Merritt, Utica, N. Y. Fire-grate	Aug. 16, 1870
106,503	Same.....Base-burning stove	Aug. 16, 1870
102,704	Peck, George H., East Hamburgh, N. Y. Smiths' bellows	May 3, 1870
109,543	Same.....Corn-planter	Nov. 22, 1870
	Peckham, Charles H., *et al.* (*See* Spicer, Peckham & Spicer.)	
104,983	Peet, Rolla A., Caledonia Township, Mich. Hay and manure fork	July 5, 1870
99,943	Peet, S. J., New York, N. Y. Stop-valve for steam and other engineery	Feb. 15, 1870
99,944	Same.....same	Feb. 15, 1870
100,318	Same.....Apparatus for making solid cores. (Antedated Feb. 16, 1870)	Mar. 1, 1870
100,319	Same.....Machine for producing molds. (Antedated Feb. 16, 1870)	Mar. 1, 1870
100,320	Same.....Machine for producing cores. (Antedated Feb. 16, 1870)	Mar. 1, 1870
101,033	Peet, Samuel Joseph, and Daniel Sawyer, assignors to Samuel Joseph Peet, Boston, Mass. Machine for forming molds	Mar. 22, 1870
107,531	Peirce, Thomas W., Minneapolis, Minn. Hay fork and hook	Sept. 20, 1870
	Peirce, William H., *et al.* (*See* Lichtenstein, Joseph, assignor.)	
98,694	Pelisse, Augustus, assignor of one-fourth interest to Warner A. Childs, Newark, N. J. Machine for stretching hats	Jan. 4, 1870
99,709	Pelisse, A., and Francis Degen, Newark, N. J. Hat-sizing machine	Feb. 8, 1870
108,621	Peloubet, David A., assignor to Warren Spadone & Co., Hudson City, N. J. Chain-link and bar	Oct. 25, 1870
105,594	Pemberton, Henry, Allegheny City, Pa. Manufacture of paper	July 19, 1870
106,177	Same.....same	Oct. 11, 1870
100,439	Pemberton, John S., Atlanta, Ga. Medical compound from globe-flower	Mar. 1, 1870
102,035	Pemberton, Thomas and George A., England. Alarm and other bells. (Patented in England May 4, 1868)	April 19, 1870
107,287	Pence, John W., Clayton, Ohio. Earth-pulverizer	Sept. 13, 1870
108,048	Pence, Oliver P., Des Moines, Iowa. Fruit-drier	Oct. 4, 1870
107,955	Pencille, Jethro, assignor to self and Cornelius Hood, Lockport, N. Y. Friction-roller for railway-car trucks	Oct. 4, 1870
	Pendleton, John M. (*See* Loew, Oscar, assignor) (Three cases.)	
102,963	Pendleton, William, and Henry M. Boardman, Augusta, Ga. Cotton-press	May 10, 1870
103,311	Penfield, Charles R., Lockport, N. Y. Flower-pot	April 26, 1870
	Penfield, Henry S., and Eben B. Fenton. (*See* Fenton & Penfield.)	
98,519	Penfield, James W., Willoughby, Ohio. Tile-machine	Jan. 4, 1870
3,905	Same.....Cleveland, Ohio. Tile-machine (Reissue)	April 5, 1870
104,677	Penicks, Thomas B., Philadelphia, Pa., and Joseph Heflly, Washington, D. C. Umbrella	June 28, 1870
108,820	Penney, Joseph, Rochester, N. Y. Machine for dressing hoops	Nov. 1, 1870
99,469	Pennington, Isaac, Tiffin, Ohio. Grain-fan	Feb. 1, 1870
	Pennington, Josias, jr. (*See* Sneider, Charles Edward, assignor.)	
102,312	Pennock, Abraham Liddon, Philadelphia, Pa. Radiating or boiler plate	April 26, 1870
103,363	Same.....Steam-generator	May 24, 1870
106,867	Same.....Upper Darby, Pa. Operating-valves	Aug. 30, 1870
107,715	Same.....Furnace-grate	Sept. 27, 1870
103,364	Pennock, W. H., assignor to self and W. H. Greenwalt, Mermaid, Del. Churn. (Antedated April 28, 1870)	May 24, 1870
99,299	Pennoyer, Dorwin Dorman, assignor to self and Albert Harvey Brooks, Colebrook, N. H. Paint or coating for roofs	Jan. 25, 1870
103,495	Pennoyer, George, New York, N. Y. Harness saddle-tree	May 24, 1870
	Pentlarge, Rafael, and David Lichtenstadt. (*See* Lichtenstadt & Pentlarge.)	
107,956	Peoble, Frederick G., New York, N. Y. Curtain-fixture	Oct. 4, 1870
99,945	Peple, Anthony, East Billerica, Mass. Preparing certain kinds of cotton-waste for cleaning machinery	Feb. 15, 1870
101,158	Same.....Mode of attaching cornices to windows	Mar. 22, 1870
4,077	Same.....same (Reissue)	July 19, 1870
108,881	Same.....Billerica, Mass. Preparing cotton-waste for cleaning machinery	Nov. 1, 1870
109,046	Pepler, James, England. Machine for dressing mill-stones. (Antedated Oct. 29, 1870)	Nov. 8, 1870
102,498	Pepper, Daniel Webster, assignor to William Jenks Fell and Joseph E. Taylor, Philadelphia, Pa. Dredging-can	April 26, 1870
3,901	Pepper, John, assignor through mesne assignments to the Pepper Knitting-Machine Company, Boston, Mass. Knitting-machine (Reissue)	Mar. 29, 1870
102,313	Pepper, John, assignor to Ipswich Mills, Lake Village, N. H. Knitting-machine	April 26, 1870
105,123	Pepper, Truman W., New York, N. Y. Sewing-machine	July 5, 1870
110,261	Peppler, Thomas, Hightstown, N. J. Gang-plow	Dec. 20, 1870
103,930	Percival, Joshua J., Speedwell, Va. Fire-tongs	June 7, 1870
107,538	Percival, Lionel V., and Joseph Link; said Percival assignor to said Link, U. S. Army. Animal-trap	Sept. 20, 1870
99,470	Perham, Aurestus S., assignor to self, Alonzo Bell, and Amos Hadley, Washington, D. C. Compound tool	Feb. 1, 1870
101,034	Perin, A., France. Saw-mill	Mar. 22, 1870
101,501	Perkes, Charles, Philadelphia, Pa. Sealing-apparatus for pipe-joint couplings	April 5, 1870
109,047	Perkins, Charles H., assignor to Perkins Sheet-Iron Company, Providence, R. I. Pitman	Nov. 8, 1870
	Perkins, D. W. (*See* Selleck, W. L., assignor.)	
108,401	Perkins, Elias, Fond du Lac, Wis. Refrigerator	Aug. 16, 1870

Alphabetical list of patentees for the year 1870—Continued.

No.	Name, residence, and invention or discovery.	Date.
106,201	Perkins, E. Lamson, Joseph H. Moulton, and Charles E. Sawyer, Boston, Mass. Steam-trap	Aug. 9, 1870
109,446	Perkins, George C., Hartford, Conn. Woven-wire mattress	Nov. 22, 1870
	Same. (*See* Locher, Conrad, assignor.)	
109,186	Perkins, George H., Brooklyn, N. Y. Cap for metallic cans	Feb. 22, 1870
104,193	Same. Metallic cap for tin cans. (*See* Lecomte & Perkins.)	June 14, 1870
	Perkins, George H., and Joseph Lecomte. (*See* Lecomte & Perkins.)	
105,244	Perkins, Harford J., assignor to George S. Snyder, Williamsport, Pa. Machine for sharpening the teeth of saws. (Antedated July 1, 1870)	July 12, 1870
103,771	Perkins, Henry L., Kinsman, Ohio. Hay-spreader	May 31, 1870
104,344	Perkins, Howard, assignor to self, Thomas B. Grover, and John B. Hartwell, Mansfield, Mass. Sash-fastener	June 14, 1870
108,314	Perkins, R. W., assignor to W. H. Hayward, Colchester, Conn. Ventilated rubber-boot	April 26, 1870
	Perkins, Stanhope, *et al.* (*See* Sacro, Perkins & Smellie.)	
108,797	Perkins, William M., and Theodore F. Vandergift, La Fountain, Ind. Draught-equalizer	Oct. 25, 1870
	Perkins, William Wallace, *et al.* (*See* Reilley, John O., assignor.)	
102,964	Perrault, Joseph, Troy, N. Y. Pressure-blower	May 10, 1870
100,321	Perrault, L. A., Natchez, Miss. Bottle-cock	Mar. 1, 1870
103,991	Perrine, Alfred T., Louisville, Ky. Metallic boot and shoe heel	June 7, 1870
100,440	Perrine, Alfred T., assignor to self and William C. Chase, Louisville, Ky. Auger for boring square holes	Mar. 1, 1870
109,057	Perrot, Louis, Greenville, Wis., and Frank Perrot and Charles H. Bates, Appleton, Wis. Combined-garden-tool	Nov. 22, 1870
	Perry, Charles, and Thomas Watson. (*See* Watson & Perry.)	
103,923	Perry, Chauncey, Rochester, N. Y. Grain-cleaner. (Antedated May 23, 1870)	June 7, 1870
100,441	Perry, Chauncey, and James E. Wheat, Rochester, N. Y. Grain-cleaner. (Antedated Feb. 26, 1870)	Mar. 1, 1870
99,701	Perry, Dan, North Providence, R. I. Knife-guard	Feb. 8, 1870
109,944	Perry, Daniel W., Wilkesbarre, Pa. Cutter-head	Nov. 15, 1870
	Perry, Edward and Richard, *et al.* (*See* Wood, Enoch, assignor.)	
4,148	Perry, Edward L., and Charles Manheim, assignors to the Combination Rubber Company, and the Gutta-Percha and Rubber Manufacturing Company, New York, N. Y. Manufacture of rubber or gutta-percha hose (Reissue)	Oct. 4, 1870
	Perry, Franklin Waldo. (*See* White, Zebard Thompson, assignor.)	
105,975	Perry, Frederick M., Barton, Vt. Cut-off for relays and other electro-magnetic instruments	Aug. 2, 1870
102,150	Perry, George, Granville, Ill. Double-shovel plow	April 19, 1870
4,008	Perry, John G., Kingston, R. I. Harvester (Reissue)	May 31, 1870
104,680	Same. same	June 21, 1870
104,490	Same. same	June 21, 1870
	Perry, John S., trustee and executor, *et al.* (*See* Dickey, Andrew, assignor.)	
100,302	Perry, John S., and Andrew Dickey, Albany, N. Y. Base-burning stove	Mar. 1, 1870
104,060	Perry, Joseph R., Wilkesbarre, Pa. Organ-bellows	June 7, 1870
106,375	Same. same	Aug. 9, 1870
104,762	Perry, Joseph R., Daniel W., and James, Wilkesbarre, Pa. Street-railway car-truck	June 28, 1870
	Perry, Nathan B., *et al.* (*See* Dickey, Andrew, assignor.)	
106,730	Perry, Noah C., Chester, Conn. Machine for bending wire screw-eyes	Aug. 23, 1870
101,303	Perry, Oliver H., Golconda, Ill. Wood-turning lathe	April 5, 1870
102,429	Perry, S. M., Plainfield, N. J., and R. Goddard, Brooklyn, N. Y., assignors to R. S. Renwick. Breech-loading pistol	April 26, 1870
	Perry, Samuel W., *et al.* (*See* Hawks, Elizabeth, assignee). (Disclaimer.)	
	Perry, William, and John J. Mills. (*See* Mills & Perry.)	
3,787	Perry, William H., Sharon, Pa. Manufacture of bar-iron (Reissue)	Jan. 4, 1870
99,566	Same. Manufacture of iron and granulating the same	Feb. 8, 1870
109,170	Peter, Lewis A., Neffs, Pa. Horse-power	Oct. 11, 1870
102,315	Peters, George M., Columbus, Ohio. Adjustable metallic dasher for vehicles	April 26, 1870
104,061	Peters, Henry, Davenport, Iowa. Tool for cutting off bolts, rods, &c.	June 7, 1870
106,698	Peters, J., William C., and William A. Le Row, Chicago, Ill. Bed and bed-bottom	Oct. 25, 1870
	Peters, Norris. (*See* Rehn, Isaac, assignor.)	
108,858	Peters, Samuel, Crescent, N. Y. Lantern	May 10, 1870
	Peters, Simeon, P. (*See* Cargar, Tyrus M., assignor.)	
	Petersen, Theodor, *et al.* (*See* Wicke, Brouner, Petersen & Zehfuss.)	
106,731	Peterson, Alfred, Stockwell, Ind. Mole-ditching machine	Aug. 23, 1870
108,049	Peterson, Christian, Red Wing, Minn. Fanning-mill	Oct. 4, 1870
	Peterson, Julius, and Joseph Wood Tuttle. (*See* Tuttle & Peterson.)	
107,884	Peterson, Peter, Abingdon, Ill. Belt-fastening	Sept. 6, 1870
	Peterson, Richard, and David Stuart. (*See* Stuart & Bridge, assignors). (Design.)	
	Same. same (Two cases.)	
	Peterson, Richard, *et al.* (*See* Bridge, Lewis, assignor.)	
101,035	Peterson, Thomas F., New Orleans, La. Apparatus for purifying water for the manufacture of ice	Mar. 22, 1870
	Peterson, Thomas K., *et al.* (*See* Horter, George, assignor) (Two cases.)	Sept. 6, 1870
107,194	Petin, Hippolyte Ulysse, France. Machine for rolling tires	Feb. 1, 1870
99,344	Petre, N., New York, N. Y. Lock	June 14, 1870
104,194	Petrie, Walter R., Westville, Conn. Manufacturing carriage-spring heads	Oct. 25, 1870
108,633	Pettee, Simon E., and Clarence A. Wells, Bethlehem, Pa. Paper-file	Mar. 15, 1870
100,798	Pettee, William W., Foxborough, Mass. Presser-foot for sewing-machines	

Alphabetical list of patentees for the year 1870—Continued.

No.	Name, residence, and invention or discovery.	Date.
103,778	Pettengill, Manasseh, assignor to self and Solon Jonson, Le Roy, Minn. Metal tip for boots and shoes	May 31, 1870
110,494	Pettes, Moses M., Worcester, Mass. Countersink	Dec. 27, 1870
109,187	Petteys, Eli, Chestertown, N. Y. Wagon	Feb. 22, 1870
107,288	Pettibone, Chauncey V., Fond du Lac, Wis. Thread-spool	Sept. 13, 1870
108,447	Same. Wheel for vehicles	Nov. 22, 1870
	Pettibone, Rush J., and Benjamin Garvin. (*See* Garvin & Pettibone.)	
	Pettingell, William, and Ashbel G. Smith. (*See* Smith & Pettingell.)	
102,705	Pough, Spencer B., Salem, Ind. Washing-machine	May 3, 1870
	Povey, Abiel, and John Currier. (*See* Currier & Povey.)	
	Povey, James A. (*See* Smith, Luther, assignor.)	
104,878	Pfaff, Adolph, Baltimore, Md. Machine for cutting fat, &c	June 28, 1870
102,030	Pfau, John L., jr., Quincy, Ill. Attachment for heating stoves	April 19, 1870
103,237	Pfau, Julius P., Lansingburgh, N. Y. Railway-station indicator	May 17, 1870
98,999	Pfeifer, Rupert, assignor to self and Jacob Naberth, Austria. Corn-sheller	Jan. 18, 1870
108,179	Pfeil, John C., Arensville, Ill. Three-horse equalizer	Oct. 11, 1870
98,795	Pfleghar, F. P., assignor to self and McLagon & Stevens, New Haven, Conn. Knob-latch	Jan. 11, 1870
100,661	Same. Combined latch and lock	Mar. 8, 1870
103,773	Pflegher, Solomon, assignor to self and James Shoemaker Pflegher, Reading, Pa. Valve-cock for hydrants	May 31, 1870
	Phares, P., *et al.* (*See* Campbell, James A., assignor.)	
102,965	Phelan, William, Peoria, Ill. Condenser and feed-water heater	May 17, 1870
	Phelan, Dennis, *et al.* (*See* Curry, John Mayre, assignor.)	
108,386	Phelps, Augustus H., assignor to Phineas E. Saunders, Mary E. Phelps, and Joseph Cook, Trenton, Mich. Refrigerator	Oct. 18, 1870
110,068	Phelps, Chamberlayne, Clayton, N. Y. Elastic mane-turner	Dec. 13, 1870
109,443	Phelps, Chamberlayne, Clayton, N. Y., and Aaron K. Tuttle, Cape Vincent, N. Y. Atmospheric leaf-turner	Nov. 22, 1870
	Phelps, D. D., *et al.* (*See* Ballantine, Alexander T., assignor.)	
104,630	Phelps, Ebenezer W., Elizabeth, N. J. Saw gumming and sharpening machine	June 21, 1870
4,159	Phelps, George M., Brooklyn, N. Y. Printing-telegraph (Reissue)	Oct. 11, 1870
	Phelps, Park & Co. (*See* Wilson, James S., assignor.)	
108,024	Phelps, Samuel W., Sandusky, Ohio. Machine for driving nails	Oct. 25, 1870
99,569	Phelps, William E., Elmwood, Ill. Hay-gatherer	Feb. 8, 1870
100,797	Same. Ventilator	Mar. 15, 1870
103,365	Same. Boot-blacking attachment to bureaus	May 24, 1870
105,976	Same. Sash-holder	Aug. 2, 1870
107,710	Same. Car-ventilator and refrigerator	Sept. 27, 1870
108,625	Phelps, William F., Winona, Minn. Map-stand. (Antedated Oct. 13, 1870)	Oct. 25, 1870
98,882	Phelps, William M., and Samuel J. Burpee, Marshall, Mich. Heating-stove	Jan. 18, 1870
103,496	Phelps, William P., Brooklyn, N. Y, and William J. Philips, Philadelphia, Pa., assignors to William J. Philips. Printing-telegraph instrument	May 24, 1870
104,345	Same. Printing-telegraph instrument	June 14, 1870
	Philadelphia Patent and Novelty Company. (*See* Goodes, E. A., assignor). (Two cases.)	
104,346	Philip, David C., Philmont, N. Y., and Clark and Ira Tompkins, Troy, N. Y., assignors to Clark Tompkins. Knitting-machine	June 14, 1870
109,798	Philip, Frank, assignor to Hamilton E. Towle and George Ed. Harding, Stockport, N. Y. Knitting-machine	Mar. 15, 1870
98,706	Philip, Peter and Franklin, Stockport, N. Y. Machine for making wire-heddles	Jan. 11, 1870
106,976	Philip, Peter, Stockport, N. Y. Machine for husking corn	Aug. 9, 1870
106,977	Same. Heddle-machine	Aug. 9, 1870
98,883	Philippe, Joseph, Germany. Mode of producing light by means of solid and liquid hydrocarbons	Jan. 18, 1870
107,533	Phillips, Lester, Eau Claire, Wis. Fence	Sept. 20, 1870
	Philips, William J., and William P. Phelps. (*See* Phelps & Philips) (Two cases.)	
98,825	Phillips, David, assignor to Daniel M. Zook and Herman Klingman, Oil City, Pa. Tongs for lifting and adjusting well-tubing. (Antedated Dec. 18, 1869)	Jan. 4, 1870
109,934	Phillips, Elwood, Centreville, Ind. Corn-plow	Dec. 6, 1870
	Phillips, Ephraim. (*See* Low, Isaac, assignor.)	
105,345	Phillips, Ezekiel, Blackstone, Mass. Cad-iron heater	July 12, 1870
101,159	Phillips, George H., Troy, N. Y. Cooking-stove. (Antedated Feb. 14, 1870)	Mar. 22, 1870
4,063	Same. same (Reissue)	July 5, 1870
4,219	Same. Reservoir cooking-stove (Reissue)	Dec. 27, 1870
107,808	Phillips, John, Chicago, Ill. Saw	Sept. 27, 1870
	Phillips, Nicholas E., *et al.* (*See* Swickard, Noah, assignor) (Reissue)	
	Phillips, N. M. (*See* Marston, T. P., assignor.)	
109,342	Phillips, Robert V., Council Bluffs, Iowa. Door-catch	Nov. 15, 1870
100,698	Phillips, Russell, Boston, Mass. Clothes-drier	Mar. 8, 1870
106,808	Same. Carpenters' plane	Aug. 30, 1870
108,189	Phillips, Thomas, Cadiz, Ohio. Fire-place	Oct. 11, 1870
	Phillips, Thomas, and Alexander Van Vleck. (*See* Van Vleck & Phillips.)	
	Phillips, Thomas D., and Lyman Bradley. (*See* Bradley & Phillips.)	
109,658	Phillips, Thomas D., Cassadaga, N. Y., and Thomas S., assignors to Benoni S. Brown and Thomas S. Phillips, Buffalo, N. Y. Enameled cast-iron retort	Nov. 29, 1870
	Phillips, William J., and Charles J. Linberg. (*See* Linberg & Phillips.)	
104,347	Phillips, William L., Normal, Ill. Malt-drier	June 14, 1870
108,511	Phillips, Zelora, Osseo, Mich. Brick-machine	Oct. 18, 1870
102,906	Phillips, Zephaniah, Dixon, Ill. Carpenters' plane	May 10, 1870

Alphabetical list of patentees for the year 1870—Continued.

No.	Name, residence, and invention or discovery.	Date.
104,783	Philp, John Wesley, Humboldt, Tenn. Cultivator	June 28, 1870
102,857	Phinney, Hugh M., Cambridge, Mass. Ventilator-register	May 10, 1870
106,869	Phinney, William H., Pawtucket, R. I. Scale for showing weight and price	Aug. 30, 1870
	Phippa, D. Goffe, *et al.* (*See* Camp, M. M., assignor.)	
104,348	Phippa, D. Goffe, assignor to self, Mortimer M. Camp, and Ellsworth I. Foote, New Haven, Conn. Joint for cement-pipes	June 14, 1870
103,649	Phleger, Leonard, Philadelphia, Pa. Steam-engine connection. (Antedated May 19, 1870)	May 31, 1870
110,157	Pickard, Ira, assignor to self and James W. Slaght, Lena, Ill. Coal-grate	Dec. 13, 1870
106,402	Pickens, Andrew F., New York, N. Y. Box for blacing, &c.	Aug. 16, 1870
102,968	Pickens, William, and Peter Dalrymple, Chicago, Ill. Machine for dressing mill-stones	May 10, 1870
102,589	Pickerill, Frank M., Indianapolis, Ind. Automatic wagon-brake	May 3, 1870
99,230	Pickerill, Samuel J. and Francis M., Indianapolis, Ind. Automatic wagon-brake	Jan. 25, 1870
103,497	Pickering, Charles H., Memphis, Tenn. Hand corn-sheller	May 24, 1870
	Pickering, Charles Williams, and William Rhoda Nichols. (*See* Nichols & Pickering.)	
99,231	Pickering, Jonathan, England. Apparatus for raising and lowering weights	Jan. 25, 1870
102,316	Pickett, Benjamin F., Nashville, Tenn. Railway-car roof	April 26, 1870
4,191	Pickford, Henry, assignor to Harshaw Scott, New York, N. Y. Skate-fastening (Reissue)	Nov. 29, 1870
102,317	Piehl, John F., Richmond, Ind. School-desk	April 26, 1870
106,403	Same same	Aug. 16, 1870
99,946	Pierce, Charles E., New York, N. Y. Combined harrow, roller, and seed-sower	Feb. 15, 1870
104,195	Same Alarm-attachment for locks and bolts	June 14, 1870
99,345	Pierce, D. C., Chicago, Ill. Railway-chair and fish-joint. (Antedated Jan. 24, 1870)	Feb. 1, 1870
99,346	Same Clayton, N. Y. Railway-frog. (Antedated Jan. 24, 1870)	Feb. 1, 1870
102,430	Pierce, Edwin A., New York, N. Y. Portable shoe-brush and box	April 26, 1870
3,940	Pierce, Elijah S., assignor to the National Screw Company, Hartford, Conn. Tool for cutting screw-threads (Division A, reissue)	April 26, 1870
3,941	Same Screw (Division B, reissue)	April 26, 1870
	Pierce, Isaac. (*See* Hall, James T., assignor.)	
109,539	Pierce, James D., and John B. Smith, Milwaukee, Wis. Stove-pipe thimble	Dec. 6, 1870
	Pierce, J. D. (*See* Sanders, David, assignor.)	
103,923	Pierce, Jonas J., Sharpeville, Pa. Hot-blast apparatus	June 7, 1870
100,663	Pierce, Levi, Charlestown, Mass. Mode of suspending mirrors to furniture	Mar. 8, 1870
104,196	Pierce, M. K., Calahan's Ranch, Cal. Sheet-metal pipe forming and threading machine	June 14, 1870
100,664	Pierce, Willard, Traxton, N. J. Ditching-machine	Mar. 8, 1870
	Pierce, William H. (*See* Sabina, Philander G., assignor.)	
	Pierce, William H., and Augustus Guild. (*See* Guild & Pierce.)	
	Pierce, Wyatt W., *et al.* (*See* Ross, Robert, assignor.)	
99,708	Pierpont, Joshua, assignor to self and Sidney S. Tuttle, La Harpe, Ill. Device for securing shovels and plowshares to standards	Feb. 8, 1870
	Pierpont, Joshua, and Sidney S. Tuttle, La Harpe, Ill. Fastening for shovels for cultivators and plows	Oct. 18, 1870
	Pierson, Edward M., assignor to Edwin D. McCracken, Newark, N. J. Switch for galvanic batteries	Oct. 18, 1870
	Pierson, Peter. (*See* Blakesley, Ezra, assignor.)	
99,107	Pike, Charles F., Providence, R. I. Cooling-apparatus	Jan. 25, 1870
99,471	Pike, Charles F., assignor to Henry C. Mahurin and Charles Smead, Providence, R. I. Railway cattle-car	Feb. 1, 1870
108,387	Pike, William G., Philadelphia, Pa. Machine for making rope	Oct. 18, 1870
107,405	Pilkington, James E., Baltimore, Md. Ice-preserver	Sept. 13, 1870
110,391	Pilling, Robert, Waterford, N. Y. Stop-valve	Dec. 20, 1870
98,796	Pilote, Theophile, Marlborough, Mass. Shoemakers' pincers	Jan. 11, 1870
	Pim, William, and Augustus Newell. (*See* Newell & Pim.)	
99,108	Pimlott, William, Springfield, Ohio. Harvester-rake	Jan. 25, 1870
109,449	Same Brockport, N. Y. Harvester-rake	Nov. 29, 1870
100,069	Pine, Benjamin, New York, N. Y. Washing-machine	Feb. 22, 1870
	Pine, Benjamin F., *et al.* (*See* Millinger, James, assignor.)	
	Same (*See* Hannen, H. S., assignor) (Reissue)	Feb. 22, 1870
100,063	Pingar, David, St. Joseph, Mo. Tank for rendering lard	July 5, 1870
104,994	Pingree, Luther F., Portland, Me. Artificial leg	April 26, 1870
102,421	Pinkham, George F., Cambridge, Mass. Fire-extinguisher. (Antedated Nov. 2, 1869)	Aug. 23, 1870
106,616	Pinkney, Robert, England. Preparation of colors for dyes, inks, &c., from aniline	Aug. 23, 1870
	Pinney, Gaylord P., and Henry F. Harris. (*See* Harris & Pinney.)	
104,040	Pinover, Simon, assignor to Kaufmann Brothers, New York, N. Y. Watch-chain lock	June 21, 1870
	Pintard, H. A., and Jane Quantin, administrators. (*See* Quantin, Alphonse). (Extension.)	May 10, 1870
102,639	Piper, Howard, Haskins, Ohio. Farm-gate	July 12, 1870
105,365	Piper, James M., Harrison City, Pa. Corn-planter	Aug. 9, 1870
105,977	Piret, Jean B. G. M. F., France. Lubricating-apparatus for axle and journal-boxes	July 26, 1870
105,721	Pitcher, Gurdon W., Brooklyn, N. Y. Tablet-locket for photographs, &c.	Dec. 13, 1870
110,089	Pitcher, Hiram, assignor to self, H. and G. O. Trowbridge, Fond du Lac, Wis. Chain-clutch. (Antedated Dec. 9, 1870)	July 26, 1870
105,639	Pitcher, Leman B., Salina, N. Y. Cylinder for mixing fertilizers	

Alphabetical list of patentees for the year 1870—Continued.

No.	Name, residence, and invention or discovery.	Date.
105,640	Pitcher, Leman B., Salina, N. Y. Mortar-mill	July 26, 1870
106,288	Same Preparation of lime and mortar	Aug. 9, 1870
107,534	Same Manner of mounting hollow revolving cylinders	Sept. 20, 1870
107,535	Same Process and machinery for making mortar	Sept. 20, 1870
	Pitkin, J. H., and William D. Alford. (*See* Alford & Pitkin.)	
108,822	Pitkin, Julian H., and Julius S. Lane, Akron, Ohio. Machine for grinding and polishing metals	Nov. 1, 1870
104,641	Pitman, William, New York, N. Y. Combined pump and siphon	June 21, 1870
106,908	Pittman, George W., Winona, Miss. Corn-planter	Aug. 9, 1870
4,451	Pitts, Joseph and James K., McLean, Ill. Coal-hod (Design)	Nov. 1, 1870
108,404	Pitts, Phillip H., Waverly, Mo. Lathe	Aug. 16, 1870
105,841	Place, William H., New York, N. Y. Steam-engine governor	July 26, 1870
106,956	Place, William S., Charleston, Mo. Water-wheel	Aug. 30, 1870
106,722	Plagge, Charles, assignor to self and Theodore C. Glasier, New York, N. Y. Ice-machine	Aug. 23, 1870
106,983	Plamondon, Peter, Atchison, Kans. Mill-stone bearing	Aug. 9, 1870
105,395	Plant, Ebenezer H., Plantsville, Conn. Die for trimming and straightening axle-clips	July 19, 1870
106,978	Plant, John, Washington, D. C. Hinge	Aug. 9, 1870
107,195	Plass, John T., New York, N. Y. Sawing-machine	Sept. 6, 1870
104,649	Plass, Reuben H., New York, N. Y. Apparatus for carbureting air. (Antedated June 11, 1870)	June 21, 1870
106,793	Platt, Alfred C., Sandusky, Ohio. Can-opener	Aug. 23, 1870
106,794	Same Machine for varnishing and labeling fruit-cans and other cylindrical packages	Aug. 23, 1870
106,795	Same Skate	Aug. 23, 1870
109,935	Same same	Dec. 6, 1870
109,448	Platt, A. Warner, New York, N. Y. Circuit-closer for electro-magnetic railroad-signals	Mar. 1, 1870
100,354	Same Wood pavement	Mar. 8, 1870
108,181	Same same	Oct. 11, 1870
107,957	Platt, Edwin, Charleston, S. C. Apparatus for washing ores and minerals	Oct. 4, 1870
107,956	Platt, Jacob B., Augusta, Ga. Machine for washing ores and other mineral substances	Oct. 4, 1870
	Platts, Hervey. (*See* Horton, Henry E., assignor.)	
103,650	Player, John, deceased, by Augusta Amelia Player and Henry McAllister, jr., administrators, Philadelphia, Pa. Treating slag from iron and glass furnaces for producing a useful material	May 31, 1870
103,651	Same Hot-blast oven	May 31, 1870
4,149	Player, John, assignor to James Henderson and Jasper M. Lawford, England. Apparatus for heating the blast for furnaces used in smelting iron, &c. (Reissue)	Oct. 11, 1870
4,150	Same Hot-blast stove for blast-furnaces, &c. (Reissue)	Oct. 11, 1870
3,906	Plimpton, James L., New York, N. Y. Skate (Reissue)	April 5, 1870
108,291	Plodeck, Paul, Cleveland, Ohio. Manufacture of vinegar	Oct. 11, 1870
103,037	Plum, Louis H., Cincinnati, Ohio. Steam-trap	April 19, 1870
98,797	Plumb, H., assignor to self and William A. Drown, Frankford, Pa. Lock for umbrellas	Jan. 11, 1870
103,774	Plumb, Hiram, assignor to self and William A. Drown, jr., Philadelphia, Pa. Apparatus for playing games	May 31, 1870
104,879	Plumb, Luke A., Boston, Mass. Composition amalgam for filling teeth	June 28, 1870
	Plumb, R. H., and George C. Bell. (*See* Mailer, Alexander, assignor.)	
	Plumer, Eugene C. (*See* Richard, Jean Elie, assignor.)	
106,617	Plumer, Isaac L., assignor to J. S. Chase, Chelsea, Mass. Material for paste for bookbinders and others	Aug. 23, 1870
109,450	Plummer, John E., and Joseph P. Noyes, Binghamton, N. Y. Clutch for machinery	Nov. 22, 1870
	Plummer, Sidney, and Thomas C. Scottron. (*See* Scottron & Plummer.)	
	Plummer, S. A. (*See* Marable, Thomas E., assignor.)	
104,764	Plympton, Nathaniel, Boston, Mass. Tea-pot	June 28, 1870
104,491	Poche, Simeon A., St. James Parish, La. Evaporating cane-juice	June 21, 1870
107,406	Pochet, Leon, France. Valve in steam-apparatus for dressing stone	Sept. 13, 1870
108,188	Pocock, Stephen, Woodstock, Canada. Window-blind	Oct. 11, 1870
102,969	Poey, Juan, Havana, Cuba. Manufacture of sugar	May 10, 1870
108,514	Same same	Oct. 18, 1870
108,151	Poffenberger, Iva, Champaign County, Ohio. Joint for pitman-heads, sickles of harvesters, &c.	April 19, 1870
3,907	Pohl, August, Brooklyn, N. Y. Stair-rod (Design)	Mar. 15, 1870
103,498	Pohlmann, Charles, Louisville, Ky. Apparatus for preserving beer	May 24, 1870
105,596	Pokorny, Francis G., New York, N. Y. Paint for marbleizing wood	July 19, 1870
107,717	Pole, Benjamin Charles, Washington, D. C. Treadle for sewing and other machines	Sept. 27, 1870
4,184	Same same (Reissue)	Nov. 22, 1870
4,317	Polhamus, John, New York, N. Y. Handle of a spoon, fork, &c.	Aug. 30, 1870
106,984	Pollard, Thomas, assignor to J. V. and W. H. Merrick, and J. E. Cope, Philadelphia, Pa. Hoisting-apparatus	Aug. 9, 1870
108,186	Pollitt, John, assignor to self and Lyman Martin, Indianapolis, Ind. Parlor-skate	Oct. 11, 1870
109,845	Pollock, James E., Port Richmond, N. Y. Manufacture of varnish	Nov. 15, 1870
	Pollock, R. Starr, and Theodore Van Tassell. (*See* Van Tassell & Pollock.)	
	Polsey, A. M., and Moses G. Crane. (*See* Crane & Polsey.)	

Alphabetical list of patentees for the year 1870—Continued.

No.	Name, residence, and invention or discovery.	Date.
99,703	Pomeroy, Daniel, New York, N. Y., and William Pomeroy, Brooklyn, New York, N. Y. Truss	Feb. 8, 1870
	Pomeroy, William, Daniel, and Julius R. (*See* Richardson, Haynes L., assignor.)	
109,659	Pomeri, John N., Greenfield, Ohio. Steam-wheel	Nov. 29, 1870
105,842	Pond, Daniel B., Woonesocket, R. I. Washing-machine	July 26, 1870
107,809	Pond, Erasmus, and Goldsbury H., and Mark S. Richardson, Rutland, Vt. Manufacture of illuminating-gas. (Antedated Sept. 24, 1870)	Sept. 27, 1870
98,686	Pond, G. H., San Francisco, Cal. Rotary steam-engine	Jan. 4, 1870
3,961	Pond, Goldsbury H., Rutland, Vt. Tobacco-pipe (Design).	April 5, 1870
110,495	Same. Cleaning wool, cotton, &c	Dec. 27, 1870
110,496	Same. Gas retort and heating furnace	Dec. 27, 1870
99,472	Pond, Joseph F., Cleveland, Ohio. Self-feeding wood and coal cooking-stove	Feb. 1, 1870
104,197	Same. Device for raising and lowering gas-fixtures. (Antedated June 1, 1870)	June 14, 1870
102,318	Pond, Levi W., assignor to self and the Eau Claro Lumber Company, West Eau Claire, Wis. Saw-swage	April 26, 1870
102,319	Same. Saw-swaging machine	April 26, 1870
	Pond, Moses, & Co. (*See* Albee, James, assignor.)	
101,503	Pond, Robert James, assignor to Jahne, Smith & Co., Morrisania, N. Y. Adjusting-slide for chains	April 5, 1870
	Pond, Zimri. (*See* Orton, M. S., assignor.)	
107,718	Ponsonby, Thomas T., England. Machine for ornamenting the surface of wood, &c.	Sept. 27, 1870
105,366	Pool, John, Elizabeth City, N. C. Farm-gate	July 12, 1870
103,208	Pool, William R., Havana, Ala. Dough-worker	May 24, 1870
109,451	Poole, Frederick C., and Harry Howe, Boston, Mass. Skate-fastening	Nov. 22, 1870
	Poole, John H., *et al.* (*See* Wicks, Loren J., assignor) (Design.)	
99,000	Poole, J. Morton, assignor to self, William T. Porter, and Thomas S. Poole, Wilmington, Del. Machine for grinding objects cylindrically	Jan. 18, 1870
104,492	Same. Machine for grinding rollers	June 21, 1870
108,823	Poole, Robert, New Providence, Tenn. Store-shelving	Nov. 1, 1870
100,799	Poor, George Edwin, Charlestown, Mass. Writing-slate	Mar. 15, 1870
103,077	Pope, Frank L., Elizabeth, N. J. Electro-magnetic movement	May 17, 1870
102,300	Pope, Frank L., Elizabeth, N. J., and Thomas A. Edison, New York, N. Y. Printing-telegraph apparatus	April 26, 1870
103,994	Same. Printing-telegraph instrument	June 7, 1870
101,160	Pope, Sampson, Covington County, Ky. Earth-auger	Mar. 22, 1870
102,860	Pope, Samuel W., Louisville, Ky. Plow	May 10, 1870
105,843	Same. same	July 26, 1870
	Pope, William, and William Frans. (*See* Frans & Pope) (Four cases.)	
101,764	Poppendieck, William C., New York, N. Y. Easy-chair	April 12, 1870
	Poppy, John H. (*See* Smith, John C., assignor.)	
98,884	Porcher, Francis Peyre, Charleston, S. C. Material for tanning, dyeing, and for other purposes	Jan. 18, 1870
	Port, George W., and William Funk. (*See* Funk & Port.)	
99,704	Porter, Alonzo, assignor to self, Elisha G. Marshall, and Sarah R. Young, Rochester, N. Y. Sewing-machine	Feb. 8, 1870
100,800	Porter, A. E., and A. L., Lamoille, Ill. Riding-attachment for plows	Mar. 15, 1870
103,490	Porter, Benjamin, Ossian, N. Y. Corn-planter	May 24, 1870
4,445	Porter, Frederick W., Springfield, Mass. Toy-carriage (Design).	Oct. 25, 1870
102,432	Porter, Henry G., Grand Rapids, Mich. Barrel	April 26, 1870
105,725	Same. Horse hay-fork	July 26, 1870
109,936	Same. Hopkinton, Iowa. Corn-planter	Dec. 6, 1870
103,925	Porter, Henry K., Boston, Mass. Saw-set	June 7, 1870
103,926	Same. Calipers	June 7, 1870
104,995	Same. Lathe-center	July 5, 1870
101,911	Porter, John G., New York, N. Y. Base-burning hot-air furnace	April 12, 1870
99,347	Porter, Mary G., Charlestown, Mass. Ladies' safety-belt	Feb. 1, 1870
109,246	Porter, Oliver, Waterford, Me. Roofing-cement	Nov. 15, 1870
109,937	Porter, Robert, Ottumwa, Iowa. Halter	Dec. 6, 1870
105,978	Porter, Samuel M., New York, N. Y. Eyelet for fastening buttons	Aug. 2, 1870
106,405	Porter, Samuel W., Springfield, Mass. Ramrod-stop	Aug. 16, 1870
107,097	Porter, T. W. and H. K., assignors to selves and Charles L. Marston, Boston, Mass. Method of inlaying wood	Sept. 6, 1870
102,152	Porter, William, Brooklyn, N. Y. Hulling-machine	April 19, 1870
107,810	Porter, William, St. Stephen, Canada. Manufacture of friction-match cigar-lighter	Sept. 27, 1870
109,669	Same. Match for cigar-lighters	Nov. 29, 1870
107,598	Porter, William H., Brazil, Ind. Wagon-bed	Sept. 20, 1870
108,209	Porter, William J., New York, N. Y., and William Cross, Jersey City, N. J., assignors to Edward H. Faulkner. Loom	Oct. 11, 1870
	Porter, William T., *et al.* (*See* Poole, J. Morton, assignor) (Two cases.)	
	Portong, L., and W. Stachlen. (*See* Chwatal, H., assignor).	
	Positive-Motion Loom Company. (*See* Whitehill, Robert, assignor.)	
107,407	Post, Charles C., Hinesburgh, Vt. Sap-bucket	Sept. 13, 1870
107,999	Post, Elting, Boston, Mass. Steam-engine	Sept. 6, 1870
	Post, Gabriel S. (*See* Beugler, Edwin F., assignor.)	
108,443	Post, Henry A. V., assignor to self, James H. Sheldon, and James T. Sterling, Cincinnati, Ohio. Steam-generator	Mar. 1, 1870
108,515	Post, John L., Ashley, Ill. Back-lash for mill-gearing	Oct. 18, 1870
108,626	Post, John W., Castile, Pa. Paddle-wheel. (Antedated Oct. 11, 1870)	Oct. 25, 1870
109,939	Post, Samuel, and Henry D. Martin, Ypsilanti, Mich. Washing-machine	Dec. 6, 1870

Alphabetical list of patentees for the year 1870—Continued.

No.	Name, residence, and invention or discovery.	Date.
109,343	Poston, Richard J., Mainville, Ohio. Sawing-machine	Nov. 15, 1870
103,078	Potter, Abiather Fales, San Francisco, Cal. Breech-loading ordnance	May 17, 1870
107,099	Potter, Abiather Fales, Oakland, Cal. Gun-carriage. (Antedated Aug. 27, 1870)	Sept. 6, 1870
109,661	Potter, Charles A., Providence, R. I. Shutter-worker. (Antedated Nov. 19, 1870)	Nov. 29, 1870
110,070	Potter, Charles L., Providence, R. I. Device for attaching the shanks to mineral and composition buttons	Dec. 13, 1870
104,349	Potter, Daniel, Peoria, Ill. Hay-binder pole for wagons	June 14, 1870
102,590	Potter, Emily S. and Betsey R., Boston, Mass. Heating and ventilating attachment for stoves and fire-places	May 3, 1870
98,580	Potter, James, Portland, Me. Bed-bottom	Jan. 4, 1870
109,046	Potter, James O., Rousseville, Pa. Device for operating plows	Nov. 8, 1870
106,504	Potter, John, Quincy, Ill. Tobacco box or drum	Aug. 16, 1870
98,780	Potter, Joseph, assignor to self and George L. Lyon, Danielsonville, Conn. Mechanism for relieving the pressure on shuttle-box swell	Feb. 15, 1870
103,500	Potter, Nathaniel F., Providence, R. I. Kiln for drying and burning brick	May 24, 1870
104,350	Potter, Orlando B., New York, N. Y. Treadle-movement	June 14, 1870
100,685	Potter, Robert M., Jersey City, N. J. Union-coupling for pipes	Mar. 8, 1870
	Potter, Thomas, Son & Co. (*See* Hutchison, James, assignor) (Design.)	
	Same. (*See* Kagy, Henry, assignor) (Five cases.) (Design.)	
	Same. (*See* Paterson, James, assignor) (Two cases.) (Design.)	
	Same. (*See* Webster, John T., assignor) (Two cases.) (Design.)	
	Potter, Thomas O., and Joseph W. Smith. (*See* Greeley, B. J., assignor.)	
	Pottle, George F. (*See* Peavey, Andrew J., assignor.)	
109,939	Potts, Albert, Philadelphia, Pa. Letter-box	Dec. 6, 1870
110,497	Same. Railway-car spring	Dec. 27, 1870
104,765	Potts, Joseph D., Philadelphia, Pa., and Benjamin P. Lamason, Milton, Pa., assignors to Empire Transportation Company. Refrigerator railroad-car	June 28, 1870
101,161	Potts, Joseph H., assignor to Mary F. Potts, Ottumwa, Iowa. Spring for bed-bottoms	Mar. 22, 1870
103,501	Potts, Mary F., Ottumwa, Iowa. Sad-iron	May 24, 1870
102,861	Potts, Robert, and Nathaniel Ogden, Chatham, N. Y. Spoke for wagon-wheels	May 10, 1870
98,637	Powell, Ambrose, New Baltimore, N. Y. Combined harrow, roller, and seeder	Jan. 4, 1870
102,038	Powell, Charles, England. Hose-coupling	April 19, 1870
109,754	Powell, Edwin R., Jeffersonville, Vt. Wheel-harrow	Nov. 29, 1870
	Powell, Jacob C. (*See* Dietsch, Edward, assignor.)	
99,001	Powell, James, Cincinnati, Ohio. Compression-cock	Jan. 18, 1870
101,308	Powell, Michael, Umatilla, Oreg. Wagon-brake	Mar. 29, 1870
103,367	Powell, Thomas J., Naples, N. Y. Elevator and conveyer	May 24, 1870
108,183	Same. Combined elevator and conveyer	Oct. 11, 1870
105,723	Powell, Thomas J., assignor to George Smith and John C. De Lang, Naples, N. Y. Hay-carrier	July 26, 1870
	Power, David G. (*See* Coon, S. Park, assignor.)	
	Powers, A. A. (*See* Hemenway, Collier V., assignor.)	
	Powers, Albert E., and John T. Webster. (*See* Webster & Powers.) (Design.)	
107,350	Powers, Charles M., and Thomas L. Robinson, Flushing, N. Y. Washing-machine	Oct. 4, 1870
	Powers, Deborah, Albert E. and Nathaniel B. (*See* Hutchison, James, assignor.) (Two cases) (Design.)	
103,652	Powers, David J., Chicago, Ill. Lamp-extinguisher	May 31, 1870
3,898	Powers, D. J., assignor through mesne assignments to James Palmer, Madison, Wis. Straw-cutter (Reissue)	Mar. 29, 1870
105,946	Powers, Jesse, Chicago, Ill. Hod-elevator	July 12, 1870
104,351	Powers, Mark H., Pike County, Ind. Evaporator and still	June 14, 1870
	Powers, Thomas H., Milwaukee, Wis. Furnace for smelting iron. (Extension)	May 24, 1870
101,036	Powers, Thomas H., assignor to self, George R. Burnham, and Daniel G. Rogers, Milwaukee, Wis. Water-wheel	Mar. 22, 1870
103,079	Powers, Timothy J., New York, N. Y. Cartridge-case	May 17, 1870
107,100	Powers, Titus, New York, N. Y. Lock	Sept. 6, 1870
101,637	Powers, Walter W., Belleville, N. Y. Hitching-post	April 5, 1870
107,537	Prall, William E., Washington, D. C. Inside sole for boots and shoes	Sept. 20, 1870
107,538	Same. Cover for boots and shoes	Sept. 20, 1870
109,693	Prall, William E., Washington, D. C., and Alden B. Rand, Staten Island, N. Y. Cloth-cutting attachment for sewing-machines	Nov. 29, 1870
104,986	Prang, Louis, Boston, Mass. Library-shears	July 5, 1870
105,194	Pratt, Charles E., assignor to self, M. Cohn & Co., and the West Bradley and Carey Manufacturing Company, Rahway, N. J. Hoop-skirt	July 5, 1870
99,232	Pratt, Daniel R., Worcester, Mass. Spring-nut	Jan. 25, 1870
99,473	Same. New York, N. Y. Spring-headed screw-bolt	Feb. 1, 1870
99,787	Same. Compound railway-rail	Feb. 15, 1870
	Pratt, Daniel R. (*See* Valentine, Farris & Barnes, assignor.)	
98,688	Pratt, David R., New Petersburgh, Ohio. Sewing-machine	Jan. 4, 1870
109,064	Pratt, Francis A., assignor to Pratt, Whitney & Co., Hartford, Conn. Friction-clutch	Feb. 22, 1870
4,439	Pratt, Francis A., assignor to the Pratt and Whitney Company, Hartford, Conn. Drilling-machine (Design)	Oct. 25, 1870
104,706	Pratt, Henry C., Boston, Mass. Bottle-stopper	June 28, 1870
	Pratt, Henry S., and Silas Barker. (*See* Barker & Pratt.)	
108,801	Pratt, Henry T., New York, N. Y. Life-preserving steel	Mar. 15, 1870
	Pratt, Henry T., *et al.* (*See* Carver, John Eleaser, assignor.)	
110,262	Pratt, Joseph, and James H. Wentworth, Boston, Mass. Cooking-stove	Dec. 20, 1870
	Pratt, Luther C. (*See* Grant, John James, assignor.)	
110,368	Pratt, Miles, Watertown, Mass. Cooking-stove	Dec. 27, 1870

Alphabetical list of patentees for the year 1870—Continued.

No.	Name, residence, and invention or discovery.	Date.
	Pratt, Randal, deceased, by Mary G. Pratt, administratrix, Marple Township, Pa. Horse hay-rake.....(Disclaimer filed)	Jan. 7, 1870
	Same.....same.....(Extension of No. 1,893)	Jan. 7, 1870
	Same.....same.....(Extension of No. 1,894)	Jan. 7, 1870
	Same.....same.....(Extension of No. 1,895)	Jan. 7, 1870
	Pratt, S. S., and I. A. Clippinger. (*See* Clippinger & Pratt.)	
100,663	Pratt, T. Willis, assignor to self and Boston Machine Company, Boston, Mass. Draw-bridge	Feb. 22, 1870
104,198	Pratt, William, New York, N. Y. Vessel for packing butter and other articles	June 14, 1870
108,344	Pratt, William, and Abby A. Williams. (*See* Sawyer, Charles B., assignor.) Pratt, William M., Chicago, Ill. Shaft-coupling	Nov. 15, 1870
	Pray, David T. (*See* Thing, R. W., assignor.)	
101,037	Pray, Onsville Evans, Portsmouth, N. H. Ticket-holder	Mar. 22, 1870
106,870	Prehn, John, N. Y. Washing-machine	Aug. 30, 1870
	Prentice, George J., and Henry Schild. (*See* Schild & Prentice.)	
	Prentice, Lewis. (*See* Schild & Prentice, assignors.)	
	Same.....(*See* Meyer & Schild, assignors.)	
108,183	Prentis, Benjamin F., Benwood, W. Va. Automatic ventilator	Oct. 11, 1870
100,666	Prentiss, E. Freeman., Philadelphia, Pa. Telegraph-pole	Mar. 8, 1870
	Prentiss, N. A., *et al.* (*See* Bigard, Kellogg & Prentiss.)	
107,136	Prescott, Andrew J., Catawissa, Pa. Car-coupling	Sept. 6, 1870
110,393	Same.....Stuffing-box	Dec. 20, 1870
90,947	Preston, Almon E., Battle Creek, Mich. Hay-loader	Feb. 15, 1870
102,706	Preston, James, Atchison, Kans. Grading-machine	May 3, 1870
	Preston, James, and Hiram C. Partridge. (*See* Partridge & Preston.)	
	Preston, John, and Daniel Long. (*See* Long & Preston.)	
103,562	Preston, Julius A., New Haven, Conn. Coal-barge	May 24, 1870
100,686	Preston, William B., North Chelsea, Mass. Steelyards	Feb. 22, 1870
107,811	Prevost, Emil, New York, N. Y. Liquid for galvanic batteries	Sept. 27, 1870
	Price, Benjamin, *et al.* (*See* Blackburn, Weed, Price & Sheridon.)	
105,979	Price, Daniel, Lockport, N. Y. Urinal attachment to a bed	Aug. 2, 1870
99,348	Price, Edwin and E. B., Norwalk, Conn. Machine for polishing marble	Feb. 1, 1870
100,892	Price, George W., Adrian, Mich. Thill-coupling	Mar. 15, 1870
101,038	Price, Jacob, San Leandro, Cal. Gang-plow	Mar. 22, 1870
99,560	Price, John A., Scranton, Pa. Base-burning stove	Feb. 8, 1870
104,493	Same.....Combined stove, door, and hearth	June 21, 1870
101,039	Price, John M., Buffalo Grove, Iowa. Bee-hive	Mar. 23, 1870
109,663	Price, Philip, West Chester, Pa. Show-case	Nov. 29, 1870
100,087	Price, Robert, New York, N. Y. Picture-envelope	Feb. 22, 1870
105,125	Same.....Paper for boards, drafts, checks, &c.	July 5, 1870
109,940	Price, Thomas, assignor to self and James Cruthers, Steubenville, Ohio. Coke-furnace	Dec. 6, 1870
	Price, Vincent C., and James F. Wiley. (*See* Atwood, Corydon F., assignor.)	
3,922	Price, Virgil, New York, N. Y. Scabbard.....(Design)	Jan. 25, 1870
4,264	Same.....Tip of a sword-scabbard.....(Design)	July 26, 1870
4,265	Same.....Sword-guard.....(Design)	July 26, 1870
101,040	Prickett, Joshua P., assignor to self and Joseph C. Hinchman, Medford, N. J. Machine for picking cranberries	Mar. 22, 1870
	Prier, Anton, and Adam Loeffelholz. (*See* Loeffelholz & Prier.)	
	Priest, Joseph K., and Roswell T. Smith. (*See* Smith & Priest).....(Reissue)	
	Priest, Joseph K., *et al.* (*See* Smith, Priest & Earl.)	
101,300	Prime, Eli S., Baltimore, Md. Gauge-rod	Mar. 29, 1870
	Prince, William L. (*See* Hemingway, Benjamin E., assignor.)	
106,667	Prince, William R., Parkersburgh, W. Va. Potato-digger	Mar. 8, 1870
107,960	Prindle, D. R., East Bethany, N. Y. Tree and plant protector	Oct. 4, 1870
96,796	Prindle, Franklin B., Southington, Conn. Bolt-heading machine	Jan. 11, 1870
102,707	Same.....Die for forming king-bolts	May 3, 1870
102,708	Same.....Die for trimming king-bolts	May 3, 1870
105,489	Prindle, Russel B., Norwich, N. Y. Door-bolt	July 19, 1870
106,950	Pringle, Hugh, Green Point, N. Y. Lubricator	Aug. 30, 1870
106,979	Printz, James A., Reading, Pa. Sash-holder	Aug. 9, 1870
	Prior, A. M., *et al.* (*See* Waterbury, Enos and George N., assignors.)	
99,349	Prior, Jesse, Adrian, Mich. Fruit-preserving house	Feb. 1, 1870
103,503	Proctor, Adonijah H., assignor to self and B. J. Canfield, Galesburgh, Mich. Wash-boiler attachment	May 24, 1870
	Proctor, Thomas P. (*See* Wightman, Joseph C., assignor.)	
	Proprietors of the Tremont Mills. (*See* Burke, William A., assignor.)	
106,285	Propst, Elias, and James F. Avis, assignors to selves and William H. Hartley, Tipton, Ind. Book-holder	Aug. 9, 1870
103,775	Prosser, Treat T., Chicago, Ill. Nut-lock bolt	May 31, 1870
103,776	Same.....Screw-threading machine	May 31, 1870
	Prosser, William. (*See* Jackson, Francis, assignor.)	
103,927	Provost, Christopher T., New York, N. Y. Apparatus for packing preserves	June 7, 1870
104,404	Same.....Concentrating the juice of tomatoes	June 21, 1870
109,444	Pruett, William, Duquoin, Ill. Spring-seat for wagons	Mar. 1, 1870
109,544	Prusha, Thomas H., assignor to Taylor, Day & Co., Fredonia, N. Y. Carriage-spring	Nov. 22, 1870
		Dec. 6, 1870
109,941	Pueta, Francis, Buffalo, N. Y. Buckle	June 28, 1870
104,880	Puffer, Alvin Davis, Boston, Mass. Faucet	June 28, 1870
104,881	Same.....Soda-fountain	Dec. 6, 1870
109,942	Same.....Apparatus for cooling soda-water and other liquids	

Alphabetical list of patentees for the year 1870—Continued.

No.	Name, residence, and invention or discovery.	Date.
104,495	Pugh, David D., Brooklyn, N. Y. Clothes-line reel. (Antedated June 11, 1870)	June 21, 1870
	Pullen, Burden. (*See* Hooton, Marsena M., assignor.)	
101,504	Pullis, William W., St. Louis, Mo. Molding sash-weights	April 5, 1870
109,040	Pullis, William W., assignor to Thomas R. and John Pullis, St. Louis, Mo. Top of gas and water stop-cock boxes	Nov. 8, 1870
	Pullman, Albert B., and David Myers. (*See* Myers & Pullman.)	
105,126	Pullman, Nathaniel, New Oregon, Iowa. Extension-ladder	July 5, 1870
100,555	Pulse, Hiram, Waldron, Ind. Grain-drill	Mar. 8, 1870
108,788	Pulver, William H., Schuylerville, N. Y. Portable privy	Oct. 25, 1870
104,643	Punderford, James, New Haven, Conn. Metal sole for boots and shoes	June 21, 1870
108,516	Purcell, Joseph L., Thompson, Ill. Gang-plow	Oct. 18, 1870
106,677	Purcell, Thomas W., Fond du Lac, Wis. Pipe-boring machine	Aug. 2, 1870
101,656	Purchase, Thomas E., assignor to self and Samuel T. Hedgkins, Reading, Pa. Puddling and other furnaces	April 5, 1870
108,989	Purdey, Nathan, Providence, Pa. Box-opener	Oct. 11, 1870
	Purdy, Alexander, and Charles S. Banker. (*See* Banker & Purdy.)	
107,812	Purdy, Calvin D., La Porte, Ind. Bedstead-fastening	Sept. 27, 1870
106,960	Purdy, Chester, Bedford, Ohio. Saw-mill	Aug. 30, 1870
	Purdy, Edwin, *et al.* (*See* Howe, Albert K., assignor.)	
108,388	Purdy, Hiram, Burlington, Iowa. Ageing alcoholic liquors	Oct. 18, 1870
101,505	Purdy, Thomas C., Janesville, Wis. Fruit-jar	April 5, 1870
107,719	Purington, Turner C., Valejo, Cal. Steering-apparatus	Sept. 27, 1870
103,653	Purington, Turner C., assignor to self and A. Mayoux, Lincoln, Cal. Wrench	May 31, 1870
	Purrington, G. (*See* Barrows, Thomas, assignor.)	
101,310	Purrey, Frederick L., New York, N. Y. Velocipede. (Antedated March 16, 1870)	Mar. 29, 1870
107,101	Pursell, Edward H., Galesburgh, Ill. Electro-magnetic railroad-alarm	Sept. 6, 1870
104,767	Pusey, Joshua, Philadelphia, Pa. Window-shade rack	June 28, 1870
107,730	Same.....Shutter-fastening	Sept. 27, 1870
109,144	Same.....Nut-cracker	Nov. 8, 1870
	Pusey, Lea, deceased, by Samuel G. Lewis, executor, Philadelphia, Pa. Arrangement of railroad platform-scales.....(Extension)	Dec. 22, 1870
	Pusey, William M., *et al.* (*See* Makibbin, Thomas A., assignor.)	
4,042	Pustknecken, G., New York, N. Y. Package.....(Design)	May 17, 1870
101,506	Putnam, John H., Gloversville, N. Y. Glove	April 5, 1870
108,894	Putnam, Abel, jr., Saratoga Springs, N. Y. Faucet	Nov. 1, 1870
102,803	Putnam, Albert T., Detroit, Mich. Brick-mold and bottom-board	May 10, 1870
	Putnam, Christopher C., *et al.* (*See* Robinson & Putnam.)	
104,358	Putnam, George W., Billerica, Mass. Water-vessel for steam fire-proof safes	June 14, 1870
100,923	Putnam, George W., assignor to self and L. B. Edmunds, South Glen's Falls, N. Y. Washing-machine	Mar. 15, 1870
4,050	Putnam, Henry W., Bennington, Vt. Apparatus for filling bottles.....(Reissue)	June 28, 1870
107,280	Putnam, Joel, Danvers, Mass. Shoe	Sept. 13, 1870
98,707	Putnam, Silas S., Dorchester, Mass. Machine for forging nails for horseshoes	Jan. 11, 1870
	Same.....Neponset, Mass. Machine for forging iron.....(Extension)	Dec. 6, 1870
99,233	Putnam, Theodore A. B., New York, N. Y. Electro-magnetic railroad-switch alarm	Jan. 25, 1870
103,368	Putnam, Winthrop, Davis, Chicago, Ill. Safety-socket for whips	May 24, 1870
103,654	Putt, Daniel W., assignor to self, Walter G. Bronson, and Philip Brewer, Wellsville, Ohio. Apparatus for teaching students the use of telegraphic instruments	May 31, 1870
	Pye, William H. M. (*See* Hopkins, Joseph W., assignor.)	
110,283	Pykiet, George F., Fairfield, Ill. Cutter for plows	Dec. 20, 1870
105,247	Pyle, William, Wilmington, Del. Manufacture of leather	July 12, 1870
106,505	Pyron, Tapley B., Springfield, Mo. Horse-power	Aug. 16, 1870
99,109	Quackenbush, Abram J., and Guilford Hawn, Fort Plain, N. Y. Device for baking bread	Jan. 25, 1870
110,284	Quackenbush, James H., Luddington, Mich. Spring bed-bottom	Dec. 20, 1870
104,496	Quaintance, Jesse, Bucyrus, Ohio. Quartz-crusher	June 21, 1870
	Quantin, Alphonse, deceased, by Jane Quantin and Henry A. Pintard, administrators, Philadelphia, Pa. Method of bottling fluids under gaseous pressure.....(Extension)	Feb. 19, 1870
102,153	Quarles, John P., Richmond, Va. Paper-file	April 19, 1870
107,197	Quay, William, and Ezra M. Hinsdale, Troy, N. Y. Stove-grate	Sept. 6, 1870
105,844	Query, Elam M., Harris Depot, N. C. Subsoil-plow	July 26, 1870
106,406	Quimby, Asahel, Salem, Mass. Wagon-brake	Aug. 16, 1870
	Quimby, David S., jr. (*See* Savage, Silas T., assignor.)	
	Quimby, Julius F., *et al.* (*See* Hawks, Elizabeth, assignor).....(Disclaimer)	
106,903	Quimby, Watson F., Wilmington, Del. Arching-brick	Aug. 9, 1870
	Quin, Hugh P., and James C. Branch. (*See* Branch & Quinn.)	
	Quinn, Nelson J. (*See* Hutson, William C., assignor.)	
110,158	Quinn, Patrick, South New Market, N. H. Steam-boiler	Dec. 13, 1870
105,794	Quinn, Robert, Whitefield, Miss. Horse-power	July 26, 1870
103,324	Quinn, William, Philadelphia, Pa. Velocipede. (Antedated April 19, 1870)	April 26, 1870
103,777	Rabb, William Smith, Winnsborough, S. C. Plow. (Antedated May 19, 1870)	May 31, 1870
105,845	Racine, Henry, Paola, Kans. Brake for wagons	July 26, 1870
108,709	Raddin, John, Lynn, Mass. Hub for road-carriages	May 3, 1870
108,825	Same.....Car-wheel. (Antedated Oct. 19, 1870)	Nov. 1, 1870
99,705	Radley, John P., Albany, N. Y. Hammer	Feb. 8, 1870
103,938	Radston, Jacob, San Francisco, Cal. Frame for street-lamps, &c	May 17, 1870
3,980	Raeser, Mathias, assignor through mesne assignments to Alzirus Brown, Worcester, Mass. Horse hay-rake.....(Reissue)	May 3, 1870

Alphabetical list of patentees for the year 1870—Continued.

No.	Name, residence, and invention or discovery.	Date.
	Rager, William B., and Michael Henney. (*See* Henney & Rager.)	
99,072	Raible, John, Matthias Reis, and John Ritter, Chicago, Ill. Self-cleaning filter for hydrants	Jan. 18, 1870
	Raiford, P. T. (*See* Milliorn, George, assignor.)	
108,389	Rainey, John, Brooklyn, N. Y. Oven	Oct. 18, 1870
108,050	Raisbeck, James and Thomas A., New York, N. Y. Water-heater	Oct. 4, 1870
107,102	Ralston, Joe, Brenham, Texas. Cotton-gin feeder	Sept. 6, 1870
102,030	Ramel, Pierre Francois, and Jean Drogat, France. Loom	April 19, 1870
104,768	Ramler, David, Union Deposit, Pa. Automatic fan	June 21, 1870
98,581	Ramsay, William Alexander, Philadelphia, Pa. Shirt-sleeve	Jan. 4, 1870
108,200	Ramsdell, Richard Robley, and George Albert Whitcomb, Marlborough Depot, N. H. Balance-pendulum for clocks	Oct. 18, 1870
108,051	Ramsey, Blackman A., Trenton, Tenn. Seed-planter	Oct. 4, 1870
110,393	Same. Cotton-planter. (Antedated Dec. 13, 1870)	Dec. 20, 1870
103,353	Ramsey, Comfort R., Farmers' Center, Ohio. Clod-crusher and pulveriser	June 14, 1870
108,720	Ramsey, Henry B., assignor to self and Edward J. Hughes, Rockville, Ind. Bedstead	Oct. 25, 1870
101,311	Ramsey, Robert, and Charles Stafford, New Wilmington, Pa. Railway-gate	Mar. 29, 1870
	Ramsey, Thomas S., *et al.* (*See* Patterson, N. A., assignor.)	
108,618	Ramseyer, Nicholas, Farmersville, Ill. Wagon and buggy brace	Aug. 23, 1870
101,912	Rand, Addison C., Westfield, Mass. Whip	April 12, 1870
101,913	Same. same	April 12, 1870
101,914	Same. same	April 12, 1870
101,915	Same. same	April 12, 1870
102,963	Same. same	May 10, 1870
	Rand, Alden B., *et al.* (*See* Gale, L. D., assignor) (Two cases.) (Reissue.)	
	Same. (*See* Rand, Alonzo C., assignor.)	
	Rand, Alden B., and William E. Prall. (*See* Prall & Rand.)	
100,009	Rand, Alonzo C., assignor to William J. Nichols, Alden B. Rand, and Richard H. Brown, New York, N. Y. Manufacture of illuminating-gas	Mar. 8, 1870
110,150	Rand, Charles R., Dubuque, Iowa. Sash-balance	Dec. 13, 1870
107,539	Rand, Franklin, P., Pawtucket, R. I. Wrench	Sept. 20, 1870
	Rand, J. B. (*See* Call, Horace, assignor.)	
9,531	Rand, James M., Chicago, Ill. Horse-power	Feb. 8, 1870
	Rand, William, and Daniel Bibbee. (*See* Bibbee & Rand.)	
109,545	Randal, Alexander R., Avola, Mo. Wind-mill	Nov. 22, 1870
	Randall, Charles A., and Theodore M. Foote. (*See* Foote & Randall.)	
110,406	Randall, Francis W., Tekonsha, Mich. Grain-binder. (Antedated Dec. 17, 1870)	Dec. 27, 1870
101,507	Randall, Francis W., assignor to Ira B. Buell, Burlington, Mich. Mode of securing horse-powers to the ground	April 5, 1870
102,501	Randall, John T., assignor to F. W. Elder & Co., Baltimore, Md. Apparatus for polishing coffee, &c	May 3, 1870
108,826	Randall, Joseph F., Warren, Ohio. Warp-tension mechanism for looms	Nov. 1, 1870
101,103	Randles, Joseph, Jersey City, N. J. Variable cut-off	Mar. 22, 1870
110,490	Randolph, James L., assignor to S. L. Denny, Berkeley Springs, W. Va. Lock-nut	Dec. 27, 1870
4,127	Randolph, Peter F., Jerseyville, Ill. Polishing-machine (Reissue)	Sept. 20, 1870
99,948	Randolph, Richard, Washington, D. C. Railway-rail splice	Feb. 15, 1870
107,633	Randolph, Richard F., jr., East Palestine, Ohio. Apparatus for coupling cars	Sept. 20, 1870
107,634	Raney, James, New Castle, Pa. Water-wheel case	Sept. 20, 1870
105,597	Rank, Amos, Salem, Ohio. Harvester	July 19, 1870
4,089	Same. Harvester-rake (Reissue)	Aug. 2, 1870
107,721	Same. same	Sept. 27, 1870
107,813	Rankin, Andrew, Philadelphia, Pa. Spring-hinge for doors, &c	Sept. 27, 1870
108,038	Same. Shutter-fastener	Oct. 4, 1870
100,893	Rankin, John C., Mount Vernon, N. Y. Clothes-line holder	Mar. 15, 1870
109,943	Same. Wagon-seat fastening	Dec. 6, 1870
110,394	Rankin, Thomas L., Granville, Ill. Refrigerating-car	Dec. 20, 1870
98,589	Ranney, Evander W., New York, N. Y. Composition for concrete pavements	Jan. 4, 1870
110,071	Ranous, Francis M., Yreka City, Cal. Combined lock and latch	Dec. 13, 1870
101,916	Ransom, Albion, Albany, N. Y. Reservoir for cooking-stoves	April 12, 1870
107,198	Ransom, Ezra, Flint, Mich. Packed rotating valve-stem	Sept. 6, 1870
4,043	Ransom, Samuel H., Albany, N. Y. Stove-plate (Design)	May 17, 1870
4,044	Same. same (Design)	May 17, 1870
4,045	Same. same (Design)	May 17, 1870
4,046	Same. same (Design)	May 17, 1870
4,047	Same. same (Design)	May 17, 1870
4,048	Same. same (Design)	May 17, 1870
108,637	Ransome, Ernest L., England. Removing soluble salts from artificial stone	Oct. 25, 1870
99,350	Raoul, W. G., Independence, Iowa. Grooving-machine	Feb. 1, 1870
99,351	Same. Fare-box for railroad-cars	Feb. 1, 1870
98,709	Raper, William B., Carthage, Ill. Corn-plow	Jan. 11, 1870
107,490	Rapise, Abijah L., assignor to Carrie R. Laman, Edwin, N. Y. Journal-box for railroad-cars	Sept. 13, 1870
104,190	Rapp, Matthias, Rapp's Mill, Va. Turbine-wheel	June 14, 1870
104,088	Ratterman, Henry A., Cincinnati, Ohio. Machine for pitching lager-beer and other casks	June 7, 1870
99,474	Rauch, Jonas, Selin's Grove, Pa. Oil-cloth cutter	Feb. 1, 1870
99,708	Rauch, J. E., Selin's Grove, Pa. Scaffold and ladder	Feb. 8, 1870
	Rauh, Samuel, and John H. Kappelhoff. (*See* Kappelhoff & Rauh.) (Two cases.) (Design.)	
	Same. (*See* Kappelhoff & Rauh.)	

Alphabetical list of patentees for the year 1870—Continued.

No.	Name, residence, and invention or discovery.	Date.
110,265	Rausch, John, Huntington, Ind. Boot-crimping machine. (Antedated Dec. 9, 1870)	Dec. 20, 1870
109,755	Rawson, Solomon and Isaac, Almond, N. Y. Harvester	Nov. 29, 1870
105,948	Ray, Alfred, and Benjamin F. Monson, Shelbina, Mo. Scaffolding	July 12, 1870
	Ray, Francis B. (*See* Dean, Charles S., assignor.)	
100,445	Ray, James S., East Haddam, Conn. Coffin-handle	Mar. 1, 1870
106,619	Ray, Nathaniel M., Surrey, Me. Boot-detaching apparatus	Aug. 23, 1870
108,227	Rayer, William Anderson, and William Stillwell Lincoln, assignors to selves and Abijah B. Lincoln, Boston, Mass. Sewing-machine	Nov. 1, 1870
	Rayl, Samuel Garret, Agency City, Iowa. Double-shovel plow	Sept. 13, 1870
99,276	Rayle, Jacob, Washington, Ill. Paint-brush	Jan. 25, 1870
99,598	Raymond, Charles H., Southington, Conn. Grooving-machine for sheet-metal	Feb. 8, 1870
99,788	Same. Beading-machine for sheet-metal	Feb. 15, 1870
	Raymond, Charles H., and Albert M. Healey. (*See* Healey & Raymond.)	
101,765	Raymond, Fitch, Cleveland, Ohio. Gate	April 12, 1870
108,961	Same. Grain-bin	Aug. 30, 1870
105,367	Raymond, Fitch, assignor of one-half interest to A. Miller, Cleveland, Ohio. Grain-bin	July 12, 1870
109,830	Raymond, Hiram, Tecumseh, Mich. Grain-separator	Dec. 6, 1870
109,840	Raymond, John G., Rondout, N. Y. Washing-machine	Dec. 6, 1870
101,041	Raymond, Saxon J., Brooklyn, N. Y. Knife for splitting wood	Mar. 22, 1870
	Raymond, Seymour, and Joseph Campbell. (*See* Campbell, John D., assignor.) (Design.)	
108,517	Rayney, John, Brooklyn, N. Y. Bakers' oven	Oct. 18, 1870
99,593	Raynor, Hiram M., New York, N. Y. Pin for artificial teeth	Feb. 8, 1870
	Raynor, Samuel, & Co. (*See* Ball, James, assignor.)	
	Raynor, William, and William Beers. (*See* Beers & Raynor.)	
108,898	Rayneford, Frederick, assignor to self and C. L. Bouchard, Grand Rapids, Mich. Low-water indicator	Nov. 1, 1870
100,556	Read, Daniel R., and James H. Clapp, assignors through mesne assignments to C. C. Dickerman, Providence, R. I. Lock	Mar. 8, 1870
3,907	Read, John B., assignor to the Okra Paper Company, New York, N. Y. Manufacture of paper (Reissue)	April 5, 1870
104,900	Read, Joseph, Philadelphia, Pa. Heel for boots and shoes	June 14, 1870
107,728	Read, Joseph A., Philadelphia, Pa. Cover for stove-pipe holes	Sept. 27, 1870
103,655	Read, Josiah M., Boston, Mass. Cooking-stove	May 31, 1870
104,497	Same. Gridiron for stoves and ranges	June 21, 1870
110,580	Read, Josiah M., and John M. Smith, Boston, Mass. Broiler and toaster	Dec. 27, 1870
103,930	Read, William, jr., assignor to self and William Read, Boston, Mass. Lamp-shade	June 7, 1870
	Read, William J., and William B. Johns. (*See* Johns & Read.)	
104,201	Reagan, William, New York, N. Y. Caster for billiard-tables and furniture	June 14, 1870
108,730	Ream, George W., Canton, Ohio. Plow	Oct. 25, 1870
	Reamer, Benjamin, and Cornelius Van Derzee. (*See* Van Derzee & Reamer.)	
109,944	Reaney, W. B., Chester, Pa. Marine-engine	Dec. 6, 1870
4,286	Rear, Robert L., Charleston, Ill. Neck-yoke, ring, and slide (Design)	Aug. 9, 1870
109,347	Rebman, John, Binkley's Bridge, Pa. Cultivator	Nov. 15, 1870
3,963	Reckendorfer, Joseph, New York, N. Y. Pencil (Reissue)	Mar. 1, 1870
	Same. (*See* Bartholomew, William N., assignor.)	
	Same. same (Design.)	
	Same. (*See* Muller & Benson, assignors) (Two cases.)	
	Reckless, Walter, *et al.* (*See* Wilson, Joseph B., assignor.)	
	Record, Israel B., *et al.* (*See* Allen, Record, Reed & Hayden.)	
108,391	Redd, William M., Hazel Green, Wis. Grain-separator	Oct. 18, 1870
	Redding, Jerome, and Charles Williams, jr. (*See* Williams & Redding.)	
	Redfield & Rice Manufacturing Company. (*See* Downing, George W., assignor.) (Design.)	
100,383	Redfield, Benjamin B., Lapeer, Mich. Filter for cisterns	Mar. 1, 1870
	Redington, J. C. O. (*See* Zawadski, Alfred, assignor.)	
99,020	Redline, John G., Lanark, Ill. Sad-iron heater	Jan. 4, 1870
103,656	Redlinger, Mathias, Freeport, Ill. Wrench. (Antedated May 19, 1870)	May 31, 1870
	Redman, Selden D., *et al.* (*See* Shaw, Walter, assignor.)	
107,540	Reese, William R., assignor to self, William Garrett, and Michael Moll, Tremont, Pa. Safety-valve	Sept. 20, 1870
	Reed & Barton. (*See* Gill, George, assignor) (Two cases.) (Design.)	
	Same. (*See* Parkin, William, assignor) (Three cases.) (Design.)	
	Reed, Alfred A., jr. (*See* Whitmore, Nathaniel Gilbert, assignor.)	
105,366	Reed, Alfred Graham, Philadelphia, Pa. Corpse-preserving case	July 12, 1870
108,609	Reed, Charles D., Polo, Ill. Gate	Oct. 25, 1870
102,864	Reed, Eden, assignor to self and Lewis L. Warren, St. Louis, Mo. Alarm-till	May 10, 1870
105,846	Reed, Edwin, Kingston, Mass. Machine for pressing seams and cutting welts for boots and shoes	July 26, 1870
104,644	Reed, Franklin, Canton, Mass. Trowel	June 21, 1870
104,645	Same. Lathe for making awl-handles	June 21, 1870
108,154	Reed, George, William C. Hoagland, and John J. Newsom, Brooklyn, Cal. Screen-attachment for windows	April 19, 1870
	Reed, Henry G., *et al.* (*See* Parkin, William, assignor) (Design.)	
	Same. (*See* Leach, Thomas, assignor.)	
107,893	Reed, Herbert P., and Thomas E. Wilson, Peabody, Mass. Machinery for dressing skins	Sept. 20, 1870
	Reed, Jacob, *et al.* (*See* Berkstresser, George, assignee.)	

Alphabetical list of patentees for the year 1870—Continued.

No.	Name, residence, and invention or discovery.	Date.
104,909	Reed, James Clarence, New York, N. Y. Comb	June 14, 1870
	Reed, John Milton, *et al.* (*See* Douglas & Reed.)	
	Reed, L. F. (*See* Bennett, Zelotes E., assignor.)	June 21, 1870
104,496	Reed, Linus G. and Erastus E., Peoria, Ill. Cultivator and roller combined	Oct. 18, 1870
108,518	Reed, Moses, Little Rock, Ark. Cotton and corn cultivator	May 24, 1870
103,360	Reed, Thomas L., Providence, R. I. Flexible tubing or hose	Oct. 18, 1870
108,392	Reed, Thomas M., Germantown, Ohio. Cultivator	
104,155	Reed, T. K., assignor to Gordon McKay, trustee of the McKay Sewing-Machine Association, East Bridgewater, Mass. Machine for uniting boot and shoe soles to their uppers	April 19, 1870
	Reed, Timothy K., and Asa B. Keith. (*See* Keith & Reed.)	Nov. 29, 1870
109,756	Same.....East Bridgewater, Mass. Machine for heeling boots	
	Reed, William, and Joel H. Rhodes. (*See* Rhodes & Reed.)	Nov. 22, 1870
109,452	Reed, William N., Arlington, Va. Drip-receiving grate	July 26, 1870
105,847	Reeder, A. F., Normal, Ill. Steam-governor	May 17, 1870
3,980	Reeder, Charles W., Chillicothe, Mo. Farm-fence (Reissue)	Oct. 18, 1870
108,263	Same.....Trenton, Mo. Washing-machine	
	Reeder, Oliver, and W. T. Howard. (*See* Howard & Reeder.)	Feb. 8, 1870
99,594	Rees, Edwin, Steddartville, Pa. Clothes washer and drier	
102,865	Rees, Edwin, assignor to self and Lewis Stull, Steddartville, Pa. Scrubbing-brush and mop-wringer	May 10, 1870
	Rees, James, Pittsburgh, Pa. Paddle-wheel	Aug. 23, 1870
106,020	Rees, Martin, and George H. Bliss. (*See* Bliss & Rees.)	
	Rees, Thomas, Judson, Minn. Washing-machine	Jan. 25, 1870
99,235	Rees, Abram and Jacob, Pittsburgh, Pa. Machine for making horseshoe blanks	July 19, 1870
105,400	Reese, Jacob, Pittsburgh, Pa. Metallic lath, and in billets from which the same may be produced	July 5, 1870
104,997	Reeside, Edwin. (*See* Joyce, Charles R., assignor.)	
	Reeve, R. H. and B. C. (*See* Paterson, James, assignor) (Design.)	Dec. 20, 1870
	Reeve, Selah, Chicago, Ill. Foundation for pavements	Dec. 13, 1870
110,395	Reeves, Joseph W., assignor to W. H. French, Philadelphia, Pa. Centre-piece for ceilings (Design)	Dec. 13, 1870
4,512	Same.....same (Design)	Feb. 8, 1870
4,513	Regan, Edward, Indianapolis, Ind. Flanging-apparatus	May 10, 1870
99,707	Same.....Device for flanging flue-holes of boiler-heads (Reissue)	Oct. 11, 1870
3,966	Regan, Simon, and Edward Meany, La Motte, Iowa. Gate	
108,186	Regensburger, Jacob, *et al.* (*See* Palmer, Charles H., assignor.)	
	Rehfuss, George, assignor to American Button-Hole Overseaming and Sewing Machine Company, Philadelphia, Pa. Sewing-machine	May 3, 1870
103,710	Rehn, Isaac, assignor to self and Norris Peters, Washington, D. C. Mode of producing photo-lithographic transfers	Mar. 15, 1870
100,924	Reichard, Henry C., and Henry P. Lauer. (*See* Lauer & Reichard.)	Mar. 1, 1870
	Reichenbach, William, and F., Recchdiantsky, Chicago, Ill. Extension-table	Aug. 16, 1870
100,446	Reid, Adam, Buffalo, N. Y. Dripping-pan	
100,506	Reid, Archibald W., assignor to self and William H. Rugg, Schenectady, N. Y. Machine for scouring and setting out leather	April 5, 1870
101,508	Reid, C. L., Louisville, Ky. Convertible plow and cultivator	Mar. 29, 1870
101,360	Reid, David A., Wayne Township, Ind. Sorghum-stripper	June 28, 1870
104,882	Reid, Frank, and Daniel O. Moore. (*See* Moore & Reid.)	
	Reid, Hiram A., Beaver Dam, Wis. Harvester-attachment for raking and binding grain	June 28, 1870
104,863	Reid, Hugh, and George W. Fisher. (*See* Fisher & Reid.)	Nov. 15, 1870
	Reid, James, Catskill, N. Y. Propelling canal-boats. (Antedated Nov. 3, 1870)	
109,248	Reid, Lawrence, and John Rogers. (*See* Rogers & Reid.)	
	Reid, William J., and Walter J. Morris. (*See* Morris & Reid.)	Mar. 1, 1870
	Reid, William O., Vienna, N. C. Adjustable bedstead	Dec. 13, 1870
100,394	Same.....Anti-friction box for axles	Oct. 11, 1870
110,160	Reiff, William H., Philadelphia, Pa. Show-case (Design)	
4,417	Reigart, John F., and Richard H. Chinn. (*See* Chinn & Reigart.)	
	Reilley, John O., and Isaac Ten Eyck. (*See* Ten Eyck & Reilley.)	Oct. 25, 1870
108,609	Reilley, John O., assignor to self, William Wallace Perkins, and Calvin C. Chaffee, Baltimore, Md. Cigar-machine	June 21, 1870
	Reilly, Michael, Covington, Ky. Harness-hook	Jan. 4, 1870
104,646	Reim, William Oscar, Springfield, Ohio. Water-gauge for the tonnage of vessels	
98,630	Reimers, Frederick P. L., and E. H. Gustav Von Doehren. (*See* Von Doehren & Reimers.)	
	Reinshagen, Peter W., assignor to self, Daniel Wiehl, Andrew P. Lusk, and John H. Buckman, Cincinnati, Ohio. Low-water indicator	April 26, 1870
102,433	Reinshagen, Peter W., assignor to self and John H. Buckman, Cincinnati, Ohio. Shaft-coupling	June 28, 1870
104,884	Same.....same	Dec. 27, 1870
110,590	Reinshagen, Peter W., *et al.* (*See* Wiehl, Daniel, assignor.)	
	Reis, Matthias, *et al.* (*See* Raible, Reis & Ritter.)	Jan. 4, 1870
98,631	Reisinger, George W., Harrisburg, Pa. Globe-valve	Sept. 13, 1870
107,410	Reisinger, George W., and William A. Middleton, Harrisburgh, Pa. Corn-sheller	Dec. 6, 1870
109,945	Reisinger, George W., assignor to William A. Middleton and Eugene Snyder, Harrisburgh, Pa. Corn-sheller	
	Reister, George H., Washington, Iowa. Hay-raker and loader. (Antedated Feb. 26, 1870)	Mar. 15, 1870
100,894	Reister, P. F., *et al.* (*See* Yount, Reister, Keeports & Yount.)	

Alphabetical list of patentees for the year 1870—Continued.

No.	Name, residence, and invention or discovery.	Date.
107,626	Reitz, Charles, Indianapolis, Ind. Electro-magnetic apparatus for medical use	Sept. 20, 1870
	Reitz, Charles, and Austin W. Allen. (*See* Allen & Reitz.)	
	Remington, Charles H. (*See* Rice, Jacob E., assignor.)	
105,848	Renetsky, Augustus, Lincoln, Ill. Sewing-machine	July 26, 1870
110,072	Reniers, Peter C., Pittsburgh, Pa. Basket for tile-grinders. (Antedated Dec. 10, 1870)	Dec. 13, 1870
98,700	Renshaw, David, assignor to Edward P. Bray, Brooklyn, N. Y. Spring-hinge. (Antedated Jan. 8, 1870)	Jan. 11, 1870
102,503	Rentchler, Henry, Belleville, Ill. Office register and directory	May 3, 1870
	Renwick, Edward S., trustee. (*See* Paraf, Alfred, assignor.)	
102,434	Renwick, Edward S., New York, N. Y. Breech-loading fire-arm	April 26, 1870
3,967	Same.....Millburn, N. J. Grate for furnaces (Reissue)	May 10, 1870
	Same.....(*See* Paraf, Alfred, assignor.)	
	Same.....(*See* Perry & Goddard, assignors.)	
4,221	Requa, E. B., assignor to the Requa Patent Concave Burner and Chimney Company, New York, N. Y. Lamp-chimney (Reissue)	Dec. 27, 1870
100,008	Requa, James E., Sonora, Cal. Thorough-brace	Feb. 22, 1870
	Requin, Charles F., and Emile F. Loiseau. (*See* Loiseau & Requin.)	
	Resor, William, and Co. (*See* Truesdale, Charles, assignor) (Reissue.)	
4,020	Resticaux, Thomas, Boston, Mass. Deodorizing petroleum (Reissue)	June 7, 1870
108,829	Restle, John, Boston, Mass. Transparent varnish	Nov. 1, 1870
98,709	Reuter, Conrad, assignor to Cincinnati Type Foundry, Cincinnati, Ohio. Printers' rule	Jan. 11, 1870
102,156	Reuttl, Hermann, and Philipp Winkelhaus, Hamilton, Ohio. Apparatus for pitching beer and other barrels	April 19, 1870
	Rex, Abraham. (*See* Bennor, Joseph, assignor) (Two cases.)	
108,204	Rex, William A., and Joseph M., jr., Butler, Ind. Car-coupling	Aug. 9, 1870
102,040	Reyer, George, Indianapolis, Ind. Harness-buckle	April 19, 1870
105,849	Reynerson, James H., and John Worrel, Clayton, Ind. Sulky-attachment to plows	July 26, 1870
109,453	Reynolds, Baker W., Evansville, Ind. Sediment-agitator for steam-boilers	Nov. 22, 1870
103,370	Reynolds, Bartin T., Centreville, Ind. Dropping-platform for harvesters	May 24, 1870
98,800	Reynolds, C. M., Mifflin, Wis. Chimney-top	Jan. 11, 1870
100,925	Reynolds, Daniel M., Chicago, Ill. Folding crib and cradle	Mar. 15, 1870
109,050	Same.....Portable cradle or crib	Nov. 8, 1870
109,051	Same.....Table	Nov. 8, 1870
109,064	Reynolds, Dennon, Napanock, N. Y. Water-wheel	Nov. 29, 1870
99,949	Reynolds, Dexter, Albany, N. Y. Process and apparatus for the manufacture of salt	Feb. 15, 1870
	Reynolds, Dexter, and James W. Paige. (*See* Paige & Reynolds.)	
100,546	Same.....Albany, N. Y. Manufacture of salt	Nov. 22, 1870
104,647	Reynolds, George A., Rochester, N. Y. Machine for rolling metallic roofing-plates	June 21, 1870
107,290	Same.....Seaming the ends of metallic roofing-plates	Sept. 13, 1870
100,059	Reynolds, George H., New York, N. Y. Bookbinding	Feb. 22, 1870
	Reynolds, George H., *et al.* (*See* Rider, Alexander K., assignor) (Two cases.)	
4,128	Reynolds, George S., assignor to Joseph H. Shireman, York, Pa. Horse hay-rake (Reissue)	Sept. 20, 1870
102,711	Reynolds, Henry, Aurora, N. Y. Machine for making chain-links	May 3, 1870
104,885	Reynolds, Henry S., New York, N. Y. Coal-scuttle	June 28, 1870
100,188	Reynolds, J., Crystal Springs, Miss. Subsoil-plow and scraper combined	Feb. 22, 1870
	Reynolds, James, sr. (*See* McConaughy, Robert A., assignor.)	
108,866	Reynolds, Jesse, Philadelphia, Pa. Heating-drum	May 10, 1870
103,041	Reynolds, Michael, New York, N. Y. Cooling ale and beer. (Antedated April 7, 1870)	April 19, 1870
101,312	Reynolds, Nathaniel C., Ellsworth, Me. Boat-detaching apparatus	Mar. 29, 1870
	Reynolds, Newton, and Horace G. Nelson. (*See* Nelson, Thomas, assignor.)	
108,033	Reynolds, Reuben M., East Saginaw, Mich. Wheelbarrow	Oct. 4, 1870
100,070	Reynolds, Roscoe C., and Cyrus I. Barker, Lewiston, Me. Warping-machine	Feb. 22, 1870
4,354	Reynolds, Samuel, Allegheny City, Pa. Trace-carrier for harness (Design)	Sept. 13, 1870
107,541	Reynolds, Samuel F., Auburn, N. Y. Machine for tempering sickle-sections, plane-irons, &c	Sept. 20, 1870
103,371	Reynolds, Thomas, Yonkers, N. Y. Machine for washing barrels	May 24, 1870
105,268	Reynolds, William, Manchester, N. H. Burglar-alarm	July 12, 1870
	Reynolds, William, *et al.* (*See* Jackson, Richard A., assignor.)	
99,473	Rhinelander, F. W., New York, N. Y. Railway-car coupling	Feb. 1, 1870
100,928	Same.....Spiral spring for railway-cars	Mar. 15, 1870
103,778	Same.....Car-spring	May 31, 1870
104,998	Rhoad, Frederick, Liberty Centre, Ohio. Sawing-machine	July 5, 1870
99,336	Rhoades, A. A., and Wiley Tash, Berlin, Ill. Pulverizing-attachment for plows	Jan. 25, 1870
98,631	Rhoades, George M., Hamilton, N. Y. Mechanical movement	Jan. 4, 1870
99,476	Rhoads, Jeremiah, Niles, Mich. Clamp for forming horseshoe calks	Feb. 1, 1870
105,980	Rhoads, John, assignor to self and William H. Harrison, Harrisburgh, Pa. Passenger-register for vehicles	Aug. 2, 1870
104,886	Rhodehamel, William G., Piqua, Ohio. Scrubber and cleaner	June 28, 1870
	Rhodes, B. M., & Co. (*See* Sapp, William L., assignor.)	
105,370	Rhodes, Edward, assignor to self and Henry Disston & Son, Philadelphia, Pa. Reciprocating-saw mill	July 12, 1870
4,253	Rhodes, Edward, assignor to Henry Disston & Son, Philadelphia, Pa. Saw (Design)	July 19, 1870
4,497	Same.....same (Design)	Nov. 29, 1870
102,328	Rhodes, Joel H., and William Reed, Philadelphia, Pa. Velocipede	April 26, 1870
102,970	Rhodes, John H., Brooklyn, N. Y. Atmospheric valve for house-boilers	May 10, 1870
110,260	Rhodes, Vernon, Memphis, Tenn. Chamber-vessel	Dec. 20, 1870

Alphabetical list of patentees for the year 1870—Continued.

No.	Name, residence, and invention or discovery.	Date.
	Ribble, John W., *et al.* (*See* Campbell, James A., assignor.)	
98,673	Ribon, Juan, New York, N. Y. Boring-machine	Jan. 4, 1870
104,999	Ricard, Hubert, assignor to self and George F. Eaton, Haverhill, Mass. Pegging-jack	July 5, 1870
	Rice, Arthur T., and William D. Mason. (*See* Mason & Rice.)	
99,237	Rice, Charles F., Brookfield, Mass. Shingle-machine	Jan. 25, 1870
100,071	Rice, Edwin T., New York, N. Y. Process of bleaching and cleaning vegetable fibers. (Antedated Feb. 10, 1870)	Feb. 22, 1870
101,650	Rice, Eli B., Madison, Wis. Harvester	April 5, 1870
104,499	Rice, George S., assignor to Vulcanite Jewelry Company, New York, N. Y. Pocket or "charm" letter-scale	June 21, 1870
	Rice, Henry J., and Charles E. Smith. (*See* Smith & Rice) (Three cases.)	
102,157	Rice, Israel L. G., Cambridge, Mass. Inking-apparatus for color-printing	April 19, 1870
104,203	Same. Inking-apparatus for printing-presses	June 14, 1870
104,204	Same. Apparatus for cure of spermatorrhœa	June 14, 1870
104,887	Same. Machine for making composition-roofing	June 28, 1870
108,630	Same. Inking-apparatus for color-printing	Oct. 25, 1870
108,830	Same. Railway-car brake	Nov. 1, 1870
109,349	Same. Paper-cutting machine	Nov. 15, 1870
	Rice, Israel L. G., and Saint Clair Denny. (*See* Denny & Rice.)	
103,779	Rice, Jacob E., assignor to self and Archibald A. Rice, Moline, Ill. Corn-harvester	May 31, 1870
106,205	Rice, Jacob E., assignor to self and Charles H. Remington, Moline, Ill. Drier	Aug. 9, 1870
108,197	Rice, James, Middletown, Ind. Extension-trunk	Oct. 11, 1870
	Rice, James R., *et al.* (*See* Rowell, Rice & Seeley.)	
105,940	Rice, John, Owego, N. Y. Raking-attachment for furnaces	July 12, 1870
106,906	Rice, Peter J., Ashtabula, Ohio, and David A. Scott, Cincinnati, Ohio. Air-heating steam-condenser	Aug. 9, 1870
106,907	Rice, Samuel G., Albany, N. Y. Mode of treating tobacco. (Antedated Aug. 5, 1870)	Aug. 9, 1870
104,648	Rice, Thomas C., Worcester, Mass. Paint for roofs	June 21, 1870
109,757	Same. Manufacture of paint	Nov. 29, 1870
106,507	Rice, Thomas H., Baltimore, Md. Sheave-block	Aug. 16, 1870
109,758	Rice, William S., Biddeford, Me. Window-shade	Nov. 29, 1870
102,867	Rich, Charles, Poughkeepsie, N. Y. Connection of springs for bed-bottoms, seats, &c	May 10, 1870
106,980	Rich, Charles, assignor to self and David S. Mallory, Poughkeepsie, N. Y. Spring for beds	Aug. 30, 1870
	Rich, Henry C., and Joseph C. Kent. (*See* Kent & Rich.)	
104,063	Rich, John, Painesville, Ohio. Lathe-chuck	June 7, 1870
107,291	Same. same	Sept. 13, 1870
	Rich, John, *et al.* (*See* Buffington, Nathaniel E., assignor.)	
108,935	Rich, John T., Philadelphia, Pa. Steam-generator	Nov. 1, 1870
108,936	Same. same	Nov. 1, 1870
102,158	Same. Apparatus for reefing sails	April 19, 1870
108,937	Richard, Jean Elie, assignor to self and Eugene C. Plumer, Columbia, S. C. Gas-apparatus	Nov. 1, 1870
107,542	Richard, William, Clyde, Ohio. Pruning-knife	Sept. 20, 1870
	Richards, Allan C., and John C. Hall. (*See* Hall & Richards.)	
	Richards, Allen C. (*See* Scott, David A., assignor.)	Nov. 1, 1870
	Richards, Alvan S., Montgomery County, Md. Carpet-stretcher	
	Richards, Celina E., and Henry C. Luther. (*See* Luther & Richards.)	
101,163	Richards, Charles L., New York, N. Y. India-rubber billiard-cushion	Mar. 22, 1870
100,180	Richards, George H., New York, N. Y. Eraser-attachment for pencils, &c	Feb. 22, 1870
104,760	Richards, Isaac P., Whitinsville, Mass. Punch	June 28, 1870
106,621	Richards, Isaac P., assignor to George Draper & Son, Whitinsville, Mass. Spindle-bolster	Aug. 23, 1870
4,145	Richards, John, Philadelphia, Pa. Band-saw frame (Design)	June 7, 1870
109,665	Same. Manufacture of wrenches	Nov. 29, 1870
103,980	Richards, John, assignor to J. A. Fay & Co., Philadelphia, Pa. Planing-machine	May 17, 1870
104,770	Richards, John, and William H. Thorne, Philadelphia, Pa. Band-sawing machine	June 28, 1870
3,866	Richards, John D., Muscatine, Iowa. Projectile (Reissue)	Mar. 22, 1870
101,509	Richards, Merritt, Princeton, Ill. Revolving plow-coulter	April 5, 1870
100,447	Richards, Philemon, Philadelphia, Pa. Nail-cutting machine	Mar. 1, 1870
109,606	Richards, Richard, Albany, N. Y. Safety-swivel	Nov. 29, 1870
105,371	Richards, Stephen M., assignor to self and Edgar R. Moffatt, St. Louis, Mo. Railway-track	July 12, 1870
110,267	Richards, Thomas C., New York, N. Y. Construction of ornamental-headed picture-nails	Dec. 20, 1870
110,300	Same. Nail for pictures, &c	Dec. 27, 1870
99,708	Richards, William J., Ferdinand M. Sofge, and Joseph H. Richards, La Fayette, Ind. Stringing and tuning piano-fortes	Feb. 8, 1870
	Richardson, Benjamin F. (*See* Lehnert, Carl, assignor.)	
108,058	Richardson, Benjamin F. and David, Martinsville, Iowa. Saw-mill	Nov. 8, 1870
100,190	Richardson, Charles, *et al.* (*See* Case, Henry J., assignor) (Reissue)	Feb. 22, 1870
	Richardson, D. E., Henrietta, N. Y. Wagon-seat	
	Richardson, Edward P., and John C. Hancock. (*See* Hancock & Richardson.)	
108,129	Richardson, Everett P., Lawrence, Mass. Machine for trimming the heels of boots and shoes. (Antedated April 9, 1870)	April 19, 1870
103,642	Richardson, Francis, Hebron, Ill. Chimney	April 19, 1870
106,736	Richardson, George, Milwaukee, Wis. Bed-bottom	Aug. 23, 1870

Alphabetical list of patentees for the year 1870—Continued.

No.	Name, residence, and invention or discovery.	Date.
107,198	Richardson, George, Milwaukee, Wis. Drain-pipe	Sept. 6, 1870
109,945	Richardson, George, Lowell, Mass. Take-up detaining-pawl	Nov. 15, 1870
	Richardson, George F., & Co. (*See* Bancroft, Melvin, assignor.)	
107,199	Richardson, George W., Taunton, Mass. Clothes-drier	Sept. 6, 1870
	Richardson, H., and Ellis Doty. (*See* Doty & Richardson.)	
99,700	Richardson, Haynes L., assignor to William, Daniel, and Julius R. Pomeroy, New York, N. Y. Splint for fracture of clavicle, &c	Feb. 8, 1870
102,631	Richardson, James C., Prairie du Chien, Wis., and Lemuel Taylor, Jordan, Wis. Churn. (Antedated Sept. 30, 1870)	Oct. 25, 1870
107,396	Richardson, James H., Westport, N. Y. Animal-trap	Sept. 13, 1870
105,598	Richardson, John R., Max Meadows, Va. Locomotive-wheel	July 19, 1870
106,962	Richardson, John R., Newcastle, Pa. Water-wheel	Aug. 30, 1870
101,706	Richardson, Joseph, Ballston Spa, N. Y. Fowl-feeder	April 12, 1870
109,950	Richardson, Lionel W., Roscoe, Ill. Plow	Nov. 15, 1870
	Richardson, Mark S., *et al.* (*See* Pond & Richardson.)	
101,381	Richardson, Matthew, Brooklyn, N. Y. Cigar-box	Mar. 29, 1870
106,831	Richardson, Nathan B., Somerville, N. J. Carriage-top fixture	Nov. 1, 1870
103,378	Richardson, Simon H., assignor to self and T. N. Egery, Bangor, Maine. Hauling up logs	May 24, 1870
99,477	Richardson, T. M., Stockton, Me. Flooring-cot	Feb. 1, 1870
	Richardson, William A., *et al.* (*See* Mahurin, Stephen, assignor.)	
107,723	Richardson, William F., Pittsburgh, Pa. Steam-engine	Sept. 27, 1870
4,293	Richardson, William H., West Roxbury, Mass. Paper-collar box (Design)	July 12, 1870
99,110	Richardson, William W., Chicago, Ill. Saw-handle	Jan. 25, 1870
103,657	Same. Water-wheel	May 31, 1870
106,407	Rieber, François Charles, Gilmer, Texas. Coffee-mill	Aug. 16, 1870
109,547	Richmond, Alexander, jr., Dayton, Ohio. Hydrant	Nov. 22, 1870
108,188	Richmond, Edwin Adison, assignor to self and Charles Watson. San Francisco, Cal. Piston-rod packing	Oct. 11, 1870
103,636	Richmond, Gideon B., Charlestown, Mass. Spring bed-bottom	May 31, 1870
	Richmond, Rufus B. (*See* Hildreth, R. S., assignor.)	
	Richmond, Seelye, *et al.* (*See* Makibbin, Thomas A., assignor.)	
100,080	Richter, Charles O., New York, N. Y. Reversible shirt	Mar. 8, 1870
106,671	Richter, Emil F., Prussia. Cleansing wool	Aug. 30, 1870
105,725	Rickard, William, assignor to self and R. K. Meigs, Jersey City, N. J. Floating tide-dock	July 26, 1870
105,492	Rickards, William, jr., Franklin, Pa. Buffer-head for car-couplings	July 12, 1870
102,593	Ricker, John W., Chelsea, Mass. Corn-sheller	May 3, 1870
	Ricker, Samuel, and Francis M. Bachman. (*See* Bachman & Ricker.)	
	Riddell, John W. (*See* Chatham, Walter S., assignor.)	
	Riddell, William. (*See* Bletcher, Thomas, assignor.)	
110,288	Riddick, Archibald A., Franklin, Va. Liniment for the cure of rheumatism	Dec. 20 1870
98,634	Rider, A. K., Elizabeth City, N. J. Liquid-meter	Jan. 4, 1870
101,510	Rider, Alexander K., assignor to self, C. H. De Lameter, and George H. Reynolds, New York, N. Y. Compound blower	April 5, 1870
109,053	Same. Balance slide-valve	Nov. 8, 1870
	Rider, A. K., and C. S. Westcott. (*See* Westcott & Rider.)	
100,191	Rider, John, New York, N. Y. Life-raft	Feb. 22, 1870
105,950	Rider, John F. C., South New Market, N. H., and Emerson P. Brownell, Providence, R. I. Spool-machine	July 12, 1870
100,448	Rider, John P., and James R. Bird, assignors to the New York Rubber Company, Brooklyn, N. Y. Covering the end of rubber-hose	Mar. 1, 1870
107,981	Rider, Leman P., assignor to self, William Yagle, and A. Ward, Pittsburgh, Pa. Hull for vessels	Oct. 4, 1870
106,408	Rider, Samuel, assignor to self, Samuel R. and Albert R. Griffith, and Andrew W. Cox, Oil City, Pa. Portable iron derrick	Aug. 16, 1870
107,543	Ridge, Joseph, assignor of one-fourth interest to Stephen S. Straitan, Wayne County, Ind. Carriage-wheel	Sept. 20, 1870
102,635	Ridgway, Jacob Elwood, Philadelphia, Pa. Street-car	April 26, 1870
106,022	Rica, Henry, Norwalk, Ohio. Grain-thrasher, &c	Aug. 23, 1870
103,920	Rigby, James, and Philip A. Palmer, Marietta, Ohio. Gas-retort	June 7, 1870
108,394	Same. Steam-generator and hot-water apparatus	Oct. 18, 1870
104,354	Rigby, Seth, 3d, Newcastle, Pa. Brick-machine	June 14, 1870
100,385	Rigell, Mark, assignor to self, Robert D., William D., and Robert F. Joy, Newton, Ala. Plow	Mar. 1, 1870
100,386	Same. same	Mar. 1, 1870
104,649	Rigg, John, Joshua E. Hall, and Carnot F. Fenton, Cleveland, Ohio. Oil-well reamer	June 21, 1870
108,054	Riggs, Abner, Frostburgh, Md. Washing-machine	Oct. 4, 1870
107,104	Riggs, James W., assignor to self and Phillip Anshutz, Wade, Ohio. Capstan. (Antedated Sept. 1, 1870)	Sept. 6, 1870
105,060	Rigsbee, Jordan, Chapel Hill, N. C. Cotton-seed planter	July 5, 1870
4,373	Riker, William, Newark, N. J. Badge (Design)	Sept. 27, 1870
4,124	Riley, John, and Charles W. Bissell, assignors through mesne assignments to the United States and Foreign Salamander Felting Company, Troy, N. Y. Composition for covering steam-boilers, steam-pipes, &c (Reissue)	Sept. 27, 1870
103,055	Riley, John, assignor to the United States and Foreign Salamander Belting Company, Troy, N. Y. Composition for covering steam-boilers and for other purposes	Oct. 4, 1870
3,988	Riley, John M., Newark, N. J. Handle-cap for satchels (Design)	Mar. 15, 1870
103,081	Riley, Peter, Lancaster, Pa. Steam-generator	May 17, 1870
101,511	Riley, William, Madison County, Miss. Washing-machine	April 5, 1870

Alphabetical list of patentees for the year 1870—Continued.

No.	Name, residence, and invention or discovery.	Date.
108,698	Riley, William, jr., Terre Haute, Ind. Dumping-car	Oct. 25, 1870
107,260	Rimmer, Thomas, South Braintree, Mass. Marine steam-boiler	Sept. 13, 1870
109,548	Ring, Edward F., St. Louis, Mo. Apparatus for stirring and cooling lard	Nov. 29, 1870
103,713	Ringle, Jacob, Jersey City, N. J. Wash-boiler apparatus	May 3, 1870
101,042	Rinkle, David, assignor to self and Charles C. Hunt, Indianapolis, Ind. Stomach-bitters	Mar. 22, 1870
3,824	Ripley, Daniel C., Birmingham, Pa. Stem for glassware (Design)	Feb. 1, 1870
3,843	Same Baptismal font (Design)	Feb. 8, 1870
104,263	Same Mold for glass lamps	June 14, 1870
107,544	Ripley, Daniel C., Pittsburgh, Pa. Glass lamp	Sept. 20, 1870
101,512	Ripley, D. C., assignor to Ripley & Co., Birmingham, Pa. Glass lamp	April 5, 1870
76,626	Ripley, Edward, and Loring Atwood. (*See* Atwood & Ripley.)	Jan. 4, 1870
3,803	Ripley, Moses H., Minneapolis, Minn. Harvester. (Antedated Dec. 24, 1869)	Jan. 25, 1870
107,087	Rippon, William F., and George A. Johnson, Providence, R. I. Lamp-burner. (Reissue)	Sept. 20, 1870
100,739	Risdon, Theodore H., Mount Holly, N. J. Water-wheel	Nov. 29, 1870
110,073	Riehe, Daniel, and Hiram D. Chance. (*See* Chance & Riehe.)	Dec. 13, 1870
100,927	Risler, Stacy, Locktown, N. J. Churn	Mar. 15, 1870
101,767	Ritchey, Michael, Paterson, N. J. Steam-generator	April 12, 1870
105,492	Ritchie, Edward S., Brookline, Mass. Marine-compass	July 19, 1870
4,061	Ritchie, Francis, assignor through mesne assignments to Jewett & Root, Troy, N. Y. Cooking-stove (Reissue)	July 5, 1870
106,260	Ritchie, Francis, assignor to Jewett & Root, Troy, N. Y. Cooking-stove	Aug. 9, 1870
	Ritchie, Francis, *et al.* (*See* Vedder, Ritchie & Heister) (Design.)	
	Ritchie, Francis, and Nicholas S. Vedder. (*See* Vedder & Ritchie) (Two cases.) (Design)	Nov. 1, 1870
108,830	Ritchie, John and George, England. Tent and umbrella	Feb. 22, 1870
109,072	Ritchie, William, Wilmington, Ill. Instrument for drawing geometrical lines	Jan. 25, 1870
99,230	Ritter, John L., Liberty, Ind. Grain-drill feed	Oct. 11, 1870
108,994	Same Brownsville, Ind. Grain-drill	Nov. 8, 1870
100,054	Rittenhouse, Alvah, Philadelphia, Pa. Lamp-heating apparatus	June 7, 1870
103,930	Rittenhouse, Daniel G., Shelby Depot, Tenn. Cotton-scraper	June 14, 1870
104,266	Rittenhouse, John B., and Joseph Collins, Locust Lane, Pa. Railway-gate	Nov. 15, 1870
	Ritter, Andrew J., Rahway, N. J. Carriage-spring (Disclaimer filed)	Feb. 1, 1870
90,478	Ritter, John, *et al.* (*See* Raible, Rein & Ritter.)	Aug. 16, 1870
106,508	Ritter, S. S., Philadelphia, Pa. Shoulder-brace	Sept. 13, 1870
4,355	Same Manufacture of trace-pads. (Antedated Aug. 16, 1870)	
	Rivers, Thomas L., Newark, N. J. Clamp for trunk-corners (Design)	
	Roach, John. (*See* Livingstone, William, assignor.)	Mar. 29, 1870
101,466	Roach, William H., Harrisonville, Ohio. Washing-machine	Mar. 8, 1870
99,595	Robb, John, New York, N. Y. Mode of splitting rosk	Nov. 22, 1870
108,464	Robb, William, 2d, South Stoddard, N. H. Apple-paring machine	Feb. 1, 1870
	Robbins, Charles. (*See* Witte, William F., assignor.)	
99,479	Robbins, Edwin, England. Decorative slab formed from plastic material	Jan. 18, 1870
99,662	Robbins, Henry R., Baltimore, Md. Pipe-coupling for heating cars. (Antedated Jan. 3, 1870)	June 28, 1870
104,771	Same Stove and furniture leg	Aug. 23, 1870
106,625	Same Wash-boiler	May 10, 1870
102,971	Robbins, Hiram, assignor to self and William R. Morris, Cincinnati, Ohio. Roller-skate	Feb. 15, 1870
99,650	Robbins, Horace T., Boston, Mass. Umbrella	Sept. 6, 1870
107,105	Same Apparatus for lighting gas by electricity	Mar. 1, 1870
109,287	Robbins, Louis S., New York, N. Y. Disinfecting compound	Oct. 4, 1870
108,056	Robbins, Moses M., Centreville, Ind. Field-roller and furrowing-machine	Nov. 15, 1870
109,346	Robbins, Richard B., Adrian, Mich. Wood and coal dumper for railways	
	Robbins, R. B. (*See* Mason, Austin Z., assignor.)	Mar. 1, 1870
100,389	Roberge, D., Moore's Forks, N. Y. Horseshoe	Mar. 8, 1870
100,389	Same Same	Jan. 11, 1870
98,801	Roberts, A. E., Des Moines, Iowa. School-desk	Sept. 27, 1870
107,724	Same Hinge for school-desks	Nov. 1, 1870
108,930	Roberts, Albert F., Lexington, Ky. Subsoil-attachment for plows	July 26, 1870
105,830	Roberts, Andrew J., Boston, Mass. Cabinet-bedstead	May 3, 1870
3,931	Roberts, Benjamin S., U. S. Army. Breech-loading fire-arm (Division 1, reissue)	May 3, 1870
3,932	Same Same (Division 2, reissue)	May 3, 1870
3,933	Same Same (Division 3, reissue)	
109,146	Roberts, Benjamin S., assignor to O. B. North & Co., New Haven, Conn. Bit for harness	Nov. 8, 1870
102,713	Roberts, Charles Hamilton, Geneva, Ohio. School-desk	May 3, 1870
101,917	Roberts, Charles Henry, Evansville, Ind. Grinding-mill	April 12, 1870
99,695	Roberts, Cyrus, Three Rivers, Mich. Universal joint for shafting	Jan. 18, 1870
99,951	Roberts, Cyrus, and John A. Thrap, Three Rivers, Mich. Horse-power	Feb. 15, 1870
	Roberts Cyrus, Three Rivers, Mich., and John Cox, New Hope, Pa. Grain-separator (Extension)	Mar. 14, 1870
109,537	Roberts, Edmund D., Hartford, Conn. Stove-pipe drum	Mar. 8, 1870
103,603	Roberts, Edwin R., and William Graham, Sturgis, Mich. Transplanting-implement	May 17, 1870
101,643	Roberts, Francis A., North Vassalborough, Maine. Tail-holder for horses	Mar. 29, 1870
105,128	Roberts, Franklin, assignor to New Orleans Pneumatic Propelling Company, New Orleans, La. Tank for holding compressed air	July 5, 1870

Alphabetical list of patentees for the year 1870—Continued.

No.	Name, residence, and invention or discovery.	Date.
109,667	Roberts, George W., assignor to self and John H. Graham, Wilmington, Del. Earth-closet	Nov. 29, 1870
98,866	Roberts, Henry K., and George R., Jefferson County, Ky. Corn planter and fertilizer	Jan. 18, 1870
99,710	Roberts, John, assignor to self, C. Hart Smith, and Levi L. Willcutt, Waltham, Mass. Machine for tarring paper for roofing, &c	Feb. 8, 1870
109,251	Roberts, John W., Hartford City, Ind. Ditching-machine	Nov. 15, 1870
	Roberts, Jonathan. (*See* Thresh, George, assignor.)	
101,513	Roberts, Lavan D., Cleveland, Ohio. Machine for making horseshoes	April 5, 1870
99,958	Roberts, Robert J., New York, N. Y. Plated needle	Feb. 15, 1870
4,514	Same Show-case (Design)	Dec. 13, 1870
105,251	Roberts, Samuel D., and Montgomery Dingee, Brooklyn, N. Y. Dumb-horse velocipede	July 12, 1870
99,480	Roberts, Thomas, Lynn, Mass. Knife-cleaning machine. (Antedated Jan. 24, 1870)	Feb. 1, 1870
	Roberts, Thomas, and Jacob W. Hill. (*See* Hill & Roberts.)	
	Roberts, Thomas Elwood. (*See* Butterfield, William, assignor.)	
	Roberts, William A. (*See* Fontaine, Eugene, assignor.)	
99,953	Roberts, William H., Mauch Chunk, Pa. Steam-pumping engine	Feb. 15, 1870
100,449	Same Device for securing uniform motion in pumping-engines	Mar. 1, 1870
106,078	Robertson, James, Scotland. Motive-power engine	Aug. 9, 1870
101,044	Robertson, John A., Boston, Mass. Steam-protection for safes, vaults, &c	Mar. 22, 1870
100,073	Robertson, John R., Syracuse, N. Y. Stove-shelf	Feb. 22, 1870
109,055	Robertson, John S., Scotland. Horseshoe	Nov. 8, 1870
3,864	Robertson, Louis F., Morrisania, N. Y. Compound for treating hides and skins. (Reissue)	Mar. 1, 1870
104,356	Same New York, N. Y. Composition to increase the friction between belts and pulleys	June 14, 1870
110,161	Same Compound for bating hides and skins	Dec. 13, 1870
101,661	Robertson, Louis T., New York, N. Y. Tanning by infiltration	April 5, 1870
105,259	Robertson, Orris W., Milwaukee, Wis. Battery-insulator	July 12, 1870
103,873	Robertson, William D., San Francisco, Cal. Dredging-machine	May 24, 1870
	Robeson, Daniel S., and Silas B. Terry, jr. (*See* Terry, Silas B., assignor.) (Reissue.)	
	Robeson, Robert I. (*See* Asher, James R., assignor.)	
108,830	Robeson, Robert I., and William Nash, Oskaloosa, Iowa. Combined cultivator and seeder	Nov. 1, 1870
98,636	Robin, Thomas, and Charles E. Burk, Sheboygan, Wis. Ship's rudder	Jan. 4, 1870
99,711	Robinett, James T., assignor to self, William Mahone, and Joseph P. Minotree, Petersburgh, Va. Journal-box	Feb. 8, 1870
101,362	Robinson, Charles, Boston, Mass. Projectile for toy-pistols	Mar. 29, 1870
102,594	Same Ball toy-gun	May 3, 1870
4,050	Same Arrow-gun (Design)	May 17, 1870
107,545	Same Alley-board for ball-games	Sept. 20, 1870
	Robinson, Charles E. (*See* Page, William I., assignor.)	
110,591	Robinson, Daniel T., Boston, Mass. Lamp-wick	Dec. 27, 1870
101,313	Robinson, David S., Pittsburgh, Pa. Chimney-top	Mar. 29, 1870
107,546	Robinson, Duportal D., Niles, Mich. Wagon-tongue support	Sept. 20, 1870
105,726	Robinson, Edward B., Portland, Maine. Music-leaf turner	July 26, 1870
98,710	Robinson, E. H., Janesville, Wis. Ruling-device. (Antedated Jan. 3, 1870)	Jan. 11, 1870
100,556	Robinson, Edward J., Syracuse, N. Y. Window-shade holder	Mar. 8, 1870
101,045	Robinson, F. W., Richmond, Ind. Horse-power	Mar. 22, 1870
109,760	Robinson, Henry, and John Smith, England. Apparatus for dressing mill-stones	Nov. 29, 1870
	Robinson, Hiram B. (*See* Wilder, Robert M., assignor) (Reissue.)	
104,906	Robinson, Isaiah J., St. Johnsbury, Vt. Try-square and bevel	June 14, 1870
109,761	Robinson, James, assignor to George Scheer, Sedalia, Mo. Wagon-brake	Nov. 29, 1870
	Robinson, James H. (*See* Clarkson, Edward H., assignor.)	
	Robinson, James W., and William C. Stern. (*See* Stern & Robinson.)	
102,972	Robinson, Job, Lawrence, Kans. Washing-machine	May 10, 1870
106,209	Robinson, John and Samuel F., and Christopher C. Putnam, Skowhegan, Maine. Apparatus for tanning	Aug. 9, 1870
103,230	Robinson, John Edward, Boston, Mass. Sand and air chamber for tubular wells	May 17, 1870
101,164	Robinson, John G., assignor to August Kessberger, Springfield, Ill. Hub-reamer	Mar. 22, 1870
105,727	Robinson, John K., Middlebury, Ohio. Match-stick	July 26, 1870
107,411	Robinson, Macedon J., Ashley, Ill. Horse hay-rake	Sept. 13, 1870
103,630	Robinson, Newton H., Owasco, Mich. Dovetailing-chisel	May 31, 1870
103,504	Robinson, Orvill M., Upper Jay, N. Y. Breech-loading fire-arm	May 24, 1870
	Robinson, R. M., and Co. (*See* Halwig, Edward J., assignor.)	
104,664	Robinson, Samuel P., Canterbury, Conn. Door-hanger	June 7, 1870
4,060	Robinson, Thomas C., assignor to George H. Sambern, Boston, Mass. Paper-cutting machine (Reissue)	Aug. 2, 1870
	Robinson, Thomas L., and Charles M. Powers. (*See* Powers & Robinson.)	
100,450	Robinson, William, Spring Valley, N. Y. Lamp-shade. (Antedated Feb. 23, 1870)	Mar. 1, 1870
105,493	Robinson, William, Brooklyn, N. Y. Electro-magnetic gate and signal-apparatus for railroads	July 19, 1870
105,494	Same Electro-magnetic gate-operating apparatus. (Antedated July 6, 1870)	July 19, 1870
108,628	Same Electro-magnetic railroad-signal	Oct. 25, 1870
109,549	Same Electro-magnetic signaling-apparatus for railroad-crossings	Nov. 29, 1870

Alphabetical list of patentees for the year 1870—Continued.

No.	Name, residence, and invention or discovery.	Date.
100,074	Robison, Horace A., Cleveland, Ohio. Weather-strip	Feb. 22, 1870
102,160	Robson, John H., Ovid, Mich. Machine for jointing the cleaning-teeth of cross-cut saws	April 19, 1870
100,451	Roch, Jules, Rochester, N. Y. Stay-brace for trunks	Mar. 1, 1870
103,374	Roche, Edward P., Bath, Me. Device for nebulizing perfumes and volatile liquids. (Antedated May 17, 1870)	May 24, 1870
105,851	Rock, Adolphe, New Orleans, La. Curing and preserving meat, &c	July 26, 1870
4,043	Rock, Edward A., assignor to the Rock Valve-Manufacturing Company, Ludlow, Vt. Globe steam-valve (Reissue)	June 21, 1870
103,660	Rock, Oliver, Hudson, Mass. Hammer	May 31, 1870
100,075	Rockhold, Charles W., Peoria, Ill. Sash-holder	Feb. 22, 1870
107,547	Rockwell, Andrew H., Harpersville, N. Y. Check-rein connector	Sept. 20, 1870
109,946	Rockwell, Ralph, and Zora B. Custer, Petroleum Centre, Pa. Scrubbing-brush	Dec. 6, 1870
3,885	Rockwood, Thomas J., St. Johnsbury, Vt. Machine for milling the knife-edges of scale-beams (Reissue)	Mar. 1, 1870
105,129	Rodda, Thomas, St. Louis, Mo. Reversing-valve for steam-engines	July 5, 1870
108,189	Rodeheaver, William H., Miamisburgh, Ohio. Machine for dressing felloes	Oct. 11, 1870
3,841	Rodgers, Amos C., assignor to self and Lewis Shaffer, Fort Washington, Pa. Railroad-station indicator (Reissue)	Feb. 15, 1870
101,165	Rodgers, Augusta M., Brooklyn, N. Y. Canopy for bedsteads	Mar. 22, 1870
105,253	Same Folding-chair	July 12, 1870
3,969	Rodgers, Felix, Philadelphia, Pa. Shade for gas-lights, &c (Design)	April 12, 1870
4,018	Same Shade for gas or lamp burners (Design)	May 10, 1870
102,161	Rodgers, John B., St. Louis, Mo. Compound to be used in treating rheumatism and other diseases. (Antedated April 12, 1870)	April 19, 1870
106,727	Rodier, Louis C., Springfield, Mass. Pumping-engine	Aug. 23, 1870
	Rodley, McAllister & Co. (*See* Maxim, Hiram S., assignor.)	
	Rodrigo, Frederick. (*See* Gruger, John P., assignor.)	
106,210	Roe, David E., Elmira, N. Y. Broiler	Aug. 9, 1870
108,634	Roe, Samuel, jr., Brownsville, Mo. Tire-machine	Oct. 25, 1870
4,318	Roebuck, Samuel and John, Brooklyn, N. Y. Cuspadore (Design)	Aug. 30, 1870
100,805	Roell, Frederick L., Northampton, Mass. Safety-attachment for pockets	Mar. 15, 1870
104,772	Roeper, John J., Philadelphia, Pa. Steam-heater	June 28, 1870
99,239	Rogan, James Woods, Memphis, Tenn. Cotton-bale tie	Jan. 25, 1870
104,650	Rogers, Charles, Allegheny City, Pa. Steam water-elevator	June 21, 1870
108,295	Rogers, Charles D., Utica, N. Y. Feeding-mechanism for wood-screw machinery	Oct. 11, 1870
	Rogers, Daniel G., *et al.* (*See* Powers, Thomas H., assignor.)	
104,357	Rogers, Edwin, Boston, Mass. Fire-alarm telegraph-apparatus	June 14, 1870
	Rogers, Ethan, Cleveland, Ohio. Hydraulic brick-press (Extension)	Sept. 6, 1870
104,773	Rogers, Francis E., Paw Paw, Ill. Harvester-cutter	June 28, 1870
101,918	Rogers, Frederick O., Boston, Mass. Elevated and suspended garden	April 12, 1870
106,963	Rogers, George B., Boston, Mass. Stamp-canceler	Aug. 30, 1870
4,266	Rogers, Henry C., Saugquoit, N. Y. Trade-mark (Design)	July 26, 1870
100,432	Rogers, Hiram D., Cincinnati, Ohio. Ash box and sifter	Mar. 1, 1870
	Rogers, Hiram D., and William Smith. (*See* Smith & Rogers.)	
	Rogers, Homer, *et al.* (*See* Houghton, Moore & Rogers.)	
99,004	Rogers, John, Rogersville, Pa. Water-wheel	Jan. 18, 1870
3,843	Rogers, John, New York, N. Y. Group of statuary (Design)	Feb. 8, 1870
4,287	Same same (Design)	Aug. 9, 1870
4,487	Same same (Design)	Nov. 22, 1870
105,254	Rogers, John, and Lawrence Reid, Brooklyn, N. Y. Refining sugar	July 12, 1870
103,940	Rogers, John, assignor to Lippiatt Silver-Plate and Engraving Company, Newark, N. J. Finishing the surface of plated goods	Nov. 1, 1870
105,253	Rogers, John G., Dowagiac, Mich. Pruning-shears	July 12, 1870
4,520	Rogers, John K., Brookline, Mass. Type (Design)	Dec. 20, 1870
4,530	Same same (Design)	Dec. 20, 1870
107,725	Rogers, Joseph, Detroit, Mich. Tuyere	Sept. 27, 1870
101,919	Rogers, Joseph A., New Haven, Conn. Artificial horizon for sextants, &c	April 12, 1870
103,681	Rogers, Joseph G., Madison, Ind. Composition for preventing incrustation in steam-boilers	May 31, 1870
103,682	Same Preventing incrustation in steam-boilers	May 31, 1870
98,711	Rogers, Luman, Pittsburgh, Pa. Hay-fork	Jan. 11, 1870
98,887	Same Horse hay-fork	Jan. 18, 1870
100,330	Rogers, Seymour, Pittsburgh, Pa. Grapple	Mar. 1, 1870
109,066	Rogers, Simeon, and Edwin K. Sperry, Fleming, N. Y. Cloth-guiding attachment for sewing-machines. (Antedated Nov. 26, 1870)	Nov. 29, 1870
100,670	Rogers, Thomas E., Dexter, Me. Dye-vat	Mar. 8, 1870
103,931	Rogers, William H., Brooklyn, N. Y. Fuse-composition	June 7, 1870
107,548	Rohm, Hiram F., West Providence, Pa. Bee-hive	Sept. 20, 1870
107,698	Same same	Sept. 20, 1870
104,307	Rohr, Charles M., Portland, Oreg. Construction of cane-seat chairs	June 14, 1870
106,034	Rohrbacher, Frederick, and Ferdinand Hormann, assignors to Salmon B. Rowley, Philadelphia, Pa. Process of forming smooth tops on glass jars	Aug. 23, 1870
101,662	Rohrer, John S., Lancaster, Pa. Hitching-post	April 5, 1870
103,663	Roles, Ruffin, Cary, N. C. Plow	May 31, 1870
	Roller, Phillip. (*See* Schwab, John, assignor.)	
103,340	Rollins, Edward B., Poland, N. Y. Machine for making files	May 17, 1870
100,841	Rollins, Samuel G., assignor to Wigg, Rollins & Co., Boston, Mass. Bar-mill. (Antedated Nov. 30, 1870)	Dec. 6, 1870
99,396	Rollins, Thomas H., Detroit, Mich. Saw-frame	Feb. 8, 1870
	Romans, Joseph H., *et al.* (*See* Simpson, Gray & Romans.)	

Alphabetical list of patentees for the year 1870—Continued.

No.	Name, residence, and invention or discovery.	Date.
	Rominger, Frederick, and John R. Davis. (*See* Davis & Rominger.)	
105,372	Ronan, Jeremiah F., jr., Boston, Mass. Wrench	July 12, 1870
	Rood, James, *et al.* (*See* Allen, Record, Rood & Hayden.)	
	Roome, Henry C., and Edwin Holmes. (*See* Holmes & Roome.)	
	Rooney, Thomas F. (*See* Doubler, John W. H., assignor.)	
110,183	Roorbach, Charles L., St. Clair, Pa. Implement for removing corns, bunions, &c	Dec. 13, 1870
110,289	Root, Charles F., West Springfield, Mass. Injector	Dec. 20, 1870
103,083	Root, Francis H., Buffalo, N. Y. Cooking-stove. (Antedated April 10, 1870)	May 17, 1870
	Root, Francis H., and Sherman S. Jewett. (*See* Jewett & Root.)	
103,084	Root, Franklin, Chelsea, Mass. Curtain-fixture. (Antedated May 9, 1870)	May 17, 1870
106,211	Same Hartford, Conn. Curtain-fixture	Aug. 9, 1870
108,190	Same same. (Antedated Sept. 30, 1870)	Oct. 11, 1870
100,192	Root, H. S., Muncy, Pa. Car-coupling	Feb. 22, 1870
106,728	Root, John, Hartland, N. Y. Cultivator	Aug. 23, 1870
100,928	Root, John, assignor to self and McLagon & Stevens, New Haven, Conn. Machine for heading bolts	Mar. 15, 1870
100,806	Root, John, assignor to self and Andrew Martin, New Haven, Conn. Paper-box	Mar. 15, 1870
103,932	Same same	June 7, 1870
98,802	Root, John B., New York, N. Y. Steam-generator. (Antedated Nov. 24, 1869)	Jan. 11, 1870
4,082	Root, John B., assignor of part interest to Thomas C. Paton, New York, N. Y. Steam-generator (Division A, reissue)	July 26, 1870
4,083	Same same (Division B, reissue)	July 26, 1870
102,519	Roots, Philander H. and Francis M., Connersville, Ind. Construction, jointly, of fire-beds and tuyeres	Oct. 18, 1870
108,941	Same Portable forge	Nov. 1, 1870
	Same (*See* Hardy & Wood, assignors.)	
102,868	Rosbrugh, Amanda M., Panora, Iowa. Bleaching straw-goods	May 10, 1870
	Roschdiantsky, F., and William Reichenbach. (*See* Reichenbach & Roschdiantsky.)	
107,814	Rose, Bennett R., Kansas City, Mo. Car-coupling	Sept. 27, 1870
	Rose, Buckley A. (*See* Banta, William E., assignor.)	
102,043	Rose, George P., Elmira, N. Y. Railway-rail splice	April 19, 1870
103,664	Rose, Israel M., Brook Haven, Mass. Sewing-machine needle for embroidering	May 31, 1870
	Rose, John H., and Sylvester J. Tucker. (*See* Tucker & Rose.)	
4,003	Rose, John R., and Edward Caleby, assignors to Samuel Budd Sexton, Philadelphia, Pa. Screen for fire-places (Design)	May 24, 1870
4,425	Same Fire-place stove (Design)	Oct. 18, 1870
4,515	Rose, John R., and Edward L. Caleby, assignors to Armstrong Company, Philadelphia, Pa. Cooking-stove (Design)	Dec. 13, 1870
	Rose, J. T. (*See* Ogden, Floyd, assignor.)	
4,170	Rose, Oliver H. P., East Greenwich, R. I. Bottle (Design)	June 21, 1870
102,044	Rose, Philip H., and Miller B. Hudson, Canandaigua, N. Y. Stove-pipe thimble	April 19, 1870
	Rose, Rufus E., and Amos Morrison. (*See* Morrison & Rose.)	
109,702	Rose, Salomon, and Nathan Goldsmith, Cincinnati, Ohio. Insect-powder ejector	Nov. 9, 1870
105,798	Rose, Thomas, and Robert Emerson Gibson, England. Engine for separating fiber from husks of cotton-seed	July 26, 1870
105,799	Same Process for separating fiber from the husks in cotton-coated seeds	July 26, 1870
101,930	Rosecrans, Josiah, assignor to Adelia R. Swartz, Berkshire, Ohio. Lifting-jack	April 12, 1870
108,296	Rosecrans, Leander W., Marshalltown, Iowa. Miter-machine	Oct. 11, 1870
	Rosencrantz, John. (*See* Follansbee, George Storrs, assignor) (Two cases.)	
	Rosenfield, Anthony. (*See* Lloyd, George A., assignor) (Two cases.)	
106,409	Rosenkrans, John, Boston, Mass. Pouncing-machine	Aug. 16, 1870
107,903	Rosenstein, Moritz, Boston, Mass. Manufacture of ice	Oct. 4, 1870
105,286	Rosenthal, Günther F. C., Philadelphia, Pa. Children's carriage	Aug. 9, 1870
101,168	Rosochacki, Richard, Cleveland, Ohio. Apparatus for pitching barrels	Mar. 22, 1870
109,347	Ross, Alexander, and John Arthur, Freeport, Ill. Railway-car bumper and draw-head	Nov. 15, 1870
	Ross, A. Q., and S. G. Cabell. (*See* Cabell & Ross.)	
101,921	Ross, Enoch, Washington, Iowa. Potato-digger	April 12, 1870
98,803	Ross, Hervy S., Millville, Ohio. Vise for holding saws while being sharpened	Jan. 11, 1870
102,045	Same Cultivator	April 19, 1870
103,973	Ross, James, North Cambridge, Mass. Oil-cup	May 10, 1870
100,193	Ross, John, San Francisco, Cal. Boat-detaching apparatus	Feb. 22, 1870
110,396	Ross, John D., and Martin K. Burk, Truckee, Cal. Vehicle	Dec. 20, 1870
104,208	Ross, John D., Truckee, Cal. Wheel for vehicles	June 14, 1870
110,380	Ross, John E., Greenesborough, Ga. Combined cotton-planter and guano-distributer	Dec. 20, 1870
110,508	Ross, Luther, Worcester, Mass. Lawn-mower	Dec. 27, 1870
100,676	Ross, Rice Farrar, Marshall County, Miss. Churn	Feb. 22, 1870
101,946	Ross, Robert, assignor to self, Wyatt W. Pierce, and George Ross, Middlebury, Vt. Casting metal	Mar. 22, 1870
	Ross, Samuel P. (*See* Bowles, John, assignor) (Reissue.)	
109,348	Ross, Thomas, and William W. Graham, Rutland, Vt. Take-up nut	Nov. 15, 1870
99,954	Ross, William Frazier, Davenport, Iowa. Heating-stove	Feb. 15, 1870
109,056	Same Ventilator	Nov. 8, 1870
99,359	Rosser, William H., and James Stiver, Mill Hall, Pa. Feed-cutter	Feb. 1, 1870
	Rossetter, William, and Colin Mather. (*See* Mather & Rossetter.)	
107,689	Rossiter, Thomas P., Cold Spring, N. Y. Base-burning cooking-stove	Sept. 20, 1870
106,410	Rossman, William F., Hudson, N. J. Stove-pipe damper	Aug. 16, 1870
	Rosswog, Constantin, administrator. (*See* Schuzenbach, Sebastian, assignor.)	

Alphabetical list of patentees for the year 1870—Continued.

No.	Name, residence, and invention or discovery.	Date.
101,962	Roth, John G., New York, N. Y. Clothes-wringer	April 12, 1870
98,712	Rothe, Julius Augustus, Philadelphia, Pa. Mode of treating vegetables to obtain fiber for paper, &c	Jan. 11, 1870
103,505	Rotig, Frederic, France. Stop-watch	May 24, 1870
	Rouse, Roswell R. (*See* Hanning, John G., assignor.)	
107,412	Rouse, Wanton, Taunton, Mass. Operating the picker-staff in looms	Sept. 13, 1870
99,712	Roux, Benoit, assignor to M. Greenwood & Co., Cincinnati, Ohio. Casting auger gate hinge	Feb. 8, 1870
3,844	Same.....Pair of gate-hinges.....(Design)..	Feb. 8, 1870
109,455	Row, George, Indiana, Pa. Lightning-rod	Nov. 22, 1870
4,373	Rowe, Alonzo H., Newburyport, Mass. Punch-drawer.....(Design)..	Sept. 27, 1870
106,218	Rowe, Ebenezer, Rockport, Mass. Apparatus for cooling the rollers used in the manufacture of isinglass	Aug. 9, 1870
101,663	Rowe, Elias, Vandalia, Ill. Vehicle	April 5, 1870
	Rowe, John, jr., and Benjamin F. Wright. (*See* Wright & Rowe.)	
103,323	Rowe, Martin A., Martinsville, Ill. Crank-motion	April 26, 1870
101,993	Rowe, Nathaniel, Emmittsburgh, Md. Water-heating attachment for stove-pipes	April 12, 1870
104,065	Rowell, Benning, Byersville, N. Y. Fence	June 7, 1870
	Rowell, Calvin C., and William Duncan. (*See* Duncan & Rowell.)	
106,834	Rowell, Elijah G. and Alfonzo D., James R. Rice, and Smith M. Seeley, Hartford, Wis. Shovel-plow and cultivator	Nov. 1, 1870
99,355	Rowell, Franklin, and E. C. Loud, Springfield, Mass. Pencil	Feb. 15, 1870
109,843	Rowell, Samuel, Amesbury, Mass. Carriage-axle and pole-yoke	Dec. 6, 1870
101,047	Rowell, Theodore, Beaver Dam, Wis. Shaft-coupling	Mar. 22, 1870
100,660	Rowland, James L., Milwaukee, Wis. Manufacture of artificial stone	Nov. 29, 1870
100,958	Rowland, Samuel, and Thomas C. Tipton, assignors to self and G. W. Wiggins, Williamsport, Ohio. Flood-gate	Nov. 15, 1870
100,550	Rowland, Thomas F., Green Point, N. Y. Gasometer	Mar. 8, 1870
	Rowland, W. B., and Otis W. Bean. (*See* Bean & Rowland.)	
	Rowles, Walter W. (*See* Russell, Albert J., assignor.)	
101,049	Rowley, John, assignor to the India Dye Company, (limited,) England. Treating coal products to obtain benzole, &c. (Patented in England July 22, 1869)	Mar. 22, 1870
100,057	Rowley, Martin Van Buren, Worcester, N. Y. Pump	Nov. 8, 1870
	Rowley, Salmon B. (*See* Rohrbacker & Hormann, assignors.)	
	Same.....(*See* Otterson, Thomas Garrison, assignor).....(Reissue.)	
109,671	Roy, Basil S., Olneyville, R. I. Lubricating the traversing-guide in machines for feeding carding-engines	Mar. 8, 1870
110,501	Roy, John, New Orleans, La. Propelling-apparatus for cars	Dec. 27, 1870
99,597	Royal, Jarvis, White Rock, Ill. Suspension-bridge	Feb. 8, 1870
	Royce, Danforth H., *et al.* (*See* Lutz, Royce, Tresor & Chadwick.)	
101,664	Royer, Lewis, Royerton, Ind. Grain-separater	April 5, 1870
	Roys & Wilcox Company. (*See* Meigs, Edmund H., assignor.)	
100,920	Roys, Franklin, East Berlin, Conn. Machine for corrugating sheet-metal	Mar. 15, 1870
101,768	Royse, James D. and John, Cane Valley, Ky. Washing-machine	April 12, 1870
105,981	Rucker, George W., Oswald C. Swan, and Thomas W. Rucker, St. Louis, Mo. Machine for pressing and sheeting tobacco	Aug. 2, 1870
106,267	Rucker, James M., Forrest Depot, Va. Apparatus for forcing water	Aug. 9, 1870
	Rude, William, and Esau D. Taylor. (*See* Taylor & Rude.)	
107,786	Rudiger, Theodore H., Lawrence, Kans. Elevator	Sept. 27, 1870
106,873	Rudolf, Henry W., Louisville, Ky. Process for stencil-printing	Aug. 30, 1870
99,481	Rudolph, Bruno, Prussia. Sewing-machine for making gloves	Feb. 1, 1870
107,963	Rudolph, William H., Clarksville, Tenn. Device for spreading circular-saw teeth	Oct. 4, 1870
	Ruckkemberg, Ludwig H. (*See* Stegmiller, Joseph, assignor.)	
103,974	Ruf, Carl, New York, N. Y. Funnel	May 10, 1870
106,500	Ruff, James H., Thomas Run, Md. Ironing-table	Aug. 16, 1870
3,843	Ruff, Joseph A., assignor to the Russell & Erwin Manufacturing Company, Somerville, Mass. Door-escutcheon.....(Design)..	Jan. 25, 1870
3,834	Same.....same.....(Design)..	Jan. 25, 1870
3,835	Same.....same.....(Design)..	Jan. 25, 1870
3,836	Same.....same.....(Design)..	Jan. 25, 1870
4,109	Ruff, Joseph A., assignor to the Metallic Compression Casting Company, assignor to the Russell & Erwin Manufacturing Company, Cambridge, Mass. Bell-pull knob.....(Design)..	June 7, 1870
4,110	Same.....same	June 7, 1870
4,111	Same.....Bell-pull back-plate	June 7, 1870
4,112	Same.....same	June 7, 1870
4,113	Same.....Door-knob	June 7, 1870
4,114	Same.....same	June 7, 1870
4,115	Same.....same	June 7, 1870
4,116	Same.....same	June 7, 1870
4,117	Same.....same	June 7, 1870
4,118	Same.....same	June 7, 1870
4,119	Same.....Door-knob rose	June 7, 1870
4,120	Same.....Door-butt	June 7, 1870
4,121	Same.....Escutcheon	June 7, 1870
4,122	Same.....same	June 7, 1870
4,123	Same.....Door-latch	June 7, 1870
4,124	Same.....Shutter-knob	June 7, 1870
4,125	Same.....same	June 7, 1870
4,126	Same.....same	June 7, 1870

Alphabetical list of patentees for the year 1870—Continued.

No.	Name residence, and invention or discovery.	Date.
4,127	Ruff, Joseph A., assignor to the Metallic Compression Casting Company, assignor to the Russell & Erwin Manufacturing Company, Cambridge, Mass. Shutter-bar	June 7, 1870
4,128	Same.....Sash-lift	June 7, 1870
	Ragg, William H. (*See* Reid, Archibald W., assignor.)	
103,095	Ruggles, Daniel, Fredericksburgh, Va. Composting manure and fertilizer	May 17, 1870
	Ruggles, Isaac D., *et al.* (*See* White, Alexander, assignor.)	
	Ruhe, Charles, and H. Galmann. (*See* Galmann & Ruhe.)	
	Ramery, Robert W. (*See* Patten, Alphonso, assignor.)	
108,835	Rundell, Daniel J., South Westerlo, N. Y. Wagon-brake	Nov. 1, 1870
101,514	Runk, Jacob L., and Benjamin H. Tharp, Nashville, Ill. Fanning-mill	April 5, 1870
102,714	Runnells, William T. C., Searsport, Me. Washing-machine	May 3, 1870
106,288	Runyan, John S., Columbus, Ohio. Combined broiler and furnace	Aug. 9, 1870
109,550	Same.....Fire-place grate	Nov. 22, 1870
109,670	Rupp, John C., Newark, Del. Railway-frog	Nov. 29, 1870
105,130	Ruset, Charles F., Brooklyn, N. Y. Brush	July 5, 1870
105,131	Same.....Device for manufacturing brushes	July 5, 1870
105,373	Same.....Manufacture of brushes	July 12, 1870
	Rush, David G., *et al.* (*See* Wolf, Ludwig, assignor.)	
108,731	Rushworth, John, New York, N. Y. Machine for bundling wood	Oct. 25, 1870
110,397	Rusk, John H., Philadelphia, Pa. Grinding-mill. (Antedated Dec. 9, 1870)	Dec. 20, 1870
104,356	Russ, James J., Worcester, Mass. Sofa-bed	June 14, 1870
	Russell & Erwin Manufacturing Company. (*See* Ruff, Joseph A., assignor.)	
	(Twenty-four cases).....(Design.)	
	Same.....(*See* Parker, Emery, assignor).....(Design.)	
	Same.....(*See* Gorman, William, assignor).....(Six cases.) (Design.)	
	Same.....(*See* Fisher, Charles E., assignor).....(Reissue.)	
	Same.....(*See* Kunze, Charles, assignor).....(Design.)	
	Same.....(*See* Leger, Joseph L., assignor).....(Design.)	
	Same.....(*See* Kreusinger, Ludwig, assignor)...(Ten cases.) (Design.)	
	Same.....(*See* Smith, John Joseph Charles, assignor)..(Ten cases.) (Design.)	
	Same.....(*See* Parker, Emery, assignor).....(Two cases.)	
	Same.....(*See* Elwell, Henry H., assignor).....(Reissue.)	
	Same.....(*See* Gorman, William, assignor.)	
	Same.....(*See* Smith, Michael, assignor.)	
105,962	Russell, Albert, Newburyport, Mass. Windlass	Aug. 2, 1870
104,774	Russell, Albert J., assignor to self and Walter W. Rowles, Baltimore, Md. Invalid-bedstead. (Antedated June 16, 1870)	June 28, 1870
103,668	Russell, Clement, and William K. Miller, Massillon, Ohio. Straw-carrier for thrashing-machines	May 17, 1870
102,436	Russell, James F., Washington, D. C. Button-shank gauge	April 26, 1870
99,420	Russell, James F., assignor to self, William Edelin, and Columbus Alexander, Washington, D. C. Lamp	Feb. 1, 1870
99,333	Russell, John, Prairie, Mo. Stop-support for mill-spindles	Feb. 1, 1870
102,046	Russell, John, and Theodore T. McGrath, Pontonville, Mich. Washing-machine and boiler	April 19, 1870
	Russell, John, and Samuel Deacon. (*See* Deacon & Russell.)	
99,005	Russell, John L., Prairie City, Iowa. Key-hole guard	Jan. 18, 1870
	Russell, John L., *et al.* (*See* West, Thomas J., assignor.)	
	Russell, Martin, jr., and John H. Goodfellow. (*See* Goodfellow & Russell.)	
3,818	Russell, N. C., Gloversville, N. Y. Treatment of leather.....(Reissue)..	Feb. 1, 1870
99,483	Russell, P. B., Malone, N. Y. Wagon-jack	Feb. 1, 1870
106,739	Russell, Titus H., Northfield, Vt. Circular-saw mill. (Antedated Aug. 17, 1870)	Aug. 23, 1870
	Russell, William D., and Peter T. Speer. (*See* Baxter, William, assignor.)	
104,066	Russell, William H., Brooklyn, N. Y. Screw-collar for lamps	June 7, 1870
104,651	Russell, William M., Cincinnati, Ohio, and Cedar & Peace, Xenia, Ohio. Railway-car signal	June 21, 1870
109,253	Russell, William W., Malden, Mass. Paper-file	Nov. 15, 1870
108,191	Rust, John P., Peabody, Mass. Removing grease from waste leather	Oct. 11, 1870
109,671	Rust, Samuel, jr., Cincinnati, Ohio. Cock for carburetors, &c	Nov. 29, 1870
102,047	Ruston, George, Freeport, Ill. Egg-packing	April 19, 1870
109,673	Ruth, William A., Wyoming, Del. Bee-hive	Nov. 29, 1870
	Ruthvin, John B. (*See* Middlebrook, Alexander, assignor.)	
103,585	Rutter, John, West Chester, Pa. Water-cooler	May 3, 1870
103,709	Rutter, Robinson, Vallejo, Cal. Nut-locking washer	May 31, 1870
	Rutter, William Forbes, and Charles Henry Forbes. (*See* Forbes & Rutter.)	
107,815	Ruttkay, Albert, New York, N. Y. Manufacture of asphaltic compositions for pavements, roads, &c	Sept. 27, 1870
109,254	Same.....Roofing-composition	Nov. 15, 1870
103,637	Ryals, Joseph, Terryville, Conn. Manufacture of shears	April 26, 1870
107,616	Ryan, Daniel E., St. Louis, Mo. Vapor-generating burner for stoves	Sept. 27, 1870
105,256	Ryan, James, Brooklyn, N. Y. Lamp-chimney cleaner	July 12, 1870
109,703	Ryan, Patrick S., Rutland, Vt. Milk-strainer	Nov. 29, 1870
104,778	Rydbeck, Sven, Red Wing, Minn. Breech-loading fire-arm	June 28, 1870
99,494	Ryder, A. V., New York, N. Y. Hasp for trunk-locks	Feb. 1, 1870
101,994	Ryder, Benjamin F., assignor to Sargent & Co., New York, N. Y. Caster for sewing-machines	April 12, 1870
105,257	Ryder, Henry, New Bedford, Mass. Candlestick	July 12, 1870
109,531	Rye, Emil, Denmark. Mode of producing lithographic copies from photographic negatives	Nov. 22, 1870

Alphabetical list of patentees for the year 1870—Continued.

No.	Name, residence, and invention or discovery.	Date.
101,065	Ryerson, William S., and George Stancliff, assignors to selves, Oliver T. McIntosh, Amos L. Tripp, and Charles Chambers, New York, N. Y. Boat-detaching apparatus	April 5, 1870
105,983	Ryerson, William S., George Stancliff, and Oliver T. McIntosh, assignors to selves, Stephen G. Tripp, and Charles Chambers, New York, N. Y. Boat-detaching apparatus	Aug. 2, 1870
102,506	Rynel, George, Paris, Kys Hemp-break	May 3, 1870
	Sabatton, Frederick A., *et al.* (*See* Sharp, Ainsworth & Sabatton.)	
104,898	Sabin, Ira A., Locust Lane, Pa. Steam road-vehicle	June 28, 1870
99,713	Sabins, Philander G., assignor to self and William H. Pierce, Westport, Mass. Fish-net	Feb. 8, 1870
99,006	Sach, Charles, Grand Rapids, Mich. Lumber-rack	Jan. 18, 1870
108,580	Sackermann, William, New York, N. Y. Breech-fastening	Oct. 18, 1870
108,581	Sacre, Charles, Stanhope Perkins, and William Smellie, Great Britain. Manufacture of wrought iron	Oct. 18, 1870
108,582	Safely, Robert, Cohoes, N. Y. Stop-valve. (Antedated Oct. 15, 1870)	Oct. 18, 1870
106,873	Safford, George B., Burlington, Vt. Treadle-motion	Aug. 30, 1870
107,964	Safford, Henry W., New York, N. Y. Hand-stamp	Oct. 4, 1870
105,854	Safford, James Billings, San Francisco, Cal. Tuck-pressing attachment for sewing-machines	July 26, 1870
98,886	Safford, Joseph A., Winchester, Mass. Leather-splitting and feeding machine	Jan. 18, 1870
98,889	Same.....Rolling leather	Jan. 18, 1870
109,764	Sage, Clinton H., and Samuel B. Alger, Norwich, N. Y. Excavator	Nov. 29, 1870
	Sage, Clinton H., *et al.* (*See* Jerome, Alger & Sage.)	
100,453	Sage, D. C., Middletown, Conn. Blind-hinge	Mar. 1, 1870
104,350	Same.....Hinge for blinds	June 14, 1870
	Same.....(*See* Cooke, James C., assignor.)	
108,297	Saggan, Henry, Newark, N. J. Churn	Oct. 11, 1870
99,240	Saiger, Jacob F., Shelby, Ohio. Preserving butter	Jan. 25, 1870
98,713	Saindee, Cyrus W., Circleville, Ohio. Sawing-machine	Jan. 11, 1870
106,411	Same.....St. Catharine's, Canada. Farm-gate	Aug. 16, 1870
	Salisbury, Amos M. (*See* Welch, Hilyard, assignor.)	
102,669	Salisbury, Elmer J., assignor to self and George A. Brush, San Francisco, Cal. Preserving and hardening stone, bricks, &c	May 10, 1870
99,111	Salisbury, John, Scituate, R. I. Bobbin-holder. (Antedated Jan. 14, 1870)	Jan. 25, 1870
	Salisbury, John, and Benjamin Wilbur, Scituate, R. I. Steel and traveling-bag. (Antedated Oct. 26, 1870)	Nov. 8, 1870
	Salladey, Lemuel, and Adolph Brase. (*See* Brase & Salladey).....(Two cases.)	
	Salmon, Aaron G. (*See* Brown, Charles, assignor.)	
3,839	Salmon, Ira A., Boston, Mass. Dentists' tool-rack (Reissue)	Feb. 8, 1870
4,381	Salomons, Leopold, assignor to J. W. and K. Chisholm, England. Medallion or cameo (Design)	Oct. 4, 1870
109,073	Salter, James, Williamsburgh, N. Y. Propeller	Nov. 29, 1870
	Sample, John J., *et al.* (*See* Wiedman, Major & Sample.)	
104,500	Sampson, Benjamin F., Brookfield, Mass. Turbine water-wheel	June 21, 1870
	Sampson, Edward C. (*See* Meyer, Charles T., assignor.) (Sixteen cases.) (Design.)	
	Same.....(*See* Meyer, Victor, assignor) (Design.)	
	Same.....(*See* Meyer, Victor and Charles T., assignors) (Design.)	
103,087	Sampson, George O., Jamestown, N. Y. Steam-generator	May 17, 1870
	Sampson, Matthew B., and Joseph Dixon. (*See* Dixon & Sampson.)	
100,050	Sampson, Thomas, Providence, R. I. Dye-tub	Nov. 8, 1870
4,158	Samuels, John L., assignor of part interest to Benjamin F. Josselyn, William B. Lake, George G. Burnett, Henry S. Dent, Mary A. Stirling, George W. Dent, Joel S. Josselyn, Benjamin R. Nickerson, Frederick T. Dent, and Henry J. Stone, San Francisco, Cal. Preserving and hardening wood (Reissue)	Oct. 18, 1870
98,837	Sanborn, Charles W., Morrill, Maine. Horse hay-rake	Jan. 4, 1870
105,091	Sanborn, D. A., Brooklyn, N. Y. Penman's hand-support. (Antedated June 30, 1870)	July 5, 1870
	Sanborn, Ebenezer. (*See* Edwards, Eben, assignor.)	
	Sanborn, George H. (*See* Robinson, Thomas C., assignor).....(Reissue.)	
	Sanborn, George H. and Joseph S. (*See* Sweetland, Frederick B., assignor.)	
109,843	Sanborn, George W., Gilmanton, N. H. Wagon-brake	Dec. 6, 1870
100,560	Sanborn, George W., assignor to Jeremiah W. Sanborn, Gilmanton, N. H. Sled-brake	Mar. 8, 1870
107,540	Sanborn, Thomas P., Boston, Mass. Organ-tremulant	Sept. 20, 1870
108,523	Sanborn, William W., assignor to self and Arthur A. Sanborn, Lewiston, Me. Dyeing woolen goods	Oct. 18, 1870
101,925	Sandbach, Thomas, and Joseph W. Fowler, South Bend, Ind., Well-borer	April 12, 1870
101,314	Sanders, Benjamin D., Wellsburgh, W. Va. Composition roofing	Mar. 29, 1870
101,315	Same.....Machine for compressing wood tenons	Mar. 29, 1870
104,889	Sanders, David, assignor to self and J. D. Pierce, Milwaukee, Wis. Stove-pipe damper	June 28, 1870
101,515	Sanders, Henry, Utica, N. Y. Horse-collar	April 5, 1870
110,974	Same.....Leather for neck-yokes for carriages	Dec. 13, 1870
104,591	Sanders, Sidney, Springfield, Mass. Steam-radiator. (Antedated Feb. 21, 1870)	June 21, 1870
	Same.....(*See* Crossman, Charles P., assignor) (Design.)	
	Sanderson, Robert B. (*See* Schachtel, George A., assignor).....(Design.)	
99,941	Sanderson, William, and James J. De Barry, New York, N. Y. Manufacture of door-knobs, umbrella-handles, and other molded articles	Jan. 25, 1870
99,942	Same.....Handle for knives, forks, &c	Jan. 25, 1870
106,419	Sandford, Elijah W., Brooklyn, N. Y. Railway-car brake	Aug. 16, 1870

Alphabetical list of patentees for the year 1870—Continued.

No.	Name, residence, and invention or discovery.	Date.
	Sandford, Thomas Albert. (*See* Haines, W. H., assignor.)	
109,944	Sandham, Frederick, Montreal, Canada. Machine for stamping, pressing, and pointing horse shoe-nails	Dec. 6, 1870
105,495	Sands, Joseph W., Annapolis, Md. Oyster-tongs	July 19, 1870
105,984	Sanford, Addison V., Union Centre, N. Y. Adjustable railway-truck	Aug. 2, 1870
99,943	Sanford, Clark S., Lena, Ill. Neck-yoke	Jan. 25, 1870
4,452	Sanford, Gelston, Bergen, N. J. Cylinder and frame for steam-engines. (Design)	Nov. 1, 1870
	Sanford, James T. (*See* Ladd, Calvin P., assignor.)	
	Sanford, James T. and George W. (*See* Goodwin, William F., assignor.)	
102,062	Sanford, Joseph Henry, assignor to Chandler Sprague, North Bridgewater, Mass. Shoemakers' edge-plane	April 19, 1870
	Sanford, Richard K. (*See* Baker, Horace, assignor) (Reissue.)	
100,454	Sangster, Hugh, Buffalo, N. Y. Milk-can. (Antedated Feb. 28, 1870)	Mar. 1, 1870
101,516	Same.....Tin-pail	April 5, 1870
4,178	Sangster, James, Buffalo, N. Y. Brick-machine (Division A, reissue)	Nov. 15, 1870
4,179	Same.....same (Division B, reissue)	Nov. 15, 1870
	Sangster, James, and David P. Dobbins. (*See* Dobbins & Sangster.)	
	Sangster, William H., and Horatio Wilkins. (*See* Wilkins & Sangster.)	
106,079	Sapp, Joseph R., Danville, Ohio. Churn	Aug. 2, 1870
	Sapp, Leo W., and William F. Class. (*See* Class & Sapp.)	
103,436	Sapp, William L., assignor to B. M. Rhodes & Co., Baltimore, Md. Manufacture of fertilizers	April 26, 1870
	Sargent & Co. (*See* Ryder, Benjamin F., assignor.)	
	Same.....(*See* Sparks, William E., assignor) (Three cases.)	
	Same.....(*See* Brocksieper, Frederick W., assignor.) (Six cases.) (Design.)	
	Same.....(*See* McArthur, Duncan, assignor.)	
	Same.....(*See* Fogelstrand, Ferdinand, assignor)..(Two cases.) (Design.)	
103,506	Sargent, Charles G., Graniteville, Mass. Machine for washing and dyeing fibrous material	May 24, 1870
100,455	Sargent, Edward Levi, Watertown, N. Y. Breech-loading fire-arm	Mar. 1, 1870
104,502	Same.....same	June 21, 1870
109,255	Same.....same	Nov. 15, 1870
98,622	Sargent, James, Rochester, N. Y. Permutation-lock	Jan. 4, 1870
98,623	Same.....Lock and bolt spindle	Jan. 4, 1870
98,714	Same.....Construction of safes, vaults, or doors	Jan. 11, 1870
101,383	Sargent, James F., Tunbridge, Vt. Traveling-cap	Mar. 29, 1870
100,194	Sargent, Joseph B., New Haven, Conn. Wardrobe-hook	Feb. 22, 1870
103,781	Same.....Lock for traveling-bags	May 31, 1870
103,782	Same.....Sewing-machine caster	May 31, 1870
105,374	Same.....Furniture-caster	July 12, 1870
106,510	Same.....Grindstone-journal box	Aug. 16, 1870
100,195	Sargent, Zebadiah, Rochester, N. H. Lock	Feb. 22, 1870
109,807	Sarosi, Herrman S., Baltimore, Md. Vapor-burner for cooking or heating	Mar. 15, 1870
	Sartor, Nicholas, and Joseph Hananer. (*See* Hananer & Sartor.)	
4,116	Sarven, James D., New Haven, Conn. Carriage-wheel (Reissue)	Sept. 6, 1870
	Sasber, Thomas J., and J. Ham Davison. (*See* Davison & Sasber.)	
103,088	Sattazahn, John, jr., Pine Grove Township, Pa. Grubbing-implement. (Antedated May 10, 1870)	May 17, 1870
99,112	Sattler, David, Mifflin, Ohio. Field-fence	Jan. 25, 1870
106,213	Sauer, Arthur and Gustave, and Leonce Cachal, France. Liquid for raising paste and dough	Aug. 9, 1870
110,291	Sauer, Frank, and John Coerver, Waterloo, Ill. Fanning-mill	Dec. 20, 1870
109,456	Saurbier, Henry, Newark, N. J. Fluting-machine	Nov. 22, 1870
105,730	Saul, Sarah E., Brooklyn, N. Y. Life-preserving skirt. (Antedated July 14, 1870)	July 26, 1870
	Saul, William, and Daniel Campbell. (*See* Campbell & Saul.)	
107,630	Saulpaugh, Thomas, Rock Island, Ill. Derrick-boat	Sept. 20, 1870
	Saunder, David, and Joseph Nason. (*See* Nason & Saunders.)	
4,463	Saunders, Joseph H., Johnston, R. I. Picture-frame (Design)	Nov. 8, 1870
	Saunders, Phineas E., *et al.* (*See* Phelps, Augustus H., assignor.)	
	Saunders, T. P., assignor. (*See* Holman, David O., assignor.)	
	Saunders, William H., *et al.* (*See* Miner, Stevens & Saunders) (Extension.)	
106,060	Saurman, Thomas M., Norristown, Pa. Photographic-print cutting-apparatus	Aug. 9, 1870
104,909	Sauter, Benedict, Danbury, Conn. Refrigerator	June 14, 1870
99,007	Savage, Elliot, West Meriden, Conn. Alloy of manganese	Jan. 18, 1870
102,284	Savage, Elliot, assignor to self and Julius Hotchkiss, West Meriden, Conn. Manufacture of alloys of manganese	April 26, 1870
	Savage, J. B. (*See* Miller, Robert R., assignor) (Three cases.)	
	Same.....(*See* Cowles, Frederick A., assignor.)	
	Same.....(*See* Hull, Daniel H., assignor.)	
101,517	Savage, Silas T., assignor to self and David S. Quimby, jr., Brooklyn, N. Y. Coffee-pot	April 5, 1870
109,785	Savage, Walter G., Knoxville, Iowa. Steam-generator	Nov. 29, 1870
106,511	Savary, George Thomas, Newburyport, Mass. Mortising-machine	Aug. 16, 1870
4,274	Savery, Charles C., Philadelphia, Pa. Refrigerator and water-cooler (Design)	Aug. 2, 1870
4,496	Same.....Water-cooler (Design)	Nov. 29, 1870
103,793	Sawtelle, Zephaniah E., assignor to self and Thomas N. Stowell, Boston, Mass. Pulley for window-sash	May 31, 1870
104,776	Sawyer, Alvah C., Canton, N. Y. Ironing-machine	June 28, 1870
	Sawyer, A. F., *et al.* (*See* Palmer, Charles H., assignor.)	

Alphabetical list of patentees for the year 1870—Continued.

No.	Name, residence, and invention or discovery.	Date.
103,375	Sawyer, Charles B., assignor of one-half interest to John W. Labaree, Fitchburgh, Mass. Balance-elevator	May 24, 1870
109,706	Sawyer, Charles B., assignor through mesne assignments to William Pratt and Abby A. Williams, Fitchburgh, Mass. Manufacture of paper-pulp	Nov. 29, 1870
	Sawyer, Charles E., *et al.* (*See* Perkins, Moulton & Sawyer.)	
	Sawyer, Daniel, and Samuel Joseph Peet. (*See* Peet & Sawyer.)	
107,294	Sawyer, Ell, Madison, Iowa. Marking-attachment to corn-planters	Sept. 13, 1870
101,384	Sawyer, Enoch, Hollow Square, Ala. Mode of lubricating axles	Mar. 29, 1870
102,430	Sawyer, Joseph B., Templeton, Mass. Dropping-platform for harvesters	April 26, 1870
101,167	Sawyer, J. H., Boston, Mass., and C. Keniston, Somerville, Mass. Machine for burnishing boot and shoe heels	Mar. 22, 1870
106,730	Sawyer, Joseph W., assignor to F. Draper & Co., Boston, Mass. Binding-attachment for sewing-machines	Aug. 23, 1870
101,518	Sawyer, Leonard, South Amesbury, Mass. Carriage-prop	April 5, 1870
101,935	Sawyer, Nowell F., Haverhill, Mass. Feed-operating mechanism for sewing-machines	April 12, 1870
	Sawyer, Peter C. (*See* Smith, Calvin D., assignor.)	
	Sawyer, Wilson. (*See* Bryan, Norman, assignor) (Two cases.)	
104,777	Sax, John K., Pittston, Pa. Mold for car-wheels	June 28, 1870
3,954	Sax, John K., and George W. Kear, Kingston, Pa. Railway-car wheel. (Reissue)	May 3, 1870
106,874	Sayer, James F., Macomb, N. Y. Stave-jointer	Aug. 30, 1870
106,731	Sayler, Henry, St. Paris, Ohio. Fifth-wheel for carriages	Aug. 23, 1870
99,354	Sayles, Thomas, Chicago, Ill. Railway-car journal-lubricator	Feb. 1, 1870
107,631	Same. Car-axle lubricator	Sept. 20, 1870
	Sayre, Edmund. (*See* Seal, William D., assignor.)	
102,169	Sayre, Samuel D., Rockford, Ill. Plow	April 19, 1870
	Scaife, Oliver P. (*See* Hill & Thumm, assignors) (Three cases.)	
4,294	Scaife, William B., Pittsburgh, Pa. Kitchen-boiler (Design)	July 12, 1870
107,817	Same. same	Sept. 27, 1870
108,504	Same. same	Oct. 18, 1870
102,049	Scanlan, Charles A., Charleston, S. C. Dredging-apparatus	April 19, 1870
99,788	Scanlan, Patrick, Indianapolis, Ind. Oil-can	Feb. 15, 1870
109,539	Same. Paper-machine	Nov. 22, 1870
101,316	Scantlin, Thomas, Evansville, Ind. Stove-drum	Mar. 29, 1870
102,650	Same. Funnel can-filler	April 19, 1870
101,519	Scarlett, William, Aurora, Ill. Sad-iron heater	April 5, 1870
102,325	Scatchard, Alfred, England. Apparatus for the manufacture of aerated bread	April 26, 1870
109,893	Scattergood, E. B., St. John's, Mich. Washing-machine. (Antedated March 11, 1870)	Mar. 15, 1870
104,310	Scattergood, E. B., assignor to William H. Watts, St. John's, Mich. Gates	June 14, 1870
109,256	Schachtel, George A., assignor to self and Robert B. Sanderson, Newark, N. J. Extension-platform step-ladder	Nov. 15, 1870
105,230	Schaefer, Julius, and Gustav Schoch, New York, N. Y. Faucet	July 12, 1870
105,138	Schaeffer, Carl, Elizabeth, N. J. Manufacture of artificial stone	July 5, 1870
	Schaeffer, Thomas H. (*See* Pumpel, Frederick W., assignor.)	
	Schaeffer, William G., & Co. (*See* Bringmann, George E., assignor.)	
99,580	Schaffer, George P., New York, N. Y. Dental articulator	Feb. 8, 1870
102,715	Schaffer, Oliver, Dayton, Ohio. Compound for refining cider, wine, &c	May 3, 1870
	Schaffner, William A., and John F. Martin. (*See* Martin & Schaffner.)	
	Schanck, Joseph C., *et al.* (*See* Dougherty, John R., assignor.)	
103,567	Schantl, Lewis, St. Louis, Mo. Coke-oven	May 24, 1870
106,875	Scharnikow, Edward, Margarettville, N. Y. Compound or "rough-stuff" to be applied to carriage-bodies, &c. (Antedated Aug. 19, 1870)	Aug. 30, 1870
112,675	Scharten, Elbert O., Philadelphia, Pa. Machine for cutting cork. (Antedated Dec. 9, 1870)	Dec. 13, 1870
110,676	Same. Cork-machine	Dec. 13, 1870
106,738	Schatz, William F., Columbus, Ohio. Breeching-attachment for horses	Aug. 23, 1870
101,589	Schaub, John D., Birmingham, Pa. Cabbage-cutter	April 5, 1870
108,635	Scheel, Ernest, New York, N. Y. Writing-desk	Oct. 25, 1870
	Scheer, George. (*See* Robinson, James, assignor.)	
107,293	Scheff, Andrew, Raymondville, N. Y. Clothes-drier	Sept. 13, 1870
3,939	Scheffler, Theodore, Paterson, N. J. Machinery for making ice (Design)	Mar. 22, 1870
99,006	Schenck, John B., Matteawan, N. Y. Planing-machine	Jan. 18, 1870
99,589	Same. same	Feb. 8, 1870
99,690	Same. Sawing-machine	Feb. 8, 1870
99,495	Schenck, Junius, Brooklyn, N. Y. Method of protecting the ends of vulcanized India-rubber or combination-hose	Feb. 1, 1870
3,843	Same. Manufacture of hose, tubing, and other rubber fabrics. (Reissue)	Feb. 15, 1870
	Schepler, John, and Samuel Stockton. (*See* Stockton & Schepler.)	
101,321	Scherb, Francis, New York, N. Y. Carriage-axle	April 5, 1870
	Schermerhorn, J. W., & Co. (*See* Munger, George, assignor.)	
	Schermerhorn, James W., and George Munger. (*See* Munger & Schermerhorn.)	
	Scherr, Erasmus Nicholas, Jr. (*See* Hasse, Daniel F., assignor.)	
103,276	Scheserle, Henry, New York, N. Y. Nail-machine. (Antedated May 13, 1870)	May 24, 1870
102,631	Scheverell, Oswald, Marion, Ala. Cartridge-case	April 19, 1870
107,559	Scheydecker, Antoine, Amsterdam, N. Y. Clasp for elastic bands	Sept. 27, 1870
110,283	Schiock, Christian, New York, N. Y. Corset-fastening	Dec. 27, 1870
110,163	Schieder, John, New York, N. Y. Material for bearing-surfaces in machinery	Dec. 13, 1870
107,636	Schiffer'e, Fridolin, St. Louis, Mo. Sauce-pan	Sept. 27, 1870
109,536	Same. Fountain-pen	Nov. 15, 1870
107,319	Schilling, Albert F., Evansville, Ind. Spring-hinge for doors, &c	Sept. 27, 1870

Alphabetical list of patentees for the year 1870—Continued.

No.	Name, residence, and invention or discovery.	Date.
	Schild, Henry, and F. Meyer. (*See* Meyer & Schild.)	
98,690	Schild, Henry, and George J. Prentice, assignors through mesne assignments to Lewis Prentice, New York, N. Y. Cigar-machine. (Antedated Jan. 10, 1870)	Jan. 18, 1870
109,060	Schilling, August M., Chicago, Ill. Scroll-saw	Nov. 8, 1870
106,512	Schilling, Cornelius, New York, N. Y. Propelling-apparatus	Aug. 16, 1870
98,638	Schillinger, John J., New York, N. Y. Refrigerator for buildings. (Antedated Oct. 7, 1869)	Jan. 4, 1870
102,716	Same. Cask for lager-beer	May 3, 1870
104,360	Same. Wall and floor for buildings	June 14, 1870
105,599	Same. Concrete pavement	July 19, 1870
	Schlecter, Charles, and Friederich Wegner. (*See* Wegner & Schlecter.)	
	Schleier, Theodore M., and Rudolph Knafft. (*See* Knafft & Schleier.)	
102,732	Schleifer, Francis. Refining sugar by steam	Oct. 25, 1870
	Schlenker, Erhard, *et al.* (*See* Hyatt, Charles, assignor.)	
99,956	Schlesinger, A. D., assignor to the India-Rubber Comb Company, College Point, Long Island, N. Y. Coloring vulcanite or hard rubber	Feb. 15, 1870
107,830	Schlickeysen, Carl Friedrich, Prussia. Stone-working machine	Sept. 27, 1870
99,355	Schlueter, Gustave, Brooklyn, N. Y. Composition for molding plaster of Paris	Feb. 1, 1870
100,672	Schmackers, Anton, assignor to Lane & Bodley, Cincinnati, Ohio. Mortising-machine	Mar. 8, 1870
	Schmehl, S. S. (*See* Eck, J. L., assignor.)	
109,674	Schmid, John B., Salem, Va. Dovetailing-machine	Nov. 29, 1870
109,675	Same. same	Nov. 29, 1870
	Schmidler, Peter A., *et al.* (*See* Doty, Little & Schmidler.)	
3,817	Schmidlin, William G., and J. W. Driscoll, New York, N. Y. Reflector for lamps (Reissue)	Feb. 1, 1870
101,709	Same. Street-lamp	April 12, 1870
3,981	Same. Reflector (Reissue)	May 17, 1870
	Schmidt, Augustus Theodore, and Frederick Braun. (*See* Braun & Schmidt.)	
	Schmidt, Ernst. (*See* Ernst, Philipp M., assignor.)	
108,636	Schmidt, John M., New Albany, Ind. Spring	Oct. 25, 1870
100,809	Schmidt, Leonhard, Lancaster, Pa. Grater	Mar. 15, 1870
103,784	Schmidt, Louis C. A., Tiffin, Ohio. Flour-bolting apparatus	May 31, 1870
100,930	Schminke, Henry, Baltimore, Md. Vapor-burner	Mar. 15, 1870
107,737	Schmitt, Anton, Cincinnati, Ohio. Horse-detaching device	Sept. 27, 1870
101,317	Schmitt, Caspar, St. Louis, Mo. Pessary	Mar. 29, 1870
	Schmitt, John A. and Phillip L., *et al.* (*See* Braley & Schmitt.)	
	Schmitt, Peter, and John Schuell. (*See* Schuell & Schmitt.)	
98,523	Schmucker, John P., assignor to self and J. D. Willis, Ashland, Ohio. Permutation-lock	Jan. 4, 1870
104,593	Schnebly, William, Hackensack, N. J. Thrashing-machine	June 21, 1870
108,597	Schneckloth, Hans Asmus, New York, N. Y. Hoisting-apparatus	May 3, 1870
102,163	Schneider, Bennett B., New York, N. Y. Lamp	April 19, 1870
105,496	Schneider, Charles, Galion, Ohio. Hanging mill-stones	July 19, 1870
	Schneider, Charles, and Louis Yenne. (*See* Yenne & Schneider.)	
101,049	Schneider, Jacob F., Brooklyn, N. Y. Skate	Mar. 22, 1870
98,524	Schneider, William A., Albany, N. Y. Steam-trap	Jan. 4, 1870
99,601	Schoch, William, Plumsteadville, Pa. Carriage-top	Feb. 8, 1870
	Schock, Gustav, and Julius Schaefer. (*See* Schaefer & Schock.)	
	Schock, J. James, and Amos N. Kellogg. (*See* Kellogg & Schock.)	
101,318	Schoenberg, Abraham, New York, N. Y. Mold for casting solder, &c	Mar. 29, 1870
108,870	Schofield, Charles, Kernville, Cal. Apparatus for saving gold	May 10, 1870
	Schofield, Charles, and Louis Heine. (*See* Heine & Schofield.)	
104,911	Schofield, George W., U. S. Army. Breech-loading fire-arm	June 14, 1870
	Schofield, John S. (*See* Wilcox, John W., assignor.)	
105,259	Schofield, Silas C., Chicago, Ill. Coupling for tumbler-shafts	July 12, 1870
106,214	Scholfield, Socrates, assignor to self and Richard A. Bright, jr., Providence, R. I. Cigar-machine	Aug. 9, 1870
100,673	Schoonover, John Q. A., assignor of one-half interest to James S. Totten, Lebanon, Ohio. Water-current motor	Mar. 8, 1870
99,944	Schopf, Benjamin and Christian, Pittsburgh, Ind. Lifting-jack	Jan. 25, 1870
103,065	Schopp, Philip Jacob, Louisville, Ky. Apparatus to effect the hydration of air in heated apartments	May 31, 1870
104,818	Same. Grate and fire-pot for heating stoves	June 14, 1870
108,306	Same. Apparatus for the support of skaters	Oct. 18, 1870
105,376	Schott, Charles, assignor to self and James H. Bruce, Nashville, Tenn. Pencil-attachment for compasses	July 12, 1870
	Schott, J. J. (*See* Byrne & Strunk, assignors.)	
103,506	Schou, Mathias, Englishtown, N. J. Jack for connecting poles and shafts to wagons	May 24, 1870
105,008	Schrader, August, New York, N. Y. Ring for securing hose to couplings	July 5, 1870
103,941	Schrag, Philip, and Philip Hafeland, New York, N. Y. Machine for cutting off lead-pencils	May 17, 1870
4,531	Schraubstadter, Carl, Brookline, Mass. Type (Design)	Dec. 20, 1870
101,779	Schreyer, Philipp, New York, N. Y. Money-safe	April 12, 1870
109,553	Schriber, Thomas H., Evansville, Ind. Ejector	Nov. 22, 1870
103,089	Schrier, William, Logansport, Ind. Composition-metal or alloy	May 17, 1870
101,823	Schroadel, John, and William Dell, Allegheny, Pa. Harrow and earth-cutter	April 5, 1870
104,778	Schroyer, Joseph J., Springfield, Ill. Wood pavement	June 28, 1870
103,717	Schryver, Henry, assignor to self and J. Deyo Chipp, Kingston, N. Y. Clothes-drier	May 3, 1870

Alphabetical list of patentees for the year 1870—Continued.

No.	Name, residence, and invention or discovery.	Date.
103,375	Sawyer, Charles B., assignor of one-half interest to John W. Labarre, Fitchburgh, Mass. Balance-elevator	May 24, 1870
109,766	Sawyer, Charles B., assignor through mesne assignments to William Frat and Abby A. Williams Fitchburgh, Mass. Manufacture of paper-pulp	Nov. 29, 1870
	Sawyer, Charles E., *et al.* (*See* Perkins, Moulton & Sawyer.)	
	Sawyer, Daniel, and Samuel Joseph Peet. (*See* Peet & Sawyer.)	
107,294	Sawyer, Eli, Madison, Iowa. Marking-attachment to corn-planters	Sept. 13, 1870
101,364	Sawyer, Enoch, Hollow Square, Ala. Mode of lubricating axles	Mar. 29, 1870
102,430	Sawyer, Joseph B., Templeton, Mass. Dropping-platform for harvesters	April 26, 1870
101,107	Sawyer, J. H., Boston, Mass., and C. Keniston, Somerville, Mass. Machine for burnishing boot and shoe heels	Mar. 29, 1870
106,730	Sawyer, Joseph W., assignor to F. Draper & Co., Boston, Mass. Binding-attachment for sewing-machines	Aug. 23, 1870
101,518	Sawyer, Leonard, South Amesbury, Mass. Carriage-prop	April 5, 1870
101,926	Sawyer, Nowell F., Haverhill, Mass. Feed-operating mechanism for sewing-machines	April 12, 1870
	Sawyer, Peter C. (*See* Smith, Calvin D., assignor.)	
	Sawyer, Wilson. (*See* Bryan, Norman, assignor) (Two cases.)	
104,777	Sax, John K., Pittston, Pa. Mold for car-wheels	June 28, 1870
3,934	Sax, John K., and George W. Kear, Kingston, Pa. Railway-car wheel. (Reissue)	May 3, 1870
106,874	Sayer, James F., Macomb, N. Y. Stave-jointer	Aug. 30, 1870
106,731	Sayler, Henry, St. Paris, Ohio. Fifth-wheel for carriages	Aug. 23, 1870
99,354	Sayles, Thomas, Chicago, Ill. Railway-car journal-lubricator	Feb. 1, 1870
107,631	Same.....Car-axle lubricator	Sept. 20, 1870
	Sayre, Edmund. (*See* Seal, William D., assignor.)	
102,168	Sayre, Samuel D., Rockford, Ill. Plow	April 19, 1870
	Scaife, Oliver P. (*See* Hill & Thumm, assignors) (Three cases.)	
4,294	Scaife, William B., Pittsburgh, Pa. Kitchen-boiler (Design)	July 12, 1870
107,817	Same.....same	Sept. 27, 1870
108,584	Same.....same	Oct. 18, 1870
102,049	Scanlan, Charles A., Charleston, S. C. Dredging-apparatus	April 19, 1870
99,769	Scanlan, Patrick, Indianapolis, Ind. Oil-can	Feb. 15, 1870
109,559	Same.....Paper-machine	Nov. 22, 1870
101,316	Scantlin, Thomas, Evansville, Ind. Stove-drum	Mar. 29, 1870
102,659	Same.....Funnel can-filler	April 19, 1870
101,519	Scarlett, William, Aurora, Ill. Sad-iron heater	April 5, 1870
102,395	Scatchard, Alfred, England. Apparatus for the manufacture of aerated bread	April 26, 1870
100,898	Scattergood, E. B., St. John's, Mich. Washing-machine. (Antedated March 11, 1870)	Mar. 15, 1870
104,210	Scattergood, E. B., assignor to William H. Watts, St. John's, Mich. Gates	June 14, 1870
109,256	Schachtel, George A., assignor to self and Robert B. Sanderson, Newark, N. J. Extension-platform step-ladder	Nov. 15, 1870
105,830	Schaefer, Julius, and Gustav Schock, New York, N. Y. Faucet	July 12, 1870
105,136	Schaeffer, Carl, Elizabeth, N. J. Manufacture of artificial stone	July 5, 1870
	Schaeffer, Thomas H. (*See* Pampel, Frederick W., assignor.)	
	Schaeffer, William G., & Co. (*See* Bringman, George E., assignor.)	
99,599	Schaffer, George F., New York, N. Y. Dental articulator	Feb. 8, 1870
102,715	Schaffer, Oliver, Dayton, Ohio. Compound for refining cider, wine, &c	May 3, 1870
	Schaffner, William A., and John F. Martin. (*See* Martin & Schaffner.)	
	Schanck, Joseph C., *et al.* (*See* Dougherty, John B., assignor.)	
103,507	Schantl, Lewis, St. Louis, Mo. Coke-oven	May 24, 1870
106,875	Scharnikow, Edward, Margarettville, N. Y. Compound or "rough-stuff" to be applied to carriage-bodies, &c. (Antedated Aug. 19, 1870)	Aug. 30, 1870
110,078	Schartau, Elbert O., Philadelphia, Pa. Machine for cutting cork. (Antedated Dec. 9, 1870)	Dec. 13, 1870
110,076	Same.....Cork-machine	Dec. 13, 1870
106,732	Schatz, William F., Columbus, Ohio. Breeching-attachment for horses	Aug. 23, 1870
101,529	Schaub, John D., Birmingham, Pa. Cabbage-cutter	April 5, 1870
108,635	Scheel, Ernest, New York, N. Y. Writing-desk	Oct. 25, 1870
	Scheer, George. (*See* Robinson, James, assignor.)	
107,293	Scheff, Andrew, Raymondville, N. Y. Clothes-drier	Sept. 13, 1870
3,929	Scheffler, Theodore, Paterson, N. J. Machinery for making ice (Design)	Mar. 22, 1870
99,098	Schenck, John B., Matteawan, N. Y. Planing-machine	Jan. 18, 1870
99,599	Same.....same	Feb. 8, 1870
99,600	Same.....Sawing-machine	Feb. 8, 1870
99,485	Scherack, Junius, Brooklyn, N. Y. Method of protecting the ends of vulcanized India-rubber or combination-hose	Feb. 1, 1870
3,948	Same.....Manufacture of hose, tubing, and other rubber fabrics (Reissue)	Feb. 15, 1870
	Schepler, John, and Samuel Stockton. (*See* Stockton & Schepler.)	
101,381	Scherb, Francis, New York, N. Y. Carriage-axle	April 5, 1870
	Schermerhorn, J. W., & Co. (*See* Munger, George, assignor.)	
	Schermerhorn, James W., and George Munger. (*See* Munger & Schermerhorn.)	
	Scherr, Erastlius Nicholas, jr. (*See* Haase, Daniel F., assignor.)	
103,276	Scheuerle, Henry, New York, N. Y. Nail-machine. (Antedated May 13, 1870)	May 24, 1870
102,051	Scheversell, Oswald, Marion, Ala. Cartridge-case	April 19, 1870
107,559	Scheydecker, Antoine, Amsterdam, N. Y. Clasp for elastic bands	Sept. 20, 1870
110,393	Schiesk, Christian, New York, N. Y. Corset-fastening	Dec. 27, 1870
110,183	Schieder, John, New York, N. Y. Material for bearing-surfaces in machinery	Dec. 13, 1870
107,626	Schifferle, Fridolin, St. Louis, Mo. Sauce-pan	Sept. 27, 1870
109,250	Same.....Fountain-pen	Nov. 15, 1870
107,319	Schilling, Albert F., Evansville, Ind. Spring-hinge for doors, &c	Sept. 27, 1870

Alphabetical list of patentees for the year 1870—Continued.

No.	Name, residence, and invention or discovery.	Date.
	Schild, Henry, and F. Meyer. (*See* Meyer & Schild.)	
96,899	Schild, Henry, and George J. Prentice, assignors through mesne assignments to Lewis Prentice, New York, N. Y. Cigar-machine. (Antedated Jan. 10, 1870)	Jan. 18, 1870
109,060	Schilling, August M., Chicago, Ill. Scroll-saw	Nov. 8, 1870
106,513	Schilling, Cornelius, New York, N. Y. Propelling-apparatus	Aug. 16, 1870
98,638	Schillinger, John J., New York, N. Y. Refrigerator for buildings. (Antedated Oct. 7, 1869)	Jan. 4, 1870
102,716	Same.....Cask for lager-beer	May 3, 1870
104,360	Same.....Wall and floor for buildings	June 14, 1870
105,599	Same.....Concrete pavement	July 19, 1870
	Schleeter, Charles, and Friederich Wegner. (*See* Wegner & Schleeter.)	
	Schleier, Theodore M., and Rudolph Knafft. (*See* Knafft & Schleier.)	
108,739	Schleifer, Francis. Refining sugar by steam	Oct. 25, 1870
	Schlenker, Erhard, *et al.* (*See* Hyatt, Charles, assignor.)	
99,956	Schlesinger, A. D., assignor to the India-Rubber Comb Company, College Point, Long Island, N. Y. Coloring vulcanite or hard rubber	Feb. 15, 1870
107,820	Schlickeysen, Carl Friedrich, Prussia. Stone-working machine	Sept. 27, 1870
99,355	Schlueter, Gustave, Brooklyn, N. Y. Composition for molding plaster of Paris	Feb. 1, 1870
100,672	Schmackers, Anton, assignor to Lane & Bodley, Cincinnati, Ohio. Mortising-machine	Mar. 8, 1870
	Schmehl, S. S. (*See* Eck, J. L., assignor.)	
109,674	Schmid, John B., Salem, Va. Dovetailing-machine	Nov. 29, 1870
109,675	Same.....same	Nov. 29, 1870
	Schmidler, Peter A., *et al.* (*See* Doty, Little & Schmidler.)	
3,817	Schmidlin, William G., and J. W. Driscoll, New York, N. Y. Reflector for lamps (Reissue)	Feb. 1, 1870
101,769	Same.....Street-lamp	April 12, 1870
3,981	Same.....Reflector (Reissue)	May 17, 1870
	Schmidt, Augustus Theodore, and Frederick Braun. (*See* Braun & Schmidt.)	
	Schmidt, Ernst. (*See* Ernst, Philipp M., assignor.)	
108,636	Schmidt, John M., New Albany, Ind. Spring	Oct. 25, 1870
100,809	Schmidt, Leonhard, Lancaster, Pa. Grater	Mar. 15, 1870
103,784	Schmidt, Louis C. A., Tiffin, Ohio. Flour-bolting apparatus	May 31, 1870
100,930	Schminke, Henry, Baltimore, Md. Vapor-burner	Mar. 15, 1870
107,727	Schmitt, Anton, Cincinnati, Ohio. Horse-detaching device	Sept. 27, 1870
101,317	Schmitt, Caspar, St. Louis, Mo. Pessary	Mar. 29, 1870
	Schmitt, John A. and Phillip L., *et al.* (*See* Braley & Schmitt.)	
	Schmitt, Peter, and John Schuell. (*See* Schuell & Schmitt.)	
98,593	Schmucker, John P., assignor to self and J. D. Willis, Ashland, Ohio. Permutation-lock	Jan. 4, 1870
104,593	Schnebly, William, Hackensack, N. J. Thrashing-machine	June 21, 1870
103,597	Schneckloth, Hans Asmus, New York, N. Y. Hoisting-apparatus	May 3, 1870
102,163	Schneider, Bennett B., New York, N. Y. Lamp	April 19, 1870
105,496	Schneider, Charles, Galion, Ohio. Hanging mill-stones	July 19, 1870
	Schneider, Charles, and Louis Yenno. (*See* Yenno & Schneider.)	
101,049	Schneider, Jacob F., Brooklyn, N. Y. Skate	Mar. 22, 1870
98,524	Schneider, William A., Albany, N. Y. Steam-trap	Jan. 4, 1870
99,601	Schoch, William, Plumsteadville, Pa. Carriage-top	Feb. 8, 1870
	Schock, Gustav, and Julius Schaefer. (*See* Schaefer & Schock.)	
	Schock, J. James, and Anson N. Kellogg. (*See* Kellogg & Schock.)	
101,318	Schoenberg, Abraham, New York, N. Y. Mold for casting solder, &c	Mar. 29, 1870
108,870	Schofield, Charles, Kernville, Cal. Apparatus for saving gold	May 10, 1870
	Schofield, Charles, and Louis Heine. (*See* Heine & Schofield.)	
104,211	Schofield, George W., U. S. Army. Breech-loading fire-arm	June 14, 1870
	Schofield, John S. (*See* Wilcox, John W., assignor.)	
105,959	Schofield, Silas C., Chicago, Ill. Coupling for tumbler-shafts	July 12, 1870
106,214	Schofield, Socrates, assignor to self and Richard A. Bright, jr., Providence, R. I. Cigar-machine	Aug. 9, 1870
109,673	Schoonover, John Q. A., assignor of one-half interest to James S. Totten, Lebanon, Ohio. Water-current motor	Mar. 8, 1870
99,944	Schopf, Benjamin and Christian, Pittsburgh, Ind. Lifting-jack	Jan. 25, 1870
103,665	Schopp, Philip Jacob, Louisville, Ky. Apparatus to effect the hydration of air in heated apartments	May 31, 1870
104,212	Same.....Grate and fire-pot for heating stoves	June 14, 1870
108,205	Same.....Apparatus for the support of skaters	Oct. 18, 1870
105,376	Schott, Charles, assignor to self and James H. Bruce, Nashville, Tenn. Pencil-attachment for compasses	July 12, 1870
	Schott, J. J. (*See* Byrne & Strunk, assignors.)	
103,508	Schou, Mathias, Englishtown, N. J. Jack for connecting poles and shafts to wagons	May 24, 1870
105,909	Schrader, August, New York, N. Y. Ring for securing hose to couplings	July 5, 1870
103,941	Schrag, Philip, and Philip Hafeland, New York, N. Y. Machine for cutting off lead-pencils	May 17, 1870
4,531	Schraubstadter, Carl, Brookline, Mass. Type (Design)	Dec. 20, 1870
101,770	Schroyer, Philipp, New York, N. Y. Money-safe	April 12, 1870
109,553	Schriber, Thomas H., Evansville, Ind. Ejector	Nov. 22, 1870
103,089	Schrier, William, Logansport, Ind. Composition-metal or alloy	May 17, 1870
101,529	Schroedel, John, and William Doll, Allegheny, Pa. Harrow and earth-cutter	April 5, 1870
104,778	Schroyer, Joseph J., Springfield, Ill. Wood pavement	June 28, 1870
102,717	Schryver, Henry, assignor to self and J. Deyo Chipp, Kingston, N. Y. Clothes-drier	May 3, 1870

Alphabetical list of patentees for the year 1870—Continued.

No.	Name, residence, and invention or discovery.	Date.
106,513	Schuckers, Jacob W., Philadelphia, Pa. Harvester-rake	Aug. 16, 1870
108,637	Schnell, John, and Peter Schmitt, Waterloo, Ill. Automatic fan	Oct. 25, 1870
	Schnellermann, John C., and Samuel Croft, executors. (*See* Lisbrich, Conrad) (Reissue.)	
108,198	Schuette, Ernst A., New York, N. Y. Apparatus for water-proofing fabrics with gutta-percha	Oct. 11, 1870
101,666	Schuette, John B., Lockington, Ohio. Churn	April 5, 1870
108,836	Schuler, Peter, Morris, Ind. Breech-loading fire-arm	Nov. 1, 1870
	Schultheis, John, *et al.* (*See* Lutz, Schultheis & Florentin.)	
100,561	Schultz, Carl, and Thomas Warker, New York, N. Y. Self-closing faucet. (Antedated Feb. 21, 1870)	Mar. 8, 1870
101,771	Schultz, Henry, assignor to self and Henry C. Bentley, Milwaukee, Wis. Regulating device for gas-burners	April 12, 1870
109,947	Schultz, Hugo, France. Skirt	Dec. 6, 1870
	Schuls, Frederick and Victor. (*See* Farrington, George K., assignor.)	
101,168	Schulse, G. F., Janesville, Wis. System of heating and ventilating	Mar. 22, 1870
106,081	Schulse, Louis, Louisville, Ky. Regulator for spirit-meters	Aug. 2, 1870
106,964	Same.....Apparatus for pitching barrels	Aug. 30, 1870
100,946	Same.....Baltimore, Md. Apparatus for pitching and coating barrels, casks, &c.	Dec. 6, 1870
	Schurr, Christian L., and Louis G. Sert. (*See* Sert & Schurr.)	
100,456	Schutt, Everett P., Cortland, N. Y. Gas and water pipe plug	Mar. 1, 1870
109,767	Schuyler, Josephus F., Tiffin, Ohio. Paper-trimming machine	Nov. 29, 1870
103,090	Schuzenbach, Sebastian, deceased, by Constantin Rosswog, administrator, New York, N. Y. Manufacture of sugar	May 17, 1870
	Schwab, Adam. (*See* Abel, Anthony, assignor.)	
104,361	Schwab, John, assignor to self and Phillip Roller, Bridgeport, Conn. Blacking-brush and case	June 14, 1870
100,674	Schwartz, Henry, Fayetteville, Ohio. Stump-extractor	Mar. 8, 1870
101,319	Schwartz, Theodore, New York, N. Y. Process of obtaining acetic acid from wood	Mar. 29, 1870
101,320	Same.....Treating wood to obtain useful products	Mar. 29, 1870
108,193	Schwerin, Morris, Newark, N. J. Caster for trunks	Oct. 11, 1870
101,583	Scobey, George V., assignor to self and Reuben Wood, Waterloo, N. Y. Skate	April 5, 1870
99,009	Scofield, Minot S., Stamford, Conn. Hand-barrow	Jan. 18, 1870
110,503	Same.....Handle for barrels, &c	Dec. 27, 1870
107,821	Scoggins, Samuel R., Baltimore, Md. Refrigerator	Sept. 27, 1870
3,801	Scorer, Robert, Troy, N. Y. Cooking-stove (Reissue)	Jan. 18, 1870
	Scott, C. A., and R. T. Bradley. (*See* Bradley & Wansbrough, assignors.)	
	Scott, David, jr., and James Davis, jr. (*See* Davis & Scott.)	
104,504	Scott, David A., assignor to Allen C. Richards, Cincinnati, Ohio. Spring bed-bottom	June 21, 1870
	Scott, David A., and Peter J. Rice. (*See* Rice & Scott.)	
110,503	Scott, Erastus W., Wauregan, Conn. Whip-holder for carriages	Dec. 27, 1870
108,639	Scott, Francis B., assignor to self and C. S. S. Lennox, Lancaster, N. Y. Rein-holder	Oct. 25, 1870
104,313	Scott, Francis E., Centreville, Ind. Drain-tile	June 14, 1870
109,676	Scott, George, New Orleans, La. Elevator	Nov. 29, 1870
101,525	Scott, George, assignor to self, Charles, John, Charles H., George W., and William H. Melcher, Philadelphia, Pa. Brick and tile machine	April 5, 1870
	Scott, George S. (*See* Shepard, Charles U., jr., assignor.)	
108,296	Scott, George W., Greencastle, Ind. Coal-vault grate	Oct. 11, 1870
	Same.....(*See* Feemster, John U. L., assignor.)	
	Scott, George W., *et al.* (*See* Eaton, Ainsworth & Scott.)	
105,009	Scott, Gustav A., and William B. Frisbie, San Francisco, Cal. Supplementary pedal-attachment for piano-fortes	July 5, 1870
	Scott, Harshaw. (*See* Evans & Gentsch, assignors) (Reissue.)	
	Same.....(*See* Bickford, Henry, assignor) (Reissue.)	
98,325	Scott, Jerome, Charlestown, Pa. Washing-machine	Jan. 4, 1870
108,876	Scott, John D., Alviso, Cal. Cattle-stanchion	Aug. 30, 1870
107,823	Scott, John William, Philadelphia, Pa. Extension-ladder	Sept. 27, 1870
103,377	Scott, Joseph, San Francisco, Cal. Amalgamator and ore-concentrator	May 24, 1870
109,661	Scott, Levi, Burgettstown, Pa. Churn-dasher	Nov. 8, 1870
103,686	Scott, Samuel A., Griffin, Ga. Seed-sower	May 31, 1870
98,804	Scott, W. B., New York, N. Y. Method of applying anti-friction rollers to wheels	Jan. 11, 1870
104,890	Scott, William Edmond, Knoxville, Tenn. Shelving for stores	June 28, 1870
	Scott, William G., *et al.* (*See* Shearon, Andrew, assignor.)	
108,942	Scott, William M., England. Breech-loading fire-arm	Nov. 1, 1870
106,877	Scottron, Thomas C., and Sidney Plummer, Springfield, Mass. Composition for blacking stoves	Aug. 30, 1870
101,584	Scoville, Elijah U., Manlius, N. Y. Horse hay-fork	April 5, 1870
4,194	Scoville, Hiram H., assignor of one-half interest to Joseph A. Scoville, Oakland, Cal. Harvester-rake (Reissue)	Dec. 6, 1870
110,998	Scrannage, Matthew, Medford, Mass., and Wallace H. Bate, Somerville, Mass. Faucet	Dec. 20, 1870
108,734	Scranton, William E., New Haven, Conn. Curtain-fixture	Oct. 25, 1870
104,650	Scribner, George H., Natick, Mass. Manufacture of felt-hats	June 21, 1870
104,653	Scribner, George W., Detroit, Mich. Reed-organ	June 21, 1870
107,823	Scribner, Gilman A., Rochester, N. Y. Grain-binder	Sept. 27, 1870
109,949	Scripture, Eliphalet S., Brooklyn, E. D., N. Y. Wrench. (Antedated Nov. 25, 1870)	Dec. 6, 1870
100,931	Scruton, Thomas C., Farmington, N. H. Catarrh remedy or snuff	Mar. 15, 1870

Alphabetical list of patentees for the year 1870—Continued.

No.	Name, residence, and invention or discovery.	Date.
	Scudder, Adam L., and John L. Wagner. (*See* Wager & Scudder.)	
	Scudder, George T. (*See* Webster, Albert G., assignor.)	
100,810	Scudder, Henry B., Needham, Mass. Knitting-machine	Mar. 15, 1870
106,215	Scully, William assignor to the Michigan Bolt and Nut Company, Detroit, Mich. Nut-tapping machine	Aug. 9, 1870
	Seal, John H., and William Ziegler. (*See* Ziegler & Seal.)	
104,362	Seal, William D., assignor to self and Edmund Sayre, Washington, D. C. Hydraulic air-compressing apparatus	June 14, 1870
99,957	Seaman, John, New York, N. Y. Harness-hook	Feb. 15, 1870
	Seaman, Robert. (*See* Shepard, Henry W., assignor) (Reissue.)	
	Searl, Francis D., and Edward Hall. (*See* Hall & Searl.)	
	Searle, Calvin. (*See* Chandler, George W., assignor.)	
	Searle, Henry, and Cyrus Eskrett. (*See* Eskrett & Searle.)	
98,805	Searle, J. Q. C., Topeka, Kans. Steam-boiler furnace	Jan. 11, 1870
98,806	Same.....Base-burning stove	Jan. 11, 1870
105,260	Same.....Railroad-car stove	July 12, 1870
	Same.....(*See* Svensson, Carl L., assignor.)	
102,718	Searles, Andrew B., Providence, R. I. Tea and coffee strainer	May 3, 1870
104,654	Searles, Irving W., Tiffin, Ohio. Clothes-pin	June 21, 1870
108,057	Same.....Land-roller	Oct. 4, 1870
100,568	Searles, Samuel C., Wilmington, Del. Caulkers' mallet	Mar. 8, 1870
105,985	Searls, Anson, Newark, N. J. Top-prop for carriages. (Antedated July 21, 1870)	Aug. 2, 1870
100,331	Sears, Brown, Cold Spring, N. Y. Coal-sifter	Mar. 1 1870
105,600	Sears, Delos A., Rockford, Ill. Gang-plow	July 19, 1870
104,779	Sears, Henry, and Edmund B., Rockford, Ill. Knife for cutting sheaf-bands	June 28, 1870
110,893	Sears, John, Cortland, N. Y. Spring for beds, sofas, &c	Dec. 20, 1870
107,632	Sears, Samuel W., New York, N. Y. Grass-cutter	Sept. 20, 1870
99,113	Seaton, William, Putnam, Conn. Slotting-tool holder	Jan. 25, 1870
	Sebring, Abram. (*See* Ayers, Samuel S., assignor.)	
99,790	Secomb, John L., Detroit, Mich. Spring bed-bottom	Feb. 15, 1870
	Secombe Manufacturing Company. (*See* Norton, Marcus P., assignor). (Reissue.)	
4,135	Sedgebeer, Joseph, Painesville, Ohio. Mill-stone dress (Reissue)	Sept. 27, 1870
	Sedgwick, C. H., & Sons, *et al.* (*See* Morgans, William T., assignor.)	
104,214	See, Cornelius S., New Brunswick, N. J. Attaching sponge-holders to tables, &c	June 14, 1870
100,939	See, John, Philadelphia, Pa. Scrubbing-brush	Mar. 15, 1870
99,714	Seeberger, Joseph, Troy, N. Y. Stop-cock	Feb. 8, 1870
105,497	Seebold, Jacob, Kantz, Pa. Bridge	July 19, 1870
107,106	Same.....same	Sept. 6, 1870
	Seeds, Joseph R. D., and Christian Kieffer. (*See* Kieffer & Seeds.)	
99,945	Seehausen, H., Memphis, Tenn. Animal-trap	Jan. 25, 1870
105,601	Seeley, D. B., Sterling, Ill. Pruning-hook	July 19, 1870
	Seeley, Smith M., *et al.* (*See* Rowell, Rice & Seeley.)	
103,091	Seely, Charles A., New York, N. Y. Manufacture of extract of hops	May 17, 1870
109,457	Seelye, Seymour K., Hudson, Mich. Combination-lock	Nov. 22, 1870
106,092	Sehner, Nathaniel, assignor to self, John F. Keller, and Abraham Hufnor, Hagerstown, Md. Umbrella	Aug. 9, 1870
104,363	Seib, Henry, New York, N. Y. Meat-cutter	June 14, 1870
108,593	Same.....Vegetable-cutter	Oct. 18, 1870
104,067	Seibel, Jacob, Manlius, Ill. Harvester	June 7, 1870
	Seiberling, John F. (*See* Esterly, George, assignor.) (Three cases.) (Reissue.)	
109,677	Seitz, August, Hoboken, N. J. Confectionery for druggists	Nov. 29, 1870
99,010	Seitzinger, George, Seneca, Ill. Fastening side-boards to grain-wagons	Jan. 18, 1870
107,728	Selden, George, Erie, Pa. Head-block for saw-mills	Sept. 27, 1870
99,486	Selden, George, and O. C. Briggs, assignors to George Selden, Erie, Pa. Head-block for saw-mills	Feb. 1, 1870
104,068	Selden, George, and H. O. Kelsey, assignors to George Selden, Erie, Pa. Head-block for saw-mills	June 7, 1870
	Selden, George S., and James Cuddy. (*See* Cuddy & Selden.)	
107,965	Selden, Samuel, and M. Griswold, Erie, Pa. Link for connecting the handles and valve-rods of pumps	Oct. 4, 1870
105,966	Selden, William C., assignor to self and Adam Carr, Brooklyn, N. Y. Valve for steam-engines. (Antedated July 19, 1870)	Aug. 2, 1870
110,294	Selden, William C., assignor to Adam Carr, Brooklyn, N. Y. Valve for engines	Dec. 6, 1870
3,948	Seldis, Raphael Morita, New York, N. Y. Muff (Design)	Mar. 29, 1870
104,780	Same.....same	June 28, 1870
110,504	Selfe, William, Cincinnati, Ohio. Tobacco-pipe	Dec. 27, 1870
101,050	Selleck, W. L., Milwaukee, Wis. Water-wheel	Mar. 22, 1870
105,602	Selleck, W. L., assignor to D. W. Perkins, Beetown, Wis. Water-wheel	July 19, 1870
98,807	Sellers, George H., Wilmington, Del. Apparatus for rolling metals	Jan. 11, 1870
103,667	Same.....Phœnixville, Pa. Hydraulic housing for rolls	May 31, 1870
	Sellers, James M., and A. K. McClure. (*See* Vaughan, Aaron C., assignor.)	
99,356	Sellers, William, Philadelphia, Pa. Gear-cutting machine	Feb. 1, 1870
	Same.....(*See* Thielemann & Meyer, assignors.)	
101,526	Sellig, D. N., Newburgh, N. Y. Spring bed-bottom	April 5, 1870
103,052	Sellors, John, Bellevue, Mich. Horse-collar cap	April 19, 1870
	Selpho, William, New York, N. Y. Construction of artificial legs. (Extension)	April 29, 1870
	Selser, William, Charles N., and John A., *et al.* (*See* Wicks, Loren J., assignor.) (Design.)	
101,772	Seltzer, John, Philadelphia, Pa. Store and household grapple. (Antedated March 28, 1870)	April 12, 1870

Alphabetical list of patentees for the year 1870—Continued.

No.	Name, residence, and invention or discovery.	Date.
4,064	Semele, Jules, assignor to self and Joseph Gerrus, New York, N. Y. Needle-case ..... (Design)	May 24, 1870
4,065	Same ..... Needle-case ..... (Design)	May 24, 1870
100,077	Semple, Edward, Chicago, Ill. Trunk-stay	Feb. 22, 1870
100,675	Semple, Samuel, jr., Mount Holly, N. J. Stop-motion for spooling-machines	Mar. 8, 1870
105,967	Senseman, Francis C., assignor to self and A. E. Steel, Philadelphia, Pa. Paper-file	Aug. 2, 1870
102,975	Serocombe, John J. H., New London, Wis. Bending-machine	May 10, 1870
103,540	Sergeant, Henry C., assignor to José Francisco de Navarro, Newark, N. J. Fluid-meter	May 24, 1870
106,870	Sergeant, Henry C., assignor to William Tobin, Newark, N. J. Fluid-meter	Aug. 30, 1870
108,630	Serf, Louis G., and Christian L. Schurr, Baltimore, Md. Awning	Oct. 25, 1870
107,633	Servant, William, assignor to self and Joseph A. Whitman, Providence, R. I. Portable sprinkling-pump	Sept. 20, 1870
102,053	Servoss, Charles W., Chicago, Ill. Heating-drum	April 19, 1870
108,299	Sessions, Albert J., deceased, by Ellen L. Sessions, administratrix, assignor to John H. Sessions, Bristol, Conn. Trunk-clamp	Oct. 11, 1870
99,516	Sessions, T. E., and Samuel A. Knox, Worcester, Mass. Mold-board for plows	Feb. 1, 1870
	Setchell, George C., and Cebra L. Taylor. (*See* Taylor & Setchell.)	
	Severance, A. J. (*See* Blanchard, Virgil W., assignor.)	
105,496	Sevey, James A., Boston, Mass. Machine for splitting whalebone	July 19, 1870
99,713	Sewell, George, Brooklyn, N. Y. Hose-coupling	Feb. 8, 1870
103,765	Same ..... same	May 31, 1870
106,103	Same ..... Meter	Aug. 9, 1870
109,554	Sexton, James B., Pella, Iowa. Cultivator	Nov. 22, 1870
101,396	Sexton, Samuel B., Baltimore, Md. Base-burning fire-place stove	Mar. 29, 1870
103,510	Same ..... same	May 24, 1870
	Same ..... (*See* Rose & Caley, assignors) ..... (Two cases) ..... (Design.)	
108,733	Sexton, Samuel B., and George W. Beard, Baltimore, Md. Hot-air furnace	Oct. 25, 1870
100,338	Seymour, Albert P., Hecla Works, N. Y. Reversible hinge	Mar. 1, 1870
4,212	Same ..... Drawer-pull ..... (Design)	July 5, 1870
4,230	Same ..... Match-safe ..... (Design)	July 19, 1870
	Seymour, Frederick J., Wolcottville, Conn. Making brass kettles. (Extension)	May 11, 1870
106,917	Seymour, George, England. Steering-apparatus	Aug. 9, 1870
101,067	Seymour, George H., Newark, Ohio. Car-brake	April 5, 1870
	Seymour, Henry & Co. (*See* Wendt, Hermann, assignor) ..... (Two cases.)	
	Same ..... (*See* Campell, Daniel, assignor.)	
102,871	Seymour, Henry A., and Williford H. Nettleton, Bristol, Conn. Riveting-hammer	May 10, 1870
103,798	Seymour, Henry L., Troy, N. Y. Construction of chairs	May 31, 1870
	Seymour, Henry W. (*See* Pease, Henry, assignor.)	
3,843	Shackleton, Joseph, Rahway, N. J. Steam-heater ..... (Division 1, reissue)	Feb. 15, 1870
3,844	Same ..... same ..... (Division 2, reissue)	Feb. 15, 1870
3,845	Same ..... same ..... (Division 3, reissue)	Feb. 15, 1870
101,869	Same ..... Steam-radiator	April 5, 1870
101,869	Same ..... Steam-heater	April 5, 1870
104,891	Shade, George W., Shippensburgh, Pa. Horse hay-fork	June 28, 1870
100,707	Shaeffer, Joseph J., and Curtis C. Steinmetz, Middletown, Pa. Railway-switch	Mar. 8, 1870
	Shaffer, Lewis. (*See* Rodgers, Amos C., assignor.)	
	Shaller, S. W. (*See* Webber, Lorenzo D., assignor.)	
105,261	Shailer, Simon W., Deep River, Conn. Saw	July 12, 1870
99,357	Shaler, Alexander, New York, N. Y. Device for connecting horses to vehicles	Feb. 1, 1870
107,924	Shaler, Ira W., Brooklyn, N. Y. Shield for gas-burners	Sept. 27, 1870
100,933	Shaler, Reuben, Madison, Conn. Burglar-alarm	Mar. 15, 1870
100,333	Shaller, Frederick, Hudson, N. Y. Railroad-car heater	Mar. 1, 1870
101,927	Same ..... Coupling for hose and pipes	April 12, 1870
109,146	Shanabrook, David S., Greencastle, Pa. Sawing-machine	Nov. 8, 1870
110,295	Shaner, Russell M., Genoa, Ohio. Hoop-racking machine	Dec. 20, 1870
105,303	Shanks, Schuyler G., Richmond, Ky. Churn	July 12, 1870
99,011	Shanks, Thomas, Baltimore, Md. Bobbin-winder for sewing-machines	Jan. 18, 1870
102,164	Same ..... same	April 19, 1870
109,950	Same ..... Elevator and distributer	Dec. 6, 1870
99,946	Shannon, Thomas J., Lawrenceburgh, Ind. Table	Jan. 25, 1870
99,716	Shannon, Thomas J., assignor to self and Thomas L. Haven & Co., Lawrenceburgh, Ind. Molding-cutter	Feb. 8, 1870
	Shanta, Enos S., and Oliver B. Keely. (*See* Coulston, Thomas J., assignor.) (Two cases.)	
	Shapleigh, Thomas W., and Blancy L. Alley. (*See* Alley & Shapleigh.)	
110,226	Shappell, John, Lynnville, Pa. Churn	Dec. 20, 1870
108,194	Share, Philip T., Baltimore, Md. Sash-fastener	Oct. 11, 1870
	Sharkey, James, *et al.* (*See* Smeltzer, Luke S., assignor.)	
103,326	Sharp, Dennis P., Ithaca, N. Y. Barley or gavel fork	May 3, 1870
4,066	Sharp, George, Philadelphia, Pa. Spoon-handle ..... (Design)	May 24, 1870
101,327	Sharp, James K., Eleanor Ainsworth, and Frederick A. Sebastian, Troy, N. Y. Covering for steam-boilers, &c.	April 5, 1870
108,925	Sharp, Thomas, and Charles S. S. Griffing, Salem, Ohio. Steam-generator	Aug. 30, 1870
103,773	Sharp, W. A., Tama City, Iowa. Implement. (Antedated April 7, 1870)	April 12, 1870
	Sharp, William H., *et al.* (*See* Palmer, Charles H., assignor.)	
108,649	Sharpe, W. A., Syracuse, N. Y. Caliper	Oct. 25, 1870
108,458	Sharpe, Christian, Philadelphia, Pa. Propelling-mechanism	Nov. 22, 1870
	Sharpe, Christian. (*See* Steiner, John H., assignor.)	
101,851	Sharts, William, Athens, N. Y. Belt for safes	Mar. 22, 1870

Alphabetical list of patentees for the year 1870—Continued

No.	Name, residence, and invention or discovery.	Date.
102,872	Shatswell, George, Waukegan, Ill. Window-screen	May 10, 1870
102,873	Shatswell, George, assignor to self and Elijah M. Haines, Waukegan, Ill. Fastening for railway-rails	May 10, 1870
107,107	Shattuc, Samuel, Kipton, Ohio. Milk-can and cooler	Sept. 6, 1870
	Shattuck, Samuel T., and Gustavus A. Williamson. (*See* Herreshoff, James B., assignor.)	
103,243	Shaughnessy, James, Cincinnati, Ohio. Tool-grinding attachment to lathes	May 17, 1870
107,825	Shaut, James H., Andover, N. Y. Stove-pipe shelf	Sept. 27, 1870
99,717	Shaver, Amenzo, Warnerville, N. Y. Lifting-jack	Feb. 8, 1870
3,794	Shaw, Daniel, Elkhart, Ind. Smut-mill and grain-separator ..... (Reissue)	Jan. 11, 1870
	Shaw, Daniel, assignor to John M. Knox, Elkhart, Ind. Smut-mill and grain-separator ..... (Disclaimer filed)	Oct. 28, 1870
103,243	Shaw, David E., Chatsworth, Ill. Feed-water heater and filter	May 17, 1870
103,244	Shaw, Edgar F., Boston, Mass. Boot and shoe sole-cutter	May 17, 1870
102,054	Shaw, Elijah, Milwaukee, Wis. Eyeleting-machine	April 19, 1870
106,218	Shaw, Ephraim, Tarr Farm, Pa. Mitering-machine	Aug. 9, 1870
107,168	Shaw, George F., West Roxbury, Mass. Mowing-machine	Sept. 6, 1870
100,196	Shaw, George W., Buffalo, N. Y. Separator to be used in distilling liquors	Feb. 22, 1870
103,719	Shaw, Henry F., West Roxbury, Mass. Hoisting-gear	May 3, 1870
107,296	Same ..... Mowing-machine	Sept. 13, 1870
104,264	Shaw, Henry F., assignor to James A. Woodbury, West Roxbury, Mass. Cutting-apparatus for mowing-machines	June 14, 1870
106,219	Shaw, James, assignor to Conyers Button, Philadelphia, Pa. Composition for oiling wool	Aug. 9, 1870
101,774	Shaw, Jehyleman, Bridgeport, Conn. Tubular well. (Antedated April 4, 1870)	April 12, 1870
4,030	Same ..... Recovering gold and silver from waste solutions ..... (Reissue)	June 14, 1870
99,247	Shaw, John L., Grand Rapids, Mich. Shovel-handle	Jan. 25, 1870
4,031	Shaw, Louise F., New York, N. Y. Imitation hair for ladies' head-dresses. (Reissue)	June 14, 1870
104,892	Shaw, Nathan Y., Greenville, N. Y. Sash-holder	June 28, 1870
102,874	Shaw, Spicer H., Attica, N. Y. Stall for feeding animals	May 10, 1870
99,791	Shaw, Thomas, Philadelphia, Pa. Compound propeller-pump	Feb. 15, 1870
99,950	Same ..... Apparatus for forging metals	Feb. 15, 1870
104,215	Same ..... Pile-driver	June 14, 1870
100,670	Shaw, Walter, assignor to self, Jonathan Vincent, and Selden D. Redman, Newfane, N. Y. Fruit-transportation box	Mar. 8, 1870
101,053	Shawcross, Samuel, Freeport, Ill. Adjustable garment-pattern	Mar. 22, 1870
99,356	Shawk, George W., assignor to the Cleveland Fire-Alarm Company, Cleveland, Ohio. Fire-alarm signal-box	Feb. 1, 1870
105,138	Shay, James, assignor to self and John Q. Jaynes, Cincinnati, Ohio. Vapor-burner	July 5, 1870
3,982	Shee, Charles, Newark, N. J. Equilibrium-spring ..... (Division A, reissue)	May 17, 1870
3,983	Same ..... same ..... (Division B, reissue)	May 17, 1870
3,984	Same ..... Compensating or equilibrium spring ..... (Division C, reissue)	May 17, 1870
103,511	Sheaffer, Alfred B., Ephrata, Pa. Bedstead-fastener	May 24, 1870
101,053	Sheaffer, Alfred B., assignor to self and John Walter, Ephrata, Pa. Hand-screw and clip for splicing broken carriage-tires	Mar. 22, 1870
	Sheaffer, John W., and Alonzo Sherman. (*See* Sherman & Sheaffer.)	
	Sheaffer, William E., and William H. Fortney. (*See* Fortney & Sheaffer.)	
107,413	Shearer, David S., Shelburne Falls, Mass. Combination and register padlock	Sept. 13, 1870
107,730	Shearer, Frank B., Columbus, Ohio. Process of uniting rubber with wood	Sept. 27, 1870
104,893	Shearer, Joseph, Timberville, Ill. Cotton-seed sower	June 28, 1870
109,678	Shearer, William, Atlanta, Ga. Pump	Nov. 29, 1870
103,245	Shearon, Andrew, assignor to Abraham, John M. and Jonas Gaar, and William G. Scott, Richmond, Ind. Head-block for saw-mills	May 17, 1870
108,537	Shedd, William B. Countersink	Nov. 1, 1870
	Shedd, William B., and George E. Hopkins. (*See* Hopkins & Shedd.)	
101,926	Sheedy, James, New York, N. Y. Gas-heater	April 12, 1870
105,134	Sheehan, Thomas, Dunkirk, N. Y. Plow	July 5, 1870
	Sheeler, John, *et al.* (*See* Smith & Brown, assignors ..... (Two cases.) (Design.)	
	Sheets, Daniel, and James W. Donaldson. (*See* Donaldson & Sheets.)	
103,500	Sheets, Isaac S., Troy, Ohio. Ditching-plow	May 3, 1870
103,512	Sheffer, Handy L., Marston, Wis. Medical compound for the cure of diphtheria	May 24, 1870
102,720	Sheffield, George V., Northbridge, Mass. Heel-stiffener for boots and shoes	May 3, 1870
102,721	Same ..... Shank-piece for boots and shoes	May 3, 1870
99,870	Sheffield, George V. and John A., Northbridge, Mass. Medical compound	Feb. 15, 1870
104,894	Sheill, William, Dayton, Ohio. Scale for laying out shoe-patterns	June 28, 1870
109,951	Shelbourne, Sidney F., New York, N. Y., and Charles E. Emery, Brooklyn, N. Y. Direct-acting engine. (Antedated Nov. 28, 1870)	Dec. 6, 1870
104,781	Sheldon, Francis, assignor to the Union Machine Company, Fitchburgh, Mass. Apparatus for bleaching paper-stock	June 28, 1870
	Sheldon & Co. (*See* Nicol, Joseph, assignor.)	
106,685	Sheldon, Alexander J., Buffalo, N. Y. Preserving wood. (Antedated Aug. 12, 1870)	Aug. 23, 1870
99,949	Sheldon, Alexander J., assignor to Colin Campbell, Buffalo, N. Y. Manufacture of parchment-paper	Jan. 25, 1870
99,949	Sheldon, Carr, Middlebargh, N. Y. Carriage-spring	Jan. 25, 1870
103,668	Sheldon, George G., Chicago, Ill. Kite-string holder	May 31, 1870
105,263	Sheldon, Gilbert L., Harteville, Mass. Endless-chain horse-power link	July 12, 1870
	Sheldon, James H., *et al.* (*See* Post, Henry A. V., assignor.)	
103,787	Sheldon, Julius, New York, N. Y. Hat-blocking machine	May 31, 1870

Alphabetical list of patentees for the year 1870—Continued.

No.	Name, residence, and invention or discovery.	Date.
110,237	Sheldon, Nathaniel P., San Francisco, Cal. Pump. (Antedated Dec. 16, 1870)	Dec. 30, 1870
108,193	Sheldon, Philo B., Bath, N. Y. Flower-trellis. (Antedated Sept. 26, 1870)	Oct. 11, 1870
4,463	Same.....Rochester, N. Y. Toaster and broiler.....(Design)	Nov. 8, 1870
99,602	Shellenback, Peter, Middletown, Ohio, and John Harton, Seymour, Ind. Steam-engine	Feb. 8, 1870
104,305	Shellenberger, Amos, assignor to self and Z. Ligier, Versailles, Ohio. Horse hay-fork	June 14, 1870
107,966	Shelley, Franklin W., Muncie, Ind. Head-block for saw-mills	Oct. 4, 1870
99,012	Shelly, F., Alton, Ill. Lime-kiln	Jan. 18, 1870
	Shelmerdine, Samuel, *et al.* (*See* Kirk, Shelmerdine & Froggatt.)	
100,256	Shelmidine, Charles, Summit, N. Y. Shingle-machine	Nov. 15, 1870
109,450	Shelton, John H., assignor to Benedict & Burnham Manufacturing Company, Waterbury, Conn. Furniture-knob	Nov. 22, 1870
99,980	Shelton, Nichols, Odessa, N. Y. Churn	Feb. 15, 1870
4,283	Shepard, Amos, Southington, Conn. Sausage-filler.....(Design)	Aug. 9, 1870
109,533	Shepard, Calvin A., assignor to self and Roman Meneger, Pomeroy, Ohio. Evaporating salt-brine	Nov. 29, 1870
100,437	Shepard, Charles U., jr., assignor to George S. Scott, Charleston, S. C. Preparing ammoniated sulphuric acid for the manufacture of fertilizers	Mar. 1, 1870
109,788	Shepard, David L., Foxborough, Mass. Road-scraper	Nov. 29, 1870
102,600	Shepard, Edwin R., Scranton, Pa. Lock-nut	May 3, 1870
102,601	Same.....Railway-rail	May 3, 1870
102,602	Same.....Compound railway-rail	May 3, 1870
100,677	Shepard, Frederick M., New York, N. Y. Heel of rubber boots and shoes	Mar. 8, 1870
100,678	Same.....Sole of rubber boots and shoes	Mar. 8, 1870
102,723	Shepard, George A., Bethel, Conn. Machine for covering reeds for hat-trimmings	May 3, 1870
99,586	Shepard, Henry W., Mannsville, N. Y. Metallic can-bottom	Jan. 4, 1870
101,920	Same.....Metallic can-cover	April 12, 1870
103,933	Same.....Milk-can handle	June 7, 1870
4,039	Shepard, Henry W., assignor to self and Robert Seaman, Mannsville, N. Y. Metallic can-bottom.....(Reissue)	June 14, 1870
103,378	Shepard, John F., Hampton Falls, N. H. Grating, sifting, and slicing machine	May 24, 1870
105,853	Shepard, Martin Van Buren, Chicago, Ill. Spring bed-bottom	July 26, 1870
106,220	Shepard, Morrill A., Evansville, Ind. Washing-machine	Aug. 9, 1870
107,551	Same.....Fort Branch, Ind. Combined lantern and candlestick	Sept. 20, 1870
102,603	Shepard, Sylvander C., Richfield, Ohio. Bob-sled	May 3, 1870
105,135	Shepard, William A., Chicago, Ill. Fountain-brush holder	July 5, 1870
100,197	Shepardson, E. O., St. Louis, Mo. Apparatus for towing rafts, &c	Feb. 22, 1870
99,043	Shepardson, H. S., Shelburne Falls, Mass. Lock	Jan. 18, 1870
100,458	Same.....Bit-brace	Mar. 1, 1870
102,440	Same.....Padlock	April 26, 1870
107,414	Same.....Combination for register-padlock	Sept. 13, 1870
110,505	Shepler, Samuel H., San Francisco, Cal., and William G. Conklin, Portland, Oreg. Seed-sower	Dec. 27, 1870
103,934	Shepley, Granville T., West Groton, Mass. Stud-nipper	June 7, 1870
3,945	Sheppard, Isaac Applin, Philadelphia, Pa. Stove-ornament.....(Design)	Mar. 29, 1870
4,319	Same.....Plate and door of a cooking-stove.....(Design)	Aug. 30, 1870
	Sheridan, Cornelius A., *et al.* (*See* Blackburn, Wood, Price & Sheridan.)	
	Sheridan, Cornelius A., and Charles L. Wood. (*See* Wood & Sheridan.)	
109,147	Sherk, Christian S., Grantville, Pa. Tire-shrinker	Nov. 8, 1870
	Sherlock, Robert E., *et al.* (*See* Dougherty, John B., assignor.)	
	Sherlock, Stephen. (*See* Hatting, John E., assignor.)	
100,340	Sherman, Alonzo, and John W. Sheaffer, Sterling, Ill. Pump	Nov. 15, 1870
3,909	Sherman, Charles R., and Wendell Macy, New Bedford, Mass. Thermometer. (Design)	Mar. 15, 1870
108,396	Sherman, Hamilton, Waverly, Pa. Earth-closet	Oct. 18, 1870
103,935	Sherman, Joseph, assignor to self and William Sherman, Coopersville, Mich. Combined feed and water trough	June 7, 1870
107,397	Sherman, Phineas L., Genesee Township, Iowa. Fence	Sept. 13, 1870
109,769	Sherry, Theron R., Newark, N. J. Filling for wood	Nov. 29, 1870
109,082	Sherwood, Allen, and Clarence, Auburn, N. Y. Harvester	Nov. 8, 1870
101,673	Sherwood, Calvin W., Chicago, Ill. School-desk	April 5, 1870
99,718	Sherwood, Daniel, assignor to Woods, Sherwood & Co., Lowell, Mass. Toast-rack	Feb. 8, 1870
101,169	Same.....Table-caster	Mar. 22, 1870
3,906	Sherwood, Daniel, assignor to self, Edward P. Woods, and Cyrus H. Latham, Lowell, Mass. Coffee-strainer.....(Reissue)	April 5, 1870
108,839	Same.....Table-caster	Nov. 1, 1870
105,731	Sherwood, Daniel, Edward P. Woods, and George D. Dudley, assignors to Woods, Sherwood & Co., Lowell, Mass. Table-caster	July 26, 1870
105,732	Sherwood, Daniel, and George D. Dudley, assignors to Woods, Sherwood & Co., Lowell, Mass. Table-caster	July 26, 1870
4,237	Sherwood, Daniel, and George D. Dudley, Lowell, Mass. Table-caster. (Design)	Aug. 16, 1870
	Shick, William. (*See* Allen, Charles L., assignor.)	
110,299	Shields, George W., Louisville, Ky. Steam-generator	Dec. 20, 1870
	Shields, James. (*See* Lordon, Daniel, assignor.)	
108,733	Shields, Nelson S., Rockford, Ill. Cultivator	Aug. 23, 1870
107,539	Shilling, George, Baltimore, Md. Burial-case	Sept. 20, 1870
103,513	Shipley, Henry W., Portland, Oreg. Water-wheel	May 24, 1870
110,077	Shipley, William S., Jersey City, N. J. Type-setting machine	Dec. 13, 1870
101,034	Shipman, Lawson, Barker, N. Y. Milk-rack and cooler	Mar. 22, 1870

Alphabetical list of patentees for the year 1870—Continued.

No.	Name, residence, and invention or discovery.	Date.
106,514	Shipman, Leonard R., Bloomsburgh, Pa. Towing-hook for canal-boats	Aug. 16, 1870
	Shireman, Joseph H. (*See* Reynolds, George S., assignor).....(Reissue.)	
109,078	Shirk, David B., Brunersville, Pa. Harvester-rake	Feb. 22, 1870
108,830	Same.....same	Nov. 1, 1870
99,719	Shirk, Henry and Cyrus, Lebanon, Pa. Harrow	Feb. 8, 1870
108,301	Shirley, Andrew J., Plymouth, Ind. Well-tube	Oct. 11, 1870
102,326	Shirts, Peter J., Highland Falls, N. Y. Shade-roller attachment	April 26, 1870
107,634	Same.....Fastening for neck-ties	Sept. 20, 1870
102,165	Shive, David, Philadelphia, Pa. Watchman's time-check	April 19, 1870
100,934	Shiver, Elisha, assignor to J. H. McBlair, Washington, D. C. Mechanism for operating sewing-machines	Mar. 15, 1870
100,935	Same.....Mechanism for driving sewing-machines	Mar. 15, 1870
105,375	Shmetzer, Louis, Chicago, Ill. Clothes-wringer	July 12, 1870
109,350	Shobe, James, Upper Principio, Md. Apple parer, corer, and slicer	Nov. 15, 1870
103,514	Shock, William H., Washington, D. C. Projectile	May 24, 1870
105,490	Shoemaker, Edwin B. S., Towsontown, Md. Manufacturer of lubricating compounds	July 19, 1870
99,603	Shoemaker, E. H., and Samuel McCleery, Franklin County, Ohio. Mop and scrubber head	Feb. 8, 1870
109,063	Shoemaker, Henry and John A. McClintock, Perry, Ill. Mill-gearing	Nov. 8, 1870
108,397	Shoemaker, John, Putneyville, Pa. Tamping device for blasting purposes	Oct. 18, 1870
105,500	Shoemaker, Peter B., Plattsburgh, Mo. Washing-machine	July 19, 1870
102,055	Shoemaker, William S., Towsontown, Md., and E. H. Shoemaker, Columbus, Ohio. Butter-worker	April 19, 1870
103,369	Shogren, Andrew, and Henry A. Adams, Sandwich, Ill. Tire-setting machine	May 31, 1870
110,078	Sholl, Christian, Mount Joy, Pa. Sash-lock	Dec. 13, 1870
99,604	Shopbell, Elias, Ashland, Ohio. Boot-pattern	Feb. 8, 1870
101,528	Same.....Pattern for shoes	April 5, 1870
105,854	Shorey, John, Lowell, Mass. Spring curtain-fixture. (Antedated July 15, 1870)	July 26, 1870
109,845	Shorey, Samuel W., Chicago, Ill. Last for boots and shoes. (Antedated Nov. 26, 1870)	Dec. 6, 1870
	Short, Joseph H., and Clark H. Charlesworth. (*See* Charlesworth & Short.)	
105,004	Short, Willard C., Providence, R. I. Chain-link	July 5, 1870
101,930	Shortt, E. G., and C. Oberly, assignors to selves and E. B. Sims, Carthage, N. Y. Cutter-bar for harvesters	April 12, 1870
101,775	Shove, George, Yarmouth Port, Mass. Roofing-tile	April 12, 1870
107,967	Same.....Roofing	Oct. 4, 1870
103,092	Shrawder, John S., Fairview Village, Pa. Horse hay-rake	May 17, 1870
99,605	Shrimpton, Alfred, England. Needle-wrapper	Feb. 8, 1870
110,164	Shryock, Valentine J., Folsomville, Cal. Straw-cutter	Dec. 13, 1870
105,377	Shuler, Isaac C., Amsterdam, N. Y. Coffin	July 12, 1870
100,936	Shuler, James C., Cain Hoy, S. C. Extracting turpentine from pine-trees	Mar. 15, 1870
	Shuler, L. S. (*See* Smith, James K. P., assignor.)	
	Shull, Henry A. (*See* Wernts, George W., assignor.)	
103,946	Shultis, Robert H., Ellenville, N. Y. Bark-mill	May 17, 1870
101,055	Shumard, Warren, Richmond, Ind. Latch for gates	Mar. 22, 1870
	Shumate, James F. (*See* Kidder, James, assignor.)	
105,733	Shunk, Alexander J., Des Moines, Iowa. Horse hay-rake	July 26, 1870
	Shute, Amos, and Samuel P. Carll. (*See* Carll & Shute.)	
105,989	Shuttleworth, Charles J., Springville, N. Y. Fence-post	Aug. 2, 1870
107,200	Shuttleworth, George L., assignor to self and Darwin E. Washburn, Sharon, Vt. Paint-brush	Sept. 6, 1870
99,961	Siar, William, Franklin, Pa. Calipers	Feb. 15, 1870
109,004	Sibbet, R. L., New Kingston, Pa. Sash holder. (Antedated April 29, 1870)	May 3, 1870
100,937	Sibert, Lorenzo, Staunton, Va. Metallic alloy to imitate the precious metals	Mar. 15, 1870
107,583	Same.....Desulphurising auro-pyrites and other ores. (Antedated Sept. 5, 1870)	Sept. 20, 1870
108,058	Same.....Manufacture of iron and steel. (Antedated Sept. 24, 1870)	Oct. 4, 1870
110,079	Sible, William H., Harrisburgh, Pa. Mortising-machine	Dec. 13, 1870
102,056	Sibley, James F., and Arthur Walsh, Bennington, Vt. Water-wheel regulator	April 19, 1870
107,109	Sibley, John J., New York, N. Y. Tuck-creasing attachment for sewing-machines	Sept. 6, 1870
103,670	Sibley, Willard E., Weston, Mass. Machine for cutting dovetails	May 31, 1870
99,360	Sickels, Frederick Elsworth, Chicago, Ill. Apparatus for sinking pneumatic piles	Feb. 1, 1870
102,976	Sickels, Gerard, Boston, Mass. Water-meter	May 10, 1870
103,379	Same.....same	May 24, 1870
104,216	Same.....Eye-glass holder	June 14, 1870
99,359	Sickels, Theophilus Elsworth, Kennett's Square, Pa. Apparatus for sinking pneumatic piles	Feb. 1, 1870
105,264	Same.....Car-brake	July 12, 1870
103,441	Siddons, John, Rochester, N. Y. Metallic roofing	April 26, 1870
105,989	Sidey, George, Brooklyn, N. Y. Sifting-machine	Aug. 2, 1870
4,080	Sidney, James C., Philadelphia, Pa. Umbrella-stand.....(Design)	May 31, 1870
3,845	Sieben, George, assignor to James H. White, Newark, N. J. Satchel-fastening.....(Design)	Feb. 8, 1870
101,366	Siebold, Severin, assignor to self and P. Burns, Syracuse, N. Y. Gag runner and buckle	Mar. 29, 1870
101,367	Same.....Ferret-lining	Mar. 29, 1870
104,655	Siemens, Charles William, England. Kiln for calcining ores, limestone, &c	June 21, 1870
109,064	Same.....Metallurgic gas-furnace	Nov. 8, 1870

Alphabetical list of patentees for the year 1870—Continued.

No.	Name, residence, and invention or discovery.	Date.
106,821	Siercks, Charles J., Chicago, Ill. Box	Aug. 9, 1870
110,089	Sieverling, Henry C., Carrollton, Ill. Plow-clevis attachment	Dec. 13, 1870
109,679	Sill, Ebenezer E., and Alonzo H. Bennett, Rochester, N. Y. Agricultural cauldron	Nov. 29, 1870
	Silver, A. R. (*See* Deming, John, assignor.)	
105,965	Silver, Albert E., assignor to self and John Deming, Salem, Ohio. Hub-boring machine	July 12, 1870
106,870	Same.....Meat-chopper	Aug. 30, 1870
	Silverman, Bernard. (*See* Wolff, Robert, assignor.)	
109,679	Silverwood, Robert D., assignor to William Silverwood, Baltimore, Md. Wood-splitting machine	Mar. 8, 1870
106,666	Sim, Thomas, assignor to self and Jesse L. Hutchinson, Baltimore, Md. Manufacture of fertilizers	Aug. 23, 1870
100,459	Simmons, Daniel, New York, N. Y. Paper-box machine	Mar. 1, 1870
100,198	Simmons, Daniel, jr., New York, N. Y. Paper-box machine	Feb. 22, 1870
	Simmons, Francis H., and George Kilner. (*See* Kilner & Simmons.)	
	Simmons, J. V. (*See* Hobart, Randolph D., assignor.)	
110,504	Simmons, Thomas, and Daniel H. Lowe, Brooklyn, N. Y. Bottle-filling apparatus. (Antedated Dec. 16, 1870)	Dec. 27, 1870
	Simon, William. (*See* Wilson, James, assignor.)	
109,959	Simonds, Calvin W., assignor to Hollis Towne, Boscawen, N. H. Pocket-alarm	Dec. 6, 1870
	Simonds, Edwin, and George H. Huntoon. (*See* Huntoon & Simonds.)	
101,170	Simonds, John P., New York, N. Y. Ink for printing stamps, drafts, and checks	Mar. 22, 1870
101,931	Simonds, N. J., Woburn, Mass. Leather-cutting press	April 12, 1870
105,501	Same.....Boot and shoe stiffener	July 19, 1870
105,378	Simonds, Warren A., assignor to Joel M. Holden, Boston, Mass. Carbureting-apparatus	July 19, 1870
103,083	Simonds, William E., Hartford, Conn. Stud for fastening neck-ties to collars	May 17, 1870
4,019	Simonet, John, Flatbush, N. Y. Muff	May 10, 1870 (Design).
109,166	Simonin, Charles F. A., Philadelphia, Pa., and Edward W. Coffin, Glendale, N. J. Cleaning wool and hair	April 19, 1870
4,067	Simonin, Charles F. A., Philadelphia, Pa., and Edward W. Coffin, Glendale, N. J., assignors to William Coffin. Process of extracting fatty substances. (Reissue)	July 12, 1870
	Simons, Joseph L. (*See* Coogan, Edward, assignor.)	
100,079	Simons, Montgomery P., Philadelphia, Pa. Faucet-filter	Feb. 22, 1870
102,977	Simonson, Sigmund, Bridgeport, Conn. Table and counter	May 10, 1870
99,703	Simonton, John W., Taylorsville, Ind. Self-working rotary corn-planter. (Antedated Feb. 14, 1870)	Feb. 15, 1870
100,811	Simonton, Thomas B., Williamsburgh, N. Y. Incline-plane elevator	Mar. 15, 1870
102,167	Simpson, Corelli W., Bangor, Me. Device for hanging pictures, &c	April 19, 1870
	Simpson, Hall, Miller & Co. (*See* Vasseur, Hermann, assignor.) (Four cases.) (Design.)	Aug. 16, 1870
106,413	Simpson, Josiah M., Oshkosh, Wis. Parlor-grindstone	Sept. 5, 1870
	Simpson, Michael H., Boston, Mass. Machine for combing wool. (Extension)	Mar. 8, 1870
100,680	Simpson, Samuel, Wallingford, Conn. Spoon-holder and bell	Mar. 15, 1870
100,938	Same.....Spoon-holder	May 17, 1870
103,247	Simpson, Thomas, Newark, Ohio. Lid and plate lifter and pot-hook	May 10, 1870
102,978	Simpson, Thomas D., Mount Vernon, Ohio. Locomotive and tender coupling	
106,083	Simpson, Thomas D., Gardner B. Gray, and Joseph H. Romans, Mount Vernon, Ohio. Breech-loading fire-arm	Aug. 2, 1870
	Sims, E. B. (*See* Shortt & Oberly, assignors.)	
106,984	Sims, Zachariah B., Bonham, Texas. Two-horse equalizer	Aug. 2, 1870
99,114	Sinclair, James A., assignor to self and Charles Messerly, Woodsfield, Ohio. One-wheeled sulky	Jan. 25, 1870
102,449	Sinclair, James A., assignor to self, Samuel L. Mooney, and William W. Jordan, Woodsfield, Ohio. Pump	April 26, 1870
108,840	Sinclair, John E., Worcester, Mass. Vise	Nov. 1, 1870
105,136	Singer, Edgar Collins, New Orleans, La. Machine for hulling cotton-seed	July 5, 1870
	Singer Manufacturing Company. (*See* Bolton, James, assignor.)	
108,841	Singer, William H., Pittsburgh, Pa. Plate and bar for the construction of plows, cultivator-teeth, &c	Oct. 25, 1870
109,853	Same.....Beveling the edges of circular plates of metal	Dec. 6, 1870
101,056	Singleton, D. T., Eatonton, Ga. Plow	Mar. 22, 1870
	Singleton, James W., *et al.* (*See* Mahurin, Stephen, assignor.)	
108,196	Singleton, Joseph J., Forsyth, Ga. Fertilizer-distributer	Oct. 11, 1870
109,954	Sink, Thomas P., Fairton, N. J. Alarm-lock	Dec. 6, 1870
101,388	Sinks, Henry B., Cincinnati, Ohio. Distillation	Mar. 29, 1870
107,110	Sints, Clark, Clark County, Ohio. Corn plow and planter	Sept. 6, 1870
106,929	Sintzenich, Edwin B., assignor to self and Henry G. Hamilton, Rochester, N. Y. Steam-generator	Aug. 9, 1870
	Sipos, Paul. (*See* Eberhardt, Ferdinand, assignor.)	
103,671	Sirrine, John, Tumbusburgh, N. Y. Washing-machine	May 31, 1870
	Sisco, Lorenzo D., and George W. Heald. (*See* Heald & Sisco.)	
110,596	Sisson, Henry P., Rutland, Vt. Carpenters' gauge	Dec. 27, 1870
106,199	Sisson, J. G., and Lark Delano, Arcola, Ill. Ditcher and grader	Feb. 22, 1870
102,979	Sisson, Luther, North Easton, Mass. Garden-rake	May 10, 1870
106,563	Siver, Simon P., Danbury, Conn. Felted fabric	Mar. 8, 1870
109,955	Sivertsen, John B., Chicago, Ill. Pump	Dec. 6, 1870
107,111	Sizer, George W., and William M. Owen, New Orleans, La. Guano-distributing machine	Sept. 6, 1870

Alphabetical list of patentees for the year 1870—Continued.

No.	Name, residence, and invention or discovery.	Date.
99,014	Skates, B. S., Whistler, Ala. Apparatus for straightening car-axles	Jan. 18, 1870
109,956	Skeen, Jacob, Mound City, Ill. Wagon for loading timber	Dec. 6, 1870
106,627	Skelly, Evan, Pinquemine, La. Machine for decorticating and drying grain	Aug. 23, 1870
103,788	Skiff, Miles H., Westfield, N. Y. Weather-strip	May 31, 1870
103,948	Skiffington, William P., New York, N. Y. Steam-generator	May 17, 1870
109,900	Skinner, E. W., Madison, Wis. Harvester-rake	Feb. 22, 1870
104,069	Skinner, Henry J., Dunkirk, N. Y. Bench-hook	June 7, 1870
107,298	Skinner, Henry M., Rockford, Ill. Colter	Sept. 13, 1870
108,309	Same.....Cultivator. (Antedated Oct. 12, 1870)	Oct. 18, 1870
100,812	Skinner, James B., Rockford, Ill. Cultivator	Mar. 15, 1870
106,223	Skinner, John, Hadley, Mich. Flour-bolt	Aug. 9, 1870
106,294	Skinner, John S., Lebanon, N. H. Lathe-dog	Aug. 9, 1870
	Skinner, Joseph C. (*See* Miller, Robert A., assignor.)	
	Skinner, L. E., and O. S. Pease. (*See* Pease & Skinner.)	
107,280	Skinner, Paul J., Oswego, N. Y. Lamp-wick	Sept. 13, 1870
105,502	Skinner, Robert, and Bonnet Bonnet, San Francisco, Cal. Concrete pavement	July 19, 1870
106,290	Skinner, Robert, and Richard Gaines; said Gaines assignor to said Skinner, San Francisco, Cal. Machine for the manufacture of composition pipes for drainage	Aug. 9, 1870
100,813	Skipp, James, Newark, N. J. Mortising-machine	Mar. 15, 1870
103,949	Skow, Charles J., Racine, Wis. Spring bed-bottom	May 17, 1870
101,389	Slade, Fred. J., Trenton, N. J. Casting ingots in groups	Mar. 29, 1870
103,094	Same.....Manufacture of steel	May 17, 1870
98,715	Slade, Norman P., Franklin Grove, Ill. Device for controlling horses. (Antedated Jan. 5, 1870)	Jan. 11, 1870
	Slag, T., *et al.* (*See* Myers, Harvey L., assignor.)	
	Slaght, James W. (*See* Pickard, Ira, assignor.)	
102,605	Slaight, Jacob W., and Jacob W. Andrevatt, Princess Bay, N. Y. Clamp for setting rigging	May 3, 1870
96,630	Slane, D. F., Chillicothe, Ohio. Fruit-picker	Jan. 4, 1870
104,895	Same.....Feed-attachment for thrashing-machines	June 28, 1870
99,015	Slater, Eli, Philadelphia, Pa. Hot-air furnace	Jan. 18, 1870
108,642	Slater, Emerson D., Greenville, N. Y. Sash-holder	Oct. 25, 1870
98,716	Slater, Erastus, Girard, Pa. Railway-car brake	Jan. 11, 1870
99,016	Slater, Francis W., Bay City, Mich. Sewer-excavator	Jan. 18, 1870
108,390	Slater, James J., Nicholasville, Ohio. Desk, bureau, and churn-power. (Antedated Oct. 1, 1870)	Oct. 18, 1870
106,714	Slater, John, Norwich, N. Y. Washer and boiler	Aug. 16, 1870
109,065	Slater, Warren G., Hart, Mich. Method of cutting boot-packs	Nov. 8, 1870
110,290	Same.....Press for forming soles for packs	Dec. 20, 1870
107,554	Slaughter, David, Mountville, Pa. Shovel for seeders. (Antedated Sept. 12, 1870)	Sept. 20, 1870
105,005	Slawson, John B., New York, N. Y. Fare-box for vehicles	July 5, 1870
109,770	Slaymaker, William A., Atlanta, Ga. School desk and seat	Nov. 29, 1870
	Sledge, Benjamin, and Lindsay Duskin. (*See* Duskin & Sledge.)	
107,415	Sleeper, Wright, Coaticook, Canada. Compound machine for shearing, punching, upsetting, and bending metal	Sept. 13, 1870
102,168	Sleeth, Francis Vanvoet, Keokuk, Iowa. Lamp	April 19, 1870
109,771	Sliker, Otto, Lincoln, Ill. Door holder or check	Nov. 29, 1870
105,855	Slingerland, John T., New York, N. Y. Type-setting machine	July 26, 1870
107,730	Sloan, Fletcher, Bolivar, Tenn. Cotton-seed planter	Sept. 27, 1870
105,856	Sloan, Theodore R., Brooklyn, N. Y. Pantaloons	July 26, 1870
	Sloane, W. & I. (*See* Mallinson, William, assignor) (Two cases.)	
109,778	Sloane, William M., New York, N. Y. Purifying and refining oil	Nov. 29, 1870
	Slocum, George B., *et al.* (*See* Warriner, Baker & Slocum.)	
106,085	Slocum, John H., and George F. Turner, Fayette, Me. Tanning	Aug. 2, 1870
109,680	Slocumb, Silas A., Philadelphia, Pa. Grain and fruit cleaner	Nov. 29, 1870
98,640	Sloss, L. L., Auburn, Ky. Plow	Jan. 4, 1870
	Slosson, Enos, and Matthew Laflin. (*See* Laflin & Slosson.)	
104,762	Slusser, Benjamin, Sidney, Ohio. Excavator	June 28, 1870
104,070	Slusser, James B., and William H. Meech, Roanoke, Ind. Grate and back for cooking-stoves	June 7, 1870
102,057	Sluthour, Anthony, Cleveland, Ohio. Rotary pump	April 19, 1870
99,600	Sly, Austin, and Samuel S. Ford, Lebanon, N. H. Rotary provision-safe	Feb. 8, 1870
106,734	Small, Alexander B., New Orleans, La. Metallic seal	Aug. 23, 1870
106,698	Small, Charles W., Worcester, Mass. Reed-organ pipe	Aug. 23, 1870
	Small, Z. E., *et al.* (*See* Barlow, Ashbell P., assignor) (Reissue.)	
110,300	Smart, James, England. Slide-valve	Dec. 20, 1870
	Smart, Porter M., *et al.* (*See* Jordan, William N., assignor.)	
109,060	Smart, Thomas, jr., assignor to self and Edward Smart, Brockville, Canada. Thimble skein and box for vehicles	Nov. 8, 1870
	Smead, Charles, *et al.* (*See* Pike, Charles F., assignor.)	
109,480	Smedberg, James E., San Francisco, Cal. Generating gas from hydrocarbons	Nov. 22, 1870
	Smedley, Joseph Valentine. (*See* Palliser, W., assignor.)	
108,400	Smeed, Ebin C., Lawrence, Mass. Dumping-car. (Antedated Oct. 1, 1870)	Oct. 18, 1870
109,846	Smeed, William, assignor to self and Glen & Hall Manufacturing Company, Rochester, N. Y. Shaft-coupling	Dec. 6, 1870
	Smellie, William. (*See* Findlay, James, assignor.)	
	Smellie, William, *et al.* (*See* Sacre, Perkins & Smellie.)	
110,505	Smiles, James, England. Breech-loading fire-arm	Dec. 27, 1870

Alphabetical list of patentees for the year 1870—Continued.

No.	Name, residence, and invention or discovery.	Date.
	Smiley, George W., *et al.* (*See* Lloyd, George A., assignor.)	
102,006	Smith, Addison, Perrysburgh, Ohio. Sawing-machine. (Antedated April 23, 1870)	May 3, 1870
102,526	Same.....Children's dining-chair. (Antedated Oct. 8, 1870)	Oct. 18, 1870
99,497	Smith, Alfred E., Bronxville, N. Y. Carriage-axle box	Feb. 8, 1870
3,991	Same.....Carriage-axle (Reissue)	May 17, 1870
105,366	Same.....same	July 12, 1870
106,086	Same.....Manufacture of carriage-axles	Aug. 2, 1870
107,112	Same.....Carriage-axle	Sept. 6, 1870
109,681	Same.....Axle for carriages	Nov. 29, 1870
102,527	Smith, Alpheus D., Grafton, Ohio. Lamp-chimney cleaner	Oct. 18, 1870
99,250	Smith, Amor, Baltimore, Md. Process for rendering lard, tallow, and other fats	Jan. 25, 1870
99,251	Same.....Process for treating fish to obtain oils and fertilizers	Jan. 25, 1870
99,252	Same.....Apparatus for rendering fatty animal matter	Jan. 25, 1870
99,253	Same.....Process for rendering rancid animal fats, and for disinfecting the gases evolved	Oct. 25, 1870
108,643	Smith, Andrew C., Roaring Falls, Tenn. Cotton-seed planter	Mar. 29, 1870
	Smith, Andrew H., and Frederick A. Stohlmann. (*See* Stohlmann & Smith.)	
101,321	Smith, Anna M., Pittsburgh, Pa. Washing-machine	Oct. 25, 1870
108,644	Smith, Arthur C., Joyner's Depot, N. C. Land-marker for corn-planting	Dec. 27, 1870
110,506	Same.....Plow	
	Smith, Arthur M., *et al.* (*See* Hamel & Holden, assignors.)	
109,461	Smith, Ashbel G., and William Pettingell, assignors to selves and William H. Fowler, Painesville, Ohio. Insulator for telegraph-wires. (Antedated Nov. 11, 1870)	Nov. 22, 1870
108,197	Smith, Augustus, Pontiac, Ill. Combined corn harvester and husker	Oct. 11, 1870
110,301	Smith, Austin, Valmont, Col. Ter. Grain-scourer	Dec. 20, 1870
105,006	Smith, Bartemus, Hood Swamp, N. C. Cotton-seed planter	July 5, 1870
110,597	Smith, Barzillai C., Burlington, N. J. Combined tramway and pavement	Dec. 27, 1870
109,556	Smith, Benedict J., Osage Mission, Kans. Churn	Nov. 22, 1870
98,898	Smith, Benjamin B., and J. Campbell Harris, Philadelphia, Pa. Apparatus for desiccating substances	Jan. 11, 1870
99,361	Smith, Bryan, Falkland, N. C. Cotton-seed planter	Feb. 1, 1870
101,671	Smith, Calvin D., assignor to self and Peter C. Sawyer, Templeton, Mass. Chair-seat	April 5, 1870
108,528	Smith, Charles E., Columbus, Ohio. Vapor-burner	Oct. 18, 1870
102,169	Smith, Charles E., and Henry J. Rice, Columbus, Ohio. Vapor-burner	April 19, 1870
106,629	Same.....Vapor-chandelier	Aug. 23, 1870
106,630	Same.....Vapor-burning street-lamp	Aug. 23, 1870
	Smith, Charles F., *et al.* (*See* Richtenstein, Joseph, assignor.)	
	Smith, Charles F., and Henry C. Comegys. (*See* Klaucke, Alexander A. C., assignor.)	
107,731	Smith, Charles G., assignor to American Metallic-Tubing Company, Chelsea, Mass. Metallic tubing	Sept. 27, 1870
101,406	Smith, Charles Hart, Baltimore, Md. Process of preparing paper for roofing and similar purposes	Mar. 29, 1870
	Smith, C. Hart, *et al.* (*See* Roberts, John, assignor.)	
106,415	Smith, Charles H., assignor to self and Theodore D. Day, Brooklyn, N. Y. Tatting-shuttle	Aug. 16, 1870
101,322	Smith, Charles J., Norfolk, Va. Bolt for safety-stoves for cars	Mar. 29, 1870
103,672	Same.....Safety-stove	May 31, 1870
107,113	Smith, Charles S., Seneca Falls, N. Y. Railway-switch	Sept. 6, 1870
99,641	Smith, Chester F., Torrington, Conn. Toy-pistol	Jan. 4, 1870
99,393	Smith, Christopher D., Bridgeport, Conn. Gaff-block for vessels. (Antedated Jan. 20, 1870)	Feb. 1, 1870
99,617	Smith, C. Shaler, C. H. Latrobe, and Frederick H. Smith, assignors to Smith, Latrobe & Co., Baltimore, Md. Bridge	Jan. 18, 1870
	Smith, C. W. M., *et al.* (*See* Farrington, George K., assignor.)	April 12, 1870
101,932	Smith, David Francis, Sullivan, N. H. Paper collar	Sept. 20, 1870
107,555	Smith, DeWitt C., Montgomery, Ill. Machine for dovetailing window-sash	Aug. 23, 1870
106,735	Smith, Dwight L., Waterbury, Conn. Pocket sun-dial	Jan. 11, 1870
98,717	Smith, Edmund, Germany. Pipe-coupling	Oct. 4, 1870
	Smith, Edward P. (*See* Lafferty, Robert M., assignor.)	
4,367	Smith, Edward T., and Joseph S. Winston, New York, N. Y. Coffin (Design)	July 5, 1870
105,137	Smith, Elias, Cedar Falls, Iowa. Window sash and fastener	Feb. 1, 1870
99,363	Smith, E. S., Macomb, Ill. Wind-wheel	July 26, 1870
105,734	Smith, Fenwick, Austin, Texas. Side-saddle	Oct. 4, 1870
107,908	Smith, Fillmore M., Syracuse, N. Y. Temporary paper-binder	Oct. 11, 1870
108,198	Same.....Purifying brine for the manufacture of salt	
	Smith, Frank W., and James K. McCullough. (*See* McCullough & Smith.)	
	Smith, Franklin, and Lewis F. Whiting. (*See* Whiting & Smith.)	
105,857	Smith, Franklin H., Burke, Vt. Safety measuring-funnel	July 26, 1870
106,087	Smith, Franklin R., Ilion, N. Y. Hay-tedder	Aug. 2, 1870
109,351	Smith, Fred. D., Chicago, Ill. Sawing-machine	Nov. 15, 1870
103,360	Smith, Frederick H., Baltimore, Md. Rolled iron or steel column	May 24, 1870
101,580	Smith, Frederick J., Chicago, Ill. Die for making chord-bar heads	April 5, 1870
99,115	Smith, Friend W., jr., Bridgeport, Conn. Padlock	Jan. 25, 1870
99,116	Same.....same	Jan. 25, 1870
100,564	Same.....Toy money-box	Mar. 8, 1870
	Smith, F. W., jr., *et al.* (*See* Eggs, Frederick, assignor) (Reissue.)	

Alphabetical list of patentees for the year 1870—Continued.

No.	Name, residence, and invention or discovery.	Date.
4,171	Smith, Garrettson, and Henry Brown, assignors to C. S. and Henry Francis, H. L. and J. A. Buckwalter, and John Sheeler, Philadelphia, Pa. Cooking-stove (Design)	June 21, 1870
4,172	Same.....Heating-stove (Design)	June 21, 1870
109,847	Smith, George, Syracuse, N. Y. Milking-stool	Dec. 6, 1870
	Smith, George, and John C. De Lang. (*See* Powell, Thomas J., assignor.)	
99,963	Smith, George A., Philadelphia, Pa. Feeding-mechanism for sewing-machines	Feb. 15, 1870
102,170	Smith, George A., and Edward L. Miller, Philadelphia, Pa. Sewing-machine	April 19, 1870
99,018	Smith, George C., assignor to New York Rubber Company, Fishkill, N. Y. Rubber-hose	Jan. 18, 1870
	Smith, George C., and James R. Bird. (*See* Bird & Smith.)	
107,416	Smith, George H., Des Moines, Iowa. Cultivator	Sept. 13, 1870
102,960	Smith, George Hamilton, assignor to self and Stephen Gay, New Orleans, La. Medical compound	May 10, 1870
103,095	Smith, George Hand, New York, N. Y. Cement for pavement, walks, roofs, &c. (Antedated May 4, 1870)	May 17, 1870
105,967	Same.....Manufacture of iron and steel	July 12, 1870
4,051	Smith, George L., and Daniel W. Kissam, Bridgeport, Conn. Lamp-shade. (Design)	May 17, 1870
104,366	Smith, George L., assignor to Bridgeport Brass Company, Bridgeport, Conn. Lamp-burner	June 14, 1870
101,323	Smith, George W., Norwich, Conn. Water-meter	Mar. 29, 1870
99,487	Smith, Gibson, Groton Junction, Mass. Compound for coloring and preserving the hair	Feb. 1, 1870
109,773	Smith, Gibson, assignor to self and Charles W. Bannon, Groton Junction, Mass. Perfumery	Nov. 29, 1870
101,776	Smith, Hamilton Erastus, Newark, N. J. Multiple sponge	April 12, 1870
101,777	Same.....Mop, mat, and wiping-cushion	April 12, 1870
103,096	Same.....New York, N. Y. Columnar mattress. (Antedated May 3, 1870)	May 17, 1870
99,230	Smith, Hamilton E., and Garret F. Speer, assignors to Mary Jane Smith, New York, N. Y. Washing-machine	Nov. 15 1870
104,783	Smith, Harlow M., Peoria, Ill. Mill-gearing	June 28, 1870
100,939	Smith, Henry, jr., Milwaukee, Wis. Manhole-plate for tannery stuffing-plate	Mar. 15, 1870
109,067	Same.....Sewer catch-basin cover	Nov. 8, 1870
105,603	Smith, Henry C., assignor to American Mortising-Machine Company, Lawrence, Kans. Mortising-machine	July 19, 1870
	Smith, H. D., & Co. (*See* Morse, F. B., assignor) (Thirteen cases.)	
101,171	Smith, Henry Julius, Boston, Mass. Electro-hydrocarbon gas-machine	Mar. 22, 1870
104,217	Same.....Electric-fuse head	June 14, 1870
107,201	Same.....Torpedo for oil-wells	Sept. 6, 1870
109,957	Smith, Henry W., Rainsburgh, Pa. Sleigh-brake	Dec. 6, 1870
105,268	Smith, Hiram, Norwalk, Ohio. Pipe-joint	July 12, 1870
100,460	Smith, Horace S., and William Hughes, Bloomington, Ill. Machine for cleaning and polishing tubes	Mar. 1, 1870
105,007	Smith, Horace S., and William D. Whitmore, Bloomington, Ill. Machine for turning crank-pins	July 5, 1870
102,327	Smith, Hugh, West Gray, Maine. Sleigh	April 26, 1870
108,199	Smith, Hugh, San Francisco, Cal. Wash for the cure of scab in sheep, &c	Oct. 11, 1870
109,352	Smith, Hugh, Moline, Ill. Plow	Nov. 15, 1870
99,793	Smith, Ira O., Muskegon, Mich. Furnace for burning edgings, saw-dust, &c	Feb. 15, 1870
3,932	Smith, Irulus R., assignor to Julius Gerber, Rockford, Ill. Cultivator. (Reissue)	April 26, 1870
102,443	Smith, Isaac, New York, N. Y. Connection for lead-pipe joints	April 26, 1870
100,201	Smith, Isaac T., Richmond, Va. Brake and ratchet for elevating and lowering buckets	Feb. 22, 1870
	Smith, Jacob H., and John H. Barr. (*See* Barr & Smith.)	
100,334	Smith, James, Richmond, Ind. School-desk	Mar. 1, 1870
102,875	Smith, James, Troy, N. Y. Flax-puller	May 10, 1870
103,515	Smith, James, New Haven, Conn. Drilling-machine	May 24, 1870
106,515	Smith, James, Altoona, Pa. Spark-arrester	Aug. 16, 1870
	Smith, James, *et al.* (*See* Vicars, Vicars & Smith.)	
	Smith, James Aiken. (*See* McArthur, William, assignor.)	
107,202	Smith, James D., Washington, D. C. Numbering-machine	Sept. 6, 1870
110,567	Smith, James E., assignor to self and Julius Ludwig, Chicago, Ill. Cabinet for sewing-machines	Dec. 27, 1870
109,840	Smith, James H., Newark, Ohio. Apparatus for the manufacture of gas from hydrocarbons	Dec. 6, 1870
104,784	Smith, James L., and William H. Nicodemus, Frederick, Md. Grain fanning and separating machine	June 28, 1870
106,645	Smith, James K. P., assignor to self and L. S. Shuler, Jeffersonville, Ind. Cider-mill	Oct. 25, 1870
103,936	Smith, James L., Pemberton, N. J. Corn-dropper	June 7, 1870
104,071	Smith, James M., Seymour, Conn. Grater	June 7, 1870
104,505	Smith, James S., Middletown, Conn. Twine-holder	June 21, 1870
107,556	Same.....Twine-holder stand	Sept. 20, 1870
99,019	Smith, James T., Washington, D. C. Number-plate for doors, &c	Jan. 18, 1870
108,943	Smith, Jared W., Hartford, Conn. Grooving-machine	Nov. 1, 1870
102,607	Smith, Jeremiah P., Hummelstown, Pa. Combined corn-sheller and vegetable-slicer	May 3, 1870
99,899	Smith, Joel F., Forest Hill, Cal. Medicine or liniment for treating nervous diseases	Jan. 11, 1870

Alphabetical list of patentees for the year 1870—Continued.

No	Name, residence, and invention or discovery.	Date.
105,599	Smith, John, Boston, Mass. Interfering-pad for horses	Aug. 2, 1870
108,401	Smith, John, St. Paul, Minn. Gymnastic-apparatus	Oct. 18, 1870
3,930	Smith, John, assignor to Hartford Carpet Company, Enfield, Conn. Carpet-pattern (Design)	Mar. 22, 1870
3,931	Same Carpet-pattern (Design)	Mar. 22, 1870
108,950	Smith, John, assignor to Henry and Hamilton Disston, Philadelphia, Pa. Saw.	Oct. 4, 1870
	Smith, John, and Henry Robinson. (*See* Robinson & Smith.)	
104,307	Smith, John, and Godfroy Joitha, Newark, N. J. Crank-motion for engines	June 14, 1870
109,958	Smith, John A., Brooklyn, N. Y. Cork-screw	Dec. 6, 1870
	Smith, John B., and James D. Pierce. (*See* Pierce & Smith.)	
107,557	Smith, John B., Samuel A. Greely, and Arthur Campaigne, Chicago, Ill. Blind-slat operator	Sept. 20, 1870
102,981	Smith, John C., Lebanon, Pa. Washing-soap	May 10, 1870
102,608	Smith, John C., assignor to self and John H. Poppy, Rochester, N. Y. Culinary vessel	May 3, 1870
	Smith, John D., and David Morrison. (*See* Morrison & Smith.)	
102,982	Smith, John E., Waterbury, Conn. Hat-check	May 10, 1870
4,428	Same Buckle (Design)	Oct. 18, 1870
104,506	Smith, John E., Buffalo, N. Y. Meat-cutter. (Antedated June 15, 1870)	June 21, 1870
108,069	Smith, John E. and Charles L., South Dedham, Mass. Tanning-vat	Oct. 4, 1870
104,218	Smith, John F., and Harrison Underwood, Westmoreland, N. Y. Root-cutter	June 14, 1870
105,901	Smith, John Harry, Brooklyn, N. Y. Cake-pan	Aug. 2, 1870
105,993	Same same	Aug. 2, 1870
104,785	Smith, John Henry, Allegheny City, Pa. Manufacture of steel-headed horse-shoe-nails	June 28, 1870
99,020	Smith, John Joseph Charles, assignor to the Metallic Compression Casting Company, Somerville, Mass. Bell-pull	Jan. 18, 1870
4,129	Smith, John Joseph Charles, assignor to the Metallic Compression Casting Company, assignor to the Russell & Erwin Manufacturing Company, Somerville, Mass. Bell-pull knob (Design)	June 7, 1870
4,130	Same same (Design)	June 7, 1870
4,131	Same Door-knob (Design)	June 7, 1870
4,132	Same same (Design)	June 7, 1870
4,133	Same same (Design)	June 7, 1870
4,134	Same same (Design)	June 7, 1870
4,135	Same same (Design)	June 7, 1870
4,136	Same same (Design)	June 7, 1870
4,137	Same same (Design)	June 7, 1870
4,138	Same same (Design)	June 7, 1870
109,353	Smith, John M., Jerseyville, Ill. Draught-device for harvesters	Nov. 15, 1870
	Smith, John M. (*See* Baker, Haydn M., assignor.)	
	Smith, John M., and Josiah M. Read. (*See* Read & Smith.)	
106,089	Smith, John O., Reiley, Ohio. Portable fence	Aug. 2, 1870
	Smith, John S. (*See* Case, Daniel W., assignor.)	
99,720	Smith, John W. X., Independence, Iowa. Churn	Feb. 8, 1870
104,219	Smith, John Y., Pittsburgh, Pa. Metallurgic furnace for iron and steel. (Antedated June 3, 1870)	June 14, 1870
104,220	Same Process for purifying and reducing magnetic ores of iron. (Antedated June 3, 1870)	June 14, 1870
104,221	Same Magnetic machine for cleaning and separating ores of iron. (Antedated June 3, 1870)	June 14, 1870
109,354	Same Machine for separating magnetic iron ores from other substances	Nov. 15, 1870
109,355	Same Furnace and process for treating iron and other ores	Nov. 15, 1870
107,989	Smith, J. Hyatt, Brooklyn, N. Y. Reading-glasses	Oct. 4, 1870
109,462	Smith, Jonas P., Pioneer, Pa. Tube-drawer for deep wells	Nov. 22, 1870
109,463	Same same	Nov. 22, 1870
109,464	Same Sucker-rod drawer for wells	Nov. 22, 1870
107,732	Smith, Jonathan L., Liberty Centre, Ohio. Bee-hive	Sept. 27, 1870
103,381	Smith, J. Nottingham, Jersey City, N. J. Brick-press	May 24, 1870
105,379	Smith, J. Plummer, assignor to self and Henry Chandler, Buffalo, N. Y. Liquid-meter	July 12, 1870
109,940	Smith, Joseph T., Louisville, Ky. Railroad-conductors' ticket-case	Mar. 15, 1870
108,841	Smith, Joseph William, Boston, Mass. Suspenders	Nov. 1, 1870
	Smith, Joseph W., and Thomas O. Potter. (*See* Greely, B. J., assignor.)	
106,980	Smith, Justin Malancon, Haddam, Conn. Plow	Aug. 30, 1870
	Smith, Leander E., and Lucius Jordan. (*See* Jordan & Smith.)	
	Smith, Leonard O., *et al.* (*See* Armstrong, Benjamin A., assignor.)	
	Smith, Leroy H., and James O. Lobdell. (*See* Lobdell & Smith.)	
106,631	Smith, Levi, Chester Centre, Mass. Seed-planter	Aug. 23, 1870
105,369	Smith, Levi F., Philadelphia, Pa. Gauge-cock	July 19, 1870
107,114	Same Low-water and high-steam indicator	Sept. 6, 1870
107,898	Same Lubricator	Sept. 27, 1870
109,950	Same Combined high and low water indicator	Dec. 6, 1870
107,970	Smith, Loyal J., assignor to self and H. D. Blake, New York, N. Y. Adjustable time-table	Oct. 4, 1870
107,971	Same Car-coupling	Oct. 4, 1870
108,402	Same Railway chair and clamp	Oct. 18, 1870
104,388	Smith, Luther, assignor to James A. Pevey, Lowell, Mass. Log-measuring scale	June 14, 1870
103,208	Smith, Luther L., Brooklyn, N. Y. Negative plate for a "Smee" battery	Feb. 22, 1870
99,426	Smith, Marshall P., Baltimore, Md. Drier	Feb. 1, 1870
107,417	Same same	Sept. 13, 1870

Alphabetical list of patentees for the year 1870—Continued.

No.	Name, residence, and invention or discovery.	Date.
109,068	Smith, Marshall P., Baltimore, Md. Drying and preserving apples	Nov. 8, 1870
107,979	Smith, Menzo A., Middlefield, N. Y. Corn-harvester	Oct. 4, 1870
110,081	Smith, Michael, assignor to Russell & Erwin Manufacturing Company, Somerville, Mass. Process of removing earthy matters from bronze and other castings	Dec. 13, 1870
101,324	Smith, Myron H., Lawton, Mich. Grain-separator	Mar. 29, 1870
103,250	Smith, Oliver C., and Theodore S. Doll, Menallen, Pa. Sawing-machine	May 17, 1870
101,057	Smith, Olney L., Providence, R. I. Dumping-car	Mar. 22, 1870
101,173	Smith, Orson H., and Willett Fisher, Marathon, N. Y. Metallic corner-support for carriage boxes and seats	Mar. 22, 1870
106,216	Smith, Orson W., Flint, Mich. Apparatus for carrying grain, plaster, &c., for sowing	Aug. 9, 1870
102,058	Smith, Othniel J., Wauwatosa, Wis. Wrench	April 19, 1870
105,004	Same same	July 19, 1870
	Smith, P. (*See* Davis, Jarvis, assignor.)	
	Smith, Palmer C., *et al.* (*See* Haswell & Irwin, assignors.)	
110,302	Smith, Peter E., Scotland Neck, N. C. Cultivator	Dec. 20, 1870
4,008	Smith, Richard, assignor to Mackellar, Smiths & Jordan, Philadelphia, Pa. Type (Design)	May 3, 1870
4,213	Same same (Design)	July 5, 1870
4,267	Same same (Design)	July 26, 1870
4,289	Same same (Design)	Aug. 9, 1870
101,173	Smith, Richard Alfred, Atchison, Kans. Lime-kiln	Mar. 22, 1870
	Smith, Robert A., Newburyport, Mass. Blast-apparatus for furnaces	Nov. 15, 1870
106,416	Smith, Rodney L., deceased, by Elisha Turner, executor, Wolcottville, Conn. Curtain-fixture	Aug. 16, 1870
109,360	Smith, Roscoe J., North Haven, Me. Tackle-block. (Antedated Nov. 5, 1870)	Nov. 15, 1870
4,021	Smith, Roswell T., and Joseph K. Priest, assignors to selves, William Earl, and John G. Blunt, Nashua, N. H. Device for shearing and clipping horses and other animals (Reissue)	June 7, 1870
104,232	Smith, Roswell T., Joseph K. Priest, and William Earl, Nashua, N. H. Animal-shearing machine	June 14, 1870
102,171	Smith, Ruth N., New York, N. Y. Churn-power	April 19, 1870
110,165	Smith, Samuel F., assignor to Osgood, Smith & Co., Indianapolis, Ind. Sand-papering machine	Dec. 13, 1870
	Smith, Samuel F., and Jacob Woodburn. (*See* Woodburn & Smith.)	
105,504	Smith, Samuel H., Altoona, Pa. Railway-rail chair	July 19, 1870
98,642	Smith, Silas, West Stockholm, N. Y. Stump-extractor and rock-lifter	Jan. 4, 1870
99,117	Smith, S. Curtis, Boston, Mass. Safety-stop for watches	Jan. 25, 1870
102,193	Smith, Solomon P., Waterford, N. Y. Horse hay-rake	April 19, 1870
103,789	Same same	May 31, 1870
109,361	Smith, Stephen J., Farmington, N. J. Hay-rack for wagons. (Antedated Oct. 29, 1870)	Nov. 15, 1870
108,646	Smith, Stephen M., Canal Dover, Ohio. Washing-machine	Oct. 25, 1870
107,300	Smith, Stephen N., assignor to the Union Eyelet Company, Providence, R. I. Shoe-stay stock, and machine for making the same	Sept. 13, 1870
110,508	Same Eyelet-machine	Dec. 27, 1870
4,516	Smith, Theron L., Attleborough, Mass. Bracelet (Design)	Dec. 13, 1870
101,672	Smith, Thomas, jr., Boston, Mass. Tea-pot	April 5, 1870
108,061	Same Earthen tea-pot	Oct. 4, 1870
102,983	Smith, Thomas Franklin, New York, N. Y. Medicated soap	May 10, 1870
103,251	Smith, Thomas H., Urbana, Ohio. Time-alarm	May 17, 1870
103,388	Smith, Thomas H., Clyde, N. Y. Seed-planter	May 24, 1870
109,465	Smith, Thomas Jordan, Cornersville, Miss. Wheel for vehicles	Nov. 22, 1870
104,507	Smith, Thomas S., Cincinnati, Ohio. Method of making files	June 21, 1870
100,941	Smith, Thomas S., assignor to self and O. H. P. Anderson, Cincinnati, Ohio. Corn-husker	Mar. 15, 1870
99,999	Smith, Timothy, assignor to Luther L. and Stoughton B. Holden, Boston, Mass. Hinge	Feb. 15, 1870
99,118	Smith, T. J., Holly Springs, Miss. Combined plow, planter, and cultivator	Jan. 25, 1870
99,021	Smith, T. Rice, and James Mitchell, Jacksonville, Ill. Clothes-sprinkler	Jan. 18, 1870
102,173	Smith, Walter, Weston, Mass. Hay-tedder	April 19, 1870
	Smith, Westcott & Co. (*See* Little & Westcott, assignors.)	
106,736	Smith, Willard H., New York, N. Y. Vapor-burner	Aug. 23, 1870
	Smith, William, New York, N. Y. Corded elastic fabric (Disclaimer filed)	Jan. 24, 1870
99,963	Smith, William, Cicero, Ind. Hot-air furnace	Feb. 15, 1870
109,203	Smith, William, Philadelphia, Pa. Steam-engine governor	Feb. 22, 1870
102,174	Same Governor-valve	April 19, 1870
104,072	Smith, William, Allegheny City, Pa. Machine for cleaning cast-iron pipe	June 7, 1870
106,080	Smith, William, San Francisco, Cal. Water-closet receiver	Aug. 9, 1870
108,647	Smith, William, Pittsburgh, Pa. Molding pipe	Oct. 25, 1870
105,389	Smith, William, and Hiram D. Rogers, assignors to Hiram D. Rogers, Cincinnati, Ohio. Method of producing price-current sheets. (Antedated Jan. 26, 1870)	July 12, 1870
109,468	Smith, William, assignor to self and Herman Grove, Tomah, Wis. Stump-extractor	Nov. 22, 1870
107,733	Smith, William A., Dresserville, N. Y. Saw-set	Sept. 27, 1870
108,403	Smith, William B., Oskaloosa, Iowa. Meal-chest or bin	Oct. 18, 1870
105,008	Smith, William Cameron, Warrensburgh, Mo. Construction of dental impression-molds	July 5, 1870
107,115	Smith, William C., New Britain, Pa. Safety-truck and car-brake	Sept. 6, 1870
101,300	Smith, William E., Chicago, Ill. Graduated rule and pattern for tailors	Mar. 29, 1870

Alphabetical list of patentees for the year 1870—Continued.

No.	Name, residence, and invention or discovery.	Date.
	Smith, William Grow. (*See* Grow, Henry, assignor.)	
99,721	Smith, William H., Charlestown, Mass. Cartridge	Feb. 8, 1870
107,827	Smith, William H., Jackson, Pa. Shovel	Sept. 27, 1870
103,516	Smith, William James, assignor to self and George W. May, Trevillians, Va. Truss	May 24, 1870
99,964	Smith, William M., Augusta, Ga. Cotton-bale tie. (Antedated Feb. 10, 1870)	Feb. 15, 1870
99,965	Same.....Table-caster. (Antedated Feb. 5, 1870)	Feb. 15, 1870
106,417	Same.....Cotton and hay press	Aug. 16, 1870
110,598	Smith, William Merion, Columbus, Ohio. Chair-frame	Dec. 27, 1870
98,643	Smith, William P. X., New York, N. Y. Toy savings-bank	Jan. 4, 1870
101,673	Smith, William R., Branford, Conn. Reversible latch	April 5, 1870
99,733	Smith, William T., assignor to self and W. T. Maher, West Zanesville, Ohio. Sewing-machine	Feb. 8, 1870
106,418	Smith, William W., Cincinnati, Ohio. Electro-magnet	Aug. 16, 1870
106,225	Smith, Willis B., Plantsville, Conn. Dye for forging carriage-shackle blanks	Aug. 9, 1870
101,325	Smyser, Jacob H., Pittsburgh, Pa. Lubricating-compound	Mar. 29, 1870
99,469	Smythe, Job, Willing, N. Y., and Chauncey Dexter, Independence, N. Y. Stove-pipe shelf	Feb. 1, 1870
101,530	Snavely, Benjamin H., Penn Township, Pa. Separator	April 5, 1870
107,973	Snead, Charles W., Milledgeville, Ga. Plow	Oct. 4, 1870
106,967	Snead, Samuel P., Louisville, Ky. Sky-light	Aug. 30, 1870
108,404	Snedaker, Warren B., Phœnix, N. Y. Car-coupling	Oct. 18, 1870
103,709	Snediker, Luke S., assignor to self, William Banzett, and James Sharkey, New York, N. Y. Apparatus for rectifying spirits	May 31, 1870
108,842	Snediker, William E., New York, N. Y. Liquid-meter. (Antedated Oct. 29, 1870)	Nov. 1, 1870
102,984	Sneider, Charles Edward, assignor of one-half interest to Josias Pennington, Baltimore, Md. Shot-cartridge	May 10, 1870
100,204	Sneider, Elias F., West Penn, Pa. Railway-car coupling. (Antedated Feb 16, 1870)	Feb. 22, 1870
	Snell, A. G. (*See* Chapman, Charles H., assignor.)	
101,391	Snell, Daniel, Little Falls, N. Y. Padlock	Mar. 29, 1870
104,786	Snell, Peter M. and Oscar, Williamsburgh, Ohio. Pump	June 28, 1870
106,226	Same.....same	Aug. 9, 1870
	Snell, Prince A. (*See* Tucker, William, assignor.)	
	Snipes, Jesse L. (*See* Lyon, Virgil H., assignor.)	
3,919	Snodgrass, Robert M., Pittsburgh, Pa. Baggage-rack.....(Design)	Mar. 15, 1870
100,080	Snodgrass, William, assignor to self and J. Marcellus Browne, Macomb, Ill. Portable gas-generator	Feb. 22, 1870
	Snook, G. W. (*See* McKelvey, S. P., assignor.)	
104,787	Snow, Charles P., assignor to Sterne F. Aspinwall, Freeport, Ill. Broom-holder	June 28, 1870
	Snow, George H., and Peter Falardo. (*See* Falardo & Snow.)	
3,919	Snow, George K., Watertown, Mass. Paper-box.....(Design)	Mar. 22, 1870
4,146	Same.....Collar-box.....(Design)	June 7, 1870
110,166	Snow, Heman S., West Meriden, Conn. Self-acting valve or cut-off for liquid cans	Dec. 13, 1870
100,942	Snow, Hervey D., Bennington, Vt. Water-wheel regulator. (Antedated March 11, 1870)	Mar. 15, 1870
109,202	Snow, Thomas, assignor of one-half interest to H. L. Spencer, Social Circle, Ga. Washing-machine	Nov. 15, 1870
103,097	Snow, William B., Chicago, Ill. Sleeping-car berth	May 17, 1870
106,737	Snow, William B., New York, N. Y. Means for adjusting car-wheels to different gauges	Aug. 23, 1870
	Snowden, George T., *et al.* (*See* Snowdon, Snowden & Lynn.)	
98,910	Snowdon, Thomas, George T. Snowden, and Isaac V. Lynn, Pittsburgh, Pa. Steam-pump	Jan. 11, 1870
109,960	Snyder, Adam, Packard, Ohio. Shifting shovel-plows	Dec. 6, 1870
103,937	Snyder, August, assignor to Atwood & McCaffrey, Pittsburgh, Pa. Valve	June 7, 1870
107,828	Snyder, Cyrus, Middletown, Ill. Plow	Sept. 27, 1870
	Snyder, Eugene, and William A. Middleton. (*See* Reisinger, George W., assignor.)	
	Snyder, George S. (*See* Perkins, Harford J., assignor.)	
101,531	Snyder, H. F. and G. S., Williamsport, Pa. Saw-mill	April 5, 1870
110,092	Snyder, Henry F., Williamsport, Pa. Safety-valve	Dec. 13, 1870
108,529	Snyder, Ira W., Dryden, N. Y. Water-wheel	Oct. 18, 1870
110,083	Snyder, Israel, and Peter C. Garrett, Cedar Rapids, Iowa. Base-burning stove	Dec. 13, 1870
103,363	Snyder, James P., Brooklyn, N. Y. Electro-magnetic indicator for burglar-alarms and for other purposes	May 24, 1870
107,301	Same.....Automatic circuit-closer for electro-magnetic burglar-alarms	Sept. 13, 1870
106,419	Snyder, John H., Troy, N. Y. Machine for making chain-links	Aug. 16, 1870
108,530	Same.....Machine for making horseshoes	Oct. 18, 1870
98,811	Snyder, Samuel M., Brady, Pa. Rotary engine	Jan. 11, 1870
100,943	Same.....Railway-gate	Mar. 15, 1870
105,993	Snyder, Silas Allen, Clarendon, N. Y. Metallic chair-seat	Aug. 2, 1870
103,985	Snyder, William B., assignor to self, James E. Dewhurst, and Robert Hubbard, Bridgeport, Conn. Vaginal syringe	May 10, 1870
103,938	Snyder, William B., and Robert Hubbard, Bridgeport, Conn. Sash-fastening	June 7, 1870
106,968	Snyder, William B., assignor to the Wheeler & Wilson Manufacturing Company Bridgeport, Conn. Apparatus for hemming, &c., for sewing-machines	Aug. 30, 1870
	Sofge, Ferdinand M., *et al.* (*See* Richards, Sofge & Richards.)	
99,119	Soggs, Henry, Columbus, Pa. Vegetable and fruit paring-knife	Jan. 25, 1870
110,167	Same.....Fruit and vegetable parer	Dec. 13, 1870

Alphabetical list of patentees for the year 1870—Continued.

No.	Name, residence, and invention or discovery.	Date.
101,532	Soley, William H., and George Stites, Philadelphia, Pa. Friction calender-rolls for paper	April 5, 1870
103,098	Solliday, Reuben, Allentown, Pa. Stove-grate	May 17, 1870
106,880	Solomon, James K. B., Rigglesville, Pa. Machine for bending wood	Aug. 30, 1870
109,961	Solomon, Joseph Jones, Philadelphia, Pa. Box for packing bottles	Dec. 6, 1870
106,738	Somers, Daniel M., assignor to Levi L. Tower, Brooklyn, N. Y. Suspension-ring	Aug. 23, 1870
106,291	Somers, George E., Waterbury, Conn. Cutter-head	Aug. 9, 1870
	Somers, Henry. (*See* Heald, H. J., assignor.)	
	Somerville, David M., *et al.* (*See* Comstock, Francis M., assignor.)	
101,533	Somerville, Thomas, assignor to self and Robert Leitch, Washington, D. C. Faucet	April 5, 1870
104,369	Somerville, William, Buffalo, N. Y. Interfering-pad for horses	June 14, 1870
99,254	Somes, Daniel E., Washington, D. C. Apparatus for preserving and freezing	Jan. 25, 1870
99,722	Same.....Device for ventilating and cooling or warming beds	Feb. 8, 1870
100,681	Same.....Apparatus for refrigerating and preserving	Mar. 8, 1870
100,682	Same.....Cooling and preserving tank	Mar. 8, 1870
100,683	Same.....Apparatus for cooling and preserving	Mar. 8, 1870
101,392	Same.....Cooling air and liquids	Mar. 29, 1870
102,986	Same.....Apparatus and process for refrigerating, preserving, and ventilating	May 10, 1870
108,531	Somes, Daniel E. and Frank C., Washington, D. C. Steam-heater	Oct. 18, 1870
	Sommer, M. M., and F. J. Herpers. (*See* Herpers & Sommer.)	
104,223	Soper, William, England. Breech-loading fire-arm	June 14, 1870
106,739	Soper, W. Horace, Baltimore, Md. Railway-car seat	Aug. 23, 1870
100,944	Sorel, Stanislas, assignor to John F. Wood, France. Manufacture of cement for artificial stone	Mar. 15, 1870
100,945	Same.....Manufacture of artificial stone	Mar. 15, 1870
103,517	Sorenson, Soren, assignor to self and Sophus and P. J. McKenzie Orting, Denmark. Preparation of artificial leather from scrap-leather, &c	May 24, 1870
	Sorrento Wood-Carving Company. (*See* Leavitt, Thomas, assignor.)	
98,891	Sory, Artaxerxes W., Prairie County, Ark. Current-water wheel	Jan. 18, 1870
	Soule, Charles and Richard, *et al.* (*See* Baylor, C. F., assignor.)	
107,302	Soule, Peter, Windsor, N. Y. Corn-planter	Sept. 13, 1870
	Soules, Blaise. (*See* Martin, Eugene, assignor.)	
	Southington Cutlery Company. (*See* Healy & Raymond, assignors.)	
101,674	Southwich, Christopher S., and David H. Baker, Newport, R. I. Nut-lock	April 5, 1870
98,527	Southwick, E. B., Mendon, Mich. Bag-string fastener	Jan. 4, 1870
	Southworth, Edward W. (*See* Whitehouse, A. S., assignor.)	
109,263	Southworth, Theodore J., Rochester, N. Y., and William H. Lawton, Elmira, N. Y. Tag. (Antedated Nov. 3, 1870)	Nov. 15, 1870
109,148	Spang, Jacob D., Dayton, Ohio. Apparatus for carbureting air	Nov. 8, 1870
110,303	Spang, William, Philadelphia, Pa. Type-casting machine	Dec. 20, 1870
102,723	Sparks, William E., assignor to Sargent & Co., New Haven, Conn. Reversible latch	May 3, 1870
104,370	Same.....Latch for cupboards	June 14, 1870
107,418	Same.....Cupboard-latch	Sept. 13, 1870
	Sparrow & Swan. (*See* Cook, Roswell F., assignor.)	
103,673	Spaulding, George H., Rockford, Ill. Grain-binder	May 31, 1870
105,009	Spaulding, James P., Williamsport, Pa. Well-filter	July 5, 1870
100,205	Speakman, Thomas S., Camden, N. J. Furnace	Feb. 22, 1870
101,933	Same.....Lubricating axle-boxes	April 12, 1870
101,174	Spear, Charles, New York, N. Y. Submarine tunnel	Mar. 22, 1870
106,881	Spear, Charles E., assignor to Eugene Humphrey, Gardiner, Me. Adding-machine	Aug. 30, 1870
100,946	Spear, Hatherly, Cape Elizabeth, Me. Combined current-wheel and condensing-engine	Mar. 15, 1870
103,518	Same.....Water-elevator	May 24, 1870
100,335	Spear, James, Philadelphia, Pa. Base-burning stove	Mar. 1, 1870
102,328	Same.....Coal-stove	April 26, 1870
106,632	Spear, Lewis H., Peekskill, N. Y. Preserving meat	Aug. 23, 1870
103,252	Spear, Robert, New Haven, Conn. Pipe for transmitting pneumatic currents for power	May 17, 1870
109,692	Spear, Samuel S., South Weymouth, Mass. Sleigh	Nov. 29, 1870
104,073	Spear, William, Cape Elizabeth, Me. Alarm for safes	June 7, 1870
110,599	Spears, Hardie, Snow Hill, N. C. Portable shield for infantry and artillery	Dec. 27, 1870
107,734	Spears, William, Jamestown, N. Y. Manufacture of hydrocarbon oil	Sept. 27, 1870
100,565	Spedden, Eugene, Astoria, Oreg. Riding-saddle	Mar. 8, 1870
108,843	Spedden, Robert R. and Harriet T., Astoria, Oreg. Cleaning-attachment for hoes	Nov. 1, 1870
	Speer, Garret F., and Hamilton E. Smith. (*See* Smith & Speer.)	
	Speer, Peter T., and William D. Russell. (*See* Baxter, William, assignor.)	
110,304	Speers, Noah W., Memphis, Tenn. Cotton-press. (Antedated Dec. 8, 1870)	Dec. 20, 1870
	Speers, William H. (*See* Elliott, William T., assignor.)	
100,336	Spellman, W. C., Hartford, Conn. Broom	Mar. 1, 1870
103,791	Same.....Providence, R. I. Broom-head	May 31, 1870
105,994	Spence, James F., Brooklyn, N. Y. Apparatus for carbureting air	Aug. 2, 1870
99,374	Spence, James F., Brooklyn, N. Y., and Lovisa D. Towsley, Newark, N. J. Apparatus for carbureting air	Jan. 25, 1870
107,635	Same.....Rotary air-wheel for gas-carbureters	Sept. 20, 1870
110,084	Spence, Peter, Great Britain. Manufacture of alum and fertilizers from mineral phosphates	Dec. 13, 1870
99,364	Spencer, Albert H., Providence, R. I. Clothes-wringer	Feb. 1, 1870
99,608	Same.....Laundry-bench	Feb. 8, 1870

Alphabetical list of patentees for the year 1870—Continued.

No.	Name, residence, and invention or discovery.	Date.
99,723	Spencer, Albert H., Providence, R. I. Locomotive-tender loader	Feb. 8, 1870
	Same. (*See* Wiswall, Samuel, assignor) (Reissue.)	
	Same. (*See* Young, Allen P., assignor.)	
100,206	Spencer, A. J., Middletown, Conn. Shifting-bar for sleighs	Feb. 22, 1870
	Spencer, Charles A. (*See* Clarke, Almon, assignor.)	
99,724	Spencer, Charles F., Rochester, N. Y. Button-fastener for shoes	Feb. 8, 1870
100,947	Spencer, Elihu, Elizabeth, N. J. Heating-attachment for steam-boilers	Mar. 15, 1870
107,419	Spencer, George H., assignor to self and Joshua B. Glenn, Cleveland, Ohio. Spoon	Sept. 13, 1870
107,420	Same. Finger-guard	Sept. 13, 1870
	Spencer, H. L. (*See* Snow, Thomas, assignor.)	
99,794	Spencer, J. Civilian, Phelps, N. Y. Engraving-machine	Feb. 15, 1870
	Spencer, John Frederick, and William Inglis. (*See* Inglis & Spencer.)	
106,882	Spencer, Lewis W., assignor to Peter Lorillard, New York, N. Y. Process for manufacturing plug-tobacco	Aug. 30, 1870
106,883	Same. Plug-tobacco machine	Aug. 30, 1870
107,829	Spencer, Naaman, jr., Eagle Point, Ill. Gang-plow	Sept. 27, 1870
105,269	Spencer, Thomas P., Jersey City, N. J. Packing-case for perfumery, &c. (Antedated June 28, 1870)	July 12, 1870
	Sperry, David R. (*See* Thickins, Richard W., assignor.)	
	Sperry, Edwin K., and Simeon Rogers. (*See* Rogers & Sperry.)	
30,022	Sperry, John, New York, N. Y. Picture-frame	Jan. 18, 1870
101,326	Sperry, Joseph, Charleston, Ill. Bed-bottom	Mar. 29, 1870
99,255	Speyer, Jacob W., Germany. Fertilizer	Jan. 25, 1870
103,384	Same. Sizing cotton and other fabrics	May 24, 1870
4,239	Spicer, George T., Charles H. Peckham, and William A. Spicer, Providence, R. I. Stove (Design)	July 19, 1870
105,735	Spicer, Pratt A., and Montgomery Crossman, Marshall, Mich. Automatic gate	July 26, 1870
105,010	Spicer, Wells, Summit County, Col. Ter. Apparatus for saving mercury from the washings of gold and silver ores	July 5, 1870
	Spicker, Ellis L. (*See* Harnly, Jacob H., assignor.)	
101,934	Spigelmyer, Linda, Hartleton, Pa. Child's body-brace and supporter	April 12, 1870
101,175	Spill, Daniel, England. Manufacture of xyloidine and its compounds	Mar. 22, 1870
105,011	Spiller, Oscar Max, Akron, Ohio. Medical compound for the cure of fever and ague	July 5, 1870
103,792	Spinney, William F., assignor to Gordon McKay, trustee, Lynn, Mass. Boot and shoe-heeling machine	May 31, 1870
99,023	Splitdorf, Henry, assignor to self and Jacob Weiss, New York, N. Y. Spring toy-ball	Jan. 18, 1870
101,779	Spoehr, Frederick, Philadelphia, Pa. Mechanism for operating the feeding-wheel in sewing-machines	April 12, 1870
	Spoehrer, H., *et al.* (*See* Heist, John, assignor.)	
102,329	Spooner, Charles Easton, and George Augustus Huddart, Wales. Railway-rail joint	April 26, 1870
107,830	Spooner, D. Brainerd, Syracuse, N. Y. Device for actuating the valve of fluid-meters	Sept. 27, 1870
99,365	Spooner, John A., and John Ellerby, Brooklyn, N. Y. Button	Feb. 1, 1870
	Spooner, Lysander, Boston, Mass. Elastic bottom for chairs and other articles. (Extension)	May 25, 1870
		Sept. 13, 1870
107,421	Sprague, Alvah J., Springfield, Mo. Chimney	Sept. 13, 1870
	Sprague, Amasa. (*See* Bristow, Thomas, assignor) (Two cases.)	
105,270	Sprague, Andrew J., Toledo, Ohio. Brick-repressing machine	July 12, 1870
	Sprague, Chandler. (*See* Sanford, Joseph Henry, assignor.)	
104,896	Sprague, Elonzo, and George C. Belt, Bridgeton, Ind. Animal-trap	June 28, 1870
109,774	Sprague, Henry L., and Jacob N. Guyon, Tottenville, N. Y. Wash-boiler	Nov. 29, 1870
99,490	Sprague, J. G., Lexington, Ill. Combined hedge-trimmer and stalk-cutter	Feb. 1, 1870
	Sprague, Richard T. and Charles D. (*See* Duval, Jules, assignor.)	
	Sprague, Thomas S., *et al.* (*See* Eberts, Hermann F., assignor.)	
	Same. (*See* Howell, Daniel Y., assignor.)	
98,992	Sprague, Watson N., Keene, N. H. Plant-protector	Jan. 18, 1870
103,793	Spring, Charles, Hyde Park, Mass., and Andrew Spring, Weston, Mass. Steam-generator	May 31, 1870
101,534	Spring, S. B., Geneva, Ohio. Soda-fountain	April 5, 1870
4,230	Spring, Solomon C., Bristol, Conn. Clock-case front (Design)	Aug. 9, 1870
109,557	Springer, Uriah A., Pontiac, Ill. Bee-hive	Nov. 29, 1870
101,780	Springer, Ezra, Davis, Ill. Apparatus for moving cars	April 12, 1870
102,600	Springer, George A., Chicago, Ill. Roll for making rails for street-railways	May 3, 1870
101,327	Springer, Samuel, Chicago, Ill. Bed-frame	Mar. 29, 1870
100,664	Springer, Theodor G., St. Louis, Mo. Gas-machine	Mar. 8, 1870
100,264	Same. Feeding hydrocarbon liquids to a hot gas-retort	Nov. 15, 1870
100,685	Sprinkle, David A., Leoti, Ind. Machine for bending felloes	Mar. 8, 1870
	Sprogle, Daniel M. (*See* Hunt, Ralph, assignor.)	
110,509	Sprout, Ariel B., Muncy, Pa. Buck-saw	Dec. 27, 1870
	Squier, Daniel, and David H. Metcalf. (*See* Metcalf & Squier.)	
101,781	Squier, John H., and Ezra J. Warner, Newark, N. J. Picture-nail	April 12, 1870
99,966	Squier, Wesley, Edon, Ohio. Horse-rake	Feb. 15, 1870
	Squire, John J., De Soto, Mo. Horse-rake (Disclaimer filed)	Dec. 16, 1870
	Same. same. (Extension)	Dec. 22, 1870
99,256	Squires, B. W., and Charles M. Clinton, assignors to Sewell D. Thompson and David P. Goodhue, Ithaca, N. Y. Binding-attachment for harvesters	Jan. 25, 1870
102,734	Staats, William H., Crescent, N. Y. Railway-switch	May 3, 1870
106,420	Stackpole, Charles F., Woburn, Mass. Slide-chuck for lathes	Aug. 16, 1870

Alphabetical list of patentees for the year 1870—Continued.

No.	Name, residence, and invention or discovery.	Date.
101,675	Stackpole, Greenleaf, Elizabeth, N. J. Broom	April 5, 1870
108,532	Stacy, George B., Richmond, Va. Separating-attachment for husk-hackling machines	Oct. 18, 1870
105,858	Stacy, William, Hardin County, Iowa. Machine for ditching and hedging	July 26, 1870
99,609	Stadler, Ferdinand, Philadelphia, Pa. Sad-iron heater	Feb. 8, 1870
	Staehlen, W., and L. Portong. (*See* Chwatal, H., assignor.)	
99,366	Staffer, Abraham and Peter, Salt Creek, Ind. Thrashing-machine and separator. (Antedated Jan. 29, 1870)	Feb. 1, 1870
	Stafford, Charles, and Robert Ramsey. (*See* Ramsey & Stafford.)	
4,427	Stafford, Nelson, Brooklyn, N. Y. Key-ring tag (Design)	Oct. 18, 1870
	Stafford, W. A. (*See* Partridge, Benjamin S., assignor.)	
109,962	Stafford, William H., New York, N. Y. Door-spring	Dec. 6, 1870
105,505	Stagg, Thomas G., East New York, N. Y. Folding-carriage for children	July 19, 1870
	Stahl, Jacob, *et al.* (*See* Gerecke, Henry, assignor.)	
102,330	Stainthorp, John, and Isaac Cole, assignors to John Stainthorp, New York, N. Y. Machine for mixing paint, soap, and other materials	April 26, 1870
110,085	Staley, Franklin J., assignor to Long, Joseph & Carter, Indianapolis, Ind. Head-block for saw-mills. (Antedated Dec. 9, 1870)	Dec. 13, 1870
99,967	Stamler, Frederick, Hamburgh, N. Y. Treadle for sewing-machines	Feb. 15, 1870
100,686	Stamp, John Mitchell, assignor to self and Peter Johnston, Grass Valley, Cal. Tool for lacing boots	Mar. 8, 1870
103,674	Stanford, Gaylord Sharp, Buffalo, N. Y. Mica frame for stoves	May 31, 1870
	Stancliff, George, *et al.* (*See* Ryerson, Stancliff & McIntosh.)	
	Standinger, Charles, and Martin F. Walter. (*See* Walter & Standinger.)	
	Standish, Joshua. (*See* Burgess, John A., assignor.)	
	Standish, Miles, and Frank Swift. (*See* Swift & Standish.)	
102,876	Stanley, Edgar A., assignor to self and Orlando A. Palmer, Brewer, Me. Axle-nut	May 10, 1870
105,271	Stanley, Thomas E., Hazlehurst, Miss. Boring-tool	July 12, 1870
	Stanley, William. (*See* Foster, John T., assignor.)	
107,116	Stannard, Abram C., Milton, Wis. Combined power-punch and shears	Sept. 6, 1870
	Stanton, Curtis, *et al.* (*See* Hallock, Valentine H., assignor.)	
108,200	Stanton, John H., Franklin, Ohio. Carpet-fastener	Oct. 11, 1870
106,740	Staples, Isaac B., Attleborough, Mass. Stock or blank for bracelets	Aug. 23, 1870
	Starbuck, George E., and Wait Mead. (*See* Mead & Starbuck.)	
104,224	Starkey, David G., New York, N. Y. Valve-gear of steam-engines	June 14, 1870
109,149	Starkey, John L., Worcester, Mass. Boiler-feeder and low-water detector	Nov. 8, 1870
	Starkweather, Archibald, and Carl O. Wederkinch. (*See* Wederkinch & Starkweather.)	
101,176	Starnes, Philip S., Majority Point, Ill. Corn-planter	Mar. 22, 1870
110,600	Starr, James M., Fond du Lac, Wis. Life-boat	Dec. 27, 1870
109,069	Starr, William M., Washington, D. C. Chain water-wheel	Nov. 8, 1870
105,506	Starratt, James, assignor through mesne assignments to Handley Starratt and Benjamin McKeen, Salem, Mass. Machine for removing grease from leather. (Antedated March 23, 1870)	July 19, 1870
100,207	Starrett, Helen Elkin, Lawrence, Kans. Fastening for overshoes	Feb. 22, 1870
108,648	Starrett, James F., New York, N. Y. Machine for shaving the heads of shoe-blanks. (Antedated Oct. 15, 1870)	Oct. 25, 1870
107,974	Starrett, William A., and Helen E., Lawrence, Kans. Device for attaching steels to corsets. (Antedated Sept. 24, 1870)	Oct. 4, 1870
102,331	Stauffer, Francis H., Philadelphia, Pa. Carpet-tacking machine	April 26, 1870
104,371	Stauffer, Henry, assignor to Nordmann Brothers, Switzerland. Watch	June 14, 1870
102,059	Stave, Lewis A., Oconomowoc, Wis. Clothes-drier	April 19, 1870
104,918	St. Clair, Charles H., New Orleans, La. Wind-wheel	June 28, 1870
104,656	St. Clair, Colin Cree, Detroit, Mich. Spectacles	June 21, 1870
100,081	St. Clair, William D., Chicago, Ill. Compound to be used as an article of diet	Feb. 22, 1870
100,461	Same. Threshold	Mar. 1, 1870
101,935	St. Cyr, Antoine Radisson, France. Treating fatty matter for the manufacture of candles	April 12, 1870
	Stead, George, and William Goodaire. (*See* Goodaire & Stead.)	
108,735	Stead, James Curtis, Jersey City, N. J. Machine for making staples	Oct. 25, 1870
100,082	Stearns, Caleb S., Marlborough, Mass. Leather-splitting machine. (Antedated Feb. 12, 1870)	Feb. 22, 1870
3,987	Stearns, Caleb S., assignor to Charles F. Davis, Thomas Corey, and Samuel and Roger Boyd, Marlborough, Mass. Machine for cutting leather (Reissue)	May 24, 1870
110,398	Stearns, Edward H., Erie, Pa. Machine for turning logs	Dec. 20, 1870
	Stearns, E. H., Erie, Pa. Head and tail block for saw-mills (Extension)	April 4, 1870
110,086	Same. Journal-box	Dec. 13, 1870
99,120	Stearns, George N., Syracuse, N. Y. Horse hay-fork	Jan. 25, 1870
110,168	Same. Spoke-shave	Dec. 13, 1870
103,385	Stearns, Henry A., Smithfield, R. I. Apparatus for distilling hydrocarbons	May 24, 1870
103,519	Same. Apparatus for extracting oil from animal and vegetable substances	May 24, 1870
107,303	Stearns, Joseph B., Boston, Mass. Attaching insulators to telegraph-poles	Sept. 13, 1870
	Stebbins, Joseph. (*See* Tibbitts, James B., assignor.)	
	Stebbins, Samuel H., and Joseph L. Hannum. (*See* Hannum & Stebbins.)	
102,175	Stebbins, Solomon A., Toledo, Ohio. Apparatus for cooling grain	April 19, 1870
100,948	Steck, George, New York, N. Y. Iron frame for upright pianos	Mar. 15, 1870
106,227	Same. Iron frame for pianos	Aug. 9, 1870
104,074	Steck, George, Hughesville, Pa. Saw for sawing felloes	June 7, 1870
107,975	Stedman, Edwin R., Sparta, Ga. Guano-distributer	Oct. 4, 1870

Alphabetical list of patentees for the year 1870—Continued.

No.	Name, residence, and invention or discovery.	Date.
109,849	Stedman, George E., Boston, Mass. Buckle	Dec. 6, 1870
3,899	Stedman, Nathan, assignor through mesne assignments to New England Pump-Manufacturing Company, Pacific Pump-Manufacturing Company, Charles F. Mudge, and Bridgeport Manufacturing Company, Aurora, Ind. Pump-piston. (Reissue)	Mar. 29, 1870
110,510	Stedman, Nathan, Aurora, Ind. Key for shafting	Dec. 27, 1870
106,516	Stedman, Oscar F., Westfield, N. Y. Wash-boiler	Aug. 16, 1870
108,944	Same.....same	Nov. 1, 1870
	Steel, Alexander, *et al.* (*See* Tappey, Lumsden & Steel.)	
	Steel, A. E. (*See* Senseman, Francis E., assignor.)	
107,538	Steele, Charles L., Boston, Mass. Flower-pot	Sept. 20, 1870
108,068	Steele, John, Sheldon, Ill. Shaft-coupling for vehicles	Oct. 4, 1870
	Steele, Joseph H. (*See* Turnbull, A. E., jr., assignor.)	
101,782	Steele, William, Sistersville, W. Va. Veneer-cutter	April 12, 1870
	Steele, William F., *et al.* (*See* Hulbert, Steele & Day).....(Design)	
103,099	Steele, Zattee Cushing, Pana, Ill. Machine for raking and cocking hay	May 17, 1870
	Steen, Joseph F. (*See* Haskell, Nathaniel, assignor.)	
105,381	Steers, Thomas, jr., assignor to John E. Mulford, Richmond, Va. Electro-magnetic apparatus for regulating valves and dampers	July 12, 1870
99,257	Steger, Joseph, New York, N. Y. Railway-car brake	Jan. 25, 1870
101,393	Same.....Fire-escape	Mar. 29, 1870
104,897	Same.....Car-brake	June 28, 1870
108,533	Same.....Friction-pulley	Oct. 18, 1870
109,265	Stegmiller, Joseph, assignor to self and Ludwig H. Rueckenbag, New York, N. Y. Mosaic floor	Nov. 15, 1870
	Steiger, Alexander. (*See* Hainque, Marshall, assignor.)	
102,176	Steiger, John J., Peoria, Ill. Self-acting equalizing valve	April 19, 1870
98,812	Steigert, Leopold, Cincinnati, Ohio. Meat-chopper	Jan. 11, 1870
106,884	Stein, Adam, Westfield, Mass. Valve for pneumatic draw in organs	Aug. 30, 1870
107,976	Stein, Henry Julius, Hannibal, Mo. Construction of steam-boilers, tanks, &c	Oct. 4, 1870
108,844	Steiner, John Henry, assignor to self and Christian Sharpe, Reading, Pa. Car-bureting attachment for gas-burners	Nov. 1, 1870
107,422	Steinmetz, Bernard, France. Lock for bags, &c	Sept. 13, 1870
	Steinmetz, Curtis C., and Joseph J. Shaeffer. (*See* Shaeffer & Steinmetz.)	
	Steketee, George G. (*See* Kimm, Martinus B., assignor.)	
101,793	Stenberg, Sten., Sweden. Manufacture of sugar and alcohol from lichens	April 12, 1870
100,083	Stephan, Mathias, Canton, Ohio. Spring-chair for children	Feb. 22, 1870
105,995	Stephens, Andrew J., Milford, Ill. Ditching-machine	Aug. 2, 1870
105,507	Stephens, Anson P., Brooklyn, N. Y. Vise	July 19, 1870
103,520	Stephens, Charles, assignor to self, Robert H. and William J. Steptoe, New Orleans, La. Manufacture of artificial stone	May 24, 1870
105,508	Stephens, John, and Jairus Collins, Fairview, Ohio. Apparatus for operating window-curtains	July 19, 1870
100,266	Stephens, John, assignor to self and Jairus Collins, Fairview, Ohio. Curtain-fixture	Nov. 15, 1870
109,775	Stephens, Mary, assignor to Wright Brothers & Co., Philadelphia, Pa. Umbrella	Nov. 29, 1870
102,444	Stephens, Perry M., assignor of one-half interest to Perry M. Tuttle, Deer Creek, Ill. Road-scraper	April 26, 1870
101,936	Stephens, Thomas B., Washington, Iowa. Churn	April 12, 1870
104,657	Stephenson, Benjamin F., Springfield, Ill. Uterine supporter	June 21, 1870
	Stephenson, Benjamin T. (*See* Keating, Ambrose, assignor.)	
101,535	Stephenson, Henry, William Thompson, and William Greaves Blake, assignors to Frederic W. Griffith and George P. Byrne, England. Ornamental scroll-type	April 5, 1870
	Stephenson, James M., and James E. French. (*See* French & Stephenson.)	
	Steptoe, Robert H. and William J. (*See* Stephens, Charles, assignor.)	
100,150	Sterling, Edward C., St. Louis, Mo. Brick-kiln	Nov. 8, 1870
	Sterling, James T., *et al.* (*See* Post, Henry A. V., assignor.)	
104,373	Sterling, Leonard, and T. W. Wilson, New York, N. Y. Lamp	June 14, 1870
109,070	Stern, William C., and James W. Robinson, London Grove, Pa. Butter-printer	Nov. 8, 1870
100,462	Sternberg, George M., Fort Riley, Kans. Electro-magnetic regulator for dampers or valves	Mar. 1, 1870
104,788	Same.....Fruit-drier	June 28, 1870
105,272	Same.....Electro-magnetic apparatus for regulating valves and dampers	July 12, 1870
105,273	Same.....Electrical thermostat	July 12, 1870
4,022	Sterry, Edward A., Norwich, Conn. Faucet.....(Reissue)	June 7, 1870
3,807	Stetefeldt, Charles, Austin, Nev. Furnace for roasting and treating ores. (Division A, reissue.)	Jan. 25, 1870
3,808	Same.....Process of treating silver ores.....(Division B, reissue)	Jan. 25, 1870
100,337	Same.....Machine for feeding ores into shaft-roasting furnaces	Mar. 1, 1870
3,806	Stetson, Bradford, assignor to self and Elmer Townsend, Uxbridge, Mass. Turbine water-wheel.....(Reissue)	Mar. 1, 1870
103,794	Same.....same	May 31, 1870
100,084	Stetson, Kimball W., Kingston, Mass. Water-ram. (Antedated Feb. 18, 1870)	Feb. 22, 1870
105,138	Stevens, Andrew, and Louis A. Cauvet, New York, N. Y. Pavement	July 5, 1870
100,814	Stevens, Andrew J., San Francisco, Cal. Steam-engine slide-valve. (Antedated March 5, 1870)	Mar. 15, 1870
	Stevens, Benjamin A. (*See* Howell, James R., assignor.)	
105,509	Stevens, Charles H., Fayetteville, N. Y. Trace-buckle	July 19, 1870
107,977	Stevens, Charles L., assignor to self and Albert A. and D. G. Dentan, Galesburgh, Ill. Steam-pump. (Antedated Sept. 26, 1870)	Oct. 4, 1870

Alphabetical list of patentees for the year 1870—Continued.

No.	Name, residence, and invention or discovery.	Date.
101,394	Stevens, Chase A., New York, N. Y. Packing-journals and other parts of machinery	Mar. 29, 1870
103,521	Stevens, Cyrus S., assignor to self and Daniel F. Knight, Portland, Me. Spring bed-bottom	May 24, 1870
106,421	Stevens, Darius, Danbury, Conn. Cutter-head for planing-machines	Aug. 16, 1870
102,725	Stevens, Francis A., Chicago, Ill. Apparatus for preserving wood	May 3, 1870
108,201	Stevens, Fred. T., Columbia, N. H. Saw-mill	Oct. 11, 1870
108,063	Stevens, George D., New York, N. Y. Button-hook and handkerchief-holder combined	Oct. 4, 1870
	Stevens, Henry W., *et al.* (*See* Miner, Stevens & Saunders).....(Extension.)	
99,998	Stevens, John C., South Norwalk, Conn. Circulating-tube for steam-generators	Feb. 15, 1870
104,373	Stevens, John W., and John P. Bacome, Westville, Ohio. Hay-rack for wagons	June 14, 1870
100,208	Stevens, Levi, Washington, D. C. Manufacture of gas from petroleum	Feb. 22, 1870
108,302	Same.....Apparatus for generating gas for heating	Oct. 11, 1870
109,963	Stevens, William J., New York, N. Y. Direct-acting engine	Dec. 6, 1870
102,177	Stevenson, Charles C., Gold Hill, Nev. Amalgamator	April 19, 1870
101,676	Stevenson, Rufus O., Baltimore, Md. Summer cooking-furnace	April 5, 1870
101,177	Stevenson, Walter S., Philadelphia, Pa. Cooking-stove. (Antedated Jan. 5, 1870)	Mar. 22, 1870
3,802	Stevenson, William M., Newcastle, Pa. Balance slide-valve.....(Reissue)	Jan. 18, 1870
99,024	Stever, Jeremiah, assignor to Isaac E. Newton, Bristol, Conn. Shuttle-driving mechanism for looms	Jan. 18, 1870
108,649	Steward, Sidney, Trenton, N. J. Carriage-spring	Oct. 25, 1870
100,209	Stewart, Alexander W., Glasgow, Scotland. Folding-chair. (Antedated Aug. 23, 1869)	Feb. 22, 1870
102,178	Same.....Boston, Mass. Folding-chair	April 19, 1870
102,179	Same.....same	April 19, 1870
102,180	Same.....same	April 19, 1870
106,633	Same.....same	Aug. 23, 1870
102,987	Stewart, Charles C., Oneonta, N. Y. Foundery flask-clamp	May 10, 1870
99,795	Stewart, Charles F., Corunna, Mich. Tool for making splints	Feb. 15, 1870
99,367	Stewart, David, assignor to self and Samuel M. Kier, Kittanning, Pa. Manufacture of iron	Feb. 1, 1870
99,368	Same.....Manufacture of iron	Feb. 1, 1870
101,404	Stewart, H. C., and R. T. Bradley, Cincinnati, Ohio. Automatic fire-extinguisher for use on railroad-cars, &c. (Antedated March 5, 1870)	Mar. 29, 1870
3,997	Stewart, H. C., and R. T. Bradley, assignors to William P. Van Deursen and William C. Davis, Cincinnati, Ohio. Fire-extinguisher for use on railroads, &c.....(Reissue)	May 24, 1870
106,422	Stewart, Isaac W., New York, N. Y. Diaper-pin	Aug. 16, 1870
109,267	Stewart, James, Washington, D. C. Ruling-machine	Nov. 15, 1870
102,445	Stewart, James F., Fredrich Hinkerman, and James Lamb, assignors to James Lamb and James F. Stewart, Aurora, Ill. Mechanism for transmitting power to lathes and other machinery	April 26, 1870
103,675	Stewart, James T., assignor to Samuel R. Whitlow, Peoria, Ill. Medical compound	May 31, 1870
	Stewart, John, and Charles Wall. (*See* Wall & Stewart.)	
109,151	Stewart, John L., Philadelphia, Pa. Machine for filling barrels	Nov. 8, 1870
103,100	Stewart, Scott, Lowell, Mass. Machine for raking and cocking hay	May 17, 1870
109,683	Stewart, Thomas, Philadelphia, Pa. Curtain-fixture	Nov. 29, 1870
103,676	Stewart, Timothy B., Hartford, Conn. Oil-box for car-axles	May 31, 1870
105,012	Stewart, William, Steubenville, Ohio. Apparatus for generating and burning gas	July 5, 1870
	Stewart, William, & Co. (*See* Ezra C., assignor.)	
104,658	St. Germain, Camille, Oxford, Mass. Shoemakers' tool	June 21, 1870
	Stickney, Augustin W., and Charles Strong. (*See* Strong & Stickney.)	
103,253	Stieren, Hermann, Mason, W. Va., and William A. Nisbit, Natrona, Pa. Apparatus for the production of bromine	May 17, 1870
106,885	Stiger, Augusta M., Brooklyn, N. Y. Combined stocking-supporter and skeleton-waist	Aug. 30, 1870
99,491	Stiles, D. L., Rochester, N. Y. Base-burning parlor cook-stove	Feb. 1, 1870
102,726	Same.....Heating-stove	May 3, 1870
4,004	Stiles, David L., assignor through mesne assignments to John M. French, jr., Rochester, N. Y. Heating-stove.....(Reissue)	May 31, 1870
	Stiles, N. C. (*See* Ford, Omri C., assignor.)	
	Stiles, Peter B., and Merrill S. Orton. (*See* Orton & Stiles.)	
104,225	Still, John F., West Farms, N. Y. Heating-stove	June 14, 1870
109,152	Same.....Coffee-pot	Nov. 8, 1870
4,067	Still, John W., San Francisco, Cal. Gate-latch.....(Design)	May 24, 1870
	Stillman, Jonathan P., Ames, Albert and Thomas B. (*See* Carmichael, Alexander, assignor.)	
107,304	Stillson, Daniel C., Charlestown, Mass. Wrench	Sept. 13, 1870
110,067	Same.....Stench-trap	Dec. 13, 1870
	Stillson, David L. (*See* Brockett, Leonard, assignor.)	
99,968	Stilson, Lyman B., assignor to self and John W. Childs, Minneapolis, Minn. Grain harvester and binder. (Antedated Feb. 6, 1870)	Feb. 15, 1870
109,776	Stilson, Lyman B., and James G. Payson, Minneapolis, Minn. Dumping-apparatus	Nov. 29, 1870
104,789	Stilwell, Edwin R., Dayton, Ohio. Feed-water heater and filter	June 28, 1870
103,677	Stilwell, Nicholas, Newark, N. J. Sawing-machine. (Antedated May 24, 1870)	May 31, 1870
107,636	Stilwell, Stephen, Waterloo, N. Y. Slide for extension-tables	Sept. 20, 1870
105,736	Stimers, Alban C., Castleton, N. Y. Rifled cannon. (Antedated July 21, 1870)	July 26, 1870
105,382	Stimpson, Edwin B., New York, N. Y. Press for perforating shoe-tips	July 12, 1870

Alphabetical list of patentees for the year 1870—Continued.

No.	Name, residence, and invention or discovery.	Date.
	Stimson, Earl L., and S. Edward. (*See* Appleton, Charles J., assignor.) (Two cases.)	
100,949	Stimson, Lovitt, assignor to the Greedwoods Scythe Company, New Hartford, Conn. Wrapping scythes for transportation	Mar. 15, 1870
109,153	Stimson, L. S., deceased, by Harriet N. Stimson, administratrix, assignor through mesne assignments of one-half interest to Nelson F. Libby, Lowell, Mass. Cigar-cutting machine	Nov. 8, 1870
106,634	Stine, Adam W., Crestline, Ohio. Window-frame	Aug. 23, 1870
	Stinebuck, Albert. (*See* Chadderdon, Edward, assignor.)	
110,160	Stinson, Ralph, Whiteaville, Mo. Water-wheel	Dec 13, 1870
100,815	Stirk, William, Fort Wayne, Ind. Combined marker, planter, and cultivator	Mar. 1, 1870
	Stirling, Mary A., *et al.* (*See* Samuels, John L., assignor) (Reissue.)	
	Stites, George, and William H. Soley. (*See* Soley & Stites.)	
105,510	Stitt, James, San Francisco, Cal. Cable-stopper	July 19, 1870
100,071	Stitzel, Frederick, Louisville, Ky. Barrel-filler	Nov. 8, 1870
99,389	Stivender, Arthur A., Ocala, Fla. Railway water-elevator	Feb. 1, 1870
	Stiver, James, and William H. Rosser. (*See* Rosser & Stiver.)	
104,075	Stiver, William C., and John S. Williams, Brooklyn, N. Y. Broiler	June 7, 1870
104,308	Stivers, Major Joseph W., North Middletown, Ky. Seed-stripper	June 21, 1870
99,025	St. James, Clement, Pittsfield, Mass. Thill-coupling	Jan. 18, 1870
104,898	St. John, Cornelius, assignor to self and James E. Vanderhill, New York, N. Y. Lamp-shade holder	June 28, 1870
101,536	St. John, Garland B., Kalamazoo, Mich. Cultivator. (Antedated April 1, 1870)	April 5, 1870
101,537	Same Attachment to seeding-machines	April 5, 1870
109,357	St. John, Hiram, Wilton, Conn. Window-fastening	Nov. 15, 1870
102,610	St. John, Thomas, Dunbar, Pa. Rock-boring apparatus	May 3, 1870
109,288	St. John, William H., and Peter Cartwright, New York, N. Y. Purifying illuminating-gas	Nov. 15, 1870
	St. John, William O., and Charles A. Fitch. (*See* Fitch & St. John.)	
	Stoakes, John G., and George W. Crabtree. (*See* Crabtree & Stoakes.)	
	Stobbs, Alexander, and James Carmac. (*See* Carmac & Stobbs.)	
109,964	Stock, Caspar A., New York, N. Y. Drawer-handle	Dec. 6, 1870
106,228	Stocker, Charles M., Georgetown, Mass. Feeding-device and presser-foot for sewing-machines	Aug. 9, 1870
109,965	Stocking, Roderick F., and Calvin P. Greene, Lawn Ridge, Ill. End-gate for wagons	Dec. 6, 1870
109,966	Same End-gate for wagons	Dec. 6, 1870
106,090	Stockton, Joseph B., Edmonton, Ky. Suspended shelf	Aug. 9, 1870
108,423	Stockton, Joseph H., Thompson, Ga. Railway-switch	Aug. 16, 1870
107,831	Stockton, Samuel, and John Shepler, Lambertville, N. J. Corpse-preserver	Sept. 27, 1870
102,877	Stockton, William, New York, N. Y. Cover for chamber-vessels	May 10, 1870
	Stockwell, Albert, and Joshua Hunt. (*See* Hunt & Stockwell.)	
	Stockwell, Alden B., administrator. (*See* Howe, Elias, jr (Design.)	
103,678	Stockwell, George W., Natchez, Miss. Combination-tool	May 31, 1870
105,511	Stockwell, John W., Portland, Me. Preparation of cement for the manufacture of cement pipe	July 19, 1870
106,424	Same Water-pipe machine	Aug. 16, 1870
4,220	Same same (Reissue)	Dec. 27, 1870
103,254	Stockwell, Levi W., Akron, Ohio. Sewing-machine	May 17, 1870
98,718	Stockwell, Nathan, Onaquaga, N. Y. Apparatus for feeding swine. (Antedated Dec. 30, 1870)	Jan. 11, 1870
107,117	Stoddard, Henry A., Springfield, Mass. Locomotive ash-pan	Sept. 6, 1870
99,026	Stoddard, Isaac H., Ansonia, Conn. Photographic camera	Jan. 18, 1870
100,950	Stoddard, J. C., Worcester, Mass. Horse-rake	Mar. 15, 1870
107,838	Same Horse hay-rake	Sept. 27, 1870
98,813	Stoddard, Worden E., Fort Edward, N. Y. Weather-board gauge	Jan. 11, 1870
106,425	Stoelker, Otto, Montgomery, Ala. Barber's furniture	Aug. 16, 1870
100,210	Stohlmann, Frederick A. Brooklyn, N. Y., and Andrew H. Smith, New York, N. Y., assignors to Frederick A. Stohlmann. Mechanical leech	Feb. 22, 1870
101,937	Stokes, John, Springfield, Mass., and Thomas Bennett, Hartford, Conn. Springvise for gun-locks	April 12, 1870
109,850	Stokes, Joseph, Trenton, N. J. Pile for beams	Dec. 6, 1870
102,737	Stokes, Septimus C., Manchester, N. H. Knife-sharpener	May 3, 1870
105,274	Stokes, William, New York, N. Y. Suspension paper-clip	July 12, 1870
100,085	Stolbrand, C. J., Columbia, S. C. Steam-generator	Feb. 22, 1870
110,691	Stoll, Charles, Brooklyn, N. Y. Malt-reservoir	Dec. 27, 1870
3,992	Stoll, Charles G. and William, assignors through mesne assignments to William W. Stoll, Brooklyn, N. Y. Machine for separating grain and other materials. (Reissue)	May 24, 1870
99,067	Stone, Alson A., Shirley, Mass. Die for forming shuttle-tips	Jan. 18, 1870
99,028	Same Die for forming shuttle-spindle heads	Jan. 18, 1870
105,275	Stone, George A., New York, N. Y. Steam-generator	July 12, 1870
	Stone, Henry J., *et al.* (*See* Samuels, John L., assignor) (Reissue.)	
	Stone, Jabez, and Henry G. Ludlow. (*See* Ludlow & Stone.)	
	Stone, Jacob, and John N. Farrar. (*See* Farrar & Stone.)	
99,725	Stone, John H., Philadelphia, Pa. Water-cooler	Feb. 8, 1870
103,253	Stone, John W., Paris, Tenn. Tobacco-rolling machine	May 17, 1870
	Stone, Jonathan. (*See* Dunn, John, assignor.)	
103,679	Stone, Melvin, Vermillion, Ohio. Safety-whiffletree	May 31, 1870
103,680	Stone, Orrin, Ionia, Mich. Grain-separator	May 31, 1870
	Stone, Pardon M. (*See* Heptonstall, Charles, assignor.)	

Alphabetical list of patentees for the year 1870—Continued.

No.	Name, residence, and invention or discovery.	Date.
105,996	Stone, Peter Jerome, Athens, Pa. Apparatus for cutting grass under water	Aug. 2, 1870
	Stone, Robert M. (*See* Hinman, Milan, assignor.)	
	Stone, William E. (*See* Boyden, Pardon, assignor.)	
104,374	Stoner, David, Canton, Ohio. Pumping-apparatus	June 14, 1870
109,269	Stoner, Ezra, Greencastle, Pa. Combined harrow and seeder	Nov. 15, 1870
105,276	Stoner, Solomon, Canton, Ohio. Horse-power	July 12, 1870
106,229	Stopple, Charles W., Houston, Texas. Hay and cotton press	Aug. 9, 1870
	Storer, Jacob J., and James D. Whelpley. (*See* Whelpley & Storer) (Six cases.)	
	Same same (Reissue.)	
	Storer, Jacob J., and James D. Whelpley, assignors to Thomas William Clarke and William S. Dexter, trustees, Boston, Mass. Grinding-mill (Disclaimer filed)	Mar. 7, 1870
104,226	Storer, John, New York, N. Y. Cataract-mechanism for engines. (Antedated June 3, 1870)	June 14, 1870
104,659	Same Peekskill, N. Y. Stop-motion for steam-engines. (Antedated June 9, 1870)	June 21, 1870
106,886	Same Cornish-engine. (Antedated Aug. 18, 1870)	Aug. 30, 1870
105,139	Storle, Ole O., North Cape, Wis. Harvester-rake	July 5, 1870
	Storm, William Mont, New York, N. Y. Breech-loading fire-arm (Extension)	July 6, 1870
	Same same (Extension)	July 6, 1870
	Story, Edward, and Christopher S. Benjamin. (*See* Benjamin & Story.)	
101,677	Story, George W., Kansas City, Mo. Carpet-stretcher	April 5, 1870
105,407	Stouffer, Hiram C., Salem, Ohio. Elevator	Mar. 29, 1870
	Stout, Charles W., and William J. Wiggins. (*See* Wiggins & Stout.)	
109,072	Stout, George W., assignor to New York Hat-Finishing Company, Newark, N. J. Hat-finishing machine	Nov. 8, 1870
101,538	Stout, Robert, Matteawan, N. Y. Horseshoeing tool	April 5, 1870
3,914	Stout, Stephen, assignor to O. B. North & Co., New Haven, Conn. Trace-holder. (Reissue)	April 12, 1870
108,650	Stovall, Philip, Newman, Ga. Spring bed-bottom	Oct. 25, 1870
108,945	Stover, Daniel C., Lanark, Ill. Cultivator	Nov. 1, 1870
102,060	Stover, Gilbert, Crystal, Mich. Turbine water-wheel	April 19, 1870
108,202	Stover, Joel, Richmond, Ind. Apparatus for heating and ventilating buildings	Oct. 11, 1870
110,399	Stow, Henry M., San Francisco, Cal. Pipe and tube for water and gas	Dec. 20, 1870
	Stow Manufacturing Company, S. (*See* Brewer, James F., assignor.)	
103,386	Stow, Orson W., Plantsville, Conn. Tinsmiths' shears	May 24, 1870
104,076	Same Gauge-attachment for tinsmiths' shears	June 7, 1870
	Stowe, Charles P., *et al.* (*See* Monroe, Nathaniel, assignor.)	
103,681	Stowe, James G., Providence, R. I. Machine for making horseshoes	May 31, 1870
106,091	Stowe, John, Lawrence, Mass. Apparatus for the treatment of fracture of the lower jaw	Aug. 2, 1870
4,517	Stowell, Barna T., Quincy, Ill. Hoe (Design)	Dec. 13, 1870
	Stowell, Thomas N. (*See* Sawtelle, Zephaniah E., assignor.)	
106,969	Straight, Albert J., Richland Centre, Wis. Axle for vehicles	Aug. 30, 1870
	Straight, John A., and George M. Hopkins. (*See* Hopkins & Straight) (Three cases.)	
104,660	Strain, Edwin, Newton, Mass. Needle for sewing-machine	June 21, 1870
106,092	Same same	Aug. 2, 1870
4,200	Strait, Joel V., Litchfield, Ohio. Gearing for mowing-machines (Reissue)	Dec. 13, 1870
99,029	Stranahan, George W., Westport, N. Y. Washing-machine	Jan. 18, 1870
98,814	Strater, Herman, jr., Boston, Mass. Water-closet valve	Jan. 11, 1870
	Strattan, Stephen S. (*See* Ridge, Joseph, assignor.)	
105,605	Stratton, Charles M. and Oscar G., Greenfield, Mass. Power-press	July 19, 1870
100,463	Stratton, Edwin A. and Charles M., Greenfield, Mass. Spirit-level	Mar. 1, 1870
	Stratton, Joseph L., and Milton Bowker. (*See* Bowker & Stratton.)	
	Stratton, Oscar G., and Baxter B. Noyes. (*See* Noyes & Stratton.)	
108,405	Straub, Henry P., Cincinnati, Ohio. Hanging mill-stones	Oct. 18, 1870
103,101	Straus, Jacob, St. Louis, Mo. Side-saddle tree	May 17, 1870
104,077	Strausbaugh, Jacob, jr., Tiffin, Ohio. Sawing-machine	June 7, 1870
110,602	Strauss, Arnold, New York, N. Y. Safety-attachment for railway-trucks	Dec. 27, 1870
109,467	Strauss, Julius, New York, N. Y. Filter for wine-sirup, &c	Nov. 22, 1870
	Strayer, George, and Jesse C. Coleman. (*See* Coleman & Strayer.)	
110,088	Street, Augustus F., Zanesville, Ohio. Car-coupling	Dec. 13, 1870
102,181	Street, Edwin, East Haven, Conn. Metal-capped cork	April 19, 1870
102,446	Street, George W., Brooklyn, N. Y. Skate-fastening	April 26, 1870
102,447	Street, John G., Brooklyn, N. Y. Machine-belting	April 26, 1870
98,893	Street, Richard, Albany, N. Y. Closing leaks in hose, pipes, and tubes	Jan. 18, 1870
106,426	Same Clasp for lightning rods	Aug. 16, 1870
102,878	Street, William Tell, Frankford, Pa. Bathing-apparatus	May 10, 1870
106,887	Street, Zadok, Salem, Ohio. Stock-car	Aug. 30, 1870
106,888	Same same	Aug. 30, 1870
	Streeter, Alvin, and Irving E., Weston. (*See* Weston & Streeter.)	
104,227	Streeter, Leroy M., Oshkosh, Wis. Clothes-drier	June 14, 1870
109,073	Streeter, Sumner F., Bernardstown, Mass. Corner-trowel	Nov. 8, 1870
105,383	Streeter, William, Rochester, N. Y. Permutation-lock	July 12, 1870
104,078	Streett, James R., assignor to self and James Vermillion, Washington, D. C. Blow-pipe	June 7, 1870
107,637	Stribling, Uriah B., Madison, Ind. Method of setting posts	Sept. 20, 1870
106,292	Stricker, George, Catawissa, Pa. Shifting buggy-top	Aug. 9, 1870
109,468	Stringer, Hugh A., and Alexander F. Ward, Chatham, Canada. Harvester-rake	Nov. 22, 1870
4,173	Strode, James E., Hillsborough, Ill. Ring and buckle (Design)	June 21, 1870

Alphabetical list of patentees for the year 1870—Continued.

No.	Name, residence, and invention or discovery.	Date.
	Strohmenger, Charles, and Henry Manneck. (*See* Manneck & Strohmenger.)	
4,051	Strong, Abner D., Ashtabula, Ohio. Vinegar-apparatus.....(Reissue).	June 28, 1870
109,270	Strong, Charles, and Augustin W. Stickney, Lebanon, N. H. Steam-engine.....	Nov. 15, 1870
107,559	Strong, Joel, College Hill, Ohio. Broom-handle.....	Sept. 20, 1870
101,938	Strong, R. H., assignor to self, J. F. Boyd, and E. F. Greene, Galesburgh, Ill. Saw-filing machine.....	April 12, 1870
102 579	Stroud, Bryant F., Marshall, Texas. Baling-press.....	May 10, 1870
101,178	Stroud, William D., Oshkosh, Wis. Combined seeder and cultivator.....	Mar. 22, 1870
101,939	Same.....Seed planter and cultivator.....	April 12, 1870
102,611	Same.....Hand corn-planter.....	May 3, 1870
102,612	Strouse, Seligman H. and Joseph, New York, N. Y. Shirt.....	May 3, 1870
103,795	Struck, Charles E., assignor to self and James Twamley, New York, N. Y. Blind-fastener.....	May 31, 1870
	Strunk, Diedrick, and Thomas Byrne. (*See* Byrne & Strunk.)	
109,271	Strunk, William, Nettle Creek, Ohio. Window-shade.....	Nov. 15, 1870
109,074	Stuart, Addison A., assignor to self and J. D. Eddy, Plainfield, Iowa. Latch.....	Nov. 8, 1870
99,989	Stuart, David, Philadelphia, Pa. Cooking-stove.....	Feb. 15, 1870
99,726	Stuart, David, and Louis Bridge, assignors to Stuart, Peterson & Co., Philadelphia, Pa. Feeder for fire-place heaters. (Antedated Aug. 9, 1870).....	Feb. 8, 1870
4,390	Same.....Portable range.....(Design)..	Aug. 30, 1870
108,736	Same.....Cooking-range.....	Oct. 25, 1870
110,400	Same.....Cooking-stove.....	Dec. 20, 1870
3,911	Stuart, David, and Louis Bridge, assignors to David Stuart and Richard Peterson, Philadelphia, Pa. Cooking-stove. (Antedated March 1, 1870).....(Design)..	Mar. 15, 1870
4,009	Same.....Screen for base-burning fire-place heaters. (Division B, reissue).	May 31, 1870
110,395	Same.....Cooking-stove.....	Dec. 20, 1870
	Stuart, David, *et al.* (*See* Bridge, Lewis, assignor.)	
	Stuart, Henri L. (*See* Boynton, John F., assignor).....(Reissue.)	
	Same.....(*See* Wiard, Norman, assignor.)	
107,833	Stuart, James, England. Separating animal from vegetable fibers. (Patented in England Aug. 6, 1869).....	Sept. 27, 1870
	Stuart, James Bleo. (*See* Chapman, Joseph L., assignor.)	
106,230	Stuart, Leverett W., Narrowsburgh, N. Y. Horse hay-fork.....	Aug. 9, 1870
	Stuart, Reuben, *et al.* (*See* Hanchett, Daney & Stuart.)	
	Stuart, William, and George G. Lobdell. (*See* Lobdell & Stuart.)	
106,231	Stuart, William George, assignor to John W. Trafton, Springfield, Mass. Water-closet.....	Aug. 9, 1870
102,061	Stuart, William M., assignor to self, Austin O. Whitcomb, and William S. and Robert H. Holmes, St. Clair, Mich. Roofing-compound.....	April 19, 1870
102,880	Stuck, Levi, Bryan, Ohio. Stove-grate.....	May 10, 1870
107,118	Stukey, Daniel, Lancaster, Ohio. Harvester-cutter.....	Sept. 6, 1870
	Stull, Lewis. (*See* Rees, Edwin, assignor.)	
110,003	Stumpf, Theodore F., New York, N. Y. Pocket-brush.....	Dec. 27, 1870
103,102	Stunts, Stephen S., Jamestown, N. Y. Traction-machine for plows.....	May 17, 1870
107,119	Sturges, James D., Chicago, Ill. Bridge-gate.....	Sept. 6, 1870
98,719	Sturges, R. C., Boston, Mass. Bearing for rudder-heads.....	Jan. 11, 1870
	Same.....(*See* Meigga, George F., assignor.)	
106,635	Sturneyk, Frederick, St. Paul, Minn. Railway-car axle.....	Aug. 23, 1870
100,211	Sturtevant, Benjamin F., Jamaica Plain, Mass. Heating and ventilating apparatus.	Feb. 22, 1870
100,212	Same.....Grain-drier.....	Feb. 22, 1870
100,235	Same.....same.....	Feb. 22, 1870
100,236	Same.....Pressure blower-wheel.....	Feb. 22, 1870
100,237	Same.....same.....	Feb. 22, 1870
100,238	Same.....Hot-air blower.....	Feb. 22, 1870
100,239	Same.....Pressure-blower.....	Feb. 22, 1870
100,240	Same.....Compound air-heater and steam-condenser.....	Feb. 22, 1870
100,241	Same.....same.....	Feb. 22, 1870
100,242	Same.....same.....	Feb. 22, 1870
100,243	Same.....Uniting tubes to tube-sheets.....	Feb. 22, 1870
102,062	Same.....West Roxbury, Mass. Blower.....	April 19, 1870
102,063	Same.....Fan-blower.....	April 19, 1870
107,305	Sugden, James, Pittsburgh, Pa. Machine for bending rake-teeth.....	Sept. 13, 1870
103,682	Sullivan, Cornelius, Boston, Mass. Book-rest.....	May 31, 1870
109,154	Sullivan, George L., and Edward Lippincott, Chicago, Ill. Relishing-machine for tenoning sash. (Antedated Oct. 29, 1870).....	Nov. 8, 1870
102,448	Sullivan, Thomas, Corning, N. Y. Tire-upsetting machine.....	April 26, 1870
3,887	Sullivan, Timothy J., Albany, N. Y. Safe.....(Reissue)..	Mar. 22, 1870
103,683	Same.....Safe and vault.....	May 31, 1870
105,519	Same.....Secretary-safe.....	July 19, 1870
110,170	Sullivan, William W., Liberty, Ind. Fence.....	Dec. 13, 1870
110,604	Sulter, Frederick, Cleveland, Ohio. Steam-boiler.....	Dec. 27, 1870
100,464	Sulzbacher, M., New York, N. Y. Sofa-bedstead.....	Mar. 1, 1870
105,513	Summers, Lucius P., assignor to P. and F. Corbin, New Britain, Conn. Device for inserting the pintles or pins in hinges.....	July 19, 1870
109,851	Same.....Machine for countersinking the holes in butt-hinges.....	Dec. 6, 1870
101,784	Sunderland, L. A., Madison, Ohio. Milk-can.....	April 19, 1870
3,818	Suplee, Hannah G., San Francisco, Cal. Needle for sewing-machines. (Division A, reissue).....	Feb. 1, 1870
3,819	Same.....Needle for sewing-machine.....(Division B, reissue)..	Feb. 1, 1870
108,737	Same.....Needle. (Antedated Oct. 15, 1870).....	Oct. 25, 1870

Alphabetical list of patentees for the year 1870—Continued.

No.	Name, residence, and invention or discovery.	Date.
102,613	Surena, Jacob, and W. N. Behrens, assignors to Archibald T. Finn, Newark, N. J. Hat-blocking machine.....	May 3, 1870
101,539	Surna, James W., San Leandro, Cal. Gang-plow.....	April 5, 1870
107,560	Same.....San Francisco, Cal. Gang-plow beam.....	Sept. 20, 1870
109,469	Sutliff, Warren, Burns, Wis. Harvester-rake.....	Nov. 22, 1870
	Sutterlin, J. E., *et al.* (*See* Lowe, John K., assignor).....(Reissue.)	
103,387	Sutton, Charles T., Brooklyn, N. Y. Table.....	May 24, 1870
109,154	Sutton, Delay F., Toledo, Ohio. Countersink.....	Nov. 8, 1870
105,277	Sutton, James H., Honesdale, Pa. Hydraulic seal.....	July 12, 1870
99,370	Sutton, John Reid, Brooklyn, N. Y. Ram for packing tobacco.....	Feb. 1, 1870
	Sutton, Joseph. (*See* Meller, William, assignor.)	
107,120	Sutton, Robert, New Castle, Del. Propeller for steam-vessels.....	Sept. 6, 1870
101,058	Suwerkrop, Edward A., Washington, D. C. Emery-wheel clamp.....	Mar. 22, 1870
110,401	Suydam, John H., Atwater, Minn. Wheel-plow.....	Dec. 20, 1870
105,737	Svensson, Carl L., assignor to J. Q. C. Searle, Topeka, Kans. Heating-stove. (Antedated July 21, 1870).....	July 26, 1870
	Swab, Jonas, and Emanuel Forney. (*See* Forney & Swab.)	
107,423	Swain, Byron G., Colden, N. Y. Curd-agitator.....	Sept. 13, 1870
102,614	Swain, Charles, Laconia, N. H. Oven.....	May 3, 1870
98,720	Swain, Edward Augustus, New York, N. Y. Adding-machine.....	Jan. 11, 1870
106,294	Swallow, John E., Hagerstown, Md. Wheel-plow.....	Aug. 9, 1870
109,684	Same.....same.....	Nov. 29, 1870
99,970	Swan, James, Seymour, Conn. Machine for grinding and polishing bits.....	Feb. 15, 1870
100,816	Same.....Machine for bending the lips of auger-bits.....	Mar. 15, 1870
103,103	Swan, John A., North Anson, Me. Bridle-bit.....	May 3, 1870
	Swan, Oswald C., *et al.* (*See* Rucker, Swan & Rucker.)	
103,684	Swan, Thomas, Manlius, N. Y. Rotary pump.....	May 31, 1870
	Swan, Wallace W. (*See* Hackett, George H., assignor.)	
103,522	Swann, William W., Richmond, Va. Over-shoe.....	May 24, 1870
	Swartz, Adelia R. (*See* Rosecrans, Josiah, assignor.)	
108,203	Swartz, Daniel M., Lewisburgh, Pa. Egg-beater.....	Oct. 11, 1870
108,204	Swartz, Hiram B., Milton, Ohio. Sash-holder.....	Oct. 11, 1870
110,306	Swasey, Isaac N., Yonkers, N. Y. Billiard-table.....	Dec. 20, 1870
105,514	Swasey, William F., San Francisco, Cal. Condiment or relish.....	July 19, 1870
107,561	Swathel, Wilbur F., assignor to self and Walter W. Woodruff, Mount Carmel, Conn. Machine for turning the heads of bolts.....	Sept. 20, 1870
101,059	Sweeney, Thomas, Boston, Mass. Water-meter.....	Mar. 22, 1870
108,064	Sweeny, Peter, New York, N. Y. Lantern.....	Oct. 4, 1870
108,205	Same.....Adjustable tuyere.....	Oct. 11, 1870
99,727	Sweet, D. F., assignor to self and L. A. Leighton, Otsego, Mich. Automatic water cut-off.....	Feb. 8, 1870
102,615	Sweet, Eli, Whitney's Point, N. Y. Mold for artificial teeth.....	May 3, 1870
	Sweet, Salmon, and Reuben P. Buttles. (*See* Buttles & Sweet.)	
105,738	Sweet, William A., Syracuse, N. Y. Heating-furnace.....	July 26, 1870
	Sweet, W. F., and Leroy Boynton. (*See* Boynton & Sweet.)	
102,064	Sweetland, Anthony B., assignor to self and James Daley, Fitchburgh, Mass. Refrigerator.....	April 19, 1870
100,465	Sweetland, Frederick B., assignor to George H. and Joseph S. Sanborn, New Haven, Conn. Paper-cutting machine.....	Mar. 1, 1870
108,534	Sweetland, Jerome B., Pontiac, Mich. Device for holding open doors.....	Oct. 18, 1870
109,076	Sweezy, George P., Riverhead, N. Y. Adjustable coat-pattern.....	Nov. 8, 1870
102,616	Sweigert, George D., assignor to self and Samuel Eshleman, Martic Township, Pa. Bag-holder.....	May 3, 1870
	Swenson, John C., and Michel Lewes. (*See* Lewes & Swenson.)	
104,079	Sweny, Monroe, Warren County, Ohio. Sawing-machine.....	June 7, 1870
	Swett, George W., *et al.* (*See* Hawks, Elizabeth, assignor).....(Disclaimer.)	
109,272	Swett, Greenleaf L., and Joseph P. Lockey, Leominster, Mass. Molded carriage-top.....	Nov. 15, 1870
4,212	Swickard, Noah, assignor through mesne assignments to Nicholas E. Phillips and John W. Cline, Galva, Ill. Wagon and car unloading apparatus.....(Reissue)..	Dec. 20, 1870
101,179	Swift, Albert Brigham, Brooklyn, N. Y. Mode of connecting architectural toy-blocks.....	Mar. 22, 1870
	Swift, Frank, and W. W. Huntley. (*See* Huntley & Babcock, assignors.)	
109,155	Swift, Frank, and Miles Standish, Hudson, Mich. Grain-separator.....	Nov. 8, 1870
100,687	Swift, George W., assignor to self and E. G. Graham, Memphis, Tenn. Hay and cotton press.....	Mar. 8, 1870
108,065	Swigart, Nathan, Richfield, Ohio. Corn-planter.....	Oct. 4, 1870
106,630	Swindell, William, Allegheny City, Pa. Stack for puddling, boiling, and other furnaces.....	Aug. 23, 1870
106,427	Swineboard, George W., Bolivar, Tenn. Press for hay, cotton, &c.....	Aug. 16, 1870
99,030	Swineford, Henry, Mifflinburgh, Pa. Bedstead-fastener.....	Jan. 18, 1870
99,492	Same.....Scaffold.....	Feb. 8, 1870
106,293	Switzer, George, Washington, D. C. Attaching and detaching horses from vehicles.....	Aug. 9, 1870
110,511	Swogger, Alfred D., Worth, Pa. Bag-holder.....	Dec. 27, 1870
	Swope, Graybill B. (*See* Dittman, Casper, assignor.)	
99,031	Sykes, E. L., Okolona, Miss. Cotton-planter.....	Jan. 18, 1870
99,493	Sykes, William, England. Tunneling rivers.....	Feb. 1, 1870
3,946	Symmes, John Cloves, assignor to William N. Ely, trustee, Stratford, Conn. Breech-loading fire-arm.....(Reissue)..	May 3, 1870
107,634	Taber, Church, Craftsbury, Vt. Milk-pail.....	Sept. 27, 1870

Alphabetical list of patentees for the year 1870—Continued.

No.	Name, residence, and invention or discovery.	Date.
107,835	Taber, Church, Craftsbury, Vt. Lantern	Sept. 27, 1870
107,836	Same.....Paper-file	Sept. 27, 1870
103,399	Taber, Freeman Augustus, assignor to Thomas Scott Williams and Philip Sidney Page, Boston, Mass. Manufacture of tubular candles	May 24, 1870
	Taber, Freeman Augustus, and Thomas Scott Williams. (*See* Williams & Taber.) (Four cases.)	
101,000	Taber, J. Oscar, Salem, Ohio. Combined mower and hedge-trimmer. (Antedated March 16, 1870)	Mar. 22, 1870
103,796	Same.....Harvester-dropper	May 31, 1870
104,089	Same.....Crank-wrist for harvesting-machines	June 7, 1870
104,790	Taft, Oliver, Whitestone, N. Y. Floor-clamp. (Antedated June 16, 1870)	June 28, 1870
98,644	Taft, George C., Worcester, Mass. Wrench	Jan. 4, 1870
99,494	Same.....Twine-cutter. (Antedated Jan. 25, 1870)	Feb. 1, 1870
107,121	Same.....Nail-extractor	Sept. 6, 1870
108,738	Same.....Wrench	Oct. 25, 1870
99,495	Taft, George C., assignor to Thomas H. Dodge, Worcester, Mass. Machine for drilling metals	Feb. 1, 1870
3,918	Taft, George C., assignor to Loring Coes, Worcester, Mass. Wrench (Reissue)	April 12, 1870
4,003	Taft, George C., assignor to Thomas B. Doolittle, Worcester, Mass. Twine-cutter (Reissue)	May 31, 1870
101,678	Taft, Horatio N., Sag Harbor, N. Y. Suspension bath-tent	April 5, 1870
108,406	Taft, Joseph, Rockville, Conn. Table	Oct. 18, 1870
102,617	Taft, Owen W., assignor to self and Ernest Mitchell, New York, N. Y. Carving-knife	May 3, 1870
4,518	Taft, Royal C., William B. Weeden, and James W. Taft, Providence, R. I. Woven fabric (Design)	Dec. 13, 1870
4,519	Same.....same (Design)	Dec. 13, 1870
4,520	Same.....same (Design)	Dec. 13, 1870
4,532	Same.....same (Design)	Dec. 20, 1870
101,785	Taft, Stephen Clarendon Mendon, Mass. Wood-pulp machine	April 12, 1870
	Taft, S. Newell, and Charles W. Gilbert. (*See* Bleakie, Robert, assignor.)	
107,978	Taft, Timothy T., assignor to Aurin Wood and Joseph F. Light, Worcester, Mass. Shaft-coupling	Oct. 4, 1870
	Taggart, John, Boston, Mass. Excavating-scoop (Extension)	May 19, 1870
104,701	Taft, William C., Alexandria, La. Medical compound	June 28, 1870
108,208	Talbot, Freeman, Cleveland, Miss. Sleigh-lock	Oct. 11, 1870
99,496	Talbot, George W., Providence, R. I. Dye for coloring wool	Feb. 1, 1870
4,023	Talbot, George W., assignor to self and Albert Knight, Providence, R. I. Dye for coloring wool and other fibrous materials (Reissue)	June 7, 1870
107,306	Talbot, John G., Sloansville, N. Y. Churn	Sept. 13, 1870
100,086	Talcott, E. P., Blair, Nebr. Steam-wagon	Feb. 22, 1870
	Talcott, Samuel C., and Horatio J. Noyes. (*See* Noyes & Talcott.)	
	Tallman, Enck, and Nicholas G. Horsie, administrators. (*See* Horsie, David K.) (Two cases.)	
108,845	Tandy, William M., Carrollton, Ky. Compound for cleaning and preserving the teeth and gums	Nov. 1, 1870
	Tanite Company. (*See* Wallace, Abijah, assignor) (Design.)	
100,338	Tannatt, Joshua F., Springfield, Mass. Calendar	Mar. 1, 1870
104,861	Tanner, George, Freetown, N. Y. Cow-tail holder	June 21, 1870
105,140	Tanner, George W., and F. D. Bliss, Providence, R. I. Cigar-wrapping machine	July 5, 1870
105,850	Same.....Cigar-machine	July 26, 1870
106,231	Tapley, Jesse P., Springfield, Mass. Photograph-album	Aug. 9, 1870
102,449	Taplin, Alvin, assignor to Bristol Brass and Clock Company, Somerville, Mass. Lamp-burner	April 26, 1870
103,728	Same.....Forestville, Conn. Lamp-burner	May 3, 1870
	Tappan, John G. (*See* Cooper, Almond F., assignor.)	
108,397	Tappey, William H., William C. Lumsden, and Alexander Steel, Petersburgh, Va. Shuck-hackling machine	Oct. 11, 1870
105,739	Tarbox, Ephraim, Charlestown, Mass. Velocipede	July 26, 1870
102,618	Tarbox, Levi B., Collierville, N. Y. Corn-planter	May 3, 1870
98,894	Tarr, John Blake, Fair Haven, Mass. Casting cannon. (Antedated Jan. 15, 1870)	Jan. 18, 1870
98,895	Same.....Locomotive-car wheel. (Antedated Jan. 15, 1870)	Jan. 18, 1870
104,793	Same.....Street-car wheel. (Antedated June 18, 1870)	June 28, 1870
110,307	Same.....Mold for casting under-pressure	Dec. 20, 1870
	Tarr, Robert, jr., and Thaddeus P. Griffin. (*See* Griffin & Tarr.)	
	Tash, Wiley, and A. A. Rhoades. (*See* Rhoades & Tash.)	
	Tash, William. (*See* Austin, Jacob M., assignor.)	
103,685	Tasker, Stephen P. M., Philadelphia, Pa. Device for cutting off metallic tubes	May 31, 1870
105,880	Same.....Chuck	July 26, 1870
105,881	Same.....Die-stock	July 26, 1870
106,295	Same.....Machine for bending tube-skelps	Aug. 9, 1870
	Same.....(*See* Wendell, Isaac P., assignor) (Three cases.)	
4,154	Tasker, Stephen P. M., assignor to Morris, Tasker & Co., Philadelphia, Pa. Trade-mark (Design)	June 14, 1870
	Tasker, Stephen P. M., and Isaac P. Wendell. (*See* Wendell & Tasker.)	
	Tate, Isaac C., and Peter M. Gallaer. (*See* Gallaer & Tate.)	
105,082	Tate, William J., assignor to William A. Drown & Co., Philadelphia, Pa. Mechanism for retaining, adjusting, and sewing parasols	July 26, 1870
108,208	Tate, William J., assignor to self and Henry R. Mitchell, Philadelphia, Pa. Press	Oct. 11, 1870

Alphabetical list of patentees for the year 1870—Continued.

No.	Name, residence, and invention or discovery.	Date.
101,940	Tatham, Benjamin, New York, N. Y. Regulating-power conveyed by friction-surfaces	April 12, 1870
99,728	Tatro, Joseph A., Hartford, Conn. Process of treating petroleum	Feb. 8, 1870
3,867	Same.....same (Reissue)	Mar. 1, 1870
106,233	Same.....Refining petroleum	Aug. 9, 1870
102,189	Tattershall, Richard, Beloit, Wis. Spring bed-bottom	April 12, 1870
101,395	Taveau, Augustin L., Chaptico, Md. Steam-plow	Mar. 29, 1870
101,540	Same.....Revolving sulky harrow and seeder combined	April 5, 1870
3,996	Taylor, Annie Ellen, assignor to Henry Taylor, Philadelphia, Pa. Shawl-mantle (Design)	April 26, 1870
3,997	Same.....Shawl-mantle (Design)	April 26, 1870
101,061	Taylor, A. P., assignor to self and George R. Clark, Darien, N. Y. Sharpening harvester-knives	Mar. 29, 1870
106,498	Taylor, Asher S., San Francisco, Cal. Beverage or champagne-mead	Aug. 16, 1870
109,156	Taylor, Benjamin Van Campen, Newark, N. J. Garment-holder	Nov. 8, 1870
102,966	Taylor, Cebra L., Norwich, Conn. Toy-hoop	May 10, 1870
106,889	Taylor, Cebra L., and George C. Setchell, Greenville, Conn. Combined furnace and tea-kettle	Aug. 30, 1870
102,665	Taylor, Charles, McKeesport, Pa. Saw-mill	April 19, 1870
108,846	Taylor, David H., Westfield, N. Y. Finishing and bleaching handles, &c	Nov. 1, 1870
	Taylor, Day & Co. (*See* Prushaw, Thomas H., assignor) (Two cases.)	
100,466	Taylor, Edward L., assignor through mesne assignments to William C. Goodwin, Hartford, Conn. Toy	Mar. 1, 1870
101,541	Taylor, Esau D., assignor to self and David Cohn, Hornellsville, N. Y. Nut-lock plate	April 5, 1870
107,562	Taylor, Esau D., and William Rude, Hornellsville, N. Y. Machine for breaking hides and working leather	Sept. 20, 1870
	Taylor, Franklin, and Thomas E. Chandler. (*See* Chandler & Bartholomew, assignors.)	
	Taylor, Gabriel A. (*See* Clarke, Richard T., assignor.)	
103,523	Taylor, George, New York, N. Y. Faucet	May 24, 1870
96,815	Taylor, George E., Philadelphia, Pa. Roofing-tongs	Jan. 11, 1870
	Taylor, George L., and Dwight Holland. (*See* Fiske, Henry G., assignor.)	
105,863	Taylor, George Oscar, Hamilton, Va. Railway-rail splice	July 26, 1870
110,308	Taylor, George W., and Walter P. Jenney, Fair Haven, Mass. Lamp-chimney. (Antedated Dec. 8, 1870)	Dec. 20, 1870
	Same.....(*See* Jenney & Taylor.)	
103,939	Taylor, Gilbert F., New York, N. Y. Gearing for carpet-sweeping machines	June 7, 1870
106,429	Same.....Gear for carpet-sweeping machines	Aug. 16, 1870
	Taylor, H. H., and C. Aultman. (*See* Allonas, Joseph, assignor.)	
99,971	Taylor, Harrison H., and George H. Graham, Rochester, N. Y. Toasting-fork. (Antedated Dec. 21, 1870)	Feb. 15, 1870
102,619	Taylor, Homer, Montreal, Canada. Apparatus for the combustion of petroleum and other hydrocarbon liquids	May 3, 1870
105,013	Taylor, James C., Trenton, N. J. Corpse-preserver	July 5, 1870
	Taylor, John, *et al.* (*See* Martin & Offineer, assignors.)	
101,941	Taylor, John L., New York, N. Y. Suspensory bandage	April 12, 1870
	Taylor, Joseph E., *et al.* (*See* Pepper, Daniel Webster, assignor.)	
104,091	Taylor, Joseph M., Dublin, Ind. Scaffold-bracket	June 7, 1870
	Taylor, Lemuel, and James C. Richardson. (*See* Richardson & Taylor.)	
107,424	Taylor, Lewis R., Clark Township, Ind. Cider-mill	Sept. 13, 1870
	Taylor, Martin, and Archibald H. Crozier. (*See* Crozier & Taylor.)	
107,735	Taylor, Peter C., San Antonio, Texas. Kiln	Sept. 27, 1870
100,467	Taylor, P. H., New Orleans, La. Label for cotton-bales	Mar. 1, 1870
4,521	Taylor, Richard Henry, Lincoln, Va. Plow-share	Dec. 13, 1870
104,375	Taylor, Robert R., assignor to self, Jeremiah H. Boone, Jonathan M. Heller, and C. B. Bertolette, Reading, Pa. Railway-track cleaner	June 14, 1870
101,180	Taylor, Samuel G., Baltimore, Md. Coffee-cleaner	Mar. 22, 1870
109,777	Taylor, Samuel H., assignor to self and Le Grand Parker, Jacksonville, Ill. Brick-machine	Nov. 29, 1870
109,778	Same.....Brick-mold	Nov. 29, 1870
106,741	Taylor, Samuel T., New York, N. Y. Gauge for cutting bias pieces of cloth	Aug. 23, 1870
107,122	Taylor, Simeon, Brighton, Mass. Reed-organ bellows-action	Sept. 6, 1870
103,526	Taylor, Sylvester J., Rome, N. Y. Combined hay-rake and tedder	May 24, 1870
	Same.....(*See* Butterfield, Spicer R., assignor.)	
101,942	Taylor, Thomas, assignor to Henry Disston, Philadelphia, Pa. Method of manufacturing circular saws	April 12, 1870
101,181	Taylor, Thomas M., New York, N. Y. Coffin	Mar. 22, 1870
104,890	Taylor, Thomas M., assignor to the Meriden Britannia Company, New York, N. Y. Lifting-handle for coffins, &c	June 28, 1870
103,686	Taylor, William, Lowell, Mass. Stove-pipe damper	May 31, 1870
	Taylor, William B. and George A. Blake. (*See* Blake & Taylor.)	
	Taylor, William B. S., New York, N. Y. Flexible tubing for illuminating-gas (Disclaimer filed)	Dec. 27, 1870
108,739	Taylor, William H., Baldwinsville, N. Y. Harness-hook	Oct. 25, 1870
109,358	Taylor, William M., Newberry, Ohio. Spring for railway-car trucks	Nov. 15, 1870
110,605	Taylor, William Z., assignor to self and John R. King, Burlington, Iowa. Grain-register	Dec. 27, 1870
	Taynton, James, and Lewis Y. Ketcham. (*See* Ketcham & Taynton.)	
108,909	Teachout, Albert P., Madison, Ohio. Water-wheel	Oct. 11, 1870
105,515	Teal, Daniel E., New Lisbon, N. Y. Construction of chairs	July 19, 1870
105,516	Same.....same	July 19, 1870

Alphabetical list of patentees for the year 1870—Continued.

No.	Name, residence, and invention or discovery.	Date.
105,517	Teal, Daniel E., New Lisbon, N. Y. Construction of chairs	July 19, 1870
99,497	Teal, Theodore D., Philadelphia, Pa. Paint for ships' bottoms. (Antedated Jan. 24, 1870)	Feb. 1, 1870
		Aug. 2, 1870
105,997	Teal, William, Rochester, N. Y. Planing-machines	July 12, 1870
105,384	Teamer, William, Evansville, Ind. Stove-grate	April 5, 1870
101,679	Teats, Herman, Ann Arbor, Mich. Composition for cleaning plate and glass	April 5, 1870
101,543	Teed, John, Reading, Pa. Counter-knife	Dec. 6, 1870
109,967	Teed, Lorenzo P., Mechanicsburgh, Pa. Horse-power	
	Teel, William S. (*See* Jones, James A., assignor.)	June 21, 1870
104,063	Te Gantvoort, Jacobus A. H., Waupun, Wis. Bread-making apparatus	Mar. 8, 1870
100,698	Tegetthoff, Frank C., Cleveland, Ohio. Roofing compound	
100,669	Tellier, Charles, assignor to Leopold Bouvier, France. Manufacture of ice, and cooling air, liquids, &c.	Mar. 8, 1870
		May 24, 1870
103,369	Temme, Christian, St. Louis, Mo. Cooking-stove	
101,543	Temple, James, assignor to self, William, and John Temple, Bellefonte, Pa. Car-coupling	April 5, 1870
101,183	Temple, John F., Chicago, Ill. Machine for making pump-buckets. (Antedated March 16, 1870)	Mar. 22, 1870
		Oct. 4, 1870
107,979	Templeton, John Stewart, Scotland. Mechanism for operating comber-boards	July 19, 1870
105,606	Templeton, Nicholas J., Cincinnati, Ohio. Bung-cutter	April 5, 1870
101,680	Ten Eyck, Edgar C., West Meriden, Conn. Tag-holder	
107,307	Ten Eyck, Isaac, and John O. Reilley, said Reilley assignor to said Ten Eyck, New York, N. Y. Cigar-machine	Sept. 13, 1870
	Terfloth, Bernard, and Solomon Jones. (*See* Jones & Terfloth.)	
4,052	Ter Hoeven, Dirk Adreaan, Philadelphia, Pa. Fertilizer. (Division A, reissue)	June 28, 1870
4,053	Same. Manufacture of fertilizers (Division B, reissue)	June 28, 1870
	Terhune, Thomas and P. O. (*See* Achenbach, John R., assignor.)	
110,171	Terrel, Enoch P., West Liberty, Ohio. Shuttle-operating mechanism for looms	Dec. 13, 1870
101,183	Terrell, Clark M., Oscaloosa, Iowa. Hay gatherer and shocker	Mar. 22, 1870
108,066	Terrell, Walca, Ansonia, Conn. Tongs for forging the arms on fifth-wheels	Oct. 4, 1870
107,563	Terry, Benjamin C., Keyport, N. J. Wind-wheel	Sept. 20, 1870
107,837	Terry, George B., Pittsford, N. Y., and Warren G. Hawle, Gorham, N. Y. Car-coupling	Sept. 27, 1870
105,607	Terry, Henry, Waterbury, Conn. Earth chamber-pail	July 19, 1870
108,334	Terry, Jabez C., Springfield, Conn. Book-binding	Aug. 9, 1870
107,123	Terry, James jr., Terryville, Conn. Trunk-lock	Sept. 6, 1870
108,051	Terry, Robert, and Frederick W. Hafkemeyer, Chicago, Ill. Carpet-cleaner	Oct. 25, 1870
3,985	Terry, Silas B., assignor through mesne assignments to Silas B. Terry, jr., and Daniel S. Robeson, Terryville, Conn. Machine for making paper boxes. (Reissue)	May 17, 1870
		Jan. 25, 1870
99,258	Terry, William A., Bristol, Conn. Clock-calendar	Nov. 29, 1870
109,685	Same. Water-wheel (Reissue)	Dec. 20, 1870
4,213	Same. Calendar-clock	Mar. 8, 1870
100,690	Terwilliger, H. G., Scranton, Pa. Grooving-chisel. (Antedated Feb. 28, 1870)	
110,309	Tetro, Waldy, assignor to Union Nut Company, Northampton, Mass. Cant-hook	Dec. 20, 1870
3,878	Thackara, Benjamin, assignor to Miskey, Merrill & Thackara, Philadelphia, Pa. Shade for gas or lamp burners. (Antedated Oct. 1, 1869) (Design)	Mar. 1, 1870
104,900	Thalhofer, Andrew, South Bend, Ind. Device for operating awnings	June 28, 1870
	Tharp, Benjamin H., and Jacob L. Runk. (*See* Runk & Tharp.)	
104,378	Thatcher, John M., Bergen, N. J. Fire-place heater	June 14, 1870
109,968	Same. Stove-grate	Dec. 6, 1870
104,337	Thayer, Albert, and William A. Hastings, Thorndike, Mass. Check-rein attachment	June 14, 1870
100,213	Thayer, Charles, and David McPherson, Rome, N. Y. Packing for piston-rods	Feb. 22, 1870
106,742	Thayer, Cornelius, and Loman L. Thomas, Otego, N. Y. Harrow	Aug. 23, 1870
103,940	Thayer, Eber, Union City, Mich. Apparatus for splitting rock	June 7, 1870
103,104	Thayer, Hiram, Paxton, Mass. Mode of making boots	May 17, 1870
	Thayer, Hiram H., and William H. Hart, jr. (*See* Hart & Thayer.)	
103,390	Thayer, Moses A., Chicago, Ill. Hot-air furnace	May 24, 1870
	Thayer, Simeon O., and Benjamin F. Housel. (*See* Housel & Thayer.)	
106,093	Thayer, Theodore H., New Haven, Conn. Cock	Aug. 2, 1870
103,797	Thayer, William H., Thomaston, Conn. Shuttle for sewing-machines	May 31, 1870
99,038	Theberath, Charles M., Newark, N. J. Mode of covering harness-trimmings	Jan. 18, 1870
104,509	Theisen, Mathias, Waukon, Iowa. Bolt and rivet trimmer	June 21, 1870
107,736	Theurer, Fritz Robert, Switzerland. Stem-winding and setting attachment to watches	Sept. 27, 1870
105,740	Thickens, Richard W., assignor to David R. Sperry, Batavia, Ill. Farmers' boiler	July 26, 1870
106,890	Thielcke, Charles M., Chicago, Ill. Curtain-fixture	Aug. 30, 1870
103,525	Thielemann, John, and Philip Meyer, assignors to William Sellers, Newark, N. J. Piano-lock	May 24, 1870
109,779	Thiers, William F. J., New York, N. Y. Ventilator, alarm, and bilge-pump for vessels	Nov. 29, 1870
99,896	Thiery, C. L., Boston, Mass. Watch-case	Jan. 18, 1870
108,847	Same. same (Design)	Nov. 1, 1870
3,869	Thilenius, George C., Cape Girardeau, Mo. Trade-mark	Mar. 8, 1870
105,319	Thing, R. W., assignor to self and David T. Pray, Boston, Mass. Gauge-pin for tympan-sheets	July 19, 1870
107,980	Thirkittle, George M., Belleville, Mich. Grain and seed drill	Oct. 4, 1870
100,469	Thoits, Frank, Yarmouth, Me. Friction-roll for yard-arms	Mar. 1, 1870
101,786	Thomas, George F., jr., Brooklyn, N. Y. Paper for checks, drafts, notes, &c.	April 12, 1870

Alphabetical list of patentees for the year 1870—Continued.

No.	Name, residence, and invention or discovery.	Date.
	Thomas, A. (*See* Cayce, John M., assignor) (Reissue)	May 3, 1870
102,729	Thomas, Abraham and George D., St. Thomas, Pa. Hay and lime elevator	Nov. 29, 1870
109,686	Thomas, Alfred, Hoboken, N. J. Apparatus for marking cloth	Sept. 20, 1870
107,564	Thomas, Alfred, Worcester, Mass. Tool-rest	Nov. 29, 1870
109,687	Thomas, Alphonse, Hoboken, N. J. Apparatus for marking cloth	
	Thomas, Benjamin F., and Marshall Turley. (*See* Turley & Thomas.)	Mar. 15, 1870
100,951	Thomas, Chauncey, Boston, Mass. Thill-coupling. (Antedated March 3, 1870)	June 28, 1870
104,901	Same. Axle-nut and axle	Dec. 27, 1870
110,606	Same. Carriage	
4,333	Thomas, Daniel W., assignor to Henry Brewster, John W. Button, and James Lawrence, New York, N. Y. Carriage-door handle (Design)	Aug. 30, 1870
109,969	Thomas, Edward, Shickshinny, Pa. Coal-screen	Dec. 6, 1870
105,998	Thomas, Edwin, Philadelphia, Pa. Machine for cushioning and ventilating leather	Aug. 2, 1870
105,385	Thomas, George, and William W. McLanahan, Milesburgh, Pa. Double-tuyere forge-fire	July 12, 1870
105,864	Thomas, George G., St. Louis, Mo. Hot-air furnace	July 26, 1870
	Thomas, Henry. (*See* Kirk, Solomon W., assignor.)	
4,147	Thomas, Hermon, Philadelphia, Pa. Cider, wine, and other press (Design)	June 7, 1870
103,391	Thomas, James, Parryville, Pa. Apparatus for opening and closing the tops of blast-furnaces	May 24, 1870
105,865	Thomas, Jesse B., Centreville, Ind. Corn-marker	July 26, 1870
107,124	Thomas, John, Hardwick, Vt. Device to regulate the flow of sap to evaporating-pans	Sept. 6, 1870
100,566	Thomas, John, assignor to self, William Bacon, Harrison Groves, and Hugh Chaytor, England. Furnace for smelting and for other purposes. (Patented in England July 16, 1868)	Mar. 8, 1870
108,535	Thomas, John F., Ilion, N. Y. Chuck	Oct. 18, 1870
105,141	Thomas, John F., and Daniel H. McLane, Ilion, N. Y. Hay-spreader	July 5, 1870
99,498	Thomas, John Henry, Springfield, Ohio. Seed-sower	Feb. 1, 1870
105,866	Same. Grain-drill	July 26, 1870
105,386	Thomas, John H., and Phineas P. Mast, Springfield, Ohio. Seeding-machine	July 12, 1870
105,387	Same. Securing drill and cultivator teeth	July 12, 1870
4,091	Thomas, John H., Phineas P. Mast, and Charles O. Gardiner, assignors to John H. Thomas and Phineas P. Mast, Springfield, Ohio. Grain-drill (Reissue)	Aug. 2, 1870
109,558	Thomas, John R., Mifflin, Pa. Cotton cultivator and plow	Nov. 22, 1870
	Thomas, Leman L., and Cornelius Thayer. (*See* Thayer & Thomas.)	
99,259	Thomas, Nicholas, Chicago, Ill. Machine for threading bolts	Jan. 25, 1870
107,308	Same. Safety-valve	Sept. 13, 1870
	Thomas, Owen W., and Stanton D. Warner. (*See* Warner & Thomas.)	
	Thomas, Samuel, Hokendauqua, Pa. Ore-washer (Extension)	Sept. 15, 1870
	Thomas, T. C. (*See* Barker, Charles, assignor.)	
	Thomas, William, and James Fraser. (*See* Fraser & Thomas.)	
108,210	Thomas, William H., assignor to Turner, Seymour & Judds, Brooklyn, N. Y. Sash-fastener	Oct. 11, 1870
104,228	Thomas, William K., assignor to self and W. E. Hill, Brooklyn, N. Y. Window-guard	June 14, 1870
100,567	Thomas, William L., Wadsworth, Ohio. Balanced water-elevator	Mar. 8, 1870
109,157	Thomasson, Tower, Calhoun, Mo. Corn huller, sheller, and feed-cutter	Nov. 8, 1870
102,066	Thompson, Alexander, Burlington, Vt. Drill	April 19, 1870
98,528	Thompson, Alexander W., for himself, and as administrator of Henry Thompson, deceased, Saginaw, Mich. Head-block for saw-mills	Jan. 4, 1870
103,941	Thompson, Ambrose B., Owego, N. Y. Corn-sheller	June 7, 1870
101,092	Thompson, A. B., assignor to self and Albert Cleveland, Owego, N. Y. Clamp for holding brooms, brushes, &c. (Antedated March 7, 1870)	Mar. 22, 1870
103,942	Thompson, Andrew, Ottawa, Ill. Mold-board press	June 7, 1870
107,203	Thompson, Barnes, Horton, Iowa. Feed-attachment for thrashing-machines	Sept. 6, 1870
	Thompson, Charles E. (*See* Bradley, Samuel C., assignor.)	
	Thompson, Charles G. (*See* Brooks, Silas M., assignor.)	
102,332	Thompson, Charles H., Alliance, Ohio. Die for making thrashing-machine teeth	April 26, 1870
102,183	Thompson, David B., Brooklyn, N. Y. Type-distributing machine	April 19, 1870
103,392	Thompson, Edward, Madison, Wis. Gas-condenser. (Antedated May 14, 1870)	May 24, 1870
105,278	Thompson, Edward Davis, Lawrence, Kans. Car-coupling	July 12, 1870
107,309	Thompson, Edward O., and Charles B., Thomasville, Ga. Horse-power apparatus	Sept. 13, 1870
	Thompson, Elizabeth. (*See* Kelly, Peter J., assignor.)	
	Thompson, George, Philadelphia, Pa. Manufacture of caustic alkali. (Extension)	Oct. 13, 1870
	Same. Manufacture of caustic alkali (Extension)	Oct. 13, 1870
	Same. same (Extension)	Oct. 13, 1870
102,630	Thompson, George, assignor to self and John H. Cogill, Trenton, N. J. Combination-padlock	May 3, 1870
99,260	Thompson, George K., Greene, N. Y. Paint-brush	Jan. 25, 1870
103,687	Thompson, Henry, Rockland, Me. Tackle-hook	May 31, 1870
	Thompson, H., and C. B. Conant. (*See* Conant & Thompson.)	
104,793	Thompson, Henry C., Mount Sterling, Ky. Bridle-bit	June 28, 1870
3,932	Thompson, Henry G., assignor to Hartford Carpet Company, New York, N. Y. Carpet-pattern (Design)	Mar. 22, 1870
3,933	Same. same (Design)	Mar. 22, 1870
3,934	Same. same (Design)	Mar. 22, 1870
3,935	Same. same (Design)	Mar. 22, 1870
3,936	Same. same (Design)	Mar. 22, 1870

Alphabetical list of patentees for the year 1870—Continued.

No.	Name, residence, and invention or discovery.	Date.
3,937	Thompson, Henry G., assignor to Hartford Carpet Company, New York, N. Y. Carpet-pattern (Design)	Mar. 22, 1870
3,938	Same same (Design)	Mar. 22, 1870
3,939	Same same (Design)	Mar. 22, 1870
3,940	Same same (Design)	Mar. 22, 1870
	Thompson, Henry G., and Reune Martin. (*See* Howe, Frederick Webster, assignor.)	
107,565	Thompson, Ira F., Providence, R. I. Rasp	Sept. 20, 1870
100,539	Thompson, James K., Chicago, Ill. Wooden pavement	Mar. 1, 1870
109,373	Thompson, John, Louisville, Ky. Rotary pulverizer	Nov. 15, 1870
101,943	Thompson, John A., Auburn, N. Y. Ladder. (Antedated April 1, 1870)	April 12, 1870
110,089	Same Method of uniting wood. (Antedated Nov. 26, 1870)	Dec. 13, 1870
101,544	Thompson, John A., assignor to American Water-Purifying Company, Auburn, N. Y. Process and apparatus for supplying pure water to buildings. (Antedated March 25, 1870)	April 5, 1870
109,470	Thompson, Justin G., and Frederick M. Briggs; said Briggs assignor to said Thompson, Stockton, N. Y. Seed-sower	Nov. 22, 1870
	Thompson, L. P., and Peter Geiser. (*See* Geiser & Thompson.)	
99,729	Thompson, Nathan, Brooklyn, N. Y. Nut for screw-bolts	Feb. 8, 1870
100,214	Same Washer for screw-bolts	Feb. 29, 1870
104,794	Same Bottle-stopper	June 28, 1870
	Thompson, Richard, and Emil T. Hartle. (*See* Hartle & Thompson.)	
100,932	Thompson, Robert J. S., Washington, Pa. Ash-shovel	Mar. 15, 1870
	Thompson, R. M., *et al.* (*See* Humes, James H., assignor.)	
108,407	Thompson, Samuel, Baltimore, Md. Machine for washing and cleaning coffee	Oct. 18, 1870
104,795	Thompson, Samuel R., Portsmouth, N. H. Pottery-machine	June 28, 1870
	Thompson, Sewell D., *et al.* (*See* Squires & Clinton, assignors.)	
102,861	Thompson, Taylor P., assignor to self and Lewis R. Bradley, Charlestown, Mass. Filter	May 10, 1870
99,261	Thompson, Thomas, assignor to self and John T. Vinson, Washington, D. C. Clock	Jan. 25, 1870
	Thompson, Thomas, deceased, by John Thompson, executor, New York, N. Y. Machine for folding paper, &c (Extension)	Feb. 10, 1870
	Thompson, William, *et al.* (*See* Stephenson, Thompson & Blake.)	
107,737	Thompson, William, assignor to self, Jeremiah S. Bollman, and Michael H. Kline, Cleveland, Ohio. Vapor-burner	Sept. 27, 1870
103,999	Thompson, William Carroll, Williamson County, Tenn. Smut-mill	Aug. 2, 1870
	Thompson, William H., Boston, Mass., and Eustis P. Morgan, Biddeford, Me. Safety-hatch for warehouses (Extension)	June 22, 1870
101,944	Thompson, William Sinclair, Rochester, N. Y. Fruit-jar	April 12, 1870
	Thomson, A. T. (*See* Fyans, Thomas, assignor.)	
108,211	Thomson, Edgar L., and Abraham Hursh, assignors to Hattie B. Thomson and Abraham Hursh, Philadelphia, Pa. Cooking-stove	Oct. 11, 1870
	Thomson, Frank. (*See* Westfall, Ezra B., assignor.)	
105,867	Thomson, George W., Buffalo, N. Y. Lamp	July 26, 1870
103,621	Thomson, Horatio N., Auburn, N. Y. Washing-machine	May 3, 1870
	Thomson, James R. (*See* Dopp, H. William, assignor.)	
	Thomson, John, and David Moffat. (*See* Moffat & Thomson.)	
107,736	Thomson, John T., Southport, Me. Snapper-cleat	Sept. 27, 1870
109,689	Thomson, William, Scotland. Recording-instrument for electric telegraphs	Nov. 29, 1870
101,184	Thomson, William P., Watertown, N. Y. Adjustable cheese-hoop	Mar. 22, 1870
	Thomson, William Sparks. (*See* Chapin, Henry A., assignor.)	
99,033	Thorla, F. W., Hoskinsville, Ohio. Horse hay-fork	Jan. 18, 1870
98,897	Thorn, Leonard, New York, N. Y. Steam-digester for rendering lard, &c. (Antedated May 25, 1868)	Jan. 18, 1870
107,310	Thorn, William J., Westbrook, Me. Book-holder	Sept. 13, 1870
109,374	Thorne, John R., Waldoborough, Me. Hook for dumping-tubs	Nov. 15, 1870
99,499	Thorne, T. T. and G. T., Whitaker's Station, N. C. Corn-planter	Feb. 1, 1870
	Thorne, William H., and John Richards. (*See* Richards & Thorne.)	
107,566	Thornley, John, Fallston, Pa. Center-plate for stove-tops	Sept. 20, 1870
102,333	Thornton, James, and Charles F. Demmen, Wellsville, N. Y. Trace-buckle	April 26, 1870
100,460	Thornton, John T., Kewanee, Ill. Three-horse equalizer. (Antedated Feb. 26, 1870)	Mar. 1, 1870
106,743	Thornton, Sterling C., Macomb, Texas. Combined gang-plow and cultivator	Aug. 23, 1870
101,787	Thornton, William M. K., Rolla, Mo. Dust-arrester for railroad-cars	April 12, 1870
99,371	Thorp, H. D., and J. G. Lehr, Harlan, Ind. Brick-machine	Feb. 1, 1870
103,526	Thorp, James H., New York, N. Y. Coal-oil stove	May 24, 1870
109,970	Same Burglar-alarm	Dec. 6, 1870
109,971	Same Alarm-attachment	Dec. 6, 1870
109,471	Thorp, Joseph W., assignor to self, David F. Brown, and Albert Webster, Hillsborough Bridge, N. H. Sad-iron heater	Nov. 22, 1870
107,204	Thresh, George, assignor to self and Jonathan Roberts, Oxford, Mo. Carding-machine	Sept. 6, 1870
103,943	Thrift, David V., assignor of one-half interest to Levi Fisher, Monroe, Iowa. Stove-pipe ventilator	June 7, 1870
	Throp, John A., and Cyrus Roberts. (*See* Roberts & Throp.)	
100,915	Thrush, E. A., New Kingston, N. Y. Corn planter	Feb. 22, 1870
98,520	Thuer, F. Alexander, assignor to the Colt's Patent Fire-Arms Manufacturing Company, Hartford, Conn. Cartridge-loading apparatus. (Patented in England April 9, 1860)	Jan. 4, 1870

Alphabetical list of patentees for the year 1870—Continued.

No.	Name, residence, and invention or discovery.	Date.
105,998	Thuer, F. Alexander, assignor to the Colt's Patent Fire-Arms Manufacturing Company, East Hartford, Conn. Breech-loading fire-arm	July 12, 1870
	Thumm, Charles F., and Samuel A. Hill. (*See* Hill & Thumm) (Three cases.)	
	Thurber, John A., *et al.* (*See* Delamarre, Charles, assignor.)	
105,519	Tibbals, S. Lee, Dutch Flat, Cal. Device for curling hair	July 19, 1870
106,235	Tibbits, James B., assignor to self and Joseph Stebbins, Portland, Mich. Cultivator	Aug. 9, 1870
110,512	Tibbits, James P., New York, N. Y. Turn-up seat for churches, &c	Dec. 27, 1870
3,912	Tiebout, John, New York, N. Y. Shuttle-bar (Design)	Mar. 15, 1870
4,033	Tierney, Dennis H., Forestville, Conn. Fastening for neck-ties (Reissue)	June 14, 1870
	Tiffany & Co. (*See* Moore, Edward C., assignor) (Two cases.) (Design.)	
100,340	Tiffany, E. Palmer, Hartford, Conn. Pen	Mar. 1, 1870
102,334	Same Paper-folder	April 26, 1870
106,000	Tiffany, Henry B., Medina, Ohio. Faucet	Aug. 9, 1870
4,488	Tiffany, Nelson O., Buffalo, N. Y. School-desk (Design)	Nov. 22, 1870
4,489	Same School-seat hinge (Design)	Nov. 22, 1870
110,402	Same Seat-hinge for school desks and settees	Dec. 20, 1870
102,989	Tift, Philancy D., Eagleville, Ohio. Warp-stand for looms. (Antedated May 3, 1870)	May 10, 1870
	Tilden, E. F. (*See* Patch, John L., assignor.)	
	Tileston, William M. (*See* King, Josiah R., assignor.)	
	Same (*See* Hart, Amos W., assignor.)	
	Tilford, J. M., *et al.* (*See* Bussell, Erastus T., assignor.)	
108,408	Tilghman, Benjamin C., Philadelphia, Pa. Cutting and engraving stone, metal, glass, &c	Oct. 18, 1870
110,403	Tillinghast, George S., and John W. Burdwin, Morrisville, N. Y. Bark roaser and breaker	Dec. 20, 1870
104,510	Tillman, Samuel D., Jersey City, N. J. Steam-heater	June 21, 1870
104,511	Same Steam-generator	June 21, 1870
104,512	Same Propelling vessels	June 21, 1870
104,513	Same Metallic pavement	June 21, 1870
	Tillotson, Eliphalet N., and R. H. Dewey. (*See* Dewey & Tillotson) (Reissue.)	
	Tillotson, William K., and Daniel W. Denman. (*See* Denman & Tillotson.)	
104,663	Tilly, Robert, Brooklyn, N. Y. Faucet	June 21, 1870
	Tilton, Alfred E., *et al.* (*See* Mariaud, Obadiah, assignor.)	
110,310	Tilton, Mary P. R., Trenton, N. J. Pad for corsets	Dec. 20, 1870
101,545	Tilton, Smilie, Alton, N. H. Extension-table	April 5, 1870
102,622	Timby, Theodore R., Brooklyn, N. Y. Sash-fastener	May 3, 1870
102,730	Same Combined thread and needle case	May 3, 1870
4,499	Same Tarrytown, N. Y. Medal (Design)	Nov. 29, 1870
109,275	Timpe, Gustavus C., New Orleans, La. Elevator	Nov. 15, 1870
99,972	Tingley, Albert H., Providence, R. I. Automatic heat-regulator for hot-air furnaces	Feb. 15, 1870
	Tipton, Thomas C., and Samuel Rowland. (*See* Rowland & Tipton.)	
103,798	Tirrell, Jacob Porter, assignor to Henry A. Clark, Charlestown, Mass. Electro-magnetic engine	May 31, 1870
	Tisdale, Denison. (*See* Patton, William R., assignor.)	
102,623	Titcomb, George H., and John P. Culver, Jersey City, N. J. Drain and water pipe	May 3, 1870
106,970	Titus, Charles W., Philadelphia, Pa. Desk	Aug. 30, 1870
98,530	Titus, T. Benton, Phelps, N. Y. Sleigh-shoe	Jan. 4, 1870
109,689	Toan, John S., Rochester, N. Y. Automatic stove-register	Nov. 29, 1870
105,608	Toay, James, Mineral Point, Wis. Harvester-rake	July 19, 1870
	Tobey, Edward S., *et al.* (*See* Baylor, C. F., assignor.)	
100,817	Tobey, Preston A., assignor of one-half interest to Stephen Tobey, Caton, N. Y. Harvester	Mar. 15, 1870
100,818	Same Horse-power	Mar. 15, 1870
	Tobin, Joseph F. (*See* Murphy, John, assignor.)	
	Tobin, William. (*See* Sergeant, Henry C., assignor.)	
	Todd, Charles A. (*See* Fake, Henry, assignor) (Two cases.)	
	Todd, George C., Lynn, Mass. Edge-key for making and polishing the edges of boot and shoe soles (Extension)	Nov. 22, 1870
108,848	Todd, James L., Newburgh, N. Y. Governor	Nov. 1, 1870
109,816	Toensc, Charles G., Jersey City, N. J. Screw-propeller	Feb. 22, 1870
107,638	Toffiemire, John J., and Joseph D. Linnell, Rockford, Ill. Gate	Sept. 20, 1870
	Toiray, Gustave, and Vve. Adrien Maurice. (*See* Maurice & Toiray.)	
106,336	Tolar, Robert E., and William D. Orr, Newnan, Ga. Automatic table fan or brush	Aug. 9, 1870
98,816	Tolles, Abner, assignor to self and Almon Durkee Tolles, Weathersfield, Vt. Apparatus for evaporating saccharine and other solutions	Jan. 11, 1870
104,644	Tomb, Benjamin F., Tiffin, Ohio. Corn-planter	June 21, 1870
4,195	Tomlinson, Nathaniel F., Mystic Bridge, Conn. Treenail (Reissue)	Dec. 6, 1870
	Tomlinson Spring and Axle Company. (*See* Keeler, Frank, assignor.)	
	Tompkins, Clark and Ira, *et al.* (*See* Philip & Tompkins.)	
101,945	Tompkins, C. W., Assyria, Mich. Device for tenoning spokes	April 12, 1870
	Toms, Crowell M., and John R. Compton. (*See* Compton & Toms.)	
109,690	Tonner, John, Canton, Ohio. Stretching-frame	Nov. 29, 1870
108,849	Tooker, William S., assignor to self and Elliot Thomas, Kingsborough, N. Y. Glove	Nov. 1, 1870
108,850	Same same	Nov. 1, 1870
98,721	Toomey, Samuel, Wilmot, Ohio. Carriage-seat	Jan. 11, 1870
	Toone, James, jr., and Bird R. Brown. (*See* Brown & Toone.)	
106,094	Topham, William H., New York, N. Y. Spittoon	Aug. 2, 1870

Alphabetical list of patentees for the year 1870—Continued.

No.	Name, residence, and invention or discovery.	Date.
110,513	Topliff, Isaac N., Adrian, Mich. Carriage-bow	Dec. 27, 1870
99,500	Toppan, Charles, Wakefield, Mass. Manufacture of oils from petroleum	Feb. 1, 1870
103,799	Same.....Treating fabrics to render them water-proof	May 31, 1870
3,931	Torney, P. J., assignor of part interest to Charles W. Hughes and John L. Kidwell, Washington, D. C. Machine for sawing marble .....(Reissue)	April 19, 1870
102,450	Torrey, William A., Mont Clair, N. J. Preventing mildew and decay in sails, awnings, tents, tarpaulins, and other articles and fabrics	April 26, 1870
105,142	Same.....New York, N. Y., Application of carbolic acid for preventing decay and mildew in sail-cloth, canvas, and other fibrous and textile materials	July 5, 1870
110,172	Same.....Mont Clair, N. J. India-rubber and combination hose	Dec. 13, 1870
	Torstrick, Henry. (*See* Boekien, Reinhold, assignor.)	
	Totten, James S. (*See* Schoonover, John Q. A., assignor.)	
89,973	Touaillon, Jules, San Francisco, Cal. Building	Feb. 15, 1870
4,291	Tower, Levi L., Somerville, Mass. Inkstand.....(Design)	Aug. 9, 1870
	Same.....(*See* Hinman, George C., assignor.)	
	Same.....(*See* Somers, Daniel M., assignor.)	
110,311	Towers, Isaac A., Quincy, Fla. Cotton-seed and corn planter	Dec. 20, 1870
99,262	Towers, William H., Boston, Mass. Water-proof shoe	Jan. 25, 1870
104,514	Same.....Composition-roll for clothes-wringers	June 21, 1870
101,681	Towle, Hamilton E., New York, N. Y. Hoisting and lowering apparatus	April 5, 1870
102,882	Same.....Leveling and grading instrument	May 10, 1870
108,409	Same.....Shuttle. (Antedated Oct. 12, 1870)	Oct. 18, 1870
	Towle, Hamilton E., and George Ed. Harding. (*See* Philip, Frank, assignor.)	
	Town, William H., and Edgar R. Hall. (*See* Hall & Town.)	
104,665	Towne, Arthur, Auburn, Me. Composition-brouse paint	June 21, 1870
103,256	Towne, Henry R., Stamford, Conn. Key-hole guard-lock	May 17, 1870
	Towne, Hollis. (*See* Simonds, Calvin W., assignor.)	
	Towne, William J. (*See* Bryant, Mertoun C., assignor.)	
101,185	Townsend, Dennis, Felchville, Vt. Folding-card globe	Mar. 22, 1870
	Townsend, Elmer. (*See* Stetson, Bradford, assignor).....(Reissue.)	
	Same.....same.	
100,619	Townsend, Henry, Philadelphia, Pa. Check-piece and shroud-yoke for ships' rigging	Mar. 15, 1870
99,974	Townsend, Henry, jr., Philadelphia, Pa. Trestle-tree for vessels	Feb. 15, 1870
4,388	Townsend, Matthew, Canton, Mass. Dress-goods.....(Design)	Oct. 4, 1870
	Townsend, Walton. (*See* Hyde, Walter, assignor.)	
3,970	Townsend, Wisner H., New York, N. Y. Oilcloth-pattern.....(Design)	April 12, 1870
3,998	Same.....same.....(Design)	April 26, 1870
	Towsley, Lovias D., and James F. Spence. (*See* Spence & Towsley)...(Two cases.)	
110,090	Toye, Benjamin B., Toronto, Canada. Telegraphic relay	Dec. 13, 1870
	Toxer, Seth A., and Oscar N. Crane. (*See* Morehouse, Clark, assignor.)	
106,237	Trafton, John W., Springfield, Mass. Cock	Aug. 9, 1870
	Same.....(*See* Stuart, William George, assignor.)	
107,630	Tranter, James, Joseph Kinsey, and John M. Carr, Cincinnati, Ohio. Rotary power-plow	Sept. 20, 1870
108,652	Trapp, Thomas J., Williamsport, Pa. Pump-siphon	Oct. 25, 1870
107,981	Trask, Charles H., Lynn, Mass. Machine for lasting shoes	Oct. 4, 1870
107,125	Traut, Justus A., assignor to self and Jeremy W. Bliss, New Britain, Conn. Device for cutting wire or cord from bottle-stoppers	Sept. 6, 1870
103,393	Trautman, William F., Llewellyn, Pa. Paper-hangers' apparatus	May 24, 1870
108,212	Traver, Alvah, Troy, N. Y. Heating-stove	Oct. 11, 1870
108,410	Same.....Cooking-stove	Oct. 18, 1870
110,312	Same.....Heating-stove	Dec. 20, 1870
107,126	Travis, Dudley W., Enfield, N. Y., and Charles M. Clinton, Ithaca, N. Y. Binding-attachment for harvesters	Sept. 6, 1870
101,186	Travis, Joseph H., Charlestown, Mass. Folding-chair	Mar. 22, 1870
108,213	Traynham, William L., Warrenton, Ga. Seed-planter and guano-distributer	Oct. 11, 1870
108,214	Treadway, James W., assignor to Oliver A. Whittemore, Crown Point Centre, N. Y. Gang-plow	Oct. 11, 1870
110,404	Treadwell, Francis C., jr., New York, N. Y., and Ebenezer G. Lamson, Windsor, Vt.; said Treadwell assignor to said Lamson. Stone-channeling machine	Dec. 20, 1870
100,953	Treat, Joseph, New York, N. Y. Manufacture of resin-oil	Mar. 15, 1870
104,796	Same.....Manufacture of soap	June 28, 1870
102,882	Treat, Sidney C., assignor to self and Charles P. Treat, Tabor, Iowa. Liquid-meter	May 10, 1870
	Tredeger Company. (*See* Eynon, David, assignor).....(Two cases.)	
110,007	Tredenick, William, Providence, R. I. Clothes-drier	Dec. 27, 1870
99,375	Tredway, Louis D., St. Louis, Mo. Bench-plane	Jan. 25, 1870
107,425	Tregellas, Henry, Calumet, Mich. Wrench	Sept. 13, 1870
102,884	Trenaunay, Alexandre, France. Wooden-block pavement	May 10, 1870
	Trenor, Michael, *et al.* (*See* Lutz, Royce, Trenor & Chadwick.)	
99,730	Trent, Joseph, Millerton, N. Y. Draught-bar for horse-cars	Feb. 8, 1870
103,944	Same.....Volute-spring. (Antedated June 1, 1870)	June 7, 1870
	Trescott, Luther. (*See* Helder, John W., assignor.)	
	Trested, Richard H., and John L. Kendall. (*See* Kendall & Trested.)	
106,001	Trevithick, Frederick H., jr., New York, N. Y. Railway-car wheel	Aug. 2, 1870
	Tribe, Thomas, and Thomas Weeden. (*See* Weeden & Tribe.)	
101,946	Trimmer, B. T., Rochester, N. Y. Machine for scouring grain, &c	April 12, 1870
104,916	Tripler, Archibald B., New Orleans, La. Preserving wood	June 28, 1870
104,917	Same.....Preserving wood for railroad-ties and for other purposes	June 28, 1870

Alphabetical list of patentees for the year 1870—Continued.

No.	Name, residence, and invention or discovery.	Date.
106,037	Tripp, Albert E., Springfield, Ohio. Curtain-fixtures	Aug. 23, 1870
	Tripp, Amos L., *et al.* (*See* Ryerson & Stancliff, assignors.)	
106,430	Tripp, Augustus F., Buffalo, N. Y. Dredge-box	Aug. 16, 1870
99,731	Tripp, Charles M., Pittsburgh, Pa. Clip for harness	Feb. 8, 1870
101,788	Tripp, Eliphalet A., Newark, N. J. Scroll-sawing machine	April 12, 1870
104,666	Tripp, Hiram B., Boston, Mass. Bolt for safe-doors	June 21, 1870
	Tripp, Robert O. (*See* Walker, William, assignor.)	
108,215	Tripp, Seth D., Lynn, Mass. Steam-trap. (Antedated Sept. 26, 1870)	Oct. 11, 1870
108,216	Same.....Leather-buffing machine. (Antedated Sept. 26, 1870)	Oct. 11, 1870
109,077	Same.....Machine for laying channels in boots and shoes	Nov. 8, 1870
	Tripp, Stephen G., *et al.* (*See* Ryerson, Stancliff & McIntosh, assignors.)	
106,517	Tripp, Thomas, Chicago, Ill. Fire-extinguisher	Aug. 16, 1870
110,514	Tripp, William, Mechanicsville, N. Y. Potato-digger	Dec. 27, 1870
103,624	Trissler, William H., Cleveland, Ohio. Faucet	May 3, 1870
4,054	Same.....same.....(Reissue)	June 28, 1870
	Troemmer, Henry. (*See* Haslam, William, assignor).....(Design.)	
100,217	Tromly, Michael, assignor to self and W. L. Hasbrouck, Cincinnati, Ohio. Escapement for time-pieces	Feb. 22, 1870
103,394	Trone, Asa, Nebraska, Ohio. Horse-power sawing-machine	May 24, 1870
103,395	Trott, Charles H., Boston, Mass. Attachment for buckles	May 24, 1870
109,550	Trotter, Jonathan G., Newark, N. J. Furnace for desulphurizing ores	Nov. 22, 1870
102,625	Troup, Abraham, assignor to self and Herman Kirk, Louisburgh, Pa. Machine for boring hubs	May 3, 1870
	Trout, B. S., *et al.* (*See* Hand, Benjamin R., assignor.)	
107,982	Trowbridge, Edmund, and James M. Jones, Detroit, Mich. Drier	Oct. 4, 1870
	Trowbridge, H. and G. O. (*See* Pitcher, Hiram, assignor.)	
104,515	Trowbridge, James T., Akron, Ohio. Seeder and cultivator combined	June 21, 1870
99,378	Trowbridge, John H., New Haven, Conn. Machine for packing tobacco	Feb. 1, 1870
	Troxler, Anderson, and William C. Bomar. (*See* Bomar & Troxler.)	
99,263	Trubee, S. Curtis, Brooklyn, N. Y. Window-button	Jan. 25, 1870
107,127	Trudell, Samuel O., Detroit, Mich. Automatic gas-regulator	Sept. 6, 1870
105,741	True, Cyrus B., Boston, Mass. Sewing-machine	July 26, 1870
100,691	Trueg, L. Ignatius, St. Vincent's, Pa. Sun-dial	Mar. 8, 1870
4,024	Truesdale, Charles, assignor to self and William Resor & Co., Cincinnati, Ohio. Lining for fire-place.....(Reissue)	June 7, 1870
101,187	Truesdell, Lucius E., Chicago, Ill. Railroad-car axle	Mar. 22, 1870
105,868	Same.....Clamp for bridges	July 26, 1870
101,964	Same.....Warren, Mass. Burning petroleum and other hydrocarbon oils	April 12, 1870
104,902	Same.....Iron bridge	June 28, 1870
110,091	Trumbull, Charles Henry, Marion, N. Y. Tree-protector	Dec. 13, 1870
109,560	Trump, Fuller, Springfield, Ohio. Link for operating the annular series of gates for water-wheels	Nov. 22, 1870
90,373	Trump, Isaac, assignor to self and Daniel O. McCarthy, San Francisco, Cal. Driven-well	Feb. 1, 1870
101,947	Trump, Joseph, Springfield, Ohio. Cotton-seed planter	April 12, 1870
106,744	Truenick, William B., assignor to Nathaniel B. Connel, Louisville, Ky. Head-block saw-mills	Aug. 23, 1870
	Trunz, Peter, and Horatio Willard. (*See* Willard & Trunz.)	
106,891	Truxel, John S., Greensburgh, Pa. Harvester	Aug. 30, 1870
109,078	Truxell, Andrew J., Lynchburgh, Va. Boring-machine	Nov. 8, 1870
109,079	Same.....Combined center and lathe dog	Nov. 8, 1870
102,626	Tscheulin, John George, Baltimore, Md. Blower for blacksmiths' forge	May 3, 1870
	Tubbs, George W., and John W. Brockleband. (*See* Brockleband & Tubbs.)	
99,501	Tuck, J. H. L., Ottawa, Ill. Corn-harvester	Feb. 1, 1870
100,820	Tucker, Benjamin W., Brooklyn, N. Y. Paddle-wheel	Mar. 15, 1870
105,869	Tucker, Charles E., assignor to self and T. L. Appleton, Boston, Mass. Carpenters' plane	July 26, 1870
110,092	Tucker, Cyrus and William H., Indianapolis, Ind. Alarm-till. (Antedated Dec. 9, 1870)	Dec. 13, 1870
103,527	Tucker, Hiram, Newton, Mass. Surfacing cast iron	May 24, 1870
103,688	Tucker, James F., Monticello, Fla. Corn and cotton planter, fertilizer-distributer, cotton-chopper, and cultivator combined	May 31, 1870
	Tucker Manufacturing Company. (*See* Hull, Liverus, assignor.)	
109,158	Tucker, Nathaniel, Levi Williams, and Henry H. Coppock, Pleasant Hill, Ohio. Rock-drilling machine	Nov. 8, 1870
4,084	Tucker, Stephen D., assignor to R. Hoe & Co., New York, N. Y. Printing-press. (Reissue)	Aug. 2, 1870
	Tucker, Stephen D., and Richard M. Hoe. (*See* Hoe & Tucker.)	
101,188	Tucker, Sylvester G., and John H. Rose, Richmond, Va. Automatic fan	Mar. 22, 1870
104,797	Tucker, William, Fiskedale, Mass. Boring-machine	June 28, 1870
106,431	Tucker, William, assignor to self and Prince A. Snell, Fiskedale, Mass. Saw-filing machine	Aug. 16, 1870
100,087	Tuckett, George E., Hamilton, Canada. Case for curing and transporting tobacco	Feb. 22, 1870
102,885	Tuell, Melzer, Penn Yan, N. Y. Implement for measuring boards	May 10, 1870
101,789	Tuell, Melzer, assignor to self, Lewis D. Young, and Benjamin F. Fenner, Penn Yan, N. Y. Fruit and extension ladder. (Antedated April 9, 1870)	April 12, 1870
108,411	Tuell, Melzer, assignor to self and Sylvester Bowers, Penn Yan, N. Y. Straw-cutter	Oct. 18, 1870
3,816	Tufts, James W., Medford, Mass. Casing for soda-water apparatus...(Design)	Jan. 11, 1870
4,090	Tufts, Otis, Boston, Mass. Overhead work for passenger elevator-cars (Design)	May 10, 1870
	Same.....(*See* Wyman, Martin L., assignor.)	

Alphabetical list of patentees for the year 1870—Continued.

No.	Name, residence, and invention or discovery.	Date.
99,610	Tully, John W., Delano, Pa. Composition or filling for coach-painter	Feb. 8, 1870
105,599	Tully, Patrick, San Francisco, Cal. Centrifugal sugar draining and molding machine	Jan. 19, 1870
102,335	Tully, Thomas, St. Joseph, Mo. Vapor-burner	April 26, 1870
109,691	Tumler, Antony, New York, N. Y. Sirup-can	Nov. 29, 1870
105,742	Tunks, Richard M., and Peter Arendt. (*See* Nicholson, Frederic, assignor.)	July 26, 1870
105,014	Tupper, Sophia S., Churchville, N. Y. Dish-washing machine	July 5, 1870
110,173	Turly, Marshall, and Benjamin F. Thomas, Council Bluffs, Iowa. Printers' ink	Dec. 13, 1870
107,567	Turly, Marshall, Council Bluffs, Iowa. Bridge. (Antedated Dec. 3, 1870)	Sept. 20, 1870
110,608	Turnbull, Andrew, New Britain, Conn. Ratchet-feed mechanism	Dec. 27, 1870
100,341	Turnbull, A. E., jr., assignor to Joseph H. Steele, Clifton, Ohio. Pepper and spice box	Mar. 1, 1870
105,389	Turnbull, James and William, Vancouver, Wash. Ter. Curtain-fixture	July 12, 1870
104,903	Trumbull, Nisbet, *et al.* (*See* McDaniel, George W., assignor.)	June 28, 1870
	Turner, Don C., Madison, Wis. Seeding-machine	
	Turner, Elisha, Wolcottville, Conn. Tassel-hook	
	Turner, Elisha, executor. (*See* Smith, Rodney L., assignor.)	
	Turner, George F., and John H. Slocum. (*See* Slocum & Turner.)	
	Turner, George W., *et al.* (*See* Wicks, Loren J., assignor) (Design)	
3,923	Turner, Grant B., and James A. Vaughn, assignors to G. B. Turner, Cuyahoga Falls, Ohio. Grain-separator (Reissue)	April 19, 1870
	Turner, Isaac. (*See* Austin, James F., assignor.)	June 7, 1870
104,082	Turner, John C., Newark, N. J. Bedstead-fastening	Dec. 6, 1870
109,979	Turner, Josiah and Stephen Woodward, Sunapee, N. H. Mode of drawing water from wells	Oct. 25, 1870
108,653	Turner, Lawrence, New Orleans, La. Piston-packing	Feb. 8, 1870
99,732	Turner, Mahlon P., Des Moines, Iowa. Street-railway car	July 12, 1870
105,390	Turner, Reuben D., New York, N. Y. Manufacture of vinegar and acidifying liquids	
	Turner, Reuben D., and Wellwood Murray. (*See* Loew, Oscar, assignor.)	
105,618	Turner, Robert, assignor to Turner & Lutes, Rochester, N. Y. Flour-belt attachment	July 19, 1870
	Turner, Seymour & Judds. (*See* Thomas, William H., assignor.)	
	Same (*See* Brothwell, John G., assignor.)	Oct. 18, 1870
108,536	Turnipseed, Edward B., Columbia, S. C. Bee-hives	
	Turrell, Horace. (*See* Myers, C. K., assignor.)	Jan. 18, 1870
99,034	Tush, Elwood, Manchester, Iowa. Harvester	Jan. 18, 1870
99,035	Tutte, Edwin, England. Tie for hollow walls	
	Tuttle, Aaron K., and Chamberlayne Phelps. (*See* Phelps & Tuttle.)	Jan. 4, 1870
98,645	Tuttle, Abel, Mannsville, N. Y. Plant-protector	Feb. 1, 1870
99,374	Tuttle, B. W., Galena, Ill. Water-wheel	Nov. 1, 1870
108,946	Tuttle, Charles N., Auburn, N. Y. Cap for plane-irons	April 5, 1870
101,682	Tuttle, David K., and Orazio Lugo, Baltimore, Md. Ice-machine	June 8, 1870
	Tuttle, Edward A., Brooklyn, N. Y. Register and ventilator (Extension)	Nov. 8, 1870
109,089	Same Williamsburgh, N. Y. Iron lining for fire-pots	
109,821	Tuttle, Horace P., Brooklyn, N. Y. Hand-indicator for showing the course of vessels	Mar. 15, 1870
99,502	Tuttle, Ichabod B., Conewango, N. Y. Milk tempering and cooling apparatus	Feb. 1, 1870
101,546	Tuttle, John W., Newton Corner, Mass. Paper-box	April 5, 1870
108,203	Same Newton, Mass. Crutch	Oct. 11, 1870
4,096	Tuttle, Joseph H., assignor to Elisha P. Wheeler, Edward M. Madden, and William Clemson, Middletown, N. Y. Saw (Reissue)	Aug. 9, 1870
100,692	Tuttle, Joseph P., Warren, Ohio. Damper	Mar. 8, 1870
102,067	Tuttle, Joseph Wood, and Julius Peterson, Rochester, N. Y. Detaching-hook	April 19, 1870
	Tuttle, Perry M. (*See* Stephens, Perry M., assignor.)	
	Tuttle, Sidney S. (*See* Pierpont, Joshua, assignor.)	April 5, 1870
101,547	Tuttle, William, Fayette, Miss. Harrow	May 3, 1870
4,009	Tuttle, William G., Chelsea, Mich. Cross-cut saw (Design)	Jan. 18, 1870
98,898	Tuxworth, William, Sheridan, Mich. Machinery for sawing laths	June 14, 1870
104,229	Twamley, James, New York, N. Y. Tag for shoe-strings	Oct. 4, 1870
108,067	Same Metallic binding for textile fabrics	
	Same (*See* Struck, Charles E., assignor.)	
99,975	Tweddle, Herbert W. C., Pittsburgh, Pa. Manufacture of paraffine and paraffine oils	Feb. 15, 1870
4,533	Tweed, Henry A., New York, N. Y. Medicine-dropper (Design)	Dec. 20, 1870
107,128	Twigg, George, England. Shearing and clipping apparatus	Sept. 6, 1870
106,432	Twing, Almon, Waltham, Mass. Reversible center-pinion for watches	Aug. 16, 1870
	Twining, Alexander C. Manufacturing ice (Extension)	July 14, 1870
99,976	Twitchell, Henry, Cincinnati, Ohio. Apparatus for ascertaining the amount of acids in liquids	Feb. 15, 1870
	Tyer, Henry G., Andover, Mass., and John Holm, New Brunswick, N. J. Making gum-elastic cloth (Extension)	Jan. 3, 1870
4,032	Tyler, Alanson P., Boston, Mass. Toy steam-engine	May 17, 1870
	Tyler, Alexander, and Paris Gibson. (*See* Gibson & Tyler) (Design.)	
	Tyler, Charles G. (*See* Neumann, Eugen, assignor.)	Mar. 22, 1870
101,189	Tyler, Cyrus, Dryden, N. Y. Horse hay-rake	July 5, 1870
105,143	Tyler, David M., Union Township, Ind. Fence	Aug. 2, 1870
108,995	Tyler, Joel, New Carlisle, Ohio. Stock-barn (Extension)	Nov. 25, 1870
	Tyler, John, West Lebanon, N. H. Water-wheel	June 14, 1870
104,230	Tyler, Peter, Ypsilanti, Mich. Saw-buck	
	Tyrrell, James E. (*See* MacCaskey, Joseph O., assignor.)	

Alphabetical list of patentees for the year 1870—Continued.

No.	Name, residence, and invention or discovery.	Date.
98,817	Tyson, William W., assignor to Philipp Weisenberger, Allegheny City, Pa. Vapor-burner	Jan. 11, 1870
3,895	Udell, Calvin G., Chicago, Ill. Step-ladder (Reissue)	Mar. 22, 1870
	Ueberroth, Edwin R. J., and John D. Brunner. (*See* Brunner & Ueberroth.)	
4,068	Uhlinger, William P., Philadelphia, Pa. School-desk (Design)	May 24, 1870
103,528	Same Washing and drying machine	May 24, 1870
104,378	Uhlinger, William P., and Justus Doering, Philadelphia, Pa. Sewing-machine cover	June 14, 1870
101,063	Uhry, H., assignor to the American Stair-Rod Company, New York, N. Y. Stair-rod	Mar. 22, 1870
101,064	Same same	Mar. 22, 1870
100,568	Ulmann, Gustavo, assignor to Charles Rhodes Goodwin, France. Seal-lock	Mar. 8, 1870
100,918	Ulrich, Friedrich, Brooklyn, E. D., N. Y. Shears	Feb. 22, 1870
	Underhill Edge-Tool Company. (*See* Drew, Carlos B., assignor) (Design.)	
	Underhill, James E. (*See* St. John, Cornelius, assignor.)	
	Underwood, Harrison, and John F. Smith. (*See* Smith & Underwood.)	
100,822	Unglish, John F., Webster, N. Y. Vegetable-scott	Mar. 15, 1870
103,886	Same Apparatus for assorting potatoes, &c	May 10, 1870
	Union Eyelet Company. (*See* Smith, Stephen N., assignor) (Two cases.)	
	Union Machine Company. (*See* Shelden, Francis, assignor.)	
	Union Nut Company. (*See* Tetro, Waldy, assignor.)	
	Union Omnibus and Wagon Manufacturing Company. (*See* Wolfla, Jacob, assignor.)	
	Union Stone Company. (*See* Elliott, Josiah S., assignor) (Two cases.)	
	Same (*See* Wood, John F., assignor.)	
	United States and Foreign Salamander Felting Company. (*See* Riley & Bissell, assignors) (Reissue.)	
	Same (*See* Riley, John, assignor.)	
	United States Brick-Machine Company. (*See* Gard, Benjamin M. and Emery R., assignors) (Reissue.)	
	United States Gas Company. (*See* O'Meara, Timothy, assignor.)	
	United States Steam-Gauge Company. (*See* Clark, Elijah, assignor.)	
	United States Wind Engine and Pump Company. (*See* Halladay, Daniel, assignor) (Reissue.)	
	Updegraff, William. (*See* Keller, John F., assignor) (Two cases.)	
102,887	Updike, Orrin, Grass Lake, Mich. Metallic churn-dasher	May 10, 1870
	Upham, Albert N. (*See* Cole, Noah L., assignor.)	
110,515	Upham, Victor De M., Brooklyn, N. Y. Machine for heading rivet and screw blanks. (Antedated Dec. 10, 1870)	Dec. 27, 1870
	Upson, Benjamin F., and Charles C. Bradley. (*See* Bradley & Upson.)	
104,067	Upson, James W., Tallmadge, Ohio. Animal-tether	June 21, 1870
107,983	Ure, James Millar, Great Britain. Locomotive	Oct. 4, 1870
102,731	Urie, James, Evansville, Ind. Machine for making plows	May 3, 1870
101,548	Urmston, John J., Rahway, N. J. Wood-turning lathe	April 5, 1870
3,989	Usher, Charles, assignor to S. B. Hewitt, jr., and L. P. Jones, Iowa Falls, Iowa. Coating iron and steel (Reissue)	May 24, 1870
108,654	Usher, John H., assignor to the Buffalo and Niagara Scale Works Company, Buffalo, N. Y. Scale-beam	Oct. 25, 1870
	Usher, Stephen L., *et al.* (*See* Armington, William W., assignor.)	
	Utassy, F. G., & Co. (*See* Krafft, Albert, assignor.)	
102,336	Utley, Gabriel, Chapel Hill, N. C. Wrench	April 26, 1870
106,638	Utley, Grey, Charlotte, N. C. Hay and cotton press	Aug. 23, 1870
106,238	Utley, Grey, assignor to self and Glenn & Wright, Charlotte, N. C. Stump-puller	Aug. 9, 1870
107,068	Utley, William, Troy, N. Y. Tile for roofing, &c	Oct. 4, 1870
101,549	Utter, Samuel S., New York, N. Y. Shelf for ovens of cooking-stove	April 5, 1870
4,053	Same Brooklyn, N. Y. Stove (Design)	May 17, 1870
107,568	Vail, Samuel S., Keokuk, Iowa. Wood-bucket. (Antedated Sept. 12, 1870)	Sept. 20, 1870
	Vaill, Edward W. (*See* Merriam, Joseph D., assignor) (Reissue.)	
	Same (*See* Boyd, Asahel C., assignor.)	
98,646	Vaillant, C. R., Whistler, Ala. Valve-cock	Jan. 4, 1870
98,647	Vairin, A. L. P., Ripley, Miss. Wheeled harrow	Jan. 4, 1870
3,796	Vale, Joseph, Beloit, Wis. Oven (Reissue)	Jan. 11, 1870
4,055	Same same (Division A, reissue)	June 28, 1870
4,056	Same same (Division B, reissue)	June 28, 1870
107,984	Same Rotary bake-oven	Oct. 4, 1870
104,083	Vale, Joseph and Charles L., Chicago, Ill. Bakers' oven	June 7, 1870
	Valentine & Butler Safe and Lock Company. (*See* Butler, William H., assignor.)	
	Valentine & Sparks. (*See* Hedges, John R., assignor.)	
100,093	Valentine, Jacob, Bound Brook, N. J., Francis Farris, jr., Elizabethtown, N. J., and Chauncey Barnes, New York, N. Y., assignors to Daniel R. Pratt. Railway-rail splice	Mar. 8, 1870
108,304	Valentine, William P., assignor to self and John Robert Drake, Buffalo, N. Y. Mop-head	Oct. 11, 1870
109,852	Valkmar, Charles, New York, N. Y. Bed-bottom	Dec. 6, 1870
	Valladares, Hilario, and Carlos Ortig. (*See* Ortig & Valladares.)	
103,257	Valley, John N., Detroit, Mich. Clothes-drier	May 17, 1870
106,745	Van, John, Cincinnati, Ohio. Culinary apparatus	Aug. 23, 1870
106,746	Same Hot-air furnace	Aug. 23, 1870
100,088	Van Aken, Myers L., Sturgis, Mich. Horse-poke	Feb. 22, 1870
	Van Alen, Mary A., *et al.* (*See* Browne, A. W., assignor) (Reissue.)	

Alphabetical list of patentees for the year 1870—Continued.

No.	Name, residence, and invention or discovery.	Date.
102,068	Van Anden, William, Poughkeepsie, N. Y. Machine for making wrought-iron chairs for railroads	April 19, 1870
109,973	Van Antwerp, John, Cleveland, Minn. Clevis for sleds	Dec. 6, 1870
98,818	Van Arnum, James D., and William Ives, Troy, N. Y. Non-conducting composition for covering steam-boilers	Jan. 11, 1870
99,375	Van Benthuysen, Henry B., Lock Haven, Pa. Base-burning stove	Feb. 1, 1870
98,531	Van Bibber, Merritt, Tipton, Ind. Harrow	Jan. 4, 1870
3,846	Van Brunt, W. A., Horicon, Wis. Seeding-machine (Reissue)	Feb. 15, 1870
101,683	Van Buren, Jafew S., Green Island, N. Y. Hot-air furnace	April 5, 1870
100,954	Van Camp, A., Washington, D. C., and M. M. Hodgman, St. Louis, Mo. Composition for concrete pavements, walks, &c	Mar. 15, 1870
	Same.....Pavement	May 17, 1870
103,105	Vancleave, James C., Hamburgh, Ark. Mechanical movement	Feb. 8, 1870
99,611	Van Dake, Frank R., Jackson, Miss. Folding-crate	Feb. 15, 1870
99,977	Vandegrift, Andrew J., Covington, Ky. Machine for hulling cotton-seed, &c	June 28, 1870
104,799	Same.....Flour and grist mill	Sept. 13, 1870
107,311	Vandegrift, Andrew J., and George W. M., Cincinnati, Ohio. Grinding-mill	May 17, 1870
103,108	Vandegrift, James, Princeton, Ill. Plow (Reissue)	Sept. 13, 1870
4,119	Vandemark, Charles, Phelps, N. Y. Cooking-stove	Jan. 25, 1870
99,264	Same.....Portable furnace	Nov. 29, 1870
109,780	Vandenburgh, Nicholas, Schuylersville, N. Y. Potato-digger	Oct. 18, 1870
108,537	Same.....same	Dec. 6, 1870
109,974	Vandergift, Theodore F., and William M. Perkins. (*See* Perkins & Vandergift.)	
	Vanderbover, Bergen, *et al.* (*See* Freeman, Idell & Vanderhoven.)	
100,343	Vanderpool, James, Hackensack, N. J. Device for oiling carriage-wheels	Mar. 1, 1870
103,589	Vanderslice, George Z., and Bela L. Churchill, Phillipsburgh, Pa. Saw-filing machine	May 24, 1870
108,655	Vanderveer, Benjamin D. and David A., and Tunis Denise, Freehold, N. J. Machine for assorting potatoes	Oct. 25, 1870
109,376	Vanderveer, Elias W. C., Linden, N. J. Earth-closet	Nov. 15, 1870
	Vandervoort, Charles M., and William F. Fluhrer. (*See* Manson, George W., assignor) (Design.)	
	Vandervoort, Charles M., *et al.* (*See* Manson, George W., assignor.)	
104,379	Vander Weyde, Nicholas J., New York, N. Y. Game. (Antedated June 3, 1870)	June 14, 1870
104,796	Vander Weyde, Peter H., New York, N. Y. Instrument for testing oils. (Antedated June 6, 1870)	June 28, 1870
105,609	Same.....Apparatus for cooling and refrigerating	July 19, 1870
108,851	Same.....Manufacture of ice	Nov. 1, 1870
103,258	Van Dersee, Cornelius, and Benjamin Reamer, Albany, N. Y. Potato-digger	May 17, 1870
106,518	Van Deursen, William P., Cincinnati, Ohio. Compound for extinguishing fires	Aug. 16, 1870
109,975	Same.....Fire-extinguisher	Dec. 6, 1870
103,800	Van Deursen, William P., assignor to self and William C. Davis, Cincinnati, Ohio. Composition for extinguishing fires	May 31, 1870
106,002	Van Deursen, William P., and William C. Davis, Cincinnati, Ohio. Automatic fire-extinguisher for railroad-cars, &c	Aug. 2, 1870
	Same.....(*See* Stewart & Bradley, assignors) (Reissue.)	July 5, 1870
105,144	Van Deusen, Charles C., Stout Brook, N. Y. Bee-feeder	Nov. 8, 1870
109,081	Van Deventer, Presley D., Wright City, Mo. Cook-room refrigerator and condenser	Mar. 22, 1870
101,190	Van Dusen, John D., assignor to self and Jacob Brinkerhoff, Auburn, N. Y. Washing-machine	July 12, 1870
105,279	Van Dyne, Jacob Brill, Covington, Ky. Fire-extinguisher	Dec. 6, 1870
109,976	Same.....same	April 19, 1870
102,069	Van Epps, James R., Albany, N. Y. Dovetailing-machine	Aug. 16, 1870
106,519	Van Eps, Henry R., Peoria, Ill. Combined latch and lock for gates	May 3, 1870
102,732	Van Everen, Philip, Brooklyn, N. Y. Copy-book	May 3, 1870
102,733	Same.....Book-cover protector	Dec. 27, 1870
4,542	Van Gaasbeek, Beekman, Mount Vernon, N. Y. Poultry-fountain (Design)	Aug. 2, 1870
106,003	Van Gorder, James L., Sidney, Ohio. Sulky-plow	Feb. 15, 1870
99,978	Van Haagen, Anthony, and William Adamson, Philadelphia, Pa. Fertilizer from glue residuum	Feb. 15, 1870
99,979	Same.....Soap product from glue residuum	Dec. 20, 1870
4,534	Van Haagen, Anthony, assignor to McKeone, Van Haagen & Co., Philadelphia, Pa. Block of soap (Design)	Oct. 11, 1870
108,305	Van Haagen, Clana, assignor to self and Anthony Van Haagen, Philadelphia, Pa. Planing-mechanism	Oct. 11, 1870
108,306	Same.....Turning and boring mechanism	Dec. 20, 1870
110,405	Same.....Portable drilling-tool	Dec. 20, 1870
110,406	Same.....Gear-cutting machine	Dec. 20, 1870
110,407	Same.....Grooving-tool	Dec. 27, 1870
110,600	Same.....Machine for cutting and sharpening metals	Nov. 22, 1870
109,561	Van Houten, James H., Newark, N. J. Air-carbureting wheel	Nov. 22, 1870
109,562	Same.....Apparatus for carbureting air	Nov. 22, 1870
109,563	Same.....Gas-machine	Aug. 16, 1870
106,433	Van Keuren, Henry, Jersey City, N. J. Pump	June 14, 1870
104,231	Van Kleeck, Wendell P., Charlestown, Mass. Emery polishing-wheel, &c	June 28, 1870
104,800	Van Meter, Stroud, Henderson, Ill. Churn	Oct. 11, 1870
108,217	Vannatta, Henry, Jefferson, Ill. Ditching-machine	
	Van Ness, Cornelious. (*See* Hares, Thomas A., assignor.)	

Alphabetical list of patentees for the year 1870—Continued.

No.	Name, residence, and invention or discovery.	Date.
107,569	Van Norman, Antoine L., Clinton, La. Washing-machine	Sept. 20, 1870
	Van Nortwick, William M., and Mortimer M. Harsha. (*See* Harsha & Van Nortwick.)	
99,121	Van Nostall, James M. and Oliver W., Newark, Ill. Hedge-trimmer	Jan. 25, 1870
104,380	Van Orden, Edward, New York, N. Y. Machine for making roofing-folting	June 14, 1870
100,994	Van Patten, A., and J. F. Kelsey, Weyauwega, Wis. Sash-holder	Mar. 8, 1870
100,781	Van Patten, Frederick, assignor to self, E. D. Clapp, and M. S. Fitch, Auburn, N. Y. Die for forging fifth-wheel boards	Nov. 29, 1870
100,782	Van Patten, Frederick, and Emerous D. Clapp, assignors to selves and M. S. Fitch, Auburn, N. Y. Stump-joint for carriage-top braces	Nov. 29, 1870
102,627	Van Patten, Silas, Albany, N. Y. Elastic tip for legs of chairs, &c	May 3, 1870
105,743	Van Pelt, Samuel D., Anderson, Ind. Hinge	July 26, 1870
107,129	Van Riper, Daniel W., Columbus, Ga. Photographic background	Sept. 6, 1870
105,145	Van Riper, Richard, Brooklyn, N. Y. Machine for fluting moldings	July 5, 1870
103,107	Vansands, Horace, Middletown, Conn. Bracket for supporting stove-pipe shelves	May 17, 1870
	Van Sandt, Elisha, *et al.* (*See* Mellen, Van Sandt & Palmer.)	
105,403	Van Scoyoc, William, Oxford, Ohio. Washing-machine	July 12, 1870
98,648	Van Sickle, Garrett, assignor to self and William H. Van Sickle, Shorterville, N. Y. Pitchfork	Jan. 4, 1870
105,015	Van Slooten, Jan., Caleb S. Hunt, and William McCulloch, New Orleans, La. Pipe-cleansing apparatus	July 5 1870
4,073	Van Slyke, Manuel, and David W. Wood, Rome, N. Y. Car-coupling. (Reissue)	July 12, 1870
103,108	Van Steenberg, Joseph, Chicago, Ill. Car-coupling	May 17, 1870
100,823	Vanstone, Samuel, Providence, R. I. Die for making clinch-rings	Mar. 15, 1870
104,904	Same.....Method of manufacturing axle-nuts	June 28, 1870
104,905	Same.....Wrought-iron coupling-pipe	June 28, 1870
110,516	Van Syckel, Samuel, Titusville, Pa. Still for petroleum and other oils	Dec. 27, 1870
99,265	Van Tassell, Theodore, and R. Starr Pollock, San Francisco, Cal. Smoothing-iron handle	Jan. 25, 1870
105,610	Van Vleck, Alexander, and Thomas Phillips, Jordan, N. Y. Mill-stone curb	July 19, 1870
102,337	Van Vleck, Matthew and Lawrence, Monroe, Wis. Spring bed-bottom	April 26, 1870
102,734	Van Vleeck, Livingstone B., New York, N. Y. Hand-stamp canceler. (Antedated March 16, 1870)	May 3, 1870
98,649	Van Wagoner, Thomas, Newark, N. J. Extension curtain-roller	Jan. 4, 1870
4,490	Van Wart, Ames, New York, N. Y. Statuary (Design)	Nov. 22, 1870
4,491	Same.....Statuette (Design)	Nov. 22, 1870
98,722	Van Wert, J. L., Tolland, Mass. Horse-collar	Jan. 11, 1870
98,899	Same.....Harness-saddle	Jan. 18, 1870
105,744	Van Wie, Isaac H., Clarksville, N. Y. Hollow auger	July 26, 1870
99,796	Van Wormer, M., Troy, Ohio. Fence	Feb. 15, 1870
109,093	Van Wyck, James T., Poughkeepsie, N. Y. Cultivator-rake	Nov. 8, 1870
99,376	Van Wyck, Theodore C., and William Kent, Poughkeepsie, N. Y. Regulator for machinery	Feb. 1, 1870
102,888	Varney, Charles, East Brimfield, Mass. Pegging-jack	May 10, 1870
104,668	Same.....Pegging-machine	June 21, 1870
105,611	Varnum, Henry C., assignor to self and James E. Laskin, Hartford, Vt. Combined horse hay-rake and tedder	July 19, 1870
	Varwig, Henry. (*See* Knoche, John, assignor.)	
3,890	Vasseur, Hermann, assignor to Simpson, Hall, Miller & Co., Wallingford, Conn. Tea-set (Design)	Mar. 8, 1870
3,891	Same.....Ice-pitcher (Design)	Mar. 8, 1870
4,440	Same.....Fruit-stand (Design)	Oct. 25, 1870
4,441	Same.....Tea-set (Design)	Oct. 25, 1870
107,426	Vater, Bernhard, New York, N. Y. Water-elevator	Sept. 13, 1870
106,971	Vaughan, Aaron C., assignor to self, James M. Sellers, and A. K. McClure, Philadelphia, Pa. Burner for locomotive head-lights	Aug. 30, 1870
108,656	Vaughan, George B., Marshall, Mo. Corn-planter	Oct. 25, 1870
107,985	Vaughan, Silas O. and Phineas W., De Kalb, Ill. Grinder for harvester-cutters	Oct. 4, 1870
	Vaughan, William H. (*See* Wheeler, Emery T., assignor.)	
	Vaughn, James A., and Grant B. Turner. (*See* Turner & Vaughn) (Reissue)	
99,980	Vaughn, Jerome A., Downieville, Cal. Horizontal wind-wheel	Feb. 15, 1870
101,065	Veasey, John M., Denver, Col. Ter. Sheet-metal seaming-machine	Mar. 22, 1870
101,328	Same.....Caster for sewing-machines	Mar. 29, 1870
98,723	Vedder, Jerome B., Gloversville, N. Y. Railway-car coupling	Jan. 11, 1870
3,859	Vedder, Nicholas S., Troy, N. Y. Stove-plate (Design)	Feb. 22, 1870
3,860	Same.....same (Design)	Feb. 22, 1870
3,861	Same.....same (Design)	Feb. 22, 1870
104,084	Same.....Heating-stove	June 7, 1870
3,862	Vedder, Nicholas S., Troy, N. Y., and Tobias S. Heister, Lansingburgh, N. Y., assignors to Nicholas S. Vedder. Stove-plate (Design)	Feb. 22, 1870
3,863	Same.....Stove-plate (Design)	Feb. 22, 1870
3,864	Same.....same (Design)	Feb. 22, 1870
3,865	Same.....same (Design)	Feb. 22, 1870
3,866	Same.....same (Design)	Feb. 22, 1870
4,240	Same.....same (Design)	July 19, 1870
4,241	Same.....same (Design)	July 19, 1870
4,242	Same.....same (Design)	July 19, 1870
4,243	Same.....same (Design)	July 19, 1870
4,244	Same.....same (Design)	July 19, 1870
4,245	Same.....same (Design)	July 19, 1870
4,360	Same.....same (Design)	Sept. 20, 1870

Alphabetical list of patentees for the year 1870—Continued.

No.	Name, residence, and invention or discovery.	Date.
4,654	Vedder, Nicholas S., Troy, N. Y., and Tobias S. Heister, Lansingburgh, N. Y., assignors to J. L. Mott. Stove-plate (Design)	May 17, 1870
4,464	Same. Range or stove (Design)	Nov. 8, 1870
3,867	Vedder, Nicholas S., and Francis Ritchie, assignors to Nicholas S. Vedder, Troy, N. Y. Stove-plate (Design)	Feb. 22, 1870
4,374	Same. same (Design)	Sept. 27, 1870
4,246	Vedder, Nicholas S., and Francis Ritchie, Troy, N. Y., and Tobias S. Heister, Lansingburgh, N. Y., assignors to Nicholas S Vedder. Stove-plate. (Design)	July 19, 1870
109,692	Veer, Andrew A., Delaware, Ohio. Buffer and catch for doors	Nov. 29, 1870
105,612	Velie, Henry C., Poughkeepsie, N. Y. Harvester	July 19, 1870
110,174	Same. Upholstering-spring	Dec. 13, 1870
101,405	Velte, William, and John Fagan, Pittsburgh, Pa. Ice-house	Mar. 29, 1870
	Vera, Silas L., and William P. Lewis. (*See* Lewis & Vera.)	
107,640	Verbeck, Amos, Sterling, Ill. Grinding-mill	Sept. 20, 1870
100,219	Verity, James H., Lansing, Mich. Fruit-ladder	Feb. 22, 1870
	Vermillion, James. (*See* Street, James R., assignor.)	
	Vernam, William D. (*See* Kenyon, Silas R., assignor.)	
103,250	Vernon, William E., Franklin County, Mo. Corn-planter	May 17, 1870
109,277	Vetterlin, Frederick, Switzerland. Breech-loading fire-arm. (Antedated Nov. 11, 1870)	Nov. 15, 1870
110,313	Vicars, Thomas, sr. and Thomas, jr., and James Smith, England. Boiler-furnace	Dec. 20, 1870
103,819	Vickers, John H., assignor to William A. Aiken, Norwich, Conn. Door-latch	May 31, 1870
100,470	Vickery, Thomas, Providence, R. I. Knife-sharpener	Mar. 1, 1870
108,412	Vickery, William P., East Auburn, Me. Rotary steam-engine	Oct. 18, 1870
103,689	Vidal, Ulysses B., Philadelphia, Pa. Lock-nut	May 31, 1870
101,790	Vienot, Louis F., New York, N. Y. Counter and show-case	April 12, 1870
102,070	Vigneron, Charles, Providence, R. I. Machine for molding glass buttons	April 19, 1870
105,581	Vigual, Carl, New York, N. Y. Ice-cream refrigerator	July 19, 1870
	Viles, George. (*See* Batchelder, William W., assignor.)	
99,981	Villard, Frederick, Mount Eaton, Ohio. Grain-drill tooth	Feb. 15, 1870
99,982	Same. Hay and manure fork	Feb. 15, 1870
99,983	Same. Chimney-cowl	Feb. 15, 1870
	Vincent, Jonathan, *et al.* (*See* Shaw, Walter, assignor.)	
105,522	Vincent, Victor, New York, N. Y. Platform-scale	July 19, 1870
	Vine, Robert, *et al.* (*See* Warner, Walton & Vine.)	
101,791	Vining, Edward P., Grand Rapids, Mich. Railway-car brake	April 12, 1870
100,834	Vining, Elijah H., Covington, Ga. Grinding-mill	Mar. 15, 1870
	Vinson, John T. (*See* Thompson, Thomas, assignor.)	
109,278	Violett, John H., Goshen, Ind. Hoisting-apparatus	Nov. 15, 1870
104,381	Vivarttas, Aloha, assignor to self and John W. Keane, New York, N. Y. Machine for making netting	June 14, 1870
	Voelter, Henry, Germany. Reducing wood-fiber to paper-pulp. (Extension)	Aug. 26, 1870
102,336	Vogel, Annie, New York, N. Y., and Fannie Krebs, Georgetown, D. C. Hair-curling pin	April 26, 1870
106,892	Vogel, Charles, New York, N. Y. Compressed-air forge-hammer	Aug. 30, 1870
102,889	Vogt, David, Trenton, Mich. Harness-buckle	May 10, 1870
103,945	Same. Washing-machine	June 7, 1870
107,130	Vogt, John H., and George Dietzel, New York, N. Y. Hair-roll	Sept. 6, 1870
100,220	Voigt, Edward, Philadelphia, Pa. Automatic latch	Feb. 22, 1870
101,684	Voigt, Edward, and Philip P. Mathes, Philadelphia, Pa. Lock	April 5, 1870
102,184	Volk, John H., Chicago, Ill. Machine for grinding and polishing marble	April 19, 1870
107,570	Volkert, Christoph, New York, N. Y. Button-machine	Sept. 20, 1870
	Volkman, Frederick. (*See* Günther, Carl, assignor.)	
102,451	Volkmar, George D., Baltimore, Md. Metal-roof protector. (Antedated April 15, 1870)	April 26, 1870
109,977	Vollum, Samuel S., and William H. Green, New York, N. Y. Carriage-wheel lubricator	Dec. 6, 1870
105,523	Von Doehren, E. H. Gustav, and Frederick P. L. Reimers, Davenport, Iowa. Sad-iron	July 19, 1870
	Von Ficht, John, and Joseph Heino. (*See* Heino & Von Ficht.)	
105,146	Von Jeinsen, Ernest, Omaha, Nebr. Self-acting lubricator for axle-boxes	July 5, 1870
105,147	Same. Automatic lubricator	July 5, 1870
106,096	Same. Lubricating-journals of railway axle-boxes	Aug. 2, 1870
107,730	Same. San Francisco, Cal. Lubricator	Sept. 27, 1870
109,159	Same. Omaha, Nebr. Journal-box for cars	Nov. 8, 1870
	Same. (*See* Goodman, Henry A., assignor.)	
103,801	Voorhis, Oliver W., Smith H. Mapes, and William M. Voorhis, Lawrence, Ind. Combined ditching and tile-laying machine	May 31, 1870
104,906	Vorse, Addison S., Des Moines, Iowa. School-desk seat	June 28, 1870
	Vosburg, Isaac N. (*See* Boynton, Charles E., assignor.)	
104,907	Vose, Richard, New York, N. Y. Railway-car spring	June 28, 1870
105,594	Same. Car-spring	July 19, 1870
	Vose, Richard, administrator. (*See* Bullock, William) (Two cases.)	
107,319	Voss, Frederick, John P. Hax, and Henry Krug, St. Joseph's, Mo. Device for catching and holding hogs	Sept. 13, 1870
107,641	Vrooman, Henry S., Boston, Mass. Rounding-up machine for shoes	Sept. 20, 1870
	Vulcan Post-Manufacturing Company. (*See* Lyons, James B., assignor.)	
	Vulcanite Jewelry Company. (*See* Rice, George S., assignor.)	
99,984	Wackerman, John V., Buffalo, N. Y. Washing-machine	Feb. 15, 1870
106,330	Waddell, Joseph P., Brook Haven, Mass. Medical compound or pill	Aug. 9, 1870
100,955	Waddington, George, Le Roy, Ill. Combined hedge-trimmer and mower	Mar. 15, 1870

Alphabetical list of patentees for the year 1870—Continued.

No.	Name, residence, and invention or discovery.	Date.
3,935	Wade, James C., Boston, Mass. Shuttle for sewing-machines (Reissue)	April 26, 1870
102,452	Wadsworth, Henry, Duxbury, Mass. Pump	April 26, 1870
105,745	Waffle, Charles L., Sharon Centre, Ohio. Cultivator	July 26, 1870
107,427	Wagener, David S., Franklin, Mass. Method of grafting	Sept. 20, 1870
106,747	Wager, John L., and Adam L. Scudder, Sanford, N. Y. Calk for boots and shoes	Aug. 23, 1870
106,749	Waggoner, Edward P., Syracuse, N. Y. Skate	Aug. 23, 1870
	Waggoner, William H., and E. A. Wareham. (*See* Wareham & Waggoner.)	
100,221	Wagner, A. H., Chicago, Ill. Gearing for harvesters	Feb. 22, 1870
108,069	Same. Harvester	Oct. 4, 1870
108,947	Wagner, Elijah, Westminster, Md. Cotton and corn planter. (Antedated Oct. 21, 1870)	Nov. 1, 1870
106,520	Wagner, Frans, New York, N. Y. Vegetable-cutter	Aug. 16, 1870
109,350	Same. Fluid-meter	Nov. 15, 1870
99,260	Wagner, Frans, assignor to self, John W. Crump, and William A. Lynch, New York, N. Y. Liquid-meter	Jan. 25, 1870
4,040	Wagner, Frans, assignor through mesne assignments to José F. de Navarro, New York, N. Y. Liquid-meter (Reissue)	June 21, 1870
106,004	Wagner, Jacob R., Manada Hill, Pa. Combined harrow, cultivator, wheel-barrow, and sled	Aug. 2, 1870
105,280	Wahle, Lorens, Davenport, Iowa. Fire-escape	July 12, 1870
108,070	Wahler, Henry, Henry Metz, and Ludwig Heingle, Freeport, Ill. Sausage-stuffer	Oct. 4, 1870
	Wahlig, Alexander, and Charles S. Chaffee. (*See* Chaffee & Wahlig.)	
	Wailes, Sydney Irving. (*See* Kopes, John O., assignor.)	
98,734	Wailey, C. W., assignor to New Orleans Pneumatic Propelling Company, New Orleans, La. Cut-off valve-gear	Jan. 11, 1870
100,569	Wait, William W., Richmond, Ind. Bed-bottom	Mar. 8, 1870
107,642	Waite, Enoch, Franklin, Mass. Fabric for the manufacture of shoes, &c	Sept. 20, 1870
4,173	Waite, Enoch, assignor to self and Stephen M. Weld, Franklin, Mass. Fabric for the manufacture of shoes, &c (Reissue)	Nov. 1, 1870
107,131	Waite, James H., assignor to Rodney Hunt, James H. Waite, and Daniel B. Flint, Orange, Mass. Bedstead-fastening	Sept. 6, 1870
103,260	Wakefield, Charles A., Pittsfield, Mass. Earth-closet	May 17, 1870
102,628	Wakeman, Joseph B., and Alfonso R. Field, Hamden, N. Y. Washing and wringing machine	May 3, 1870
103,946	Wakeman, Joseph B., and Alonzo M. Bush, Hancock, N. Y. Coffee and tea steeper	June 7, 1870
110,610	Walbank, Samuel S., Superior City, Wis. Compound for treating leather	Dec. 27, 1870
	Walborn, Cornelius A. (*See* Kitson, Laning & Bennor, assignors.)	
	Walden, Philo, *et al.* (*See* Lawrence, Walden & Huntoon.)	
	Waldo, A. G., and Jonathan Mills. (*See* Mills & Waldo) (Two cases.)	
4,543	Waldron, Josiah V. and Charles F., New York, N. Y. Chain (Design)	Dec. 27, 1870
103,947	Walenn, William Henry, England. Electro-deposition of copper and brass on iron and steel. (Patented in England Dec. 24, 1868)	June 7, 1870
3,942	Wales, Thomas C., Dorchester, Mass. Water-proof shoe (Reissue)	April 26, 1870
107,966	Walker, Albert A., assignor to William C. Leyburn and George A. Fisk, Sparta, Wis. Thrasher and separator	Oct. 4, 1870
105,525	Walker, Alfred, Portland, Me. Regulator for steam-heating apparatus	July 19, 1870
101,396	Walker, Alpheus, Worcester, Mass. Trowel	Mar. 29, 1870
101,792	Walker, Ellery A., Hyannis, Mass. Piston-packing	April 12, 1870
3,943	Walker, Emory P., Belchertown, Mass. Butter-worker (Reissue)	April 26, 1770
100,089	Walker, George, Middletown, N. Y. Saw-grinding machine	Feb. 22, 1870
102,735	Walker, George W., Malden, Mass. Refrigerator	May 3, 1870
108,852	Same. Cooking-stove	Nov. 1, 1870
108,413	Walker, Henry Balen, New York, N. Y. Heating-table for silvering glass. (Antedated Oct. 1, 1870)	Oct. 18, 1870
110,408	Same. Silvering glass	Dec. 20, 1870
	Walker, James, Isaiah D., and Ivan N. (*See* Hagan, Jno. C., assignor) (Reissue.)	
100,222	Walker, James T., Albany, N. Y. Machine for making horseshoes	Feb. 22, 1870
108,948	Walker, Joseph H., Worcester, Mass. Boot	Nov. 1, 1870
100,695	Walker, Loudus B., Chicago, Ill. Planing-machine	Mar. 8, 1870
	Walker, Nelson A., and George Bradley. (*See* Bradley & Walker.)	
105,596	Walker, Rebecca J., Goshen, Ohio. Mode of protecting fruit-trees from curculio, &c	July 19, 1870
103,185	Walker, Redford W., Washington, D. C. Carpet-fastener	April 19, 1870
100,098	Same. Device for moistening and closing envelopes	Aug. 2, 1870
106,005	Walker, Robert E., Dresden, Mo. Carriage-spring	Aug. 2, 1870
105,527	Walker, Thomas, Philadelphia, Pa. Quartz-mill	July 19, 1870
108,854	Walker, Thomas, assignor to George H. Wooster, Brooklyn, N. Y. Plaiting-device	Nov. 1, 1870
108,855	Same. Plaiting-device	Nov. 1, 1870
99,733	Walker, Thomas George, New York, N. Y. Expelling volatile matter from peat and other materials	Feb. 8, 1870
108,853	Same. Expelling volatile matters from peat	Nov. 1, 1870
110,175	Walker, William, Odin, Ill. Mechanical movement	Dec. 13, 1870
107,571	Walker, William, assignor to self and Robert O. Tripp, Woodside, Cal. Car-coupling	Sept. 20, 1870
110,409	Walker, William P., and Ernest Henry Leseman, Toledo, Ohio. Scrubber and mop	Dec. 20, 1870
	Wall, Carl O., and Olof Johnson. (*See* Johnson & Wall.)	
99,503	Wall, Charles, New York, N. Y., and John Stewart, Brooklyn, N. Y. Drawing-frame for flax, hemp, &c	Feb. 1, 1870
	Wall, William, *et al.* (*See* Enright, John, assignor.)	

Alphabetical list of patentees for the year 1870—Continued.

No.	Name, residence, and invention or discovery.	Date.
4,321	Wallace, Abijah, assignor to the Tanite Company, Stroudsburgh, Pa. Frame of an emery-girder (Design)	Aug. 30, 1870
101,948	Wallace, Ferrand G., Syracuse, N. Y. Wheel for vehicles	April 12, 1870
	Wallace, John H. (*See* Herrick, Bryant B., assignor.)	
106,893	Wallace, Marshall, Little Rock, Ark. Hay and cotton press	Aug. 30, 1870
4,155	Wallace, Robert, Wallingford, Conn. Spoon-handle (Design)	June 14, 1870
4,069	Wallace, Robert, assignor to Meriden Britannia Company, Wallingford, Conn. Sugar-tongs (Design)	May 24, 1870
4,070	Same.....same (Design)	May 24, 1870
4,071	Same.....same (Design)	May 24, 1870
4,072	Same.....same (Design)	May 24, 1870
4,073	Same.....same (Design)	May 24, 1870
4,074	Same.....same (Design)	May 24, 1870
104,223	Wallace, William, assignor to self and Charles McAllister, Philadelphia, Pa. Carpet-fabric	June 14, 1870
102,990	Wallach, Henry, New York, N. Y. Shirt	May 10, 1870
100,471	Walling, John, Plymouth, Ind. Sawing-machine	Mar. 1, 1870
	Walls, Martin, and Thomas J. Hamer. (*See* Hamer & Walls.)	
108,856	Walmsley, James and Thomas, Great Britain. Warping-machine	Nov. 1, 1870
	Walsh, Arthur, and James P. Sibley. (*See* Sibley & Walsh.)	
99,036	Walsh, Cornelius, Newark, N. J. Trunk-hasp	Jan. 18, 1870
4,010	Same.....Trunk-lock (Design)	May 3, 1870
	Same.....(*See* Coeller, Friedrich, assignor.)	
99,037	Walsh, James, Philadelphia, Pa. Hydrant	Jan. 18, 1870
108,071	Walsh, James F., Hazel Green, Wis. Cap for horse-collars	Oct. 4, 1870
110,518	Same.....Horse-collar pad	Dec. 27, 1870
	Walsh, John, and David Alcorn. (*See* Alcorn & Walsh.)	
99,038	Walsh, P. R., and J. C. Eaton, Rochester, N. Y. Pruning-shears	Jan. 18, 1870
108,538	Walsh, Samuel, New York, N. Y. Sink	Oct. 18, 1870
	Walsh, Samuel A. (*See* Keen, Morris L., assignor) (Two cases.)	
	Same.....(*See* Krause, Frederick C., assignor.)	
	Walter, John. (*See* Sheaffer, Alfred B., assignor.)	
108,857	Walter, John A., and Eli Bushman, White House, Pa. Corn-plow	Nov. 1, 1870
107,139	Walter, Martin F., and Charles Standinger, Hartford, Conn. Heel-calk	Sept. 6, 1870
104,382	Walter, Rudolph L., Washington, D. C. Paper or paper and cloth neck-tie. (Antedated June 4, 1870)	June 14, 1870
100,343	Walter, Thomas, Philadelphia, Pa. Broom	Mar. 1, 1870
102,453	Walter, William P., Philadelphia, Pa. Holder for fruit-jars	April 26, 1870
109,478	Walton, Albert G., San Francisco, Cal. Device for exhibiting photographic pictures	Nov. 22, 1870
105,328	Walton, Elisha W., San Leandro, Cal. Gang-plow	July 19, 1870
105,329	Same.....Weed-cutter	July 19, 1870
100,223	Walton, Gustavus, Minneapolis, Minn. Shingle-machine	Feb. 22, 1870
102,463	Walton, Henry R., Philadelphia, Pa. Hay and cotton press	April 26, 1870
	Walton, Jacob W., *et al.* (*See* Warner, Walton & Vine.)	
107,133	Walton, Jeremiah W., Decatur, Mich. Wagon-jack	Sept. 6, 1870
	Walton, Joseph J. (*See* White, Robert, assignor.)	
	Same.....(*See* Gair, John, assignor.)	
109,563	Walton, William W., Roanoke, Ind. Shoe-fastening for shoe-boxes	Nov. 22, 1870
	Walworth, Caleb C., Boston, Mass. Vise (Extension)	Sept. 24, 1870
103,396	Wampach, John, Shakopee, Minn. Bob-sled	May 24, 1870
99,532	Wangeman, Rudolph, Chicago, Ill. Stop for curtain-rollers	Jan. 4, 1870
108,218	Wanner, Albert, Hoboken, N. J. Handle for canes and umbrellas. (Antedated Oct. 1, 1870)	Oct. 11, 1870
98,819	Wanner, Anthony, New York, N. Y. Velocipede. (Antedated Jan. 1, 1870)	Jan. 11, 1870
101,191	Same.....Fire-proof building	Mar. 22, 1870
	Wansbrough, Henry W., and Richard T. Bradley. (*See* Bradley & Wansbrough.)	
100,473	Warburton, William F., Philadelphia, Pa. Ventilator for hats	Nov. 22, 1870
	Ward, A., *et al.* (*See* Rider, Leman P., assignor.)	
102,890	Ward, Aaron, assignor to self and Jesse Hiatt, Dublin, Ind. Harvester-dropper	May 10, 1870
	Ward, Alexander F., and Hugh A. Stringer. (*See* Stringer & Ward.)	
4,453	Ward, Benjamin A., Lynn, Mass. Frame (Design)	Nov. 1, 1870
4,454	Same.....Bracket (Design)	Nov. 1, 1870
4,455	Same.....same (Design)	Nov. 1, 1870
4,456	Same.....Clock-front (Design)	Nov. 1, 1870
	Ward, Benjamin A., *et al.* (*See* Bellamy, John H., assignor.) (Three cases.) (Design.)	
98,630	Ward, B. F., Indian Springs, Ga. Cultivator	Jan. 4, 1870
	Ward, Daniel, and John Freeland. (*See* Freeland & Ward.)	
107,740	Ward, Edward, Smyrna, Del. Oyster-tongs	Sept. 27, 1870
103,530	Ward, Eugene, assignor to self, Francis C. Butler, and Elias S. Ward, Newark, N. J. Manufacture of winkers for harness-bridles	May 24, 1870
	Ward, Henry C., and Charles Colby. (*See* Colby & Ward.)	
	Ward, James W., *et al.* (*See* Baird, James W., assignor.)	
110,314	Ward, John D., assignor to self and William F. Jones, Baltimore, Md. Thermometer	Dec. 20, 1870
107,838	Ward, John F., Jersey City, N. J. Water-pipe	Sept. 27, 1870
107,134	Ward, Lorenzo R., Ward's Corner, Iowa. Breast-strap protector for harness	Sept. 6, 1870
108,307	Ward, Luther, Trenton, N. J. Machine for sawing stone	Oct. 11, 1870
	Ward, Mina, and Abner McOmber. (*See* McOmber & Ward.)	
106,581	Ward, R., Edinburgh, Ind. Stove-grate	Aug. 16, 1870

Alphabetical list of patentees for the year 1870—Continued.

No.	Name, residence, and invention or discovery.	Date.
110,519	Ward, Rivera, Newark, N. J. Toy-hoop	Dec. 27, 1870
108,858	Ward, Samuel W. H., New York, N. Y. Toilet-box	Nov. 1, 1870
101,192	Ward, Thomas, Columbus, Ohio. Fluid-lamp	Mar. 22, 1870
102,339	Same.....Franklin County, Ohio. Vapor-burner	April 26, 1870
106,522	Same.....Columbus, Ohio. Vapor-burner	Aug. 16, 1870
105,016	Ward, Walter, Mount Holly, N. J. Spike-extractor	July 5, 1870
110,176	Ward, Wesley G., Fayette, N. Y. Nail-extractor	Dec. 13, 1870
110,177	Ward, Wesley G., assignor to self and Abram M. Flickinger, Fayette, N. Y. Pump	Dec. 13, 1870
101,793	Ward, William, Pittsburgh, Pa. Coal-digging apparatus	April 12, 1870
99,504	Ward, William G., Edgewater, N. Y. Breech-loading fire-arm	Feb. 1, 1870
103,397	Ward, William H., Auburn, N. Y. Machine for rolling metals. (Antedated May 14, 1870)	May 24, 1870
103,398	Same.....Gear-wheel	May 24, 1870
103,399	Same.....Housing for metal-rolling mills	May 24, 1870
108,530	Same.....Adjustable gear-wheel	Oct. 18, 1870
	Ward, William S., and Edward Jones Mallett, jr. (*See* Mallett & Ward.)	
	Warden, Americus, and Jacob Fricker. (*See* Fricker & Warden.)	
110,093	Wardrobe, James, Charles D. B. Fisk, John F. Curtis, and George Fetley, Carlin, Nev. Railway axle-box	Dec. 13, 1870
99,797	Wardwell, George J., Rutland, Vt. Harvester-knife. (Antedated Feb. 6, 1870)	Feb. 15, 1870
105,391	Same.....Stone-channeling machine	July 12, 1870
	Ware, Charles. (*See* Haviland, Richard, assignor.)	
106,894	Ware, Daniel B., Athens, Mich. Miter-machine	Aug. 30, 1870
107,572	Ware, William Powell, New York, N. Y. Shoe-fastening. (Antedated Sept. 5, 1870)	Sept. 20, 1870
107,313	Wareham, E. A., and William H. Waggoner, Kirkville, Iowa. Mechanism for operating the pickers of looms	Sept. 13, 1870
109,093	Warfel, Henry C., Philipsburgh, Pa. Oil-can	Nov. 29, 1870
101,193	Warfield, Alexander, Alexandria, Va. Manufacture of soap	Mar. 22, 1870
108,540	Same.....Philadelphia, Pa. Manufacture of soap	Oct. 18, 1870
	Same.....same (Disclaimer filed)	Oct. 6, 1870
	Waring, John T. (*See* Eickemeyer Rudolf, assignor) (Reissue.)	
	Same.....same.	
	Warker, Thomas, and Carl Schultz. (*See* Schultz & Warker.)	
108,308	Warne, Mahlon, Philadelphia, Pa. Head-rest	Oct. 11, 1870
	Warner, Charles. (*See* Evans, William J., assignor.)	
105,148	Warner, Edward E., Jacob W. Walton, and Robert Vine, Philadelphia, Pa. Metal-backed comb	July 5, 1870
101,794	Warner, Effingham H. N., New York, N. Y. Shirt-bosom and wrist-band combined	April 12, 1870
105,149	Warner, Egbert L., Oxford, Conn. Baby-jumper	July 5, 1870
	Warner, Ezra J., and John H. Squier. (*See* Squier & Warner.)	
110,320	Warner, Francis F., Chicago, Ill. Adding-machine	Dec. 27, 1870
106,895	Warner, George, Des Moines, Iowa. Extensible gas-pendant. (Antedated Aug. 24, 1870)	Aug. 30, 1870
109,279	Warner, Horace, Ridgway, Pa. Washing-machine	Nov. 15, 1870
98,820	Warner, J. S., Ogdensburgh, N. Y. Chuck for grinding crystals	Jan. 11, 1870
99,123	Same.....Thread-tension device for sewing-machines	Jan. 25, 1870
105,530	Warner, L. A., Freeport, Ill. Corn-popper and coffee-roaster	July 19, 1870
4,120	Warner, Nathan S., Bridgeport, Conn. Toy-velocipede (Reissue)	Sept. 13, 1870
109,474	Warner, Samuel H., Darbyville, Ohio. Underground drain	Nov. 22, 1870
100,224	Warner, Stanton D., and Owen W. Thomas, Richmond, Ill. Apparatus for producing butter from cream	Feb. 22, 1870
98,651	Warner, William Y., and James Crooks, Wilmington, Del. Apparatus for tanning hides and skins	Jan. 4, 1870
105,746	Warren, Benjamin F., Fishkill, N. Y. Cooking-stove	July 26, 1870
103,961	Warren, Charles, Centre Groton, Conn. Saw-mill	May 17, 1870
104,383	Warren, Charles C., and James B. Baldy, Toledo, Ohio. Process for cleaning and polishing coffee	June 14, 1870
109,978	Same.....Machine for polishing coffee	Dec. 6, 1870
	Warren, Edmond A., and William C. Hornfager. (*See* Hornfager & Warren.)	
102,891	Warren, Edward, Ceresco, Mich. Hoe	May 10, 1870
	Warren, Edwin R. (*See* Hall, Alexander, assignor.)	
	Warren, Edwin W., and Alfred Woodworth. (*See* Woodworth & Warren.)	
104,660	Warren, Horace, Leicester, Mass. Hay-loader	June 21, 1870
102,186	Warren, John, Flushing, N. Y. Still for petroleum	April 19, 1870
101,329	Warren, John L., assignor to George and Samuel Hargreaves, Detroit, Mich. Oval-turning tool	Mar. 29, 1870
	Warren, Lewis L. (*See* Reed, Eden, assignor.)	
108,414	Warren, Lorenzo D., Havana, Ill. Lifting-jack	Oct. 18, 1870
	Warren, Spadone & Co. (*See* Peloubet, David A., assignor.)	
102,892	Warren, Sylvester W., assignor to self and George B. Parrott, Boston, Mass. Lamp-chimney	May 10, 1870
106,099	Warren, Thomas E., Shelburne Falls, Mass. Adjustable gauge	Aug. 2, 1870
109,160	Warren, William J., Philadelphia, Pa. Privy	Nov. 8, 1870
104,085	Warriner, Ralph, James H. Baker, and George B. Slocum, Saratoga Springs, N. Y. Machine for husking corn	June 7, 1870
104,801	Warring, Charles B., Poughkeepsie, N. Y. Heating-stove	June 28, 1870
	Warrior Mower Company. (*See* Black, Henry, assignor) (Reissue.)	

Alphabetical list of patentees for the year 1870—Continued.

No.	Name, residence, and invention or discovery.	Date.
100,000	Warson, George, England. Steam and air engine. (Patented in England Sept. 8, 1869)	Feb. 22, 1870
101,883	Warth, Albin, Stapleton, N. Y., and Philip Hufeland and George Braun, New York, N. Y., assignors to Eberhard Faber. Machine for varnishing pencils, &c	May 10, 1870
102,187	Warth, Albin, Stapleton, N. Y. Stop-valve for petroleum-packages	April 19, 1870
102,188	Same.....Tap for liquid-packages	April 19, 1870
105,150	Same.....same	July 5, 1870
105,613	Same.....Bung	July 19, 1870
106,100	Same.....same	Aug. 9, 1870
106,101	Same.....Machine for cutting textile and other materials	Aug. 9, 1870
108,073	Same.....Rendering leather impervious to hydrocarbon liquids	Oct. 4, 1870
109,360	Same.....Funnel	Nov. 15, 1870
110,611	Same.....Tap for oil-packages	Dec. 27, 1870
110,612	Same.....same	Dec. 27, 1870
109,161	Washburn, A. W., Yazoo City, Miss. Cotton-seed planter.....(Extension)	Mar. 16, 1870
	Washburn, Charles A., San Francisco, Cal. Type-writing machine	Nov. 8, 1870
	Washburn, Darwin E. (*See* Shuttleworth, George L., assignor.)	
98,735	Washburn, George L., Worcester, Mass. Mode of operating valves in steam-engines	Jan. 11, 1870
	Washburn, S., *et al* (*See* Newell, Daniel P., assignor.)	
105,399	Washburn, William L., New York, N. Y. Grinding-apparatus	July 19, 1870
108,415	Washington, Beverly H., Columbia County, Ga. Cotton-planter and fertilizer-distributor	Oct. 18, 1870
108,416	Washington, H. W. Macrae, Green Plains, Va. Safety-device for lamps	Oct. 18, 1870
100,570	Wassell, Edwin, Wood's Run, Pa. Machine for making horseshoes	Mar. 8, 1870
104,233	Waste, Charles, Galesburgh, Ill. Hay-gatherer	June 14, 1870
	Waterbury Brass Company. (*See* Hayden, Hiram W., assignor.) (Two cases.) (Reissue.)	
	Same.....(*See* Hoxsie, David K., assignor).....(Two cases.)	
103,629	Waterbury, Charles G., New York, N. Y. Stone pavement	May 3, 1870
103,901	Same.....Wooden street-pavement	May 10, 1870
	Waterbury Clock Company. (*See* Dunn, Robert, assignor.) (Five cases.) (Design.)	
110,521	Waterbury, Enos and George N., assignors to G. N. Waterbury and A. M. Prior, Stamford, Conn. Windlass	Dec. 27, 1870
102,454	Waterhouse, Addison Goodyear, San Francisco, Cal. Rotary mechanical movement	April 26, 1870
101,194	Waterhouse, William R., Liverpool, N. Y. Sliding-door	Mar. 22, 1870
100,472	Waterman, Julius, assignor to Waterman & Mayer, New York, N. Y. Bosom-pad	Mar. 1, 1870
101,195	Same.....Hoop-skirt	Mar. 22, 1870
106,630	Waters, Alonzo M., assignor to self and Henry R. Mariner, Cuyahoga Falls, Ohio. Lifting-jack	Aug. 23, 1870
100,344	Waters, G., Cincinnati, Ohio. Feed-water filter	Mar. 1, 1870
106,973	Waters, Gardner, assignor of one-fourth interest to James J. Butler, Cincinnati, Ohio. Feed-water heater	Aug. 30, 1870
108,657	Waters, Jason, West Sutton, Mass. Press for removing liquid matter from various substances	Oct. 25, 1870
	Waters, Richard C. (*See* Benson, Charles W., assignor.)	
103,531	Waters, Wilbur F., Dunkirk, N. Y. Machine for putting together and tiring wheels	May 24, 1870
106,006	Watkins, Gardner A., assignor to self and Calvin S. Greenwood, Cavendish, Vt. Saw-table for sawing irregular forms	Aug. 2, 1870
107,135	Watkins, Gardner A., assignor to the American Chair-Seat Company, Cavendish, Vt. Machine for grooving the frames of chair-seats	Sept. 6, 1870
107,136	Same.....Chair-seats	Sept. 6, 1870
107,137	Same.....same	Sept. 6, 1870
99,377	Watkins, William, Joliet, Ill. Subsoil-plow	Feb. 1, 1870
102,992	Watkins, William B., Jersey City, N. J. Thermostat fire-alarm	May 10, 1870
109,475	Watrous, Leonard, Mystic River, Conn. Electro-plating with nickel the metallic parts of cotton-gins	Nov. 22, 1870
	Watson, Addison, and John Campbell. (*See* Campbell & Watson.)	
104,902	Watson, Alfred, Jersey City, N. J. Hot-air register	June 28, 1870
	Watson, Charles. (*See* Richmond, Edwin Adison, assignor.)	
103,699	Watson, Charles S., Philadelphia, Pa. Low-water indicator for boilers. (Antedated Jan. 29, 1870)	May 31, 1870
106,940	Watson, Edward, and Richard H. Norris, Paterson, N. J. Show-case	Aug. 9, 1870
107,373	Watson, Edward K., Shokan, N. Y. Propelling canal-boats	Sept. 20, 1870
	Watson, Elvy L., and Robert Darlington. (*See* Darlington & Watson.)	
	Watson, Ezra W., and David Mead. (*See* Mead & Watson.)	
98,921	Watson, James, Philadelphia, Pa. Milling-machine	Jan. 11, 1870
100,473	Same.....Lathe	Mar. 1, 1870
101,571	Watson, John J., assignor to self and Hiram Watson, Coatesville, Pa. Stove-shelf and drier. (Antedated March 1, 1870)	Mar. 8, 1870
100,474	Watson, J. P., Rochester, Minn. Cistern cut-off	Mar. 1, 1870
108,650	Watson, Royal H., Lapeer, Mich. Machine for making wooden pins	Nov. 1, 1870
	Watson, Samuel. (*See* Ogborn, Harrison, assignor.)	
108,656	Watson, Thomas, Nevada City, Cal. Hydraulic mining-apparatus	Oct. 25, 1870
104,803	Watson, Thomas, and Charles Perry, Brooklyn, N. Y. Extension-ladder. (Antedated June 23, 1870)	June 28, 1870

Alphabetical list of patentees for the year 1870—Continued.

No.	Name, residence, and invention or discovery.	Date.
110,094	Watson, Thomas, and Charles Perry, Brooklyn, N. Y. Extension-ladder	Dec. 13, 1870
100,826	Watson, W. M., Tonica, Ill. Die or former for making double-shinned mold-board blanks for plows	Mar. 15, 1870
106,523	Same.....Motive power	Aug. 16, 1870
106,896	Watt, James R. and John C., Greene County, Ohio. Seeding-plow and planter	Aug. 30, 1870
101,685	Wattles, Hiram J., Rockford, Ill. Vegetable-washer	April 5, 1870
104,516	Same.....Shield for gas-burners	June 21, 1870
109,853	Wattles, Joseph W., Canton, Mass. Suspender	Dec. 6, 1870
	Watts, William H. (*See* Scattergood, E. B., assignor.)	
99,378	Waud, Edward, Eugene City, Oreg. Spark-arrester	Feb. 1, 1870
	Way, Charles. (*See* Marble, George W., assignor.)	
	Way, William B., *et al.* (*See* Dyer, Parker & Way.)	
102,340	Wayland, James, New York, N. Y. Spring	April 26, 1870
	Waymoth, A. D., Fitchburgh, Mass. Machine for manufacturing spools...(Extension)	July 23, 1870
104,670	Weatherbee, Paul, Port Washington, Ohio. Car-coupler	June 21, 1870
102,736	Weathers, Columbus M., Rochefort, Mo. Straw-cutter	May 3, 1870
106,749	Weathers, James, assignor to self and V. P. Harris, Greensburgh, Ind. Wall for buildings	Aug. 23, 1870
103,091	Weaver, David H., South Bend, Ind. Horse hay-rake	May 31, 1870
	Weaver, E. F. and H. H. (*See* Hill, David R. P., assignor.)	
108,417	Weaver, Edward J., Sterling, Ill. Flour-bolt feeder	Oct. 18, 1870
106,434	Weaver, Horace S., Freeport, Pa. Railway	Aug. 16, 1870
101,550	Weaver, Horatio B., assignor to George S. and Charles L. Lincoln, Hartford, Conn. Feed for iron-planers	April 5, 1870
	Weaver, Horatio B., and James E. Gillespie. (*See* Gillespie & Weaver.)	
104,234	Weaver, James E., Temperanceville, Pa. Die for cutting screw-threads on bolts	June 14, 1870
104,908	Weaver, John G., jr., Cincinnati, Ohio. Manufacture of cast-pipe elbows	June 28, 1870
	Weaver, Reuben, and M. S. Nichols. (*See* Nichols & Weaver.)	
107,830	Weaver, Samuel, Pottstown, Pa. Meat-hook	Sept. 27, 1870
101,949	Weaver, Theophilus, Harrisburgh, Pa. Hand corn-sheller	April 12, 1870
107,138	Weaver, Thomas H., Marietta, Ohio. Churn-dasher	Sept. 6, 1870
104,671	Webb, Allen P., Charlestown, Mass. Coal-sifter	June 21, 1870
108,659	Webb, Ezra, New York, N. Y. Preserving wood	Oct. 25, 1870
98,736	Webb, Francis William, England. Steam-generator	Jan. 11, 1870
	Webb, Henry C., and John F. Cory. (*See* Cory & Webb.)	
	Webb, Isaac N. (*See* Gillespie & Hughes, assignors.)	
108,860	Webb, John W., Cotton Valley, Ala. Plow	Nov. 1, 1870
	Webb, L. E., *et al.* (*See* Bailey, John A., assignor.)	
109,979	Webb, Rodolphus L., New Britain, Conn. Twine-holder	Dec. 6, 1870
99,798	Webber, J. R., Morris, Ill. House-trimming	Feb. 15, 1870
104,672	Same.....Latch or fastener for doors	June 21, 1870
106,750	Same.....Coal-stove	Aug. 23, 1870
108,219	Webber, Leroy D., Laporte, Ind. Cooking-stove	Oct. 11, 1870
105,281	Webber, Lorenzo D., assignor to self and S. W. Shailer, Deep River, Conn. Sawing-machine	July 12, 1870
102,993	Webber, Nathan G., East Springfield, Pa. Cultivator	May 10, 1870
98,823	Webendorfer, Rudolf, assignor to self and Carl Beiter, New York, N. Y. Shuttle for looms	Jan. 11, 1870
105,747	Weber, Adam, New York, N. Y. Furnace for reburning bone-black and reducing ores	July 26, 1870
4,201	Same.....Furnace for burning bone-black and other substances.....(Reissue)	Dec. 13, 1870
105,151	Webster, Abel L., Cleveland, Ohio. Nozzle for cans and casks	July 5, 1870
105,152	Same.....Seam for cans	July 5, 1870
106,007	Same.....New York, N. Y. Faucet or tap	Aug. 2, 1870
106,008	Same.....Device for drawing liquids by compressed air	Aug. 2, 1870
	Webster, Albert, *et al.* (*See* Thorp, Joseph W., assignor.)	
106,435	Webster, Albert G., assignor to self and George T. Scudder, Troy, N. Y. Base-burning stove	Aug. 16, 1870
102,994	Webster, Benjamin R., East Haverhill, Mass. Implement for turning the edge of a shoemaker's buffing-knife	May 10, 1870
106,751	Webster, Dexter P., Boston, Mass. Seed-planter and fertilizer	Aug. 23, 1870
105,017	Webster, Edward, Hartford, Conn. Hot-air furnace	July 5, 1870
4,418	Webster, Elisur G., Brooklyn, N. Y. Tea and coffee service.....(Design)	Oct. 11, 1870
103,109	Webster, James, England. Manufacture and purifying of iron. (Antedated May 4, 1870)	May 17, 1870
103,802	Webster, John N., Peoria, Ill. Cherry-stoner	May 31, 1870
3,879	Webster, John T., assignor to Page, Wilder & Co., New York, N. Y. Carpet pattern.....(Design)	Mar. 1, 1870
3,880	Same.....Carpet-pattern.....(Design)	Mar. 1, 1870
4,139	Same.....Floor-cloth pattern.....(Design)	June 7, 1870
4,140	Same.....same.....(Design)	June 7, 1870
4,344	Webster, John T., assignor to Thomas Potter, Son & Co., New York, N. Y. Oil-cloth pattern.....(Design)	Dec. 27, 1870
4,345	Same.....same.....(Design)	Dec. 27, 1870
4,344	Webster, John T., New York, N. Y., and Albert R. Powers, Lansingburgh, N. Y., assignors to Deborah, Albert E., and Nathaniel B. Powers. Floor oil-cloth. (Design)	Sept. 6, 1870
100,896	Webster, Lewis T., Northfield, Mass. Plow	Mar. 8, 1870

Alphabetical list of patentees for the year 1870—Continued.

No.	Name, residence, and invention or discovery.	Date.
106,524	Webster, William, Washington, D. C. Sad-iron	Aug. 16, 1870
107,207	Weddington, Samuel C., Jonesborough, Ind. Combined lock and latch	Sept. 6, 1870
109,083	Wederkinch, Carl O., and Archibald Starkweather, Boston, Mass. Floating velocipede	Nov. 8, 1870
109,783	Wedge, Francis, assignor to self and Thomas Griffith, Zanesville, Ohio. Steam-engine	Nov. 29, 1870
100,697	Weed, Alfred, Boston, Mass. Self-closing auger stop-cock. (Antedated Feb. 25, 1870)	Mar. 8, 1870
98,823	Weed, Otis H., Boston, Mass. Washing-machine	Jan. 11, 1870
107,205	Weeden, Thomas, and Thomas Tribe, Hillsdale, Mich. Cloth-measuring machine	Sept. 6, 1870
	Weeden, William B., *et al.* (*See* Taft, Weeden & Taft.) (Four cases.) (Design.)	Oct. 4, 1870
107,987	Weeks, Abner B., Rockland, Me. Furnace-grate	
99,123	Weeks, William H., New York, N. Y. Automatic lighting-attachment for lamps and taper-burners	Jan. 25, 1870
	Same.....Automatic lighting-wicks for lamps	May 17, 1870
103,110	Wegmann, Frederic, Italy. Machine for cleaning and separating grain	Oct. 18, 1870
108,541	Wegmann, Friedrich, Italy. Condenser	Aug. 30, 1870
106,973	Wegner, Friedrich, and Charles Schiester, West Troy, N. Y. Churn	Feb. 15, 1870
99,985	Wegner, Herrman and Friedrich, West Troy, N. Y. Knife and fork cleaner	Aug. 30, 1870
106,897	Webrham, Adelbert W., Columbia, S. C. Lamp for halls, gardens, &c	May 10, 1870
102,985	Wehrser, Abraham H., San Francisco, Cal. Child's chair	June 21, 1870
104,517	Weible, Jacob R. (*See* Gammel, William F., assignor.)	Nov. 1, 1870
108,861	Weichert, Arnold, New York, N. Y. Manufacture of sugar	May 10, 1870
102,894	Weicker, William, Blackstone, Mass. Mold for making rubber pencil-tips	Dec. 20, 1870
110,315	Weidman, Jacob, John Major, and John J. Sample, Pittsburgh, Pa. Spark-arrester	May 3, 1870
102,630	Weigle, Charles H., York, Pa. Attaching handles to joiners' plows	Mar. 22, 1870
101,196	Weiland, Godfried, Dayton, Ohio. Horse hay-rake. (Antedated Dec. 14, 1869)	May 31, 1870
	Weimar, Jacob, and John Farrel. (*See* Farrel & Weimar.)	June 28, 1870
103,692	Weimar, John S., Pleasant Hill, Ohio. Railway-rail chair	June 28, 1870
104,804	Weimar, Peter L., Lebanon, Pa. Tuyere	Aug. 30, 1870
104,906	Weinman, George, Columbia, Ohio. Combined piston-head and valve	Dec. 6, 1870
106,974	Weinman, George M., Columbus, Ohio. Pump-valve	Nov. 15, 1870
109,980	Same.....Steam-pump	
109,289	Weis, Wendelin, St Paul, Minn. Machine for making cigar-bunches	April 12, 1870
	Weisenberger, Philipp. (*See* Tyson, William W., assignor.)	Jan. 18, 1870
101,950	Weismantel, Valentin, Belleville, Ill. Hand corn-sheller	Nov. 1, 1870
99,039	Weisner, William, assignor to self and Claudius Kiefer, Elizabethtown, New Mexico. Strike for locks	Oct. 18, 1870
	Weiss, Jacob. (*See* Splitdorf, Henry, assignor.)	
108,862	Weiss, Theodor, Saxony. Metallurgic and other furnace	
	Weissinger, Rozel. (*See* Meadors, Galen, assignor.)	
108,418	Welbourn, Edward L., Union City, Ind. Horse-collar fastening	
	Welch, Benjamin G. (*See* Hamlin, Mahlon, assignor) (Two cases.)	
	Welch, E. B. (*See* Adams, Milton F., assignor.)	
	Same.....(*See* Anders, George L., assignor.)	
104,673	Welch, Hilyard, assignor to Amos M. Salisbury, Schuylerville, N. Y. Street-car starter	June 21, 1870
	Welch, James H. (*See* Atkinson, Mahlon B., assignor.)	
	Welch, James M. (*See* King, Sidney D., assignor.)	
109,854	Welch, Peter, St. Louis, Mo. Machine for trussing barrels	Dec. 6, 1870
99,379	Welch, Samuel, Belpassi, Oreg. Gang-plow	Feb. 1, 1870
	Welch, Spring & Co. (*See* Lewis, Benjamin B., assignor.)	
99,986	Welch, William, England. Apparatus for diffusing vapors through cushions, mattresses, &c	Feb. 15, 1870
106,296	Welch, William H., Bloomington, Ill. Washing-machine	Aug. 9, 1870
108,073	Weld, Edwin C., assignor to self and Theodore C. Glazier, New York, N. Y. Letter-box	Oct. 4, 1870
	Weld, Stephen M. (*See* Waite, Enoch, assignor.)	
98,727	Welling, William M., New York, N. Y. Composition resembling horn	Jan. 11, 1870
108,660	Same.....Die for molding buttons	Oct. 25, 1870
99,040	Wellington, A. H., Woodstock, Vt. Summer cooking-stove	Jan. 18, 1870
102,341	Wellington, Darius, Boston, Mass. Faucet	April 26, 1870
102,737	Same.....Lavatory apparatus	May 3, 1870
102,738	Same.....Water-closet bowl	May 3, 1870
98,824	Wellington, Henry, assignor to self and Truman P. Doane, Chicago, Ill. Vapor-burner	Jan. 11, 1870
100,572	Same.....Vapor-burner	Mar. 8, 1870
107,741	Same.....same	Sept. 27, 1870
100,345	Wellington, William, Rockford, Ill. Clothes-pin	Mar. 1, 1870
100,346	Same.....Apparatus for transmitting motion to sewing-machines	Mar. 1, 1870
102,996	Wellington, Winslow, assignor to Benjamin Wellington, Hillsborough, N. H. Head-block for saw-mills	May 10, 1870
99,041	Wellman, Marshall D., Allegheny City, Pa. Stove-grate	Jan. 18, 1870
101,795	Same.....Allegheny County, Pa. Grate-bar for steam-generators	April 12, 1870
100,698	Wells, Albert S., New Britain, Conn. Ladle for pouring metals	Mar. 15, 1870
101,307	Wells, Charles G., Collinsville, Conn. Sawing-machine	Mar. 29, 1870
108,542	Wells, Charles S., Springfield, Mass. Manufacture of boxes, cartridge-cases, &c	Oct. 18, 1870
100,956	Wells, Edward, New Haven, Conn. Landau-carriage door	Mar. 15, 1870
103,948	Same.....Concealed hinge for landau-carriages	June 7, 1870
109,981	Same.....Landaulet-carriage	Dec. 6, 1870

Alphabetical list of patentees for the year 1870—Continued.

No.	Name, residence, and invention or discovery.	Date.
4,322	Wells, Edward, assignor to Wells, Crittenden & Co., New Haven, Conn. Carriage-boot (Design)	Aug. 30, 1870
103,111	Wells, George A., Oskaloosa, Iowa. Box for transporting eggs	May 17, 1870
99,790	Wells, George W., Lawton, Mich. Scaffold	Feb. 15, 1870
104,835	Wells, Glory Ann, Luzerne, N. Y. Dish-washer	June 14, 1870
103,400	Wells, Horace, Hopkinton, R. I. Shuttle for looms	May 24, 1870
	Wells, John H., *et al.* (*See* Bailey, John A., assignor.)	
110,613	Wells, Marcus M., Hartwick, N. Y. Grain-rake	Dec. 27, 1870
99,612	Wells, Richard P., assignor to self and John P. Comly, Dayton, Ohio. Churn	Feb. 8, 1870
100,698	Wells, William, Salem, Mass. Spring bed-bottom	Mar. 8, 1870
106,297	Same.....Car-seat	Aug. 9, 1870
106,298	Wells, William, assignor to self, E. B. Horton, and David Buffum, Salem, Mass. Box or case for hot-beds	Aug. 9, 1870
109,855	Wells, William, assignor to self and John Wriglesworth, Cleveland, Ohio. Spring-hinge	Dec. 6, 1870
106,752	Wells, William W., Webster, Iowa. Shuttle for sewing-machines	Aug. 23, 1870
	Welsh, Charles, *et al.* (*See* Wolff, Ludwig, assignor.)	
106,436	Welsh, Dwight F., Bucyrus, Ohio. Corn-husker	Aug. 16, 1870
109,162	Same.....Nevada, Ohio. Apparatus for grinding the knives of mowing-machines	Nov. 8, 1870
	Welton, Fred. A., *et al.* (*See* Armington, William W., assignor.)	
99,380	Welty, Mary W., New York, N. Y. Shield for sewing-machines	Feb. 1, 1870
109,281	Wemple, Leonard C., Rockford, Ill. Door-stop	Nov. 15, 1870
108,230	Wemyss, Alexander, Philadelphia, Pa. Cooking-stove	Oct. 11, 1870
98,825	Wendell, Isaac P., assignor to self and Stephen P. M. Tasker, Philadelphia, Pa. Journal-bearing	Jan. 11, 1870
101,551	Same.....Lubricating journals and bearings	April 5, 1870
104,805	Same.....Lubricating journal-bearings	June 28, 1870
102,739	Wendell, Isaac P., and Stephen P. M. Tasker, Philadelphia, Pa. Lubricator for loose pulleys	May 3, 1870
	Wendell, Jules, and Ernst W. Gilles. (*See* Gilles & Wendell.)	
107,574	Wendell, Washington, Milwaukee, Wis. Card-rack. (Antedated Sept. 17, 1870)	Sept. 20, 1870
103,940	Wendell, Washington, assignor to the Finkle & Lyon Manufacturing Company, Milwaukee, Wis. Thread-controller for sewing-machines	June 7, 1870
98,826	Wendt, Hermann, assignor to Henry Seymour & Co., Elizabeth, N. J. Pruning-shears	Jan. 11, 1870
103,693	Same.....Process of welding and tempering shear-blades	May 31, 1870
3,985	Wendt, John R., New York, N. Y. Handle for spoons, forks, ladles, &c (Design)	April 19, 1870
106,758	Wenger, Milton, Upper Leacock, Pa. Combined fork and hand-cutter	Aug. 23, 1870
99,987	Went, Robert, Brooklyn, N. Y. Combination-toy	Feb. 15, 1870
	Wentworth, Harry, and William O'Brien. (*See* O'Brien & Wentworth.)	
4,350	Wentworth, Isaac B., New York, N. Y. Hat (Design)	Sept. 13, 1870
	Wentworth, James H., and Joseph Pratt. (*See* Pratt & Wentworth.)	
	Wentworth, Louis E., and George W. White. (*See* White & Wentworth.)	
107,314	Wentworth, William P., Seneca Falls, N. Y. Snow-shovel	Sept. 13, 1870
109,564	Werckmeister, Albert, Prussia. Liquid-meter	Nov. 22, 1870
104,986	Wermershirchen, Hubert, Chicago, Ill. Bridge-gate	June 7, 1870
106,975	Werner, August, Buffalo, N. Y. Straw and feed cutter	Aug. 30, 1870
109,694	Werner, Christopher, Charleston, S. C. Awning-frame	Nov. 29, 1870
98,827	Werner, David, St. Louis, Mo. Hinge	Jan. 11, 1870
99,124	Werner, John, Mannheim, Baden. Composition for lining ale and beer casks	Jan. 25, 1870
4,509	Werner, Robert, Hoboken, N. J. Dress-trimming (Design)	Nov. 29, 1870
104,087	Werner, William H., Nazareth, Pa. Cane-gun	June 7, 1870
109,699	Wernet, August, and John Kershaw, Canton, Ohio. Construction of stove-plates	Mar. 8, 1870
99,307	Werni, Peleg, assignor to self and James W. Morrison, Chicago, Ill. Roofing-material	Jan. 25, 1870
109,784	Wernts, George W., Auburn, Ind. Water-wheel	Nov. 29, 1870
100,475	Werrkmeister, A., assignor to self and Henry Loewenberg, Prussia. Liquid measuring and registering device	Mar. 1, 1870
110,095	Werst, Decatur, assignor to self and Joshua Laffin, South Bend, Ind. Double-tree fastener	Dec. 13, 1870
102,631	Werts, Nicholas, Magnolia, Ill. Cultivator	May 3, 1870
99,268	Werts, William, Chicago, Ill. Machine for shrinking tires	Jan. 25, 1870
110,316	Wesner, Samuel F., assignor to self and James Foster, jr., Camden, N. J. Adjustable square	Dec. 20, 1870
4,256	Wessel, Frederick, New Britain, Conn. Bracelet (Design)	July 19, 1870
	Wesson, Daniel B. (*See* King, Charles A., assignor) (Reissue.)	
103,694	Wesson, Frank, Worcester, Mass. Breech-loading fire-arm	May 31, 1870
	West, Bradley & Cacy Manufacturing Company, *et al.* (*See* Pratt, Charles E., assignor.)	
106,640	West, Isaiah M., Wilmington, Ohio. Fence	Aug. 23, 1870
109,476	West, John, Bethlehem, Pa. Valve	Nov. 22, 1870
108,410	West, John W., Saylorsville, Iowa. Wagon. (Antedated Oct. 8, 1870)	Oct. 18, 1870
99,269	West, Jonathan B., Geneseo, N. Y. Lathe-dog	Jan. 25, 1870
101,330	Same.....Device for tightening carriage-tires	Mar. 29, 1870
99,381	West, J. D., New York, N. Y. Lightning-rod	Feb. 1, 1870
106,898	West, Lewis, Georgetown, Ky. Corn-planter	Aug. 30, 1870
4,402	West, Samuel, Boston, Mass. Church-window glass (Design)	Nov. 22, 1870
100,573	West, Thomas J., assignor to self, John L. Russell, Abram C. Fisher, and Joel Morekoss, Alfred Centre, N. Y. Fertilizer-sower	Mar. 8, 1870

Alphabetical list of patentees for the year 1870—Continued.

No.	Name, residence, and invention or discovery.	Date.
	Westbrook, Richard B., *et al.* (*See* Manson, George W., assignor.)	
110,522	Westcott, Charles S., assignor to self, John Austin, Rollin Germain, and William H. H. Williams, Elizabeth, N. J. Printers' inking-roller. (Antedated Dec. 17, 1870)	Dec. 27, 1870
104,236	Westcott, C. S., and A. K. Rider. Type-distributing machine	June 14, 1870
107,130	Westcott, Henry P., Seneca Falls, N. Y. Butter-pail	Sept. 6, 1870
	Westcott, Henry P., and Sherrod S. Little. (*See* Little & Westcott.)	
106,280	Westcott, Samuel B., River Point, R. I. Stopping-mechanism for spinning and other machines	Aug. 9, 1870
103,401	Westerman, James, Sharon, Pa. Furnace for boiling and puddling iron	May 24, 1870
104,518	Westfall, Daniel B., Lyons, N. Y. Potato-digger	June 21, 1870
99,282	Westfall, Ezra B., assignor to self and Frank Thomson, Williamsport, Pa. Railroad signal-box	Feb. 1, 1870
	West Haven Buckle Company. (*See* Hartshorn, Sheldon S., assignor). (Reissue.)	
	Same. (*See* Hyde, James C., assignor.)	
106,899	Westinghouse, George, jr., Pittsburgh, Pa. Steam engine and pump	Aug. 30, 1870
109,695	Same. Atmospheric car-brake pipe	Nov. 29, 1870
101,066	Westlake, William, Chicago, Ill. Attachment for lamp-burners	Mar. 22, 1870
102,895	Same. Lantern	May 10, 1870
102,896	Same. same	May 10, 1870
107,140	Same. same	Sept. 6, 1870
107,141	Same. Oil-can	Sept. 6, 1870
108,221	Same. Lantern	Oct. 11, 1870
108,223	Same. same	Oct. 11, 1870
108,661	Westman, Henry M., East Boston, Mass. Cement for coating and protecting wood	Oct. 25, 1870
109,361	Westmoreland, Joseph M., Danville, Texas. Grinding-mill	Nov. 15, 1870
103,262	Weston, Charles H., and John Dennis, Lowell, Mass. Cloth-press	May 17, 1870
103,263	Same. same	May 17, 1870
109,585	Weston, Charles T., Scranton, Pa. Mill-bush and other spindle	Nov. 22, 1870
104,384	Weston, Charles T., Sidney Broadbent, and Willard B. Culver, Scranton, Pa. Grist-mill	June 14, 1870
105,393	Weston, Elijah, Buffalo, N. Y. Stove-door	July 19, 1870
101,197	Weston, Henry J., Buffalo, N. Y. Leather-rolling machine	Mar. 22, 1870
	Weston, Horace S. (*See* Lucas, Robert A., assignor.)	
103,803	Weston, Irving E., and Alvin Streeter, Winchendon, Mass. Churn	May 31, 1870
101,688	Weston, James W., New York, N. Y. Car-wheel	April 5, 1870
110,088	Same. Barrel	Dec. 13, 1870
107,840	Weston, William, William R., and Nathaniel, and Burt Brett, Stevens Point, Wis. Steam-generator	Sept. 27, 1870
101,687	Westover, Charles W., assignor to self and E. J. Carter, St. Joseph, Mo. Composition for paint, cement, &c	April 5, 1870
109,343	Wetherby, James S., New York, N. Y. Lamp-burner	April 26, 1870
	Wetherell, Charles H. (*See* Gowen, James E., assignor.)	
110,087	Wetmore, Fannie, Chicago, Ill. Pattern for measuring and laying out garments	Dec. 13, 1870
108,309	Wetmore, Hiram P., Elizabeth, N. J., and John G. Hitchcock, New York, N. Y. Neck-tie	Oct. 11, 1870
104,519	Wetmore, Seth, Wellsborough, Pa. Mortar-mixer	June 21, 1870
100,574	Wettengel, Charles W., Pittsburgh, Pa. Machine for making horseshoes	Mar. 8, 1870
102,638	Weyand, John M., St. Louis, Mo. Apparatus for distilling	May 3, 1870
100,476	Weymouth, George F., Dresden, Maine. Horse hay-fork. (Antedated Feb. 26, 1870)	Mar. 1, 1870
107,142	Whaite, Charles L., Waverly, Pa. Cultivator	Sept. 6, 1870
105,748	Whalen, Frank, Balston Spa, N. Y. Stove-leg	July 26, 1870
103,531	Wharton, George, Jerseyville, Ill. Plow	July 19, 1870
	Wharton, John, *et al.* (*See* Nutt, Isaiah, assignor.)	
106,900	Wharton, Levi, Salem, Ohio. Clamp	Aug. 30, 1870
99,383	Wharton, Linton, Richland, Iowa. Washing-machine	Feb. 1, 1870
101,951	Wharton, William, jr., Philadelphia, Pa. Railway-switch	April 19, 1870
110,317	Wharton, William T. H., Fayetteville, Tenn. Leach for tanning	Dec. 20, 1870
108,663	Wheat, Corydon, Geneva, N. Y. Skate	Oct. 25, 1870
107,375	Wheat, George W., Phillipsburgh, Pa. Sash-holder	Sept. 20, 1870
107,988	Same. Railway-car coupling	Oct. 4, 1870
	Wheat, James E., and Chauncey Perry. (*See* Perry & Wheat.)	
108,074	Wheat, John J., Wheeling, W. Va. Sewing-machine table	Oct. 4, 1870
100,957	Wheatley, Robert J., Du Quoin, Ill. Plow	Mar. 15, 1870
	Wheaton, Abraham C., *et al.* (*See* Nutt, Isaiah, assignor.)	
	Wheaton, Abram C. (*See* Mandeville, George A., assignor.)	
	Wheeler & Wilson Manufacturing Company. (*See* Moschcowitz, Schamu Moritz, assignor.)	
	Same. (*See* Snyder, William B., assignor.)	
109,982	Wheeler, Aaron O., St. Augustine Depot, Ill. Mode of setting tires on wheels	Dec. 6, 1870
	Wheeler, Albert G., *et al.* (*See* Dougherty, John B., assignor.)	
101,796	Wheeler, Asa, assignor to George B. Wheeler, Brattleborough, Vt. Countersink	April 12, 1870
105,929	Wheeler, Benjamin F., Calais, Vt. Bridle-bit	July 19, 1870
99,270	Wheeler, C. G., Chicago, Ill. Fire-extinguisher	Jan. 25, 1870
109,302	Wheeler, Edmund H., Scranton, Pa. Sash-holder. (Antedated Nov. 5, 1870)	Nov. 15, 1870
104,237	Wheeler, Elbridge, Hudson, Mass. Combined iron and steel bar	June 14, 1870
104,239	Same. Manufacture of rails for railroads	June 14, 1870
	Wheeler, Elisha P., *et al.* (*See* Tuttle, Joseph H., assignor) (Reissue.)	
102,343	Wheeler, Emery T., assignor to self and William H. Vaughan, Cannelton, Ind. Shingle-machine	April 26, 1870

Alphabetical list of patentees for the year 1870—Continued.

No.	Name, residence, and invention or discovery.	Date.
109,477	Wheeler, George T., Mexico, N. Y. Bee-hive	Nov. 22, 1870
99,968	Wheeler, H. M., Woodbine, Iowa. Wind-mill	Feb. 15, 1870
107,576	Wheeler, Isaac H., Sciotoville, Ohio. Bridge	Sept. 20, 1870
108,946	Wheeler, Lorenzo D., assignor of one-third interest to Hubbard H. Beigham, Fitchburgh, Mass. Fan-blower	Nov. 1, 1870
102,633	Wheeler, Norman W., Brooklyn, N. Y., and Walton W. Evans, New Rochelle, N. Y. Evaporating and distilling by solar heat	May 3, 1870
104,239	Wheeler, Orson Harvey, Hamline, Mich. Carriage-spring guard	June 14, 1870
	Wheeler, Ralph, *et al.* (*See* Harrington, Jackson, assignor.)	
	Wheeler, Russell B., *et al.* (*See* Wolcott, Henry E., assignor) (Two cases.)	
104,240	Wheeler, Seth, Albany, N. Y. Horse-power	June 14, 1870
108,223	Wheeler, Shepherd H., Dowagiac, Mich. Nut-lock	Oct. 11, 1870
107,498	Wheeler, Sylvester P., Bridgeport, Conn. Coating embossed wood. (Antedated Sept. 5, 1870)	Sept. 13, 1870
101,552	Wheeler, Sylvester P., assignor to self and Samuel B. Henry, Bridgeport, Conn. Manufacture of articles of compressed wood	April 5, 1870
101,553	Same. Process of treating wood	April 5, 1870
105,018	Wheeler, Thomas N., Blue Earth City, Minn. Animal-tether	July 5, 1870
105,019	Wheeler, Thomas W., assignor to self and E. W. Carpenter, New Berne, N. C. Distilling pine-wood	July 5, 1870
98,828	Wheeler, Willard M., Berlin, Mass. Water-wheel	Jan. 11, 1870
100,225	Wheeler, William A., New York, N. Y. Canceling-stamp	Feb. 22, 1870
99,989	Wheelock, Alpheus, Fort Wayne, Ind. Metallic abutment for bridges	Feb. 15, 1870
99,990	Wheelock, Jerome, Worcester, Mass. Steam-piston packing	Feb. 15, 1870
108,310	Same. Boring-apparatus	Oct. 11, 1870
4,121	Wheelock, Jesse, Lancaster, N. Y. Boat for transporting railroad-cars. (Reissue)	Sept. 13, 1870
	Whelan, Alexander, and G. F. Fischer. (*See* Fischer & Wheeler.)	
	Whelpley, Corydon E., and Charles E. Macomber. (*See* Macomber & Whelpley.)	
104,910	Whelpley, James D., Boston, Mass. Breaking-machine	June 28, 1870
3,857	Whelpley, James D., and Jacob J. Storer, assignors to Thomas William Clarke and William S. Dexter, trustees, Boston, Mass. Use and application of fuel in metallurgic and other furnaces (Reissue)	Mar. 1, 1870
101,067	Whelpley, James D., and Jacob J. Storer, Boston, Mass. Manufacture of iron, and in the apparatus therefor	Mar. 22, 1870
102,740	Same. Manufacture of wrought iron from ore, cinder, or slag	May 3, 1870
102,997	Same. Feed-apparatus for grinding-mills, &c	May 10, 1870
103,695	Same. Feeding fuel to metallurgic and other furnaces	May 31, 1870
103,804	Same. Feeding pulverized fuel to metallurgic and other furnaces	May 31, 1870
109,785	Same. Heating metallurgic and other furnaces	Nov. 29, 1870
	Same. (*See* Storer & Whelpley) (Disclaimer)	
	Whidden, J. N. (*See* Crawford, Peter S., assignor.)	
	Whidden, J. W. (*See* Golladay, Jacob H., assignor.)	
	While, Joseph, and William Davis. (*See* Davis & While.)	
	Whiley, Thomas B. (*See* Wolford, John B., assignor.)	
102,634	Whipple, James T., Chicago, Ill. Pump	May 3, 1870
107,841	Same. Pump-valve	Sept. 27, 1870
104,520	Whipple, Nelson S., Detroit, Mich. Glue or cement	June 21, 1870
	Whipple, Rodney M., and Thomas S. Dickerson. (*See* Dickerson & Whipple.)	
	Whitaker, George W. (*See* Hartman, John M., assignor.)	
	Whitaker, Nathaniel N., and Lewis E. Lockling. (*See* Lockling & Whitaker.)	
102,741	Whitaker, Samuel, Bel Air, Md. Automatic gate	May 3, 1870
100,837	Whitbeck, George, Phelps, N. Y. Horse-poke	Mar. 15, 1870
	Whitcomb, Austin O., *et al.* (*See* Stuart, William M., assignor.)	
105,740	Whitcomb, Elisha, and Daniel A. Gunn, Waterville, Ohio. Land-roller	July 26, 1870
110,523	Whitcomb, Elisha, Waterville, Ohio. Roller-lifting power	Dec. 27, 1870
103,805	Whitcomb, Franklin, Chicago, Ill. Brick-machine	May 31, 1870
	Whitcomb, George Albert, and Richard Robley Ramsdell. (*See* Ramsdell & Whitcomb.)	
100,226	White, Abner, Macon, Ga. Hook for harness	Feb. 22, 1870
101,688	White, Alexander, Genesco, Ill. Base-burning stove	April 5, 1870
104,911	Same. Window for coal-stoves	June 28, 1870
99,613	White, Alexander, assignor to self, Alexander H. Hammond, and Isaac D. Ruggles, Genesco, Ill. Cooking-stove	Feb. 8, 1870
	White, Amos, and Samuel P. Emerson. (*See* Cole, J. H., assignor.)	
107,643	White, Charles H., Emmett Township, Mich. Railway	Sept. 20, 1870
99,614	White, Eugene A., Boston, Mass. Current-wheel	Feb. 8, 1870
100,828	White, F. C., Euclid, Ohio. Lifting-jack	Mar. 15, 1870
108,683	White, George H., New York, N. Y. Tubular bridge	Oct. 25, 1870
109,983	Same. Huntington, N. Y. Fruit-basket. (Antedated Nov. 26, 1870)	Dec. 6, 1870
102,742	White, George W., Malden, Mass., and Louis C. Wentworth, Melrose, Mass. Drier	May 3, 1870
106,437	White, Harrison W., Joppa Village, Mass. Vine cutter and trimmer	Aug. 16, 1870
105,539	White, Henry J., Chatham, Iowa. Water-wheel	July 19, 1870
102,807	White, Hiram J., Boston, Mass. Lamp-burner	May 10, 1870
109,856	Same. Lantern	Dec. 6, 1870
103,455	White, James E., New York, N. Y. Combined filter and cooler	April 26, 1870
109,786	Same. Casting stench-traps	Nov. 29, 1870
	White, James H. (*See* Sieben, George, assignor) (Design.)	
	White, James M. (*See* McDonald, Alvin, assignor.)	
	White, James M., and Alvin McDonald. (*See* McDonald & White.)	

Alphabetical list of patentees for the year 1870—Continued.

No.	Name, residence, and invention or discovery.	Date.
108,740	White, John Albert, Philadelphia, Pa. Handle of table-knives	Oct. 25, 1870
106,901	White, John C., Auburn, N. Y. Heel-rounding machine	Aug. 30, 1870
104,088	White, John E., Clinton, Ill. Seed-planter	June 7, 1870
100,091	White, John G., Albany, N. Y. Malt-kiln. (Antedated Feb. 17, 1870)	Feb. 22, 1870
104,089	White, John G., Cambridge, Mass. Earth-urinal	June 7, 1870
106,752	White, Joseph, assignor to self and J. B. Wickersham, Philadelphia, Pa. Vapor-burner	Aug. 23, 1870
	White, L. E. (*See* Graesale, Gottlieb, assignor.)	
101,956	White, Leroy S., Plantsville, Conn. Die for forming carriage-shackles	April 12, 1870
104,385	White, Margaret, Saratoga Springs, N. Y. Ironing-table and bureau	June 14, 1870
110,410	Same.....Ironing-table bureau	Dec. 20, 1870
109,696	White, Maurice W., assignor to self and Ebenezer P. Cutter, Boston, Mass. Violin	Nov. 29, 1870
104,521	White, Nathaniel F., Mount Pleasant, Iowa. Bee-hive	June 21, 1870
99,800	White, Peregrine, Dixmont Centre, Me. Lubricator for bearings of shafts. (Antedated Feb. 11, 1870)	Feb. 15, 1870
109,566	White, Philo S., Providence, R. I. Paper cap	Nov. 22, 1870
105,014	White, Robert, assignor to self and Joseph J. Walton, Rockville Centre, N. Y. Clamp-nut for screws	July 19, 1870
99,505	White, Rollin, Lowell, Mass. Revolving fire-arm	Feb. 1, 1870
3,833	Same.....Metallic cartridge (Reissue)	Feb. 8, 1870
100,227	Same.....Revolver	Feb. 22, 1870
	White, Thomas G., *et al.* (*See* Leak, James, assignor). (Two cases.) (Design.)	Nov. 1, 1870
108,863	White, Windsor N., Winchendon, Mass. Heating-apparatus for lamps	
101,331	White, Zebard Thompson, assignor to self and Franklin Waldo Perry, Winchester, Mass. Apparatus for tanning hides	Mar. 29, 1870
100,093	Whiteford, John, Pond City, Kans. Car-coupling	Feb. 22, 1870
104,674	Whitehead, Edward, Cincinnati, Ohio. Skipping-hoop	June 21, 1870
99,125	Whitehead, John P., Chicago, Ill. Railroad-ticket. (Antedated Jan. 16, 1870)	Jan. 25, 1870
103,264	Whitehead, Lewis, Nunda, N. Y. Harness	May 17, 1870
104,806	Same.....same	June 28, 1870
110,318	Whitehead, William Edward, England. Feeding-mechanism for cotton-openers, &c	Dec. 20, 1870
110,304	Whitehill, Robert, assignor to the Positive-Motion Loom Company, New York, N. Y. Loom	Dec. 27, 1870
110,319	Whitehouse, A. S., assignor to self and Edward W. Southworth, Ashland, Mass. Pump-box	Dec. 20, 1870
3,920	Whitehouse, Henry, Newark, N. J. Set of turret and rings for harness-saddles. (Design)	Mar. 22, 1870
99,364	Whitehurst, William E., Norfolk, Va. Fire-place grate. (Antedated Jan. 20, 1870)	Feb. 1, 1870
	Whiteley, David, Providence, R. I. Process of separating the hair from the warp in hair-cloth	Dec. 6, 1870
	Whiteley, Edward, Cambridge, Mass. Culinary boiler (Extension)	April 4, 1870
99,506	Whiteley, William N., Springfield, Ohio. Rake for harvesters	Feb. 1, 1870
104,386	Same.....Harvester	June 14, 1870
105,394	Same.....same	July 12, 1870
105,385	Same.....same	July 12, 1870
105,396	Same.....Harvester-dropper	July 12, 1870
	Same.....Harvesting-machine (Disclaimer filed)	Nov. 25, 1870
	Same.....same (Extension)	Nov. 25, 1870
	Same.....same (Extension)	Nov. 25, 1870
	Whiteley, William N., and Salem T. Lamb. (*See* Lamb & Whiteley.)	
102,635	Whiteman, John W., Christiana, Del. Safety-socket for whips, umbrellas, billiard-cues, &c	May 3, 1870
98,829	Whiteside, John, Salinas, Cal. Platform-attachment for grain-separators	Jan. 11, 1870
	Whithed, Darius, *et al.* (*See* Bradshaw, Brown & Whithed.)	
103,906	Whiting, David, Ashland, Ohio. Clover-machine	May 31, 1870
	Whiting, George Augustus. (*See* Howard, Elijah Leavitt, assignor.)	
101,330	Whiting, John L., Boston, Mass. Brush	Mar. 29, 1870
106,902	Same.....same	Aug. 30, 1870
107,749	Same.....same	Sept. 27, 1870
108,430	Same.....Paint-brush	Oct. 18, 1870
109,084	Same.....Brush	Nov. 8, 1870
100,093	Whiting, Lewis F., and Franklin Smith, Boston, Mass. Safe	Feb. 22, 1870
107,848	Whiting, William H., assignor to self and Marcus M. Johnson, Wellington, Conn. Carding-machine teeth	Sept. 27, 1870
106,903	Whitker, Daniel D., assignor of one-half interest to James McGhee, New York, N. Y. Harvester	Aug. 30, 1870
105,283	Whitley, Exum, assignor to self and Charles H. Foster, Murfreesborough, N. C. Manufacture of fertilizers	July 12, 1870
106,439	Whitlock, Abel, Danbury, Conn. Saw-jack	Aug. 16, 1870
108,741	Whitlock, Cyrus, deceased, by John T. Whitlock, administrator, Bridgeport, Vt. Horse-hoe	Oct. 25, 1870
105,307	Whitlock, Daniel, Newark, N. J. Feed-water heater for steam-boilers	July 12, 1870
	Whitlow, Samuel R. (*See* Stewart, James T., assignor.)	
103,909	Whitman, Charles P., Charlemont, Mass. Wheel-hub	May 10, 1870
106,754	Same.....Bit-stock	Aug. 23, 1870
	Whitman, Josiah A. (*See* Servant, William, assignor.)	
99,991	Whitman, Silas, Londonderry, Vt. Cam-lever	Feb. 15, 1870
98,659	Whitmarsh, Samuel, Northampton, Mass. Composition for flooring, wainscotting, and other purposes	Jan. 4, 1870

Alphabetical list of patentees for the year 1870—Continued.

No.	Name, residence, and invention or discovery.	Date.
101,689	Whitmore, Andrew E., Somerville, Mass. Sliding calipers	April 5, 1870
105,153	Same.....Boston, Mass. Calipers	July 5, 1870
105,615	Whitmore, Franklin, and Edward Conklin, Channahon, Ill. Weather-strip for doors	July 19, 1870
104,912	Whitmore, Nathaniel Gilbert, assignor to self and Alfred A. Reed, jr., Mansfield, Mass. Cartridge	June 28, 1870
106,755	Whitmore, Seth H., assignor to Caleb C. Burroughs and James Milliken, Decatur, Ill. Shaft-coupling	Aug. 23, 1870
106,756	Same.....same	Aug. 23, 1870
100,477	Whitmore, William D., Bloomington, Ill. Piston-packing	Mar. 1, 1870
	Whitmore, William D., and Horace C. Smith. (*See* Smith & Whitmore.)	
101,068	Whitney, Aaron W., Pardon A., and Foster A., Woodstock, Vt. Tinners' and sheet-iron workers' rolls	Mar. 22, 1870
109,984	Whitney, Andrew Jackson, Harrisburgh, Pa. Canal waste-way and sluice-gate	Dec. 6, 1870
103,532	Whitney, Baxter D., Winchendon, Mass. Machine for bottoming fruit-baskets	May 24, 1870
103,533	Same.....Cutter for cutting the bodies of fruit-baskets	May 24, 1870
	Same.....(*See* Atwood & Ripley, assignors.)	
103,965	Whitney, Edwin F., and Reuben Jones, Union Mills, Pa. Boring-tool	May 17, 1870
109,085	Whitney, Frank W., Brooklyn, N. Y. Paper-file	Nov. 8, 1870
103,402	Whitney, George F., assignor to self and Herbert S. Merrill, Boston, Mass. Compound for oiling, polishing, and blacking leather	May 24, 1870
4,021	Whitney, Henry, East Cambridge, Mass. Lamp-fount (Design)	May 10, 1870
4,022	Same.....Candlestick (Design)	May 10, 1870
4,202	Same.....Inkstand (Design)	Aug. 9, 1870
	Whitney, Henry I. and Albert A. (*See* Chandler, George W., assignor.)	
	Whitney, Hiram, and Benjamin S. Goodwin. (*See* McGill, John, assignor.)	
102,344	Whitney, James S., Lowell, Mass. Curtain-fixture	April 26, 1870
4,122	Whitney, Joel, Winchester, Mass. Machine for rolling leather (Reissue)	Sept. 13, 1870
100,820	Whitney, John H., Helena, Montana Ter. Sluice-box for gold-mining. (Antedated March 5, 1870)	Mar. 15, 1870
109,163	Whitney, John H., Rochester, Minn. Mechanical movement	Nov. 8, 1870
109,164	Same.....Stop-motion gear-wheel	Nov. 8, 1870
109,985	Same.....Combined grain harvester and binder	Dec. 6, 1870
103,950	Whitney, Levi H., Washington, D. C. Boot and shoe	June 7, 1870
107,143	Same.....Screw for soles and heels of shoes	Sept. 6, 1870
107,644	Same.....Machine for hulling and scouring grain, rice, coffee, &c	Sept. 20, 1870
109,097	Same.....Washing-machine. (Antedated Nov. 19, 1870)	Nov. 29, 1870
110,098	Same.....Roller-shaft for wringers. (Antedated Nov. 26, 1870)	Dec. 13, 1870
105,154	Whitney, Nelson, Bellingham, Mass. Signal for railways	July 5, 1870
105,284	Whitney, Orison C., Meadville, Pa. Knee-lever for melodeon or organ swell	July 12, 1870
107,743	Whitney, Samuel, Newark, N. J. Gas-carbonizing attachment for street and other lights	Sept. 27, 1870
109,086	Whitteley, Isaac N., Mount Vernon, Ind. Steam-gauge and safety-valve	Nov. 8, 1870
109,478	Whittemore, Amos, Cambridgeport, Mass. Motive mechanism of sewing-machines. (Antedated Nov. 14, 1870)	Nov. 22, 1870
100,478	Whittemore, A. S., Willimantic, Conn., and John E. Atwood, Mansfield, Conn. Thrashing-machine	Mar. 1, 1870
	Whittemore, David. (*See* Lambart, Richard C., assignor.)	
4,345	Whittemore, Henry, Passaic, N. J. Curtain-cornice, &c (Design)	Sept. 6, 1870
104,387	Whittemore, James M., Augusta, Maine. Breech-loading fire-arm	June 14, 1870
	Whittemore, Oliver A. (*See* Treadway, James W., assignor.)	
	Whitten, C. T., and J. P. Crutchfield. (*See* Crutchfield & Whitten.)	
103,696	Whitten, John L., Essex, Vt. Glove	May 31, 1870
	Whittier, Charles, and Benjamin F. Campbell (*See* Campbell & Whittier.)	
108,421	Whittier, Hazen, West Roxbury, Mass. Thrashing-machine	Oct. 18, 1870
108,075	Whittingham, Harry, New York, N. Y. Sectional steam-generator	Oct. 4, 1870
100,830	Whittingham, Joseph, Pittsburgh, Pa. Reversible knob-latch	Mar. 15, 1870
102,898	Whitton, Samuel J., Coleraine, Mass. Machine-hand	May 10, 1870
102,071	Wiard, Edward, assignor to B. F. Avery, Louisville, Ky. Handle-seat for plows	April 19, 1870
100,479	Wiard, Norman, assignor to self and Henri L. Stuart, New York, N. Y. Safety-attachment for boilers	Mar. 1, 1870
100,347	Wicke, Frederick, Julius Brönner, Theodor Petersen, and Johann G. Zehfuss, Prussia. Fertilizer from excrements	Mar. 1, 1870
106,757	Wicker, Henry W., Norwich, Conn. Weather-strip	Aug. 23, 1870
100,573	Wickers, George O., Lawrence, Mass., and T. J. McClary, North Andover, Mass. Loom-cam	Mar. 8, 1870
105,750	Wickersham, John B., Philadelphia, Pa. Lubricator. (Antedated July 11, 1870)	July 26, 1870
	Same.....(*See* White, Joseph, assignor.)	
	Wickersham, Joshua G. (*See* Moore, Thomas C., assignor.)	
106,009	Wickersham, William, Boston, Mass. Hair-pin	Aug. 2, 1870
106,010	Same.....Means of attaching the soles to boots and shoes	Aug. 2, 1870
106,011	Same.....Wire-driving machine for manufacturing boots and shoes	Aug. 2, 1870
106,012	Same.....Manufacture of boots and shoes	Aug. 2, 1870
106,013	Same.....Boots and shoes	Aug. 2, 1870
106,941	Same.....Wire for attaching soles to boots and shoes	Aug. 9, 1870
105,870	Wickham, Horace, jr., Chicago, Ill. Machine for motive power	July 26, 1870
108,224	Wickham, James K., Hartford, Conn. Toy-locomotive	Oct. 11, 1870
	Wickham, Warren S., and Demon R. Gould. (*See* Gould & Wickham.)	
109,787	Wicks, Frank, Decatur, Ill. Elevator	Nov. 29, 1870
3,836	Wicks, Loren J., assignor to self, Charles N. and John A. Selser, George W. Turner, and John H. Poole, Bridgeton, N. J. Bottle (Design)	Feb. 1, 1870

Alphabetical list of patentees for the year 1870—Continued.

No.	Name, residence, and invention or discovery.	Date.
105,398	Wicks, William A., Baltimore, Md. Machine for seaming sheet-metal cans	July 12, 1870
107,744	Same. Fastening for neck-ties	Sept. 27, 1870
110,178	Same. Neck-tie supporter	Dec. 13, 1870
106,014	Widdowson, William, Rochester, N. Y. Stave-jointing machine	Aug. 2, 1870
107,843	Wiedersum, Philip H., New York, N. Y. Harness-saddle tree	Sept. 27, 1870
104,522	Wiegand, S. Lloyd, Philadelphia, Pa. Steam-generator	June 21, 1870
	Wiehl, Daniel, *et al.* (*See* Reinshagen, Peter W., assignor.)	
105,155	Wiehl, Daniel, assignor to self, Peter W. Reinshagan, Andrew P. Lusk, and John H. Buckman, Cincinnati, Ohio. Low-water indicator	July 5, 1870
99,734	Wieland, Benjamin, Oneco, Ill., and Daniel S. Young, Monroe, Wis. Water-elevator	Feb. 8, 1870
102,900	Wier, Stephen M., New Haven, Conn. Goose-neck for hanging carriage-springs	May 10, 1870
	Wierman, I. W. G. (*See* Gibson, Samuel, assignor.)	
110,009	Wiesenhofer, Franz, Fremont, Ohio. Faucet	Dec. 13, 1870
	Wigg, Rollins & Co. (*See* Rollins, Samuel G., assignor.)	
3,921	Wiggenhorn, Joseph B., St. Louis, Mo. Cooking-stove (Design)	Mar. 22, 1870
104,675	Wiggin, George B., assignor through mesne assignments to John W. Howd, South New Market, N. H. Water-meter	June 21, 1870
	Wiggins, G. W. (*See* Rowland & Tipton, assignors.)	
103,951	Wiggins, William J., and Charles S. Stont, St. Louis, Mo. Fire-kindling fagot	June 7, 1870
108,664	Wigner, George William, England. Utilizing sewage	Oct. 25, 1870
104,388	Wight, Andrew Jackson, and William Lewis Meeker, Newark, N. J. Cast-iron turn-table for railways	June 14, 1870
101,333	Wight, Charles H., Baltimore, Md. Hand-setting calendar. (Antedated Jan. 14, 1870)	Mar. 29, 1870
3,902	Same. Frame for containing stationery articles. (Antedated March 19, 1870) (Design)	April 5, 1870
101,953	Same. Inkstand. (Antedated Feb. 15, 1870)	April 12, 1870
4,034	Same. Stationery-furniture (Reissue)	June 14, 1870
108,742	Wight, Edwin, Philadelphia, Pa. Machine for making umbrella-connections	Oct. 25, 1870
106,585	Wightman, Henry M., Boston, Mass. Steam water-elevator	Aug. 16, 1870
101,334	Wightman, Joseph C., assignor to Thomas P. Proctor, trustee, Newton, Mass. Steam water-elevator	Mar. 29, 1870
102,699	Wightman, Thomas, Pittsburgh, Pa. Spring-clamp for glass-blowers	May 10, 1870
105,751	Wikoff, Milton J., Stout's Post-Office, Ohio. Churn	July 26, 1870
99,385	Wilbar, George W., Taunton, Mass. Clothes-line clamp	Feb. 1, 1870
101,554	Wilber, John D., Poughkeepsie, N. Y. Mowing-machine	April 5, 1870
103,112	Wilbor, Philander, Milan, Ohio. Washing-machine	May 17, 1870
	Wilbur, Benjamin, and John Salisbury. (*See* Salisbury & Wilbur.)	
100,489	Wilcke, Julius, and M. Ellenbogen, assignors to Maximilian Ellenbogen, Chicago, Ill. Bridge-gate	Mar. 1, 1870
99,738	Wilcox, Alanson, Green Island, N. Y. Molders' flask	Jan. 11, 1870
99,830	Wilcox, Alexander J., Fall River, Mass. Washing-machine	Jan. 11, 1870
104,676	Wilcox, Benjamin B., New Haven, Conn. Fruit-jar	June 21, 1870
105,285	Wilcox, Camden L., Wayne Township, Ohio. Combined cultivator and corn-drill	July 12, 1870
102,456	Wilcox, Charles W. and Joseph D., Kingston, R. I. Pole-socket	April 26, 1870
	Wilcox, Dairus. (*See* Dow, Joseph H., assignor.)	
	Wilcox, E. D. (*See* Aldrich, Robert, assignor.)	
105,758	Wilcox, Edward M., Bloomer, Wis. Miter-box	July 26, 1870
110,100	Wilcox, George A., Chicago, Ill. Weighing-wagon	Dec. 13, 1870
101,797	Wilcox, Horace C., assignor to Woods, Sherwood & Co., West Meriden, Conn. Dish-stand	April 12, 1870
4,247	Wilcox, H. C., assignor to the Meriden Britannia Company, West Meriden, Conn. Tea and coffee pot (Design)	July 19, 1870
104,913	Wilcox, James A., assignor to self and Walter S. Wilcox, Rocky Hill, Conn. Pipe-wrench	June 28, 1870
	Wilcox, John H., and Philip Wisdom. (*See* Wisdom & Wilcox.)	
110,390	Wilcox, John W., assignor to self and John S. Schofield, Macon, Ga. Horse-power	Dec. 20, 1870
106,300	Wilcox, Josiah C., New London, Wis. Shearing and punching machine. (Antedated Aug. 5, 1870)	Aug. 9, 1870
100,576	Wilcox, Martin, Sacramento, Cal. Steam-pump device. (Antedated Dec. 30, 1869)	Mar. 8, 1870
106,904	Same. Pump	Aug. 30, 1870
99,043	Wilcox, Stephen S., and Eli J. Colgrove, Linchlaen, N. Y. Revolving-grater. (Antedated Jan. 6, 1870)	Jan. 18, 1870
109,696	Wild, George L. and Louis P., Washington, D. C. Dancing-toy	Nov. 29, 1870
98,653	Wilde, William A., Malden, Mass. Slate-frame	Jan. 4, 1870
101,798	Same. same	April 12, 1870
101,940	Wilder, Eli F., Lowell, Mass. Apparatus for measuring liquids. (Antedated Sept. 23, 1869)	Mar. 22, 1870
4,176	Same. Drip-filtering oil-fountain (Reissue)	Nov. 8, 1870
104,677	Wilder, Elijah A., Dennysville, Maine. Medicine for cure of diseases in cattle	June 21, 1870
101,799	Wilder, Joseph W., Leominster, Mass. Stove-pipe shelf	April 12, 1870
103,403	Wilder, Luke A., Chicago, Ill. Roofing-compound	May 24, 1840
103,636	Wilder, Nahum C., Hartford, Conn. Water-cock filter	May 3, 1870
3,889	Wilder, Robert M., assignee of part interest to Hiram B. Robinson, Coldwater, Mich. Sheep-shears (Reissue)	Mar. 22, 1870
99,735	Wilder, Salmon W., Lawrence, Mass. Cleansing paper when reduced to pulp from coloring matters	Feb. 8, 1870

Alphabetical list of patentees for the year 1870—Continued.

No.	Name, residence, and invention or discovery.	Date.
110,525	Wilder, Tolbert G., Camden, Miss. Subsoil-plow	Dec. 27, 1870
107,144	Wildman, Frederick M., assignor to self and John S. Fayerweather, Bethel, Conn. Galley	Sept. 6, 1870
108,076	Wile, Daniel H., New Pittsburgh, Ohio. Hay-knife	Oct. 4, 1870
99,736	Wiler, William, assignor to self and Lucien Moss, Philadelphia, Pa. Safety-box for bank-porters	Feb. 8, 1870
	Wiley, Benjamin B. (*See* Brown, Franklin H., assignor.)	
110,411	Wiley, James, Warsaw, N. C. Cotton-plow	Dec. 20, 1870
	Wiley, James F., and Vincent E. Price. (*See* Atwood, Corydon F., assignor.)	
104,923	Wiley, John L., Vermont, Ill. Refrigerating-attachment for wells	June 21, 1870
101,070	Wiley, Moses H., assignor to self, Thomas Miller, and John H. B. Lang, East Boston, Mass. Oil-cabinet	Mar. 22, 1870
4,035	Same. same (Reissue)	June 14, 1870
104,389	Same. same	June 14, 1870
103,404	Wiley, Moses H., and Thomas Miller, assignors to selves and John H. B. Lang, Boston, Mass. Apparatus for measuring liquids	May 24, 1870
105,871	Wilhelm, John H., Chicago, Ill. Curtain-fixture	July 26, 1870
109,087	Same. same	Nov. 8, 1870
99,507	Wilkes, Dunham, Nineveh, Ind. Shingle-machine	Feb. 1, 1870
107,989	Wilkes, George, New York, N. Y. Corrugated metallic pavement	Oct. 4, 1870
100,958	Wilkin, Marmaduke, and John Clark, England. Automatic car-brake	Mar. 15, 1870
103,952	Wilkin, William M., Detroit, Mich. Saw-mill	June 7, 1870
108,665	Same. Kalamazoo, Mich. Saw-mill	Oct. 25, 1870
	Wilkins, Cassander S., *et al.* (*See* Bicknell, Joseph G., assignor.)	
	Wilkins, Henry C. (*See* Jackson, William, assignor.)	
99,992	Wilkins, Horatio, and William H. Sangster, Paris, Ky. Motive-power apparatus	Feb. 15, 1870
	Wilkins, Josiah W., and Crawford S. Griffin. (*See* Griffin & Wilkins.)	
	Wilkins, W. A., *et al.* (*See* Ham, John D., assignor.)	
3,817	Wilkinson, George, assignor to Gorham Manufacturing Company, Providence, R. I. Egg-cup and salt-stand (Design)	Jan. 11, 1870
3,922	Same. Spoon and fork (Design)	Mar. 22, 1870
3,923	Same. Fancy spoon and fork work (Design)	Mar. 22, 1870
3,924	Same. Spoon and fork (Design)	Mar. 22, 1870
100,577	Wilkinson, James, Albany, N. Y. Sash-holder	Mar. 8, 1870
108,666	Wilkinson, James T., Lockport, N. Y. Roofing-cement. (Antedated Oct. 8, 1870)	Oct. 25, 1870
105,753	Wilkinson, John Atwater, Wilson, N. Y. Safety-guard for railway-cars	July 26, 1870
104,807	Wilkinson, Joseph B., Troy, N. Y. Cooking-stove	June 28, 1870
	Same. (*See* Hermance, Richard M., assignor) (Two cases.)	
101,954	Wilkinson, Joseph H., South New Market, N. H. Lubricator	April 12, 1870
101,955	Same. Concord, N. H. Wood pavement	April 12, 1870
102,345	Wilkinson, Nelson J., Kalamazoo, Mich. Hoisting-machine	April 26, 1870
106,641	Wilkinson, William H., Southwick, Mass. Logotype. (Antedated Aug. 12, 1870)	Aug. 23, 1870
107,577	Will, Frederick A., San Francisco, Cal. Pruning-shears	Sept. 20, 1870
99,801	Willard, Henderson, Grand Rapids, Mich. Stove for burning stumps. (Antedated Jan. 20, 1870)	Feb. 15, 1870
101,956	Same. Barrel	April 12, 1870
101,957	Same. Chair	April 12, 1870
102,346	Same. Barrel	April 26, 1870
102,347	Same. same	April 26, 1870
102,348	Same. Broiler for meat	April 26, 1870
103,000	Same. Barrel	May 10, 1870
103,001	Same. Method of forming cylinders	May 10, 1870
3,968	Same. Stove for burning stumps (Reissue)	May 10, 1870
110,413	Willard, Horatio, Evansville, Ind. Lock	Dec. 20, 1870
107,145	Willard, Horatio, and Peter Truax, Evansville, Ind. Lock	Sept. 6, 1870
	Willcox & Gibbs Sewing-Machine Company. (*See* Willcox, Charles H., assignor.)	
	Same. (*See* Carleton, Cyrus, assignor.)	
3,795	Willcox, Charles H., assignor through mesne assignments to the Willcox & Gibbs Sewing-Machine Company, New York, N. Y. Sewing-machine. (Reissue)	Jan. 11, 1870
99,126	Willcox, Charles H., assignor to the Willcox & Gibbs Sewing-Machine Company, New York, N. Y. Treadle for sewing-machine	Jan. 25, 1870
106,242	Same. Sewing-machine table	Aug. 9, 1870
	Willcox, Joseph, and Henry B., *et al.* (*See* Hatfield, Charles, B., assignor.)	
	Willcutt, Levi L., *et al.* (*See* Roberts, John, assignor.)	
100,228	Willey, Freeman O., Wilmette, Ill. Broom-brace	Feb. 22, 1870
	Williams, Aaron White Cook. (*See* Loader, John, assignor.)	
	Same. (*See* Loader & Child, assignors.)	
	Williams, Abby A., and William Pratt. (*See* Sawyer, Charles B., assignor.)	
103,002	Williams, Allison L., assignor to self and John H. Bell, Orth, Ind. Flour-bolting reel	May 10, 1870
102,900	Williams, Benjamin J., Philadelphia, Pa. Blind, screen, and shutter	May 10, 1870
99,737	Williams, Blaelus, Jefferson, Texas. Apparatus for transmitting power	Feb. 8, 1870
	Williams, Burett H., and William H. H. Gorham. (*See* Gorham & Williams.)	
101,335	Williams, Caleb, Newark, N. J. Washing-machine	Mar. 29, 1870
101,600	Williams, Carmi Henderson, Rhinebeck, N. Y. Brick-machine	April 5, 1870
108,743	Williams, Charles, jr., Somerville, Mass., and Jerome Redding, Charlestown, Mass. Electro-magnetic alarm-gong	Oct. 25, 1870
103,966	Williams, Charles D., St. Paul, Minn. Artificial fuel	May 17, 1870
110,179	Williams, Charles H., Cleveland, Ohio. Machine for making coupling-pins	Dec. 13, 1870

Alphabetical list of patentees for the year 1870—Continued.

No.	Name, residence, and invention or discovery.	Date.
104,090	Williams, Daniel, and Edward Joseph, Gallipolis Ohio. Revolving steam-gauge cock	June 7, 1870
108,543	Williams, David E., Davenport, Iowa. Cartridge	Oct. 18, 1870
	Williams, Edward, *et al.* (*See* Wood, Enoch, assignor.)	
103,807	Williams, Edward P., Elizabeth, N. J., and George H. Chinnock, New York, N. Y. Hand-toilet mirror-frame	May 31, 1870
103,808	Same.....same	May 31, 1870
103,809	Same.....Toilet-mirror and other frames	May 31, 1870
	Same.....(*See* Chinnock & Williams.)	
4,001	Williams, Francis H., Syracuse, N. Y. Construction of safes.....(Reissue)	May 31, 1870
	Williams, Garner C., and Albert J. Blakslee. (*See* Blakslee & Williams.)	
	Williams, George D., *et al.* (*See* Burbank, Abner, assignor.)	
109,068	Williams, Isaac, Westfield, N. Y. Device for unloading wagons	Nov. 8, 1870
98,534	Williams, John D., Allegheny City, Pa. Fix for boiling and puddling furnaces	Jan. 4, 1870
102,189	Williams, John D., New York, N. Y. Copy-book	April 19, 1870
104,091	Williams, John De Witt, assignor to self and John Wilson Butler, Philadelphia, Pa. Manufacture of iron	June 7, 1870
104,808	Williams, John H., Pleasant Hill, Ohio. Reed for looms	June 28, 1870
108,544	Same.....Tire-setting machine	Oct. 18, 1870
98,900	Williams, John L., Millvale, Pa. Apparatus for rolling metal	Jan. 18, 1870
101,306	Williams, John P., Mobile, Ala. Coffee-pot	Mar. 29, 1870
109,089	Williams, John R., Taunton, Mass. Brick-machine	Nov. 8, 1870
	Williams, John S., and William C. Stiver. (*See* Stiver & Williams.)	
107,578	Williams, John T., Chicago, Ill. Knob-latch	Sept. 20, 1870
	Williams, Levi, *et al.* (*See* Tucker, Williams & Coppock.)	
98,533	Williams, Lewis, Terryville, Conn. Egg-beater	Jan. 4, 1870
110,180	Williams, Lewis, Arlington, Vt. Mop-head	Dec. 13, 1870
101,337	Williams, Mollie, Camden, Ohio. Device for measuring, laying out, and forming corsets	Mar. 29, 1870
108,864	Williams, Morris D., Dakota, Iowa. Brick-machine	Nov. 1, 1840
107,429	Williams, O. T., Smithland, Ky. Shingle-machine	Sept. 13, 1870
3,958	Williams, Richard Mortimer, Rockville, Md. Harvester.....(Reissue)	May 3, 1870
105,754	Williams, Richard Price, England. Railway-crossing. (Patented in England Feb. 22, 1869)	July 26, 1870
104,524	Williams, Richard S., New York, N. Y. Preparing gold for dentists' use	June 21, 1870
109,986	Williams, Robert A., Colusa, Cal. Bee-hive	Dec. 6, 1870
108,077	Williams, Robert C., Frankfort, Ky. Umbrella	Oct. 4, 1870
	Williams, R. T., Nelson, and Joseph. (*See* Dunn, William R., assignor.)	
109,699	Williams, Stephen, Philadelphia, Pa. Mangling and ironing machine	Nov. 29, 1870
107,745	Williams, Stephen G., Trumansburgh, N. Y. Mill-pick	Sept. 27, 1870
107,579	Williams, Theodore Dwight, Chicago, Ill. Compound for stuffing and finishing leather	Sept. 20, 1870
106,439	Williams, Theron R., assignor to Chester Guild, jr., Salem, Mass. Machine for working hides, scouring leather, &c	Aug. 16, 1870
109,282	Williams, Thomas, Tompkinsville, N. Y. Roach and bug trap	Nov. 15, 1870
	Same.....(*See* Anthony, Richard, assignor.)	
103,534	Williams, Thomas Scott, and Freeman Augustus Taber, assignors to Thomas S. Williams and Philip S. Page, Boston, Mass. Treating candle and lamp wick	May 24, 1870
103,810	Williams, Thomas Scott, and Freeman Augustus Taber, Boston, Mass. Candle-lamp	May 31, 1870
104,525	Same.....Lamp for burning candles	June 21, 1870
105,020	Same.....Candle-lamp	July 5, 1870
110,526	Williams, Thomas S., assignor to self and Philip S. Page, Boston, Mass. Lamp	Dec. 27, 1870
	Williams, Thomas Scott, and Philip Sidney Page. (*See* Taber, Freeman Augustus, assignor.)	
103,811	Williams, Turner, assignor to self and E. D. Goodrich, Providence, R. I. Egg-beater	May 31, 1870
3,944	Williams, William, Rochester, N. Y. Insole for boots and shoes.....(Reissue)	April 26, 1870
90,508	Williams, William, assignor to self and Daniel Harrington, Vallejo, Cal. Swivel-shackle	Feb. 1, 1870
101,691	Williams, William H., Little Falls, N. Y. Street-pavement	April 5, 1870
	Same.....(*See* Fisher, Henry, assignor.)	
100,348	Williams, W. H., assignor to self and C. H. Williams, Canton, Ohio. Machine for paring fruit	Mar. 1, 1870
	Williams, William H. H., *et al.* (*See* Westcott, Charles S., assignor.)	
4,142	Williams, William L., assignor to self and Thomas J. O'Connor, New York, N. Y. Machine for bundling wood.....(Reissue)	Oct. 4, 1870
110,527	Williams, William L., New York, N. Y. Seat-guard for hobby-horses. (Antedated Dec. 17, 1870)	Dec. 27, 1870
103,637	Williams, Willis D., Raleigh, N. C. Machine for bending wood	May 3, 1870
107,147	Williamson, George S., assignor to self and Edwin R. McKean, Gallatin, Tenn. Apparatus for and process of distillation	Sept. 6, 1870
	Williamson, Gustavus A., and Samuel T. Shattuck. (*See* Herreshoff, James B., assignor.)	
	Williamson, Moses B., and John T. Carter. (*See* Carter & Williamson.)	
106,642	Williamson, William C., assignor to Williamson Brothers, Philadelphia, Pa. Hoisting-machine	Aug. 23, 1870
98,535	Willis, A. D., Crawfordsville, Ind. Medical compound	Jan. 4, 1870
100,339	Willis, Herbert L., South Easton, Mass. Sand-paper holder for finishing the soles of boots and shoes	Feb. 22, 1870
108,345	Willis, James, Mifflin, Wis. Sled-brake	Oct. 18, 1870

Alphabetical list of patentees for the year 1870—Continued.

No.	Name, residence, and invention or discovery.	Date.
	Willis, J. D. (*See* Schmucker, John P., assignor.)	
102,457	Willoughby, J. D., Shippensburgh, Pa. Lamp-burner	April 26, 1870
109,987	Wills, Harry A., assignor to National Horse-Nail Company, Vergennes, Vt. Machine for pointing nails	Dec. 6, 1870
103,267	Willson, Henry, Chicago, Ill. Embossing-attachment for printing-presses	May 17, 1870
	Willson, T. W., and Leonard Sterling. (*See* Sterling & Willson.)	
106,440	Willson, William J., Coles County, Ill. Press for baling broom-corn. (Antedated July 30, 1870)	Aug. 16, 1870
100,950	Willson, W. N. C., Summit Point, W. Va. Gauge for tobacco-cutters	Mar. 15, 1870
106,243	Wilmington, William, Toledo, Ohio. Cast-iron car-wheel	Aug. 9, 1870
4,102	Same.....Chill for casting car-wheels.....(Reissue)	Aug. 16, 1870
108,078	Wilmot, Samuel R., Bridgeport, Conn. Lamp-burner	Oct. 4, 1870
108,867	Same.....same	Oct. 25, 1870
	Wilmot, S. R., *et al.* (*See* Eggo, Frederick, assignor).....(Reissue.)	
	Wilson, Alvin W., and Henry Broomell. (*See* Broomell & Wilson.)	
109,383	Wilson, Arthur G., Chicago, Ill. Measuring-can. (Antedated Nov. 5, 1870)	Nov. 15, 1870
109,858	Wilson, Bartholomew, and Franklin P. Grimes, Dayton, Ohio. Wire-fence	Dec. 6, 1870
102,636	Wilson, Charles C., Baltimore, Md. Former for hoop-skirts. (Antedated April 18, 1870)	May 3, 1870
98,831	Wilson, C. F., Brooklyn, N. Y. Card-rack	Jan. 11, 1870
104,526	Wilson, Charles G., Brooklyn, N. Y. Mercurial-expansion engine	June 21, 1870
110,101	Wilson, Elijah, New Brighton, Pa. School-desk	Dec. 13, 1870
99,386	Wilson, Elisha, New York, N. Y. Electric clock	Feb. 1, 1870
102,743	Wilson, F. C., Watkins, N. Y. Pump	May 3, 1870
107,580	Wilson, George, Chicago, Ill. Bedstead and table	Sept. 20, 1870
107,581	Same.....Adjustable table	Sept. 20, 1870
104,914	Wilson, Henry, England. Impermeater for steam-engines	June 28, 1870
	Wilson, Henry Pendleton Taylor, and Charles Nelson Hitchcock. (*See* Hitchcock & Wilson.)	
	Wilson, James. (*See* Alvord, Joseph D., assignor.)	
100,481	Wilson, James, assignor to William Simon, Philadelphia, Pa. Valve-cock	Mar. 1, 1870
104,390	Wilson, James, assignor to Elizabeth, John, jr., and George Matthews, New York, N. Y. Tool for making bottles	June 14, 1870
102,456	Wilson, James Edward, Bridgeport, Conn. Pump	April 26, 1870
99,043	Wilson, James S., assignor to Phelps, Park & Co., Allegheny City, Pa. Wagon	Jan. 18, 1870
4,197	Wilson, James T., Rochester, N. Y. Mold board.....(Design)	June 28, 1870
106,441	Same.....Rotary steam-plow	Aug. 16, 1870
105,021	Wilson, John, and George H. Baisley, Hamilton, Mo. Well-auger	July 5, 1870
109,479	Wilson, John C., New York, N. Y. Hair-clipping device	Nov. 22, 1870
3,999	Wilson, John C., assignor to Richard Campbell, New York, N. Y. Skewer-cushion.....(Design)	April 26, 1870
109,090	Wilson, John J., New York, N. Y. Pot for glue, paint, &c	Nov. 8, 1870
99,509	Wilson, John Wall, New York, N. Y. Car brake and starter	Feb. 1, 1870
100,482	Same.....Gun-carriage	Mar. 1, 1870
4,154	Same.....same.....(Reissue)	Oct. 11, 1870
102,672	Wilson, Joseph C., Winneconne, Wis. Locomotive and car brake	April 19, 1870
106,301	Wilson, Josiah B., assignor through mesne assignments to self, Philip W. Lawrence, and Walter Reckless, Philadelphia, Pa. Washing-machine	Aug. 9, 1870
101,092	Wilson, L. B., Cambridge, Ohio. Blow-pipe	April 5, 1870
105,533	Wilson, Nimrod E., Wilsonburgh, W. Va. Oscillating-churn	July 19, 1870
101,693	Wilson, Robert, Des Moines, Iowa. Snow-plow for railways	April 5, 1870
107,315	Wilson, Samuel, Watertown, N. Y. Cheese-hoop	Sept. 13, 1870
98,839	Wilson, Samuel M., New York, N. Y. Vegetable-grater. (Antedated Dec. 24, 1869)	Jan. 11, 1870
	Wilson, Samuel S. (*See* Campbell, Alexander, assignor.)	
	Wilson, Thomas E., and Herbert P. Reed. (*See* Reed & Wilson.)	
102,639	Wilson, William, Boston, Mass. Coal-hod. (Antedated May 18, 1870)	May 3, 1870
102,349	Wilson, William and David, New York, N. Y. Bottle-stopper	April 26, 1870
106,905	Wilson, William M., and Dallas S. Denton, Polk County, Mo. Medical compound	Aug. 30, 1870
102,901	Wimer, Peter R., Trenton, N. J. Crutch	May 10, 1870
101,694	Wimer, William, Union City, Ind. Car-coupling	April 5, 1870
99,802	Winans, George G., Scranton, Pa. Elevating-apparatus	Feb. 15, 1870
	Winchester, Arthur S. (*See* Parsons, James S., assignor.)	
105,755	Winchester, Arthur St. Clair, assignor to self and James Seton Parsons, Boston, Mass. Metallic-plate screen for screening paper-pulp	July 26, 1870
	Winchester, George C. (*See* Bingham, O. A., assignor.) (Four cases.) (Reissue.)	
	Same.....(*See* Fitts, Samuel L., assignor.)	
105,022	Winchester, Gilman K., Providence, R. I. Stop-motion spring for braiding-machines	July 5, 1870
106,906	Windeck, Albert, Peoria, Ill. Folding-table	Aug. 30, 1870
103,697	Winder, John W., Cincinnati, Ohio. Bee-hive	May 31, 1870
101,198	Windhausen, Franz, Germany. Ice-machine	Mar. 22, 1870
105,534	Windsor, George W., assignor to self and John F. Beilstein, Allegheny City, Pa. Lifting-jack	July 19, 1870
	Windsor Manufacturing Company. (*See* Case, G. F., assignor.)	
100,094	Wing, Benjamin A., Galesburgh, Mich. Bolt-feeder for mills	Feb. 22, 1870
109,788	Wing, Daniel S., Rome, N. Y. Bag-holder	Nov. 29, 1870
102,744	Wing, George A., Albany, N. Y. Hay rake and loader	May 3, 1870
105,335	Same.....Base-burning stove. (Antedated July 12, 1870)	July 19, 1870
106,422	Same.....Stove or furnace-grate	Aug. 16, 1870
102,640	Wing, William R., Newark, Ohio. Strap-fastener	May 3, 1870

Alphabetical list of patentees for the year 1870—Continued.

No.	Name, residence, and invention or discovery.	Date.
99,510	Wingard, Adam, San Francisco, Cal. Paddle-wheel	Feb. 1, 1870
108,668	Winger, Martin, Ephrata, Pa. Bark-shaving machine	Oct. 25, 1870
108,669	Same. Manufacture of quercitron bark	Oct. 25, 1870
	Winkelhaus, Philipp, and Hermann Routti. (*See* Routti & Winkelhaus.)	
107,146	Wing, Thomas S., Lawrence, Mass. Drawing-frame	Sept. 6, 1870
108,225	Winslow, Alonzo P., Cleveland, Ohio. Machine for making nails	Oct. 11, 1870
4,214	Same. Machine for cutting nails. (Reissue)	Dec. 20, 1870
103,405	Winslow, Charles P., assignor to self and L. P. Day, Westborough, Mass. Washing-machine	May 24, 1870
103,953	Winsor, Frank Knowlton, Hillsdale, Mich. Lime barrel or kibble	June 7, 1870
	Winston, Joseph S., and Edward T. Smith. (*See* Smith & Winston.) (Design.)	Aug. 30 1870
106,076	Winston, Lucius, Pontiac, Ill. Corn-planter	Nov. 8, 1870
109,165	Same. Swing	
102,641	Winter, Henry, assignor to self and Thomas W. Ball, Honesdale, Pa. Bending-machine	May 3, 1870
109,091	Winter, Hiram A., Windsor, Ill. Ditching and grading machine	Nov. 8, 1870
104,241	Winter, Robert, San Francisco, Cal. Coloring photographs	June 14, 1870
	Winterbottom, John, and Joseph Duvall. (*See* Duvall & Winterbottom.)	
104,242	Winterburn, Andrew, Albany, N. Y. Stove-grate	June 14, 1870
	Winters, George. (*See* Kline, Jacob, assignor) (Two cases.)	
102,902	Wire, Henry C., Wilmington, Ohio. Wire and stone fence combined	May 10, 1870
108,863	Wisdom, Charles, Flat Rock, Mich. Corn-planter	Nov. 1, 1870
101,800	Wisdom, Philip, Brooklyn, N. Y., and John H. Wilcox, New York, N. Y. Machine for twisting and curling hair	April 12, 1870
105,286	Wise, James M., Wilmington, N. C. Mechanism for operating booms of vessels	July 12, 1870
109,093	Wise, Joseph, Elizabeth, N. J. Machine for booking tobacco leaves. (Antedated Oct. 22, 1870)	Nov. 8, 1870
102,190	Wise, Morris, New York, N. Y. Button-fastening	April 19, 1870
108,744	Wisner, James E., Friendship, N. Y. Horse hay-rake	Oct. 25, 1870
109,700	Same. same	Nov. 29, 1870
108,546	Wissler, Aaron, Brunersville, Pa. Separator for thrashing-machines	Oct. 18, 1870
4,097	Wiswall, Samuel, assignor to Albert H. Spencer, Hyde Park, Vt. Extension wash-bench (Reissue)	Aug. 9, 1870
101,338	Witherby, Thomas H., Worcester, Mass. Mowing-machine	Mar. 29, 1870
101,339	Same. Shearing and punching machine	Mar. 29, 1870
104,092	Witherell, Loren R., and Amasa B. Crandall, Galesburgh, Ill. Dusting-brush	June 7, 1870
110,5[illegible]8	Withey, Jerome B., Detroit, Mich. Running-gear for carriages	Dec. 27, 1870
103,113	Withington, Phineas M., Stoughton, Mass. Knife-sharpener	May 17, 1870
100,578	Withmar, Arnold, St. Louis, Mo. Lantern	Mar. 8, 1870
105,616	Witsil, George L., assignor to self and Thomas L. Bates, Philadelphia, Pa. Washing-machine	July 19, 1870
110,181	Witsil, George L., Philadelphia, Pa. Washing-machine	Dec. 13, 1870
105,399	Witt, Caleb W. and Bennett F., assignors to Bennett F. Witt, Indianapolis, Ind. Harvester	July 12, 1870
107,430	Witte, William F., assignor to Charles Robbins, Whitemarsh, Pa. Washing-machine for waste, &c	Sept. 13, 1870
101,203	Wittram, Frederick, San Francisco, Cal. Dress-protector	Mar. 22, 1870
109,003	Wixom, Albert R., Farmington, Mich. Potato-digger	Nov. 8, 1870
101,398	Wuord, Charles V., Waltham, Mass. Watch	Mar. 29, 1870
110,614	Same. Watch-regulator	Dec. 27, 1870
108,428	Wohlenberg, John P. H., Lyons, Iowa. Mill-stone dress	Oct. 18, 1870
106,102	Wolcott, Charles H., Jamestown, N. Y. Clothes-rack	Aug. 2, 1870
108,745	Wolcott, Henry E., assignor to self, Russell B. Wheeler, and Ezekiel B. Hoyt, Eldridge, N. Y. Spring for vehicles	Oct. 25, 1870
110,182	Wolcott, Henry E., assignor of two-thirds interest to Russell B. Wheeler and Ezekiel B. Hoyt, Eldridge, N. Y. Pump	Dec. 13, 1870
104,678	Wolcott, Russel F., assignor to Austin C. Chase, Claremont, N. H. Car-coupling	June 21, 1870
101,199	Wolf, A. N., Sheridan, Pa., and Joel Haag, Bernville, Pa. Water-wheel	Mar. 22, 1870
	Wolf, James, and Sylvester D. Barber. (*See* Barber & Wolf.)	
102,191	Wolff, Herman, Milwaukee, Wis. Shutter-worker	April 19, 1870
102,192	Same. same	April 19, 1870
103,400	Same. same	July 12, 1870
99,615	Wolff, Joseph, Lexington, Ky. Manufacture of yeast for distillers	Feb. 8, 1870
3,950	Same. Cincinnati, Ohio. Manufacture of yeast for distillers. (Reissue)	May 3, 1870
107,362	Wolff, Julius, New York, N. Y., and William N. Numsen, Baltimore, Md. Bottle-corking machine	Sept. 20, 1870
101,340	Wolff, Louis, Chicago, Ill. Liniment for burns, scalds, &c	Mar. 29, 1870
101,555	Wolff, Ludwig, assignor to self, David G. Rush, H. J. Puhlman, and Charles Welsh, Chicago, Ill. Combination distilling-apparatus	April 5, 1870
102,903	Wolff, Robert, assignor to self and Bernard Silverman, New York, N. Y. Brick-machine	May 10, 1870
102,073	Wolff, Uriah S., Burrel Township, Pa. Feeding-apparatus for nail-machine	April 19, 1870
100,579	Wolfington, W. P., Louisville, Ky. Method of laying off patterns for stitching on leather	Mar. 8, 1870
103,268	Wolfkiel, Walter F., assignor to Morris, Tasker & Co., Philadelphia, Pa. Wrench	May 17, 1870
110,183	Wolfle, Jacob, assignor to the Union Omnibus and Wagon Manufacturing Company, Cincinnati, Ohio. Wagon-brake	Dec. 13, 1870
105,872	Wolford, John B., assignor to self and Thomas B. Whiley, Lancaster, Ohio. Corn-sheller	July 26, 1870

Alphabetical list of patentees for the year 1870—Continued.

No.	Name, residence, and invention or discovery.	Date.
	Wolle, Clarence E., and Simon E. Pettee. (*See* Pettee & Wolle.)	
101,900	Wolpert, John, Louisville, Ky. Combined plow and cultivator	Mar. 22, 1870
109,701	Wonderlin, John, Louisville, Ky. Horse or mule shoe	Nov. 29, 1870
109,986	Wonlarlarsky, Nicolaus, Russia. Hoisting-machine	Dec. 6, 1870
103,114	Wonser, Mileden, Norwalk, Ohio. Carriage-wheel	May 17, 1870
109,989	Wood, Alfred A., Charlotte, Mich. Watch-case	Dec. 6, 1870
105,673	Wood, Aurin, Worcester, Mass. Machine for nicking screw-blanks	July 26, 1870
	Wood, Aurin, *et al.* (*See* Taft, Timothy F., assignor.)	
106,015	Wood, Benjamin B., Negaunee, Mich. Spike-drawer	Aug. 2, 1870
101,556	Wood, Charles L., and Cornelius A. Sheridan, Cleveland, Ohio. Machine for making cornice-moldings	April 5, 1870
	Wood, Charles L., *et al.* (*See* Blackburn, Wood, Price & Sheridan.)	
108,526	Wood, Cornell J., Brewerton, N. Y. Thread-cutter for sewing-machines	Aug. 16, 1870
106,643	Wood, David S., Tiskilwa, Ill. Combination of ochres for paints	Aug. 23, 1870
4,159	Same. Ochre for paints. (Reissue)	Oct. 18, 1870
	Wood, David W., and Manuel Van Slyke. (*See* Van Slyke & Wood). (Reissue.)	
98,901	Wood, De Volson, Ann Arbor, Mich. Pneumatic reciprocating movement. (Antedated Jan. 10, 1870)	Jan. 18, 1870
3,868	Wood, Edwin A., Utica, N. Y. Pressure-gauge case. (Design)	Feb. 22, 1870
102,350	Same. Pressure-gauge. (Antedated March 19, 1870)	April 26, 1870
	Wood, Ed. E., and Dexter D. Hardy. (*See* Hardy & Wood.)	
109,984	Wood, Enoch, assignor to self, Edward and Richard Perry, William McPherson, and Edward Williams, Pittsburgh, Pa. Rotary puddling-furnace	Nov. 15, 1870
106,644	Wood, Eugene K., De Witt, Iowa. Combined scrubbing-brush, &c	Aug. 23, 1870
100,700	Wood, George, Philadelphia, Pa. Floor-clamp	Mar. 8, 1870
107,316	Wood, George, Cambridgeport, Mass. Reed-organ	Sept. 13, 1870
106,907	Wood, George B., Chicago, Ill. Apparatus for treating club-feet	Aug. 30, 1870
102,351	Wood, George W., assignor to Joseph W. Kendall, New York, N. Y. Ear-brush	April 26, 1870
107,317	Wood, Henry, England. Platform-scale	Sept. 13, 1870
	Wood, James, *et al.* (*See* Durham, Wood & Hair.)	
	Wood, James, and Theodore Hair. (*See* Hair & Wood.)	
102,459	Wood, James T., Philadelphia, Pa. Gouge	April 26, 1870
109,702	Wood, James W., Alden, Ill. Bee-house	Nov. 29, 1870
102,193	Wood, Jehu H., Lebanon, Ohio. Artificial teeth	April 19, 1870
106,244	Wood, Joel, Martinsville, Ohio. Earth-closet	Aug. 9, 1870
	Wood, John, *et al.* (*See* Meredith, Samuel, assignor.)	
105,023	Wood, John A., Far Rockaway, N. Y. Sawing-machine	July 5, 1870
	Wood, John F. (*See* Sorel, Stanislas, assignor) (Two cases.)	
110,102	Wood, John F., assignor to the Union Stone Company, Boston, Mass. Manufacture of emery-wheels	Dec. 13, 1870
107,844	Wood, John J., North Manchester, Ind. Animal-trap. (Antedated Sept. 17, 1870)	Sept. 27, 1870
101,557	Wood, Joseph S., assignor to self and John J. Carberry, Philadelphia, Pa. Apparatus for generating and carbureting hydrogen gas	April 5, 1870
101,558	Same. Generating hydrogen and hydrocarbon gas	April 5, 1870
105,756	Same. Gas-apparatus for railroad-cars, &c	July 26, 1870
105,757	Same. same	July 26, 1870
110,331	Wood, Morris, Chillicothe, Ill. Steam-generating apparatus	Dec. 20, 1870
	Wood, Reuben. (*See* Scobey, George V., assignor.)	
109,789	Wood, Romanso E., Santa Cruz, Cal. Animal-trap	Nov. 29, 1870
106,443	Wood, Stephen S., Brooklyn, N. Y. Ditching-plow	Aug. 16, 1870
109,480	Same. Ditching-machine	Nov. 22, 1870
100,330	Wood, Thomas, Matteawan, N. Y. Machine for making nails and spikes	Feb. 22, 1870
101,071	Wood, Thomas E., Waseca, Minn. Compound to be applied to roofing	Mar. 22, 1870
105,287	Wood, Thomas H., New York, N. Y. Folding carriage-top	July 12, 1870
105,758	Same. Folding buggy-top	July 26, 1870
	Wood, Valentine and George W., *et al.* (*See* Lowe, John K., assignor). (Reissue.)	
	Wood, Walter A., Mowing and Reaping Machine Company. (*See* Partridge, William, assignor.)	
101,341	Wood, William E., Baltimore, Md. Base-burning fire-place stove	Mar. 29, 1870
102,074	Woodard, Alvin N., Fenton, Mich. Belt-tightener	April 19, 1870
106,908	Woodard, Stephen and Albert, Saratoga, Ind. Harrow	Aug. 30, 1870
103,812	Woodberry, Richard A., assignor to self and Francis Norwood, 2d., Beverly, Mass. Handle for edge-keys	May 31, 1870
110,184	Woodburn, Jacob, St. Louis, Mo., and Samuel F. Smith, Indianapolis, Ind., assignors to Osgood, Smith & Co. Machine for bending plow-handles	Dec. 13, 1870
100,483	Woodbury, D. A., Rochester, N. Y. Reversing-gear for steam-engines	Mar. 1, 1870
103,698	Same. Reversing and cut-off apparatus for steam-engines	May 31, 1870
107,746	Same. Automatic cut-off for steam-engines	Sept. 27, 1870
108,670	Woodbury, Edwin, Sharon, Pa. Railway-gate	Oct. 25, 1870
101,072	Woodbury, George E., Cambridge, Mass. Planing-machine	Mar. 22, 1870
	Woodbury, James A. (*See* Shaw, Henry F., assignor.)	
110,392	Woodbury, Leander S., assignor to self and David F. Hunt, South Antrim, N. H. Fruit-parer	Dec. 20, 1870
102,460	Woodbury, Oscar D., New York, N. Y. Brush	April 26, 1870
110,529	Same. Machine for making brushes	Dec. 27, 1870
106,016	Woodbury, Royal L., Lexington, Mass. Lap-board for dressmakers	Aug. 2, 1870
	Woodbury, Seth H., *et al.* (*See* Wright & Rowe, assignors.)	
100,701	Wooden, John L., Greensburgh, Ind. Collar and hames	Mar. 8, 1870
103,954	Wooding, Alvin L., Bristol, Conn. Machine for making ox-shoes	June 7, 1870
101,390	Woodley, Joseph, Quebec, Canada. Boot and shoe heel	Mar. 29, 1870
108,396	Woodman, Harvey T., Dubuque, Iowa. Wash-boiler	Oct. 11, 1870

Alphabetical list of patentees for the year 1870—Continued.

No.	Name, residence, and invention or discovery.	Date
	Woodman, Horace, Saco, Me. Machinery for cleaning top-flats of carding-engines ..... (Disclaimer filed)	June 16, 1870
	Same ..... Machinery for cleaning top-flats of carding engines .. (Extension)	July 7, 1870
106,527	Woodruff, Chauncey D., Toledo, Ohio. Water-pipe support	Aug. 16, 1870
106,528	Same ..... Ventilator for stove-pipes	Aug. 16, 1870
100,231	Woodruff, C. F., Newbern, Tenn. Ditcher	Feb. 22, 1870
108,950	Woodruff, Enos, Elizabeth, N. J. Earth-commode	Nov. 1, 1870
103,115	Woodruff, James, and Frederick Boyd, Quincy, Ill. Preparation of fibrous material	May 17, 1870
105,289	Woodruff, Jonah, Philadelphia, Pa. Sleeping-car	July 12, 1870
	Woodruff, Theodore T., Philadelphia, Pa. Railway-car seat and couch .... (Extension)	Dec. 1, 1870
	Same ..... Railway-car seat and couch ..... (Extension)	Dec. 1, 1870
	Woodruff, Walter W. (*See* Swathel, Wilbur F., assignor.)	
	Woods, Charles A., *et al.* (*See* McGowan, Robert L., assignor.)	
	Woods, Edward P., *et al.* (*See* Sherwood, Daniel, assignor) ..... (Reissue.)	
	Same ..... (*See* Sherwood, Woods & Dudley.)	
	Same ..... (*See* Sherwood, Daniel, assignor.)	
4,546	Woods, George, Cambridge, Mass. Case of a parlor-organ ..... (Design)	Dec. 27, 1870
	Woods, Sherwood & Co. (*See* Sherwood, Daniel, assignor) ..... (Two cases.)	
	Same ..... (*See* Sherwood, Woods & Dudley, assignors.)	
	Same ..... (*See* Sherwood & Dudley, assignors.)	
	Same ..... (*See* Wilcox, Horace C., assignor.)	
	Same ..... (*See* Latham, Cyrus H., assignor.)	
	Same ..... same ..... (Reissue.)	
	Woods, Thomas, *et al.* (*See* Millingar, James, assignor.)	
	Same ..... (*See* Hannen, H. S., assignor) ..... (Reissue.)	
101,201	Woods, W. D., Bennington, N. H. Knife-handle	Mar. 22, 1870
108,746	Woods, William L., Washington, D. C. Paper-file	Oct. 25, 1870
105,874	Woodside, B. F., McDonald Station, Tenn. Percussion-cap. (Antedated July 15, 1870)	July 26, 1870
	Woodside, George W., and Frederick Blackburn. (*See* Blackburn & Woodside.)	
	Woodward, A. H., and R. S. Craig. (*See* Craig & Woodward.)	
103,813	Woodward, Amos W., Rockford, Ill. Water-governor	May 31, 1870
104,391	Woodward, Arthur P., New York, N. Y. Card-cabinet	June 14, 1870
	Woodward, Benjamin. (*See* Coffin, David N. B., jr., assignor) ..... (Reissue.)	
104,392	Woodward, David F., Jasper, N. Y. Milk-cooler	June 14, 1870
	Woodward, Erastus, and Duncan H. Campbell. (*See* Campbell & Woodward.)	
106,017	Woodward, Ferdinand, Sacramento, Cal. Stocking	Aug. 2, 1870
	Woodward, George M., *et al.* (*See* King, John C., assignor) ..... (Two cases.)	
104,527	Woodward, John T., Bowling Green, Ky. Apparatus for bending and upsetting tire	June 21, 1870
	Woodward, Stephen, and Josiah Turner. (*See* Turner & Woodward.)	
101,958	Woodward, Theodore F., assignor to Hay & Co., Winslow, N. J. Fastening for fruit-jars	April 12, 1870
109,703	Same ..... same	Nov. 8, 1870
104,915	Woodworth, Alfred, and Edward W. Warren, Cambridge, N. Y. Tool for driving glaziers' points	June 28, 1870
109,094	Woodworth, Elon G., John Brawdy, and Fitch Merithew, Birmingham, Pa. Machine for bending iron pipe for welding. (Antedated Oct. 29, 1870)	Nov. 8, 1870
103,406	Woodcocks, Thomas J., New York, N. Y. Speaking-tube whistle	May 24, 1870
	Woolever, Adam, and William Harris. (*See* Harris & Woolever.)	
104,909	Wooley, Walton W., New York, N. Y. Mosquito-screen frame	June 28, 1870
108,547	Woolf, Jacob, Burr Oak, Mich. Mechanical movement	Oct. 18, 1870
109,709	Same ..... same	Nov. 29, 1870
110,185	Same ..... same	Dec. 13, 1870
110,186	Woolley, George Washington, Washington, D. C. Pen	Dec. 13, 1870
104,084	Woolrich, John H., Woburn, Mass. Condition-powder for horses and cattle	June 7, 1870
107,431	Woolsey, John B., Bloomfield, Iowa. Washing-machine	Sept. 13, 1870
108,227	Woolsey, Nathan, Ottawa, Ill. Fence	Oct. 11, 1870
	Woolson, Augustus N., *et al.* (*See* Frost, Henry S., assignor.)	
100,231	Woolston, Samuel, Vincentown, N. J., and William Corfield, Philadelphia, Pa. Reversible percolator	Feb. 22, 1870
	Woonsocket Rubber Company. (*See* Holt, John F., assignor) ..... (Reissue.)	
	Same ..... (*See* Flynn, Francis, assignor.)	
	Wooster, George H. (*See* Walker, William, assignor) ..... (Two cases.)	
106,444	Wooster, Gilbert L., Plymouth, Conn. Hay-spreader	Aug. 16, 1870
104,093	Wootten, John Eastburn, Reading, Pa. Machinery for moving coal and other minerals	June 7, 1870
	Wootten, John E., and John J. Lahaye. (*See* Lahaye & Wootten.)	
99,803	Worcester, Edward J., Worcester, Mass. Drilling-machine	Feb. 15, 1870
108,747	Same ..... Wrench	Oct. 25, 1870
108,748	Same ..... Shingling-bracket	Oct. 25, 1870
110,530	Same ..... Boring-machine	Dec. 27, 1870
107,845	Worden, Alva, Ypsilanti, Mich. Whip-socket clasp	Sept. 27, 1870
	Worden, William H. (*See* Butterfield, William, assignor.)	
3,913	Workman, William, assignor to Frederick H. Manny, Ripon, Wis. Seeding-machine ..... (Reissue)	April 12, 1870
110,103	Workman, William, and Jason Hitchcock, Ripon, Wis. Friction-block for attaching cultivator and other teeth	Dec. 13, 1870
99,616	Wormood, W. W., assignor to self and C. Hathaway, Dubuque, Iowa. Fare-box for street-cars	Feb. 8, 1870

Alphabetical list of patentees for the year 1870—Continued.

No.	Name, residence, and invention or discovery.	Date.
101,559	Worrall, Thomas H., East Blackstone, Mass. Grinding-machine	April 5, 1870
	Worrel, John, and James H. Reynerson. (*See* Reynerson & Worrel.)	
100,831	Worrell, Stanley E., Quincy, Ill. Apparatus for washing and elevating lumber	Mar. 15, 1870
107,645	Worthen, Daniel, Brooklyn, N. Y. Rectifying and improving alcoholic spirits	Sept. 20, 1870
109,791	Worthen, Edward A., Springfield, Mass. Device for manufacturing metallic cartridge-shells	Nov. 29, 1870
	Worthington, H. R., and Joseph Nason. (*See* Nason & Worthington.)	
	Worthington, Lewis, *et al.* (*See* Danks, Samuel, assignor.)	
101,695	Wottring, Reuben, Prospect, Ohio. Cultivator	April 5, 1870
104,670	Wrenshall, John C., Baltimore, Md. Car-coupling	June 21, 1870
104,680	Same ..... Process and apparatus for preserving fruits, vegetables, &c	June 21, 1870
101,959	Wright, Alexander, Wilmington, Del. Adjustable carriage-seat	April 12, 1870
104,943	Wright, Benjamin F., Charlestown, Mass. Chair-seat	June 14, 1870
105,759	Wright, Benjamin F., Charlestown, Mass., and John Rowe, jr., Wilmington, Mass., assignors of three-fifths interest to Seth H. Woodbury, William T. Gray, and Charles H. Drew. Preparing raw-hide for use in chair-seats	July 26, 1870
	Wright Brothers & Co. (*See* Stevens, Mary, assignor.)	
	Same ..... (*See* McMichael, John, assignor.)	
107,990	Wright, Charles A., Rodney, Miss. Combined horse-power and baling-press	Oct. 4, 1870
105,536	Wright, Charles D., Leesville, Conn. Water-wheel	July 19, 1870
	Wright, Charles E., *et al.* (*See* Haswell & Irwin, assignors.)	
101,073	Wright, David Pitcairn, and Cephas Butler, England. Lamp-burner	Mar. 22, 1870
99,511	Wright, Edward, Worcester, Mass. Self-acting mule for spinning	Feb. 1, 1870
100,380	Wright, Elbridge G., Boston, Mass. Inlaying metallic surfaces	Mar. 8, 1870
109,095	Wright, Enos, Lee County, Iowa. Spring for vehicles	Nov. 8, 1870
107,995	Wright, George, Savannah, Ga. Washing-machine	Oct. 4, 1870
103,269	Wright, George C., Leroy, Ohio. Gearing for clothes-wringers	May 17, 1870
101,074	Wright, Homer, assignor to self and Henry H. and Benjamin F. Collins, Pittsburgh, Pa. Cap for fruit-jars	Mar. 22, 1870
104,703	Wright, Horton, assignor to self and O. D. Childs, Akron, Ohio. Musical staff	June 14, 1870
101,075	Wright, Howell W., Taunton, Mass. Electro-plating apparatus	Mar. 22, 1870
108,977	Wright, Howell W., assignor to Albert Field Tack Company, Taunton, Mass. Coating tacks and nails with copper	Aug. 30, 1870
109,704	Wright, Jackson, Versailles, Ill. Gate	Nov. 29, 1870
105,094	Wright, Jackson & Green, Morrisania, N. Y. Stone-truck. (Antedated June 30, 1870)	July 5, 1870
109,481	Wright, James D., Columbia, Tenn. Means for adjusting the grain-wheel of harvesters	Nov. 22, 1870
108,548	Wright, Leander, Rochester, N. Y. Time-table indicator. (Antedated Oct. 13, 1870)	Oct. 18, 1870
104,528	Wright, Lemuel W., Brooklyn, N. Y. Paddle-wheel	June 21, 1870
99,993	Wright, Nathan, Cleveland, Ohio. Machine for re-turning crank-pins of locomotives	Feb. 15, 1870
	Wright, Ransom C. (*See* Cummins & Isreal, assignors.)	
101,960	Wright, Robert L., West Nantmeal, Pa. Pump	April 12, 1870
108,352	Wright, Rufus, Brooklyn, N. Y. Lacing for shoes	April 26, 1870
106,645	Wright, Samuel, Hillsborough, Mo. Adjustable fruit-ladder	Aug. 23, 1870
105,760	Wright, Simeon M., Athens, Ohio. Boring and mortising machine	July 26, 1870
99,512	Wright, Thomas, assignor to John A. Holmes, New York, N. Y. Broom for stables, &c	Feb. 1, 1870
107,992	Wright, Walter S., Chicago, Ill. Type-planer	Oct. 4, 1870
	Wright, Wendell, Bloomfield, N. J. Mode of securing springs in upholstery. (Extension)	Dec. 10, 1870
100,702	Wright, William, New York, N. Y. Pump	Mar. 8, 1870
	Wright, W. A. (*See* Bosom, Francis, assignor.)	
100,484	Wright, William H., Rochester, N. Y. Farm-gate	Mar. 1, 1870
100,485	Same ..... Cattle-pump	Mar. 1, 1870
103,270	Wright, William P., Winamac, Ind. Fence	May 17, 1870
101,696	Wrightington, Charles D., Boston, Mass. Brick-machine	April 5, 1870
107,563	Same ..... Fairhaven, Mass. Printing-press	Sept. 20, 1870
	Wrigleworth, John. (*See* Wells, William, assignor.)	
	Wundram, G. W., *et al.* (*See* Griffith, Wundram & Müller.)	
	Same ..... (*See* Müller, T. H., assignor.) ..... (Reissue.)	
	Wundram, George W., and John Griffith. (*See* Griffith & Wundram.)	
99,738	Wurts, Henry, assignor to James Lorimer Graham, New York, N. Y. Artificial fuel	Feb. 8, 1870
99,739	Same ..... Composition for moldings, picture-frames, &c	Feb. 8, 1870
99,740	Same ..... Preparing anhydrous grahamite	Feb. 8, 1870
99,741	Same ..... Chemical product called fused or anhydrous grahamite	Feb. 8, 1870
98,654	Wyatt, John, assignor to self and George Lewis, Philadelphia, Pa. Curtain-fixture. (Antedated Dec. 24, 1869)	Jan. 4, 1870
101,460	Wyatt, Robert, Brooklyn, N. Y. Brush-handle attachment. (Antedated March 19, 1870)	Mar. 29, 1870
105,989	Wyatt, William, Nashville, Tenn. Water regulator and alarm	July 12, 1870
108,671	Wyche, William E., Brookville, N. C. Cultivating-plow ..... (Extension)	Feb. 11, 1870
	Same ..... Plow-handle. (Antedated Oct. 7, 1870)	Oct. 25, 1870
105,401	Wyckoff, Peter. (*See* Livings, Francis, assignor.)	
	Wyeth, Henry M., Newark, Ohio. Pump	July 12, 1870
	Same ..... (*See* McLain, James B., assignor.)	
100,838	Wyman, Martin L., assignor to Otis Tufts, Melrose, Mass. Elevator	Mar. 15, 1870
	Wyman, Martin L., and Charles E. Moore. (*See* Moore & Wyman.)	

Alphabetical list of patentees for the year 1870—Continued.

No.	Name, residence, and invention or discovery.	Date.
106,529	Wyndham, Charles, England. Velocipede	Aug. 16, 1870
105,619	Wayne, George M., and William MacGrove, Dennison, Ohio. Furnace for steam-engines	July 19, 1870
106,000	Yager, Charles E., Hudson, N. Y. Blacking box and brush	Aug. 30, 1870
	Yagle, William, *et al.* (*See* Rider, Leman P., assignor.)	
107,993	Yale, Charles O., New York, N. Y. Electro-magnetic safe-lock. (Antedated Sept. 24, 1870)	Oct. 4, 1870
99,536	Yale, Linus, jr., deceased, by Silas N. Brooks, administrator, Bernardston, Mass. Permutation-lock	Jan. 4, 1870
108,806	Yancy, Edwin L., Batavia, N. Y., and Charles Edwin Dorman, Pembroke, N. Y. Apparatus for making cheese. (Antedated Oct. 20, 1870)	Nov. 1, 1870
101,401	Yarrell, Pierce W., Littleton, N. C. Anti-friction journal	Mar. 29, 1870
101,402	Same.....Water-wheel	Mar. 29, 1870
110,323	Same.....Anti-friction journal	Dec. 20, 1870
103,271	Yaryan, Homer T., Nashville, Tenn. Apparatus for refrigerating and making ice	May 17, 1870
103,814	Yates, Arthur P., Syracuse, N. Y. Fountain	May 31, 1870
107,747	Yates, William P., Elmira, N. Y. Curtain-fixture	Sept. 27, 1870
104,010	Yeamans, Ira, Brooklyn, N. Y. Tea and coffee service	June 7, 1870
101,560	Yeiser, Edmund. Thill-coupling	April 5, 1870
102,642	Yenne, Louis, New York, N. Y. Adjustable awning-frame	May 3, 1870
107,584	Yenno, Louis, New York, N. Y., and Charles Schneider, Newark, N. J. Adjustable awning	Sept. 20, 1870
4,180	Yeoman, Edward, Waukegan, Ill. Bed-bottom (Reissue)	Nov. 15, 1870
103,116	Yergason, Christopher J., Brooklyn, N. Y. Apparatus for steaming lard and oil casks	May 17, 1870
	Yerkes, Jesse. (*See* Hart, Daniel, assignor.)	
	Yetter, Andrew B. (*See* Bancroft, L. F., assignor) (Reissue.)	
	Same.....(*See* Bancroft, John A., assignor.)	
107,846	Yewdall, John and William, Philadelphia, Pa. Wool-washing machine	Sept. 27, 1870
104,589	Yinger, John S., Manchester, Pa. Horse hay-fork	June 21, 1870
109,385	Yocom, James, jr., Philadelphia, Pa. Grate-bar	Nov. 15, 1870
104,681	York, James, jr., Monroe, Mich. Resawing-machine	June 21, 1870
103,272	Yorke, William, Portland, Me. Register for odometers, &c	May 17, 1870
	Yost, George W. N., *et al.* (*See* Bradford, Charles K., assignor.)	
104,810	Yost, Harrison, assignor to self and Henry Yost, Dayton, Ohio. Wash-boiler	June 28, 1870
99,994	Youart, John M., Indianapolis, Ind. Bee-hive	Feb. 15, 1870
104,394	Young, Alfred, Philadelphia, Pa. Lock for fire-arms	June 14, 1870
102,194	Young, Allen, Pittsborough, N. C. Medicine for coughs and colds	April 19, 1970
106,445	Young, Allen P., assignor of one-half interest to Albert H. Spencer, Providence, R. I. Portable bath-seat	Aug. 16, 1870
108,423	Young, Augustus R., Red Wing, Minn. Boiler-feeder	Oct. 18, 1870
109,363	Young, Benjamin F., Toulon, Ill. Cultivator	Nov. 15, 1870
	Young, Charles. (*See* Ford, Charles S., assignor) (Two cases.)	
107,318	Young, Charles H., Lake Village, N. H. Construction of cylinders of knitting-machines	Sept. 13, 1870
	Young, Charles M., and Grant T. Coolman. (*See* Coolman & Young.)	
109,096	Young, Charles P., Attleborough, Mass. Door-check	Nov. 8, 1870
	Young, Daniel, and Benjamin Wieland. (*See* Wieland & Young.)	
104,811	Young, Emil, Cleveland, Ohio. Faucet	June 28, 1870
102,745	Young, Francis M., Nashville, Tenn. Apparatus for distilling spirits	May 3, 1870
103,535	Same.....Apparatus for distilling and purifying liquor	May 24, 1870
106,646	Young, George E., assignor to self, Charles A. and Solomon W. Young, Providence, R. I. Table. (Antedated Aug. 19, 1870)	Aug. 23, 1870
99,513	Young, Hugh, Middletown, Conn., and James L., New York, N. Y. Stone-cutting machine	Feb. 1, 1870
99,514	Same.....Tool for cutting stone, &c	Feb. 1, 1870
107,847	Same.....Machine for cutting stone. (Antedated Sept. 26, 1870)	Sept. 27, 1870
108,298	Same.....Stone-cutting machine. (Antedated Oct. 1, 1870)	Oct. 11, 1870
108,424	Same.....same	Oct. 18, 1870
108,425	Same.....Tool for cutting stone. (Antedated Oct. 2, 1870)	Oct. 18, 1870
108,426	Same.....Steam-engine. (Antedated Oct. 8, 1870)	Oct. 18, 1870
101,697	Young, James T., Washington, D. C. Time-indicator for letter-boxes	April 5, 1870
110,531	Young, John H. W., Henderson, Texas. Cotton cultivator, scraper, and chopper	Dec. 27, 1870
105,761	Young, John L., New York, N. Y. Folding counter-stool	July 26, 1870
109,705	Young, Josiah L., San Francisco, Cal. Sewing-mechanism. (Antedated Nov. 16, 1870)	Nov. 29, 1870
	Young, Lewis D., *et al.* (*See* Tuell, Meizer, assignor.)	
104,692	Young, Lewis V., St. Louis, Mo. Breech-loading fire-arm	June 21, 1870
105,762	Young, McClintock, Frederick, Md. Lantern	July 26, 1870
3,977	Young, McClintock, jr., assignor to Cyrus H. and Leander J. McCormick, Frederick, Md. Harvester (Reissue)	May 17, 1870
3,978	Same.....Harvester-rake (Reissue)	May 17, 1870
3,979	Same.....Combined reel and rake for harvesters (Reissue)	May 17, 1870
106,446	Young, Nicholas, Parma, Mich. Quilting-frame holder	Aug. 16, 1870
108,549	Young, Robert Clark, assignor to Oliver Franklin Grover, Middletown, Conn. Composing-stick	Oct. 18, 1870
	Young, Sarah R., *et al.* (*See* Porter, Alonzo, assignor.)	
102,748	Young, Solomon W., Providence, R. I. Umbrella	May 3, 1870
102,195	Young, Solomon W., assignor through mesne assignments to Elisha Dyer, Providence, R. I. Machine for forming and cutting eyelets and in the preparation of stock for the same	April 19, 1870

Alphabetical list of patentees for the year 1870—Continued.

No.	Name, residence, and invention or discovery.	Date.
102,644	Young, Theodore B., Louisville, Ky. Substitute for jamb-nuts	May 3, 1870
110,104	Young, Thomas, assignor to Ives & Allen, Montreal, Canada. Heating-stove	Dec. 13, 1870
	Young, William. (*See* Bomar, Elijah, assignor.)	
107,848	Young, William, and Peter Brash, Scotland. Manufacture of illuminating-gas	Sept. 27, 1870
	Young, William B., *et al.* (*See* Lane, John, assignor) (Two cases.)	
101,561	Young, William D., South Pittsburgh, Pa. Curling-rod for paper cigar-lighters	April 5, 1870
99,804	Young, W. H., Chicago, Ill. Fare-box for street-cars	Feb. 15, 1870
104,530	Same.....Fare-box for omnibuses, &c	June 21, 1870
110,324	Young, William H. H., Waverly, Iowa. Automatic band-cutter, spreader, and feeder	Dec. 20, 1870
102,643	Youngs, Alanson, Berlin, Mich. Evaporating-apparatus	May 3, 1870
106,245	Youngs, Edmund, New York, N. Y. Tuyere	Aug. 9, 1870
99,971	Yount, George W., P. P. Reister, A. L. Keeports, and William Yount, Littlestown, Pa. Curtain-holder	Jan. 25, 1870
104,395	Zacharias, John F., Leesburgh, Va. Sash-holder	June 14, 1870
105,875	Zahn, Henry, San Francisco, Cal. Candlestick	July 26, 1870
101,802	Zakrzewska, Wilhelmina Julianna, Prussia. Rocker for chairs	April 12, 1870
109,792	Zantzinger, Augustus, assignor to William P. McDowell, Louisville, Ky. Hand-stamp	Nov. 29, 1870
102,353	Zawadski, Alfred, assignor to self and J. C. O. Redington, Syracuse, N. Y. Bassotenuto for melodeons, &c	April 26, 1870
	Zehfuss, Johann G., *et al.* (*See* Wicke, Brönner, Petersen & Zehfuss.)	
107,439	Zeigler, Daniel, Lewistown, Pa. Mechanical movement	Sept. 13, 1870
103,955	Zeits, Frederick, Philadelphia, Pa. Apparatus for cooling ale, beer, &c	June 7, 1870
108,229	Zent, Abram L., Roanoke, Ind. Leather-cutting machine	Oct. 11, 1870
101,302	Ziegler, Albert F., Columbus, Ohio. Vapor-burner	Mar. 22, 1870
109,364	Ziegler, William, and John H. Seal, New York, N. Y. Flavoring-compound	Nov. 15, 1870
100,833	Ziesing, August G., Weehawken, N. J. Lock for ships' pumps	Mar. 15, 1870
103,815	Zimerman, Eli, Pamelia Four Corners, N. Y. Horse hay-rake	May 31, 1870
110,413	Zimmerman, Jackson C., Thomaston, Ga. Chair	Dec. 20, 1870
99,272	Zimmerman, John, Owatonna, Minn. Spiral-current water-wheel	Jan. 25, 1870
106,018	Zimmermann, Carl Friedrich, Philadelphia, Pa. Accordeon	Aug. 2, 1870
109,097	Zink, Anthony, Lancaster, Ohio. Self-acting wagon-brake	Nov. 8, 1870
	Zink, C., *et al.* (*See* Heist, John, assignor.)	
108,550	Zinsser, August, New York, N. Y. Treating shellac	Oct. 18, 1870
109,990	Zinsser, William, New York, N. Y. Compound for treating malt liquors	Dec. 6, 1870
99,515	Zitsman, E. H., assignor to Albert A. Freeman, Philadelphia, Pa. Railway-brake shoe	Feb. 1, 1870
109,567	Zoeberlein, John, Baltimore, Md. Carriage-attachment for plows	Nov. 22, 1870
	Zoiner, Paul W., and Conrad Harris. (*See* Harris & Zoiner.)	
	Same.....same (Design.)	
	Zook, Daniel M., and H. Klingman. (*See* Phillips, David, assignor.)	
4,123	Zuckermann, Jacob, San Francisco, Cal. Motive-power for sewing and other machines (Reissue)	Sept. 13, 1870
99,742	Zwiebel, Anton, Burlington, Wis. Universal joint	Feb. 8, 1870

LIST OF TRADE-MARKS REGISTERED DURING THE YEAR 1870.

No.	Name, residence, and invention or discovery.	Date of filing.	Date of registration.
	Alexander & White. (*See* White & Alexander.)		
17	American Tube Works, Boston, Mass. Seamless metal tubes	Oct. 11, 1870	Nov. 1, 1870
61	Appleby & Helme, New York, N. Y. Snuff	Oct. 24, 1870	Nov. 15, 1870
71	Atlantic White-Lead Company, New York, N. Y. White-lead	Nov. 3, 1870	Nov. 22, 1870
72	Same. Refined boiled linseed-oil	Nov. 3, 1870	Nov. 22, 1870
1	Averill Chemical-Paint Company, New York, N. Y. Liquid paint	Aug. 29, 1870	Oct. 25, 1870
96	Badger, Benjamin F., Everett, Mass. Razor-strops	Nov. 26, 1870	Dec. 13, 1870
	Baldwin & Pope. (*See* Pope & Baldwin.)		
2	Baldy, J. B., & Co., Toledo, Ohio. Mustard	Aug. 27, 1870	Oct. 25, 1870
18	Bartlett, Henry A., & Co., Philadelphia, Pa. Stove-blacking	Sept. 21, 1870	Nov. 1, 1870
112	Block, H., & Co., Cincinnati, Ohio. Whisky	Dec. 9, 1870	Dec. 27, 1870
83	Boetticher, Kellogg & Co., Evansville, Ind. Ax	Nov. 14, 1870	Dec. 6, 1870
66	Bowen, Hunt & Winslow, Chicago, Ill. Black alpaca dress-goods	Nov. 4, 1870	Nov. 22, 1870
3	Branson, Ellis, Philadelphia, Pa. Retail coal	Aug. 11, 1870	Oct. 25, 1870
53	Brooklyn White-Lead Company, New York, N. Y. White-lead	Oct. 22, 1870	Nov. 8, 1870
54	Same. same	Oct. 22, 1870	Nov. 8, 1870
55	Same. same	Oct. 22, 1870	Nov. 8, 1870
97	Brown, D. Arthur, & Co., Fishersville, N. H. Wagon-axle	Nov. 26, 1870	Dec. 13, 1870
13	Buffalo Magic-Polishing Company, The, Buffalo, N. Y. Polishing-preparation	Sept. 15, 1870	Oct. 25, 1870
	Clark and Wattson. (*See* Wattson & Clark.)		
4	Coit, Tracy, New York, N. Y. Fish	Sept. 28, 1870	Oct. 25, 1870
12	Dale, Ross & Co., Philadelphia, Pa. Dry-goods	Aug. 3, 1870	Oct. 25, 1870
113	Danforth, George M., New York, N. Y. Burning-fluid	Nov. 29, 1870	Dec. 27, 1870
67	Danforth, Roderick F., Cleveland, Ohio. Non-explosive burning-fluid	Aug. 5, 1870	Nov. 22, 1870
84	Dawes, Fiske & Fanning, New York, N. Y. Umbrellas and parasols	Nov. 5, 1870	Dec. 6, 1870
85	Deniker & Melville, New York, N. Y. Toilet-soap	Nov. 11, 1870	Dec. 6, 1870
114	Des Anges, Robert, New York, N. Y. Honolulu orange-bitters	Dec. 12, 1870	Dec. 27, 1870
115	Dugdale & Girvin, Baltimore, Md. Fertilizer	Nov. 10, 1870	Dec. 27, 1870
116	Same. same	Nov. 10, 1870	Dec. 27, 1870
5	Ellis, William Lanfair, & Co., Baltimore, Md. Oyster-packing	Oct. 1, 1870	Oct. 25, 1870
86	English, Richard W., Buffalo, N. Y. Brooms	Oct. 21, 1870	Dec. 6, 1870
87	Same. same	Nov. 18, 1870	Dec. 6, 1870
88	Same. same	Nov. 18, 1870	Dec. 6, 1870
6	Evans, Clow, Dalzell & Co., Pittsburgh, Pa. Wrought-iron pipe	Sept. 12, 1870	Oct. 25, 1870
19	Faber, Eberhard, New York, N. Y. Lead-pencils	Aug. 8, 1870	Nov. 1, 1870
117	Same. same	Dec. 5, 1870	Dec. 27, 1870
118	Fisk, Clark & Flagg, New York, N. Y. Furnishing-goods	Dec. 3, 1870	Dec. 27, 1870
98	Flint & Co., Providence, R. I. Root and herb bitters	Nov. 28, 1870	Dec. 13, 1870
20	Foote, Arthur W., Brooklyn, N. Y. Manufactured tobacco	Aug. 13, 1870	Nov. 1, 1870
89	Frieberg & Workum, Cincinnati, Ohio. Whisky	Aug. 27, 1870	Dec. 6, 1870
99	Furber, George C., Yreka, Cal. Medical compound	Oct. 18, 1870	Dec. 13, 1870
101	Gaines, W. A., & Co., Frankfort, Ky. Whisky	Nov. 26, 1870	Dec. 13, 1870
102	Same. same	Nov. 26, 1870	Dec. 13, 1870
103	Same. same	Nov. 26, 1870	Dec. 13, 1870
104	Same. same	Nov. 26, 1870	Dec. 13, 1870
100	Gardiner, L. Y., & Co., Amsterdam, N. Y. Brooms and brushes	Nov. 22, 1870	Dec. 13, 1870
7	Garrett, W. E., & Sons, Philadelphia, Pa. Snuff	Aug. 26, 1870	Oct. 25, 1870
	Girvin & Dugdale. (*See* Dugdale & Girvin) (Two cases.)		
21	Green, Richard, Manchester, N. H. Preparations for the hair	Sept. 8, 1870	Nov. 1, 1870
8	Hamilton, William G., New York, N. Y. Car-wheel	Oct. 1, 1870	Oct. 25, 1870
	Hardy, Milton J., and Charles P. Moorman. (*See* Moorman & Hardy.)		
78	Hathaway, C. L., & Sons, Boston, Mass. Leather-dressing	Nov. 5, 1870	Nov. 20, 1870
	Helme & Appleby. (*See* Appleby & Helme.)		
22	Hirsch, David, & Co., New York, N. Y. Cigars	Oct. 14, 1870	Nov. 1, 1870
23	Same. same	Oct. 14, 1870	Nov. 1, 1870
24	Same. same	Oct. 14, 1870	Nov. 1, 1870
25	Same. same	Oct. 14, 1870	Nov. 1, 1870
26	Same. same	Oct. 14, 1870	Nov. 1, 1870
27	Same. same	Oct. 14, 1870	Nov. 1, 1870
28	Same. same	Oct. 14, 1870	Nov. 1, 1870
29	Same. same	Oct. 14, 1870	Nov. 1, 1870
30	Same. same	Oct. 14, 1870	Nov. 1, 1870
31	Same. same	Oct. 14, 1870	Nov. 1, 1870
32	Same. same	Oct. 14, 1870	Nov. 1, 1870
33	Same. same	Oct. 14, 1870	Nov. 1, 1870
34	Same. same	Oct. 14, 1870	Nov. 1, 1870
35	Same. same	Oct. 14, 1870	Nov. 1, 1870
36	Hirsh, Henry, and Seligman Oppenheimer, New York, N. Y. Watches	Sept. 7, 1870	Nov. 1, 1870
	Hite & Teter. (*See* Teter & Hite.)		

List of trade-marks registered during the year 1870—Continued.

No.	Name, residence, and invention or discovery.	Date of filing.	Date of registration.
79	Hoffheimer Brothers, Cincinnati, Ohio. Whisky	Nov. 5, 1870	Nov. 29, 1870
9	Hogg, John K., Frederick, Md. Soap	Aug. 17, 1870	Oct. 25, 1870
37	Holmes, Henry J., Atlanta, Ga. Cotton-seed	Oct. 10, 1870	Nov. 1, 1870
56	Houghton, Edwin F., Philadelphia, Pa. Cosmoline, a product of petroleum	Sept. 9, 1870	Nov. 8, 1870
38	Hughes, David W., Palmyra, Mo. Corn-planters	Sept. 21, 1870	Nov. 1, 1870
39	Jackson, James A., & Co., St. Louis, Mo. Stomach-bitters	Sept. 1, 1870	Nov. 1, 1870
40	Johnson, Frank G., New York, N. Y. School-charts	Oct. 1, 1870	Nov. 1, 1870
57	King, William, Springfield, Ohio. Table-sauce	Oct. 21, 1870	Nov. 8, 1870
41	Lippiatt Silver-Plate and Engraving Company, New York, N. Y. Silver and plated ware	Aug. 33, 1870	Nov. 1, 1870
68	Lynch, J. Augustus, & Co., Boston, Mass. The Huntoon steam-governors	Nov. 4, 1870	Nov. 29, 1870
62	Maddox, William, Ripley, Ohio. Cough-balsam	Oct. 31, 1870	Nov. 15, 1870
58	Martin, J. Lloyd, Baltimore, Md. Preparation for the hair	Oct. 20, 1870	Nov. 8, 1870
69	McDermott, A., Oroville, Cal., and Redington, Hostetter & Co., San Francisco, Cal. Yreka cante	Oct. 29, 1870	Nov. 22, 1870
42	McKinnon, John A., Selma, Ala. Medical compound	Sept. 22, 1870	Nov. 1, 1870
	Melville & Deniker. (*See* Deniker & Melville.)		
43	Meyer, Julius W., St. Louis, Mo. Axes	Sept. 17, 1870	Nov. 1, 1870
63	Moorman, C. P., Louisville, Ky. Whisky	Nov. 4, 1870	Nov. 15, 1870
64	Moorman, Charles P., Louisville, Ky., and Milton J. Hardy, New York, N. Y. Whisky	Nov. 4, 1870	Nov. 15, 1870
90	Moorman, C. P., & Co., Louisville, Ky. Whisky	Nov. 17, 1870	Dec. 6, 1870
44	Myers, Elkanah, & Co., Cincinnati. Prize-candy	Sept. 22, 1870	Nov. 1, 1870
10	Olzendam, Abraham P., Manchester, N. H. Woolen hose	Aug. 15, 1870	Oct. 25, 1870
	Oppenheimer, Seligman, and Henry Hirsh. (*See* Hirsh & Oppenheimer.)		
105	Page, George F. and Charles T., Franklin, N. H. Leather	Nov. 28, 1870	Dec. 13, 1870
106	Palmer, Lorin, New York, N. Y. Cigars, snuff, and tobacco	Oct. 8, 1870	Dec. 13, 1870
65	Partridge, John C., & Co., Chicago, Ill. Cigars, tobacco, and snuff	Oct. 10, 1870	Nov. 15, 1870
73	Patent-Metal Company, Philadelphia, Pa. Metal	Nov. 3, 1870	Nov. 22, 1870
46	Peck & Snyder, New York, N. Y. Base-balls	Aug. 30, 1870	Nov. 1, 1870
91	Pope & Baldwin, Quincy, Ill. Corn-planter	Nov. 18, 1870	Dec. 6, 1870
107	Pratt, Charles, New York, N. Y. Oils	Nov. 23, 1870	Dec. 13, 1870
109	Prescott, James L., North Berwick, Me. Stove-polish	Sept. 19, 1870	Dec. 20, 1870
110	Randolph, Reune R., New York, N. Y. Tobacco	Nov. 0, 1870	Dec. 20, 1870
45	Rasin, R. W. L., Baltimore, Md. Soluble sea-island guano	Oct. 15, 1870	Nov. 1, 1870
92	Rawson & Philbrick, Key West, Florida. Cigar	Nov. 15, 1870	Dec. 6, 1870
	Redington, Hostetter & Co., and A. McDermott. (*See* McDermott & Redington, Hostetter & Co.)		
93	Ridenour, Coblents & Co., Springfield, Ohio. Liniment	Nov. 16, 1870	Dec. 6, 1870
108	Roberts, Robert J., New York, N. Y. Cutlery	Nov. 26, 1870	Dec. 13, 1870
80	Roose, William S., Washington, D. C. Cigar	Nov. 8, 1870	Nov. 29, 1870
81	Same. same	Nov. 8, 1870	Nov. 29, 1870
119	Ross, Charles H., & Co., Baltimore, Md. Liquors	Dec. 7, 1870	Dec. 27, 1870
11	Ryan, William, Dubuque, Iowa. Hams	Oct. 10, 1870	Oct. 25, 1870
120	Seely, Samuel S., Bath, N. Y. Medical compound	Dec. 7, 1870	Dec. 27, 1870
94	Smith, James T., New York, N. Y. Umbrellas and parasols	Nov. 23, 1870	Dec. 6, 1870
70	Smith, Jesse S., Waverly, N. Y. Detergent powder	Oct. 28, 1870	Nov. 22, 1870
	Snyder & Peck. (*See* Peck & Snyder.)		
47	Teter & Hite, Moffett's Creek, Va. All-healing liniment and morning-star lamp-oil	Sept. 20, 1870	Nov. 1, 1870
95	Thompson & Steele, Chicago, Ill. Baking-powder	Nov. 10, 1870	Dec. 6, 1870
14	Thurber, H. K., & Co., New York, N. Y. Yeast-powder	Oct. 1, 1870	Oct. 25, 1870
15	Same. Whisky	Oct. 1, 1870	Oct. 25, 1870
111	Tappan, Charles, Wakefield, Mass., and Moses F. Winn, Woburn, Mass. Water-proof goods	Nov. 5, 1870	Dec. 20, 1870
16	Turner, J. J., & Co., Baltimore, Md. Fertilizing-compound	July 28, 1870	Oct. 25, 1870
82	Underwood, William, & Co., Boston, Mass. Deviled entremets	Oct. 25, 1870	Nov. 29, 1870
74	United States Proprietary Medicine Company, Cincinnati, Ohio. Medical compound	Nov. 2, 1870	Nov. 22, 1870
49	Victor Scale Company, Dixon, Ill. Scales	Oct. 7, 1870	Nov. 1, 1870
75	Walton, Whann & Co., Wilmington, Del. Fertilizer	Nov. 3, 1870	Nov. 22, 1870
50	Warfield, Alexander, Philadelphia, Pa. Soap	Oct. 26, 1870	Nov. 8, 1870
50	Wattles, Joseph Warren, Canton, Mass. Suspenders and elastic webbing	Sept. 19, 1870	Nov. 1, 1870
60	Wattson & Clark, Philadelphia, Pa. Super-phosphate	Oct. 22, 1870	Nov. 8, 1870
51	Weed Sewing-Machine Company, Hartford, Conn. Sewing-machines	Aug. 15, 1870	Nov. 1, 1870
121	Weisenberger, Philip, Pittsburgh, Pa. Burning-fluid	Dec. 12, 1870	Dec. 27, 1870
76	Wells, William N., Boston, Mass. Medicines	Oct. 20, 1870	Nov. 22, 1870
48	West Virginia Oil and Oil-Land Company, The, Petroleum, W. Va. Lubricating-oils	Sept. 28, 1870	Nov. 1, 1870
77	White & Alexander, Paris, Ky. Whisky	Sept. 23, 1870	Nov. 22, 1870
	Winn, Moses F., and Charles Toppan. (*See* Toppan & Winn.)		
52	Zeilin, J. H., & Co., Macon, Ga. Medicine	Aug. 5, 1870	Nov. 1, 1870

LIST OF PATENTS EXTENDED DURING THE YEAR 1870.

No.	Name, residence, and invention or discovery.	Date.
2,220	Andrews, Emanuel, Williamsport, Pa. Machine for grinding saws. (Reissued June 19, 1866)	Dec. 16, 1856
18,888	Apperly, James, and William Clissold, England. Machinery for preparing fibrous substances for spinning. (Patented in England Dec. 4, 1856)	Dec. 22, 1857
15,540	Averill, Levi, Elmira, N. Y. Lime-kiln	Aug. 19, 1856
14,044	Avery, Benjamin F., Louisville, Ky. Plow	Jan. 8, 1856
2,145	Bachelder, John, Norwich, Conn. Sewing-machine. (Reissued Dec. 12, 1865; extended seven years, and again extended by act of Congress approved July 14, 1870)	May 8, 1849
15,406	Bailey, Alfred, Amesbury, Mass. Pegging-jack	July 29, 1856
3,812	Baker, Henry N., Binghamton, N. Y. Printing-telegraph. (Reissued Jan. 25, 1870)	April 29, 1856
4,026	Ball, Hosea, New York, N. Y. Oven. (Reissued Oct. 12, 1869, and again reissued June 14, 1870)	Sept. 23, 1856
14,944	Ball, William, deceased, by Adelia E. and Edwin P. Ball, administrators, Chicopee, Mass. Operating steam-stamps	May 27, 1856
14,708	Bartle, Warren S., Newark, N. Y. Machine for sowing fertilizers	April 22, 1856
1,798	Barton, Jason, deceased, by Margarette L. Barton and Charles A. Buell, administrators, Chatham, Conn. Pressure-bell. (Reissued Oct. 25, 1864)	April 8, 1856
14,221	Baxter, William, Newark, N. J. Wrench	Feb. 12, 1856
15,4.8	Boyes, Burritt C., deceased, by Sady D. Boyes, administratrix, Philadelphia, Pa. Folding-guide for sewing-machines	July 22, 1856
15,544	Bradford, Hezekiah, Reading, Pa. Ore-washer	Aug. 12, 1856
14,551	Brooks, William F., New York, N. Y. Making seamless metal tubes	April 1, 1856
14,490	Brown, Adolph and Felix, New York, N. Y. Machine for cutting loaf-sugar	Mar. 25, 1856
2,754	Brown, Charles H., and Charles Burleigh, Fitchburgh, Mass. Valve-gear for steam-engines. (Reissued Aug. 27, 1867)	Jan. 15, 1856
16,204	Bryson, Robert, Schonectady, N. Y. Machine for husking corn	Dec. 9, 1856
14,378	Burleigh, Charles, Georgetown, Col. Ter. Gearing for feed-rollers of planing-machines	Feb. 12, 1856
978	Carr, William S., New York, N. Y. Water-closet. (Reissued June 12, 1860)	Aug. 5, 1856
14,388	Carter, William L., Marietta, Pa. Ore-washer	Mar. 11, 1856
15,657	Cawood, Joseph D., deceased, by George Johnson, administrator, Marshall, Mich. Repairing railway-bars	Sept. 9, 1856
4,679	Chambers, Cyrus, jr., Philadelphia, Pa. Paper-folding machine. (Reissued July 26, 1870)	Oct. 7, 1856
14,086	Clark, H. M., deceased, by William S. Booth, administrator, New Britain, Conn. Machine for heading bolts	Jan. 15, 1856
14,950	Clemson, William, Middletown, N. Y. Grinding circular saws	May 27, 1856
15,223	Clough, William T., Newark, N. J. Concentrating-apparatus for sulphuric acid.	July 1, 1856
3,687	Crosby, C. O., New Haven, Conn. Machine for folding paper. (Reissued Oct. 26, 1869)	Dec. 23, 1856
16,306	Dawley, Benjamin G., North Providence, R. I. Looms	Dec. 23, 1856
15,054	Dodge, Daniel, Keeseville, N. Y. Nail-machine	June 3, 1856
15,718	Dole, L. A., deceased, by Richard H. Garrigues, administrator, Salem, Ohio. Sawgummer	Sept. 9, 1856
2,982	Dorsey, Owen, Newark, Ohio. Harvester-rake. (Reissued Oct. 23, 1860, and again reissued June 9, 1868)	Mar. 4, 1856
15,176	Dunham, Isaac A., North Bridgewater, Mass. Shoemakers' edge-plane	June 24, 1856
14,951	Eames, Charles T., Milford, Mass. Boot-tree	May 27, 1856
15,880	Estep, David P., Pittsburgh, Pa. Making ax-polls	Oct. 14, 1856
15,220	Fay, Samuel B., New York, N. Y. Metallic hook for labels	July 1, 1856
15,228	French, Erasmus, New Haven, Conn., and Charles Frost, Waterbury, Conn. Making boxes of paper-pulp	July 1, 1856
14,158	Gold, Stephen J., West Cornwall, Conn. Apparatus for heating buildings by steam	Jan. 29, 1856
16,308	Goodell, Joseph H., Logansport, Ind. Machine for cutting veneers from the log.	Dec. 23, 1856
16,144	Greavenor, Jonathan P., Lowell, Mass. Method of clamping cutters in cutter-heads for planing-machines	Dec. 2, 1856
15,358	Grover, Oliver F., Middletown, Conn. Printers' composing-stick	July 15, 1856
14,914	Hedley, Edward, Philadelphia, Pa. Shingle-machine	May 20, 1856
14,844	Hill, George W., Olean, N. Y. Saw-mill dog	May 6, 1856
3,893	Hoe, Richard M., New York, N. Y. Printing-press. (Reissued Mar. 22, 1870)	Aug. 5, 1856
4,597	Horsford, E. N., Cambridge, Mass. Pulverulent acid for use in the preparation of soda powders, farinaceous food, and for other purposes. Reissued May 7, 1867)	April 29, 1856
1,828	Hunt, Walter, deceased, by Polly and George W. Hunt, administrators, New York, N. Y. Shirt-collar. (Reissued Nov. 29, 1864; extended under act of Congress approved March 15, 1870)	July 23, 1854
15,978	Ingham, Harvey B., Camptown, Pa. Smut-machine	Oct. 28, 1856
15,077	Ives, James, Mount Carmel, Conn. Mode of attaching pads to saddle-trees	June 10, 1856
15,610	Jones, J. Herva, Rockford, Ill. Hand seed-planter	Aug. 26, 1856
2,332	Kindleberger, Tobias J., Eaton, Ohio. Cider-mill. (Reissued Aug. 14, 1866; extended under act of Congress approved April 6, 1870)	May 29, 1855
16,278	Kingsland, Joseph, jr., Franklin, N. J. Paper-pulp engine	Dec. 23, 1856

List of patents extended during the year 1870—Continued.

No.	Name, residence, and invention or discovery.	Date.
1,380	Kingsland, Joseph, jr., Franklin, N. J. Machine for grinding paper-pulp. (Reissued June 28, 1859, and again reissued Jan. 6, 1863)	Dec. 16, 1856
1,381	Same.....Process of grinding paper-pulp. (Reissued June 28, 1859, and again reissued Jan. 6, 1863)	Dec. 16, 1856
15,768	Lamson, Daniel, deceased, by Emily J. Lamson, executrix, Weymouth, Mass. Machine for notching hoops	Sept. 23, 1856
15,854	Lewis, William, Brooklyn, N. Y., and William H. Lewis, New York, N. Y. Plate-holder for photographic cameras	Oct. 7, 1856
2,944	Louis, Lafayette, deceased, by El Dora Louis, administratrix, New York, N. Y. Melodeon. (Reissued Feb. 26, 1867, and again reissued May 20, 1868)	Nov. 18, 1856
14,510	Lyman, Asel S., New York, N. Y. Method of cooling and ventilating rooms, &c	Mar. 25, 1856
1,355	Magee, John, Chelsea, Mass. Ventilating-damper for stoves. (Reissued Nov. 18, 1862)	May 20, 1856
15,044	Mann, Jacob J., deceased, by William C. Martin, administrator, and Henry F. Mann, Pittsburgh, Pa. Reaping-machines	June 3, 1856
15,141	Maynard, Edward, Washington, D. C. Cartridge	June 17, 1856
15,142	McComb, David, deceased, by Mary Ann McComb, administratrix, Memphis, Tenn. Non-elastic band for bales of cotton and other fibrous materials	June 17, 1856
14,923	Miller, James M., assignor through mesne assignments to D. D. Foley, Washington, D. C. Surface-condenser for steam-engines. (Act of Congress)	May 20, 1856
14,985	Miner, Henry, and Henry M. Stevens; and William H. Saunders, deceased, by Mary Saunders, executrix, New York, N. Y. Coupling for vehicles	May 27, 1856
367	Moen, Augustus R., deceased, by Sophia A. and Philip L. Moen, administrators, New York, N. Y. Mode of constructing walls and floors of cellars. (Reissued April 8, 1856)	Feb. 26, 1856
830	Morrill, Samuel, Andover, N. H. Clothes-drier. (Reissued Sept. 27, 1859)	Nov. 11, 1856
1,312	Morris, John C., Cincinnati, Ohio. Wood-bending machine. (Reissued May 27, 1862)	Mar. 11, 1856
15,491	Munson, David, Indianapolis, Ind. Lightning-rod	Aug. 5, 1856
14,064	Musgrave, Hiram B., Cincinnati, Ohio. Gas-cooking stove	Jan. 8, 1856
16,248	Nelson, Thomas, Troy, N. Y. Machinery for weaving shade-cord	Dec. 16, 1856
16,214	Neville, John, Brooklyn, N. Y. Making cast steel	Dec. 9, 1856
15,492	Park, Sidney W., Albany, N. Y., and Edgar S. Ells, Fremont, N. Y. Rotary knitting-machines	Aug. 5, 1856
15,666	Parker, Edward, Plymouth, Conn. Buckle for wearing-apparel	Sept. 2, 1856
14,827	Powers, Thomas H., Milwaukee, Wis. Furnace for smelting iron	May 6, 1856
1,803	Pratt, Randal, deceased, by Mary G. Pratt, administratrix, Maple Township, Pa. Horse hay-rake. (Reissued Feb. 28, 1865)	Jan. 8, 1856
1,804	Same.....same.....(Reissued Feb. 28, 1865)	Jan. 8, 1856
1,805	Same.....same.....(Reissued Feb. 28, 1865)	Jan. 8, 1856
16,286	Pusey, Lea, deceased, by Samuel G. Lewis, executor, Philadelphia, Pa. Arrangement of railroad platform-scales	Dec. 23, 1856
16,186	Putnam, Silas S., Neponset, Mass. Machine for forging iron	Dec. 9, 1856
3,272	Quantin, Alphonse, deceased, by Jane Quantin and Henry A. Pintard, administrators, Philadelphia, Pa. Method of bottling fluids under gaseous pressure. (Reissued Oct. 27, 1868, and again reissued Jan. 19, 1869)	Mar. 4, 1856
3,502	Roberts, Cyrus, Three Rivers, Mich., and John Cox, New Hope, Pa. Grain-separator. (Reissued June 15, 1869)	Mar. 25, 1856
15,778	Rogers, Ethan, Cleveland, Ohio. Hydraulic brick-press	Sept. 23, 1856
14,836	Selpho, William, New York, N. Y. Construction of artificial legs	May 6, 1856
78	Seymour, Frederick J., Wolcottville, Conn. Making brass kettles. (Reissued May 14, 1861)	May 13, 1856
16,864	Simpson, Michael H., Boston, Mass. Machinery for combing wool. (Antedated Sept. 17, 1856)	Mar. 17, 1857
15,021	Spooner, Lysander, Boston, Mass. Elastic bottom for chairs and other articles	June 3, 1856
3,303	Squire, John J., De Soto, Mo. Horse-rake. (Reissued Feb. 16, 1869)	Dec. 23, 1856
14,700	Stearns, E. H., Erie, Pa. Head and tail block for saw-mills	April 15, 1856
2,445	Storm, William Mont, New York, N. Y. Breech-loading fire-arm. (Reissued Jan. 1, 1867)	July 8, 1856
2,446	Same.....Breech-loading fire-arm. (Reissued Jan. 1, 1867)	July 8, 1856
14,933	Taggart, John, Boston, Mass. Excavating-scoop	May 20, 1856
15,827	Thomas, Samuel, Hokendauqua, Pa. Ore-washer	Sept. 30, 1856
2,569	Thompson, George, Philadelphia, Pa. Manufacture of caustic alkali. (Reissued Feb. 1, 1859, and again reissued April 16, 1867)	Oct. 21, 1856
2,570	Thompson, George, Philadelphia, Pa. Manufacture of caustic alkali. (Reissued Feb. 1, 1859, and again reissued April 16, 1867)	Oct. 21, 1856
2,571	Thompson, George, Philadelphia, Pa. Manufacture of caustic alkali. (Reissued Feb. 1, 1859, and again reissued April 16, 1867)	Oct. 21, 1856
14,960	Thompson, Thomas, deceased, by John Thompson, executor, New York, N. Y. Machine for folding paper, &c	Feb. 12, 1856
15,201	Thompson, William H., Boston, Mass., and Eustis P. Morgan, Biddeford, Me. Safety-hatch for warehouses. (Improvement added April 14, 1857)	June 24, 1856
16,128	Todd, George C., Lynn, Mass. Edge-key for making and polishing the edges of boot and shoe soles	Nov. 25, 1856
130	Tuttle, Edward A., Brooklyn, N. Y. Register and ventilator. (Reissued Nov. 12, 1861)	June 10, 1856
10,221	Twining, Alexander C., New Haven, Conn. Manufacturing ice. (Antedated July 3, 1850; extended 7 years, and again extended by act of Congress)	Nov. 8, 1853
14,814	Tyer, Henry G., Andover, Mass., and John Helm, New Brunswick, N. J. Making gum-elastic cloth. (Antedated Jan. 9, 1856)	May 6, 1856
3,015	Tyler, John, West Lebanon, N. H. Water-wheel. (Reissued June 30, 1868)	July 8, 1856

List of patents extended during the year 1870—Continued.

No.	Name, residence, and invention or discovery.	Date.
3,361	Voelter, Henry, Germany. Reducing wood-fiber to paper-pulp. (Antedated Aug. 29, 1856; reissued April 6, 1869)	Aug. 10, 1858
15,962	Walworth, Caleb C., Boston, Mass. Vise	Oct. 7, 1856
14,529	Washburn, A. W., Yazoo City, Miss. Cotton-seed planter	Mar. 25, 1856
15,446	Waymouth, A. D., Fitchburgh, Mass. Machine for manufacturing spools	July 29, 1856
3,056	Whiteley, Edward, Cambridge, Mass. Culinary boiler. (Reissued July 29, 1868)	April 8, 1856
1,614	Whiteley, William N., Springfield, Ohio. Harvesting-machine. (Reissued June 25, 1861, and again reissued Feb. 2, 1864)	Nov. 25, 1856
1,615	Whiteley, William N., Springfield, Ohio. Harvesting-machine. (Reissued June 26, 1861, and again reissued Feb. 9, 1864)	Nov. 25, 1856
2,202	Woodman, Horace, Saco, Me. Machinery for cleaning top-flats of carding-engines. (Reissued March 13, 1866)	July 8, 1856
16,169	Woodruff, Theodore T., Philadelphia, Pa. Railway-car seat and couch	Dec. 2, 1856
1,439	Woodruff, Theodore T., Philadelphia, Pa. Railway-car seat and couch. (Reissued March 17, 1863)	Dec. 2, 1856
16,254	Wright, Wendell, Bloomfield, N. J. Mode of securing springs in upholstery	Dec. 16, 1856
14,333	Wyche, William E., Brookville, N. C. Cultivating-plow	Feb. 26, 1856

ALPHABETICAL LIST OF INVENTIONS.

Invention or discovery.	Name of patentee.	No.
A.		
Abdominal and back supporter and truss, Combined	R. J. Cundiff	103, 992
Abutment for bridges, Metallic	A. Wheelock	99, 989
Accordeon	C. F. Zimmerman	106, 018
Acetic acid, Process of obtaining from wood	T. Schwartz	101, 319
Acetic acid, Purifying	T. L. Olden	100, 553
Acid, citric, Manufacture of	W. R. Johnston	103, 340
Acid, residuum from oil-refineries, Process of treating	A. Farrar	100, 876
Acid, sulphurous, Apparatus for producing	M. Hatschek	101, 011
Adding and subtracting register	H. A. House	109, 619
Adding-machine	E. A. Swain	98, 720
Adding-machine	H. Parmelee	99, 226
Adding-machine	G. W. Chapin	99, 533
Adding-machine	J. Groesbeck	100, 288
Adding-machine	N. Ockerlund	105, 717
Adding-machine	F. T. Leilich	106, 701
Adding-machine	C. E. Spear	106, 881
Adding-machine	G. W. Chapin	106, 999
Adding-machine	F. F. Warner	110, 520
Addressing-machine	J. McFatrick	108, 038
Adjustable attachment of pump-barrels to their bases	J. W. Douglas	98, 674
Adjustable bearings for water-wheel shafts	W. Bayley	101, 083
Adjusting-slide for chains	R. J. Pond	101, 503
Adjustment of mercurial pressure-gauge	M. E. Campfield	102, 464
Adjustment of wheels on the axles of railway-cars	R. Eaton	99, 418
Advertising-apparatus	W. Hebdon	109, 308
Advertising-frame, Extensible	D. G. Howell	99, 675
Ads, Stone	W. Covart	107, 227
Ageing spirits	A. Caldwell	107, 658
Ageing whisky and other spirits, Apparatus for	J. P. Greely	109, 611
Air and gas, Apparatus for carbureting	J. B. Hyde	107, 269
Air and gas, Apparatus for carbureting	H. A. Chapin	108, 005
Air and gases, Apparatus for carbureting	A. Bartholf	108, 439
Air and gases in fat-rendering, bone-boiling, &c., Deodorising the	A. and E. Lister and C. J. Eames	109, 638
Air and liquids, Cooling	D. E. Somes	101, 392
Air, Apparatus for carbureting	J. H. Van Houten	109, 562
Air, Apparatus for carbureting	J. D. Spang	109, 148
Air, Apparatus for carbureting	J. F. Spence and L. D. Towsley	99, 274
Air, Apparatus for carbureting	R. H. Plass	104, 642
Air, Apparatus for carbureting	A. E. Dupas and A. Barbarin	104, 716
Air, Apparatus for carbureting	J. F. Spence	105, 994
Air, Apparatus for carbureting	H. Oertel	107, 403
Air, Apparatus for supplying	H. W. Adams	110, 414
Air, Carbureting	C. Lawrence	100, 534
Air-compressing apparatus	B. T Babbitt	103, 121
Air-compressing apparatus, Hydraulic	M. Hey	102, 307
Air-compressing apparatus, Hydraulic	W. D. Seal	104, 302
Air-heater and steam-condenser, Compound	B. F. Sturtevant	100, 240
Air-heater and steam-condenser, Compound	B. F. Sturtevant	100, 241
Air-heater and steam-condenser, Compound	B. F. Sturtevant	100, 242
Air, Machine for cooling, and for manufacture of ice	J. Kraffert	110, 573
Air-pistol	R. Brooks, jr	99, 754
Air-pump	J. W. Hopkins	99, 193
Air-pump	J. F. Haskins	109, 732
Air-wheel for gas-carburoters, Rotary	J. F. Spence	107, 635
Alarm-attachment	J. H. Thorp	109, 971
Alarm-attachment for clocks	J. H. Davis	110, 016
Alarm-attachment for locks and bolts	C. E. Pierce	104, 195
Alarm, Burglar	H. Green	98, 489
Alarm, Burglar	R. Shaler	100, 933
Alarm, Burglar	W. Reynolds	105, 309
Alarm, Burglar	E. T. Clegg	109, 588
Alarm, Burglar	J. H. Thorp	109, 970
Alarm, Burglar	M. J. Hunt	110, 043
Alarm, burglar, Electro-magnetic	W. B. Guernsey	108, 257
Alarm, burglar, Electro-magnetic	J. M. Dille	109, 723
Alarm, Electro-magnetic	T. S. Hall	105, 447
Alarm for safes	W. Spear	104, 073
Alarm for steam-boiler, low-water, Electro-magnetic	W. Duryea	106, 141
Alarm-gong, Electro-magnetic	C. Williams, jr., and J. Redding	108, 743
Alarm-gun	C. J. Beasley	100, 106
Alarm, High and low water	G. N. Jones	105, 461
Alarm, Hotel and burglar	C. S. Nee	100, 792
Alarm-lock for money-drawer	G. Kimball	108, 363
Alarm, Low-water and high-pressure	G. B. Massey	106, 596

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Invention or discovery.	Name of patentee.	No.
Alarm, Nautical	J. F. Haskins	110, 036
Alarm, Pocket	C. W. Simonds	109, 952
Alarm, railroad, Electro-magnetic	E. H. Purcell	107, 101
Alarm, railroad-switch, Electro-magnetic	T. A. & Putnam	99, 233
Alarm, Telegraph signal-box	J. Abbott	103, 117
Alarm ticket-nippers for coupon-tickets	I. Hyde	105, 459
Alarm, Till	A. D. Hoffman	100, 037
Alarm, Till	E. Reed	102, 864
Alarm, Till	J. F. Baldwin	103, 134
Alarm, Till	C. and W. H. Tucker	110, 092
Alarm, Till	T. H. Smith	103, 251
Alarm, Time	G. Bourgade	107, 158
Albumen, Manufacture of	G. Bourgade	106, 112
Albumen, Preparation of	J. E. Tapley	106, 238
Album, Photographic	J. B. Mason	103, 064
Alcohol and other liquids, Cold cap-still for the distillation of.	C. C. Parsons	104, 343
Alcohol and spirits, Purifying	C. L. Fleischman	103, 320
Alcoholic liquors, Apparatus for rectifying	C. L. Fleischman	106, 530
Alcoholic liquors, Apparatus for rectifying	J. Ellingwood	108, 773
Alcoholic liquors from grain, Fermenting	D. Werthen	107, 645
Alcoholic spirits, Rectifying and improving	J. Werner	99, 124
Ale and beer casks, Composition for lining	M. Reynolds	102, 041
Ale and beer, Cooling	F. Zeits	103, 955
Ale, beer, &c., Apparatus for cooling	W. H. Balmain	102, 907
Alkali, caustic, Packing	C. Robinson	107, 545
Alley-board for ball-game	L. Sibert	100, 937
Alloy, Metallic, to imitate the precious metals	E. Savage	102, 324
Alloys of manganese, Manufacture of	H. Colby	100, 119
Altitude-instrument	N. Heintzelman	103, 570
Alto-relievo figures, Process for making molds for casting of.	P. Spence	110, 084
Alum and fertilizers from mineral phosphates, Manufacture of.	J. C. Brewster	99, 630
Amalgamator	C. W. Stevenson	102, 177
Amalgamator	J. Scott	103, 377
Amalgamator and ore-concentrator	L. A. Plumb	104, 879
Amalgam for filling teeth, Composition	G. C. Pattison	102, 583
Anchor	G. C. Pattison	102, 584
Anchor	A. H. Law	103, 205
Anchor	W. W. Goodrich	100, 405
Anchor-beam support for brick walls	Z. Ellis	98, 676
Anchor for securing cores in molds	R. Pinkney	106, 616
Aniline, Production of colors for dyes, inks, &c., from	H. A. Stearns	103, 519
Animal and vegetable substances, Apparatus for extracting oil from.	J. Stuart	107, 833
Animal fibers from vegetable, Separating	B. T. Smith, J. K. Priest, and W. Earl	104, 223
Animal-shearing machine	O. Barker	100, 967
Animals, Instrument for dosing	S. H. Shaw	102, 874
Animals, Stall for feeding	J. W. Upson	104, 667
Animal-tether	J. Capron	110, 547
Annunciator	W. N. McInnis	101, 372
Annunciator, Electro-magnetic	J. G. Hanning	103, 325
Anti-freezing device for pumps	T. Chase	105, 426
Anti-friction gearing	J. S. Howard	100, 038
Antimony, Electrotyping with	D. Bainbridge	108, 231
Anvil-last	A. K. Howe	108, 788
Apparatus for drying and pressing lard-scraps	S. M. Moschcowitz	99, 752
Apparatus for frizzling cloth	R. J. Dodd	101, 838
Apple corer and slicer	B. J. McFeely	107, 794
Apple corer and quarterer	J. Shobe	109, 350
Apple parer, corer, and slicer	G. W. Bennett	103, 224
Apple parer, cutter, and corer	W. Robb, 2d	109, 454
Apple-paring machine	M. P. Smith	109, 068
Apples, Drying and preserving	G. B. Hamlin	106, 350
Apples for the manufacture of cider, Machine for preparing.	S. H. Cole	106, 330
Approach gate	D. Hammond and J. Abbott	102, 393
Arch girders, Tubular	J. B. Fuller	105, 785
Argand gas-burner	W. B. Curtiss	103, 993
Argand lamp-burner, Wick-adjuster for	G. K. Osborn	104, 635
Argand oil-burner	F. Coignet	99, 637
Argillaceous limestones, Treating, to obtain hydraulic cement.	H. Hendrickson	107, 402
Arms for working slide-valves, Adjustable	L. Buchberger	109, 582
Arm-support for keyed instruments	C. M. T. Du Molay	103, 433
Arsenic sulphurets, Process of extracting silver and gold from.	S. P. Wheeler	101, 532
Articles of compressed wood, Manufacture of	C. A. Moore	109, 646
Articles of glass, Manufacture of	G. F. Shaffer	99, 593
Articulator, Dental	W. Boulton	105, 633
Ashlars, Cutting		

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Invention or discovery.	Name of patentee.	No.
Asphaltic composition for pavements, roads, &c., Manufacture of.	A. Ruttkay	107, 615
Aspirator for preventing overheating of grain, &c	T. A. Hoffman	100, 628
Atomizer, Steam	I. P. Leslo	103, 710
Attaching standing-rigging to masts, Apparatus for	J. Nute	107, 093
Attachment for hot-air registers	O. A. Ebert	99, 864
Attachment for lamp-burners	W. Westlake	101, 066
Attachment for lamp-chimneys	J. Hughes	99, 901
Attachment to paper-machines to prevent the straining and breaking of the paper.	L. Dean	106, 134
Attachment to ships' compass, Electro-magnetic	A. Foucaut	105, 562
Auger	R. H. Hopkins	104, 457
Auger-bit	A. L. Andrews	104, 404
Auger-bits, Machine for bending the lips of	J. Swan	100, 816
Auger, Earth	S. Pope	101, 160
Auger for boring square holes	A. T. Perrino	100, 440
Auger-handle	W. A. Ives	108, 967
Auger, Hollow	J. H. Van Wie	105, 744
Auger, Hollow	C. S. Bonney	105, 896
Auger, Hollow	A. F. Cushman	106, 919
Auger, Post	H. C. Partridge and J. Preston	99, 937
Augers, earth-boring, Coupling for	T. Orchard	109, 930
Auger stop-cocks, Self-closing	A. Weed	100, 697
Auger, Well	J. Wilson and G. H. Baisly	105, 021
Automatic heat-regulator for hot-air furnaces	A. H. Tingley	99, 979
Awl	S. Babbitt	105, 161
Awl, Grafting	D. B. Oliver	109, 442
Awning	L. G. Sert and C. L. Schurr	108, 639
Awning	W. Hildebrand	109, 007
Awning, Adjustable	L. Yenne	107, 584
Awning and fan for horses' heads	H. L. Byrd	107, 333
Awning for cars, &c	J. H. Monce	105, 829
Awning for horses	W. McCormick	109, 532
Awning-frame	H. Hilliard	105, 076
Awning-frame	C. Werner	109, 694
Awning-frame, Adjustable	L. Yenne	102, 642
Awnings, Device for operating	A. Thalhofer	104, 900
Ax and hook combined	P. W. Norris	99, 784
Axes, Manufacturing	H. D. Morris	98, 789
Axle and axle-yoke, Carriage	S. Rowell	109, 842
Axle-box	J. J. Lahaye and J. Eastburn	105, 096
Axle-box	D. Dalzell	106, 469
Axle-box, Carriage	A. E. Smith	99, 607
Axle-boxes, Core for casting	W. H. Hawley	106, 265
Axle-boxes, Lubricating	T. S. Speakman	101, 933
Axle-box for carriage	A. G. Baker and G. M. Ennis	98, 543
Axle-box for carriages	D. Jewett	102, 127
Axle-box for carriages	G. B. Durkee	103, 161
Axle-box for carriages	L. R. Dye	107, 170
Axle-box, Railway	J. Wardrobe, C. D. B. Fiak, J. F. Curtis, and G. Fetley.	110, 093
Axle-box, Railway-car	J. T. Hagerty	99, 882
Axle-box, Railway-car	G. F. Lynch	108, 977
Axle, Carriage	D. Dalzell	98, 473
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Axle, Wagon	W. A. Lewis	108, 608
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Baby-jumper	E. L. Warner	105, 140
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Bag-filler for fanning-mill	J. C. Gephart	104, 207
Baggage-check	G. F. Newcomb	104, 339
Bag-holder	J. M. Burke	99, 553
Bag-holder	L. Crofoot	104, 183
Bag-holder	G. D. Sweigert	103, 616
Bag-holder	D. S. Wing	109, 788
Bag-holder	A. D. Swogger	110, 511
Bag-holder	E. Boynton	104, 698
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Basket, Fruit	E. Colby	103, 570
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Bed-bottom, Spring	H. D. W. Bailey	107, 213
Bed-bottom, Spring	A. H. Fatzinger	107, 348
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Bed-bottom, Spring	C. Glenn	109, 889
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Bed, Spring	L. Andersen	107, 995
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Bedstead and lounge	G. Wilson	107, 560
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Bee-hive	H. F. Carpenter	103, 978
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Bee-hive	D. S. Burget	105, 037
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Bee-hive	H. F. Rohm	107, 548
Bee-hive	H. F. Rohm	107, 628
Bee-hive	J. L. Smith	107, 732
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Beer, Apparatus for preserving	C. Pohlmann	103, 498
Beer-cooler, Portable	E. C. Bundy	100, 852
Beer, water, and other liquids, Apparatus for cooling and purifying.	J. P. Gruber	100, 047
Beer-worts, Method of cooling	O. P. Lewis	108, 606
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Bell, Alarm and other	T. and G. A. Pemberton	102, 034
Bell, Door	W. Allport	101, 699
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Bells, wire, Machine for making	R. W. Norton	106, 951
Bellows, Blacksmiths'	J. F. Cory and H. C. Webb	103, 720
Bellows, Smiths'	G. H. Peck	102, 704
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Belt-fastener	S. S. Bolton	109, 708
Belt-gearing	G. B. Hamlin	108, 959
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Belt-shifter	J. E. Mutchler	108, 379
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Binding for textile fabrics, Metallic	J. Twamley	1[illegible], 0[illegible]
Bird-cage	G. F. J. Colburn	98, 502
Bird-cage	G. F. J. Colburn	99, 164
Bird-cage	T. H. Bradley	104, 690
Bird-cage	T. H. Bradley	105, 164
Bird-cage	G. R. Osborn	107, 502
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Blind-fastener	B. C. Davis	103, 8[illegible]
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Blind, screen, and shutter	J. L. Brown	108, 440
Blinds for harness-bridles	M. W. Clark	108, 118
Blind-slat	F. Leclere	99, 327
Blind-slat machine	J. B. Smith, S. A. Greely, and A. Campaigne.	107, 557
Blind-slat operator	J. W. Heisler	108, 694
Blind-slats, Machine for cutting	F. Douglas	107, 671
Blind-slat tenoning-machine	T. Crossley	108, 498
Block for carpet-printing	P. D. Cummings	110, 449
Blocks for wood-pavements, Machine for grooving	T. H. Rice	108, 507
Block, Sheave	H. A. Hogel	100, 089
Blood, Treating, for the preparation of fertilizers and for other purposes	F. W. Frost and S. L. Hayward	101, 852
Blotter, Rotary	J. F. French	105, 563
Blotting-pad	G. C. Hinman	106, 696

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Blotting-pad	B. F. Sturtevant	102, 068
Blower	J. N. Gilchrist	103, 733
Blower	D. D. Hardy and E. E. Wood	104, 585
Blower	W. S. Colwell	107, 665
Blower and exhauster, Steam	J. Howarth	100, 204
Blower, Compound	A. K. Rider	101, 516
Blower, Fan	J. Ericsson	106, 348
Blower for blacksmiths' forge	J. G. Tecbeulin	102, 696
Blower, Hot-air	B. F. Sturtevant	100, 238
Blower, Pressure	B. F. Sturtevant	100, 230
Blower, Pressure	J. Perrault	102, 964
Blower, Rotary	H. C. McIlwain and A. Brumfiel	103, 482
Blower, Rotary	W. G. Hyndman	106, 165
Blower-wheel, Pressure	B. F. Sturtevant	100, 236
Blower-wheel, Pressure	B. F. Sturtevant	100, 237
Blowing-apparatus	R. H. Gilbert	99, 876
Blowing-machine	J. Dougherty	103, 318
Blow-pipe	L. B. Wilson	101, 692
Blow-pipe	J. B. Hyde	107, 263
Blow-pipes	J. R. Street	104, 078
Board, Implement for measuring	M. Tuells	102, 865
Boards, Apparatus for measuring	I. J. W. Adams	106, 067
Boat-detaching apparatus	S. L. Lord	99, 922
Boat-detaching apparatus	J. Ross	100, 193
Boat-detaching apparatus	N. C. Reynolds	101, 312
Boat-detaching apparatus	W. S. Ryerson and G. Stancliff	101, 665
Boat-detaching apparatus	W. S. Ryerson, G. Stancliff, and O. T. McIntosh.	103, 983
Boat-detaching apparatus	J. Foster, jr	105, 931
Boat-detaching apparatus	N. M. Ray	106, 619
Boat-detaching apparatus	J. C. Cottingham	108, 454
Boat-detaching apparatus	M. V. Nobles	108, 507
Boat-detaching apparatus	J. C. Cottingham	110, 116
Boat, Life	R. Humble	107, 918
Boats on canals, Machine for moving	W. R. King	99, 323
Boats on canals, Propelling	W. F. Goodwin	98, 760
Bobbin	M. Bliss	104, 009
Bobbin for spinning, &c	O. Pearl	102, 737
Bobbin-holder	J. Salisbury	99, 111
Bobbins or spools, Mode of strengthening	A. Hallowell	100, 754
Bobbin-winding machine, Thread-guide and holder for	W. W. Altemus	110, 535
Bob-sled	S. C. Shepard	102, 603
Body brace and supporter, Child's	L. Spigelmyer	101, 934
Boiler	M. Gore	103, 670
Boiler, Agricultural	F. Farquhar	102, 671
Boiler and washer	E. C. Brooks	104, 550
Boiler and washing-machine	D. H. Hull	101, 628
Boiler apparatus, Wash	J. Ringle	102, 712
Boiler, Coffee	E. B. Manning	105, 347
Boiler, Culinary	G. W. Bliss	100, 361
Boiler, Culinary	F. M. Carnes	100, 853
Boiler, Culinary	I. S. Bunnell	102, 765
Boiler, culinary, Cover of	P. J. and J. Abbott	108, 082
Boiler, Farmers'	A. N. Merrill	98, 988
Boiler, Farmers'	A. N. Merrill	103, 639
Boiler, Farmers'	R. W. Thickins	105, 740
Boiler, Farmers'	J. H. Hunter	110, 139
Boiler-feeder	S. J. Parker	101, 762
Boiler-feeder	L. Foote	101, 992
Boiler-feeder	A. R. Young	108, 423
Boiler-feeder and low-water alarm	V. D. Anderson	103, 539
Boiler-feeder, Automatic	E. H. Goldman	100, 883
Boiler-flues, Machine for repairing	J. Hughes	106, 580
Boiler for cooking-stoves	F. S. Bissell	99, 752
Boiler for preparing paper-pulp	L. Dean	100, 595
Boiler for reducing fibrous material to textile stock	L. Dean	108, 135
Boiler for steam-heater	J. W. Paige and D. Reynolds	103, 492
Boiler-furnace	J. A. T. Overend	102, 561
Boiler-furnace	T. Vicars, sr., T. Vicars, jr., and J. Smith	110, 313
Boiler, Kitchen	W. B. Scaife	107, 817
Boiler, Kitchen	W. B. Scaife	108, 524
Boiler-stand	J. L. Mott	99, 222
Boilers, steam, Covering for	C. A. Banman	110, 354
Boilers, steam-pipes, &c., Non-conducting covering for	W. Harris	98, 865
Boilers, steam, Sediment-agitator for	R. W. Reynolds	100, 453
Boiler, Steam	D. Flynn	109, 195
Boiler, Steam	W. R. Mack	109, 890
Boiler, Steam	G. S. Dubois	109, 893
Boiler, Steam	P. Quinn	110, 158
Boiler, Steam	F. Sulter	110, 614

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Boiler, steam, Feed-water heater for	D. Lordon	107, 185
Boiler-Steam, for cooking food for stock	W. J. Estes	100, 531
Boiler, steam, Hollow grate for	C. E. Hudson	100, 631
Boiler, steam, Marine	T. Rimmer	107, 223
Boiler-tube cleaner	P. H. Coyle	103, 374
Boiler-tube cleaner	J. Green	105, 194
Boiler, Wash	T. Evans	98, 570
Boiler, Wash	C. D. Blinn	99, 773
Boiler, Wash	T. G. Hughes	100, 490
Boiler, Wash	R. G. Fitzhugh	104, 723
Boiler, Wash	H. Yost	104, 810
Boiler, Wash	O. F. Stedman	106, 516
Boiler, Wash	H. R. Robbins	106, 623
Boiler, Wash	J. W. and M. A. Bates	107, 501
Boiler, Wash	H. T. Woodman	108, 536
Boiler, Wash	O. F. Stedman	108, 944
Boiler, Wash	H. L. Sprague and J. N. Guyon	1 9, 774
Boiler, Washing and cooking	N. T. and E. J. Case	104, 286
Bolster for wagons	J. W. Pearman and J. F. C. Luts	109, 245
Bolster-plate	T. Morgan	104, 622
Bolt	M. Harbster	105, 675
Bolt	F. G. McClelland	109, 640
Bolt and clip, Spring	J. Deeble	99, 413
Bolt and rivet machine	J. Morgan, jr	103, 416
Bolt and rivet trimmer	M. Theisen	104, 509
Bolt-cutter	W. Mendham	102, 026
Bolt-cutting device	L. Daniels	103, 152
Bolt, Door	W. H. Hart	103, 006
Bolt, Door	R. B. Prindle	105, 469
Bolt, Door	D. McArthur	108, 920
Bolt-fastening	P. Peterson	107, 096
Bolt feeder for mills	B. A. Wing	109, 084
Bolt for barn-doors, &c	M. R. Green	108, 017
Bolt for doors	J. Levy	99, 230
Bolt for doors and shutters	G. B. Green	104, 449
Bolt for safe-doors	H. B. Tripp	104, 066
Bolt for safes	W. Sharts	101, 051
Bolt for safes	J. Farrel	102, 704
Bolt for safes, &c	G. L. Damon	102, 720
Bolt for safety-stove for cars	C. J. Smith	101, 322
Bolt-heading machine	F. B. Prindle	98, 798
Bolt-holder	S. R. Butterfield	104, 204
Bolting device for safes	S. J. Burton	103, 241
Bolting-reel	F. B. Lewis	107, 512
Bolt-machine	J. R. Abbe	100, 5e1
Bolt, Mill	W. H. Berdan	103, 833
Bolt, Nut-lock	T. T. Prosser	103, 775
Bolt, Sash	J. C. Cooke	1.0, 503
Bolts, Die for heading	F. Bruso	107, 160
Bolts, Machine for heading	J. Root	100, 528
Bolts, Machine for threading	N. Thomas	99, 259
Bolts, Machine for threading	M. Hine	101, 386
Bolts, Machine for threading	M. Lovo	109, 433
Bolts, Machine for turning the heads of	W. F. Swathel	107, 561
Bolts, Manufacture of	A. Mailor	102, 586
Bolt, Spring-catch	T. McCargar	103, 104
Bolts, rods, &c., Tool for cutting off	H. Peters	104, 061
Bolt-threader	G. W. Mingus	103, 042
Bolt-threading machine	M. Hamlin	105, 563
Bolt-threading machine	M. Hamlin	108, 569
Bolt-work for safe-doors, &c	M. Briggs	99, 928
Bonds, &c., Mode of preventing the stealing of	J. Myers, jr	100, 788
Bonnet, Forge	W. Dunkerly	103, 160
Book-binding	G. H. Reynolds	100, 060
Book-binding	J. C. Terry	108, 234
Book-cover protector	P. Van Everen	102, 733
Book-holder	E. Propst and J. F. Avée	106, 285
Book-holder	W. J. Thorn	107, 310
Book-marker	E. Cottle	106, 785
Book rack or stand	G. Gardner	102, 948
Book-repository	R. L. Dodge	103, 853
Book-rest	C. Sullivan	103, 802
Books, Machine for sewing	F. W. Howe	109, 407
Books, Machine for sewing	L. Hall	105, 309
Books, Safe-case for	S. H. Harris	107, 043
Boom-crotch supporter	H. Hopkins	106, 822
Boom for vessels	E. G. Gailso	99, 874
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Boot and shoe	S. Babbitt	99, 281

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Boot and shoe	A. Burke	106, 030
Boot and shoe, Calk for	J. L. Wager and A. L. Scudder	106, 747
Boot and shoe for horses, Combined	H. G. and E. M. Haedrich	105, 068
Boot and shoe heel	J. Woodley	101, 399
Boot and shoe heel	G. E. Newcomb	102, 961
Boot and shoe heel	H. F. Harris and G. P. Pinney	106, 814
Boot and shoe heel, Detachable	C. W. Bailey	106, 984
Boot and shoe heeling machine	W. F. Spinney	103, 792
Boot and shoe heel, Metallic	A. T. Perrine	103, 921
Boot and shoe heels	F. Bliesenick	100, 968
Boot and shoe heels, Composition for the manufacture of	C. Bocking	109, 578
Boot and shoe heels, Machine for burnishing	J. H. Sawyer and C. Keniston	101, 167
Boot and shoe heels, Mode of attaching	B. Giroux	110, 030
Boot and shoe, Moccasin	T. Hersey	107, 045
Boot and shoe shave	S. Packard	99, 466
Boot and shoe shave	A. B. Clark	100, 724
Boot and shoe sole cutter	E. F. Shaw	103, 244
Boot and shoe soles, Machine for molding, rounding, and channeling	W. Duckeman	109, 500
Boot and shoe soles, Manufacture of	E. Ibos	106, 366
Boot and shoe soles to the uppers, Machine for uniting	T. K. Reed	102, 155
Boot and shoe stiffener	N. J. Simonds	105, 501
Boot and shoe uppers, Corrugation of	W. Lee	100, 535
Boot-crimper	S. W. Jamison	104, 596
Boot-crimping machine	J. Rausch	110, 295
Boot-jack and brush	S. Kennedy	102, 014
Boot-jack and door-buffer	W. S. Chatham	110, 453
Boot, Ladies'	E. F. Doty	107, 231
Boot-laster	L. Barnett	100, 490
Boot-packs, Method of cutting	W. G. Slater	109, 065
Boot-pattern	E. Shopbell	99, 604
Boot, rubber, Ventilated	H. C. Cottrell	102, 228
Boots	C. H. Fitch	109, 122
Boots and shoes	L. H. Whitney	103, 950
Boots and shoes	H. H. Bigelow	108, 870
Boots and shoes, Apparatus for trimming the heels of	L. Coté	109, 300
Boots and shoes, Channel for	R. Ashe	104, 534
Boots and shoes, Cover for	W. E. Prall	107, 538
Boots and shoes, Heel for	J. Read	104, 200
Boots and shoes, Heel-stiffener for	G. V. Sheffield	102, 720
Boots and shoes, Inner-sole for	E. W. Parish	103, 770
Boots and shoes, Inside-sole for	W. E. Prall	107, 537
Boots and shoes, Insole for	P. M. Ernst	103, 857
Boots and shoes, Instep-stretcher for	M. Belding	104, 923
Boots and shoes, Last for	S. W. Shorey	109, 845
Boots and shoes, Machine for cutting the heels of	R. C. Lambert	108, 005
Boots and shoes, Machine for cutting soles for	J. H. Bean	108, 435
Boots and shoes, Machine for finishing heels of	H. H. Bigelow	108, 678
Boots and shoes, Machine for heeling	J. Gilson	103, 734
Boots and shoes, Machine for heeling	H. H. Bigelow	108, 677
Boots and shoes, Machine for laying channels in	S. D. Tripp	109, 077
Boots and shoes, Machine for pressing seams and cutting welts for	E. Reed	105, 646
Boots and shoes, Machine for rounding, channeling, and stamping soles of	A. Jeffers	99, 689
Boots and shoes, Machine for shaving heels of	A. B. Keith	104, 599
Boots and shoes, Machine for trimming the heels of	E. P. Richardson	102, 159
Boots and shoes, Manufacture of	L. R. Blake	102, 364
Boots and shoes, Manufacture of	W. Wickersham	106, 012
Boots and shoes, Manufacture of	W. N. Brookhouse	107, 664
Boots and shoes, Means of attaching the sole to	W. Wickersham	106, 010
Boots and shoes, Metallic heel for	E. T. Miller	106, 186
Boots and shoes, Metal sole for	J. Punderford	104, 643
Boots and shoes, Metal tip for	M. Pettingill	103, 779
Boots and shoes, Method of constructing	J. McComber	109, 438
Boots and shoes, Method of lasting	W. Chambers	104, 828
Boots and shoes, Mode of attaching composition heels to	C. H. Helms	110, 037
Boots and shoes, rubber, Heel of	F. M. Shepard	100, 677
Boots and shoes, rubber, Sole of	F. M. Shepard	100, 678
Boots and shoes, Sand-paper holder for finishing the soles of	H. L. Willis	100, 229
Boots and shoes, Securing soles to	C. S. Chaffee and A. Wahlig	100, 723
Boots and shoes, Shank-piece for	G. V. Sheffield	102, 721
Boots and shoes, Sole-edge finishing-machine for	L. Coté	104, 560
Boots and shoes, Water-proof compound for	M. H. Böttger	101, 974
Boots and shoes, Wire-driving machine for manufacturing	W. Wickersham	106, 011
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Boiler, steam, Feed-water heater for	D. Lordon	107, 185
Boiler, Steam, for cooking food for stock	W. J. Estes	102, 521
Boiler, steam, Hollow grate for	C. E. Hudson	100, 631
Boiler, steam, Marine	T. Rimmer	107, 203
Boiler-tube cleaner	P. H. Coyle	103, 374
Boiler-tube cleaner	J. Green	105, 104
Boiler, Wash	T. Evans	98, 670
Boiler, Wash	C. D. Blinn	99, 773
Boiler, Wash	T. G. Hughes	100, 400
Boiler, Wash	B. G. Fitzhugh	104, 723
Boiler, Wash	H. Yost	104, 810
Boiler, Wash	O. F. Stedman	106, 516
Boiler, Wash	H. R. Robbins	106, 623
Boiler, Wash	J. W. and M. A. Bates	107, 391
Boiler, Wash	H. T. Woodman	108, 826
Boiler, Wash	O. F. Stedman	108, 944
Boiler, Wash	H. L. Sprague and J. N. Guyon	1 8, 774
Boiler, Wash	N. T. and E. J. Case	104, 286
Boiler, Washing and cooking	J. W. Pearman and J. F. C. Luts	100, 245
Bolster for wagons	T. Morgan	104, 628
Bolster-plate	M. Harbster	105, 675
Bolt	F. G. McClelland	100, 640
Bolt	J. Deeble	99, 413
Bolt and clip, Spring	J. Morgan, jr	108, 418
Bolt and rivet machine	M. Theisen	104, 500
Bolt and rivet trimmer	W. Mendham	102, 026
Bolt-cutter	L. Daniels	103, 150
Bolt-cutting device	W. H. Hart	103, 600
Bolt, Door	R. B. Prindle	105, 469
Bolt, Door	D. McArthur	108, 920
Bolt, Door	P. Peterson	107, 096
Bolt-fastening	B. A. Wing	100, 094
Bolt feeder for mills	M. R. Green	108, 617
Bolt for barn-doors, &c	J. Levy	99, 330
Bolt for doors	G. B. Green	104, 440
Bolt for doors and shutters	H. B. Tripp	100, 066
Bolt for safe-doors	W. Sharts	101, 051
Bolt for safes	J. Farrel	102, 793
Bolt for safes	G. L. Damon	102, 720
Bolt for safes, &c	C. J. Smith	101, 322
Bolt for safety-stove for cars	F. B. Prindle	99, 799
Bolt-heading machine	S. R. Butterfield	104, 264
Bolt-holder	S. J. Burton	103, 241
Bolting device for safes	F. B. Lewis	107, 512
Bolting-reel	J. R. Abbe	100, 501
Bolt-machine	W. H. Berdan	103, 833
Bolt, Mill	T. T. Prosser	103, 775
Bolt, Nut-lock	J. C. Cooke	100, 503
Bolt, Sash	F. Bruso	107, 160
Bolts, Die for heading	J. Root	100, 028
Bolts, Machine for heading	N. Thomas	99, 250
Bolts, Machine for threading	M. Hino	101, 366
Bolts, Machine for threading	M. Love	100, 433
Bolts, Machine for threading	W. F. Swathel	107, 561
Bolts, Machine for turning the heads of	A. Mailer	102, 506
Bolts, Manufacture of	T. McCargar	105, 104
Bolt, Spring-catch	H. Peters	104, 061
Bolts, rods, &c., Tool for cutting off	G. W. Mingus	103, 642
Bolt-threader	M. Hamlin	105, 563
Bolt-threading machine	M. Hamlin	108, 560
Bolt-threading machine	M. Briggs	99, 828
Bolt-work for safe-doors, &c	J. Myers, jr	100, 768
Bonds, &c., Mode of preventing the stealing of	W. Dunkerly	103, 160
Bonnet, Forge	G. H. Reynolds	100, 060
Book-binding	J. C. Terry	108, 234
Book-binding	P. Van Everen	102, 733
Book-cover protector	E. Propst and J. F. Avoe	106, 285
Book-holder	W. J. Thorn	107, 310
Book-holder	E. Cottle	106, 785
Book-marker	G. Gardner	103, 048
Book rack or stand	R. L. Dodge	103, 853
Book-repository	C. Sullivan	103, 602
Book-rest	F. W. Howe	100, 407
Books, Machine for sewing	L. Hall	103, 389
Books, Machine for sewing	S. H. Harris	107, 048
Books, Safe-case for	H. Hopkins	108, 889
Boom-crotch supporter	F. G. Gailac	99, 674
Boom for vessels	J. M. Wise	105, 206
Booms of vessels, Mechanism for operating	J. H. Walker	108, 948
Boot	S. Babbitt	99, 281
Boot and shoe	R. A. Miller	102, 237
Boot and shoe	W. Wickersham	106, 013
Boot and shoe	A. Burke	106, 030
Boot and shoe, Calk for	J. L. Wager and A. L. Scudder	106, 747
Boot and shoe for horses, Combined	H. G. and E. M. Haedrich	105, 068
Boot and shoe heel	J. Woodley	101, 399
Boot and shoe heel	G. E. Newcomb	102, 961
Boot and shoe heel	H. F. Harris and G. P. Pinney	106, 814
Boot and shoe heel, Detachable	C. W. Bailey	106, 984
Boot and shoe heeling machine	W. F. Spinney	103, 792
Boot and shoe heel, Metallic	A. T. Perrine	103, 921
Boot and shoe heels	F. Bliesenick	100, 968
Boot and shoe heels, Composition for the manufacture of	C. Bocking	109, 578
Boot and shoe heels, Machine for burnishing	J. H. Sawyer and C. Keniston	101, 167
Boot and shoe heels, Mode of attaching	B. Giroux	110, 030
Boot and shoe, Moccasin	T. Hersey	107, 045
Boot and shoe shave	S. Packard	99, 406
Boot and shoe shave	A. B. Clark	100, 724
Boot and shoe sole cutter	E. F. Shaw	103, 244
Boot and shoe soles, Machine for molding, rounding, and channeling	W. Duckeman	109, 500
Boot and shoe soles, Manufacture of	E. Ibos	106, 366
Boot and shoe soles to the uppers, Machine for uniting	T. K. Reed	102, 155
Boot and shoe stiffener	N. J. Simonds	105, 501
Boot and shoe uppers, Corrugation of	W. Lee	100, 535
Boot-crimper	S. W. Jamison	104, 586
Boot-crimping machine	J. Rausch	110, 285
Boot-jack and brush	S. Kennedy	103, 014
Boot-jack and door-buffer	W. S. Chatham	110, 433
Boot, Ladies'	E. F. Doty	107, 231
Boot-laster	L. Barnett	100, 490
Boot-packs, Method of cutting	W. G. Slater	109, 065
Boot-pattern	E. Shopbell	99, 604
Boot, rubber, Ventilated	H. C. Cottrell	102, 228
Boots	C. H. Fitch	109, 123
Boots and shoes	J. H. Whitney	103, 950
Boots and shoes	H. H. Bigelow	108, 870
Boots and shoes, Apparatus for trimming the heels of	L. Coté	109, 300
Boots and shoes, Channel for	R. Ashe	104, 534
Boots and shoes, Cover for	W. E. Prall	107, 532
Boots and shoes, Heel for	J. Read	104, 200
Boots and shoes, Heel-stiffener for	G. V. Sheffield	102, 720
Boots and shoes, Inner-sole for	E. W. Parish	103, 770
Boots and shoes, Inside-sole for	W. E. Prall	107, 531
Boots and shoes, Insole for	P. M. Ernst	103, 857
Boots and shoes, Instep-stretcher for	M. Belding	104, 923
Boots and shoes, Last for	S. W. Shorey	109, 845
Boots and shoes, Machine for cutting the heels of	R. C. Lambert	108, 065
Boots and shoes, Machine for cutting soles for	J. H. Bean	108, 435
Boots and shoes, Machine for finishing heels of	H. H. Bigelow	108, 678
Boots and shoes, Machine for heeling	J. Gilson	103, 734
Boots and shoes, Machine for heeling	H. H. Bigelow	108, 677
Boots and shoes, Machine for laying channels in	S. D. Tripp	109, 077
Boots and shoes, Machine for pressing seams and cutting welts for	E. Reed	105, 646
Boots and shoes, Machine for rounding, channeling, and stamping soles of	A. Jeffers	99, 082
Boots and shoes, Machine for shaving heels of	A. B. Keith	104, 599
Boots and shoes, Machine for trimming the heels of	E. P. Richardson	102, 159
Boots and shoes, Manufacture of	L. R. Blake	102, 369
Boots and shoes, Manufacture of	W. Wickersham	106, 012
Boots and shoes, Manufacture of	W. N. Brookhouse	107, 864
Boots and shoes, Means of attaching the sole to	W. Wickersham	106, 010
Boots and shoes, Metallic heel for	E. T. Miller	106, 180
Boots and shoes, Metal sole for	J. Punderford	104, 643
Boots and shoes, Metal tip for	M. Pettingill	103, 759
Boots and shoes, Method of constructing	J. McComber	109, 436
Boots and shoes, Method of lasting	W. Chambers	104, 828
Boots and shoes, Mode of attaching composition heels to	C. H. Helme	110, 037
Boots and shoes, rubber, Heel of	F. M. Shepard	100, 677
Boots and shoes, rubber, Sole of	F. M. Shepard	100, 678
Boots and shoes, Sand-paper holder for finishing the soles of	H. L. Willis	100, 220
Boots and shoes, Securing soles to	C. S. Chaffee and A. Wuhlig	100, 725
Boots and shoes, Shank-piece for	G. V. Sheffield	102, 721
Boots and shoes, Sole-edge finishing-machine for	L. Coté	104, 560
Boots and shoes, Water-proof compound for	M. H. Böttger	101, 974
Boots and shoes, Wire-driving machine for manufacturing	W. Wickersham	106, 011
Boots and shoes, Wire for attaching soles to	W. Wickersham	106, 241

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Boot and shoe	W. Wickersham	106, 013
Boot and shoe	A. Burke	106, 030
Boot and shoe, Calk for	J. L. Wager and A. L. Scudder	106, 747
Boot and shoe for horses, Combined	H. G. and E. M. Haedrich	105, 068
Boot and shoe heel	J. Woodley	101, 399
Boot and shoe heel	G. E. Newcomb	102, 961
Boot and shoe heel	H. F. Harris and G. P. Pinney	106, 814
Boot and shoe heel, Detachable	C. W. Bailey	106, 984
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Bottle-stopper	N. Thompson	104, 794
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Bottle-stopper	J. T. Cree	106, 537
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Broom	T. Walter	100, 343
Broom	G. Stackpole	101, 675
Broom	J. H. Parsons	103, 310
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Broom	E. M. Crandal	104, 834
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Brushes, Machine for making	O. D. Woodbury	110, 529
Brushes, Manufacture of	C. F. Ruset	105, 373
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Corn-husker	L. A. Aspinwall	101, 809
Corn-husker	D. F. Welsh	106, 406
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Corn-sheller	G. S. Coleman	107, 761
Corn-sheller	E. Jordan	107, 919
Corn-sheller	J. R. Hamilton	109, 315
Corn-sheller	G. W. Reisinger	109, 945
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Cotton-seed and guano distributer	J. T. Graves	108, 349
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Coupling, Car	W. W. Bell	99, 817
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Coupling for earth-boring augers	T. Orchard	109, 870
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Coupling, Railway-car	J. B. Vedder	98, 723
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Coupling, Railway-car	S. J. Anderson	100, 837
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Couplings for shafting	C. Bean	110, 422
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Coupling, Shaft	T. Rowell	101, 047
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Coupling, Shaft	M. S. Bassett	106, 768
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Coupling, Shaft	W. M. Pratt	109, 344
Coupling, Shaft	W. Smeed	109, 846
Coupling, Shaft	P. W. Reinshagen	110, 590
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Coupling, Thill	C. St. James	98, 625
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Coupling, Thill	E. Yeiser	101, 560
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Coupling, Thill	W. W. Anderson	109, 484
Coupling, Thill	F. B. Morse	109, 927
Coupling, Thill	F. A. Jewett	110, 367
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Cow-milker	L. O. Colvin	108, 881
Cow-tail holder	J. Knight	103, 753
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Cradle, Automatic	S. G. Delano	100, 735
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Crate, Folding	L. A. Lindsey	100, 209
Crate, Folding	F. R. Van Dake	99, 977
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Cultivator	A. L. Chubb	98, 560
Cultivator	J. P. Lets	98, 604
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Cultivator	N. L. Ingrigg	100, 040
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Cultivator	W. Notman	100, 655
Cultivator	M. Bruner, jr	100, 790
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Cutter, Meat and vegetable	G. E. Bringman	110, 111
Cutter, Molding	T. J. Shannon	99, 716
Cutter, Molding	N. Jenkins	108, 026
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Cutter, Stalk	J. Lee	99, 328
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Cutter, Straw	A. P. Massey	106, 707
Cutter, Straw	M. Tuell	108, 411
Cutter, Straw	E. A. Cralle, jr	108, 974
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Desk and seat, School	W. P. Erwin and T. A. Dugdale	100, 276
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Die and plunger	J. H. Cale	99, 849
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Die for forging cars for carriage-spring heads	J. Evans	104, 440
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Fan, Grain	L. Pennington	99, 469
Fan, Grain	J. McPhail	100, 434
Fanning-mill and grain-separator	H. Ogborn	100, 553
Fanning-mill shoes, Device for balancing	W. Crane	107, 450
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Fare-box for street-cars	W. H. Young	99, 804
Fare-box, Portable	A. Bradley	110, 423
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Faucet measure and funnel, Combined	T. McMahon	99, 451

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Faucet, Water	P. A. Mayor	110, 484
Faucet, Weighing	D. Leah, jr	101, 633
Feather-duster	M. A. Goodenough	98, 750
Feather-renovator	A. D. Cook and J. Graves	100, 190
Feather-renovator	M. K. Morris	107, 944
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Feather washer and drier	J. Mallory	100, 911
Feed and water trough, Combined	J. Sherman	103, 935
Feed-attachment for thrashing-machines	B. Thompson	107, 903
Feed-cutter and thrasher	N. McLeod	99, 931
Feed-device for power-press	P. E. Austin	108, 312
Feeder and indicator for steam-boilers, Automatic	A. D. Clark	105, 304
Feeder for grain-drill	M. L. Nickels	106, 950
Feeder, Steam-boiler	J. M. Case	101, 225
Feed for iron-planers	H. B. Weaver	101, 580
Feed-hopper	J. Madison	99, 926
Feeding-device for fanning-mill	N. Kibler	108, 154
Feeding-apparatus for nail-machine	J. Nolan	101, 496
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Feed-water heater for steam-generators	E. B. Johnson	99, 573
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Felloes, Machine for dressing	H. Kurtz	98, 696
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Fence	M. Vanwormer	99, 796
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Fence	H. H. Margeson	100, 169
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Fence	D. Mitchell	100, 919
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Fence, Portable	J. O. Smith	106, 088
Fence, Portable	E. Hunt	106, 826
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Filter	E. S. Furson	103, 592
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Fire-arm, Breech-loading	E. L. Sargent	104, 502
Fire-arm, Breech-loading	L. V. Young	104, 682
Fire-arm, Breech-loading	S. Rydbeck	104, 775
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Fire-arm, Breech-loading	S. Gerngross	110, 353
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Fire-arm, Revolving	B. R. Hill	98, 768
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Fire-arms, Breech-loading	E. L. Sargent	100, 455
Fire-arms, Breech-loading	J. Davis	103, 154
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Fire-arms, Breech-loading	F. Vetterlin	109, 277
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Fire-arms, Lock for	A. Young	104, 394
Fire-arms, repeating, Feeder for	L. W. Broadwell	110, 338
Fire-arms, Revolving	J. C. Miller	99, 693
Fire, Composition for extinguishing	W. P. Van Deursen	103, 800
Fire, Compound for extinguishing	W. P. Van Deursen	106, 518
Fire-cracker holder	C. Most	106, 714
Fire-cracker pistol or holder	R. Hutchison	109, 014
Fire-cracker pistol, Revolving	J. H. Hawes and O. W. Brock	108, 022
Fire-detector with the alarm, Connecting	H. L. Brower	109, 292
Fire-engine, Steam	E. R. and H. S. Cole	108, 452
Fire-escape	W. and G. H. Burditt	99, 399
Fire-escape	M. Lewis and J. C. Swenson	100, 777
Fire-escape	J. Steger	101, 393
Fire-escape	L. Wahle	105, 280
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Fire-ext'nguisher	C. G. Wheeler	99, 270
Fire-extinguisher	G. Cowing	102, 229
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Fire-extinguisher	W. M. Parker	102, 582
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Fire-extinguisher for use on railroad-cars, &c., Automatic.	H. C. Stewart and R. T. Bradley	101, 404
Fire-kindler	C. Batcheller	101, 704
Fire-kindler	A. S. Morse and E. A. Jefferies	104, 336
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Fire-place	A. B. Johnson	105, 806
Fire-place	T. W. Baird	106, 985
Fire-place	T. Phillips	108, 180
Fire-place	J. I. Bard	99, 748
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Fire-place, Base-burning	J. Curran	99, 646
Fire-plug	I. H. Clark	99, 291
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Fish and animal matters, Treating, to obtain oils, fats, &c.	W. J. and T. Hooper and O. Lugo	99, 673
Fish, &c., Apparatus for drying	H. Cook	99, 849
Fish-joint for railway-rails	O. Lugo	102, 689
Fish, Manufacture of fertilizers and oil from	D. Y. Howell	109, 820
Fish, meats, &c., Device for freezing	W. Beck	108, 553
Fish-nets, &c., Metallic	J. Cunningham	109, 115
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Flask-guide	A. Wilcox	98, 728
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Flask, Pocket	L. Lincoln	104, 748
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Flax, hemp, &c., Machine for spinning	J. Smith	102, 875
Flax-puller	T. Mayor	110, 260
Flier for spinning	J. Ingram	99, 573
Float and sinker to fishing-lines, Attaching	W. McAllister	109, 920
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Flooring	C. J. McAllister	101, 638
Flooring	T. M. Richardson	99, 477
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Flour-bolt attachment	E. J. Weaver	108, 417
Flour-bolt feeder	L. C. A. Schmidt	103, 784
Flour-bolting apparatus	J. W. Bradly	105, 034
Flour-bolt knocker	W. W. Huntley and A. Babcock	101, 736
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Flour, Machine for packing	B. F. Bashor	106, 919
Flour, Machine for packing	W. Freudenau	99, 427
Flour, Manufacture of	A. H. Nordyke	110, 155
Flour-packer	A. T. Boon and L. Mills	101, 423
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Flowers, artificial, Manufacture of	C. E. Howard	100, 293
Flowers, artificial, Manufacture of	J. W. Barbour	108, 091
Flowers, Shears for cutting	H. H. Kendrick	109, 130
Flower-stand	P. B. Sheldon	108, 195
Flower-trellis	N. Fouché	108, 014
Flue	H. L. Palmer	108, 726
Flue-cleaner for cooking-stoves	W. B. Hix	100, 530
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Fluting and sad iron	C. Hyatt	106, 898
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Fluting-machine	E. J. Manville	103, 063
Fluting-machine	M. P. Carpenter	104, 825
Fluting-machine	S. G. Cabell	107, 657
Fluting-machine	C. Dion	108, 336
Fluting-machine	H. Sauerbier	109, 456
Fluting-machine	W. P. McKee	109, 535
Fluting-machine	A. Y. Hubbell	109, 738
Fluting-machines, Roller for	H. Sauerbier	106, 289
Flux for working metals and minerals	S. W. Kirk	109, 021
Fly-net for horses	J. M. Harman	99, 434
Fly-net for horses	J. Graham	102, 113
Fly-net for horses	J. S. Huston	103, 337
Fly-wheel, Sectional	H. L. Farr	99, 659
Folding or winding and measuring cords, &c., Machine for.	G. P. Farmer	102, 931
Food for horses and cattle	E. H. Clowser	98, 849
Food, Preserving various articles of	H. L. Palmer	105, 484
Foot-rest and boot-jack combined	D. H. James	110, 240
Foot-stool for churches, &c	W. G. Brown	100, 971
Foot-warmer, Electric	C. V. Littlepage	103, 061
Forge	G. Campbell	100, 975
Forge-hammer, Compressed air	C. Vogel	106, 893
Forging and stamping device	W. Ball	98, 839
Forge, Portable	P. H. and F. M. Roots	108, 941
Fork and band-cutter, Combined	M. Wenger	106, 758
Fork, Barley or gavel	B. P. Sharp	102, 598
Fork for peach-parer	D. H. Goodell	102, 934
Fork, Grain	W. S. Bryan	106, 656
Fork, Hay	L. Rogers	98, 711
Fork, Hay and manure	R. A. Peet	104, 993
Forks, Machine for bending	I. G. Batcheller	106, 709
Fork, Table	J. Patterson	99, 341
Fork, Toasting	H. H. Taylor and G. H. Graham	99, 971
Former for hoop-skirts	C. C. Wilson	102, 638
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Forming T-bolts, Method of	J. Deeble	98, 931
Forming umbrella-handles from plastic material, Mode of.	L. Chapman	107, 000
Foundation for buildings	A. F. Cooper	100, 962
Foundery flask-clamp	C. C. Stewart	102, 987
Fountain	A. P. Yates	103, 814
Fountain brush-holder	W. A. Shepard	105, 135
Fountain, Self-feeding	E. Amende	104, 921
Fowls, Medical compound for	J. H. Kipp	108, 603
Frame for dyeing in various colors for the manufacture of Scotch plaids, &c.	C. Barton	99, 750
Frame for passe-partout	P. Mignot	102, 296
Frame for potato-diggers and shovel-plows	J. M. Dick	105, 922
Frame for sensitizing photographic paper	L. V. Moulton	105, 833
Frame for street-lamps, &c	J. Radston	103, 239
Frame of safe-case for papers	S. H. Harris	107, 043
French bedstead	R. C. Dubois	102, 098
Friction calendar-rolls for paper	W. H. Soley and G. Stites	101, 539
Friction-clutch	S. Ingersoll	99, 199
Friction-clutch	F. A. Pratt	100, 064
Friction-clutch	O. Lull	103, 634
Friction-clutch	T. Coldwell	109, 299
Friction-clutch	W. W. Jerome, S. B. Alger, and C. H. Sage.	109, 740
Friction-clutch for engaging and disengaging gearing	G. D. Emerson	104, 846
Friction-clutch mechanism	M. G. Crane and A. M. Polsey	99, 761
Friction-locomotive	T. S. Minnis	107, 709
Friction-match lighter, Manufacture of	W. Porter	107, 810
Friction-matches, Composition for the manufacture of	J. J. Karlen	101, 625
Friction-pulley	E. F. Allen	108, 749
Friction-roller	W. Brown	109, 866
Friction-roller bearing	C. M. Daboll	102, 779
Friction-roller for railway-car trucks	J. Pencille	107, 955
Friction-roll for yard-arms	F. Thoits	100, 468
Friction-wheels for gearing	W. D. Andrews	100, 830
Frosted plush-paper, Manufacture of	H. V. Edmond	103, 990
Fruit and vegetable parer	H. Boggs	110, 167
Fruit and vegetable slicer	W. A. Mayhew	107, 516
Fruit and vegetables, Machine for paring	A. G. Batcheldor	103, 830
Fruit, Apparatus for preserving	W. W. Lyman	102, 951
Fruit-basket	G. H. White	109, 983
Fruit-basket, Paper	A. Adams and J. F. Jewett	105, 619
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Fruit-baskets, Machine for bottoming	B. D. Whitney	103, 532
Fruit-cans and other cylindrical packages, Machine for varnishing and labeling.	A. C. Platt	106, 794
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Fruit-crate	G. Clapp	109, 175
Fruit-drier	J. Mougeno	102, 298
Fruit-drier	J. Hildebrand	103, 744
Fruit-drier	N. C. Cooley	104, 550
Fruit-drier	G. M. Sternberg	104, 788
Fruit-drier	H. Henley	106, 484
Fruit-drier	O. P. Pence	108, 048
Fruit-drier	J. B. Okey	109, 289
Fruit-drier	J. B. May	100, 914
Fruit, Machine for canning	J. H. Ellis	104, 438
Fruit, Machine for paring	W. H. Williams	100, 348
Fruit, Method of preserving	G. Jaques	107, 689
Fruit-parer	L. S. Woodburn	110, 323
Fruit-picker	D. F. Slane	98, 689
Fruit-preserving house	J. Prior	99, 349
Fruit, provisions, &c., Box for packing	G. M. Huston	103, 821
Fruit-pulp, Apparatus for separating the seed from	R. H. Mayo	101, 289
Fruits, Composition of matter for preserving from decay.	G. Jaques	107, 690
Fruit-straining apparatus	M. E. Grigsby	105, 196
Fruits, vegetables, &c., Process and apparatus for preserving.	J. C. Wrenshall	104, 680
Fruits, vegetables, &c., Preserving	L. Bradley and T. D. Phillips	99, 628
Fruit-trees, Composition for destroying worms in	S. Kepner	103, 030
Fuel, Artificial	P. M. McGill	98, 786
Fuel, Artificial	H. Wurz	99, 738
Fuel, Artificial	C. D. Williams	103, 266
Fuel, Artificial	C. F. Loiseau and C. B. Requin	104, 471
Fuel, Artificial	P. M. McGill	109, 231
Fuel, artificial, Manufacture of	J. F. Cranston, J. H. Banks, and J. M. Ingersoll.	101, 828
Fuel, artificial, Manufacture of	E. J. De Smedt	103, 580
Fuel, liquid, for producing heat and light, Process and apparatus for using.	T. S. Dickerson and R. M. Whipple	102, 662
Funnel	W. E. Ledmann	100, 420
Funnel	P. H. Niles	103, 855
Funnel	C. Ruf	103, 974
Funnel	A. Warth	109, 360
Funnel, Beer	W. Golden	104, 574
Funnel, Can-filler	T. Scantlin	102, 050
Funnel, measuring, Safety	F. H. Smith	105, 857
Furnace	J. B. Hoyt	99, 570
Furnace	T. Speakman	100, 905
Furnace	J. Hulbert, jr	101, 621
Furnace	J. R. Morris	101, 965
Furnace and flue, Boiler	W. H. Burns	99, 839
Furnace and process for treating iron and other ores	J. Y. Smith	109, 355
Furnace and range combined	E. Edward	107, 347
Furnace and tea-kettle, Combined	C. L. Taylor and G. C. Sotchell	108, 889
Furnace, blast, Apparatus for	R. A. Smith	109, 356
Furnace, Coke	T. Price	100, 940
Furnace for burning edgings, saw-dust, &c	I. O. Smith	99, 793
Furnace for burning shavings	L. Crandall	110, 118
Furnace for deoxidizing iron ore	A. W. Housinger	98, 496
Furnace for deoxidizing iron ore	A. H. Brainerd	109, 173
Furnace for drying sand	I. D. Johnson and A. Hartwell	100, 636
Furnace for melting and refining iron, &c	A. F. Du Faur	99, 415
Furnace for producing "sponge" from iron ore	G. Nock	103, 489
Furnace for re-burning bone-black and reducing ores	A. Weber	105, 747
Furnace for reducing ores	C. M. Atkins and A. Govan	103, 409
Furnace for roasting, oxidizing, and chloridizing ores	J. P. Arey	103, 006
Furnace for salt-boiling	W. J. Dodge	105, 786
Furnace for smelting and for other purposes	J. Thomas	100, 566
Furnace for smelting scrap-iron	A. Ott	107, 712
Furnace for steam-engines	G. M. Wyne and W. McGrove	105, 617
Furnace for treating cast iron to convert the same into iron and steel.	W. Fields	103, 437
Furnace, gas, Metallurgic	C. W. Siemens	109, 064
Furnace, Gas-producing	W. Gerhardt	99, 554
Furnace, Glass	J. Henderson	98, 963
Furnace, grate-bar, and grating	J. Cuthbert	102, 233
Furnace, Heating	W. D. Bartlett	101, 082
Furnace, Heating	W. A. Sweet	105, 738
Furnace, Heating and other	T. Hydes and J. Bennet	101, 017
Furnace, Hot-air	E. Slater	99, 015
Furnace, Hot-air	E. D. Norcross	99, 585
Furnace, Hot-air	W. Smith	99, 963
Furnace, Hot-air	O. Bellman and J. W. Garver	100, 107
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Furnace, Hot-air	T. W. Chatfield	100, 979

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Furnace, Hot-air	J. S. Van Buren	101, 683
Furnace, Hot-air	L. W. Brown	102, 086
Furnace, Hot-air	G. H. Miller	102, 950
Furnace, Hot-air	M. A. Thayer	103, 390
Furnace, Hot-air	M. G. Fagan	104, 842
Furnace, Hot-air	B. S. Koll	104, 962
Furnace, Hot-air	E. Webster	105, 017
Furnace, Hot-air	G. C. Thomas	105, 804
Furnace, Hot-air	J. McCoy	106, 708
Furnace, Hot-air	J. Van	106, 746
Furnace, Hot-air	S. B. Sexton and G. W. Beard	108, 733
Furnace, Hot-air	R. F. Brown	108, 754
Furnace, Hot-air	W. and W. James, jr	108, 790
Furnace, hot-air, Base-burning	J. G. Porter	101, 911
Furnace, Hot-blast	A. Burtenshaw	101, 223
Furnace, Metallurgic	J. Montgomery	99, 456
Furnace or oven and tempering-die, Combined	H. Disston	107, 599
Furnace, Portable	T. Chadwick	100, 117
Furnace, Portable	J. H. Lyon	101, 893
Furnace, Portable	S. Gregory	103, 736
Furnace, Portable	C. Van De Mark	103, 780
Furnace, Puddling	S. McLaughlin	100, 306
Furnace, puddling, Rotary	E. Wood	109, 284
Furnace, Raking-attachment for	J. Rice	105, 249
Furnaces, blast, Apparatus for opening and closing the top of.	J. Thomas	103, 391
Furnaces, boiling and puddling, Fix for	J. D. Williams	98, 534
Furnaces, Collecting, separating, and purifying the gases from.	J. H. Connelly and J. McLure	103, 572
Furnaces for ores, Roasting	J. Collom	106, 553
Furnaces, Heating and puddling slide-door for	S. McLaughlin	108, 501
Furnaces, Heating metallurgic and other	J. D. Whelpley and J. J. Storer	109, 785
Furnaces, Metallurgic and other	T. Weiss	108, 863
Furnaces, metallurgic and other, Feeding fuel to	J. D. Whelpley and J. J. Storer	103, 695
Furnaces, Puddling and other	T. E. Purchase	101, 658
Furnaces, puddling, boiling, and other, Stack for	W. Swindell	106, 636
Furnace, Steam-boiler	J. Q. C. Searle	98, 805
Furnace, Steam-boiler	C. J. Hagstroem	103, 324
Furnace, Summer cooking	R. O. Stevenson	101, 670
Furnace, Tank, for making glass	G. Leuffgen	103, 208
Furnace, Tinsmiths'	M. Conner	108, 762
Furnace, Tinsmiths'	M. Conner	109, 805
Furniture, Barbers'	O. Stoelker	106, 425
Furniture-fastening	L. A. Johnson	106, 590
Furniture, Marine	L. D. Newell	104, 490
Furniture, Mode of suspending mirrors to	L. Pierce	100, 663
Furniture-pad	W. B. Moses	101, 648
Furniture, Printers'	A. N. Kellogg	102, 013
Furniture, School	J. McG. Johnson	104, 161
Furniture, Stationery	A. D. Hibbs	102, 398
Furs, Dyeing	P. Norden and H. Mischo	107, 800
Fuse-composition	W. H. Rogers	103, 931
Fuse-head, Electric	H. J. Smith	104, 217

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Gaff-block for vessels	C. D. Smith	99, 362
Gag-runner and buckle	S. Siebold	101, 386
Galley	F. M. Wildman	107, 144
Galley-rest	H. H. Galo	107, 246
Galvanic batteries, Liquid for	E. Prevost	107, 811
Game	N. J. V. Weyde	104, 379
Game	D. F. Hale	108, 587
Game-board, Combination	C. Krath and G. Hermann	107, 065
Game-box for ten-pins	C. B. Fowler	107, 030
Games, Apparatus for playing	H. Plumb	103, 774
Garancine, Preparation of	S. Borden	109, 489
Gardens, Elevated and suspended	F. O. Rogers	101, 918
Garden-tool, Combined	L. and F. Perrott and C. H. Bates	109, 657
Garment, Dummy	A. M. Davis	101, 591
Garment-hanger and size-ticket holder combined	I. Desky and F. A. Jennings	98, 476
Garment-holder	B. Van C. Taylor	109, 156
Garment, Life-preserving	W. Morris	102, 419
Garment-pattern, Adjustable	S. Shawcross	101, 052
Garments, Applying measurement to and laying out	J. J. Miller	105, 355
Garments, Device for measuring and laying out	I. J. Ordway	98, 618
Garments, Fastening for	J. E. Dallon	106, 920
Garments, Hooded	A. Keating	110, 242
Garments, Instrument for draughting	U. L. Leeto	107, 068
Garments, Pattern for measuring and laying out	F. Wetmore	110, 097

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Garments, Patterns for measuring the body for	M. Palmer, jr., and E. Willoughby	103, 486
Garter	C. E. Coester, jr., and J. L. Mooro	106, 328
Garter	H. A. House	109, 617
Garter	H. A. House	109, 736
Garter	H. A. House	109, 737
Gas and air heating apparatus for metallurgic furnaces	J. W. Ellis	105, 558
Gas and water pipe plug	E. P. Schutt	100, 456
Gas and water stop-cock boxes, Top for	W. W. Pullis	109, 040
Gas-apparatus	J. R. Richard	108, 937
Gas, Apparatus for generating and burning	W. Stewart	105, 012
Gas, Apparatus for lighting and extinguishing	A. N. Allen and R. H. Dewey	101, 806
Gas, Apparatus for lighting by electricity	W. H. Kelly	100, 773
Gas, Apparatus for lighting	W. J. Morris and W. J. Reid	101, 491
Gas, Apparatus for lighting by electricity	W. W. Batchelder	103, 127
Gas, Apparatus for lighting by electricity	W. W. Batchelder	103, 231
Gas, Apparatus for lighting by electricity	H. T. Robbins	107, 105
Gas, Apparatus for lighting and extinguishing by electricity.	F. Bean	108, 434
Gas-apparatus for railroad-cars, &c	J. S. Wood	105, 756
Gas-apparatus for railroad-cars, &c	J. S. Wood	105, 757
Gas-apparatus for railroads	W. Foster, jr., and G. P. Ganster	105, 561
Gas-carbureter	J. L. Bartlett	107, 853
Gas, Clay retort for the manufacture of	F. C. Krauss	110, 249
Gases, Apparatus for generating and burning, in metallurgic furnaces.	J. W. Ellis	105, 557
Gases for fuel, &c., inflamable, Manufacture of	W. Elmer	106, 360
Gas-fittings, Machine for drilling and tapping	R. T. Crane	100, 731
Gas-fixture	D. Milne	107, 194
Gas-fixture, Extension	H. Krüger	101, 369
Gas-fixture, Extension	H. Coester	105, 911
Gas-fixtures, Device for raising and lowering	J. F. Pond	104, 197
Gas-fixtures, Trap-attachment for	J. B. Hyde	107, 264
Gas for head-lights, Apparatus for generating	H. S. Maxim	99, 927
Gas for heating, Apparatus for generating	L. Stevens	108, 302
Gas for illuminating purposes, &c., Manufacture of	J. Kidd	106, 090
Gas from coal, Apparatus for producing	T. O'Meara	108, 863
Gas from hydrocarbons, Apparatus for the manufacture of.	J. H. Smith	109, 242
Gas from hydrocarbons, Generating	J. R. Smedbury	109, 469
Gas from petroleum, Manufacture of	L. Stevens	100, 208
Gas-heater	R. George	108, 583
Gas, illuminating, Apparatus for generating	D. Davidson	99, 860
Gas, illuminating, Apparatus for the manufacture of	J. Dailey	103, 994
Gas, illuminating, Apparatus for the manufacture of	H. G. Ludlow	107, 208
Gas, illuminating, Apparatus for the manufacture of	A. W. Hall	109, 510
Gas, illuminating, Manufacture of	E. P. McCarthy	103, 218
Gas, illuminating, Manufacture of	E. D. McCracken	103, 351
Gas, illuminating, Manufacture of	E. A. and G. H. Pond and M. S. Richardson.	107, 809
Gas, illuminating, Manufacture of	W. Young and P. Braish	107, 848
Gas, illuminating, Method of producing	J. F. Boynton	110, 427
Gaskets for steam-packing, Mode of and device for making.	M. C. Gardner	105, 934
Gas-lighting apparatus, Electric	C. N. Ealer	107, 465
Gas-machine	S. R. Ball	98, 462
Gas-machine	T. G. Springer	100, 684
Gas-machine	W. W. Binny	104, 253
Gas-machine	J. P. Gallagher	105, 190
Gas-machine	J. H. Van Houten	109, 568
Gas-machine, Electro-hydrocarbon	H. J. Smith	101, 171
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Gas-meter, Dry	G. Lowen and S. H. Goldthorp	109, 230
Gasometer	T. E. Rowland	100, 550
Gas-pendants, Extensible	G. Warner	106, 895
Gas-purifier, Tray for	P. Munzinger	108, 107
Gas-regulator	P. Keller	98, 778
Gas-regulator	P. Keller	108, 020
Gas-regulator, Automatic	S. O. Trudell	107, 127
Gas-retort	J. Rigby and P. A. Palmer	103, 920
Gas-retort	E. D. McCracken	105, 350
Gas-retort	D. Davison	108, 009
Gas-retort and heating-furnace	G. H. Pond	110, 496
Gas-retort, Setting	T. Curley	103, 570
Gas-tar and ammoniacal liquor, Apparatus for separating.	E. D. McCracken	108, 430
Gas-tube for chandeliers, Extensible	H. L. McAvoy	100, 171
Gas used in heating vulcanizers, &c., Apparatus for automatically regulating the flow of.	J. M. Osgood	105, 971
Gas-works, Center-seal for	P. Munzinger	109, 540
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Gate	I. C. Bennett	98, 841
Gate	C. S. Bonney	99, 823
Gate	C. H. Eggleston	100, 129
Gate	T. Ellison	100, 739
Gate	J. Hays	100, 759
Gate	A. Becraft	101, 570
Gate	F. Raymond	101, 765
Gate	S. Henry	102, 003
Gate	B. F. Dickey	102, 783
Gate	B. F. Dickey	103, 583
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Gate	J. D. Chambers	104, 556
Gate	J. H. Gustin	105, 067
Gate	T. Andrews	106, 763
Gate	J. H. Harnley	107, 254
Gate	J. J. Toffiemire and J. D. Linnell	107, 638
Gate	S. Kepner	108, 031
Gate	S. Regan and E. Meusy	108, 186
Gate	F. Livings	108, 368
Gate	C. D. Read	108, 628
Gate	J. S. Covell	108, 764
Gate	W. C. Hooker	108, 786
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Gate	J. Wright	109, 704
Gate	R. T. Bowne	109, 713
Gate	H. R. Hoskins	110, 363
Gate and signal-apparatus for railroads, Electro-magnetic.	W. Robinson	105, 493
Gate, Automatic	S. Whittaker	103, 741
Gate, Automatic	P. A. Spicer and M. Crossman	105, 735
Gate, Automatic	J. B. Cotton	106, 917
Gate, Automatic	M. Orewiler	107, 801
Gate, Balance-pivot	D. Brown	102, 365
Gate, Bridge	J. Wilcke	100, 480
Gate, Bridge	M. Kirsch	109, 520
Gate, Farm	J. Dickason and G. W. D. Culp	98, 573
Gate, Farm	W. H. Wright	100, 484
Gate, Farm	C. Hart	100, 620
Gate, Farm	J. H. and P. J. Murphy	100, 767
Gate, Farm	M. Gunsbeman	101, 998
Gate, Farm	J. Mayben	102, 569
Gate, Farm	H. Piper	102, 859
Gate, Farm	J. Dickason	104, 435
Gate, Farm	J. Pool	105, 360
Gate, Farm	G. J. Fiedler	105, 662
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Gate, Farm	C. W. Saladee	106, 411
Gate, Flood	J. J. Kimball	98, 979
Gate, Flood	A. L. Noble	101, 651
Gate, Flood	T. H. Breed	107, 159
Gate, Flood	J. Campbell and A. Watson	107, 659
Gate, Flood	S. Rowland and T. C. Tipton	109, 252
Gate, Flood	N. Hinckley	109, 734
Gate for railway-crossings	J. H. Clark	105, 420
Gate-hinge, auger, Casting	B. Roux	99, 712
Gate-operating apparatus, Electro-magnetic	W. Robinson	105, 494
Gate, Railway	S. M. Snyder	100, 943
Gate, Railway	R. Ramsey and C. Stafford	101, 311
Gate, Railway	E. Woodbury	108, 680
Gates, Fastening	J. Lintner	103, 629
Gates, Latch for	E. Barks and L. H. Emmons	107, 589
Gate, sluice, Automatic	J. Keplinger	105, 220
Gates, Railway	J. B. Rittenhouse and J. Collins	104, 355
Gate, Suspension	E. Chadderdon	105, 170
Gate, Water	M. Hays	100, 623
Gauge, Adjustable	T. E. Warren	106, 009
Gauge and divider	G. Kenny	98, 504
Gauge-attachment for tinsmiths' shears	O. W. Stow	104, 076
Gauge, Axle	R. C. Kelly	106, 373
Gauge, Button-shank	J. F. Russell	102, 436
Gauge, Carpenters'	H. P. Sisson	110, 596
Gauge, Clapboard	J. S. Biddlecom	102, 649
Gauge, Clapboard	E. Horton	105, 210
Gauge, Clapboard	A. Dero	108, 010
Gauge-cock	J. B. Christoffel	100, 981
Gauge-cock	L. F. Smith	105, 503
Gauge, Duplex-pressure	P. B. Hovey	104, 593
Gauge for cutting bias pieces of cloth	S. T. Taylor	106, 741

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Gauge for gang-saws	O. C. Meigs	109, 643
Gauge for paper-cutting machines	C. C. Child	99, 750
Gauge for printing-presses	A. Campbell	105, 638
Gauge for tobacco-cutter	W. N. C. Wilson	100, 959
Gauge for turning clock-work	H. F. Henderson and J. E. Ladd	110, 480
Gauge-pin for tympan-sheets	R. W. Thing	105, 518
Gauge, Pressure	J. W. Maloy	101, 636
Gauge, Pressure	C. Liedke	106, 120
Gauge, Pressure	J. B. Edson	106, 345
Gauge, pressure, Recording	E. S. Primo	101, 309
Gauge-rod	W. Clemson	101, 229
Gauge, Saw	R. H. Norris	100, 793
Gauge, Spooling	J. P. Holt	105, 685
Gauge, Steam	I. N. Whittlesey	109, 086
Gauge, Steam and safety-valve	G. J. Firmin	106, 801
Gauge, water, Maximum and minimum	W. E. Stoddard	98, 813
Gauge, Weather-board	J. M. Milhollin	108, 376
Gauge, Weather-board	W. Sellers	99, 356
Gear-cutting machine	C. Van Haagen	110, 406
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Generator, Steam	W. G. Savage	109, 765
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Grain and seed separator, Fan-case for	C. L. Allen	105, 158
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Grain, Apparatus for cooling	S. A. Stebbins	102, 175
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Grain-bin	F. Raymond	106, 961
Grain-binder	W. D. Harrah, I. M. Gifford, and E. T. Johnston.	102, 815
Grain-binder	G. H. Spaulding	103, 673
Grain-binder	W. B. Oglesby	104, 487
Grain-binder	W. H. Payne	105, 974
Grain-binder	D. McPherson	107, 797
Grain-binder	G. A. Scribner	107, 823
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Grain-binder	C. Jones	98, 975
Grain-cleaner	C. Perry and J. E. Wheat	100, 441
Grain-cleaner	C. Perry	103, 922
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Grain, Machine for cleaning and separating	S. D. Locke	106, 945
Grain, Machine for cutting and binding	E. Skelly	106, 627
Grain, Machine for decorticating and drying	B. T. Trimmer	101, 946
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Grain-scourer	A. Smith	110, 301
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Grain-separator	L. Boyer	101, 664
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Grate-bar	W. Kearney	105, 948
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Guard for machine for pitching waste	C. L. Dean	98, 570
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Gun-carriage	J. W. Wilson	100, 492
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Gun-carriage	A. F. Potter	107, 099
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Gun-lock	R. D. Hay	100, 514
Gun-lock	E. B. Hendee	110, 300
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Hame-fastener	C. H. Miller	101, 642
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Hammer, Nail	E. S. Morton	103, 914
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Hand-barrow	M. S. Scofield	99, 000
Handle for barrels, &c	M. S. Scofield	110, 502
Handle for boat-hooks, &c	F. F. Bibber	103, 0 7
Handle for canes and umbrellas	A. Wanner	108, 218
Handle for casket	A. McGuire	106, 496
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Handle for cross-cut saws	E. M. Boynton	99, 825
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Handles, &c., Finishing and bleaching	D. H. Taylor	108, 846
Hand-rubber for washing clothes	G. F. J. Colburn	100, 603
Hand-saw blades, Machine for grinding	D. M. Mefford	106, 071
Hand-screw and clip for splicing broken carriage-ties	A. B. Sheaffer	101, 053
Hand seed-drill and cultivator, Combined	S. D. Lucas	109, 916
Hand-stamp	J. C. Gaston	104, 444
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Hanger for shafting	W. W. Carey and G. W. Harris	99, 156
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Hard rubber, Manufacture of	J. B. Newbrough	100, 435
Hard water, Device for removing lime from	K. Fraser	106, 759
Harness	E. L. Bassett	101, 569
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Harness	L. Whitehead	104, 806
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Harness-saddle	E. E. Hardy	104, 023
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Harness-saddle tree	G. Pennoyer	101, 495
Harness-saddle tree	P. H. Wiedersum	107, 843
Harness, Trace-holder for	R. M. Dill	106, 037
Harness, Trace-hook and clip for	W. H. Morgan	107, 086
Harness-trimmings, Mode of covering	C. M. Theberath	99, 039
Harrow	M. Vanbibber	98, 531
Harrow	H. and C. Shirk	99, 719
Harrow	J. G. Burcham	101, 350
Harrow	W. Tuttle	101, 547
Harrow	W. J. Burdick	105, 775
Harrow	A. Friedmann	1 6, 046
Harrow	G. M. Ellis	106, 077
Harrow	C. Thayer and L. L. Thomas	106, 743
Harrow	S. and A. Woodart	106, 908
Harrow	W. P. Jones	107, 057
Harrow	A. Lewis	107, 269
Harrow	J. Dingman	107, 344
Harrow	J. Mellinger	108, 279
Harrow	J. Dawson	108, 690
Harrow	J. J. Austin	108, 910
Harrow	J. M. Harper	110, 133
Harrow	D. L. Jaques	110, 142
Harrow	D. B. Conover	110, 314
Harrow, Adjustable	A. Havens	108, 478
Harrow and cultivator	J. Lerch	106, 376
Harrow and earth-cutter	J. Schroeffel and W. Dell	101, 522
Harrow and roller, Combined	T. Bailey	106, 765
Harrow and roller, Combined	J. M. Blenkenbeker	106, 539
Harrow and roller, Combined	F. A. Dann and J. McKibben	107, 461
Harrow and seeder, Combined	R. Stoner	109, 260
Harrow and seeder combined, Sulky	A. L. Taveau	101, 540
Harrow and shovel cultivator, Combined	A. B. Baum	105, 770
Harrow, cultivator wheelbarrow, and sled, Combined	J. R. Wagner	106, 004
Harrow, Revolving	H. H. Monroe	100, 547
Harrow, roller, and seeder, Combined	A. Powell	98, 627

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Harrow, Rotary	G. Collins	107, 337
Harrow, Sulky	J. A. Casey	104, 423
Harrow-teeth	A. R. Kinney	107, 506
Harrow-teeth	S. W. Corbin	109, 719
Harrow-teeth, Machine for making	J. Morgan	104, 186
Harrow, Wheel	E. R. Powell	109, 754
Harrow, Wheeled	A. L. P. Vairin	98, 647
Harvester	M. H. Ripley	98, 635
Harvester	J. F. Crawford	98, 671
Harvester	C. J. Miller and B. Hersting	98, 700
Harvester	C. R. Brinkerhoff	98, 737
Harvester	W. G. Beels	98, 910
Harvester	P. A. Tobey	100, 817
Harvester	J. B. McCormick	101, 031
Harvester	W. F. Goodwin	101, 120
Harvester	L. J. McCormick and W. R. Baker	101, 618
Harvester	E. B. Rice	101, 659
Harvester	W. A. Kirby	102, 131
Harvester	C. Clapp	102, 776
Harvester	J. Kline	103, 835
Harvester	C. N. Owen	103, 490
Harvester	T. Loring	103, 633
Harvester	J. Seibel	104, 067
Harvester	J. H. Elward	104, 290
Harvester	J. L. McCormick, W. B. Baker, and L. Erpelding.	104, 331
Harvester	W. N. Whiteley	104, 386
Harvester	A. P. Ayeres	104, 407
Harvester	J. C. Miles	104, 422
Harvester	J. G. Perry	104, 489
Harvester	J. G. Perry	104, 490
Harvester	J. Birch and A. Crosby	104, 695
Harvester	W. B. Johns and W. J. Read	104, 852
Harvester	H. Mews	104, 978
Harvester	S. T. Lamb and W. N. Whiteley	105, 343
Harvester	W. N. Whiteley	105, 394
Harvester	W. N. Whiteley	105, 395
Harvester	C. W. and B. F. Witt	105, 399
Harvester	A. Rank	105, 597
Harvester	H. C. Velie	105, 612
Harvester	I. H. Palmer	105, 973
Harvester	V. S. Barber	106, 535
Harvester	J. S. Truxel	106, 891
Harvester	D. D. Whitker	106, 903
Harvester	L. Hall	107, 039
Harvester	H. H. Nestertu	107, 193
Harvester	M. and W. P. Bales	107, 214
Harvester	A. J. Haswell and J. W. Irwin	107, 487
Harvester	A. H. Wagner	108, 069
Harvester	W. T. Miller	108, 716
Harvester	L. J. McCormick and W. R. Baker	108, 922
Harvester	A. and C. Sherwood	109, 062
Harvester	S. and I. Rawson	109, 755
Harvester	G. F. Hawley	110, 568
Harvester	G. T. Coolman and C. M. Young	99, 850
Harvester	W. R. Low and A. Adams	99, 451
Harvester	J. B. McCormick	99, 920
Harvester	J. McCaffery	100, 051
Harvester	R. Eickemeyer	101, 710
Harvester	C. H. Charleworth and J. H. Short	103, 136
Harvester and binder, Grain	L. B. Stilson	99, 968
Harvester and binder, grain, Combined	J. H. Whitney	109, 985
Harvester and thrasher, Combined	D. Howell	99, 089
Harvester and thrasher, Combined	J. D. Field	101, 849
Harvester-attachment for raking and binding grain	H. A. Reid	104, 883
Harvester, Clutch-mechanism for	W. Michael	103, 910
Harvester, Combined rake and reel for	P. F. Hodges	103, 185
Harvester, Combined rake and reel for	P. F. Hodges	103, 186
Harvester, Corn	E. Tush	99, 034
Harvester, Corn	W. Murray	99, 403
Harvester, Corn	J. H. L. Tuck	99, 501
Harvester, Corn	H. Flesher	101, 721
Harvester, Corn	M. A. Getzendaner	102, 592
Harvester, Corn	J. E. Rice	103, 779
Harvester, Corn	G. B. Humlin	104, 846
Harvester, Corn	N. Newman	105, 716
Harvester, Corn	Menzo A. Smith	107, 972
Harvester, corn, and husker, Combined	S. Patton	103, 302
Harvester, Cotton	J. Davis, jr., and D. Scott, jr	101, 439
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Harvester-cutter	F. E. Rogers	104, 773
Harvester-cutter	D. Stukey	107, 118
Harvester cutter-bar	R. Allstatter	103, 699
Harvester, Cutter-bar for	W. J. Oxer	103, 361
Harvester-cutter, Corn	J. J. De Freitas	105, 764
Harvester cutter-holder for grinder	T. E. King and G. C. Dolph	107, 764
Harvester-cutters, Machine for sharpening	W. S. Ingraham	106, 167
Harvester, Cutting-apparatus for	T. J. and G. M. Clark	108, 686
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Harvester-dropper	C. D. Jefferies	99, 444
Harvester-dropper	E. Myers	100, 181
Harvester-dropper	N. S. Ketchum	101, 273
Harvester-dropper	A. Ward	102, 890
Harvester-dropper	J. O. Taber	103, 796
Harvester-dropper	D. S. Harner	104, 953
Harvester-dropper	W. N. Whiteley	105, 396
Harvester-dropper	T. C. Moore	107, 522
Harvester-dropper	T. W. S. Kidd	110, 246
Harvester-gearing for changing speed	M. G. Hubbard	99, 439
Harvester-guard fingers, Machine for manufacturing. (Division A.)	J. Fassler	100, 878
Harvester-guard fingers, Machine for sawing the slot in	J. Fassler	105, 323
Harvester-knife	G. J. Wardwell	99, 797
Harvester-knife, Sharpening	A. P. Taylor	101, 061
Harvester, Reel for	J. W. Bope	103, 969
Harvester, Rest for	J. W. Bope	103, 970
Harvesters, Adjustable reel-post for	J. W. Davis	105, 654
Harvesters, Binding-attachment for	B. W. Squires and C. M. Clinton	99, 256
Harvesters, Binding-attachment for	F. B. Isett	105, 946
Harvesters, Binding-attachment for	D. W. Travis	107, 126
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Harvesters, Cutting-apparatus for	H. Mewes	105, 111
Harvesters, Cutting-apparatus for	H. C. Aydelott	106, 305
Harvesters, Cutting-apparatus for	J. L. Abell	109, 569
Harvesters, Dropping-device for	O. C. Green	98, 689
Harvesters, Dropping-platform for	J. B. Sawyer	102, 439
Harvesters, Dropping-platform for	E. P. Cady	102, 914
Harvesters, Dropping-platform for	M. T. Reynolds	103, 370
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Hasp and staple fastening	E. P. Jones	100, 899
Hasp-fastening for fruit-crates	F. R. Baird	99, 620
Hasp for trunk-locks	A. V. Ryder	99, 484
Hasp for trunks	S. T. Barton and J. W. Affron	101, 212
Hat	J. M. Heard	103, 457
Hat	J. W. McGill	109, 641
Hat	G. Johnson	110, 570
Hat and cap holder and bracket	J. R. Hartman and M. Kais	105, 938
Hat-blocking machine	J. Sureus and W. H. Behrens	102, 613
Hat-blocking machine	J. Sheldon	103, 787
Hat-bodies, Machine for felting	J. Kirk, S. Shelmerdine, and C. Froggatt	101, 276
Hat-bodies, Machine for felting and hardening	J. T. Earle	107, 887
Hat-bodies, Machine for forming	I. Nutt	108, 175
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Hat, Brim of soft	J. W. Corey	108, 884
Hat-check	J. E. Smith	102, 992
Hatch, Vessel's	J. P. Maddox	109, 330
Hatchway-hoist, Self-acting	G. N. Creamer	100, 265
Hat-finishing machine	G. W. Stout	109, 072
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Hats, felt, Manufacture of	G. H. Scribner	104, 652
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Hat-sizing machine	A. Pelisse and F. Degen	99, 700
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Hatters, Head-measure for	H. Bonham	105, 895
Hat-trimming, Machine for covering reeds for	G. A. Shepard	102, 723
Hawse-hole cover	R. Liston	103, 630
Hawse-pipe stopper	O. B. Bearse	104, 101
Hay and manure fork	F. Villard	99, 982
Hay and pruning knife, Combined	J. Fasig	102, 524
Hay-binder	A. R. Clark	100, 176
Hay-carrier	C. S. Boothby	102, 651
Hay-carrier	T. J. Powell	105, 723
Hay crane or carrrier	B. P. Brackman	99, 520
Hay-drag	D. and A. Eddelman	99, 766
Hay-fork	J. E. Lobdell and L. H. Smith	99, 449
Hay fork and hook	T. W. Peirce	107, 531
Hay-fork, Horse	L. Rogers	98, 887
Hay-fork, Horse	E. G. Crandall	98, 930
Hay-fork, Horse	C. Forney and J. Swab	98, 946
Hay-fork, Horse	F. W. Thorla	99, 033
Hay-fork, Horse	G. N. Stearns	99, 140
Hay-fork, Horse	S. Clark	99, 292
Hay-fork, Horse	G. F. Weymouth	100, 476
Hay-fork, Horse	R. S. Frame	100, 518
Hay-fork, Horse	J. M. McDonald	10', 650
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Hay-fork, Horse	A. Shellenberger	104, 365
Hay-fork, Horse	J. S. Yinger	104, 529
Hay-fork, Horse	G. W. Shade	104, 891
Hay-fork, Horse	H. G. Porter	105, 722
Hay-fork, Horse	L. W. Stuart	106, 230
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Hay-fork, Horse	C. N. Baldwin	108, 531
Hay-fork, Horse	W. W. McFadden	109, 089
Hay-fork, Horse	A. T. Dunbar and J. H. Fellows	109, 305
Hay-gatherer	W. E. Phelps	99, 580
Hay-gatherer	C. Waste	104, 253
Hay gatherer and carrier	G. Meaders	104, 420
Hay gatherer and shocker	C. M. Terrill	1[illegible]1, 183
Hay-knife and pruning-hook, Combined	D. Fasig	100, 611
Hay-loader	C. B. Garlinghouse	99, 181
Hay-loader	A. E. Preston	99, 947
Hay-loader	G. G. Park	106, 611
Hay-loader	J. Bachelder	100, 710
Hay-loader	J. M. Boorman	101, 705
Hay-loader	E. Cooper	105, 308
Hay-loader	A. Buck	105, 418
Hay-loader	L. J. Parker	105, 837
Hay-loader	W. H. Gray	106, 355
Hay-loader	D. Clagett	106, 916
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Hay-loading device	A. B. Clark	103, 844
Hay, Machine for raking and cocking	Z. C. Steele	103, 092
Hay, Machine for raking and cocking	S. Stewart	103, 100
Hay-rack and wagon-box, Combined	F. G. McClellan	102, 023
Hay-rake and loader	N. Gabel	98, 581
Hay-rake and tedder, Combined	S. J. Taylor	103, 524
Hay-rake, Horse	C. W. Sanborn	98, 637
Hay-rake, Horse	N. W. Curtis	99, 066
Hay-rake, Horse	C. Howard	99, 319
Hay-rake, Horse	W. H. Long	99, 331
Hay-rake, Horse	J. Morgan and W. Cline, jr	99, 457
Hay-rake, Horse	J. H. Cook	99, 643
Hay-rake, Horse	B. F. Horton	99, 897
Hay-rake, Horse	J. K. O. Neil	99, 930
Hay-rake, Horse	A. B. Barnard	100, 104
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Hay-rake, Horse	S. P. Smith	102, 172
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Hay-rake, Horse	J. A. McGee	103, 065
Hay-rake, Horse	J. S. Shrawder	103, 092

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Hay rake, Horse	D. H. Weaver	103, 691
Hay-rake, Horse	S. P. Smith	103, 789
Hay-rake, Horse	E. Zimmerman	103, 805
Hay-rake, Horse	W. H. Fay	104, 131
Hay-rake, Horse	S. S. Bortree	104, 545
Hay-rake, Horse	L. Myers	105, 117
Hay-rake, Horse	A. Brown	105, 165
Hay-rake, Horse	N. M. Barnes	105, 548
Hay-rake, Horse	A. J. Shunk	105, 733
Hay-rake, Horse	S. R. Nye	105, 833
Hay-rake, Horse	S. L. Denney	106, 336
Hay-rake, Horse	G. M. L. McMillen	106, 385
Hay-rake, Horse	J. M. Colson	106, 554
Hay-rake, Horse	J. Mills	106, 604
Hay-rake, Horse	G. O. Lackey	107, 183
Hay-rake, Horse	G. Hauck	107, 250
Hay-rake, Horse	M. J. Robinson	107, 411
Hay-rake, Horse	G. E. Carleton	107, 660
Hay-rake, Horse	J. C. Stoddard	107, 899
Hay-rake, Horse	J. E. Wisner	108, 744
Hay-rake, Horse	O. T. Nanny	109, 430
Hay-rake, Horse	H. N. Green	109, 509
Hay-rake, Horse	J. E. Wisner	109, 700
Hay-spreader	C. R. Frink	98, 486
Hay-spreader	W. H. H. Frye	103, 441
Hay-spreader	H. L. Perkins	103, 771
Hay-spreader	J. F. Thomas and D. H. McLane	105, 141
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Hay-tedder	R. Bryson	99, 833
Hay-tedder	T. J. and G. M. Clark	109, 856
Hay-tedder	J. M. Burdick	10', 972
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Hay-tedder	F. R. Smith	106, 0e7
Hay-tedder	M. B. Harvey	107, 365
Hay-tedder	O. A. Benton	109, 863
Hay-unloader	H. H. Ensminger	104, 947
Head-block	H. H. Grindley	106, 939
Head-block	P. M. Cummings	110, 119
Head-block for saw-mills	A. W. Thompson	98, 528
Head-block for saw-mills	G. Selden and O. C. Briggs	99, 486
Head-block for saw-mills	J. H. and G. Burket	99, 838
Head-block for saw-mills	J. Duvall and J. Winterbottom	103, 039
Head-block for saw-mills	C. E. Grandy	103, 871
Head-block for saw-mills	A. Shearon	103, 945
Head-block for saw-mills	G. Selden and H. O. Kelsey	104, 068
Head-block for saw-mills	J. W. Handshy	106, 578
Head-block for saw-mills	G. Selden	107, 728
Head-block for saw-mills	F. W. Shelley	107, 966
Head-block for saw-mills	F. J. Staley	110, 085
Head-block of saw-mill	J. A. Clark	102, 091
Head-block of saw-mills	C. Meiners	102, 847
Head-block of saw-mills	W. B. Trunick	106, 744
Head-block of saw-mills	W. Wellington	102, 996
Head-light, Locomotive	S. M. Davies	109, 877
Head-lights, Lens or glass for	H. C. Felthousen	110, 449
Head-rest	E. P. Cook	100, 014
Head-rest	C. V. Littlepage	103, 631
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Head-rest	M. Warne	1[illegible]8, 308
Head-rest	J. S. Bartlett	108, 876
Head-rest for car-seats	E. M. Judd	109, 823
Heads of bolts, Machine for turning	W. F. Swathel	107, 561
Heads of screw-blanks, Machine for shaving	J. F. Sharrett	108, 646
Hearth, grate, and fender, Combined	G. Buchanan	104, 703
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Heated apartments, Apparatus to effect the hydration of air in	P. J. Schopp	103, 065
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Heater and ventilator	G. W. Blake	100, 110
Heater, Base-burning fire-place	J. Martino	100, 539
Heater, Base-burning fire-place	J. Jaeger	109, 909
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Heater, Feed-water	G. Waters	106, 972
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Heater, Gas	L. B. Hamilton	102, 258
Heater, Gas	J. Cromly	103, 017
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Heater, Gas	C. C. Burt	103, 297
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Heater, Gas	J. Lundgren	106, 070
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Heater, Laundry-iron	R. Diven	103, 997
Heater, Railroad-car	F. Shaller	100, 333
Heater, Railroad-car	W. Meller	100, 543
Heater, Railroad-car	J. G. Allen	107, 149
Heater, Railroad-car	P. Grandjean	108, 702
Heater, Sad-iron	J. G. Redline	98, 649
Heater, Sad-iron	E. Lewis	99, 213
Heater, Sad iron	R. Drake	99, 542
Heater, Sad-iron	F. Stadler	99, 609
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Heater, Sad-iron	W. Scarlett	101, 519
Heater, Sad-iron	J. Burgess	103, 294
Heater, Sad-iron	E. Phillips	105, 245
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Heater, Steam	F. P. Halberg	101, 602
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Heater, Steam	J. J. Roeper	104, 772
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Heddles, wire, Machine for making	P. and F. Philip	98, 706
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Hedge and tree trimmer	C. E. Healey	100, 145
Hedge-trimmer	J. M. and O. W. Van Nosdall	99, 121
Hedge-trimmer	D. Oliver	99, 938
Hedge-trimmer	W. E. Horne	104, 956
Hedge-trimmer	J. McAnulty	107, 517
Hedge trimmer and mower, Combined	G. Waddington	100, 953
Hedge-trimmer and stalk-cutter, Combined	J. G. Sprague	99, 490
Heel-burnisher	M. Burnham, 2d	108, 657
Heel-calk	M. F. Walter and C. Standinger	107, 132
Heel-cutting machine, Knife-holder and guide for	S. Keen	108, 601
Heel-rounding machine	J. C. White	106, 901
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Jack, Lifting	F. C. White	100, 828
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Joint for metal pipes	W. H. Harrison	98, 960
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Joint for shafting, Universal	C. Roberts	98, 895
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Lamp for halls, gardens, &c	A. W. Wehrhan	102, 995
Lamp for railroad-cars	R. S. Merrill	109, 537
Lamp-founts to brackets, chandeliers, &c., Attaching	G. Bohner	100, 884
Lamp, Gas	J. H. Brown	110, 605
Lamp, Glass	D. C. Ripley, jr	101, 512
Lamp, Glass	D. C. Ripley	107, 544
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Lamp-heating apparatus	A. Rittenhouse	100, 054
Lamp-lighter and burglar and fire alarm	J. B. Irwin	103, 338
Lamp, Safety-device for	H. W. M. Washington	108, 416
Lamps and taper-burners, Automatic lighting-attachment for.	W. H. Weeks	99, 123
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Lamp-shade	W. H. Johnson	100, 533
Lamp-shade	W. Reed, jr	103, 928
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Lamps, Shade-holder for	J. W. Lyon	102, 691
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Lamp, Street	J. F. Harly	99, 314
Lamp, Street	W. G. Schmidlin and J. W. Driscoll	101, 709
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Lamp-wick	D. T. Robinson	110, 591
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Lamp-wick feeder	L. W. Leary	107, 617
Lamp-wick regulator	E. Wells	100, 956
Landau-carriage door	A. C. Smith	108, 644
Land marker for corn-planting	H. F. Baker	110, 333
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Lantern	E. F. Haskell	98, 962
Lantern	J. H. Irwin	99, 442
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Lantern	A. Withmar	100, 578
Lantern	W. J. Berry	100, 845
Lantern	J. M. Jenness	102, 551
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Lantern	W. Westlake	102, 896
Lantern	L. W Leary	103, 698
Lantern	J. H. Irwin	104, 318
Lantern	L. W. Leary	104, 745
Lantern	J. H. Irwin	105, 083
Lantern	D. Challinor	105, 170
Lantern	J. H. Irwin	105, 339
Lantern	McC. Young	105, 762
Lantern	W. Westlake	107, 140
Lantern	C. Tabor	107, 835
Lantern	P. Sweeney	108, 064
Lantern	W. Westlake	108, 221
Lantern	W. Westlake	108, 222
Lantern	C. S. and A. L. Baron	108, 430
Lantern	H. J. White	109, 856
Lantern and candlestick, Combined	M. A. Shepard	107, 551
Lantern, Astronomical	J. F. Clarke	110, 435
Lantern for streets	J. W. Bartlett	103, 828
Lantern, Globe	I. C. Mayo	102, 692
Lantern-guard	J. Kintz	104, 857
Lantern, Magic	A. Krüss	99, 211
Lantern, Street	J. Neumann	102, 305
Lanyard, Elastic	J. E. Jones	99, 320
Lap-board	W. F. Gammel	102, 530
Lap-board for dress-makers	R. L. Woodbury	106, 016
Lard and oil cakes, Apparatus for steaming	C. J. Yergason	103, 116
Lard, Apparatus for stirring and cooling	C. F. Ring	109, 548
Lard, butter, &c., Package for	G. M. Huntley	109, 739
Lard, Rendering	J. W. Patterson	103, 234
Lard, tallow, and other fats, Rendering	A. Smith	99, 250
Last	N. Jones	106, 591
Last	C. S. Dunbrack	109, 399
Lasting-machine	H. N. Moyon and J. E. Lemercier	101, 151
Lasting-machine	K. Gnasan	101, 456
Last for machine-sewed turned-shoe	L. R. Blake	106, 459
Lasts, Fastening for blocks of	J. Bullivant	109, 492
Latch	F. W. Gammell	98, 684
Latch	J. A. Clark	99, 845
Latch	S. W. Drowne	100, 872
Latch	M. P. Favor	103, 314
Latch	T. Dolan	103, 586
Latch	A. A. Stuart	109, 074
Latch and lock, Combined	W. N. Bailey	98, 907
Latch and lock, Combined	F. P. Pfleghar	100, 661
Latch and lock, Combined	C. L. Dean	100, 734
Latch and lock, Combined	F. Hoppe	102, 820
Latch and lock, Combined	T. Hahn	105, 197
Latch and lock for gates, Combined	H. R. Van Epe	106, 519
Latch and lock for sliding-doors, Combined	J. Capron	109, 298
Latch, Cupboard	W. E. Sparks	107, 418
Latch, Door	J. H. Vickers	103, 819
Latch, Door	W. T. Munger	109, 834
Latches, Automatic	E. Voigt	100, 220
Latches, Guard-bolt for	E. H. Kent	108, 361
Latch for cupboard	W. E. Sparks	104, 370

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Latch for gate	H. Clymo	103,143
Latch for gates	J. Kindel	100,044
Latch for gates	W. Shumard	101,055
Latch for gates	W. R. Goodrich	104,447
Latch for gates	E. Barks and L. H. Emmons	107,589
Latch for gates, &c	W. Patton	106,955
Latch, Gate	E. E. Earll and J. B. Hunter	104,287
Latch, Gate	J. Johnson and S. Ingersoll	104,320
Latch, Gate	C. Cole	108,971
Latch, Knob	J. T. Williams	107,578
Latch, knob, Reversible	H. P. Appleton	107,587
Latch or fastening for doors	J. R. Webber	104,672
Latch, Reversible	W. T. Munger	100,313
Latch, Reversible	W. B. Smith	101,673
Latch, Reversible	W. E. Sparks	102,723
Latch, Reversible	J. Kinser	103,053
Latch, Reversible	J. Kinser	103,054
Latch, Reversible	W. H. Andrews	105,926
Latch, Reversible	C. F. Herrick	105,975
Latch, Safety	J. W. Fifield	107,695
Lathe	J. Watson	100,473
Lathe	F. B. Matteson	104,751
Lathe	P. H. Pitts	106,404
Lathe	S. U. King	109,912
Lathe-center	H. K. Porter	104,995
Lathe, Centering-attachment for	D. Kelly	100,772
Lathe-chuck	J. Rich	104,063
Lathe-chuck	J. Rich	107,291
Lathe-chuck	W. H. King	109,423
Lathe-chuck, Automatic friction-dog	L. Coes	103,015
Lathe-dog	J. B. West	99,969
Lathe-dog	J. S. Skinner	106,224
Lathe-dog	C. Buss	108,325
Lathe for making awl-handles	F. Reed	104,645
Lathe for setting jewels in time-pieces	H. H. Haskett	100,801
Lathe for squaring nuts, &c	J. Flower	101,949
Lathe for turning ovals	R. Eickemeyer	101,447
Lathe for turning wood	J. C. Brown	105,166
Lathes and other machinery, Mechanism for transmitting power to.	F. Klinkermann and J. Lamb	102,445
Lathe-spindle	J. E. Boutelle	101,975
Lathe, Spoke	C. B. Conant and H. Thompson	100,261
Lathe, Spoke	G. F. Almy	100,836
Lathes, Slide-chuck for	C. F. Stackpole	106,420
Lathes, Tool-elevator for	C. Knox	102,278
Lathes, Tool-grinding attachment to	J. Shaughnessy	103,242
Lathes, wood, Revolving center-rest for	H. J. Durgin	101,500
Lathe, Turning	H. Locke	107,513
Lathe, Wood	L. H. Dwelley	103,033
Lathe, Wood-turning	N. Norris, and C. S. and H. S. Black	99,696
Lathe, Wood-turning	L. Atwood and E. Ripley	99,810
Lathe, Wood-turning	J. Chase	100,855
Lathe, Wood-turning	O. H. Perry	101,502
Lathe, Wood-turning	J. J. Urmston	101,548
Lathe, Wood-turning	F. Baldwin	106,767
Lathing-machine	G. N. Creamer	109,391
Lath-machine	W. B. Noyes	98,996
Lath-machine	J. Cothoudt	101,659
Lath-machine	S. M. and G. E. Palmer	104,637
Lath-machine	J. J. Knowlton	106,374
Lath-machine	J. T. Hall	109,005
Lath, Machinery for sawing	W. Tuxworth	98,898
Lath, Machine for sawing	J. H. Butler	100,782
Lath, Metallic, and billets from which the same may be produced.	J. Reese	104,997
Lavatory-apparatus	D. Wellington	102,737
Leaches for tanning	W. T. H. Wharton	110,317
Lead from the precious metals, Separating	S. W. Kirk	109,743
Leads, Method of fastening	J. Merlett	104,623
Leaf-turner, Atmospheric	C. Phelps and A. K. Tuttle	109,448
Leather, &c., Process and composition for waterproofing.	W. Morris	104,629
Leather, Apparatus for tanning	O. W. Bean and W. B. Rowland	101,913
Leather, Attaching dicing-stones to wheels for polishing	H. C. Havemeyer and D. P. Burdon	109,305
Leather-buffing machine	S. D. Tripp	108,216
Leather channeling and folding tool	A. H. Bailey and W. G. Bratton	98,906
Leather, Compound for oiling, polishing, and blacking	G. F. Whitney	103,402
Leather, Compound for stuffing and finishing	T. D. Williams	107,579
Leather, Compound for treating	S. S. Walbank	110,610
Leather-cutting machine	A. L. Zent	108,220
Leather, Gauge-knife for cutting	C. T. Durham, J. Wood, and T. Hair	104,436

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Leather, hides, and skins, Dyeing, &c	C. Lond	98,466
Leather impervious to hydrocarbon liquids, Rendering	A. Warth	108,078
Leather, Machine for boarding	J. W. Hildreth	104,454
Leather, Machine for boarding	M. B. Bishop	108,319
Leather, Machine for cushioning and ventilating	E. Thomas	105,998
Leather, Machine for dressing	E. Fitzhenry	100,387
Leather, Machine for removing grease from	J. Starratt	105,506
Leather, Machine for rolling	J. A. Safford	98,889
Leather, Machine for scouring and setting out	A. W. Reid	101,508
Leather, Machine for scraping	J. T. Barnstead	101,081
Leather, Machine for skiving	J. P. Crooke	108,687
Leather, Machine for striking out	S. Hutchinson	102,270
Leather, Manufacture of	W. Pyle	105,247
Leather, Manufacture of	F. A. Holcomb	110,465
Leather, Removing colors from	E. S. Frye	100,997
Leather-renovator	W. G. Lumbard	108,161
Leather-rolling machine	H. J. Weston	101,197
Leather, Rolling-machine for	J. G. Curtis	101,234
Leather-sammier	D. C. Guttridge	99,431
Leather-scarfing machine	C. H. Helms	100,890
Leather-scouring machine	D. P. Burdon	105,419
Leather-scouring machine	H. C. Havemeyer and D. P. Burdon	108,782
Leather-scouring machine	H. C. Havemeyer and D. P. Burdon	108,783
Leather-scrap, &c., Preparation of artificial leather from	S. Sorenson	103,517
Leather-splitting and fleshing machine	J. A. Safford	98,888
Leather-splitting machine	C. S. Stearns	100,082
Leather, Tanning	C. L. Jenkins	107,177
Leather, Tanning and stuffing	W. B. Brittingham	98,916
Leather, Treating hides and manufacturing	W. H. Fuller	110,562
Ledger and fly blades, planer-knives, &c., Grinding	C. Hardy	104,584
Ledger-index	C. A. Fitch and W. O. St. John	100,994
Leech, Mechanical	F. A. Stohlmann	100,210
Leg, Artificial	L. P. Pingree	104,994
Leg, Stove and furniture	H. R. Robbins	104,771
Lemon-squeezer	V. Himmer	101,128
Lemon-squeezer	J. L. Jensen	104,159
Lenses, &c., Machine for grinding and polishing	H. D. Knight	109,325
Lens or glass for head-lights	H. C. Felthousen	110,449
Letter-box	C. R. Bancroft	103,826
Letter-box	E. T. Marsh	104,043
Letter-box	A. Potts	109,939
Lettering-block, Adjustable	E. J. Griffin	98,762
Lever and stump-puller	J. G. Fox	99,179
Lever, Ratchet	H. W. Millar	103,763
Lid and plate lifter and pot-hook	T. Simpson	103,247
Lid-fastening for burial-casket	W. Hamilton	107,253
Life-boat	P. Heinrich	102,261
Life-boat	T. Masac	103,637
Life-boat	J. M. Starr	110,600
Life-preserver	C. Krejci	100,906
Life-preserver	L. Jacobs	102,823
Life-preserver	T. B. Boyd	104,546
Life-preserver	E. M. Crandall	108,606
Life-raft	J. Rider	100,191
Life-raft	D. McFarland	110,059
Lifter for kitchen use	T. S. Coffin	99,061
Lifting-machine	C. H. Mann	104,973
Light from heavy hydrocarbons, Production of	R. S. Merrill	100,915
Lightning-conductors, tubular, Machine for making	B. F. Housel and S. O. Thayer	107,051
Lightning-rod	J. D. West	99,381
Lightning-rod	D. Munson	99,461
Lightning-rod	D. Munson	100,549
Lightning-rod	G. Row	109,455
Lightning rod and conductor	J. W. Hankenson	99,184
Lights, street and other, Gas-carbonizing attachment for.	S. Whitney	107,743
Lime and mortar, Preparation of	L. B. Pitcher	106,282
Lime barrel or kibble	F. K. Winsor	103,953
Lime from hard water, Device for removing	K. Frazer	106,759
Lime-spreader	W. C. Burnett	104,694
Line and wire tightener	T. Crosby	108,766
Liniment	W. H. Barr	103,411
Liniment	O. P. Hare	104,146
Liniment	J. C. Branch and H. P. Quin	108,963
Liniment for burns, scalds, &c	L. Wolff	101,340
Liniment for the cure of rheumatism	A. A. Riddick	110,288
Liniment for treating neuralgia, &c	G. L. Fearis	104,721
Liniment, Horse and cattle	H. H. Hanmer	109,203
Lining and drying pasteboard, Machine for	G. L. Jaeger	103,942
Lining Bessemer-converters	A. L. Holley	104,592
Lining for fire-pot, Iron	E. A. Tuttle	109,080

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Link, Adjustable	A. J. Dexter	105, 921
Link for connecting the handles and valve-rods of pumps	S. Selden and M. Griswold	107, 965
Link for endless-chain horse-power	G. L. Burt	108, 564
Link for operating the annular series of gates for turbine water-wheels.	F. Trump	109, 560
Link for water-wheel gates, Adjustable	W. A. Parmele	103, 122
Linseed-oil, Process of purifying	R. T. Clarke	103, 141
Lint-room and cotton-press, Combined	I. H. Albertson	110, 327
Liquid, Conveying	T. Donnelly and J. H. and A. Anchors	104, 284
Liquid-cooler for cooling liquids under pressure	E. Bigelow	108, 318
Liquid for raising paste or dough	A. and G. Sauer and L. Cachal	106, 913
Liquid-gauge and hydrometer, Combined	S. R. P. Camp	103, 976
Liquid measure and funnel	J. Huff	106, 589
Liquids, Apparatus for ascertaining the amount of acid in.	H. Twitchell	99, 976
Liquids, Apparatus for evaporating	G. F. Grey	103, 602
Liquids, Apparatus for measuring	E. F. Wilder	101, 060
Liquids, Apparatus for measuring	M. H. Wiley and T. Miller	103, 404
Liquids used in seasoning and preserving wood, Treating and recovering the.	C. M. Cresson	100, 874
Liquor containing gelatine or glue, Treating	O. Lugo	100, 647
Liquors, alcoholic, Ageing	H. Purdy	108, 388
Liquors, alcoholic and vinous, Apparatus for deodorizing.	L. Bradley	108, 588
Liquors, medicated malt, Manufacture of	H. Kessler	102, 833
Liquors, Refining and ageing	S. H. Gilman	102, 806
Liquor thief and measure	S. C. Catlin	110, 202
Lithographic copies from photographic negatives, Mode of producing.	E. Rye	100, 551
Loading and dumping machine, Portable	W. D. Dorsey	110, 216
Loads on wire rope, Apparatus for transporting	C. Hodgson	109, 317
Loaf-sugar, Machine for cutting	A. and F. Brown	109, 293
Loaf-sugar, Machine for cutting	F. Brown	109, 295
Loaf-sugar, Machine for cutting	F. Brown	109, 296
Lock	L. Beer	98, 545
Lock	E. Fay	98, 577
Lock	H. S. Shepardson	99, 013
Lock	N. Petré	99, 344
Lock	Z. Sargent	100, 195
Lock	C. E. Dickerman	101, 355
Lock	E. Voight and P. P. Mathes	101, 084
Lock	M. O. Baker	103, 542
Lock	J. Brady	103, 838
Lock	J. Gérard	103, 868
Lock	W. M. Keefer	104, 598
Lock	T. Powers	107, 100
Lock	H. Willard and P. Trunz	107, 145
Lock	J. Brady	108, 098
Lock	J. Brady	108, 099
Lock	C. C. Dickerman	108, 770
Lock	H. Willard	110, 412
Lock	T. P. Sink	109, 954
Lock, Alarm	J. Sargent	98, 623
Lock and bolt spindle	G. B. Allen	100, 708
Lock and latch, Combined	S. C. Weddington	107, 207
Lock and latch, Combined	F. M. Ranous	110, 071
Lock and latch, Combined	C. J. Kehoe	109, 220
Lock and latch for sliding-doors, Combined	H. Fischer	108, 897
Lock, Bung	G. Heath	109, 890
Lock, Canal	J. L. Howard	98, 967
Lock, Car-door	E. Miller	105, 965
Lock, Car-seat	A. Loeffelholtz and A. Prier	110, 254
Lock, Car-seat	S. Bentley and C. Mee	100, 714
Lock, Combination	F. B. Kalkbrenner	108, 360
Lock, Combination	S. K. Seelye	109, 457
Lock, Combination	W. Andrews	101, 564
Lock, Door	J. Linder	104, 749
Lock, Door	H. Arden	108, 952
Lock, Electro-magnetic	G. W. Pitcher	105, 721
Locket for photographs, Tablet	V. L. Maxwell	102, 290
Lock, Faucet	B. Steinmetz	107, 442
Lock for bags, &c	A. Young	104, 304
Lock for fire-arms	H. Ahrend	107, 585
Lock for pianos, &c	G. A. McIlhenny	105, 105
Lock for pipe-couplings	A. W. Cram	109, 182
Lock for railroad-switches	F. Brackett	103, 711
Lock for securing revenue-stamps on beer-barrels	J. L. Harley	107, 176
Lock for securing stamps upon barrels	H. O. Nauen	98, 616
Lock for sewing-machine case	H. O. Nauen	107, 401
Lock for sewing-machine case	A. G. Zeising	100, 833
Lock for ships' pumps	F. W. Judd and G. M. Hubbard	106, 830
Lock for the meeting-rail of sashes		

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Lock for traveling-bag	J. B. Sargent	103, 781
Lock for umbrellas	H. Plumb	98, 797
Lock for wagon-seat	E. Hitt	100, 150
Lock, furniture, Automatic	J. T. Brown and I. Hird	108, 874
Lock, Indicator	E. M. and J. E. Mix	98, 513
Locking-bolt	H. Feyh	107, 350
Locks in hoops, Machine for cutting	A. Cutter	108, 114
Lock-nut	G. C. Heermance	99, 315
Lock-nut	M. Langhorne	99, 919
Lock-nut	A. C. Binns	101, 421
Lock-nut	E. R. Shepard	102, 600
Lock-nut	E. T. Ligon	103, 348
Lock-nut	U. B. Vidal	103, 089
Lock-nut	J. Miller, jr	108, 927
Lock-nut	P. Dyer, jr., A. Parker, and W. B. Way	108, 967
Lock-nut	J. L. Randolph	110, 499
Lock-nut and splice-bar, Combined	R. L. McGowan	106, 849
Lock, Pad and trunk	A. M. Adams	108, 951
Lock, Permutation	J. P. Schmucker	98, 523
Lock, Permutation	S. N. Brooks	98, 536
Lock, Permutation	J. Sargent	98, 622
Lock, Permutation	F. E. Isham	98, 972
Lock, Permutation	H. Gross	101, 362
Lock, Permutation	J. H. Larry	101, 632
Lock, Permutation	J. C. Hintz	103, 183
Lock, Permutation	H. Gross	103, 450
Lock, Permutation	W. Kock	104, 961
Lock, Permutation	W. F. Kistler	105, 091
Lock, Permutation	N. Macneale	105, 102
Lock, Permutation	W. Streeter	105, 383
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Lock, Permutation	M. Hainque	107, 251
Lock, Permutation	J. E. and L. P. Barnes	107, 590
Lock, Permutation	W. N. Hall	107, 705
Lock, Permutation	H. Gross	108, 134
Lock, Permutation	J. C. Hintz	108, 481
Lock, Permutation	E. W. Brettell	108, 561
Lock, Permutation	C. Flesch	110, 560
Lock, Permutation	F. H. Brown	108, 964
Lock, Piano	J. Thielemann and P. Meyer	103, 525
Lock, Piano	J. Murphy	107, 947
Lock, safe, Electro-magnetic	C. O. Yale	107, 993
Lock, Sash	G. W. Dubuisson	105, 787
Lock-spindle	J. L. Hall	105, 800
Lock, Time	C. F. Atwood	105, 291
Lock, Trunk	E. L. Gaylord	99, 553
Lock, Trunk	J. Terry, jr	107, 123
Lock, Trunk	J. Morgan	108, 166
Lock, Umbrella	H. Clarke	109, 386
Lock, Wagon	S. S. Hurlbut	107, 914
Lock, Watch-chain	S. Pinover	104, 640
Locomotive	W. A. Foster	107, 472
Locomotive	J. M. Ure	107, 983
Locomotive attachment	C. Lewis	107, 511
Locomotive head-light	R. W. Love	103, 905
Locomotive head-lights, Burner for	A. C. Vaughan	106, 971
Locomotives, Ash-pan for	L. H. Dee	105, 317
Locomotives, Device for adjusting the cross-heads of	J. D. Ackley and R. English	103, 407
Locomotives, Feed-water connecting-pipe for	C. A. Peavey	103, 494
Locomotives, Feed-water heater for	I. P. Magoon	101, 287
Locomotives, Feed-water heater for	J. S. Hooton	105, 207
Locomotives, Foot-board for	G. F. Morse	102, 299
Locomotives, Machine for re-turning crank pins of	N. Wright	99, 993
Locomotive-spark arrester	B. P. Freeman and P. Payton	103, 731
Locomotives, Valve-gear for	A. Onslow	103, 647
Locomotives, Water-supply pipe for	F. Gerrard	98, 685
Locomotive tender-loader	A. H. Spencer	99, 723
Log-loader	J. H. Harvey	103, 608
Log loader and piler	J. G. Brady	104, 548
Logotype	W. H. Wilkinson	106, 641
Logs, Apparatus for blasting	M. Cooke	102, 503
Logs, Hauling up	S. H. Richardson	103, 373
Logs, Machine for turning	W. E. Hill	106, 160
Logs, Machine for turning	E. H. Stearns	110, 398
Looking-glasses, signs, &c., Machine for ornamenting and lettering.	W. M. Davis	108, 458
Loom	G. S. Faulkner	99, 177
Loom	J. R. Norfolk	99, 586
Loom	E. B. Bigelow	101, 088

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Loom	A. R. Field	101, 969
Loom	P. F. Ramel and J. Drogat	102, 039
Loom	C. W. Gilbert	103, 600
Loom	J. J. Herbert	103, 880
Loom	H. D. Davis	106, 334
Loom	L. M. Gilbert	106, 809
Loom	J. Miller	108, 281
Loom	W. J. Porter and W. Cross	108, 292
Loom	W. S. Laycock	110, 050
Loom	R. Whitehill	110, 534
Loom-cam	G. O. Wickers and T. J. McClary	100, 575
Loom-circular	C. Bryant	98, 738
Loom for weaving irregular fabrics	A. Goullioud	101, 006
Loom for weaving rattan	S. L. Fitts	106, 477
Loom, Hand	J. E. Nute	107, 094
Loom-harness, Machine for varnishing and dressing	E. J. Ellis	106, 676
Loom, Harness-operating mechanism for	R. Bleakie	103, 708
Loom, Lappet	W. Aspinall	104, 667
Loom, Let-off mechanism for	J. Day	102, 506
Loom, Let-off mechanism for	J. Magee	104, 328
Loom, Pattern-chain for	H. D. Davis	102, 094
Loom, Picker-check for	W. Montgomery	102, 145
Loom, Power	J. Bullough	98, 919
Loom, Power	T. H. Müller	99, 223
Loom, Roller-jaw temple for	W. H. Burns	99, 287
Looms, &c., Measuring-apparatus for	J. A. Bradshaw and S. L. Crockett	108, 671
Looms, Belt-shifting mechanism for	L. J. Knowles	106, 267
Looms, Cloth-winding mechanism for	W. A. Arnold	109, 794
Looms, Harness-operating mechanism for	G. S. Faulkner	99, 176
Looms, Harness-operating mechanism for	J. Ashworth	106, 306
Looms, Harness-operating mechanism for	A. R. Field	106, 571
Looms, Harness-operating mechanism for	J. C. Duckworth	109, 824
Loom, Shuttle for	E. F. Burrows	102, 368
Loom, Shuttle for	H. Carstaedt	107, 220
Looms, Let-off mechanism for	D. Long and J. Preston	99, 044
Looms, Let-off mechanism for	E. B. Bigelow	103, 415
Looms, Let-off mechanism for	L. N. Fletcher and I. M. Page	104, 949
Looms, Let-off mechanism for	M. C. Burleigh	106, 543
Looms, Mechanism for operating the pickers of	E. A. Wareham and W. H. Waggoner	107, 313
Looms, Mechanism for actuating the picker-staff in	M. C. Burleigh	106, 116
Looms, Mechanism for operating shuttle boxes in	L. J. Knowles	110, 146
Looms, Mechanism for stopping the shuttle in	S. Boorn	101, 817
Looms, Operating the picker-staff of	W. Rouse	107, 412
Looms, power, Let-off and tension-mechanism for	E. B. Bigelow	110, 000
Looms, Roller-temple for	W. W. Dutcher	106, 797
Looms, Roller-temple for	W. H. Burns	109, 583
Looms, Shuttle-driving mechanism for	J. Stever	99, 024
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Shoe-fastening	J. Koykendall	107, 064
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Shutter-fastener	H. Grow	108, 256
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Shutter-fastening	S. D. Arnold	105, 402
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Shutter-worker	A. C. Cornell	101, 983
Shutter-worker	H. Wolff	102, 191
Shutter-worker	H. Wolff	102, 192
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Side-saddle	W. Hill	104, 456
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Side-saddle tree	W. Hill	104, 455
Side-saddle tree	A. Lawrence	110, 147
Sieve	R. J. Mann	106, 597
Sieve, Grain and seed	N. S. Greenwood	105, 066
Sifter	S. O. Blanding	110, 543
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Sifting-machine	G. Sidey	105, 989
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Smut-machine	W. H. Kite and G. S. Newman	110, 475
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Soap, Manufacture of	L. Groux	105, 670
Soap, Manufacture of	A. Warfield	108, 540
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Soldering-furnace	J. A. Bostwick	104, 412
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Sower and cultivator, Seed	G. Bradley	104, 926
Sower, Cotton-seed	J. Shearer	104, 893
Sower, Fertilizer	T. J. West	100, 573
Sower, planter, cultivator, scraper, and gang-plow, Combined.	J. P. Eddleman	103, 855
Sower, Seed	J. H. Thomas	99, 498
Sower, Seed	T. Howell	103, 464
Sower, Seed	S. A. Scott	103, 606
Sower, Seed	F. H. Manny	103, 760
Sower, Seed	D. W. Guseman, J. A. Davis, and H. D. McGeorge.	104, 302
Sower, Seed	W. Painter	104, 992
Sower, Seed	J. G. Thompson and F. H. Briggs	109, 470

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Spade and shovel	J. Caylor	106, 779
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Spark-arrester	W. Ballard	104, 199
Spark-arrester	J. Smith	106, 515
Spark-arrester	J. Wiedman, J. Major, and J. J. Sample	110, 395
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Spectacles	C. C. St. Clair	104, 656
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Spider-furnace for burning bagasse	J. Amick	101, 968
Spider, skillet, and gridiron, Combined	T. Foster	100, 397
Spike, bolt, and rivet machine	M. Decelle	103, 025
Spike-drawer	B. B. Wood	106, 015
Spike-extractor	W. Kegg	98, 977
Spike-extractor	L. Lehman	104, 966
Spike-extractor	W. Ward	105, 016
Spike for railways	J. Montgomery	100, 055
Spikes, Art of manufacturing	D. Eynon	107, 602
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Spindle-bolster	I. P. Richards	106, 031
Spindle for safe-lock	R. Haile	104, 020
Spindle for spinning-machine	G. W. Daugherty	103, 996
Spindles, Oil-cups and bearings for	E. Convers	104, 115
Spindles, Self-packing bush for	C. Miller	102, 848
Spindle-step	E. D. Murfey	109, 238
Spindle-step cap	W. E. Draper and J. B. Bancroft	102, 514
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Spinning-machine	L. W. Felt	103, 858
Spinning-machine	W. La Banister and L. V. Doggett	105, 815
Spinning-machine	W. Duffner	106, 675
Spinning-machine	W. D. Huse	108, 356
Spinning-machine, Drawing and twisting head for	S. W. Lawrence, P. Walden, and J. W. Huntoon.	108, 709
Spinning-machine, Hand	W. H. Main	103, 906
Spinning-machines, Saddle for	J. S. Casey	107, 758
Spinning-machines, Trumpet for	G. Draper	110, 021
Spinning-mules, Device for preventing the uncoupling of clutches in.	H. Macon and J. Hunt	105, 705
Spinning-ring	W. F. Draper	106, 140
Spinning, Self-acting mules for	J. Cumnock	108, 688
Spinning, Twisting-tubes for	C. D. House	99, 674
Spiral-fastening	C. S. Muscroft	103, 645
Spirit-level	E. A. and C. M. Stratton	100, 463
Spirits, Ageing	A. Caldwell	107, 658
Spirits, Apparatus for distilling	F. M. Young	102, 745
Spirits, Apparatus for rectifying	L. S. Snediker	103, 790
Spirits, Apparatus for redistilling and rectifying	A. Noteman	102, 033
Spirits, Rectifying and improving alcoholic	D. Worthen	107, 645
Spirits, Treating grain to obtain extracting-matter for coloring and flavoring.	S. H. Gilman	104, 138
Spittoon	W. H. Topham	106, 094
Spittoon-holder	C. O. Haley	107, 382
Spittoon, Railroad-car	W. J. Beach	104, 691
Spittoons, Attaching, to floors of railroad-cars	J. S. Daggett	99, 857
Splint for fractured limbs	G. S. King	101, 743
Splint for fracture of clavicle	H. L. Richardson	99, 709
Split-ring	T. S. Hattersley	99, 891
Spoke for wagon-wheels	R. Potts and N. Ogden	102, 961
Spokes, Device for tenoning	C. W. Tompkins	101, 945
Spokes, Machine for dressing	R. H. and H. S. Boynton	108, 439
Spokes, Machine for finishing	W. P. Hale	98, 955
Spokes, Machine for smoothing	H. Keys	99, 913
Spokes, Machine for tenoning	J. P. Crutchfield and C. T. Whitten	98, 746
Spokes, Machine for tenoning	J. W. Huffman	107, 911
Spoke-shave	J. Davies	98, 475
Spoke-shave	G. N. Stearns	110, 168
Spoke-socket for carriage-wheels	A. J. Carleton	101, 821
Spoke-tenoning and hub-boring machine	J. Deming	103, 157
Spool and needle-threader, Combined	G. P. Farmer	106, 925
Spool-case	W. F. Foster	100, 995
Spool-holder	J. C. Koch and B. J. Beck	107, 786
Spooling-machine	G. W. Daugherty	103, 955
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Spool-machine	J. F. C. Rider and C. P. Brownell	105, 250
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Spool-thread case	J. D. Carter	106, 128
Sponge, Coach-cleaning	H. D. Olsen	108, 076
Sponge, Multiple	H. E. Smith	101, 776
Sponges, Bleaching, tanning, and coloring	F. Braun and A. T. Schmidt	102, 760
Spoon	G. H. Spencer	107, 419
Spoon-holder	S. Simpson	100, 938
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Spring	J. M. Schmidt	108, 636
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Spring, Buggy	G. W. Kenan	107, 986
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Spring, Car	C. French	101, 724
Spring, Car	F. W. Rhinelander	103, 778
Spring, Car	R. Rose	105, 524
Spring, Car	P. G. Gardiner	107, 934
Spring, Car	P. G. Gardiner	107, 935
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Spring, Carriage	C. Sheldon	99, 940
Spring, Carriage	B. T. Henry	100, 926
Spring, Carriage	J. S. Foster	104, 135
Spring, Carriage	R. E. Walker	106, 005
Spring, Carriage	S. Steward	108, 649
Spring, Carriage	F. B. Morse	108, 629
Spring, Carriage	T. H. Prushaw	109, 544
Spring, Carriage	D. S. Abbott	109, 993
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Spring, Corset	F. W. Marston	106, 381
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Spring, Door	B. G. Fitzhugh	100, 388
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Spring, Door	J. T. Folwell	103, 859
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Spring, Door	W. F. Kells	108, 368
Spring, Door	W. H. Stafford	109, 962
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Spring for beds	C. Rich	106, 980
Spring for beds, sofas, &c	W. Lord	106, 069
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Spring for vehicles	H. E. Wolcott	108, 745
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Spring, Gate and door	M. Harrington	109, 542
Spring-guard	J. S. Behm	102, 909
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Spring-headed screw-bolt	D. R. Pratt	99, 473
Spring, Helical	W. R. Nichols	102, 421
Spring-hinge for doors, &c	A. Rankin	107, 813
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Spring-holder for wagon-seats	J. A. L. Forgeo	99, 446
Spring-nut	D. R. Pratt	99, 892
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Spring, Railway-car	D. G. Daniels	98, 672
Spring, Railway-car	F. W. Rhinelander	99, 475
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Squares, &c., Machine for graduating	C. S. Bement	104, 949
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Stair-rod	W. M. Clayton	100, 858
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Stamping, pressing, and pointing horseshoe-nails, Machine for.	F. Sandham	109, 844
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Steam and water supply and pressure-regulator	J. C. Hagan	108, 905
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Steam-boilers, Non-conducting composition for covering.	J. D. Van Arnum and W. Ives	98, 818
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Steel-headed rails, Manufacturing a fagot for	J. Abterdam	98, 537
Steel, Manufacture of	J. Baur	99, 624
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Steel, Manufacture of	C. M. Nes	102, 146
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Steel, Manufacture of	C. M. Nes	108, 267
Steel, Process for tempering	J. Jenkins	102, 550
Steels, Device for attaching to corsets	W. A. and H. E. Starrett	107, 974
Steelyard	W. B. Preston	100, 066
Steering-apparatus	E. G. Green	100, 750
Steering-apparatus	C. M. Hayden	104, 955
Steering-apparatus	D. De Haven	105, 436
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Steering-apparatus	C. G. Gumpel	106, 358
Steering-apparatus	T. C. Purington	107, 719
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Steering-apparatus, Steam	H. P. Hicks	103, 458
Steering-propeller	F. G. Fowler	98, 483
Stench-trap, Casting	J. L. White	109, 786
Step and bolster for cotton-spindles	C. H. Chapman	99, 534
Step for spindle to spinning-machines	J. P. Hillards	99, 087
Step for street-car	A. A. Daly	98, 750
Step-ladder, Extension platform	G. A. Schachtel	109, 256
Step-spindle	E. Dougherty	101, 109
Step-support for mill-spindles	J. Russell	99, 353
Stereoscope	A. Beckers	99, 136
Stereoscope, Box	S. T. Jennings	103, 817
Stereoscope, Folding	E. K. Page	104, 990
Stereoscope, Revolving	A. Beckers	99, 135
Stereotype-matrices, Machine for preparing	W. T. Morgans	108, 813
Stereotyping	A. Chase	108, 879
Still, Alcohol and spirit	J. Dawson	103, 783
Still for distilling hydrocarbons	J. B. Edwards	100, 874
Still for hydrocarbons	S. A. Hill and C. F. Thumm	101, 364
Still for hydrocarbons	S. A. Hill and C. F. Thumm	101, 365
Still for hydrocarbons, &c	J. Gracio	99, 081
Still for petroleum	J. Warren	102, 186
Still for petroleum and other oils	S. Van Syckel	110, 516
Still for spirits	E. Melton	104, 758
Still for whisky and other spirits	H. G. Dayton	98, 853
Still, Fruit and alcohol	J. A. Campbell	103, 547
Still, Oil	J. Hofferberth	105, 683
Stirrer and egg-beater	C. Lehmann	101, 361
Stirrup	A. H. Blossom	105, 893
Stirrup and spur for saddles	H. Fellows	99, 767
Stirrup, Saddle	J. A. Dunnagan	103, 031
Stirrups, Machine for bending	D. Forest	99, 303
Stock-barn	J. Tyler	106, 095
Stocking	F. Woodward	106, 017
Stocking-last and yarn and needle holders combined	D. B. Keith	109, 519
Stockings, &c., machine-knit, Method of producing selvages on.	H. A. House	101, 016

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Stocking, Water-proof	F. Curtis	99, 412
Stone and stump extractor	J. B. Lyons	100, 165
Stone, artificial, &c., Machine for mixing the materials to form.	J. S. Elliott	110, 023
Stone, artificial, Manufacture of	J. M. Ordway	98, 517
Stone, artificial, Manufacture of	F. Coignet	99, 062
Stone, artificial, Manufacture of	S. Sorel	100, 945
Stone, artificial, Manufacture of	A. H. Frear	101, 253
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Stone, artificial, Removing soluble salts from	E. L. Ransome	108, 627
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Stone-channeling machine	V. W. Blanchard	99, 130
Stone-channeling machine	G. J. Wardwell	105, 391
Stone-cutting machine	H. Young	99, 513
Stone-cutting machine	H. and J. L. Young	108, 928
Stone-cutting machine	H. Young	108, 424
Stone-dressing machine	J. Coulter and H. Harpin	98, 850
Stone, Machine for breaking	A. Dietz	107, 769
Stone, Machine for cutting	H. and J. L. Young	107, 847
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Stone, Machine for dressing	A. G. Anderson	105, 150
Stone, Machine for sawing	L. Ward	108, 307
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Stone-sawing machine	G. Morgan	105, 359
Stones, &c., Separating, from clay	D. J. Hunter	107, 053
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Stool and traveling bag	J. Salisbury and B. Wilbur	109, 058
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Stop-valve for steam and other machinery	S. J. Peet	99, 943
Stop-valve for steam and other machinery	S. J. Peet	99, 944
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Stove, Base-burning parlor cooking	H. J. Frizello	98, 580
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Stove, Coal	D. W. C. Clark and H. W. Cady	104, 369
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Stove, Coal	A. C. Corse	107, 597
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Stove, Cooking	S. S. Jewett and F. H. Root	104, 461
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Stove, cooking, Summer	C. Cole	104, 272
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Stove-door	J. A. Price	104, 493
Stove door and hearth, Combined	T. Scantlin	101, 316
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Stove-fastener	P. Klotz	109, 022
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Stove for burning stumps	M. T. Hitchcock	100, 404
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Stove, Heating	H. Besse	101, 420
Stove, Heating	M. C. Hull	1 1, 733
Stove, Heating	D. L. Stiles	102, 736
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Stove-leg	D. L. Bates	106, 6.0
Stove-leg	S. E. Chubbuck	107, 874
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Stove-pipe damper	W. J. Keep	100, 641
Stove-pipe damper	G. Hollinger and S. H. Fry	102, 206
Stove-pipe damper	W. J. Keep	102, 407
Stove-pipe damper	R. M. Hermance	102, 539
Stove-pipe damper	W. Taylor	103, 696
Stove-pipe damper	D. Sanders	104, 889
Stove-pipe damper	F. Rossman	106, 410
Stove-pipe damper and ventilator	A. R. Burdick	100, 369
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Stove-pipe shelf	R. R. Gorton	105, 327
Stove-pipe shelf	J. H. Shaut	107, 825
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Stove-pipes, Water-heating attachment for	N. Rowe	101, 923
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Stove-plates, Casting lugs in	J. M. Fife	102, 933
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Straw and feed cutter	A. Werner	106, 975
Straw and other paper board, Manufacture of	B. F. Field	105, 700
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Straw-boards, Machine for attaching thin paper to	M. Fitzgibbons	103, 319
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Street-car, Device for starting	G. P. Frick	108, 127
Street-car, Double and single tree attachment for	J. F. Lowe	109, 020
Street-car, Pneumatic	D. Myers	108, 380
Street-cars, Device for propelling	S. Jones and B. Terfloth	105, 083
Street-cars, Motive-power for driving	P. E. McDonnell	106, 000
Street-indicator for city cars	W. Brown	107, 440
Street-lamp, Vapor-burning	C. E. Smith and H. J. Rice	106, 630
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Stuffing-box	A. J. Prescott	110, 302
Stump-extractor	A. Gummer	99, 311
Stump-extractor	J. Higgins	100, 529
Stump-extractor	H. Schwartz	100, 674
Stump-extractor	W. O. Johnson	100, 770
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Stump-extractor	C. Bilhars	104, 693
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Stump-extractor	W. Smith	109, 466
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Stump-joint for carriage-top braces	F. Van Patten and E. D. Clapp	109, 784
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Stumps, Machine for extracting	J. A. Jenkins	102, 043
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Subsoil-attachment for plow	A. F. Roberts	108, 930
Subsoil-pulverizer	G. S. Newsom	106, 195
Sucker-rod connection	G. M. Backus	105, 410
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Swing, Revolving	A. Graves	101, 600
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Table, Dining	J. L. Knight	103, 625
Table, Dining	M. P. Boyd	106, 460
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Table for dovetailing-machine	J. Dill	104, 943
Table for silvering glass, Heating	H. B. Walker	108, 413
Table, Ice-crushing	S. H. and D. W. Davis	98, 852
Table, Ironing	S. Merritt	99, 919
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Table, Ironing	J. F. Martin and W. A. Shaffner	107, 271
Table, Ironing	H. McChesney	107, 940
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Table-leaf support	A. Anderson	100, 965
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Tablet for tombs	H. F. Bailey	101, 567
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Tackle-block	R. J. Smith	109, 260
Tackle-block	H. W. Wright	106, 977
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Tag-attachment	H. Fisher	102, 800
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Torpedo for oil-wells	H. J. Smith	107, 901
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Track-laying machine	J. R. Adams	100, 834
Track-lifter	J. M. Batchelor	106, 913
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Wheels, Railway-car	J. N. Farrar	100, 310
Wheel, Steam	J. N. Pommert	109, 650
Wheels, water, Spiral-current	J. Zimmerman	99, 272
Wheels, wrought-metal, Manufacture of	B. Brunnon	109, 380
Wheel-tire, Tightening	S. R. Bolton	103, 550
Wheel, Water	J. D. Bryson and W. R. Dunlap	98, 552
Wheel, Water	F. O. Clarke	98, 561
Wheel, Water	E. M. Buckley	98, 739
Wheel, Water	W. M. Wheeler	98, 898
Wheel, Water	J. Rogers	99, 604
Wheel, Water	B. W. Tuttle	99, 374
Wheel, Water	I. Carter	99, 532
Wheel, Water	G. A. Houston	99, 549
Wheel, Water	S. Martin	100, 648
Wheel, Water	A. F. Murray and H. Green	100, 920
Wheel, Water	T. H. Powers	101, 036
Wheel, Water	W. L. Selleck	101, 050
Wheel, Water	A. N. Wolf and J. Hang	101, 199
Wheel, Water	J. E. Gillespie	101, 256
Wheel, Water	P. W. Yarrell	101, 402
Wheel, Water	J. Busbo	101, 579
Wheel, Water	J. L. Frisbie	101, 725
Wheel, Water	T. Bristol	102, 809
Wheel, Water	W. H. Hubbard	102, 930
Wheel, Water	W. T. Duvall	103, 168
Wheel, Water	J. Krail	103, 475
Wheel, Water	H. W. Shipley	103, 513
Wheel, Water	W. W. Richardson	103, 657
Wheel, Water	E. Dougherty	103, 725
Wheel, Water	W. Braidwood and H. J. Hewitt	103, 972
Wheel, Water	W. Haslup	104, 026
Wheel, Water	A. C. Corpe	104, 428
Wheel, Water	W. Greenwell	104, 579
Wheel, Water	J. C. Kelly	104, 600
Wheel, Water	O. J. Bollinger	104, 697
Wheel, Water	O. Fuller	104, 726
Wheel, Water	J. Bastion	105, 163
Wheel, Water	J. Campbell	105, 301
Wheel, Water	H. J. White	105, 532
Wheel, Water	C. D. Wright	105, 536
Wheel, Water	W. Selleck	105, 600
Wheel, Water	G. H. Jones	105, 604
Wheel, Water	A. Kneass	105, 696

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Wheel, Water	G. Miller	105, 712
Wheel, Water	V. M. Baker	106, 766
Wheel, Water	D. Cushman	106, 787
Wheel, Water	W. S. Place	106, 958
Wheel, Water	J. R. Richardson	106, 962
Wheel, Water	J. M. Cook	107, 007
Wheel, Water	T. H. Risdon	107, 027
Wheel, Water	D. Lane	107, 789
Wheel, Water	E. Parker	107, 805
Wheel, Water	A. P. Teachout	108, 909
Wheel, Water	D. O. Holman	108, 482
Wheel, Water	I. W. Snyder	108, 529
Wheel, Water	J. T. Case	108, 757
Wheel, Water	F. G. Coggin	108, 970
Wheel, Water	B. J. Barber	109, 099
Wheel, Water	W. Blake	109, 170
Wheel, Water	J. A. Morgan	109, 335
Wheel, Water	K. and T. Cox	109, 390
Wheel, Water	D. Reynolds	109, 664
Wheel, Water	W. A. Terry	109, 683
Wheel, Water	G. W. Wernts	109, 784
Wheel, Water	W. H. Elmer	109, 885
Wheel, Water	M. Gregg	109, 891
Wheel, Water	M. Millard	109, 925
Wheel, Water	J. Turner and S. Woodward	109, 972
Wheel, Water	D. W. Case	110, 009
Wheel, Water	R. Stinson	110, 169
Wheel, Water	J. W. Bookwalter	110, 544
Wheel, water, Combination	J. and H. Fuller	100, 746
Wheel, water, Current	A. W. Storey	98, 891
Wheel, water, Power	J. Nipp, jr	106, 715
Wheel, water, Regulator	H. D. Snow	100, 942
Wheel, Wheelbarrow	G. Harris	105, 939
Wheel, Wind	E. S. Smith	99, 363
Wheel, Wind	C. Mahler	100, 538
Wheel, Wind	P. Heald	103, 742
Wheel, Wind	C. H. St. Clair	104, 918
Wheel, Wind	J. C. Coleman and G. Strayer	105, 915
Wheel, Wind	J. O. Heyworth	107, 372
Wheel, Wind	B. C. Terry	107, 563
Wheel, Wind	J. O. Heyworth and H. E. Fessel	108, 503
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Whiffletree	J. V. Norton	99, 936
Whiffletree	J. J. Adair	103, 118
Whiffletree	A. Green	105, 065
Whiffletree, Safety	M. Stone	103, 679
Whiffletree trace-hook	C. C. Bradley and B. F. Upson	105, 899
Whip	A. C. Rand	101, 912
Whip	A. C. Rand	101, 913
Whip	A. C. Rand	101, 914
Whip	A. C. Rand	101, 915
Whip	L. Hull	102, 007
Whip	A. C. Rand	102, 863
Whip	L. Hull	103, 467
Whip, Detachably tipped	P. Boyden	108, 679
Whip-holder	N. Hanchett	107, 175
Whip-holder for carriages	E. W. Scott	110, 503
Whip, Safety-socket for	W. D. Putnam	103, 368
Whips, Method of covering	V. W. Crowsen	104, 423
Whip-socket	E. Chamberlin	102, 221
Whip-socket	E. Chamberlin	106, 908
Whip-socket and rein-holder	J. R. Finney	101, 247
Whip-socket ring	J. J. Hillman	105, 574
Whisky and other spirits, Apparatus for ageing	J. P. Greeley	109, 611
Whisky and other spirits, Treating	O. Mariand	98, 784
Whisky, &c., Rectifying	H. Fake	105, 788
Whisky, Rectifying, during distillation	H. Fake	99, 175
Whistle, Speaking-tube	T. J. Woolcocks	103, 406
White-lead, Manufacture of	J. Cuddy and G. S. Selden	104, 434
White-lead, Manufacture of	J. Cuddy	105, 431
White-lead, Manufacture of	C. W. Dwelle	106, 571
White-lead, Manufacture of	R. F. Hatfield	109, 125
Wick-tube for lamps	J. H. Gray	100, 985
Winding and spooling machinery, Traverse-motion for	J. E. Atwood	109, 708
Winding-machine	S. Eccles	109, 502
Winding-watch	A. E. Guyot	101, 850
Windlass	A. Hitchcock	105, 668
Windlass	A. Russell	105, 962
Windlass	E. and G. N. Waterbury	110, 521
Windlass, Adjustable	J. S. Brown	100, 594
Windlass, Oyster-dredge	T. Howard and O. Reeder	99, 990

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Windmill	W. Peck	100, 061
Window	E. W. Giddings	104, 290
Window	T. Bullivant	108, 443
Window	D. Goodwillie	108, 348
Window and door-screen	T. Donato	103, 854
Window-blind	S. Eich	104, 717
Window-blind	S. Pocock	108, 182
Window-blind	J. P. Boyd	108, 357
Window-blind	F. R. Osgood	108, 819
Window-blind, Folding	B. C. Davis	101, 107
Window-blind, Machine for wire	S. C. Trubee	99, 263
Window-button	J. Stephens and J. Collins	105, 508
Window-curtains, Apparatus for operating	H. St. John	103, 357
Window fastening	A. J. Cleveland	99, 780
Window-frame	A. W. Stine	106, 634
Window-frame	W. H. Griffin	109, 892
Window-frame	W. K. Thomas	104, 228
Window-guard	E. S. Legg	101, 285
Window-guard against flies and mosquitoes	S. P. Loomis	98, 905
Window-jack	W. Conrad	107, 163
Window of railroad-cars, Deflector for	G. S. Knapp	98, 981
Window, Railroad-car	H. L. Myers	104, 303
Window-sash	E. Smith	105, 137
Window sash and fastener	D. W. C. Smith	107, 555
Window-sash, Machine for dovetailing	F. G. Chapman	107, 329
Window-sash, Machine for tenoning	J. T. Forrester	108, 904
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Window-screen	G. Shatswell	103, 872
Window-screen	A. C. Brown	104, 010
Window-screen	J. T. Kimball and B. F. Hobard	98, 601
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Windows, Device for operating	W. Strunk	109, 271
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Window-shade	E. W. Hastings	107, 902
Window-shade, Adjustable	C. H. Miller	103, 040
Window-shade, Cord-tension device for	D. W. De Forest	101, 440
Window-shade fixtures	E. J. Robinson	100, 556
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Wire-heddles, Mechanism for making	J. G. Frick	107, 171
Wire-cloth for wire-screens	A. Giraudat	103, 110
Wire-covering machine	F. Carow	107, 334
Wire-cutter	C. Brombacher	98, 843
Wire-cutter and shears, Combined	J. D. Alvord	103, 468
Wire, Die for drawing	W. F. Collier	107, 006
Wire for wire-goods	F. Fanning	101, 601
Wire-fence, Wire-tightener for	S. Beatty	103, 356
Wire, Perforated	C. Hodgson	109, 317
Wire-rope, Apparatus for transporting loads on	E. H. Hill	101, 264
Wire, Turning and galvanizing	H. Haupt	99, 186
Wood, &c., Drying, preserving, and coloring	R. B. Robbins	109, 346
Wood and coal dumper for railways	A. L. Lansing	103, 745
Wood and other pavements, Ramming machine for	G. R. Mather	108, 805
Wood, Apparatus for giving form to	F. A. Stevens	103, 725
Wood, Apparatus for preserving	J. W. Martin	99, 925
Wood-bending machine	J. Fippe	103, 993
Wood-bending machine	M. T. Boult	100, 848
Wood, Carving	H. M. Westman	108, 661
Wood, Cement for coating and preserving	F. Lear	109, 927
Wood, Coloring and preserving	T. H. Davis	103, 660
Wood, Composition for and mode of ornamenting	S. P. Wheeler	101, 533
Wood, compressed, Manufacture of articles of	R. H. Watson	108, 859
Wooden-pins, Machine for making	T. R. Sherry	109, 700
Wood, Fillings for	C. F. Ritchell	100, 937
Wood for inlaying, Machine for preparing	J. Babcock	99, 618
Wood for painting, Composition for preparing	A. B. Tripler	104, 917
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Wood, Machine for bending	W. D. Williams	102, 637
Wood, Machine for bending	J. K. B. Solomon	106, 880

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Wood, Machine for bending	J. McMichael	112, 262
Wood, Machine for bundling	J. Rushworth	108, 731
Wood, Machine for polishing	F. G. Chapman	100, 503
Wood, metal, &c., Composition for coating	P. S. Devlan	103, 922
Wood, Method of inlaying	T. W. and H. K. Porter	107, 097
Wood, Method of inlaying	J. S. Baldwin	107, 150
Wood, Method of uniting	J. A. Thompson	110, 089
Wood-molding machine	A. S. Gear	106, 685
Wood-moldings, Tool for cutting	C. E. Boynton	107, 653
Wood on railway-cars, Apparatus for loading	J. Nicholson	106, 274
Wood-paper stock, Manufacture of	G. H. Bliss and M. Rees	103, 968
Wood, Preserving	A. B. Tripler	104, 916
Wood, Preserving	A. J. Sheldon	106, 625
Wood, Preserving	J. R. Hays	107, 904
Wood, Preserving	E. Webb	108, 659
Wood, Preserving and hardening	B. R. Nickerson	107, 680
Wood, Process and apparatus for treating	L. Hayford	101, 012
Wood, Process of treating	S. P. Wheeler	101, 553
Wood-pulp machine	S. C. Taft	101, 785
Wood-screw machine	J. M. Alden	110, 532
Wood-screw machinery, Feeding-mechanism for	C. D. Rogers	108, 295
Wood, Seasoning	R. A. Douglas	102, 665
Wood, Seasoning and preserving	J. C. Day	109, 380
Wood, Seasoning and preserving	C. M. Cresson	109, 872
Wood, Seasoning and preserving	C. M. Cresson	109, 873
Wood-splitting machine	R. D. Silverwood	100, 679
Wood-splitting machine	E. Coogan	108, 883
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Wood to pulp, Apparatus for reducing	G. Ames	105, 629
Wood, Treating, to obtain useful products	T. Schwartz	101, 320
Wood-working, Method of	N. Jenkins	99, 201
Wool and hair, Cleaning	C. F. A. Simonin and E. W. Coffin	103, 166
Wool, &c., Apparatus for combing and preparing	E. Holden	98, 966
Wool, &c., Machine for burring and cleaning	Z. Parkhurst	101, 763
Wool, Apparatus for oiling	T. A. Campbell	98, 922
Wool, Cleansing	E. T. Richter	106, 871
Wool, Composition for oiling	J. Shaw	106, 219
Wool, Compound for treating	H. H. Capamagian	108, 756
Wool, cotton, &c., Cleaning	G. H. Pond	110, 495
Wool-drier	L. S. Blake	105, 891
Wool, Machine for burring on the skin	G. F. Dockham	103, 360
Wool, Machine for burring on the skin	E. H. Ashcroft	110, 418
Wool, Machine for picking and dusting	M. Bliss	101, 218
Wool, Machine for spinning	E. Kilbourn	103, 052
Wool, Removing burrs from	P. Casson	107, 447
Work-box	J. E. Marvel	106, 278
Work-holder	J. E. Gilman	102, 334
Work-holder	N. Clute and O. W. Marshall	108, 569
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Worms in fruit-trees, Composition for destroying	S. Kepner	108, 030
Wrapper for seeds, &c	R. G. Kinnor	101, 275
Wrecking-tongs or excavator	R. Hunter	98, 870
Wrench	R. Morrison	98, 515
Wrench	G. C. Taft	98, 644
Wrench	A. B. Lipsey	98, 696
Wrench	G. J. Capewell	98, 847
Wrench	A. G. Coes	100, 602
Wrench	L. Chapman	100, 978
Wrench	J. Faessler	101, 114
Wrench	O. J. Smith	102, 058
Wrench	J. F. Nordquist	102, 307
Wrench	G. Utley	102, 336
Wrench	B. F. Buxton	103, 770
Wrench	W. F. Wolfkiel	103, 266
Wrench	T. C. Purington	103, 653
Wrench	M. Redlinger	104, 656
Wrench	J. J. Hull	105, 336
Wrench	J. F. Ronan	105, 372
Wrench	O. J. Smith	105, 604
Wrench	C. H. Miller	105, 897
Wrench	S. Chapman	106, 467
Wrench	H. Fessler and R. V. Jones	106, 475
Wrench	D. C. Stillson	107, 304
Wrench	H. Tregellas	107, 425
Wrench	F. P. Rand	107, 530
Wrench	O. C. Lawbaugh	107, 790
Wrench	D. Campbell and W. Saul	107, 871
Wrench	J. F. Case	108, 330
Wrench	G. C. Taft	108, 736
Wrench	E. J. Worcester	108, 747
Wrench	P. Barrees and C. Cline	109, 493

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Wrench	C. Knisely	109,913
Wrench	E. S. Scripture	109,949
Wrench, Duplex	A. B. Davis	106,129
Wrench, Manufacture of	J. Richards	109,665
Wrench, Pipe	J. A. Wilcox	104,913
Wrench, Pipe and bolt	L. Frey and G. Macardle	102,390
Wrenches, Machine for forging the heads of	A. G. Coes	104,931
Wringer, Clothes	W. Cooper	98,566
Wringer, Clothes	A. Magowan	101,749
Wringer, Clothes	E. G. W. Bartlett	103,283
Wringer, Clothes	L. Shmeltzer	105,375
Wringer, Clothes	C. H. De Knight	106,136
Wringer, Clothes	J. McLaughlin	107,518
Wringer, Clothes	R. E. Ferguson	107,893
Wringer, Clothes	A. O'Dell	108,020
Wringer, Mop	H. L. Ennes	109,307
Wringers, &c., Rubber-roller for	D. H. Chamberlain	104,926
Wringers, Elastic-roller for	A. O. Bourn	109,579
Wringers, Roller shaft for	L. H. Whitney	110,096
Wringing-machine	E. G. W. Bartlett	108,674
Wrought-iron chairs for railroads, Machine for making	W. Van Anden	103,066
X.		
Xylidine and its compounds, Manufacture of	D Spill	101,175
Xyloglodine and other explosive agents, Manufacture of	C. Dittmar	99,070
Xyloglodine, Explosive agent called	C. Dittmar	99,080
Y.		
Yarn, Apparatus for steaming	J. H. Higgins	99,180
Yarn, Machine for brushing	J. Brady	108,100
Yarns or warps, Machine for beaming	G. Draper	110,218
Yarn-washing machine	E. Haeffely	102,256
Yeast for distillers, Manufacture of	J. Wolff	99,615
Yeast, Manufacture of	H. Fleischmann	103,387
Yoke, Horse	A. B. Beaumont	110,541
Z.		
Zinc, Apparatus for cooling the vapors of oxide of	J. E. Burrows	108,965

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A.		
Advertising-desk	A. Brummel	4,301
Arrow-gun	C. Robinson	4,050
Ax	C. B. Drew	4,020
Ax	E. Hurst	4,060
B.		
Back of a playing-card	S. L. Cohen	4,536
Back of a playing-card	S. L. Cohen	4,537
Badge	W. Riker	4,372
Band-saw frame	J. Richards	4,145
Baptismal font	D. C. Ripley	3,942
Bar, Shutter	J. A. Ruff	4,127
Baschlik	M. Landenberger	4,164
Base of a hot-air furnace	R. Boyd and J. C. Hart	4,504
Bedouin or Arab	T. Dolan	3,881
Bedouin or Arab	T. Dolan	3,882
Bedouin or Arab	T. Dolan	4,156
Bell-pull back-plate	J. A. Ruff	4,111
Bell-pull back-plate	J. A. Ruff	4,112
Berry-box	J. W. Lealie	4,359
Blackboard-eraser	J. H. Atwater	4,300
Block of soap	A. Van Haagen	4,534
Blotting-pad	J. S. Bryant	3,971
Blower-holder	F. W. Brocksieper	4,361
Boiler, Kitchen	W. R. Scaife	4,324
Boot and shoe pattern	J. M. Dutton	4,198
Boot, Carriage	E. Wells	4,382
Bottle	L. J. Wicks	3,836
Bottle	G. J. Byrne	3,846
Bottle	G. J. Byrne	3,847

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Bottle	G. J. Byrne	3,848
Bottle	J. H. Gamhart	3,926
Bottle	O. H. P. Rose	4,170
Bottle	J. Mackintire	4,204
Bottle and cup	J. Mackintire	4,205
Bottle, Ink	A. French	3,871
Box, Collar	J. R. Jerauld and H. L. Holmes	3,894
Box, Collar	S. F. Hilton	4,336
Box, Collar	A. Aronson	4,446
Box, Collar and cuff	F. Field	3,870
Boxes for tops of bureaus	C. Kilburn	4,201
Box for bureau	C. Kilburn	4,423
Box for holding and displaying tapes, braids, &c	S. B. Fleischer	4,384
Box for putting up paper-cuffs	G. Faul	4,471
Box for the top of bureaus	C. Kilburn	4,346
Box for the top of bureaus	C. Kilburn	4,350
Box for the top of bureaus	C. Kilburn	4,351
Box for the top of bureaus	C. Kilburn	4,352
Box for the top of bureaus	C. Kilburn	4,357
Box for the top of bureaus	C. Kilburn	4,460
Box, Paper-collar	F. Field	3,869
Box, Paper-collar	W. H. Richardson	4,293
Brace for school-desk	J. K. McCullough and F. W. Smith	4,206
Bracelet	F. Wessel	4,256
Bracelet	T. I. Smith	4,516
Bracket	M. D. Jones	3,953
Bracket	A. D. Judd	3,992
Bracket	J. H. Bellamy	4,250
Bracket	J. H. Bellamy	4,268
Bracket	B. A. Ward	4,454
Bracket	B. A. Ward	4,455
Bracket	J. H. Bellamy	4,465
Bracket	J. H. Bellamy	4,466
Bracket, Lamp	P. Cinquini	4,086
Bracket, Metallic	A. D. Judd	4,077
Brake-wheel	A. Merriman	3,955
Brand	M. Hoffheimer	4,004
Bread-toaster	S. Faucett and H. R. Corkhill	3,840
Breast-strap slide	J. Henderson	4,015
Broiler, Wire	W. J. Johnson and H. A. Hildreth	4,163
Broom	R. W. English	4,506
Buckle	J. E. Smith	4,496
Buckle	J. J. Bell	4,458
Buggy-body	W. M. Armstrong	3,974
Building-front	J. Fraser, F. Furness and G. W. Hewitt	4,159
Bureaus, Box for the top of	C. Kilburn	4,151
Burial-casket	C. Dahlinger	3,913
Burial-casket	P. J. Marchal	4,006
Burner, Lamp	J. B. Alexander	4,148
Bust	H. Berger	3,941
Butt, Door	J. A. Ruff	4,190
C.		
Cake-basket or fruit-tray	W. Parkin	3,877
Cake-dish	G. Gill	3,960
Calendar	H. C. Heistad	4,014
Candlestick	H. Whitney	4,022
Can, Metal	H. Everett	3,839
Carpet-pattern	C. T. Meyer	3,830
Carpet-pattern	C. T. Meyer	3,831
Carpet-pattern	C. T. Meyer	3,832
Carpet-pattern	J. Crabtree	3,837
Carpet-pattern	J. Crabtree	3,838
Carpet-pattern	J. T. Webster	3,879
Carpet-pattern	J. T. Webster	3,880
Carpet-pattern	H. Christie	3,892
Carpet-pattern	L. G. Malkin	3,927
Carpet-pattern	L. G. Malkin	3,928
Carpet-pattern	J. Smith	3,930
Carpet-pattern	J. Smith	3,931
Carpet-pattern	H. G. Thompson	3,932
Carpet-pattern	H. G. Thompson	3,933
Carpet-pattern	H. G. Thompson	3,934
Carpet-pattern	H. G. Thompson	3,935
Carpet-pattern	H. G. Thompson	3,936
Carpet-pattern	H. G. Thompson	3,937
Carpet-pattern	H. G. Thompson	3,938
Carpet-pattern	H. G. Thompson	3,939
Carpet-pattern	H. G. Thompson	3,940
Carpet-pattern	R. R. Campbell	3,976

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Carpet-pattern	E. J. Ney	3,977
Carpet-pattern	E. J. Ney	3,978
Carpet-pattern	E. J. Ney	3,979
Carpet-pattern	E. J. Ney	3,980
Carpet-pattern	E. J. Ney	3,981
Carpet-pattern	E. J. Ney	3,982
Carpet-pattern	E. J. Ney	3,983
Carpet-pattern	J. Crabtree	4,026
Carpet-pattern	J. Crabtree	4,027
Carpet-pattern	J. Crabtree	4,028
Carpet-pattern	I. Foster	4,032
Carpet-pattern	W. Kerr	4,035
Carpet-pattern	E. J. Ney	4,039
Carpet-pattern	E. J. Ney	4,040
Carpet-pattern	R. R. Campbell	4,081
Carpet-pattern	R. R. Campbell	4,082
Carpet-pattern	R. R. Campbell	4,083
Carpet-pattern	R. R. Campbell	4,084
Carpet-pattern	E. J. Ney	4,090
Carpet-pattern	E. J. Ney	4,091
Carpet-pattern	E. J. Ney	4,092
Carpet-pattern	E. J. Ney	4,093
Carpet-pattern	E. J. Ney	4,094
Carpet-pattern	H. Christie	4,176
Carpet-pattern	H. Christie	4,177
Carpet-pattern	W. Kerr	4,189
Carpet-pattern	H. Christie	4,250
Carpet-pattern	J. Crabtree	4,253
Carpet-pattern	J. Allinson	4,258
Carpet-pattern	J. Dornan	4,294
Carpet-pattern	J. Crabtree	4,305
Carpet-pattern	A. Heald	4,311
Carpet-pattern	A. Heald	4,312
Carpet-pattern	A. Heald	4,313
Carpet-pattern	A. Heald	4,314
Carpet-pattern	W. Kerr	4,315
Carpet-pattern	R. R. Campbell	4,324
Carpet-pattern	R. R. Campbell	4,325
Carpet-pattern	R. R. Campbell	4,326
Carpet-pattern	R. R. Campbell	4,327
Carpet-pattern	R. R. Campbell	4,328
Carpet-pattern	R. R. Campbell	4,329
Carpet-pattern	R. R. Campbell	4,330
Carpet-pattern	R. R. Campbell	4,331
Carpet-pattern	R. R. Campbell	4,332
Carpet-pattern	R. R. Campbell	4,333
Carpet-pattern	E. J. Ney	4,339
Carpet-pattern	E. J. Ney	4,340
Carpet-pattern	E. J. Ney	4,341
Carpet-pattern	E. J. Ney	4,342
Carpet-pattern	E. J. Ney	4,343
Carpet-pattern	R. R. Campbell	4,394
Carpet-pattern	R. R. Campbell	4,395
Carpet-pattern	R. R. Campbell	4,396
Carpet-pattern	R. R. Campbell	4,397
Carpet-pattern	J. Crabtree	4,398
Carpet-pattern	E. J. Ney	4,411
Carpet-pattern	E. J. Ney	4,412
Carpet-pattern	E. J. Ney	4,413
Carpet-pattern	E. J. Ney	4,414
Carpet-pattern	J. Crabtree	4,426
Carpet-pattern	J. Crabtree	4,448
Carpet-pattern	A. Beck	4,480
Carpet-pattern	A. Beck	4,481
Carpet-pattern	A. Beck	4,482
Carpet-pattern	A. Heald	4,493
Carpet-pattern	A. Heald	4,494
Carpet-pattern	H. S. Kerr	4,507
Carpet-pattern	W. Mallinson	4,508
Carpet-pattern	W. Mallinson	4,509
Carpet-pattern	H. S. Kerr	4,540
Carriage	A. S. Dodd	4,306
Carriage-bed	H. Killam	4,435
Carriage-body	A. S. Clapp	3,890
Carriage, Children's	G. H. Mellen	3,899
Carriage-door handle	D. W. Thomas	4,383
Cars, passenger-elevator, Overhead work for	O. Tufts	4,090
Case of a parlor-organ	G. Woods	4,546
Casing for soda-water apparatus	J. W. Tufts	3,816
Caster	G. B. Garret	3,859
Caster-bottle	W. Parkin	4,436

Alphabetical list of designs—Continued.

Invention or discovery.	Name of patentee.	No.
Caster, Table	C. H. Latham	4,166
Caster, Table	D. Sherwood and G. D. Dudley	4,297
Caster, Table	W. Parkin	4,437
Caster, Wheel-holding block for	S. J. Parker	4,041
Center-piece	H. Berger	3,947
Center-piece	S. Kellett	4,478
Center-piece	S. Kellett	4,479
Center-piece for ceilings	J. W. Reeves	4,512
Center-piece for ceilings	J. W. Reeves	4,513
Chain	J. V. and C. F. Waldron	4,543
Chair, Arm	W. E. Cameron	4,269
Chandelier	P. Cinquini	4,085
Chimney, Lamp	E. Foster	3,857
Chimney, Lamp	G. W. Moyers	4,038
Church-window glass	S. West	4,492
Clamp for trunk-cover	T. L. Rivers	4,355
Clamp, Fruit-jar	P. J. Bresenback	4,522
Clamp, Trunk-cover	W. S. Jessup	4,200
Clock-case	E. Ingraham	3,850
Clock-case	E. Ingraham	3,851
Clock-case	N. Müller	4,237
Clock-case	R. Dunn	4,307
Clock-case	R. Dunn	4,308
Clock-case	R. Dunn	4,309
Clock-case	S. B. Jerome	4,338
Clock-case	R. Dunn	4,421
Clock-case	R. Dunn	4,524
Clock-case front	S. B. Jerome	4,278
Clock-case front	S. C. Spring	4,290
Clock-case sash	S. B. Jerome	4,422
Clock-frame	G. B. Owen	3,815
Clock-front	N. Müller	3,888
Clock-front	N. Müller	3,900
Clock-front	J. H. Bellamy	4,023
Clock-front	J. H. Bellamy	4,299
Clock-front	J. H. Bellamy	4,375
Clock-front	N. Müller	4,450
Clock-front	B. A. Ward	4,456
Clock-front	N. Müller	4,496
Coal-box	R. W. Newberry	4,510
Coal-box	R. W. Newberry	4,511
Coal-hod	J. and J. K. Pitts	4,451
Coffin	E. T. Smith and J. S. Winston	4,387
Collar-box	G. K. Snow	4,146
Collar-box	S. F. Hilton	4,277
Collar-box	A. L. Elliott	4,383
Collar, Fur	J. H. Kappelhoff and S. Rauh	4,179
Column for coach-lamps, Glass	T. Bondren	4,002
Comb	E. F. Coffin	3,986
Corn-husker	A. T. Morris	4,262
Corset	D. H. Fanning	4,366
Corset	D. H. Fanning	4,367
Counting-house calendar, Adjustable	S. S. Coe	3,963
Cup, Jelly	J. S. and T. B. Atterbury	4,225
Curtain-cornice, &c	H. Whittemore	4,345
Cuspadore	C. and J. Roebuck	4,318
Cylinder and frame of steam-engine	G. Sanford	4,452

D.

Desk, School	W. P. Uhlinger	4,068
Desk, School	N. O. Tiffany	4,488
Dishes, Ornamentation of	E. Bennett	4,175
Dog-muzzle	J. and H. Braentigam	4,055
Dog-muzzle	T. J. Meyers	4,168
Door-bell	W. Allport	4,214
Door-bolt	F. Fogelstrand	4,472
Door-pull	F. W. Brocksieper	4,364
Dovetail	H. H. Evarts	4,031
Drawer-pull	W. Gorman	3,915
Drawer-pull	A. D. Judd	4,000
Drawer-pull	A. D. Judd	4,016
Drawer-pull	A. P. Seymour	4,219
Drawer-pull	N. Merriam	4,502
Dress-trimming	M. Landnoeryer	4,443
Dress-trimming	R. Werner	4,500
Drilling-machine	F. A. Pratt	4,430

E.

Egg-cup and salt-stand	G. Wilkinson	3,817
Emery-wheel	F. J. Frazier	4,036

Alphabetical list of designs—Continued.

Invention or discovery.	Name of patentee.	No.
Escutcheon	L. Kreuzinger	4,104
Escutcheon	L. Kreuzinger	4,105
Escutcheon	L. Kreuzinger	4,106
Escutcheon	J. A. Ruff	4,121
Escutcheon	J. A. Ruff	4,122
Escutcheon, Door	J. A. Ruff	3,924
Escutcheon, Door	J. A. Ruff	3,924
Escutcheon, Door	J. H. Ruff	3,925
Escutcheon, Door	J. A. Ruff	3,926
Escutcheon for doors	W. Gorman	3,916
F.		
Fabric, Knitted	T. Dolan	3,964
Fabric, Knitted	M. Landenberger	4,230
Fabric, Knitted	M. Landenberger	4,270
Fabric, Knitted	M. Landenberger	4,271
Fabric, Knitted	T. Dolan	4,334
Fabric, Knitted	E. Greasly	4,346
Fabric, Net	R. J. Jefford	4,226
Fabric, Net	A. G. Jennings	4,229
Fabric, Net	R. H. Jefford	4,357
Fabric, Shawl	M. Landerberger	4,272
Fabric, Shawl	M. Landerberger	4,356
Fabric, Stocking	T. Dolan	3,965
Fabric, Stocking	T. Dolan	3,966
Fabric, Stocking	T. Dolan	4,003
Fabric, Stocking	T. Dolan	4,157
Fabric, Stocking	C. Button	4,251
Fabric, Woven	R. C. and J. W. Taft and W. B. Weeden	4,518
Fabric, Woven	R. C. and J. W. Taft and W. B. Weeden	4,519
Fabric, Woven	R. C. and J. W. Taft and W. B. Weeden	4,520
Fabric, Woven	R. C. and J. W. Taft and W. B. Weeden	4,533
Face-plate for locks	H. H. Elwell	4,430
Face-plate for locks	H. H. Elwell	4,431
Face-plate for locks for sliding-doors	W. Gorman	4,034
Face-plate of a sash-lock	C. H. Eulcston	4,470
Fence, Rustic	J. Millar	4,461
Fire-dog	F. W. Brockstieper	4,363
Fire-set holder	F. W. Brockstieper	4,362
Floor-cloth pattern	C. T. Meyer	3,875
Floor-cloth pattern	H. Christie	3,896
Floor-cloth pattern	H. Christie	3,897
Floor-cloth pattern	C. T. Meyer	3,956
Floor-cloth pattern	C. T. Meyer	3,957
Floor-cloth pattern	C. T. Meyer	3,958
Floor-cloth pattern	J. Paterson	4,007
Floor-cloth pattern	J. T. Webster	4,139
Floor-cloth pattern	J. T. Webster	4,140
Floor-cloth pattern	C. T. Meyer	4,207
Floor-cloth pattern	C. T. Meyer	4,208
Floor-cloth pattern	C. T. Meyer	4,209
Floor-cloth pattern	V. Meyer	4,210
Floor-cloth pattern	V. Meyer	4,223
Floor oil-cloth pattern	J. Hutchison	3,890
Floor oil-cloth pattern	J. Hutchison	3,891
Floor oil-cloth pattern	J. Meyer	4,444
Floor oil-cloth pattern	C. T. Meyer	4,484
Floor oil-cloth pattern	C. T. Meyer	4,485
Floor oil-cloth pattern	C. T. Meyer	4,486
Floor oil-cloth or carpet pattern	C. T. Meyer	3,878
Flower, Artificial	C. S. Baldwin	3,895
Flower-pot	J. Leak	4,273
Flower-pot	J. Leak	4,449
Folding-door key	H. H. Elwell	3,949
Fountain	J. Hegarty	4,210
Fountain	B. Van Gansbeek	4,542
Frame	B. A. Ward	4,453
Frame for a paper-bag machine	C. F. Annan	4,503
Frame for a printing-press	J. Henry	4,168
Frame for containing stationery articles	C. H. Wight	3,982
Frame of an emery-grinder	A. Wallace	4,391
Fruit-gatherer	J. S. and A. M. Barry	4,535
Fruit-stand	H. Vasseur	4,449
G.		
Gate	S. Macferran and E. Omensetter	4,184
Gate latch, Cradle-plate of	J. Johnson	4,371
Generator, Oxygen	A. H. Carpenter	4,056
Goods, Dress	M. Townsend	4,369

Alphabetical list of designs—Continued.

Invention or discovery.	Name of patentee.	No.
Goods, Knitted	M. Landerberger	4,231
Goods, Knitted	M. Landerberger	4,232
Glassware	W. M. Kirchner	4,261
Glassware	J. Oesterling	4,263
Glassware, Ornamentation of	W. M. Kirchner	3,954
Glassware, Ornamentation of	C. Ballinger	4,419
Glassware, Ornamentation of	J. S. and T. B. Atterbury	4,457
Glassware, Ornamenting	J. H. Hobbs	3,898
Glassware, Ornamenting	W. Leighton	3,899
Glassware, Ornamenting	T. B. Atterbury	3,954
Glassware, Ornamenting	J. Bryce	3,955
Glassware, Ornamenting	W. T. Gillinder	3,914
Glassware, Ornamenting	S. Hipkins	3,972
Grate	H. B. Gayle	4,033
Grinding-mill stand or frame	J. G. Baker	4,141
Group of statuary	J. Rogers	3,843
Group of statuary	J. Rogers	4,287
Group of statuary	J. Rogers	4,487
Group of tools, machinery, &c	E. A. Ellsworth	4,442
H.		
Hair-crimper	H. A. Humphrey	4,088
Hair-pin	G. W. Manson	4,303
Hand-glass frame	J. H. Bellamy	4,240
Handle-cap for satchels	J. M. Riley	3,908
Handle for spoons	E. C. Moore	3,917
Handle for spoons, forks, ladles, &c	J. R. Wendt	3,965
Handle of spoon, fork, &c	C. D. Hall	4,348
Handle of spoons and other articles	A. Conradt	4,227
Handle of spoons, forks, &c	J. Polhamus	4,317
Hand-stamp	H. W. Hubbard and F. P. Follett	3,967
Hand-stamp	A. L. Munson	4,017
Hand-stamp	C. J. Mortimer	4,037
Hand-stamp	S. J. Hoggson	4,142
Hand-stamp	J. F. Pages	4,296
Harness, Breast-collar for	W. R. Olmsted	4,169
Harness, Breast-slide for	H. W. Minnemeyer	4,353
Harness-mounting	C. Eisele	3,952
Harness, Trace-carrier for	S. Reynolds	4,354
Hat	I. B. Wentworth	4,356
Head-band	W. S. Mingis	4,436
Hinge	A. C. Kasson	4,407
Hinge, School-seat	N. O. Tiffany	4,489
Hoe	B. T. Stowell	4,517
Hook, Coat and hat	W. R. Goodrich	4,310
Horse-stall, Iron railing for	J. L. Jackson	4,377
Horse-stall, Iron railing for	J. L. Jackson	4,378
Horse-stall, Iron railing for	J. L. Jackson	4,379
I.		
Ice, Machinery for making	T. Scheffler	3,929
Ice-pitcher	H. Vasseur	3,891
Inkstand	A. French	3,812
Inkstand	J. W. June	3,874
Inkstand	L. L. Tower	4,291
Inkstand	H. Whitney	4,292
Inkstand	D. Merritt	4,408
J.		
Jelly-glass	W. Doyle	4,260
Journal-box	P. P. Child	4,203
K.		
Keeper for door-locks	H. H. Elwell	4,432
Keeper for door-locks	H. H. Elwell	4,429
Key for locks	W. T. Munger	3,918
Key-ring tag	N. Stafford	4,427
Knife, Tobacco	J. Kinzer	4,036
Knob, Bell-pull	J. A. Ruff	4,109
Knob, Bell-pull	J. A. Ruff	4,110
Knob, Bell-pull	J. J. C. Smith	4,129
Knob, Bell-pull	J. J. C. Smith	4,130
Knob, Door	L. Kreuzinger	4,097
Knob, Door	L. Kreuzinger	4,098
Knob, Door	L. Kreuzinger	4,099
Knob, Door	L. Kreuzinger	4,100
Knob, Door	C. Kunze	4,107

Alphabetical list of designs—Continued.

Invention or discovery.	Name of patentee.	No.
Knob, Door	J. L. Leger	4,108
Knob, Door	J. A. Ruff	4,113
Knob, Door	J. A. Ruff	4,114
Knob, Door	J. A. Ruff	4,115
Knob, Door	J. A. Ruff	4,116
Knob, Door	J. A. Ruff	4,117
Knob, Door	J. A. Ruff	4,118
Knob, Door	J. J. C. Smith	4,131
Knob, Door	J. J. C. Smith	4,132
Knob, Door	J. J. C. Smith	4,133
Knob, Door	J. J. C. Smith	4,134
Knob, Door	J. J. C. Smith	4,135
Knob, Door	J. J. C. Smith	4,136
Knob, Door	J. J. C. Smith	4,137
Knob, Door	J. J. C. Smith	4,138
Knob, Shutter	J. A. Ruff	4,124
Knob, Shutter	J. A. Ruff	4,125
Knob, Shutter	J. A. Ruff	4,126
L.		
Label	J. S. Dunham	4,030
Label	G. F. Gantz	4,075
Lamp	R. S. Merrill	4,089
Lamp	J. S. and T. B. Atterbury	4,350
Lamp-chimney cleaner	C. Oblinger	4,001
Lamp-chimney cleaner	E. T. Annis	4,301
Lamp-fount	H. Whitney	4,021
Lamp-shade	G. L. Smith and D. W. Kissam	4,051
Lamp-shade, Glass	C. Dorflinger	4,317
Lamps, Mica chimney for	C. and C. H. Colt	4,087
Lamp-stand	J. S. and T. B. Atterbury	4,286
Latch, Cupboard	W. Gorman	4,335
Latch, Door	J. A. Ruff	4,123
Latch, Gate	J. W. Still	4,067
Latch, Outside-door	W. Gorman	3,873
Letter, Ornamental	W. H. Clendinen	3,948
Lid of a feed-cup in bird-cage	O. Lindeman	4,380
Lock, Car	W. Gorman	4,474
Lock-front	F. W. Brocksieper	4,467
M.		
Masonic chart	J. Ames	3,973
Match-safe	A. P. Seymour	4,336
Match-safe	F. W. Brocksieper	4,498
Medal	T. R. Timby	4,499
Medallion or cameo	L. Solomons	4,361
Medal of Elias Howe, jr.	A. B. Stockwell	3,835
Medicine-dropper	H. A. Tweed	4,533
Mill, Spice	W. Haslum	3,893
Mold-board	J. T. Wilson	4,197
Mowing-machine, Frame for	W. G. Kenyon	4,220
Muff	R. M. Seldis	3,946
Muff	J. Simonet	4,019
Muff	J. H. Kappelhoff and S. Rauh	4,254
N.		
Neck yoke and slide	R. L. Beat	4,286
Needle-case	J. Semelé	4,064
Needle-case	J. Semelé	4,065
O.		
Oil-cloth, Floor	J. T. Webster and A. T. Powers	4,344
Oil-cloth pattern	W. H. Townsend	3,970
Oil-cloth pattern	W. H. Townsend	3,998
Oil-cloth pattern	L. F. Dandre	4,399
Oil-cloth pattern	J. Hutchison	4,403
Oil-cloth pattern	H. Kagy	4,404
Oil-cloth pattern	H. Kagy	4,405
Oil-cloth pattern	H. Kagy	4,406
Oil-cloth pattern	J. Paterson	4,415
Oil-cloth pattern	J. Paterson	4,416
Oil-cloth pattern	H. Kagy	4,538
Oil-cloth pattern	H. Kagy	4,539
Oil-cloth pattern	J. T. Webster	4,544
Oil-cloth pattern	J. T. Webster	4,545
Oil-cloth pattern, Floor	C. T. Meyer	4,409
Oil-cloth pattern, Floor	C. T. Meyer	4,410

Alphabetical list of designs—Continued.

Invention or discovery.	Name of patentee.	No.
Organ	E. Hamlin	4,161
Organ or melodeon case	G. Cook	3,618
P.		
Package	G. Pustkuchen	4,042
Pail, Ash	J. Merry	4,304
Pair of gate-hinges	B. Roux	3,844
Paper-box	G. K. Snow	3,919
Paper-box	J. C. Bauer	4,174
Paper-cuffs, Box for putting up	G. Faul	4,471
Pattern or chart for applying measurements and laying out dress-waists	W. and E. Cornwell	3,898
Persian cloak	T. Dolan	4,300
Persian cloak	T. Dolan	4,301
Piano	Ole Bull	4,468
Piano-case	G. H. Davis	3,856
Picture-frame	E. W. Haven	4,199
Picture-frame	J. H. Bellamy	4,248
Picture-frame	J. H. Saunders	4,462
Picture-frame	I. A. Sheppard	4,319
Plate and door of a cooking-stove	H. O. Fritsch	4,385
Plate for pitcher-stand	J. Martino and J. Currie	4,167
Plates and feet of the Dexter cooking-stove	R. H. Taylor	4,591
Plow-share	M. Dyer	4,057
Post, Step and hitching	H. Thomas	4,147
Presses, Cider, wine, or other	E. A. Wood	3,868
Pressure-gauge case	A. H. Rowe	4,373
R.		
Rack, Baggage	R. M. Snodgrass	3,910
Radiator, Steam	W. Burdon	4,024
Railing, Iron	E. Omensetter	4,189
Railing, Iron	E. Omensetter	4,190
Railing, Iron	E. Omensetter	4,191
Railing, Iron	E. Omensetter	4,192
Railing, Iron	E. Omensetter	4,193
Railing, Iron	E. Omensetter	4,194
Railing, Iron	E. Omensetter	4,195
Railing, Iron	E. Omensetter	4,196
Range, Portable	D. Stuart and L. Bridge	4,330
Range or stove	N. S. Vedder and T. S. Heister	4,464
Refrigerator and water-cooler	C. C. Savery	4,274
Ring and buckle	J. E. Strede	4,173
Rose, Door-knob	L. Krenzinger	4,101
Rose, Door-knob	L. Krenzinger	4,102
Rose, Door-knob	L. Krenzinger	4,103
Rose, Door-knob	J. A. Ruff	4,119
Rubber-eraser	W. N. Bartholomew	3,810
S.		
Saddletree	J. T. Million	4,495
Sad-iron	W. M. Griscom	4,475
Safe	W. McFarland	3,814
Sash-fastener	W. Gorman	4,160
Sash-holder	J. H. Martin	4,185
Sash-lift	J. A. Ruff	4,128
Sash-lock, Railway-car	W. H. Paige	4,541
Sash or shutter lift	E. Parker	3,833
Satchel-fastening	G. Sieben	3,845
Sausage-filler	A. Shepard	4,288
Saw	E. Rhodes	4,255
Saw	E. Rhodes	4,497
Saw, Cross-cut	W. G. Tuttle	4,000
Saw-teeth, Shape of the slots between	E. Moore	3,994
Scabbard	V. Price	3,822
Screen for fire-place	J. R. Rose and E. Caley	4,063
Scythe	C. P. Crossman	4,505
Seal or banner	F. W. Bacon	4,095
Seat and desk, School	C. G. Harrington	4,076
Shade for gas-lights, &c	F. Rodgers	3,969
Shade for gas or lamp burners	J. Letchworth	3,852
Shade for gas or lamp burners	J. Letchworth	3,853
Shade for gas or lamp burners	B. Thackara	3,878
Shade for gas or lamp burners	P. Lair	3,968
Shade for gas or lamp burners	F. Rodgers	4,018
Shade for gas or lamp burners	J. Letchworth	4,295
Shape of a hood	M. Landenberger	4,165
Shawl	M. Landenberger	4,233
Shawl	M. Landenberger	4,234

Alphabetical list of designs—Continued.

Invention or discovery.	Name of patentee.	No.
Shawl	M. Landenberger	4,235
Shawl-fabric, Woven	J. Hodgson	4,326
Shawl-fabric, Woven	J. Hodgson	4,327
Shawl-fabric, Woven	J. Hodgson	4,328
Shawl-mantle	E. Flues	3,987
Shawl-mantle	E. Flues	3,988
Shawl-mantle	A. E. Taylor	3,996
Shawl-mantle	A. E. Taylor	3,997
Shears, Pruning	C. Condon	3,950
Shears, Pruning	R. L. Nichols and F. A. Elder	3,985
Shield, Transparent	I. C. Mayo	4,153
Shirred goods	A. Hecht	4,323
Shoe	G. H. Maynard	4,494
Show-case	W. H. Reiff	4,417
Show-case	W. H. Grove	4,477
Show-case	R. J. Roberts	4,514
Shutter-bar	J. Tiebout	3,912
Slate-frame	J. M. Coffin	4,215
Skating-cap, Knit	M. Landenberger	4,221
Skewer-cushion	J. C. Wilson	3,999
Soda-water fountain	A. J. Morse	3,959
Spool for thread	H. Conant	3,949
Spool-stand	R. G. Clemons	4,149
Spool-stand	R. Gordon	4,276
Spoon	B. Jerald	4,096
Spoon and fork	G. Wilkinson	3,923
Spoon and fork	G. Wilkinson	3,924
Spoon and fork handle	R. D. Biederhase	4,362
Spoon and fork handle	E. C. Moore	4,476
Spoon-handle	G. Sharp	4,066
Spoon-handle	R. Wallace	4,155
Spoon and fork work, Fancy	G. Wilkinson	3,923
Spoons, forks, ladles, &c., Handle of	G. W. Downing	4,218
Sprig of artificial flowers	L. D. Newell	3,960
Stair-rod	A. Pohl	3,907
Statuary	A. Van Wart	4,490
Statuette	N. Müller	4,187
Statuette	A. Van Wart	4,491
Statuette, Equestrian	N. Müller	3,841
Statuettes, Pair of	N. Müller	4,188
Stem for glassware	D. C. Ripley	3,834
Step, Carriage	J. W. Curtis, F. A. Briggs, and M. O. Cox	4,150
Stocking	T. Appleton	4,389
Stool-pan and its cover	J. Clark	3,897
Stove	S. S. Utter	4,053
Stove	I. T. Montrose	4,236
Stove	G. T. and W. A. Spicer and C. H. Peckham.	4,239
Stove	J. D. Flansburg	4,400
Stove, Cook	H. H. Culver	4,365
Stove, Cooking	D. Stuart and L. Bridge	3,911
Stove, Cooking	J. B. Wiggenhorn	3,921
Stove, Cooking	W. C. Davis	3,951
Stove, Cooking	G. Smith and H. Brown	4,171
Stove, Cooking	P. Low	4,183
Stove, Cooking	W. Hailes	4,433
Stove, Cooking	J. R. Rose and E. L. Calley	4,515
Stove, cooking, Coal or wood	C. Harris and P. Zoiner	4,349
Stove-door	D. G. Littlefield	4,068
Stove door and panel	M. C. Burleigh	4,226
Stove, Fire-place	J. R. Rose and E. Calely	4,425
Stove, Heating	G. Smith and H. Brown	4,172
Stove ornament	I. A. Sheppard	3,945
Stove, Parlor	W. Hailes	4,434
Stove-plate	N. S. Vedder	3,859
Stove-plate	N. S. Vedder	3,860
Stove-plate	N. S. Vedder	3,861
Stove-plate	N. S. Vedder and T. S. Heister	3,862
Stove-plate	N. S. Vedder and T. S. Heister	3,863
Stove-plate	N. S. Vedder and T. S. Heister	3,864
Stove-plate	N. S. Vedder and T. S. Heister	3,865
Stove-plate	N. S. Vedder and T. S. Heister	3,866
Stove-plate	N. S. Vedder and F. Ritchie	3,867
Stove-plate	S. H. Ransom	4,043
Stove-plate	S. H. Ransom	4,044
Stove-plate	S. H. Ransom	4,045
Stove-plate	S. H. Ransom	4,046
Stove-plate	S. H. Ransom	4,047
Stove-plate	S. H. Ransom	4,048
Stove-plate	S. H. Ransom	4,049
Stove-plate	N. S. Vedder and T. S. Heister	4,054
Stove-plate	N. S. Vedder and T. S. Heister	4,240
Stove-plate	N. S. Vedder and T. S. Heister	4,241

Alphabetical list of designs—Continued.

Invention or discovery.	Name of patentee.	No.
Stove-plate	N. S. Vedder and T. S. Heister	4,242
Stove-plate	N. S. Vedder and T. S. Heister	4,243
Stove-plate	N. S. Vedder and T. S. Heister	4,244
Stove-plate	N. S. Vedder and T. S. Heister	4,245
Stove-plate	N. S. Vedder, F. Ritchie, and T. S. Heister	4,246
Stove-plate	G. W. Eddy	4,347
Stove-plate	N. S. Vedder and T. S. Heister	4,360
Stove-plate	N. S. Vedder and F. Ritchie	4,374
Stove-plate	L. W. Harwood	4,376
Stove-shelf	W. C. Davis	4,469
Stud, Trace-supporting	J. Letchworth	4,202
Sugar-tongs	R. Wallace	4,069
Sugar-tongs	R. Wallace	4,070
Sugar-tongs	R. Wallace	4,071
Sugar-tongs	R. Wallace	4,072
Sugar-tongs	R. Wallace	4,073
Sugar-tongs	R. Wallace	4,074
Sword-guard	V. Price	4,265
T.		
Tack-head	G. A. Field	3,883
Tack-head	G. A. Field	3,884
Tea and coffee service	E. G. Webster	4,418
Tea or coffee pot	H. C. Wilson	4,247
Tea-service	G. Gill	3,872
Tea-service	W. Parkin	4,211
Tea-set	H. Vasseur	3,890
Tea-set	H. Vasseur	4,441
Thermometer	C. R. Sherman and W. Macy	3,909
Thumb-latch	F. Fogelstrand	4,473
Thumb of glove	E. Hulbert, W. F. Steele, and H. C. Day	4,143
Tile	W. H. Humphrey	4,144
Tip of a sword-scabbard	V. Price	4,264
Toaster and broiler	P. B. Sheldon	4,463
Tobacco-pipe	G. H. Pond	3,961
Tonga, Fire	S. S. Green	4,013
Top-plate combustion and air-chamber of a vapor generator and burner, Combined.	J. Comly	4,346
Top-plate for mangers	S. S. Bent	4,273
Toy-block	J. A. H. Ellis	4,058
Toy-carriage	F. W. Porter	4,445
Toy, Figure of a mechanical	W. C. Goodwin	4,368
Toy, Figure of a mechanical	W. C. Goodwin	4,369
Toy, Figure of a mechanical	W. C. Goodwin	4,370
Toy steam-engine	W. Holt	3,849
Toy steam-engine	A. P. Tyler	4,052
Trade-mark	R. and J. P. Kerr	3,810
Trade-mark	O. C. Maxwell, T. L. Neal, and C. L. Long.	3,887
Trade-mark	G. C. Thilenius	3,889
Trade-mark	W. Pearson	3,906
Trade-mark	J. H. Gambart	3,943
Trade-mark	J. S. Kirk	3,944
Trade-mark	D. A. Page	3,984
Trade-mark	H. Kellogg	3,993
Trade-mark	O. Kornemann and J. Jungbluth	4,005
Trade-mark	R. W. Bell	4,011
Trade-mark	P. Gibson and A. Tyler	4,012
Trade-mark	W. J. Clark	4,025
Trade-mark	G. W. and J. D. Langhorne and N. B. Johnston.	4,078
Trade-mark	G. W. and J. D. Langhorne and N. B. Johnston.	4,079
Trade-mark	S. P. M. Tasker	4,154
Trade-mark	W. A. Burke	4,156
Trade-mark	H. Fletcher	4,178
Trade-mark	M. Landenberger	4,182
Trade-mark	M. Landenberger	4,186
Trade-mark	D. M. and J. J. Demarest and N. H. Joralemon.	4,216
Trade-mark	J. Adams	4,257
Trade-mark	H. C. Rogers	4,266
Trunk-lock	C. Walsh	4,010
Tuck-comb	E. Brown	4,523
Turret and rings for harness-saddle, Set of	H. Whitehouse	3,920
Type	W. H. Page	3,901
Type	W. H. Page	3,902
Type	W. H. Page	3,903
Type	W. H. Page	3,904

Alphabetical list of extensions.

Invention or discovery.	Name of patentee.	No.
Type	W. H. Page	3,905
Type	R. Smith	4,008
Type	H. Ilenburg	4,061
Type	A. Little	4,203
Type	R. Smith	4,213
Type	R. Smith	4,267
Type	W. H. Page	4,279
Type	W. H. Page	4,280
Type	W. H. Page	4,281
Type	W. H. Page	4,288
Type	W. H. Page	4,289
Type	R. Smith	4,299
Type	R. Bruce	4,302
Type	W. Bruce	4,303
Type	J. Herriet	4,401
Type	J. Herriet	4,402
Type	J. K. Rogers	4,529
Type	J. K. Rogers	4,530
Type	C. Schraubetädter	4,531
Type	W. H. Page	4,984
Type-border	W. H. Page	4,985
Type-border	T. M. Cash	3,811
Type, Printers'	H. Ilenburg	3,813
Type, Printers'	A. Little	4,158
Type, Printing		
U.		
Umbrella-stand	C. Blake	3,925
Umbrella-stand	J. C. Sidney	4,089
Umbrella-stand	C. Blake	4,447
W.		
Watches, Barrel-bridge, ratchet-cap base, and arbor-cap of.	F. S. Giles	3,866
Watches, Top-plate, barrel-bridge, and cock for	F. S. Giles	3,865
Watch-chain	M. Buffum	3,975
Watch-plate	F. A. Jones	4,459
Water-cooler stand	C. C. Savery	4,498
Well-casing	E. S. Cummins	4,483
Wood, Joining	C. B. Knapp	4,302
Wrench	A. Kindermann	3,821

EXTENSIONS.

A.		
Acid, sulphuric, Concentrating-apparatus for	W. T. Clough	15,229
Ax-polls	D. P. Estey	15,880
B.		
Bales of cotton and other fibrous materials, Non-elastic bands for.	M. A. McComb	15,142
Boilers, Culinary	E. Whiteley	14,893
Bolts, Machine for heading	W. S. Booth	14,086
Boot-trees	C. T. Eames	14,951
Boxes, Making	A. French and C. Frost	15,296
Brick-press, Hydraulic	E. Rogers	15,778
Buckle for wearing apparel	E. Parker	15,666
Buildings, Apparatus for heating, by steam	S. J. Gold	14,156
C.		
Carding-engines, Machinery for cleaning top-flats of	H. Woodman	15,313
Cartridge	E. Maynard	15,141
Cast steel, Making	J. Neville	14,214
Caustic alkali, Manufacture of (Division A)	G. Thompson	15,957
Caustic alkali, Putting up (Division B)	G. Thompson	19,957
Caustic alkalies, Manufacture of (Division C)	G. Thompson	15,951
Chairs and other articles, Elastic bottoms for	L. Spooner	15,021
Clothes-drier	S. Merrill	16,065
Cloth, gum-elastic, Making	H. G. Tyer and J. Helm	14,514
Corn, Machine for husking	R. Bryson	16,304
Coupling for vehicles	H. Miner, H. M. Stevens, and M. Saunders.	14,965

Alphabetical list of extensions—Continued.

Invention or discovery.	Name of patentee.	No.
E.		
Edge-keys	G. C. Todd	16,128
Excavating-scoops	J. Taggart	14,033
F.		
Fertilizers, Machine for sowing	W. S. Bartle	14,709
Fibrous substances for spinning, Machinery for preparing.	J. Appely and W. Cliesold	16,888
Fire-arms, Breech-loading	W. M. Storm	15,307
Fluids, Bottling, under gaseous pressure	J. Quantin and H. A. Pintard	14,368
G.		
Grain-separator	C. Roberts and J. Cox	14,517
H.		
Harvesting-machine (Division A)	W. N. Whiteley	16,131
Harvesting-machine (Division B)	W. N. Whiteley	16,131
Harvester-rakes	O. Dorsey	14,350
Hay-rake, Horse	M. G. Pratt (Reissue 1,893)	40,067
Hay-rake, Horse	M. G. Pratt (Reissue 1,894)	40,067
Hay-rake, Horse	M. G. Pratt (Reissue 1,895)	40,067
Hay-rakes, Horse	M. G. Pratt	40,067
Hoops, Machine for notching	E. J. Lamson	15,768
I.		
Ice, Process and apparatus for making	A. C. Twining	10,221
Inking rollers, pads, &c., Composition for	L. Francis and C. H. Loutrel	43,199
Iron, Furnace for smelting	T. H. Powers	14,827
Iron, Machines for forging	S. S. Putnam	16,186
J.		
Jack, Pegging	A. Bailey	15,406
K.		
Kettles, brass, Making	F. J. Seymour	14,887
Kiln, Lime	L. Averill	15,549
Knitting-machine, Rotary	S. W. Park and E. S. Ells	15,493
L.		
Lathing surfaces, Continuous sheet-metal	J. R. Cornell	14,854
Legs, artificial, Construction	W. Selpho	14,836
Lightning-rods	D. Munson	15,491
Loaf-sugar, Machine for cutting	A. and F. Brown	14,490
M.		
Melodeon	E. D. Louis	16,094
Mill, Cider	T. J. Kindleberger	12,958
N.		
Nail-machines	D. Dodge	15,054
O.		
Ore-washer	W. L. Carter	14,388
Ore-washer	H. Bradford	15,544
Ore-washer	S. Thomas	15,827
Oven	H. Ball	15,753
P.		
Pads, Attaching, to saddle-trees	J. Ives	15,077
Paper-folding machine	C. Chambers	15,842
Paper, Machinery for folding	C. O. Crosby	16,266
Paper-pulp engine	J. Kingsland, jr	16,278
Paper-pulp, Machinery for grinding	J. Kingsland, jr	16,230
Paper-pulp, Process of grinding	J. Kingsland, jr	16,316
Paper-pulp, Reducing wood fibers to	H. Voelter	21,161
Photographic cameras, Plate-holder for	W. and W. H. Lewis	15,854
Planing-machine, Gearing for feed-rollers of	C. Burleigh	14,260
Planing-machines, Clamping cutters in the cutter-heads of.	J. P. Grosvenor	16,144

Alphabetical list of reissues.

Invention or discovery.	Name of patentee.	No.
Planter, Cotton-seed	A. W. Washburn	14, 529
Planter, seed, Hand	J. H. Jones	15, 610
Plow	R. F. Avery	14, 044
Press, Printing	R. M. Hoe	15, 501
Pressure-bells	M. L. Barton and C. A. Buel	14, 593
Printers' composing-stick	O. F. Grover	15, 358
Printing-telegraph	H. N. Baker	14, 759
Pulverulent acid for use in the preparation of soda-powders, farinaceous food, &c.	E. N. Horsford	14, 723
R.		
Railroad-car seats and couches	T. T. Woodruff (Reissue 1,439)	16, 159
Railroad-car seats and couches	T. T. Woodruff	16, 160
Railway-bars, Repairing	G. Johnson	15, 687
Reaping-machines	W. C. Martin and H. F. Mann	15, 044
Registers and ventilators	E. A. Tuttle	15, 003
S.		
Saddle-trees, Attaching pads to	J. Ives	15, 677
Saw-gummer	R. H. Garrigues	15, 718
Saw-mill dogs	G. W. Hill	14, 844
Saw-mills, Head and tail blocks for	E. H. Stearns	14, 700
Saws, circular, Grinding	W. Clemson	14, 950
Saws, Machine for grinding	E. Andrews	16, 233
Sewing-machine	J. Bachelder	6, 439
Sewing-machine (Reissue 2,125)	J. Bachelder	6, 439
Sewing-machines, Folding-guides for	S. D. Boyce	15, 402
Shingle-machine	E. Hedley	14, 914
Shirt-collars	P. and G. W. Hunt	4, 376
Shirt-collars	P. and G. W. Hunt	10, 019
Shoemakers' edge-plane	L. A. Dunham	15, 176
Smut-machine	H. B. Ingham	15, 978
Spools, Machine for manufacturing	A. D. Waymouth	15, 446
Steam-stamps, Operating	E. P. Ball	14, 944
Stoves, cooking, Gas	H. B. Musgrove	14, 064
Stoves, Ventilating-dampers for	J. Magee	14, 940
Surface-condensers for steam-engines	D. D. Foley	14, 923
T.		
Tubes, metal, seamless, Making	W. F. Brooks	14, 551
U.		
Upholstery, Mode of securing springs in	W. Wright	16, 254
V.		
Valve-gear for steam-engines	C. H. Brown and C. Burleigh	14, 125
Vise	C. C. Walworth	15, 883
W.		
Walls and floors of cellars, Constructing	S. A. and P. L. Morn	14, 323
Warehouses, Safety-hatches for	E. P. Morgan	15, 201
Water-closet	W. S. Carr	15, 474
Wheel, Water	J. Tyler	15, 300
Wool, Machinery for combing	M. H. Simpson	16, 864
Wood-bending machines	J. C. Morris	14, 405
Wrench	W. Baxter	14, 221

REISSUES.

A.		
Air and gas, Apparatus for carbureting	A. Barbarin	3, 892
Air, Treating organic materials with	R. D. Heureuse	3, 921
Alarm for railroad switches, Electro-magnetic	Hall's Patent Electric Railway Switch and Drawbridge Signal Company.	3, 859
Ale, beer, &c., Brewing	J. McCormick	3, 804
Animal and vegetable substances, Apparatus for evaporating the moisture from. (Division A.)	C. Alden and Alden Fruit-Preserving Company.	4, 010
Animal and vegetable substances, Process for evaporating the moisture from. (Division B.)	C. Alden and Alden Fruit-Preserving Company.	4, 011
Apple-parer	A. G. Batchelder	3, 970
Apples, grapes, &c., Machine for grinding and pressing	C. B. Hutchinson	3, 830
Auger	I. T. Payne	3, 879
Auger	W. A. Ives	4, 156

Alphabetical list of reissues—Continued.

Invention or discovery.	Name of patentee.	No.
Auger-handle	J. M. Horton	4, 187
Axle-box, Railway	J. B. Fletcher	3, 963
Axle, Carriage	A. E. Smith	3, 991
B.		
Bagasse, Spider-arch for burning	J. Amich	4, 044
Bar-iron, Manufacture of	W. H. Perry	3, 787
Bearings and packings, Material for	E. D. Murfey	4, 210
Bed-bottom	E. Yeoman	4, 180
Bedstead-fastening	J. L. Haven & Co	4, 028
Bit-stock	L. J. Gunn and C. H. Amidon	4, 199
Blast-furnaces, &c., Hot-blast stove for	J. Henderson and J. M. Lawford	4, 149
Boat for transporting railroad-cars	J. Wheelock	4, 121
Boiler, Farmers'	A. N. Merrill	4, 062
Boiler-heads, Device for flanging the flue-hole of	E. Regan	3, 966
Boiler, Steam	H. Leslie	3, 904
Boilers, Water-indicator for	J. D. Lynde	4, 049
Bone-black and other substances, Furnace for burning	A. Weber	4, 201
Boots and shoes, Insole for	W. Williams	3, 944
Bottles, Apparatus for filling	H. W. Putnam	4, 050
Box for packing neck-ties (Division B)	W. H. Hart, jr	4, 163
Bracket, plated-metal, Manufacture of	J. Barclay	4, 192
Brake, Railway-car	A. M. Allen	3, 790
Branch stop-cock for mains	R. A. Hill	3, 829
Brick-machine	United States Brick Machine Company	4, 108
Brick-machine (Division A)	J. Sangster	4, 178
Brick-machine (Division B)	J. Sangster	4, 179
Bridge	A. Fink	4, 003
Bridge, iron, Corrugated	R. Montgomery	4, 172
Broiler	J. T. Page	4, 218
Bronzing and gilding	J. L. Duffee and J. H. Johnson	3, 962
Brush	J. McQuide	4, 151
Buckle	West Haven Buckle Company	3, 868
Buggy-top	A. M. Cory	4, 104
Burner, Lamp	W. F. Rippon and G. A. Johnson	3, 805
Burner, Lamp	A. Burtis, M. A. Van Allen, and W. D. Ludlow	4, 058
Butter-worker	E. P. Walker	3, 943
C.		
Calico-printers' rollers, Machine for engraving	J. and T. Hope and H. Le Favour	3, 849
Camera, Solar	W. H. Masters	4, 136
Can-bottom, Metallic	H. W. Shepard	4, 032
Can for paint, fruit, &c	Devoe Manufacturing Company	3, 993
Capstan and windlasses	D. N. B. Coffin, jr., and B. Woodward	4, 100
Carpet-lining	G. W. Chipman	4, 066
Carriages, Children's	B. P., W. E., and C. T. Crandall	3, 971
Carriages, Children's	W. E. Crandall	3, 972
Carriages, Rein-holder for	E. C. Patterson	4, 133
Carriage-wheels, Machine for compressing	H. Killam	4, 070
Cast steel, Manufacture of	W. W. Averell	3, 835
Cast steel, Manufacture of	L. La Brech-Viger	4, 153
Cartridge, Metallic	R. White	3, 833
Cartridge-shells, Machine for necking	B. Payne	3, 793
Cement water-pipe	E. Dayton	3, 824
Chain-links, Device for swaging	O. M. Draper	3, 858
Chair, Folding	E. W. Vaill	3, 986
Cherry-stoner	G. Geer, T. G. Hadley, and W. Hamilton.	4, 105
Chills for casting car-wheels	W. Wilmington	4, 102
Clock, Calendar	W. A. Terry	4, 213
Clock case	E. Ingraham	4, 207
Coal-hod	E. A. Jeffery	4, 147
Coal-scuttle	J. Edgar	3, 903
Cock	J. P. Gallagher	4, 140
Cock, Steam-gauge	O. T. Earle	4, 027
Coffee-strainer	E. P. Woods, D. Sherwood, and C. H. Latham.	3, 908
Condenser, Steam	J. Houpt	3, 909
Cornices, Machine for rolling	A. and W. H. Johnson	4, 171
Corn, Machine for husking	L. A. Aspinwall	4, 009
Corn, Machine for husking	L. A. Aspinwall	4, 174
Corn-popper	J. H. Bigelow	3, 821
Corn-sheller	J. Bowles and S. P. Rose	4, 036
Cotton-gin	J. C. Du Bois	4, 047
Coupling-car	M. Van Slyke and D. W. Wood	4, 073
Covering steam-boilers and other similar articles, Composition for.	F. Leroy and P. A. V. Le Lubez	4, 095
Crimping-machine	F. B. Cabell	3, 856

Alphabetical list of reissues—Continued.

Invention or discovery.	Name of patentee.	No.
Cultivator	J. Gerber	3,932
Cultivator	A. R. Blood and V. R. Beach	3,945
Cup for casters, &c (Division B)	C. H. Latham	4,000
Cutter, Corn-stalk	G. W. Cole	3,874
Cutter, Straw	J. Palmer	3,898
Cutter, Straw	W. Gale and B. Belcher	3,912
Cutter, Twine	T. B. Doolittle	4,003
D.		
Damper, Stove-pipe	G. B. Halstead	4,183
Dentists' tool-rack		
Deodorizing-apparatus for closet (Division A)	Earth Closet Company, Hartford, Conn.	4,137
Desk, School	C. H. Loomis	4,190
Drill, Grain	J. H. Thomas, P. P. Mast, and C. O. Gardiner.	4,091
Drills, Grain	J. Ingels	3,976
E.		
Earth-closet (Division B)	Earth Closet Company, Hartford, Conn.	4,138
Excavating-machine (Division A)	O. S. Chapman	4,038
Excavating-machine (Division B)	O. S. Chapman	4,039
F.		
Fabric for the manufacture of shoes, &c	E. Waite	4,173
Fastening for neck-tie	D. H. Tierney	4,033
Fatty substances, Process of extracting	W. Coffin	4,067
Faucet	E. A. Sterry	4,022
Faucet	W. H. Triesler	4,054
Felting-machine	J. T. Waring	3,916
Fence, Farm	C. W. Reeder	3,980
Fertilizer (Division A)	D. A. Ter Hoeven	4,052
Fertilizers, Manufacture of	D. A. Ter Hoeven	4,053
Fertilizers or guano from fish, Manufacture of	O. Lugo	3,840
Fire-alarm signal and apparatus (Division A)	A. Allen	4,012
Fire-alarm signal and apparatus (Division B)	A. Allen	4,013
Fire-arm, Breech-loading	W. C. Hicks	3,798
Fire-arm, Breech-loading	W. C. Hicks	3,860
Fire-arm, Breech-loading	B. S. Roberts	3,951
Fire-arm, Breech-loading (Division 2)	B. S. Roberts	3,952
Fire-arm, Breech-loading	B. S. Roberts	3,953
Fire-arms, Breech-loading	W. N. Ely	3,946
Fire-extinguisher for use on railroads, &c	W. P. Van Deursen and W. C. Davis	3,997
Fluting-machine	S. R. Knox	3,861
Fluting-machine	S. R. Knox	3,938
Forging-apparatus, Portable	A. Thomas	3,894
Fruit-basket	L. Carpenter	4,145
Furnace for burning bone-black and other substances	A. Weber	4,201
Furnace for roasting and treating ores, (Div. A)	C. Stetefeldt	3,807
Furnace for roasting ores	E. P. Hudson	4,132
Furniture, Stationary	C. H. Wight	4,034
G.		
Gas, Apparatus for the manufacture of	W. J. Nichols and A. C. Rand	3,873
Gas from hydrocarbons, Manufacture of	J. Kidd	4,168
Gas, Manufacture of	W. J. Nichols and A. C. Rand	3,873
Generator, Gas	B. Best	3,924
Generator, gas, Steam	H. S. Maxim	3,950
Generator, Steam	H. L. Stuart	3,809
Generator, Steam	W. P. Abendroth, J. Griffith, J. W. Wundrum, and T. H. Miller.	3,853
Generator, Steam	W. Lowe	4,000
Generator, Steam (Division A)	J. B. Root and T. C. N. Paton	4,082
Generator, Steam (Division B)	J. B. Root and T. C. N. Paton	4,083
Generator, Steam (Division B)	American Generator Boiler Company, New York, N. Y.	4,186
Glue, Manufacture of	A. Guenther and E. H. Neymann	3,884
Glue, Manufacture of	T. P. Milligan and T. Higgins	4,072
Gold and silver from waste solutions, Recovering	J. Shaw	4,030
Grain and other materials, Machine for separating	W. W. Stoll	3,992
Grain-cleaner (Division A)	W. Ager	3,788
Grain-cleaner (Division B)	W. Ager	3,789
Grain-separator	G. B. Turner	3,923
Grate	J. Old	4,042
Grate for furnaces	E. S. Renwick	3,987
Grate, Stove	E. Moneuse and L. Duparquet	3,800
Gun-carriage	J. W. Wilson	4,154

Alphabetical list of reissues—Continued.

Invention or discovery.	Name of patentee.	No.
H.		
Hair for ladies' head-dress, Imitation	L. F. Shaw	4,031
Hand-canceling stamp (Division B)	M. P. Norton	4,144
Hand-stamp	B. B. Hill	3,927
Hard rubber, Manufacture of new articles from	Halsey's Patent Box and Case Company.	3,974
Hard rubber, Molding watch-cases and other articles from.	Halsey's Patent Box and Case Company.	3,973
Harvester (Division A)	J. F. Sieberling	3,955
Harvester (Division B)	J. F. Seiberling	3,956
Harvester (Division C)	J. F. Seiberling	3,957
Harvester	R. M. Williams	3,958
Harvester (Division A)	R. Dutton	4,124
Harvester (Division B)	R. Dutton	4,125
Harvester (Division A)	R. Dutton	4,139
Harvester (Division B)	R. Dutton	4,217
Harvester	J. G. Perry	4,008
Harvester, Combined rake and reel for	C. H. and L. J. McCormick	3,979
Harvester, Pitman-connection for (Division B)	J. W. Doty	4,017
Harvesters	C. H. and L. J. McCormick	3,977
Hasp for trunk-lock	S. Croft and J. C. Schuellermann	4,170
Hasp for trunk-locks	L. Hillebrand	4,205
Hat	J. P. Beatty	3,855
Hay-fork, Horse	J. K. O. Nell	3,876
Hay-rake, Horse	W. Emmons	3,937
Hay-rake, Horse	A. Brown	3,960
Hay-rake, Horse	J. H. Sherman	4,128
Heaters and filters, Feed-water	J. Armstrong	3,834
Heater, Steam (Division 1)	J. Shackleton	3,843
Heater, Steam (Division 2)	J. Shackleton	3,844
Heater, Steam (Division 3)	J. Shackleton	3,845
Hides and skins, Compound for treating	L. F. Robertson	3,864
Hides, Apparatus for scraping and working	H. Lampert	3,839
Hinge	P. and F. Corbin	3,893
Hoisting-apparatus	Warrior Mowing Company	3,811
Hoisting-block	J. A. Burr	4,215
Hoisting-machine	W. Miller	3,922
Holder for neck-ties (Division A)	W. H. Hart, jr	4,162
Horse-cover, Ventilated	P. B. Eager	3,926
Horses and other animals, Device for shearing and clipping.	R. T. Smith, W. Earl, J. K. Priest, and J. G. Blunt.	4,021
Horseshoe	G. T. Chapman	3,822
Hose, tubing, and other rubber fabrics, Manufacture of	J. Schenck	3,842
Hullers, Cotton-seed	P. P. J. Martin	3,831
Hydrant	W. Bailey	4,155
Hydrocarbons, Manufacture of gas from	J. Kidd	4,168
I.		
Ice-cream freezer	B. G. Martin	4,177
Indicator, Railroad-station	A. C. Rodgers and L. Shaffer	3,841
Inking-apparatus for printing-presses	V. Wood and J. E. Suiterlin	3,996
Inkstand	S. Darling	4,197
Inkstand, Manufacture of	T. S. Hudson	3,964
Insulator	L. A. Cauvet	3,847
Iron and steel, Coating	S. B. Hewitt, jr., and L. P. Jones	3,989
Iron, Apparatus for heating the blast for furnaces used in smelting.	J. Henderson and J. M. Lawford	4,150
Iron into steel, Converting	The Barrons Patent Steel Manufacturing Company.	3,920
Iron exposed to water or dampness, Preventing the corrosion of.	C. Godfrey and R. Lighthall	4,048
J.		
Jar, Fruit	T. G. Otterson	4,211
K.		
Kettle, Brass (Division B)	Waterbury Brass Company	3,996
Kettles, Machine for making (Division A)	Waterbury Brass Company	3,995
Kiln, Lime	C. D. Page	3,877
Knife, Paring	J. J. Le Beau	4,118
Knitting-machine	Pepper Knitting-Machine Company	3,901
Knob, Curtain	C. Z. Kroh	4,019
Knob-latch, Reversible	Norwalk Lock Company	3,909
Knob-latch, Reversible	Russell & Erwin Manufacturing Company.	3,990
Knob-latch, Reversible	H. H. Elwell	4,196
Knobs to spindles, Attaching	M. Andrew	4,114

Alphabetical list of reissues—Continued.

Invention or discovery.	Name of patentee.	No.
L.		
Ladder, Step	C. G. Udell	3,895
Ladies' head-dress, Imitation hair for	L. F. Shaw	4,031
Lamp	C. A. Kleemann	3,900
Lamp-chimney	E. and E. D. Dithridge	4,182
Lamp-chimney	Requa Patent Concave Burner and Chimney Company.	4,221
Latch, Reversible	B. Mallory	3,862
Leather, Machine for cutting	C. F. Davis, T. Corey, and S. and R. Boyd	3,967
Leather, Machine for rolling	J. Whitney	4,122
Leather, Tanning and stuffing	W. B. Brittingham	4,129
Leather, Treatment of	N. C. Russell	3,816
Lining for fire-place	C. Truesdale and W. Resor & Co	4,024
Lock	Hall's Safe and Lock Company	4,018
Lubricator	H. A. Daniels	4,131
M.		
Marble, Machine for dressing	R. P. Bailey	4,057
Marble, Machine for sawing	P. J. Torney, C. W. Hayden, and J. L. Kidwell.	3,931
Marker, planter, and cultivator, Corn	E. Barto	4,046
Mattress, Spring	E. L. Bushnell	4,103
Metal bolts, Machine for forging or rolling screw-threads on.	J. Cochrane	3,998
Meter	J. C. Horton and S. K. Hawkins	4,206
Meter, Liquid	J. F. De Navarro	4,040
Mill	J. B. Brown	3,925
Mill	J. B. Brown	3,926
Mill, Cider	J. S. and A. W. Hall, J. A. Moore, and H. Burkhardt.	3,791
Mill, Coffee	T. W Brown	4,130
Mill, Saw	A. P. Barlow, C. H. Eastman, W. W. King, Z. B. Small, and J. H. Johnson.	3,878
Mill, Saw	A. McCreight	4,101
Millstone-dress	J. Sedgebeer	4,135
Mill, Wind	United States Wind Engine and Pump Company.	4,064
Movement, Mechanical	H. J. Case, N. Chapin, and C. Richardson.	4,078
Mower, Lawn	S. Coit	3,784
Mowing-machine	J. P. Greely and L. W. Buxton	3,947
Mowing-machines, Gearing for	J. V. Strait	4,200
N.		
Nails, Machine for cutting	A. P. Winslow	4,214
Nails, wrought-iron, Machine for making	D. Armstrong	3,969
Neck-ties, Box for packing (Division B)	W. H. Hart, jr	4,163
Neck-ties, Holder for (Division A)	W. H. Hart, jr	4,162
Needles, Machine for making	C. O. Crosby	3,911
O.		
Ochres for paints	D. S. Wood	4,159
Oil-cabinet	M. H. Wiley, T. Miller, and J. H. B. Lang.	4,035
Oiler for loose pulleys	C. A. King and D. B. Wesson	3,928
Oil-fountain, Drip-filtering	E. F. Wilder	4,176
Ore-crusher	J. G. W. and J. Hamilton	3,948
Ores, Furnace for roasting	E. P. Hudson	4,132
Ornamenting, Mode of	H. Harrop	3,903
Oven	J. Vale	3,796
Oven	H. Ball	4,026
Oven (Division A)	J. Vale	4,055
Oven (Division B)	J. Vale	4,056
Oven, Bakers'	M. A. E. McKenzie	3,929
P.		
Packing-case for tobacco	S. F. Hess	3,871
Padlock	F. W. Smith, jr., G. W. Bassell, and S. R. Wilmot.	3,880
Paint and cement, Fire and water proof	T. Brinkmann	3,881
Paper and other fabrics and materials, Compound for coloring.	F. Beck	4,181
Paper-bags, Tool for manufacturing	E. J. Howlett	4,039
Paper-boxes, Machine for making	S. B. Terry, jr., and D. S. Robeson	3,985
Paper-cutting machine	G. H. Sanborn	4,090
Paper-folding machine (Division A)	S. C. Forsaith	3,785
Paper-folding machine	C. Chambers, jr	4,079

Alphabetical list of reissues—Continued.

Invention or discovery.	Name of patentee.	No.
Paper, Manufacture of	Okra Paper Company, New York	3,907
Paper-pulp from straw, &c., Manufacture of	A. K. Eaton	4,203
Pavement, Composition	H. L. Cranford	4,059
Pavement, Stone	C. Guidet	4,106
Pencil	J. Reckendorfer	3,863
Petroleum, Deodorizing	T. Restieaux	4,020
Petroleum, Process of treating	J. A. Tatro	3,867
Piston, Pump	New England Pump-Manufacturing Company, Boston; Pacific Pump-Manufacturing Company, San Francisco; C. F. Mudge, and Bridgeport Manufacturing Company.	3,899
Piston-rod adjuster	D. Ely	4,015
Planing-machine	S. L. Allen	4,092
Planter, Corn	J. and W. Campbell	3,836
Plow	J. Vandegrift	4,119
Plow, Gang	G. W. Hildreth	4,223
Polishing-machine	P. F. Randolph	4,127
Post-office post marking and canceling hand-stamp. (Division A.)	N. P. Norton	4,143
Press, Printing	R. Hoe & Co	3,893
Press, Printing	R. Hoe & Co	4,084
Priming-cartridge (Division 1)	A. Moffatt	4,075
Priming-cartridge (Division 2)	A. Moffatt	4,076
Printing-presses, Combining paper-folding machines with, (Div. B.)	S. C. Forsaith	3,786
Printing-telegraph	Gold and Stock Telegraph Company, New York.	3,810
Printing-telegraph	Gold and Stock Telegraph Company, New York.	3,812
Printing-telegraph	Gold and Stock Telegraph Company, New York.	3,890
Printing-telegraph	G. M. Phelps	4,152
Projectile	J. D. Richards	3,886
Pump	Forrester Manufacturing Company	3,888
Pump (Division A)	J. Brokenshire, G. Goble, and J. D. Macfarlane.	4,110
Pump (Division B)	J. Brokenshire, G. Goble, and J. D. Macfarlane.	4,111
Pump	C. L. and J. P. Griscom	4,204
Pump, Pneumatic	W. H. Guild	3,898
R.		
Rake and loader, Hay	H. Baker	3,854
Rake, Harvester	A. Rank	4,089
Rake, Harvester	H. H. Scofield	4,194
Rakes, Harvester	C. H. and L. J. McCormick	3,978
Reflector	W. G. Schmidlin and J. W. Driscoll	3,981
Reflector (Division A)	I. P. Frink	3,826
Reflector (Division B)	I. P. Frink	3,827
Reflector for lamps	W. G. Schmidlin and J. W. Driscoll	3,817
Rein-holder for carriages	R. C. Putterson	4,133
Reservoir for wells (Division A)	R. H. Dewey and E. N. Tillotson	4,165
Rhubarb-plant, Alcoholic liquor from	J. H. Deacon	3,837
Roller for clothes-wringer	Woonsocket Rubber Company	3,930
Roofing, Metallic	S. Hughes	4,198
Rubber or gutta-percha hose, Manufacture of	E. L. Perry and C. Manheim	4,148
S.		
Safe	T. J. Sullivan	3,887
Safes, Construction of	F. H. Williams	4,001
Sash-fastener	Judd Manufacturing Company	3,915
Saw	J. and F. W. Davis	4,008
Saw	R. P. Wheeler, E. M. Madden, and W. Clemson.	4,006
Scale-beams, Machine for milling the knife-edges of	T. J. Rockwood	3,865
Scraping and working hides, Apparatus for	H. Lampert	3,839
Screen for base-burning fire-place heater. (Division B)	D. Stuart and R. Peterson	4,009
Screw (Division B)	National Screw Company	3,941
Seat, Chair	G. C. Winchester	3,890
Seat, Chair	O. A. Bingham	4,164
Seeding-machine	W. A. Van Brunt	3,846
Seeding-machine	F. H. Manny	3,913
Settee	W. Chase	3,882
Sewing and other machines, Motive power for	J. Zuckermann	4,193
Sewing and other machines, Treadle for	B. C. Pole	4,184
Sewing-machine	Wilcox & Gibbs Sewing-Machine Company.	3,795
Sewing-machine	G. L. Dulaney	3,885
Sewing-machine	Globe Sewing-Machine Company	3,904
Sewing-machine cover, Construction of	J. Johnson	3,861
Sewing-machine, Shuttle for	J. C. Wade	3,935

Alphabetical list of reissues—Continued.

Invention or discovery.	Name of patentee.	No.
Sewing-machines, Needle for (Division A)	H. G. Suplee	3,818
Sewing-machines, Needle for (Division B)	H. G. Suplee	3,819
Sewing-machines, Needle for	M. P. Carpenter	4,002
Sewing-machines, Tuck-creasing device for	J. Bolton	4,196
Shears, Sheep	R. M. Wilder and H. B. Robinson	3,869
Shoe	C. Buffum	4,037
Shoes, &c., Fabric for the manufacture of	E. Waite	4,173
Shoe, Water-proof	T. C. Wales	3,942
Shovel-plow and potato-digger, Combined	J. M. Dick	4,216
Side-saddle	J. T. Gathright	4,041
Silver ores, Process of treating (Division B)	C. Stetefeldt	3,808
Skate	H. Scott	3,800
Skate	J. L. Plimpton	3,996
Skate-fastening	H. Scott	4,191
Skates, Mode of fastening	N. Ladd	4,088
Sleeping-collar	L. Dederick	4,193
Sleeve button and stud	B. Clayton	4,016
Sleigh-bells to straps, Attaching	W. E. Barton	4,185
Slide-valves in direct-acting engines, Operating	W. H. Guild and W. F. Garrison	3,885
Smut-mill and grain-separator	D. Shaw	3,794
Soap, Apparatus for crutching	G. M. Leslie	4,107
Spectacles	L. Black	4,065
Spindle for spinning	A. H. Gilman	4,094
Spoke-machine	R. H. Boynton	4,109
Spring, Compensating (Division B)	C. Shea	3,983
Spring, Equilibrium (Division A)	C. Shea	3,982
Springs, Combined India rubber and steel	National Spring Company, New York	4,202
Springs, Compensating or equilibrium (Division C)	C. Shea	3,984
Spring, Shank	E. Heaton	4,081
Sprinkler, Street	L. F. Bancroft and A. B. Yotter	3,917
Steam-boilers, steam-pipes, &c., Composition for covering	J. Riley and C. W. Bissell	4,134
Steel, Manufacture of	W. Fields	4,060
Stone-channeling machine	E. G. Lamson	4,189
Stove, Base-burning	G. G. Hunt	3,965
Stove, Coal	H. G. Giles	3,897
Stove, Cooking	R. Scorer	3,801
Stove, Cooking	E. Bussey and C. A. MacLeod	3,815
Stove, Cooking	S. S. Jewett	4,061
Stove, Cooking	G. H. Phillips	4,063
Stove, Cooking	S. H. La Rue	4,157
Stove, Cooking	G. H. Phillips	4,219
Stoves, cooking, Reservoir	C. O. Green	4,161
Stoves, cooking, Water-reservoir for	D. G. Littlefield	4,006
Stoves, Covers for	H. Willard	3,968
Stove for burning stumps	J. M. French	4,004
Stove, Heating	S. H. La Rue	4,175
Stove, Heating	C. Hoeller	3,934
Stove-pipe elbows	T. K. Anderson	4,008
Stove-pipe thimble	W. H. Guild	3,797
Sugar, Purging and draining	J. J. Emery	3,838
Surge-reliever		
T.		
Table-caster (Division A)	C. H. Latham	4,208
Table, Croquet	H. R. Heyl	4,118
Table, Extension	C. P. Lenz	3,949
Table-leaf supporter	G. L. Gerard	4,146
Tape for oil-vessels	M. Andrew	4,014
Telegraph, Printing	T. A. Edison	4,166
Thrashing-machine	J. O. Ferrall and T. L. Daniels	4,007
Tile-machine	F. M. Mattice	3,851
Tile-machine	J. W. Penfield	3,905
Tin, Method of ornamenting	L. Fitzmaier	4,160
Tool for cutting screw-thread (Division A)	National Screw Company	3,940
Tool for manufacturing paper-bags	E. J. Howlett	4,029
Toy, Teachers'	E. F. Anderson	3,891
Toy velocipedo	N. S. Warner	4,120
Trace-holder	O. B. North & Co	3,914
Trap, Animal	J. A. Lee	4,113
Traveling-bag	F. Fischbeck	4,069
Treadle for sewing and other machines	B. C. Pole	4,184
Tree for side-saddles	J. B. Gathright	3,988
Treenail	N. L. Tomlinson	4,195
Tumbler-washer	G. D. and C. Dows	3,870
Turbine	B. Stetson	3,866
U.		
Unloading apparatus, Wagon and car	N. Swickard	4,212
Urinal	S. Males	3,939
Use and application of fuel in metallurgic and other furnace.	T. W. Clarke and W. S. Dexter	3,857

Alphabetical list of trade-marks.

Invention or discovery.	Name of patentee.	No.
V.		
Vacuum-apparatus, Medical	J. G. Hadfield	4,080
Valve, slide, Balance	W. M. Stevenson	3,802
Valve, slide, Balance	T. M. Herriott and S. Myers	4,117
Valve, Globe-steam	Rock-Valve Manufacturing Company	4,043
Valve-seat, Non-corrosive	E. H. Ashcroft	4,045
Valve, Stop	J. H. Davis	3,823
Varnish (Division A)	D. R. Averill	3,813
Varnish, Manufacture of (Division B)	D. R. Averill	3,814
Vegetable and fruit peeler	E. D. Averell and J. Malan	4,025
Vehicles, Umbrella-supporter for	H. S. Hermance	3,793
Veneers, Stay-log for cutting	J. N. Lyman	3,789
Ventilator, Car	M. T. Hitchcock	4,005
Ventilator, Railroad-car	H. D. Carroll, R. Hitchcock, and J. H. Hare.	3,910
Vessel for boiling	W. Krueger	4,188
Vinegar-apparatus	A. B. Strong	4,051
Vise	E. Crawley and T. L. Bayliss	3,883
W.		
Wagons	L. M. Ham and J. H. Dodge	3,975
Wash-bench, Extension	S. Wiswall	4,097
Washing-apparatus	J. T. Grose	4,141
Watchmen's time-detector	J. E. Bexerk	3,869
Water-pipe machine	J. W. Stockwell	4,220
Water-supplying apparatus	J. C. Hagan	4,167
Water-supply regulator for water-works (Division A)	B. Holly	4,085
Water-supply regulator for water-works (Division B)	B. Holly	4,086
Water-supply regulator for water-works (Division C)	B. Holly	4,087
Weather-strip	F. C. Gridley	3,848
Weight for sashes, clocks, &c.	D. B., I. A., and T. T. Lacy, and The Lacy Sash-Weight Company, and The Standard Sash-Weight Company.	4,115
Wheel, Carriage	J. D. Sarven	4,116
Wheel, Railway-car	G. Natorp	3,919
Wheel, Railway-car	J. K. Sax and G. W. Kear	3,954
Wheel, Water	W. Foos, J. W. Bookwalter, M. A. Leffel, and L. Foos.	3,855
Whip-socket	J. O. Merriam and E. Chamberlin	4,071
White-lead, Manufacture of	D. C. Colby, T. Woods, and B. F. Pines	4,074
Wind-mill, Self-regulating	Continental Windmill Company, New York.	4,169
Window-blind	S. Hebron	3,933
Windows, Mode of attaching cornice to	A. Peplo	4,077
Wood, Machine for bending	W. P. Letchworth	3,850
Wood, Machine for bundling	W. S. Williams and T. J. O'Connor	4,142
Wood, Preserving and hardening	J. L. Samuels	4,158
Wool and other fibrous material, Dye for coloring	A. Knight and G. W. Talbot	4,023
Wrench	Collins Company	3,852
Wrench	L. Coes	3,918
Y.		
Yeast for distillers, Manufacture of	J. Wolff	3,959

TRADE-MARKS.

[This list commences with the issue of October 25th.]

A.		
All-healing liniment and morning-star lamp-oil	Teter & Hite	47
Ax	J. W. Meyer	43
Ax, Chopping	Bœtticher, Kellogg & Co	63
B.		
Baking-powder	Thompson & Steele	93
Base-ball	Peck & Snyder	46
Bitters, Honolulu orange	R. Des Auges	114
Bitters, Stomach	J. A. Jackson & Co	39
Broom	R. W. English	86
Broom and brush	L. Y. Gardiner	100
Broom XX	R. W. English	88
Broom XXX	R. W. English	87

Alphabetical list of trade-marks—Continued.

Invention or discovery.	Name of patentee.	No.
Burning-fluid	G. M. Dunforth	113
Burning-fluid	P. Weisenberger	121
Burning-fluid, Non-explosive	R. F. Danforth	67
C.		
Car-wheel	W. G. Hamilton	8
Cigar	D. Hirsch & Co	22
Cigar	D. Hirsch & Co	23
Cigar	D. Hirsch & Co	24
Cigar	D. Hirsch & Co	25
Cigar	D. Hirsch & Co	26
Cigar	D. Hirsch & Co	27
Cigar	D. Hirsch & Co	28
Cigar	D. Hirsch & Co	29
Cigar	D. Hirsch & Co	30
Cigar	D. Hirsch & Co	31
Cigar	D. Hirsch & Co	32
Cigar	D. Hirsch & Co	33
Cigar	D. Hirsch & Co	34
Cigar	D. Hirsch & Co	35
Cigar	W. S. Roose	80
Cigar	W. S. Roose	81
Cigar	Rawson & Philbuck	92
Cigars, snuff, and tobacco	Lorin Palmer	106
Cigars, tobacco, and snuff	J. C. Partridge & Co	65
Compound, Medical	J. A. McKinnon	42
Compound, Medical	United States Proprietary Medicine Company, Cincinnati.	74
Compound, Medical	G. C. Furber	99
Compound, Medical	S. S. Seeley	120
Cosmoline, a product of petroleum	E. F. Houghton	56
Cotton-seed	H. J. Holmes	37
Cough-balsam	W. Maddox	68
Cutlery	R. J. Roberts	108
D.		
Deviled entrement	W. Underwood & Co	89
Dress-goods, Black alpaca	Bowen, Hunt & Winslow	66
Dry goods	Dale, Ross & Co	19
F.		
Fertiliser	Walton, Whan & Co	75
Fertiliser	Dugdale & Girvin	115
Fertiliser	Dugdale & Girvin	116
Fertilizing compound	J. J. Turner & Co	10
Fish	T. Coit	4
Furnishing goods	Fish, Clark & Flagg	118
G.		
Goods, Water-proof	C. Tappan and M. F. Winn	111
Guano, Soluble sea-island	R. W. L. Rasin	45
H.		
Hair, Preparation of	R. Green	21
Ham	W. Ryan	11
Huntoon steam-governor	J. A. Lynch & Co	98
L.		
Lead-pencil	E. Faber	19
Leather	G. F. and C. T. Page	105
Leather-dressing	C. L. Hauthaway	78
Liniment	Ridenour, Coblentz & Co	93
Linseed oil, Refined boiled	Atlantic White-Lead Company, New York.	72
Liquid paint	Averill Chemical Paint Company, New York.	1
Liquors	C. H. Ross	119
M.		
Medicine	J. H. Zeilin & Co	58
Medicine	W. N. Wells	76
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DESCRIPTIONS AND CLAIMS OF PATENTS

ISSUED IN THE YEAR 1870.

ISSUE OF JANUARY 4.

PATENTS.

98,460.—ASPHALT PAVEMENT.—Carl Petrus Aleing, New York, N. Y.

Claim.—The manufacture or preparation of a compound which is denominated asphalt pavement, of the ingredients, in the proportions, and for the purposes set forth.

98,461.—MACHINE FOR MAKING NETS.—Benjamin Arnold, East Greenwich, R. I.

Claim.—1. The combination of a shuttle with a device for holding and feeding the net, substantially as herein described.

2. The combination of the shuttle with the levers D E G, as herein described, and for the purpose set forth.

3. The arrangement of the shuttle, cam *d*, and cams C and *a*, substantially as specified, and for the purpose set forth.

4. The combination of the lever H and lever E, for the purpose of regulating the size of the mesh, as set forth.

5. The rotating tube, provided with a perforated head, for laying the twine or thread in the shuttle, substantially as set forth.

6. The combination of the shuttle-filler, substantially as described, with the netting-machine herein set forth.

98,462.—GAS-MACHINE.—Silas R. Ball, Hyde Park, Ill.

Claim.—The construction of an air-carburetting device, wherein the carburetting-chamber B, pipes *b*, *c c'*, *d d'*, and *e*, and diaphragm *a*, are arranged with relation to each other, and the tank A, gasometer C, and a suitable air-pump, substantially as and for the purpose set forth.

98,463, antedated December 22, 1869.—CHILD'S CHAIR AND TABLE.—Philip G. Beckley, Newark, N. J.

Claim.—The combination of the table B, with perforations and staples on its top, with the chair A, provided with the hooks, as and for the purposes specified.

98,464, antedated December 30, 1869.—WATER-INDICATOR FOR STEAM-GENERATOR.—W. G. Bell, Pittsburg, Pa.

Claim.—1. The float A, attached to a hollow axis, which passes through the stuffing-box, provided with a steam-opening, X, said float, axis, and opening being so constructed with relation to the water-supply as to give an alarm when the water is below the desired water-line in the boiler, substantially as described.

2. The combination and arrangement of the float A with the valve in the supply-pipe, for regulating the flow of water into the boiler, substantially as herein described.

98,465.—EXTENSION-TABLE.—William John Boda, Dayton, Ohio.

Claim.—The within-described table, consisting of the sections A, connected together and made adjustable to or from each other by means of the bars D and D', pivoted at their ends and centre and provided with the pins F, and notches *d*, substantially as and for the purpose shown.

98,466.—COMPOSITION FOR DYEING AND COLORING LEATHER, HIDES, AND SKINS.—Charles Bond, New York, N. Y.

Claim.—The above-described coloring-compound for dressing or dyeing leather, skins, or hides, substantially as set forth.

98,467.—CATTLE-STANCHION.—N. W. Boody, Westbrook, Me.

Claim.—The improved cattle-tie, so arranged as to swing laterally on bolts *h i*, and to slide out at the bottom by means of the link A and bolt *i*, as and for the purposes herein set forth.

98,468.—COACH-LAMP BRACKET.—Thomas Boudren, Bridgeport, Conn.

Claim.—The combination of the standard, the brackets, and the nut, these parts being constructed to operate as set forth.

98,469.—CHANDELIER.—Thomas Buckley, New York, N. Y.

Claim.—1. The burner-rings B C, two or more, having different diameters, and placed one above the other in parallel planes, the smaller one being uppermost, in combination with the reflectors D E and the pipe A, substantially as and for the purpose herein set forth.

2. The rims *i*, fitted loosely on the burner-rings B C, and perforated to admit of the glass pendants *h* being attached to and detached from said burner-rings, substantially as shown and described.

3. The ring or hoop *j*, in which the lower end of the polygonal reflector D is fitted, substantially as and for the purpose set forth.

4. The combination of the reflectors D E, suspended directly to the pipe A, the burner-rings B C, the transparent or semi-transparent canopy F, with its rim *g*, and the rims *i*, with pendants *h* attached and fitted on the burner-rings B C, all arranged substantially as and for the purpose specified.

5. The canopy F, provided with a metallic rim, *g*, and made of a transparent or semi-transparent material, in combination with one or more reflectors and gas or other lights, substantially as and for the purpose set forth.

98,470.—DRIER.—Albert W. Cox and William Gause, Indianapolis, Ind.

Claim.—1. The described arrangement of sieves to caliduct K K', orifices L L', and broad flues E E', for the object designated.

2. In combination with the elements K K', L L', E E', the side pipes F F', with the dampers *f f'*.

3. The arrangement of side pipes or flues F F', and the pipe G, traversing the upper part of the chamber A, as and for the object stated.

98,471, antedated December 22, 1869.—CULTIVATOR.—Bowman S. Cox, Paulsborough, N. J.

Claim.—1. In a cultivator, the fender F and tooth D, constructed and arranged substantially as and for the purpose set forth.

2. Constructing the beam C with a portion bent to contain a long tooth, D, and prevent the times from falling forward, substantially as set forth.

3. Constructing the rear ends of the oblique frame-bars, as described, in combination with suitable bolt and screw, to connect and regulate the same.

4. In combination with oblique bars, as described, constructing and arranging the shank G, as and for the purpose set forth.

5. Constructing and arranging the standards H' H', as specified in combination with the oblique bars, as set forth.

98,472.—SWITCH-STAND FOR RAILWAYS.—Nicholas N. Dale, Plymouth, Ind.

Claim.—1. A railroad-switch stand, provided with a self-locking switch-lever, constructed as herein shown and described, for the purpose specified.

2. In combination with the switch-lever B, either with or without the foot-rests h, and with the slotted frame A, the sliding collar a, pins f, and pivoted levers b, connected with said collar, substantially as herein shown and described, for the purpose specified.

3. In combination with the switch-lever B, the collar a, pins f, levers b, and foot-rests h, substantially as herein shown and described, for the purpose specified.

98,473.—CARRIAGE-AXLE.—David Dalzell, South Egremont, Mass.

Claim.—The construction and arrangement of the flanged cap or moon-plate F, the collar B, projection C, and lugs a a on the box A, and the collar E and washers d f on the arm D, when the moon-plate is secured to the collar B C a of the box A by screws h h, and the said box is made fast to the hub by screws j j, and is provided with the hollow nut H screwed into one end, all as herein described.

98,474.—ICE-SLED.—Levi Darozir, Worcester, Mass., assignor to himself and Napoleon Nalette, same place.

Claim.—1. The combination, with the frame A and runners B B, of the hinged frame C and propelling-wheel E, said part being constructed and arranged substantially as and for the purposes described.

2. The combination, with the sides of the sled, of the guiding-crank screw-shafts M M, provided with cranks N N, substantially as and for the purposes described.

3. The combination, with the sled-frame and the hinged frame C, of the screw-shaft G, substantially as and for the purposes set forth.

4. The combination, with the sled-frame, and the hinged frame C, and wheel E, of the foot-treadles K and L, arranged substantially as and for the purposes set forth.

98,475.—SPOKE-SHAVE.—Joshua Davies, Muskegon, Mich.

Claim.—The spoke-shave A, having cast therewith the lugs E and C, and having pivoted, in the latter, the guide-gauge D, substantially as and for the purpose set forth.

98,476, antedated December 24, 1869.—GARMENT-HANGER AND SIZE-TICKET HOLDER COMBINED.—Isaac Desky and Thomas A. Jennings, Seneca Falls, N. Y.

Claim.—The combined coat-hanger and size-ticket holder, consisting of the curved bar A, bars B and C, connected together, and adapted for fastening to a garment, substantially in the manner and for the purposes set forth.

98,477.—ASH-SIFTER, LEACH, AND SMOKE-HOUSE.—David Willson Doan, Rochester, N. Y.

Claim.—The pivoted metallic ash-safe A, provided with an inclined perforated bottom, a^1, combined and arranged with the rotary sifter C, substantially as and for the purposes hereinbefore set forth.

98,478, antedated December 24, 1869.—AUTOMATIC VACCINATING-INSTRUMENT.—Charles H. Eccleston, Oxford, N. Y.

Claim.—The automatic vaccinating-instrument herein described, consisting of the reservoir F, having a hollow lancet, D, tube G, collar I, guide-screw E, piston and rod J, nut M, and spiral spring K, the whole enclosed in case B, and arranged to operate substantially as herein described, and for the purpose set forth.

98,479.—PAPER-CLIPS.—George W. Emerson, Chicago, Ill.

Claim.—1. The combination, with the body of the clip B, C, and T, of the spring-plate E, the lever I J, the pivot O, the handle H, and the spring D, substantially as and for the purpose hereinbefore set forth.

2. The combination, with the body of the clip B, C, and T, of the spring D, of the spring-plate E, the handle H, the lever I J, the pivot O, the catch M, the bed-plate L, and the bar P, substantially as and for the purpose hereinbefore set forth.

3. The bar P, arranged to hold the paper-fasteners F F F, one or more, in place, and to unloose them when they are full, substantially as herein-before described and set forth.

98,480.—CAST-IRON PAVEMENT.—Alonzo Farrar, Longwood, Mass.

Claim.—Each pavement-block or grated section made in manner substantially as described, viz, with the series of parallel bars, transverse connections having tenons or projections, and recesses or mortises disposed at its sides and ends, in manner as set forth.

Also, the block or section as so made, and as constructed, with its bars and transverse connections, or with either the bars or transverse connections tapered in manner and for the purpose substantially as specified.

98,481.—SPRINKLING-POT.—Warren L. Fish, Springfield, Mass.

Claim.—A sprinkling-pot, with a valve n o, spring m, chamber a, tube e f, having openings i, lever B, and rod A', all constructed and operating substantially as and for the purposes herein described and specified.

98,482.—ROTARY PUMP.—John T. Foster, New York, N. Y.

Claim.—The link-piston A, when constructed and arranged to move and operate within the semi-cylindrical chamber B, as set forth.

98,483.—STEERING-PROPELLER.—F. G. Fowler, Norwalk, Conn.

Claim.—1. The arm B, pawl y, notches y', apertures x and x', all arranged and operating in the manner and for the purpose as shown and described.

2. Arranging the eccentric-straps one inside the other, as shown in figs. 5 and 6, so as to diminish their resistance in the water, as specified.

3. The notch u, arranged as and for the purpose specified.

98,484.—LAMP-CHIMNEY.—Samuel W. Fowler, Brooklyn, N. Y.

Claim.—A lamp-chimney, with lateral curvilinear depressions and projections, the inward and outward curvature of which is uniform and regular, when constructed and operating substantially as described.

98,485.—COVER FOR SEWING-MACHINE.—E. F. French, New York, N. Y.

Claim.—The herein-described cover for sewing-machines, the same consisting of stiles b b, solid corners a a, the top frame c^2, and the side and top panels d, set loosely in grooves, as and for the purpose set forth, when the parts are constructed, arranged and combined as specified, so that the cover can be taken apart for transportation, as described.

98,486.—HAY-SPREADER.—C. R. Frink, Norwich, N. Y.

Claim.—The combination of the main frame A with springs G, foot-lever I L, chains E, hooks F, links S, hooks J, and bars B and C, the whole arranged and operating substantially as described and set forth.

98,487.—MANURE-DRAG.—William Genhr, East Earl township, Pa., assignor to himself and George Duchman, same place.

Claim.—The arrangement and combination of the single hinged handle H, undivided beam B, with the connecting-bar C, hinged to the handle and block A, to stay or release the hook D, in the manner and for the purpose specified.

98,488.—GUARD FOR CARRIAGE-STEPS.—Richard H. Goodwin, Boston, and Gideon L. Gamage, Lynn, Mass., and Richard J. P. Goodwin, Manchester, N. H.

Claim.—The step A, rubber covering B, and metallic shell C, all constructed and arranged in the manner and for the purpose set forth.

98,489.—BURGLAR-ALARM.—Hiram Green, Norwalk, Conn.

Claim.—The arrangement and combination of the ratchet B, gear C, slide F, cam D, and pins E G, in the manner substantially as and for the purpose herein described.

98,490.—SECTIONAL STEAM-GENERATOR.—John Griffith, George W. Wundram, and T. H. Müller, New York, N. Y.

Claim.—1. The arrangement of the pipes B along the sides of the fire-chamber, in the manner shown, so that said pipes shall be partially embedded in and form a support for the bricks, and that the bricks may be readily renewed, for the purpose of repair, substantially as set forth.

2. The heads C', provided with vertical and horizontal shanks, and with sockets, so arranged that while the heads are set in uniform rows, one above another, the sockets, and consequently the tubes, are "staggered," substantially as shown and described.

3. The bricks, provided with indentations on two or more sides, in combination with the pipes B and B', substantially as described.

4. The shoes g, in combination with the arch h of the top I, substantially as set forth.

98,491.—MACHINE FOR MAKING ROPE.—Bernice S. Hale and James B. Hale, Lowell, Mass.

Claim.—1. The arrangement of the hollow shafts i and j and bevel-gear k, when used in connection with the feed-roll frame f, substantially as described.

2. The arrangement and construction of the feed-roll frame f, with feed-rolls h h, bevel gears i and k, hollow shafts i and j, and gear g, when operating substantially as described.

98,492.—REIN-HOLDER.—Jones Harding, Detroit, Mich.

Claim.—A line-fastener, made of any suitable material, and consisting of the concave face-plate B and corrugated slide-bar A, with its projections and bearings, substantially as herein shown and described.

98,493.—MODE OF SECURING LASH IN FLY-NET.—Moses Heilman, Lebanon, Pa.

Claim.—The manner herein described of fastening the lashes upon the ribs, the manner consisting in passing each lash twice, in opposite directions, through the same hole in each rib, and bending the lashes around, so as to form two such loops on each rib as have no crossing of the lash in them.

98,494.—BOLT-WORK AND DOORS FOR SAFES.—John C. Hintz, Cincinnati, Ohio, assignor to Charles Diebold and Jacob Kienzle.

Claim.—1. The combination of links H and H', levers F and F', and I and I', plate D, arms J and J', and bolt A.

2. Safe-doors, provided with the steps V, which fit into corresponding steps V', in the door-frame, lips B and B, fitting into grooves B' B', of the door-frame, and elongated bolt A, in one of the doors, fitting into a corresponding elongated recess in the other, all constructed and arranged as set forth.

98,495.—BRICK-MACHINE.—J. S. Hobbs and Luther R. Elder, West Falmouth, Me.

Claim.—1. The spring-scraper F, arranged to operate as described.

2. The segment-gears on the shaft E, with the pin q and chains L, as herein described.

3. The mould-box, made as herein described, that is, having the spring-scraper and the removable strip in the front thereof, having the four-armed clasp, as herein set forth.

98,496.—FURNACE FOR DEOXIDIZING IRON-ORE.—Abram W. Honsinger, Rome, N. Y.

Claim.—1. The combination and arrangement of these concentric vertical cylinders, for the deoxidation and purification of iron-ore.

2. The combination and arrangement of said cylinders with one or more furnace-fires, constructed and arranged substantially as described.

3. The application of said furnace-fires at the bottom instead of at the side of said cylinders, to furnish heat, in the manner and for the purpose already mentioned.

98,497, antedated December 30, 1869.—DRILLING, RIVETING, AND WATCH-JEWELLING APPARATUS.—C. Hopkins, Philadelphia, Pa.

Claim.—1. The arm G, with cutting and burnishing-points g, in combination with the handle E, the collar F, and the thumb-screws f and o, substantially as and for the purposes described.

2. The combination of the subject-matter of above clause with the drill-stock e v, substantially as described, and for the purposes set forth.

3. The combination of the riveting-punch K and stake L, with the bed A, centring-piece B, the uprighting-piece D D, and the upright handle I or M, substantially as and for the purposes set forth.

4. The improved combination uprighting, freeing, centring, drilling, wheel-riveting, bushing, and watch-jewelling apparatus herein described, the several parts being constructed and operated in combination, substantially as set forth.

98,498.—ARRANGEMENT OF THE PENDULUM IN CALENDAR-CLOCKS.—Henry B. Horton, Ithaca, N. Y., assignor to himself and Hervey Platts, same place.

Claim.—The swinging of the pendulum-rod in front of the calendar-dial in a calendar-clock.

98,499.—THILL-COUPLING.—Bennet Hotchkiss, Fair Haven, assignor to himself and W. J. Clark & Co., Southington, Conn.

Claim.—The construction of a coupling, as herein described, and as shown in figs. 4 and 5, the part A A' matching and partially enclosing the part B', as shown in said figures, the two being held together by means of the square bolt C fitting tightly the socket in part B', and passing loosely through an enlarged opening in the part A', all constructed, arranged, and operating substantially as specified.

98,500.—KNITTING-MACHINE.—Henry A. House, Bridgeport, Conn.

Claim.—1. An extensible frame or needle-support, composed of sections A A^2, having interior guides applied to them, and adapted for receiving, supporting, and guiding knitting-needles which are disconnected from each other, substantially as described.

2. The plates or bars h^1, in combination with the sliding frame section A^2, and inner walls g h, for

connecting these walls and forming a continuation of the needle-guide channel between them, substantially as described.

98,501.—Lead-Pipe Coupling.—Jacob Hoyt, New York, N. Y., assignor to James O. Morse, Englewood, N. J.

Claim.—1. The thimble A, with a conical enlargement at one or both ends, and the nut or ring N, when combined, applied, and used substantially as described, for the purpose of a lead-pipe coupling.

2. The two joints at the opposite ends of the thimble, applied and operating substantially as described.

98,502.—Box for Coffee, Spices, &c.—H. Wesley Hutchins, Livermore Falls, Me.

Claim.—The box as described, having the reversible cover *d*, the ends and sides of a single piece, and the knob *e*, as herein set forth.

98,503, antedated December 24, 1869.—Sand-Chamber for Well-Pumps.—Edward C. Johnson, Williamsport, Pa.

Claim.—1. The combination, with the sand-chamber, of the inlet-pipe F, having a cover, E, and the screen D, as and for the purpose set forth.

2. In combination with the above, the plugged openings B^1 B^2, for removing the sand from said chamber, as described.

98,504.—Gauge and Divider.—George Kenny, Nashua, N. H.

Claim.—1. A dividing-gauge, consisting of adjustable points *a b*, right-and-left screws S and S′, fixed point *d*, in combination with cylinder A, substantially as shown and described.

2. The combination of a dividing-gauge, consisting of the parts set forth in first claim, splitting-gauge point *h*, and an ordinary gauge, consisting of parts A B E, substantially as shown and described.

98,505.—Spiral Spring for Mattresses and Furniture.—Samuel P. Kittle, Brooklyn, N. Y.

Claim.—1. A spiral spring, for use in mattresses, furniture, &c., so constructed that its central coil or coils are wound at right angles to its axis, substantially as and for the purposes set forth.

2. The combination of a spiral spring, when constructed as described, with the cross-webbing C C and frame D, or their equivalent, when arranged to support such spring, substantially as and for the purpose set forth.

3. In a spring-mattress, having the springs supported from or at their centres, the arrangement of a rattan or like flexible border, attached to the outer edges, at bottom and top, of the outside rows of springs to furnish a suitable support to keep the ticking in line, but which will also yield as any spring or part of the mattress is compressed.

98,506.—Casket-Handle.—Dennis Leonard, Winsted, Conn.

Claim.—Securing the handle between the swinging arms, by means of a pin upon the end ornaments, which pin passes into the end of the handle proper, and is secured by a set-screw, passing through the circular part of the swinging lever, and through the handle, until it reaches the dowel-pin, substantially as set forth.

98,507.—Card-Clothing Clamp.—Joshua O. Lewis, Worcester, Mass.

Claim.—The combination of the jaws A B, having lips *a b*, made with bevelled surfaces 1, 2, 3, and 4, 5, 6, as and for the purposes shown and described.

98,508.—Curtain-Fixture.—John S. Lovejoy, Washington, D. C.

Claim.—1. A perforated slide and knob, provided with a pawl, *p*, spiral spring *g*, and button B, all constructed substantially as and for the purposes set forth.

2. The combination of the grooved frame F with the dovetailed slide S, knob K, pawl *p*, spring *g*, and button B, when constructed as and for the purposes set forth.

98,509.—Tea-Kettle Cover.—William C. Lovering, Taunton, Mass.

Claim.—The new manufacture of tea-kettle cover, made as a dish, and provided with a passage through its bottom, and a valve and counterbalance thereto, the whole being arranged substantially in manner and so as to operate as described.

Also, the tea-kettle cover, as made with the annular cap *a*, in combination with the dish, and the valve and counterbalance, the whole being substantially as set forth.

Also, a tea-kettle cover, as made with the dished body, and a valve combined therewith, in manner as described, and with the valve extended up into the chamber of the body, (or provided with a projection, to extend up into the same,) such extension or projection of the valve being as and for the purpose as hereinbefore specified.

98,510.—Stop-Valve.—Jeremiah A. Marden, Boston, Mass., assignor to George M. Gibson and Thomas A. Johnston, same place.

Claim.—Connecting the valve-stem with the screw-rod, or other device by which the end-movements of the valve are effected, by means of a swivel-joint, which, while compelling the valve to follow the longitudinal movement of the screw or other device, will permit it to oscillate independently of the same, substantially as shown and set forth.

98,511.—Cruet.—Theodore H. Mead, Boston, Mass.

Claim.—The spoon, formed of the combination of the handle H, stopple S, and bowl B, with the bottle R formed substantially as described.

98,512.—Machine for Attaching Rivets to Buttons.—J. Johnson Mervesp, New York, N. Y.

Claim.—1. The reversible dies A B, formed each with two different faces, substantially as and for the purpose herein set forth.

2. The combination of the die A, shank D, spring C *c*, and countersunk punch *d*, all constructed and arranged substantially as herein described.

3. The arrangement of the die A, extending below the lower end of the punch *d*, to form a recess which receives the rivet, and prevents it from bending while the head is being formed.

4. The reversible lower die B, fitted on the punch *e*, and supported by the spring G, which encircles shank H, to be regulated by the nut I, as herein described.

5. The reversible dies A B, countersunk punches *d e*, rivet-holding spring-pin *h i*, shanks D H, nuts E I, and shank F, all constructed, arranged, and combined to operate as herein described.

98,513, antedated July 27, 1869.—Indicator-Lock.—E. M. Mix and J. E. Mix, Westfield, N. Y.

Claim.—1. Operating the numbered wheel of an indicator-lock, by a direct connection of its actuating-mechanism with the locking-catch, substantially as and for the purpose set forth.

2. In combination with an indicator-wheel, the actuating-mechanism of which is connected directly with the locking-catch, so as to be operated thereby, the sealed stop P, operating substantially as set forth.

3. In combination with the indicator-wheel J J′, the pawl L, provided with the stem P, and guard-detent O, arranged and operating as and for the purpose described.

98,514.—Leather-Fastening for Harness.—T. G. Moore, Albia, Iowa.

Claim.—The flanged plates A and D, when constructed substantially as described, and for the purpose specified.

98,515.—Wrench.—Robert Morrison, New York, N. Y.

Claim.—The improved adjustable wrench herein described, provided with a cam-block and movable jaw, connected and adjusted by the screw F, and arranged to operate in combination with a cam and slide-bar, substantially as described.

98,516.—Iron Core for Castings.—Abram C. Mott, Philadelphia, Pa.

Claim.—As an improved article of manufacture, a zinc-coated cast-iron pattern, substantially as and for the purpose hereinbefore set forth.

98,517, antedated December 18, 1869.—Manufacture of Artificial Stone.—John M. Ordway, Jamaica Plains, Mass., assignor to Sewell Brackett, same place.

Claim.—The composition or artificial stone, as above explained, consisting of silicate of soda or potash, oxide of lead, and fine silicious sand, treated substantially in manner as hereinbefore described.

98,518.—Collecting Gold from Ores.—August F. W. Partz, Oakland, Cal.

Claim.—The use, in connection with stamp-batteries and other ore-pulverizing machinery, of the tanks *b*, *d*, and *k*, together with the pumps *g*, *g*, and *l*, and the troughs *o* and *v*, or their respective equivalents, substantially as and for the purpose herein specified.

98,519.—Tile-Machine.—James W. Penfield, Willoughby, Ohio.

Claim.—The belt *g*, having the bars *h h* upon it, in combination with the roller-frame D, when the bars *h h* have spaces between them, which allow the tile to be cut entirely through, all substantially as herein described.

98,520.—Bed-Bottom.—James Potter, Portland, Me.

Claim.—1. The combination and arrangement of the hooked springs *d*, flexible connections *e*, the peculiarly-formed support, having the three hooks, one on each of the flaring ends, to enter the holes in the flexible connections, the other passing up through the holes in the slats, and overlapping the tops thereof, the said support being placed underneath the slats, and the whole being arranged so that when weight is placed upon the bed, the hooks *h*, pressing down upon the slats, bind them and hold them firmly, as herein set forth.

2. The elevated detachable and adjustable cross-slat *i*, in one or two pieces, as herein set forth.

98,521.—Shirt-Sleeve.—William Alexander Ramsay, Philadelphia, Pa.

Claim.—1. The combination and arrangement of the extension-piece *b* and the fly *c* with the two cuffs B C, applied to, or to be applied to a sleeve, as set forth.

2. The combination and arrangement of the auxiliary button *h* with the main and auxiliary cuffs B C, and the button *f*, and button-holes *d e* of the main cuff.

98,522.—Composition for Concrete Pavements.—Evander W. Ranny, New York, N. Y.

Claim.—A concrete pavement, composed of the materials and prepared and laid substantially in the manner herein described.

98,523.—Permutation-Lock.—John P. Schmucker, Ashland, Ohio, assignor to himself and J. D. Willis, same place.

Claim.—The movable guard P, in combination with the toothed wheel or wheels, having slot E, when constructed to operate in the manner and for the purpose substantially as described.

98,524.—Steam-Trap.—William A. Schneider, Albany, N. Y.

Claim.—In a steam-trap, the elastic ball E, in combination with the inner tube B and the head-piece D, when arranged substantially as described, for the purpose set forth.

98,525.—Washing-Machine.—Jerome Scott, Charleston, Pa.

Claim.—1. The arrangement of the levers G H I K, and their connection with arms C C and follower D.

2. In combination with the above, the adjusting-blocks F, pin *e*, pivot *d*, hinged sockets M and N, washboard or rack with slats *a a a*, side pieces B, box or tub A, as shown, for the purpose described.

98,526.—Metallic Can-Bottom.—H. W. Shepard, Mannsville, N. Y.

Claim.—As a new article of manufacture, the can-bottom A, when constructed of one piece of metal, of sufficient strength and weight for the purpose stated, having a convex surface, A^1, and an annular rim, A^2, when the same so meet as to leave an open recess for the cylinder to be seated in, the rim serving as an outer hoop for the cylinder, all combined and arranged as set forth.

98,527.—Bag-String Fastener.—E. B. Southwick, Mendon, Mich.

Claim.—An improvement in bag-string fasteners, consisting of the curved plate A, when provided with the perforation B, the point or projection G, and the bent projection or lock F, when these parts are constructed and arranged in relation to each other, precisely as herein shown and described.

98,528.—Head-Block for Saw-Mills.—Alexander W. Thompson, Saginaw, Mich., for himself, and as administrator of the estate of Henry Thompson, deceased.

Claim.—The combination of the head-block A, with the upright cylinder B and inside cylinder C, containing the round and square dogs D D, when all the parts are constructed and operate substantially as shown and described.

98,529, patented in England, April 9, 1869.—Cartridge-Loading Apparatus.—F. Alexander Thuer, East Hartford, Conn., assignor to "The Colt's Patent Fire-Arms Manufacturing Company," same place.

Claim.—A cartridge-holder, adapted for use in combination with the recoil-shield and rammer of a revolving fire-arm, substantially in the manner described, for the purpose specified.

Also, the ball-guide B, in combination with the holder A, when these are adapted to be used together in connection with the parts of a revolver, as described.

Also, the cap-guide C, constructed and applied substantially as and for the purpose set forth.

Also, the capping-plug D, adapted for application to the rammer of a revolver, for the purpose hereinbefore specified.

98,530.—Sleigh-Shoe.—T. Benton Titus, Phelps, N. Y.

Claim.—A cast-iron sleigh-shoe, with short sections of wrought-metal, substantially as set forth.

98,531.—Harrow.—Merrit Vanbibber, Tipton, Ind.

Claim.—The planks *c c c c c*, of angular shape, combined with straight planks B B B B B, all forming a peculiar corrugated surface, as described, and in combination with cutters D D D D D D D D D D, substantially as herein set forth, and for the purposes specified.

98,532.—Stop for Curtain-Rollers.—Rudolph Wangeman, Chicago, Ill.

Claim.—The stop P G I J, constructed as herein described, and pivoted to the bracket E, so as to be operated from either side of the curtain-roller, by the curtain-fixtures, as and for the purpose specified.

98,533. — Egg-Beater. — Lewis Williams, Terrysville, Conn.

Claim.—As an improvement in the manufacture of egg-beaters, a two-part receptacle, *a*, having a ring, *b*, to closely fill the inside of the receptacle, near their union, and having arranged therein cutters, beaters, or splashers *c*, in an inclined position, having a locking-device to allow it to be easily inserted and removed, as and for the purpose set forth.

98,534.—Fix for Boiling and Puddling-Furnaces.—John D. Williams, Allegheny, Pa.

Claim.—The combination, mixture, or composition, made, prepared, and used in manner as above substantially set forth and described, and the manufacture of said compound of the materials named, and in the proportions substantially as set forth.

98,535.—Medical Compound.—Abner D. Willis, Crawfordsville, Ind.

Claim.—The compound, composed of alcohol, water, *Coptis trifolia* root, *Hydrastis Canadensis* root, hydrastin, and elixir of vitriol, a medical compound of the ingredients in or about the proportions as set forth in the specification above, when used for the purposes specified.

98,536. — Permutation-Lock. — Silas N. Brooks, Bernardston, Mass., administrator of Linus Yale, Jr., deceased.

Claim.—1. The combination of the following parts, viz: first, a socket; second, a door with an opening in it corresponding with the tumbler-cavity of the socket; third, a filling-plate and spindle; and fourth, rotating tumblers contained within the socket, the whole being constructed so that the spindle, filling-plate, and rotating tumblers can all be withdrawn from the outer side of the door, substantially as before described.

2. Also, the combination of the following parts, viz: first, a socket or lock-case; second, a door, with an opening in it corresponding with the cavity of the socket; third, a filling-plate and spindle; fourth, rotating tumblers; and fifth, a tumbler-case, the whole constructed in such manner that the rotating tumblers and the tumbler-case may be withdrawn from the outer side of thedoor, substantially as before set forth.

3. Also, the combination of the socket, the door having an opening corresponding with the tumbler-cavity of the socket, the filling-plate, and spindle, the rotating tumblers, and the bolt or catch to prevent the withdrawal of the filling-plate, the whole constructed in such manner that the filling-plate and rotating tumblers can be withdrawn from the outer side of the door after the bolt or catch is acted upon from the inner side of the door, substantially as before set forth.

4. Also, the combination of the socket, the door having an opening corresponding with the tumbler-cavity of the socket, the filling-plate, and spindle, the rotating tumblers, the tumbler-case, and the catch or bolt for preventing the withdrawal of the filling-plate, the whole constructed in such manner that the filling-plate, rotating tumblers, and tumbler-case can be withdrawn from the outer side of the door after the bolt or catch is acted upon from the inner side of the door, substantially as before set forth.

5. Also, the combination of the following elements or parts of a lock, viz: first, the socket or lock-case; second, the tumbler-case; and third, the spindle, when the construction is such that both the tumbler-case and the spindle may be withdrawn from the outer side of the socket, substantially as described, without removing the socket from the inside of the door.

6. Also, the combination of the following elements or parts of a lock, viz, the socket, tumbler-case, spindle, and bolt or catch passing through the socket, the construction being such that the tumbler-case and spindle can be withdrawn from the outer side of the socket when the bolt or catch is moved for that purpose, substantially as before set forth.

7. Also, the combination of the following elements or parts of a lock, viz: first, the socket or lock-case; second, the tumbler-case; third, the spindle; and fourth, the filling-plate, the construction being such that the tumbler-case, the spindle, and the filling-plate can be withdrawn from the outer side of the socket, substantially as before set forth, without removing the socket from the inside of the door.

8. Also, the combination of the following elements or parts of a lock, viz, the socket, tumbler-case, spindle, filling-plate, and bolt or catch; the construction being such that the tumbler-case, spindle, and filling-plate can be withdrawn from the outer side of the socket when the bolt or catch is moved for that purpose, substantially as before set forth.

9. Also, the combination of rotating tumblers with a grooved tumbler-case, constructed in parts, one of which is a little more than semi-cylindrical, so that the tumblers can be inserted only when their notches are opposite the dividing edge of the case, substantially as before set forth.

10. Also, the combination of the door, the removable spindle of the lock, and the catch or bolt passing through the rim of the door, so that the catch cannot be moved when the door is shut, substantially as before set forth.

11. Also, the combination of the socket or lock-case, the stump of the lock, and the spring for holding the stump out of the cavity of the socket, substantially as before set forth.

12. Also, the combination of the socket, the stump of the lock, the spring for holding the stump out of the cavity of the socket, and the tumbler-case so arranged, that when in position in the socket, it prevents the spring from acting upon the stump, substantially as before set forth.

13. Also, the combination of the following elements, viz, the stump, socket, rotating tumblers, and the spindle, the construction of the whole being such that both tumblers and spindle may be removed from the front side of the socket without the stump, substantially as before set forth, without removing the socket from the inside of the door.

14. Also, the combination of the following elements, viz, the stump-socket, rotating tumblers, spindle, and filling-plate, the construction of the whole being such that the tumblers, spindle, and filling-plate may all be removed from the front side of the socket without the stump, substantially as before set forth.

15. Also, the combination of the following elements, viz, the stump, socket, rotating tumblers, and tumbler-case, the construction of the whole being such that the rotating tumblers and tumbler-case can be removed from the front side of the socket without the stump, substantially as before set forth, without removing the socket from the inside of the door.

16. Also, the combination of the following elements, viz, the tumbler-case, tumblers, filling-plate spindle, stump, socket, and door constructed with an opening coinciding with the tumbler-cavity of the socket, the whole constructed in such manner that when the filling-plate and spindle are removed from the opening in the door, the tumbler-case, tumblers, and stump can be withdrawn through said opening from the outer side of the door, substantially as before set forth.

17. Also, the combination of the elements recited in the last preceding claim, with a bolt or catch for preventing the withdrawal of the spindle, filling-plate, and tumblers, substantially as before set forth.

18. Also, the combination of a revolving tumbler with two pins projecting from the same side thereof, and located in the same diametrical line or thereabout, and at different radial distances from the axis of rotation of the tumbler, the construction being substantially as described.

98,537.—Method of Manufacturing a Fagot for Steel-Headed Rails.—John Absterdam, New York, N. Y.

Claim.—The method, hereinbefore described, of preparing a fagot of iron and steel, and of heating the same ready to be passed through the rolls; that is to say, welding a plate or bar or iron and a plate or bar of steel together, by pressure, operating simultaneously over the whole extent of the surface to be welded, placing the compound bar thus formed on a pile or fagot of iron bars, covering the exposed surface of the steel with a coating of fire-clay, or equivalent substance, and heating the pile to a degree sufficient to be passed through the rolls, with the steel portion lying upon the sole of the furnace, all as described.

98,538.—Carriage-Curtain Fastening.—James Adams, Newark, Del.

Claim.—1. For the purpose of a fastener for curtains, the cross-bar *a* and screw-hook F, combined and operating together, substantially as described.

2. The spring C, in combination with the cross-bar and a hook, to operate together, substantially as described.

98,539.—Mole-Trap.—William C. Akers, Petersburg, Va.

Claim.—The combination, with the earth-trigger D, lever A′, and catch *c*, the rod *d*, when bevelled at its upper end, all constructed and arranged to operate as shown and described.

98,540.—Vulcanized India-Rubber Car-Springs.—Henry A. Alden, Matteawan, N. Y., assignor to the New York Rubber Company.

Claim.—1. The formation, upon one or both ends of a vulcanized India-rubber car-spring, of a series of ridges or their equivalents, projecting from the main body of the spring, substantially as and for the purposes described.

2. An India-rubber car-spring, of cylindrical or equivalent shape, having one or more annular corrugations, on one or both ends as described, whether combined or not, with corrugations around the body of the spring.

98,541.—Lumber-Drier.—Joseph Allonas, Mansfield, Ohio, assignor to C. Aultman and H. H. Taylor, same place.

Claim.—In a lumber-drier, having independent lumber and heating-chambers, the arrangement, substantially as described, of two independent sets of induction and eduction-pipes, one set connecting with the inner chamber, and the other set connecting with the outer chamber.

98,542.—Combined Seeder and Cultivator.—Clark Alvord, Westford, Wis.

Claim.—1. The seeder-wheels *a*, provided with the V-shaped circumferential grooves, and centrally open cross-partitions *a″*, as and to the end set forth.

2. The eccentric axle B′, combined with the pivoted drag-bars *c*, as and for the object specified.

3. The eccentric axle B′, combined with the cleaning-fingers *c′*, as and for the object specified.

4. The eccentric axle B′, combined with the cleaning-fingers *c′*, and pivoted drag-bars *c*, as and for the purpose explained.

5. The pivoted frame B, combined with the pivoted tongue C, and pivoted drag-bars *c*, in the manner and for the end specified.

6. The combination of a seeder with a cultivator, when the drag-bars are located between the seeding-box and axle, substantially as and for the purpose set forth.

98,543.—Axle-Box for Carriage.—Ansel Granville Baker and George Morris Ennis, New Bedford, Mass.

Claim.—In the soft-metal lined box, the lining, as extended into recesses *d′ d′*, and beyond the shoulders *a b*, and into the recesses or grooves *c d*, arranged in the sleeve A, as set forth.

98,544.—Bee-Hive.—Sylvester D. Barber and James Wolf, Mattoon, Ill., assignors to said Barber and Hiram Cox, same place.

Claim.—1. The openings *i*, formed in the sides of a bee-hive, closed by perforated slides *j* and caps *k*, substantially as herein shown and described, to serve as ventilators or winter-entrances, as set forth.

2. The bee-hive, consisting of the tapering box A, suspended frames C C, slats D, honey-box E, gate F, which is pivoted to the arms *m*, and of the slide and cap *j k*, all arranged, combined, and operating substantially as herein shown and described.

98,545.—Lock.—Ludwig Beer, New York, N. Y.

Claim.—The sliding bolt *a*, having the projecting pin *s*, arranged in combination with the locking-cylinder D, to lock the same, and prevent the key from turning it, as set forth.

98,546.—Railway-Rail Chair. — Thomas G. Bering, Harrisburg, Pa.

Claim.—In combination with a double-bearing rail-road-rail, having inclined treads *a′ a′*, and rib *a*, the diagonal clamp-chair B, having lip *d*, sill *e*, and inclined face *c′*, arranged to press the rib *a* into the corner *e*, as shown and described.

98,547.—Brick-Machine.—Thomas Bishop and Daniel Agnew, Vincennes, Ind.

Claim.—1. The combination of the rack H, adjustable levers G G, and bent bar I, with crank *i*, when constructed and operated substantially as and for the purposes herein set forth.

2. The combination of the standards K K and cloth-covered roller J, having its yielding bearings in said standards, and with openings placed above the journals, substantially as and for the purposes herein set forth.

3. The mould M, composed of the frames *k m*, loose bottom *l*, partitions *n n*, slotted plates *o o*, and bars *p p*, constructed and arranged as and for the purpose herein set forth.

4. The die-plate C, having the front edge of its under side bevelled, substantially as and for the purposes herein set forth.

5. The arrangement of the cans N N, friction-roller O, slide P, frame R, levers S S, and bar V, all substantially as and for the purposes herein set forth.

6. The arrangement of the rod *t*, spring *v*, and slide *w*, connected with the bar V, substantially as and for the purposes herein set forth.

98,548.—Weather-Strip.—James T. Bliss and Joseph D. Davenport, North Providence, R. I.

Claim.—The substitute for thresholds herein described, consisting of the combination of the horizontal hinged plate D with the arms E E, controlled by the spring F, and operated by the plane G, constructed, arranged, and operating substantially as described.

98,549.—Mechanism for Stopping the Delivery-Rollers of Spinning-Machines.—Henry Bottomley and Peter Greenwood, Camden, N. J.

Claim.—The combination of the clutch *c*, on the spindle A, the clutch *c′*, spring-rod *c*, or its equivalent, and the lever B, arranged for operating the said clutch *c′*, and controlled by the shaft C, all substantially as and for the purpose herein set forth.

98,550.—Machine for Cutting and Pressing the Heads of Metal Cans.—Reuben Brady, New York, N. Y.

Claim.—1. The lever D, holding the annular cutter, in combination with the bar H and lever G, which holds the internal presser F, all arranged to operate as set forth.

2. The levers D G, so arranged that they will be automatically connected and disconnected during their motion, as specified.

3. The bar H and catch *f*, arranged to arrest the cutting-lever, while the punching-lever remains in action, as set forth.

98,551.—Razor-Honing Machine. — William Brown, Thomaston, Conn.

Claim.—The combination, with a bed, A, arranged on journals, and adapted for the support of the blades to be sharpened, of a hone, hone-stock, and guide E, arranged substantially as specified.

98,552. — Water-Wheel.—James D. Bryson and William R. Dunlap, Newcastle, Pa.

Claim.—The combination of buckets, the outer ends *a a'* of the vertical portions of which are curved transversely of the water-currents, and the remaining portions *a' b* of the vertical portions of which are inclined to the water-currents, with the lower outer lips *c d*, and with division-plates *e*, the two latter forming parts of the same inclined planes, and dividing the passages between the buckets into an upper and a lower series, substantially as described.

98,553. — Bag-Holder. — John M. Burke, Dansville, N. Y.

Claim.—The bars *c*, *c'*, and *c''*, clamps *d*, cheeks B, and hooks *b'*, in combination with the truck A, constructed and arranged to operate substantially as and for the purposes specified.

98,554. — Medical Compound. — William R. Call and Thaddeus F. Griffin, Gloucester, Mass.

Claim.—The combination of boneset, bistort, and spirea, in the manner and proportions herein described, for the purposes specified.

98,555.—Ventilating Millstone. — Constant Cerisier, Mung-Sur-Loire, France.

Claim.—1. The spherical air-vessel G, in combination with the air-supplying-pipe H and conducting-pipe F, for admitting air, equalizing its pressure, and conducting it under such equalized pressure to the millstones, as herein set forth.

2. The balance-lever J, pivoted, at one end, to the post K, and carrying, at the other end, the single set-screw N, in combination with the pipe F, air-vessel C, and pipe H, substantially as and for the purpose described.

98,556. — Washing-Machine. — George E. Chamberlin, New York, N. Y., assignor to the New York Laundry-Manufacturing Company, of New York city.

Claim.—The yoke-rack C and connecting-rod D combined, acting directly on the cylinder-gudgeon *b*, through the pinion *c*, when constructed and operating substantially in the manner and for the purposes herein set forth.

2. The anti-friction roller *f*, used in combination with the yoke-rack C, substantially as shown and described.

3. In combination with the central hub *d*, and the bracket supporting the driving-shaft G, the bar N, substantially as and for the purposes herein set forth.

98,557. — Rake-Attachment for Reaper. M. C. Chamberlin and A. Clawson, Plainview, Minn.

Claim.—1. The arrangement of the axle A, wheel B, hinged piece C, and rod H, for connection of the rake or gleaner to a reaper, substantially as herein set forth.

2. The combination and arrangement of the axle A, rods *a a*, blocks *d d* and *e e*, teeth *f f*, shaft D, loops *i i*, lever E, and hook H, all substantially as and for the purposes herein set forth.

98,558.—Saw-Mill.—Thomas E. Chandler and John C. Bartholomew, Indianapolis, Ind., assignors to Thomas E. Chandler and Franklin Taylor, same place.

Claim.—The arrangement of the feeding and backing-mechanism, herein described, consisting of the counter-shafts K and J, feed and backing-shaft I, idle-pulley and crank-shaft H, together with the slides C and D, all upon the same vertical frame, upon which the saw B is hung.

98,559.—Scaffold-Bracket.—James Chattin, Marion, Iowa.

Claim.—A scaffold-bracket, consisting of the jaws A B, eccentric pawl E, and spring I, all combined, constructed, and arranged substantially as specified.

98,560.—Cultivator.—A. L. Chubb, Grand Rapids, Mich.

Claim.—The side-bars B B, when cast with recesses on their inner sides, to receive the cross-bars or beams A A, substantially in the manner specified.

98,561. — Water-Wheel. — F. O. Clarke, Unadilla Forks, N. Y.

Claim.—1. The combination of wheel C and gate D D, when said gates are constructed and arranged to operate as and for the purpose set forth.

2. The combination and arrangement of the casing A B, wheel C, gates D D, buckets E E, racks H H, and pinion I, all constructed and arranged as described, substantially as and for the purposes herein set forth.

98,562. — Bird-Cage. — G. F. J. Colburn, Newark, N. J.

Claim.—1. The removable and detachable fender, in combination with a bird cage, as set forth.

2. A bird-cage, having its wires protected and ornamented by beans of ivory, wood, metal, or other suitable material, strung thereon.

98,563.—Draught-Attachment for Horses.—Cyrus C. Cole, Phelps, N. Y.

Claim.—The combination of the pivoted breast-block B and shoulder-yoke A, operating in the manner and for the purpose specified.

Also, the arrangement of the shoulder-yoke A, breast-block B, and thills C C, so connected that the forward draught may be applied through the thills, as herein described.

98,564.—Shoulder-Brace.—Henry N. Conklin, Indianapolis, Ind.

Claim.—The shoulder-brace herein described, consisting of the straps B B B B, united and adjustably connected at C, and having buckles I I I I, and loops D D, E E, for attachment to the suspender-straps, as specified.

98,565.—Hominy-Mill.—William C. Coombs and James M. Gray, Memphis, Ind.

Claim.—The combination and arrangement of the frame A, slotted cylinder B J, knives I I, ventilators K K, shaft G, knives H H, inclined board E, and drawer D, all constructed as described, and for the purposes set forth.

98,566.—Clothes-Wringer.—William Cooper, Independence, Iowa.

Claim.—The combination of the frame A, rollers E C, spring G, bar H, cam-lever J, blocks K K, slotted wedges L, and journal-blocks F F, all constructed as specified.

98,567.—Joint-Mould or Flask.—William Cullins, Philadelphia, Pa.

Claim.—A joint in moulds, formed by breaking asunder, along the line of the designed joint or joints, the mould first prepared or made in one piece of iron.

Also, the adjustment of the said joint or joints, by means of fixed pins, through which the pressure upon the joint or joints is relieved, as herein substantially described.

98,568.—Sawing-Machine.—Jacob D. Culver, Bellmore, Ind.

Claim.—The arrangement of the frame B, arches N, shaft C, rod or pitman E, guides *h h*, and cross-head F, with the dogs L L, substantially as and for the purposes set forth.

98,569.—Plowing and Harrowing-Machine.—Arthur Cunningham, Cincinnati, Ohio.

Claim.—1. The connection of the plow-beam to the truck, by means of the projecting beam D and draw-rod E', the latter being provided with the adjustable block F, substantially as specified.

2. The combination, with the plow-beam and platform, of the levers N K, rod M, and chain I, substantially as specified.

3. The combination, with the plow-handles and platform, of the beam T, perforated bars R, and detachable rod Q, when arranged substantially as specified.

4. The combination, with the truck and plow, of the vertically-adjustable guide W, substantially as specified.

5. The combination, with the guide, arranged as described, of the lever K, rod Y, lever Z, and foot-piece Z^3, substantially as specified.

6. The combination, with the truck and plow, of the harrow, substantially as specified.

7. The combination of the harrow, suspending-rod X^4, clearing-plate Y^1, lever Y^2, rod Y^4, and notched post Y^5, all arranged substantially as specified.

8. The combination, with the plow and beam V, of the chain U, substantially as specified.

98,570.—Guard for Machine for Picking Waste.—Charles L. Dean, Franklin, Mass., assignor to himself and Francis B. Ray, same place.

Claim.—The yielding spring concave section or plate A, having its under side made smooth, rough, or with teeth, and applied and operating in connection with the picking-cylinder, substantially as and for the purpose set forth.

98,571, patented in England, August 13, 1863. — Construction of Concrete Arches for Buildings, &c. — Charles Colton Dennett, Nottingham, England.

Claim.—Constructing self-supporting arches, for buildings and other structures, of concrete, composed of sulphate or carbonate of lime, together with broken bricks, calcined cinder, or other similar suitable material, substantially as set forth.

98,572.—Buckle.—Noah Dice, Xenia, Ind.

Claim.—The buckle herein described, consisting of the frame A, tongue B, and spring C, all constructed and arranged with reference to one another, as set forth.

98,573.—Farm-Gate.—John Dickason, Vevay, and George W. D. Culp, Moore's Hill, Ind., assignor to John Dickason.

Claim.—1. Constructing the staple of the hinge with the downward-bowing neck *b''*, of circular section, and the strap d and eye *a'*, of the hinge M, substantially as herein shown, and for the purpose set forth and described, to insure a vertical motion of the gate when in any position.

2. The sliding latch O, pivoted to the lever N, said lever extending above the top of the gate, and being arranged in an inclined position, so that its gravity shall cause the latch to operate automatically when the lever is released, substantially as described.

98,574.—Clamp for Holding Staves.—Edmund Doremus, Roundout, N. Y.

Claim.—1. The combination of the pivoted clamp C with the pivoted sliding follower D and frame B, all arranged on a stave-jointing machine, as specified.

2. The clamp C, pivoted to the frame B by vertically-adjustable pins *e*, to permit various positions of the stave in the same clamp, as set forth.

3. The double joint *h i j*, arranged on the shank of the sliding follower D, substantially as and for the purpose herein shown and described.

4. The guards *l l*, arranged on the frame B to permit the staves to be set true, as set forth.

98,575.—Pruning-Hook.—William M. Doty, Woodbridge, N. J.

Claim.—1. A pruning-instrument, composed of a pruning-hook and stock, in combination with a chisel adapted to move to and from the hook, and a separate rod or plunger for driving said chisel toward the hook, substantially as and for the purposes set forth.

2. The sliding chisel, formed with a forked or V-shaped cutting-edge, in combination with the hook, substantially as shown and set forth.

3. The combination, with the hook-stock, of the sliding chisel and spring, by which the same is retracted, substantially as described.

4. The percussion-rod or plunger, weighted at its end, as and for the purposes set forth.

98,576.—Bread and Meat-Slicer.—Jacob Ensinger and Lewis Fertig, Dauphin, Pa.

Claim.—A bread-slicer, having the adjustable gauge F G H, side plate I, and guides D E, constructed and arranged with reference to the knife, as shown and described.

98,577.—Lock.—Edward Fay, Washington, D. C., assignor to himself and Louis C. Gury, of same place.

Claim.—1. The construction of the lock A, when it has combined within its frame the double bolts C C and catch or knob K, and each separated from the other by means of the partitions N N, when said bolts are operated upon by means of the key E, having upon or near its end cogs or teeth, that mesh or fit into corresponding cogs or teeth *f f*, formed upon the bolts C C, and when said bolts are retained or secured in a locked or unlocked position by means of the pin *i*, fitting into the holes *e e*, in the manner and for the purpose herein described.

2. The combination and arrangement of the spring *a*, having upon its free end the pin *i*, with the ward of the lock, the bolt or bolts C C, their holes *e e*, to receive said pin, and the key E, in the manner and for the purpose herein described.

98,578.—Wooden Pail.—Leonard Asa Fleming, West Mount Vernon, N. Y.

Claim.—The method, herein described, of cutting the body-part of pails, or other circular wooden vessels, as set forth

98,579. — Breech-Loading Fire-Arm. — George H. Fox, Boston, Mass.

Claim.—1. A gun, in which the barrels are made movable on the stock to the right or left, and forward and back, for the purpose of opening and closing the breech, for loading, unloading, or extracting empty shells, when the movement is controlled by the action of pins or projections within or on curved boundaries struck from an imaginary centre, and without employment of a pivot at such centre.

2. The means for operating the extractor, consisting substantially of a yielding or spring sliding shank, provided with a pin, gearing in the slot *n o*, the pin or the slot, or both, being bevelled for the purpose described.

98,580.—Coal-Stove.—H. J. Frizelle, East Saginaw, Mich.

Claim.—1. The conveyer *m*, constructed, arranged, and operating as and in the manner and for the purposes substantially as herein recited.

2. The air-chamber *b*, on either side of the fire-box or fuel-cylinder of the stove, constructed and operated substantially as set forth.

3. The chambers or flues *e* and *f*, beneath the plate *a*, or bottom plate of the fire-box or fuel-cylinder, when constructed, arranged, and operated as described and shown.

4. The arrangement of the air-pipe *g* within the smoke-pipe, and as arranged in relation to the other parts of the stove, as set forth.

5. The chamber *c*, formed by the double top of the stove, in combination with the air-chamber *b*, on either side of the fire-box, as and for the purposes described.

98,581.—HAY-RAKE AND LOADER.—Nelson Gabel, Minneapolis, Kansas.

Claim.—1. The hinged frame C, in combination with the rake D *a* and teeth-holders *b b*, substantially as and for the purposes herein set forth.

2. The combination of the hinged rake-head G, teeth *d d*, bar H, and spring *e*, all substantially as and for the purposes herein set forth.

3. The arrangement of the pivoted lever E, with holder *b*, and bevelled projection *i*, and the ratchet-bar *f*, and key *g*, all substantially as and for the purposes herein set forth.

4. The combination and arrangement of the hinged frame C, rakes D *a* and G H *d*, holders *b b'*, spring *e*, lever E, key *g*, and rachet-bar *f*, all constructed as described, and operated from the wagon A, by means of the pulley-shaft I, crank L, and cords *h h*, substantially in the manner and for the purposes herein set forth.

5. The arrangement of the wagon A, pulley-shaft I, crank L, inclined beams J J, and braces K K, all substantially as shown and described.

98,582.—STOVE-PIPE SHELF.—John H. Gerhart and Joseph S. McCord, Middletown, Pa.

Claim.—1. A clamp for supporting a shelf or shelves upon stove-pipes, consisting of two adjustable segmental portions formed with serrated ears, having elongated slots therein, hooks D D', and stops C C', for supporting the shelf, substantially as shown, and for the purpose set forth.

2. The combination of the above-described clamp, the shelf B, and a stove-pipe, or equivalent device, for supporting said clamp and shelf, substantially as and for the purpose set forth.

98,583.—AUTOMATIC COAL-SIFTER.—William Gluck, Baltimore, Md.

Claim.—The trap-box B, platform C, and lever D, with its weight, in combination with the base-plate A and screen G, as shown and described.

98,584.—CANT-HOOK.—W. Q. Greely, St. Anthony, Minn.

Claim.—1. The elongated socket or ferrule A, provided with ears *a a*, headed screw *c*, and stop *d*, all substantially as and for the purposes herein set forth.

2. In combination with the socket or ferrule A, constructed as described, the hook E, spring *b*, and pick D, all substantially as and for the purposes herein set forth.

98,585.—WASHING-APPARATUS.—John T. Grose, Upper Sandusky, Ohio, assignor to himself and William E. Kinnear, same place.

Claim.—The arrangement of the tubs D, steam-pipe F, *f'*, *f''*, *f'''*, and pipes C and E, with reference to each other and the boiler B and furnace A, substantially as herein shown and described.

98,586.—FRUIT-JAR.—William L. Haller, Philadelphia, Pa.

Claim.—In combination with the horizontal ledge or seat *a''*, and vertical sides *a'''*, in the inner side of the mouth of the jar A, the flanged screw-threaded glass or glazed-ware stopper B, the flanged screw-threaded sheet-metal cap C, and the elastic packing-ring D, substantially as and for the purpose hereinbefore set forth.

98,587.—GYMNASTIC APPARATUS.—William Hanlon, New York, N. Y., assignor to himself and George, Alfred, Frederick, and Edward Hanlon.

Claim.—The use, in connection with the parallel bars, of the shifting-flaps, or other equivalent means for varying the central space, substantially as and for the purposes set forth.

Also, the employment, in combination with a trapeze and the sustaining or stationary portion of the apparatus, of stop-ropes S, or their equivalents, so arranged, that by means of said stops the person swinging by the feet can stop and start at pleasure, as hereinbefore set forth.

98,588.—GYMNASTIC APPARATUS.—William Hanlon, New York, N. Y., assignor to himself and George, Alfred, Frederick, and Edward Hanlon.

Claim.—A safety-apron, composed of any suitable material, and provided with stays, substantially as and for the purposes set forth.

Also, the combined arrangement; with the apron, of supporting-horses, one at each end, and holding cords drawn together at each end, and adapted to be secured to only two stage-fixtures, substantially as set forth.

98,589.—LOUNGE AND BED.—August Hansen, San Francisco, Cal.

Claim.—1. In combination with the folding seat C, and folding head-piece G, the plate *d*, folding plate F, slotted legs D, and plate E, provided with the slots *a* and *a'*, at right angles to each other, as and for the purpose set forth.

2. In combination with the above, the folding-back B and the drawer-bed I, when constructed and arranged as and for the purpose specified.

98,590.—LAWN-MOWER.—Hiram W. Harkness, New Britain, Conn., assignor to Landers, Fray & Clark, same place.

Claim.—1. The pawl F, when arranged to operate with pressure, directly between the inner periphery of the rim and outer periphery of the hub of the traction-roller, and with its driving-arm pivoted to the inner face of the driving-gear, without the interposition of friction-cams or rollers, in the manner and for the purposes specified.

2. The arrangement of the adjusting longitudinal stop-screw *i*, applied to the handle, and parallel therewith, thereby admitting of its fixed adjustment against downward pressure, and of a free upward-swinging movement, for the purposes specified.

3. The improved lawn-mower, herein described, consisting of a rotary cutter, with suitable gearing, connecting the same with the traction-roller A, and operated by means of the pawl F, and provided with the handle, adjusted by the longitudinal stop-screw *i*, the whole being arranged and operating as set forth.

98,591.—WASHING-MACHINE.—Lionel B. Hartt, Detroit, Mich.

Claim.—The combination and arrangement of the ribs C, spring-poles *c*, cylinder D, stoppers *u*, with their openings as described, substantially as and for the purposes specified.

98,592.—VELOCIPEDE.—John H. Haynes, Boston, Mass.

Claim.—1. The construction of the frame, being the axle B, the frame-bars E E, with their guide-wheel bearing-ends, the bar connecting the frame-bars, and the seat-bars O O, with their upright continuations, when in combination, all substantially as described.

2. The combination and arrangement of the guide-wheel and its frame, being the two curved slotted bars, bearing the wheel, the slide-bar L, the guide-bars H H, the slide I K, and the guide-loop J, all substantially as and fitted for the purpose described.

3. The combination and arrangement of the driving-pulleys P P, with their handles, the wheel-pulleys, and the guide-wheel F, when constructed and arranged substantially as described.

4. The combination and arrangement of the bearing-wheels A A, with their pulleys C C, the driving-pulleys P P, the seat M, the frame-bars E E, the guide-wheel F, the guide-bars H H, and the slide-bar L, with its slide, all substantially as and fitted for the purpose described.

98,593.—ELECTRIC CLOCK.—Vitalis Himmer, New York, assignor to himself, W. Heissenbuttle, and James McMullen, Brooklyn, N. Y.

Claim.—The oscillating armature-lever C, acted upon by the electro-magnets A B, in one direction, and by a weight, or its equivalent, in the other direction, and connected with the arm E, and with the anchor M, to move the hands and reverse the motion of the balance-wheel, substantially as herein shown and described.

98,594.—ELECTRIC CLOCK.—Vitalis Himmer, New York, assignor to himself, W. Heissenbuttle, and James McMullen, Brooklyn, N. Y.

Claim.—The combination, with the magnet, of oscillating armature-lever D, and weights E *d*, as and for the purpose specified.

98,595.—GUN-CARRIAGE.—Jules César Houel and Ferdinand Louis Felix Caillet, Paris, France.

Claim.—The combination, with the swinging frame B B, of the springs H and sliding cheeks I, in which the trunnions of the gun are supported, essentially as described, and for the purposes herein set forth.

98,596.—FILTERING-APPARATUS FOR PIPES. Thomas Smith Hudson, East Cambridge, Mass.

Claim.—1. The combination of the rotary globe, provided with strainers and crossed passages, as described, with the body A and cap B, the whole being substantially as and to operate as set forth.

2. The combination and arrangement of the perforated cap D with the body A and cap B, and the rotary straining-globe, made and applied to the body, substantially in manner, and so as to operate as specified.

98,597, antedated December 24, 1869.—PIPE-COUPLING.—John Vivian Jepson, Brooklyn, N. Y.

Claim.—The hard-metal washer C, having annular grooves or corrugations in its face or faces, in combination with the male and female socket A A', for the coupling of soft-metal pipes, in the manner substantially as set forth.

98,598.—HOE.—Giles T. Jobson, Macon, Ga.

Claim.—A hoe (or similar implement) provided with a sectional tubular shank, C, as and for the purpose specified.

98,599.—COCK FOR WATER-CLOSET.—Henry Jones, Philadelphia, Pa., assignor to himself, James Jones, and Charles Harrison.

Claim.—1. The cock or valve *l*, and water-ways 4 5, between the variable chamber *e* and the supply-water chamber, in combination with the piston *f*, valve *i*, and cylinder 3, as and for the purposes set forth.

2. The piston *f*, formed with diagonal slots in its periphery, in combination with the cup-leather *t* and variable chamber *e*, as and for the purposes set forth.

98,600.—GUIDE FOR PLANING-MACHINE.—Franklin Keagey, Chambersburg, Pa.

Claim.—The arrangement of the pattern-guide G on the bed A, and, with respect to the centres, in the manner described, and for the purpose set forth.

98,601.—EXTENSION WINDOW-SCREEN.—John T. Kimball and Benjamin F. Hebard, Boston, Mass.

Claim.—1. The combination of the extension screen-case E and extension-roll A, constructed and arranged to operate in connection with the screen G, as shown and described.

2. In combination with the above, the springs *e*, for the purpose specified.

3. The extension shelter-bar F, hinged to the window-sash, and used in connection with the screen G, as and for the purpose specified.

98,602.—LANTERN.—Thomas Langston, Meriden, Conn.

Claim.—1. The base A, provided with a burner, B, screw H, lug D, flange *a*, and air-hole *b*, substantially in the manner specified.

2. Providing the glass K with a flange, *d*, around its bottom, through which the slot *e* is cut, substantially in the manner shown.

3. The wire *c*, extending through the rim G, so as to support the glass, substantially in the manner set forth.

4. The base A, burner B, stem C, lug D, flange *a*, air-hole *b*, screw H, rim G, guard *c* extending through the rim, and glass K, with its flange and slot, when all are arranged and combined so as to form a lantern, substantially as specified.

98,603.—HOSE.—Benjamin F. Lee, New York, N. Y.

Claim.—Strengthening the ends of hose which are applied to couplings by means of one or more plies or strips of leather, canvas, metal, or other suitable material, secured upon the exterior or between the plies of the body of the hose, substantially as shown and set forth.

98,604.—CULTIVATOR.—John P. Letz, Lacon, Ill.

Claim.—The plate *d*, provided with the circular head *d'* and orifice *e'*, in combination with the rounded recesses *e* and bolts and staples, in the manner and for the purpose described.

98,605.—WINDOW-JACK.—S. P. Loomis, Philadelphia, Pa.

Claim.—1. The slide or bracket C, when provided with double slots to allow its being adjusted on the platform A in a vertical or horizontal position, and, when reversible, substantially as herein shown and described.

2. The window-jack, consisting of the platform A, pivoted outer bracket B, and inner reversible slide C, all arranged and operating substantially as herein shown and described.

98,606.—PROCESS OF PREPARING COAL FOR SMELTING ORE.—William John Lynd, Golden City, Colorado Territory.

Claim.—1. The mode of coking or preparing Colorado coals, and other coals of a similar kind, in an open or closed retort, substantially in the manner described.

2. The improvements in coking or preparing coals, substantially as above described, for the uses specified.

98,607.—USING COLORADO AND SIMILAR COAL FOR METALLURGICAL OPERATIONS. William J. Lynd, Golden City, Colorado Territory.

Claim.—1. The use of coals, such as specified, in smelting and other metallurgical operations, substantially in the manner set forth.

2. The use of coals, such as specified, in the operation of calcining limestone, substantially in the manner set forth.

3. The use of coals, such as specified, for burning pottery-ware, brick, &c., substantially in the manner set forth.

4. The process of coking the coals and smelting, or otherwise reducing metals, calcining limestone, or burning pottery-ware, bricks, &c., simultaneously or by one continuous operation, substantially as herein specified.

98,608.—Safe.—Walter K. Marvin, New York, N. Y.

Claim.—1. The combination, in a safe, of the angle-irons, with the solid exterior plates planed down or otherwise reduced at the edges of the safe, so as to form recesses in the solid metal for the reception of said angle-irons, as shown and set forth.

2. A safe, having the angle-irons which meet at the corners upon its exterior, formed and united substantially as described, so as to constitute solid corners, as set forth.

98,609.—Egg-Box.—J. D. Michael, Baltimore, Md.

Claim.—1. The portable packing-case for eggs, consisting of the rectangular box A, open at top and bottom, and provided with the boards B and C, arranged to be moved up or down, and to be adjusted and secured at any point within it, as herein shown and described.

2. The mode of securing the boards A B within the boxes, by means of the pins or rods E, and the holes D, substantially as specified.

98,610.—Die for Forming Carriage-Shackles.—Robert R. Miller, Plantsville, Conn.

Claim.—The series of dies A A′ and E E′, constructed as described, to form carriage-shackles.

98,611.—Paper-Cutting Machine.—Charles Montague, Boston, Mass., assignor to Cyril C. Child, same place.

Claim.—1. So combining the knife-bar D with the clamping-bar C, that said knife-bar shall be forced in the direction of its length by the clamping-bar, substantially as described.

2. So combining, with the knife-bar D, the clamping-bar C, that it may be automatically controlled and operated by the movements of the knife-bar D, substantially as described.

3. The levers H H, working upon a constantly-changing fulcrum, to impart a reciprocating motion to the bars E E, when said levers are operated by the crank-pins *k k*, working in the slots *l l*, substantially as described.

4. A clamping-bar, for holding paper while it is being cut, having its lower or holding-surface corrugated or grooved, substantially as described, for the purpose specified.

5. The clamping-bar C, constructed in two parts, substantially as described.

98,612.—Bee-Hive.—John Montgomery, Union City, Tenn.

Claim.—1. The combination of the frames F with each other, with the recessed bottom board A, side boards B, partition C, and cap G, said frames being so constructed and arranged, that when put together they may form a close box, substantially as herein shown and described, and for the purpose set forth.

2. The perforated metallic plates E, constructed substantially as herein shown and described, in combination with the recessed bottom boards A, and with the frames F, as and for the purpose set forth.

98,613.—Safety Railway-Truck.—C. R. Morris and H. W. Franklin, Bridgeport, Conn.

Claim.—1. The solid wooden runner-guards A, when extended beyond the truck-frame, and rounded or curved at the lower corners, as shown and described, and for the purpose specified.

2. The combination, with the runner-guards, when attached to the trucks, as described, of the brake-beams B, when arranged, relatively to the said runners, substantially as specified.

98,614.—Desk and Book-Rack.—George Munger, Madison, Conn., assignor to himself and J. W. Schermerhorn & Co., New York city.

Claim.—In combination with a desk, an overhanging book-rack, substantially as described.

98,615.—Apparatus for the Manufacture of Chocolate-Drops and other Confections.—William C. Murdoch and Edgar K. Haynes, Boston, Mass.

Claim.—1. The use of the wire pin or pins *h*, or other suitable material, for the purpose of casting confection on, to dip or cover with chocolate.

2. The combination of the false bottom *m* with the wire pins *h* and board *g*, for the purpose of stripping the confection off from the pins.

3. The combination of the stop-pins *k*, for giving space between the confection and the false bottom, for the purpose of preventing the chocolate from getting on the paper or false bottom, when dipping, with the pins *h*, false bottom *m*, and board *g*.

4. The combination of the pins *h*, the board *g*, false bottom *m*, stop-pins *k*, paper for relieving the false bottom to cool on, and buttons *n*, for holding the false bottom and paper in place, for the purposes set forth and described.

98,616.—Lock for Sewing-Machine Case.—H. O. Nauen, New York, N. Y.

Claim.—1. The arrangement, within the case D, of the spring-catch, to engage with the cloth-plate of a sewing-machine, in combination with the cam *b*, the parts operating together, substantially as described.

2. So arranging the case D that its shoulder *c* locks the tool-box, which is overlapped by it, all as and for the purpose described.

98,617.—Marker for Carpenters.—G. M. Nickason, Ellenville, N. Y.

Claim.—The improved "blind and sash-marker" herein described, its several parts being each constructed and arranged with reference to the others, as shown and described.

98,618.—Device for Measuring and Laying Out Garments.—Ira J. Ordway, West Edmeston, N. Y.

Claim.—The main rule A, combined with the transverse rules B and inclined rule C, substantially as and for the purpose specified.

98,619.—Rotary Engine.—Frederick Ortlieb, Green Point, N. Y.

Claim.—1. The combination of a main or controlling-valve, M, constructed to operate substantially as described, with the inner and outer cylinders of the engine and ports *u u′* and *q q′*, together with their respective passages, connecting the valve-chest or space with said cylinders, essentially as specified.

2. The combination of a duplicate exhaust-valve or valves, M M′, with the main or controlling-valve M, and the inner and outer cylinders of the engine, substantially as shown and described.

3. The skeleton piston H, provided with balance-openings *i*, and carrying radial slides or pistons proper, in combination with the inner and outer cylinders of the engine, substantially as specified.

98,620.—Bridge.—Charles H. Parker, Boston, Mass.

Claim.—1. A cantilever-bridge, in which the tension member is constructed of wire, substantially as set forth.

2. The use of wire in the cantilever-bridge, in the manner and for the purposes specified.

3. The cross B, or its equivalent, when used in the manner and for the purposes set forth.

4. The holding-plate, or its equivalent, for surrounding the chord, and receiving the arms of the cross, at the points of junction of the chord with the web, substantially as shown and described.

5. The combination of the wire rope, the holding-plate, and the cross, when used in the manner and for the purposes set forth.

98,621, antedated December 24, 1869.—Railway-Car Brake.—O. S. Pease, Xenia, and L. E. Skinner, Cincinnati, Ohio.

Claim.—1. The shaft C, when the same is provided with an adjustable spring, C′, pulleys *c b*′, endless chain *c*′, and pulley or roller *d*′, when the same are so combined and arranged as to operate substantially as described, as and for the purpose specified.

2. The shaft C, chain *c*, lever E, chains *e′ e′*, upright levers F F, rods or arms F′ F′, when the same are so combined and arranged as to impart simultaneous motion to the brake-bars and shoes, substantially as described, as and for the purpose specified.

98,622.—Permutation-Lock.—James Sargent, Rochester, N. Y.

Claim.—The arrangement of two or more rollers, H H′, of varying eccentricity, when combined with the cam, in the manner and for the purpose specified.

98,623.—Lock and Bolt-Spindle.—James Sargent, Rochester, N. Y.

Claim.—1. The head B, consisting of the two parts *f g*, arranged within the door A, at the inner side thereof, in combination with the conical spindle C, substantially as and for the purpose described.

2. The combination, with the circular groove *l*, of the longitudinal groove *k*, extending inward on the spindle, beyond the circular groove, in the manner and for the purpose specified.

98,624.—Machine for Stretching Hats.—Augustus Pelisse, Newark, N. J., assignor, for one-fourth, to Warren A. Childs, same place.

Claim.—1. The method of stretching a hat-body whilst in a folded state, by means of a pair of clamping-jaws opening laterally, substantially as herein specified.

2. The combination of the jaws C, with those, B, operating in the manner substantially as herein specified.

3. The combination, with the jaws B C, of the treadle D, and connecting-rods *a a*, or their equivalents, for clamping and holding the hat-body whilst the same is being stretched, substantially as herein specified.

4. The combination, with the jaws B, of the toggle T, arms B, connecting-rod *e*, and crank *f*, substantially as and for the purpose herein specified.

98,625, antedated December 18, 1869.—Tongs for Lifting and Adjusting Well-Tubing.—David Phillips, Oil City, Pa., assignor to Daniel M. Zook and Herman Klingman, same place.

Claim.—The herein-described improved tongs, having the jaws D, clamping-link E rings F and G, and swivel combined therewith, and arranged substantially as specified.

98,626.—Rotary Steam-Engine.—G. H. Pond, San Francisco, Cal.

Claim.—1. Vaporizing the liquid within the engine at the moment of its use, by the continuous concentric chambers F F, substantially as herein described.

2. The use of fluid-metal packing for [illegible] air, or gas-engines, substantially as described.

3. The drum D, rotating partly out of [illegible] in the fluid metal, and having the chambers or cylinders F at the periphery, substantially as herein described.

4. Filling the cylinders or chambers of the engine by the revolution of the drum, thereby forming the pistons or resisting-surfaces, substantially as described.

5. The box K for the shaft, with its plumbago lining, substantially as and for the purpose described.

98,627.—Combined Harrow, Roller, and Seeder.—Ambrose Powell, New Baltimore, N. Y.

Claim.—1. The combination of the swinging arms K and lifting-apparatus, as described, when constructed and arranged substantially as and for the purposes specified.

2. The arrangement, herein shown and described, of the revolving harrow H, rod *n*, bar *s*, guards L, lever R, and roller C, when constructed substantially as specified.

98,628.—Sawing-Machine.—David R. Pratt, New Petersburg, Ohio.

Claim.—The head *h*, swivelled in the sliding frame B, and provided in front with a clamp, *j*, and in the rear with projecting stops *k*, which bear against the lower side of the cross-bar *l* of the frame B, when the saw has cut through the log, as and for the purpose described.

98,629.—Sad-Iron Heater.—John G. Redline, Lanark, Ill.

Claim.—A sad-iron heater, consisting of the vessels A B, and slotted doors C, the vessel B having the draught-holes *b*, substantially as herein shown and described.

98,630.—Water-Gauge for the Tonnage of Vessels.—William Oscar Reim, Springfield, Ohio.

Claim.—1. The combination of the valve *h*, valve-chamber *b*, gauge *j*, index-hands *i l*, tube *e*, and tubes *f f*, when constructed and arranged substantially as shown and described.

2. The combination of the valve *h*, rod *i*, and tube *g*, substantially as shown and described.

3. The combination of the glass tubes *m m*, horizontal tubes *n* and *p*, and the stop-cock *q*, when constructed and arranged substantially as shown and described.

98,631.—Globe-Valve.—George W. Reisinger, Harrisburg, Pa.

Claim.—In combination with a globe-valve, (or a valve which is opened and closed by means of a screw,) the conical nut G, and the conical cavity H, or their equivalents, when arranged to operate as and for the purposes described.

98,632.—Mechanical Movement.—George M. Rhoades, Hamilton, N. Y.

Claim.—The employment, in combination with the usual main driving-wheel and belt, and a secondary or driven pulley, hung on a movable axis, of an intermediate pulley or pulleys, the whole arranged to operate in the manner and for the purpose set forth.

98,633.—Boring-Machine.—Juan Ribon, New York, N. Y.

Claim.—The shaft *c*, and sliding sleeve which carries the wheels *d d′*, in combination with the concentric wheels *f f′*, nut *g′*, screw *k*, and vertical shaft *h*, all arranged to operate substantially as herein shown and described.

98,634.—Liquid-Meter.—Alexander K. Rider, Elizabeth City, N. J.

Claim.—1. A reciprocating and partially-rotating piston, which performs the functions of a valve by

its partial rotation, when operated as represented, relatively to an enclosing-cylinder, with suitable orifices and connections, substantially as herein described, and for the purposes set forth.

2. In combination with the valve and piston E e^1 e^2 e^3 e^4, the spherical part H, arranged as represented, relatively to the crank I, arm G', and rod G, for the purposes herein set forth.

3. The combination of all the several parts, to wit, the cylinder B, with its induction and eduction-apertures, and proper connections, the reciprocating and partially-turning piston and valve E e^1 e^2 e^3 e^4, the rigid connections G G', the crank and shaft I J, and the peculiar spherical bearings H, with the provision for allowing both the rolling motion and the end motion of the arm G' therein, and with means for adjusting the tightness of the hold upon the spherical bearings to compensate for wear, all as and for the purposes herein set forth.

98,635, antedated December 24, 1869.—HARVESTER.—Moses H. Ripley, Minneapolis, Minn.

Claim.—1. The arrangement of the bent lever F, bar G, and lever connecting said bar with suitable gearing on the driving-wheel B, when one arm of the lever F is connected with the sickle-bar, at or near its centre, substantially as shown and described.

2. The combination of the rollers H and I, carrying an endless apron, with the inclined slotted board K and receivers L and M, all constructed and arranged to operate substantially as and for the purposes herein set forth.

3. The arrangement of the receivers L and M, cranks *a a*, connecting-bar *b*, bar *c*, lever *d*, and foot-lever *e*, all substantially as and for the purposes herein set forth.

98,636.—SHIP'S RUDDER.—Thomas Robin and Charles E. Burk, Sheboygan, Wis.

Claim.—1. The jointed sectional rudder E, as described, hinged to the stern-post, and operated by an independent rudder-post, substantially as herein specified.

2. The independent rudder-post D and chain G, in connection with the rollers l^1, l^2, and l^3, bolts *j*, nuts *k*, and plates *i*, arranged and operating substantially as described and for the purposes set forth.

3. The pintle-bolt F, when extended up through the deck, for shipping and unshipping the rudder when necessary.

98,637.—HORSE HAY-RAKE.—Charles W. Sanborn, Morrill, Me.

Claim.—In a horse-rake constructed as herein described, the bars E, made adjustable by nuts and screws on the rods *e*, in combination with the springs *v* and supporting-pins *y*, substantially as specified.

98,638, antedated October 7, 1869.—REFRIGERATOR FOR BUILDINGS.—John J. Schillinger, New York, N. Y.

Claim.—1. The air-space *j*, in combination with the ice-chamber B, air-ducts *h i*, pipes *n*, vault E, and provision-chambers C C, all arranged, constructed, and operated as set forth.

2. The employment of layers *a a*, of paper, on the walls, when used in connection with a layer, *b*, of sheet-iron, or other metal, to prevent injury to the paper, as set forth.

98,639.—FRUIT-PICKER.—D. F. Slane, Chillicothe, Ohio.

Claim.—The arrangement of the tube A, fingers B B, socket C, handle D, sleeve or conveyer E, hooks *a a*, bands *b b*, and strap G, all substantially as specified.

98,640.—PLOW.—L. L. Sloss, Auburn, Ky.

Claim.—1. The combination of beams A A A' A' and adjusting-bars F F' substantially as shown and described.

2. The combination and arrangement of the beams A A A' A', extension-bars B B', uprights C C', connecting-bars D, D', and E, and rod or bar G, substantially as and for the purpose set forth.

3. The arrangement of the cross connecting-bar I, substantially as and for the purpose set forth.

98,641.—TOY-PISTOL.—Chester F. Smith, Torrington, Conn.

Claim.—The combination, with the spring and the barrel, of the stud-pin E and catch-trigger, arranged for holding the spring and the ball, and for disengaging them, all substantially as specified.

98,642.—STUMP-EXTRACTOR AND ROCK-LIFTER.—Silas Smith, West Stockholm, N. Y.

Claim.—1. The front shaft A, arranged with relation to the rear portion of the frame and front axle, and connected therewith, as shown and described, for the purpose specified.

2. The transverse beam D, having its ends extend beyond the frame on each side, and having the reach-rods C C detachably connected therewith, and with the front shaft, all arranged as shown and described, for the purpose specified.

3. The combination, with the shear-frame, of the winding-drum E, driving-wheel I, worm-gear K, and crank-shaft L, substantially as specified.

4. The combination, with the elevating-chain, of the cord R, winding-drum N, pawl P, ratchet O, and hand-lever Q, all arranged substantially as specified.

98,643.—TOY SAVINGS-BANK.—William P. X. Smith, New York, N. Y.

Claim.—1. An improved toy savings-bank, formed by the combination of three figures, A C E, and base or box B, with each other, said parts being so constructed and arranged that the depression of one figure may partially revolve the second, and open the mouth of the third, to receive the money, substantially as herein shown and described.

2. The combination of the spring H, cords I K, roller J, and wheel D, with the figures A C E, and base or box B, substantially as herein shown and described, and for the purposes set forth.

3. Connecting the movable part *a1*, of the mouth of the figure A, with the eyes of said figure, to project the said eyes as the mouth of said figure is opened, and to retract them as the mouth is closed, substantially as herein shown and described.

98,644.—WRENCH.—George C. Taft, Worcester, Mass.

Claim.—The combination and arrangement of the reinforced bar A, with shoulders *i*, nut C, jaw G, clutch *e*, casing *g*, and handle B, with its nut and thread as described, as and for the purposes specified.

98,645.—PLANT-PROTECTOR.—Abel Tuttle, Mannsville, N. Y.

Claim.—The hereinbefore-described vegetable-shield, consisting of the hoop A and cover B, the latter provided with the loop C, or its equivalent, in combination with the stake D, substantially as and for the purpose specified.

98,646.—VALVE-COCK.—C. R. Vaillant, Whistler, Ala.

Claim.—In combination with the shell A, the piston-valve E, the puppet-valve C, the stem B, and the lever N, constructed, arranged, and operating substantially as and for the purpose described.

98,647.—WHEELED HARROW.—A. L. P. Vairin, Ripley, Miss.

Claim.—In combination with the frame A, the disks B, arranged to rotate on the axle B, bent at its centre, all constructed as shown and described.

98,648.—PITCHFORK.—Garrett Van Sickle, Shorterville, assignor to himself and William H. Van Sickle, Springport, N. Y.

Claim.—1. The employment, with a pitchfork or other like fork, of a cutting-blade, applied to said fork, substantially as and for the purposes set forth.

2. The combination, with the fork, of a cutting-blade constructed substantially as described, so as to constitute both a knife to sever the bands, or other articles to be cut, and a tine to act in conjunction with the other tines of the fork.

98,649.—EXTENSION CURTAIN-ROLLER.—Thomas Van Wagoner, Newark, N. J.

Claim.—The centre-piece C and tube D, provided with the slots E E, in combination with the parts A and B, as shown and described.

98,650.—CULTIVATOR.—B. F. Ward, Indian Springs, Ga.

Claim.—1. The bow or frame D, cross-bar E, teeth F, adjustable cross-bar G, and stay or brace H, with each other, and with the standard C of the frame A B C, substantially as herein shown and described, and for the purposes set forth.

2. The combination of the pivoted bars I, adjustable bars J, and cross-bar K, with the frame or bow D, cross-bar E, teeth F, adjustable cross-bar G, and standard C, substantially as herein shown and described, and for the purpose set forth.

98,651.—APPARATUS FOR TANNING HIDES AND SKINS.—William Y. Warner and James Crooks, Wilmington, Del.

Claim.—1. The feeding-trough A, in combination with the series of pipes B, B, F, and G, substantially as and for the purposes set forth.

2. The hose B, with its funnel-head C and valve D, when used for like purposes, substantially as set forth.

3. The gauge-box E, with its slides S S, operating substantially as described, for the purposes mentioned.

4. The gauge-box E, with its slides S S, in combination with the tapering pipe F, and connecting-pipe G and bin I, substantially as and for the purposes hereinbefore specified.

5. The valve-mouthed piece H, substantially as and for the purposes hereinbefore described.

6. The combination of the following elements or parts: the feeding-trough A, the filling-hose B with its funnel C and valve D attached, the bin I, the gauge-box E with its slides S S, the tapering pipe F and its connecting-pipe G, and the valve H, substantially as hereinbefore described, as and for the purposes hereinbefore set forth.

98,652.—COMPOSITION FOR FLOORING, WAINSCOTING, AND OTHER PURPOSES.—Samuel Whitmarsh, Northampton, Mass.

Claim.—The composition of matter, made up of linseed meal, rosin-solution, and asbestos, with or without other ingredients, substantially as specified.

98,653.—SLATE-FRAME.—William A. Wilde, Malden, Mass.

Claim.—The piece C, made of India rubber, or other soft and elastic substance, as combined with the slate-frame B, and of the shape and form above described.

98,654, antedated December 24, 1869.—CURTAIN-FIXTURE.—John Wyatt, Philadelphia, Pa., assignor to himself and George Lewis, same place.

Claim.—The separate and independent travellers B and B', adapted for the reception of the opposite ends of a curtain-roller, D, guided and arranged to slide upon the rods *b b b b*, and operated simultaneously by means of the cords *h*, h^1, and h^2, all substantially as herein set forth.

98,655.—LUBRICATOR.—Royal S. Hildreth, South Adams, assignor to himself and Rufus B. Richmond, Adams, Mass.

Claim.—The combination of oil-cup A, collar B, cap C, spring E, and wire D, all arranged and fitted together as and for the purpose specified.

REISSUES.

89,604, dated April 20, 1869; reissue 3,784.—LAWN-MOWER.—Samuel Coit, Hartford, Conn., assignee of Joseph Arbeiter.

Claim.—1. The combination of the wheels A B, spring-pawl J, ratchet K, on the side of wheel C, gear-wheels C D E, enclosed in the oscillating frame H, with the revolving cutter F G G, when constructed and arranged to operate in the manner and for the purpose described.

2. The combination of the revolving cutter F G G, adjustable journal-boxes R R, moving in curved grooves concentric with the axis of wheel D, and adjustable cutter L, with the frame H I, when said frame is fixed to and can be revolved on the axles of wheels A and B, in the manner and for the purpose described.

31,578, dated February 26, 1861; reissue 3,785.—Division A.—PAPER-FOLDING MACHINE.—S. C. Forsaith, Manchester, N. H., assignee, by mesne assignments, of William H. Milliken and John Milliken.

Claim.—1. The combination, with the horizontal rolls E, of the inclined rolls I and inclined table H, so arranged, that the sheet of paper, after receiving its first fold, shall slide down the inclined table to gauges, which determine its position for the second fold, without loss of register, and without the use of tapes or belts, substantially as described and specified.

2. The combination and arrangement of the inclined table H, inclined rolls I, gauges K, and knife L, for making the second fold in the sheet, substantially as described and specified.

3. The combination of the inclined trough M, with its fingers a^2 b^2 d^2, so arranged that the sheet shall be guided into the trough after passing the rolls I, and slide to the position for its third fold, substantially as described.

4. The inclined rolls P and Q, at right angles to each other, in combination with the knife U, substantially as described and specified.

5. The guide-plate *q*, employed for deflecting the sheet in one direction or the other, for giving it three or four folds, without the necessity of unshipping or stopping the operation of the machine, substantially as described and specified.

6. The combination, with the folding-knives, of a pair of rollers, one of which is kept in contact with the other by a spring-pressure, so as to readily yield to the edge of the folding-knife, the passage of double sheets or any inequalities in the paper folded, substantially as described and specified.

31,578, dated February 26, 1861; reissue 3,786.—Division B.—COMBINING PAPER-FOLDING MACHINES WITH PRINTING-PRESSES.—S. C. Forsaith, Manchester, N. H., assignee, by mesne assignments, of William H. Milliken and John Milliken.

Claim.—The combination, with the rolls E E of a folding-machine, of a knife, or the equivalent therefor, upon the fly of a printing-press, which shall enter the sheets to the rolls, whereby the two machines become co-operative, and the folding of the printed sheets is completed direct from the press, substantially as described.

33,006, dated August 6, 1861; reissue 3,787.—MANUFACTURE OF BAR-IRON.—William H. Perry, Sharon, Pa.

Claim.—1. The manufacture of wrought-iron, by crushing the blast-furnace or pig-metal at or a little above a red heat, charging the pulverized metal into a puddling or other suitable furnace, and converting and balling the charges successively, substantially in the manner hereinbefore set forth.

2. Two or more pairs of crushing-rolls, arranged so as to be operative in the crushing of red-hot cast-iron, substantially as described.

DESIGN.

3,810.—Rubber Eraser.—William N. Bartholomew, Newton Centre, Mass., assignor to J. Reckendorfer, same place.

Claim.—The design for a rubber eraser, as herein shown and described.

ISSUE OF JANUARY 11.

PATENTS.

98,656.—Screw and Nut for Clamps, &c. John Adt, New Haven, Conn., assignor to the Judd Manufacturing Company, same place.

Claim.—The nut or tube *a*, with screw-threads at opposite sides and ends of the interior, and widened at the portions 4 and 5, in combination with screw *a*, substantially as and for the purposes set forth.

98,657.—Velocipede-Sleigh.—D. M. Anderson, Twinsburg, Ohio.

Claim.—1. A velocipede-sleigh, whose driving spike-wheel is arranged on spring-bearings in front thereof, and operated by a belt from a crank-shank, near the seat of the driver, in the manner described.

2. A sleigh, constructed with a seat for the driver at the back, a spring guiding-device on each side, a foot-crank, near the seat, and a spike driving-wheel in front, actuated by a belt from the crank-shaft, all said devices being arranged, with respect to each other, in the manner set forth.

98,658.—Process of Cleaning Cotton-Waste and other Fibres from Oil, &c. — Haydn M. Baker, Washington, D. C.

Claim.—The use of hot aqueous solutions of silicate of potash or soda, for the removal of oils, gums, and resins from fibrous substances, in the manner herein described and set forth, or by any other manner substantially the same.

98,659.—Stove-Pipe Elbow.—P. J. Biesenbach, Rochester, N. Y.

Claim.—A stove-pipe elbow, having the right-angled sections A A, secured together by casting the contiguous ends *b b* into a metallic ring or bead, *c*, substantially as herein set forth.

98,660.—Retainer for Necktie.—James B. Bishop, New Haven, Conn.

Claim.—The necktie or scarf-fastener and collar-supporter, constructed, as above described, of the curved wire E A F, the curved spring B B, and the spring and pin D *d* and catch H, both wires E A F and B B being connected by means of the bands G G, all arranged as described for the purpose specified.

98,661.—Coal-Scuttle.—Frank L. Blair, Allegheny, Pa.

Claim.—The combination of the angular band C, with the cork or wooden lining B, and with the body A, of an ordinary coal-scuttle, substantially as herein shown and described, and for the purpose set forth.

98,662.—Reflector. — Edward C. Blakeslee, Waterbury, Conn., assignor to the Benedict & Burnham Manufacturing Company, same place.

Claim.—The combination, with a reflector, A, of the hooked wire B and wire C, bent so as to form curved arms, when the same shall be constructed and operate as and for the purpose described.

98,663.—Corn-Planter and Corn-Cultivator. — Nathan Breed, Jeffersonville, Ind.

Claim.—1. The frames C, adjustably connected to the frame A, at their rear and forward ends respectively, by the stirrups D and E, and their fastening-bolts, and adapted to be adjusted at their forward ends by the pivoted lever G and connecting-rod K, as herein shown and described, for the purpose specified.

2. The arrangement of the seed-plow L, levers Q, R, T, and U, and covering-plow N, with relation to each other and the frame C, substantially as herein shown and described, for the purpose specified.

3. Connecting the forward cultivator-plows K to the frames C, by means of the slotted bars I and downwardly-projecting bars or keepers J, substantially as herein shown and described, and for the purpose set forth.

98,664. — Cane and Whip Combined. — Corydon L. Bushnell, Jefferson, Ohio.

Claim.—A convertible cane and whip, so arranged that when closed as a cane, it shall consist of the barrel A, head F, and ferrule D, the said barrel enclosing its bow G, and, when arranged as a whip, said whip to be formed by removing the bow from barrel A, and fastening the same upon its screw-thread C, as shown and described, and for the purpose set forth.

98,665, antedated December 29, 1869.—Turbine Water-Wheel.—H. A. Chadwick, Burnet, Texas.

Claim.—The combination of the buckets B B with the guides D D, substantially as and for the purpose herein shown and described.

Also, the reversing-guides D D, within the casing C, substantially as shown and for the purpose specified.

Also, the wheel A, provided with two or more sets of buckets, B B, in combination with the casing C, guides D D, and spiral valves, H H, all constructed and arranged to operate substantially as and for the purpose shown.

Also, the pivoted, adjustable spiral valves H H, when constructed and arranged to operate substantially as shown and for the purpose specified.

98,666.—Machinery for Cutting Barrel-Heads. — Philander Chase, Peoria, Ill.

Claim.—1. The combination of the plane-bit *e*, cutters *f* and *g*, and plow-bit, with the rotating cutter-head *d*, constructed substantially in the manner and for the purposes as herein set forth.

2. The arrangement of the cutter-head *d*, constructed as described, with the arm *i*, lever *m*, weight *x*, rod *n*, treadle-arm *h*, connecting-rod, lever *o*, and rack *p*, all constructed and operating substantially in the manner and for the purposes as herein set forth.

98,667.—Liquid-Meter.—William F. Class and Wilhelm Napp, Cleveland, Ohio.

Claim.—1. The wheel C, constructed with the curved buckets *d d*, as described, and playing in an inclined plane, as shown, and for the purpose set forth.

2. The bucketed inclined wheel C, in combination with the air-tight case A.

98,668.—Ice-Creeper.—William B. Coates, Philadelphia, Pa., assignor, for one-half, to Joseph Leeds, same place.

Claim.—The ice-creeper, when made of heel-stay B, heel-strap C, and strap and buckle G, the heel-stay being provided with a slit, I, in which one end of a strip of woven woollen cloth, H, is secured, the other end being fastened to the heel-strap C, the whole constructed for the purposes set forth and as described.

98,669.—Time-Register for Hiring-Purposes. — Auguste Courvoisier, Denver, Colorado Territory.

Claim.—1. The arrangement of the small gear-wheels F, provided with stops and springs, as specified, the levers J, pinions I, springs L, and keys M, with respect to the journals on which the hands E are placed, and the driving-wheel K, all constructed and operating as and for the purpose specified.

2. The combination of the hands E E, dial D, spring H, gear-wheel F, lever J, spring L, gear-wheel K, and key M, with each other and with the hour-hand, spindle, frame, and case of a clock, substantially as herein shown and described, and for the purpose set forth.

98,670.—Children's Carriage.—Jesse A. Crandall, Brooklyn, N. Y.

Claim.—1. The handle C of a children's carriage, pivoted to the carriage, and connected with the front axle, for steering the vehicle, by means substantially as set forth.

2. The pivoted front axle A, having the arm *c*, in combination with the arm *d* and handle C, the latter swivelled upon a bracket of the body or frame B, all arranged as set forth.

98,671.—Harvester.—J. F. Crawford, New York Mills, N. Y.

Claim.—A cutter-bar for harvesters, fulcrumed on a pin, and removable from one side to the other, by means of lever F and strap *a*, as shown and described.

98,672.—Railway-Car Spring.—D. G. Daniels, Chicago, Ill.

Claim.—The perforated secondary spring B, placed between the two arched or curved primary springs, A A, which touch at their outer edges, and are adapted to operate substantially as described.

98,673. — Mould for Casting Metals.—Henry Davies, Covington, Ky.

Claim.—A mould, having a rotary motion given it, as described, when said mould is provided with concentric chambers, T and T′, for pouring in two kinds of metal at the same time, as set forth.

98,674.—Adjustable Attachment of Pump-Barrels to their Bases.—Joseph W. Douglas, Middletown, Conn., assignor to W. & B. Douglas, same place.

Claim.—The combination of the detachable ears or clamps with the cylinder, arranged to turn on its own axis, in order to set the spout in any desired direction.

98,675. — Railway-Car Truck. — Isaac Dripps, Fort Wayne, Ind.

Claim.—The combination of tie and brace-rods H with lower timber E and frames D, all arranged as and for the purpose set forth.

98,676. — Anchor for Securing Cores in Moulds.—Zabina Ellis, Philadelphia, Pa.

Claim.—The anchor *h*, constructed in the manner, and for the purpose substantially as set forth.

98,677.—Dust-Ring for Watch-Frames.—S. D. Engle, Hazleton, Pa.

Claim.—A movement-protector for watches, consisting of the ring A, with offsets C D thereon, and attached to the movement by means of pin *e*, as shown and described.

98,678. — Programme-Clock. — Samuel F. Estell, Richmond, Ind.

Claim.—In combination with the pinion F and cog-wheel G, the wheel E and adjustable springs I I, when constructed and arranged substantially in the manner and for the purpose herein set forth.

Also, in combination with the above, the disk D and drop-wire C, when constructed and arranged as herein shown and described.

98,679. — Wash-Boiler. — Thomas Evans, Newark, N. J.

Claim.—The combination and arrangement of the removable bottom C, with elevations, the fixed passage *e f*, the hinged passage *e f′*, the external pipes B, with diverging branches *d d*, and the rack *k*, the passage communicating with the main pipes, and the branches arranged to discharge in opposite directions, when the parts are constructed and adapted to operate as described.

98,680.—Vapor-Burner.—John E. Finley, Memphis, Tenn.

Claim.—The combination of the tube B with the wings or flanges A A, reservoir C, the whole used in combination, as described, and for the purpose specified.

98,681.—Railway-Car-Axle Coupling.—David F. Fetter, New York, N. Y.

Claim.—The collar C, having the conical part *a* and groove *b*, in combination with the ring E, sectional plate F, and collar D, all combined to serve as coupling for car-axles, &c., as specified.

98,682.—Fence.—Jacob Fox, Bucyrus, Ohio.

Claim.—A portable fence, formed of panels A, combined with yokes B, keys C, pins E, and blocks D, all constructed and arranged as described.

98,683.—Railroad Pushing-Jack.—Alfred Freeman, Peoria, Ill.

Claim.—1. The shoe A, provided with the spiked clamp *d*, and auxiliary spur *f*, combined and operating as described, and the additional fastening, by means of the slot *m* in shoe, and fixed staple *k*, and bolt, as may be required, in combination with above, constructed and used substantially in the manner and for the purposes set forth.

2. The lever B, provided with the link *l*, in combination with the spiked clamp *d*, constructed and operating as described.

98,684.—Latch. — Frederick W. Gammell, Spring Valley, Iowa.

Claim.—1. A door and casing, A B, provided with the fixed latch E, fixed plate C, and friction-roll D, arranged and operating together in the manner described.

2. A door and casing, A B, provided with the fixed latch E, fixed plate C, friction-roll D, and swinging arm K, arranged as and for the purpose specified.

98,685.—Water-Supply Pipe for Locomotives.—Frank Gerrard, Kansas City, Mo.

Claim.—1. The combination of the water-pipe, swivel-jointed at F, and having friction-roll K thereon, with the horizontal semicircular plate I, all arranged in the manner specified.

2. The combination of swinging doors M M, chains N, and pivoted and weighted levers O O′, all arranged and operating as described.

3. The swivel-pipe joint F, formed in three parts, and coupled together as shown.

98,686.—Water-Meter.—Othniel Gilmore, Raynham, Mass.

Claim.—In combination with the pinching-rolls, flexible meter-tubes, which are normally collapsed, and are only expanded by the pressure of the water.

Also, in combination with the flexible meter-tubes and pinching rolls, the valve-cylinder and valves, arranged to operate substantially as described.

98,687.—POTATO-PLANTER.—S. T. Godfrey, Seaville, N. J.

Claim.—1. The dropping-wheel L, formed with a row of cells, M, around its outer edge, substantially as herein shown and described, for the purpose of receiving the potatoes, and conveying them to the conducter-spout.

2. The combination of the series of guide-rods or wires O with the revolving dropping-wheel L and cells M, substantially as herein shown and described, and for the purpose set forth.

3. The double furrow-wheel J, in combination with the plow D E and spout N, leading from the dropping-wheel L M, substantially as herein shown, and for the purpose set forth.

4. The combination of the adjustable plow and standard D E, and levers G, with the arms F, and standards H and I, attached to the frame or platform C, substantially as herein shown and described and for the purpose set forth.

5. The combination of the toothed wheels R, slides S, and teeth or pins Q, with the axle B, frame or platform C, and revolving dropping-wheel L, substantially as herein shown and described, and for the purpose set forth.

6. The combination of the fertilizer-hopper U, and slides W, with the slides S T, frame or platform C, and dropping-device L N O, substantially as herein shown and described, and for the purpose set forth.

98,688.—GLOBE-VALVE.—E. J. Gould, Milwaukee, Wis.

Claim.—1. Valve C, in combination with valve F and stem D, substantially as described.

2. Pin M, attached to stem D for the purpose of raising valve C, taking the pressure of steam off of valve C, substantially as described.

98,689.—DROPPING-DEVICE FOR HARVESTERS.—Oliver C. Green, Dublin, Ind.

Claim.—1. The adjustable chamfered stumps or projections E, for the purpose designated.

2. The combination and arrangement of the arms L L′, head M, prongs N, rod O, and lever P, constituting an automatic cut-off, as and for the purpose described.

3. The combination, with a side-delivering platform and a cut-off, constructed and operating as herein set forth, of the tappet Q and lever P, for operating the cut off from the platform.

4. The combination, with a side-delivering platform, operating as described, and a lever, P, actuated by said platform, of the deflector or grain-lifter S *s*, as and for the purpose set forth.

5. The combination of the cogged sector F W, intermittent rack G G′, and spring V, constructed and operating as described, for the purpose set forth.

6. The combination, with a side-delivering platform, of a cradle, T, for the purpose stated.

98,690.—MEDICAL COMPOUND.—Horace H. Grigg, Philadelphia, Pa.

Claim.—The within-described ingredients, mixed or compounded in about the proportions set forth, substantially as and for the purpose specified.

98,691.—PAPER-ENGINE.—Ebenezer Hawkins, Islip, N. Y.

Claim.—A paper-engine, consisting of the annular vat A and two or more beating-cylinders D D, substantially as herein shown and described.

98,692, antedated December 29, 1869.—RAG-CUTTER.—J. W. Barbour, Winooski Falls, Vt.

Claim.—1. The combination of the disk A, knives B and C, when all arranged substantially as specified.

2. The combination of the disk A, knives B, C, and D, when all arranged substantially as specified.

3. The knife C, formed as described, and combined with the fixed rollers and the knives B, substantially as specified.

98,693.—SICKLE-GRINDER.—A. B. Jones, Lowell, Wis.

Claim.—The adjustable bed P, provided with a depression, R, and socket O, in combination with the spring N, bolt S, and socket M, arranged with reference to the stand C C, standard B, wheel G, pinion T, shaft H, and wheel L, as set forth.

98,694.—WINDOW-BUTTON.—Morton Judd and Albert D. Judd, New Haven, Conn.

Claim.—1. The stop 2, in the recessed surface of the plate *c*, in combination with the notched annular flange 3, upon the lever *a*, around the fulcrum-pin *f*, as and for the purposes set forth.

2. The plate *c* and cam-flange 4, in combination with the adjustable plate *i*, flange 6, and lever *a*, as and for the purposes specified.

98,695.—SAW-SWAGE.—Simon Kinney, Bignellville, N. Y.

Claim.—1. In combination with the stock A, the sliding socket D, cross-head E, and adjustable bar F, arranged and operated as described, for the purpose set forth.

2. The arrangement and combination, with the stock A, of the adjustable stop X, operated as described, and for the purpose set forth.

3. The anvil J, bar M, and compressing-block K, and the operation of the latter by the cam-lever L and spring L′, for the purposes mentioned.

4. The swage-bar P and guides Q Q, and the arrangement and combination of the cam-disk T, cam-lever U, spring R, and handle V, for pressing the teeth of the saw against the bar M, substantially as described and set forth.

98,696.—MACHINE FOR DRESSING FELLOES.—Henry Kurtz, Washington, D. C.

Claim.—1. The arrangement of the sunken or concave cutting-disk D, the adjustable clamp-carriage H, the segment-guide *f f*, and supporting-table E, constructed and operating in the manner as and for the purposes herein specified.

2. The arrangement of the cutting-disk C, the clamp-carriage K, and table E, constructed and operating in the manner as and for the purpose set forth.

98,697.—SAFETY-VALVE.—T. S. La France, Elmira, N. Y.

Claim.—The safety-valve B, arranged in the pipe A, and combined with the spring *b* and screw C, and with the lower screw-shaft D, substantially as described, to operate as set forth.

98,698.—WRENCH.—Andrew B. Lipsey, New York, N. Y.

Claim.—1. The combination, in a wrench, of the right and left-hand threaded screw-bolt E with the stationary jaw A, the shank B, and the sliding jaw C, substantially in the manner and for the purpose set forth.

2. The combination, with the bolt E, in a wrench, constructed substantially as described, of the pin *f* and ferrule *e*, as and for the purpose hereinabove specified.

98,699.—BRIDGE.—H. S. McDowell, Columbus, Texas.

Claim.—1. A bridge, provided with bars B, castings C, rods D, duplicate jointed braces E F, bolts M, plates L, and chords A O, all arranged as shown and described.

2. The combination, with the axle-rods N, of the bent bars Q and braces S, substantially as specified.

98,700.—HARVESTER.—Christina Julia Miller, administratrix of Charles G. Miller, deceased, and Benjamin Kersting, Springfield, Ohio, assignors, for one-half, to George W. Hoglin and S. D. Grafflin.

Claim.—1. The screw-stirrup V, in combination with the shoe M and drag-bar L, for the purpose set forth.

2. The segment-head Y, constructed with the reel-shaft box and arms *c c*, as and for the purpose described.

3. In combination with an automatic reciprocating sweep-rake, and its driving-pitman, the wheels *g h*, mounted upon the same shaft, and coupled by the intermediate wheel I, all constructed and arranged substantially as set forth.

4. The truck *n*, constructed substantially in the form shown and described, and provided with two friction-wheels *r r*, to traverse the track *s*, bearings for the rake-arm *v*, and a swivel pitman-joint, *o*.

5. The slotted brace *d*, in combination with the reel-shaft box and the segment-head *c c*, as and for the purpose described.

6. The combination of the rake P, mounted upon the shaft *t*, with the clutch-pin *y*, collar *y′*, and trip *r′*, as set forth.

7. The combination of the shaft *t*, spring *p′*, and adjustable collar *n′*, as and for the purpose set forth.

8. The combination of the brace W, friction-roller *k′*, and arm *v′*, as and for the purpose set forth.

9. The combination of the arch and segment-track *s* with the rake P, carriage *n*, and adjustable braces *w q′*, as set forth.

10. The braces *w* and *q′*, or either of them, when made adjustable at their connection with the arch, so as to serve the double purpose of brace and adjustable stop, as set forth.

98,701.—CAR-AXLE LUBRICATOR.—T. J. Moores, Blossburg, Pa.

Claim.—The combination, with the oil-reservoir A, of the valve E, guide or supporting-rod F, and spring G, when the said valve is arranged to close the passage D, and the wall is provided with perforations H, all substantially as specified.

98,702.—COMBINED PRESS FOR CHEESE, &c.—Christian C. Musselman, Somerset, Pa.

Claim.—The arrangement of the winch-barrel *t v*, cords or ropes *s u*, and pulleys *r w*, combined with the spring 5 and press-lever *d* that acts upon the plungers, as and for the purposes set forth.

98,703.—CHURN.—John P. Nichols, New Richmond, Ohio.

Claim.—The arrangement and combination of the spring A, fusee B, cord C, shaft D, gear-wheel E, pinion N, pallet-wheel M, elbow-lever L, lever O, and dasher P, all constructed and operated substantially in the manner and for the purposes set forth.

98,704.—PICKER FOR WOOL.—Stephen R. Parkhurst, Mont Clair, N. J., assignor to Emily R. Parkhurst and Warren H. Holt, same place.

Claim.—1. The feeding-belt 20 and toothed roller 21, in combination with the delivery-brush and picker, as specified, so as to mix a second quality of wool into the wool that is being delivered from the picker, as set forth.

2. The delivery-blower *l*, made with brushes, composed partially of straight wires, in combination with the toothed cylinder *f* or *g*, for the purposes and as set forth.

98,705.—COTTON-GIN.—Stephen R. Parkhurst, Mont Clair, N. J., assignor to Emily R. Parkhurst and Warren H. Holt, same place.

Claim.—1. Arranging the feeding-apron of a cotton-gin, in such relation to the ginning-cylinder and stripper, that the seed will be thrown down upon said apron, and carried beneath the under side of the cylinder, so that any fibres may be taken from said seeds before their delivery from the apron, substantially as set forth.

2. The endless feeding-belt or apron *b*, arranged as shown beneath the ginning-cylinders, and passing around rollers *e e*, in combination with two toothed cylinders, two strippers, and a brush-blower, substantially as and for the purposes set forth.

3. The feeding-apron, formed with slats that are grooved longitudinally for the cotton-seeds to fall into, as set forth.

4. Arranging the cylinders *e* and *f*, in the manner shown in relation to the strippers *g* and *h*, in combination with the pinions *i i*, and internal gear *r*, so that one internal gear shall drive both strippers, as set forth.

98,706.—MACHINE FOR MAKING WIRE HEDDLES.—Peter Philip and Franklin Philip, Stockport, N. Y.

Claim.—1. In combination with the twisting-jaws of a machine for making heddles, a point or tooth which is first thrust between the wires for the purpose of crowding the twist toward the eye-forming jaws, and also for the purpose of taking up slack wire to be used in forming the twist, and then gradually withdrawn from between the wires, substantially in the manner set forth.

2. The combination of the twisting-jaws C′, lever F, with point or tooth F1, hook G, spring G′, and incline H, all arranged to operate substantially in the manner set forth.

98,707.—MACHINE FOR FORGING NAILS FOR HORSESHOES.—Silas S. Putnam, Dorchester, Mass.

Claim.—1. The combination, in a machine for forging nails, of the laterally-vibrating pair of hammers with the laterally-vibrating pair of cutters, substantially as described.

2. The combination of the laterally-vibrating pair of hammers, for operating on two sides of the blank, with the pair of hammers for operating on the other two sides, and with the laterally-vibrating pair of cutters, substantially as described.

3. The combination of the laterally-vibrating pair of hammers, mechanism for arresting the blows of said hammers, and the laterally-vibrating pair of cutters, substantially as described.

4. The combination of the laterally-vibrating pair of hammers, for operating on two sides of the blank, with the pair of hammers for operating on the other two sides, mechanism for arresting the blows of the hammers, and the laterally-vibrating pair of cutters, substantially as described.

5. The combination of the laterally-vibrating pair of hammers, mechanism for varying the number of blows to be given, and the laterally-vibrating pair of cutters, substantially as described.

6. The combination of the laterally-vibrating pair of hammers, mechanism for arresting and for varying the number of blows, and the laterally-vibrating pair of cutters, substantially as described.

7. The combination of one or two pairs of hammers, the cutters, the mechanism for varying the number of the blows of the hammers, and the mechanism for arresting said blows, substantially as described.

98,708.—CORN-PLOW.—William B. Raper, Carthage, Ill.

Claim.—In a corn-plow, the combination and arrangement of the several parts, viz, the ratcheted joints B C C′, by which the two sets of wheels and plows are adjusted toward or from each other; the downward-pointing arms E E′, with their double hinging-parts G G′, having their series of holes *g g′ g″*, &c.; the ratcheted manner of adjusting the plow-standards *h* H *h′* H′ up and down on the plow-beams F F′; and the double tree, having dependent parts L L′, to bear the single-trees M M′ and draught-rods N N′, reaching back to the wheel-frame B, all substantially as set forth.

98,709, antedated January 8, 1870.—SPRING-HINGE.—David Renshaw, Brooklyn, N. Y., assignor to Edward P. Bray, Elizabeth, N. Y.

Claim.—1. The combination of the ratchet-wheel C and the curved pawl E, fitting between said ratchet-wheel and one or both of the wings of the

hinge, and abutting against one of them, substantially as hereinbefore set forth.

2. The combination of the recesses *a a*, in one or both of the wings of the hinge, and the pawl E, so constructed as to fit into said recess or notch, and thereby secure the pawl from working out of place, substantially as hereinbefore set forth.

3. The combination of the pawl E, ratchet-wheel C, and the wings A A, when the said parts are so constructed that the interposition of the pawl E between the centre-pin and one or both of the wings of the hinge, shall prevent the centre-pin from working out of place, substantially as hereinbefore set forth.

98,710, antedated January 3, 1870.—Ruling-Device.—E. H. Robinson, Janesville, Wis.

Claim. — The ruling-device, consisting of the square A, having the tongue B rigidly formed upon its ends to produce two permanent right-angles, said tongue and square adapted to receive at any angle the slotted adjustable bar *c*, as herein described, for the purpose specified.

98,711.—Hay-Fork.—Luman Rogers, Pittsburg, Pa.

Claim.—1. The construction, in a harpoon hay-fork or elevator, of a pair of jaws, one, at least, of which is hinged, such that, by their conjoint action, they shall lock the distended prongs or barbs, by embracing or engaging a rivet, *c*, or some other fixed part of the stem, case, or sheath, substantially as above set forth.

2. The arrangement, inside the handle of a harpoon hay-elevator, of a dog, *g*, as a locking-device, in combination with a pair of jaws, *d d'*, substantially as described.

3. The jaws *d d'*, one hinged at a point intermediate between its ends, and having a spring, *f*, in combination with a dog, *g*, and its spring *e'*, arranged substantially as described.

98,712.—Mode of Treating Vegetables to Obtain Fibre for Paper, &c.—Julius Augustus Rothe, Philadelphia, Pa.

Claim.—Solving the gums of the plants named, by boiling the same in water, and, after washing in hot water, to remove thereby as much as possible the solved gummy, &c., matter, and in combination with the same, the acidulous bath, made so by sulphuric acid, added to the water containing the material for paper, &c.

98,713.—Sawing-Machine.—Cyrus W. Saladee, Circleville, Ohio.

Claim.—The vibrating saw-frame W, with guides R and S, pivoted supporting-beam P, lever Q, and pitman H, when constructed and arranged as and for the purposes specified.

98,714.—Construction of Safes, Vaults, or Doors.—James Sargent, Rochester, N. Y.

Claim.—1. The arrangement of the two or more sets of conical bolts B B, combined with the plating of a safe, vault, or door, in the manner and for the purpose herein described.

2. A bolt for holding the plates, consisting of a conical shaft, with steps or shoulders *d d* formed thereon, in the manner and for the purpose specified.

98,715, antedated January 5, 1870.—Device for Controlling Horses.—Norman P. Slade, Franklin Grove, Ill.

Claim.—The combination of the check-cord *l*, or its equivalent, revolving shaft C, levers *d d d d*, and capstan *f*, with a horse-power, A, for the purpose of checking and controlling the horses attached to said power, at the option of the driver, substantially as shown and described.

98,716. — Railway-Car Brake. — Erastus Slater, Girard, Pa.

Claim.—1. The shaft M, extending by coupling through the train, connected by the clutch F G, with its operating-lever, to the shaft E, which carries the bevel-gear, as set forth.

2. On the shaft M, thus operated, the friction-clutch drum, arranged and operating in the described connections, as set forth.

3. The coupling-device, constructed of the described parts, arranged and operating as set forth.

98,717.—Pipe-Coupling.—Edmund Smith Hamburg, Germany.

Claim.—1. The bevelled rims or flanges *b b*, on the outside of the ends of the pipe A, in combination with the clasp-band *d d*, lugs *c c*, and bevelled bolt-head, and screw-nut *a a*, for connecting water or gas-pipe, as herein described.

2. In connection with the above clamping-device, the bevelled or angle-ends of the pipe for making curves in laying, in the manner herein set forth.

98,718, antedated December 30, 1869.—Apparatus for Feeding Swine.—Nathan Stockwell, Onnquaga, N. Y.

Claim.—Providing the longitudinal shaft G with one or more eccentrics, H H, for opening and holding in position the gate C, as herein described, for the purpose set forth.

98,719. — Bearing for Rudder-Heads.—Retire C. Sturges, Boston, Mass.

Claim.—The combination of a series of removable rollers of vulcanized rubber, or gutta-percha, with the deck of a vessel, in such positions, with relation to each other and to the rudder of the same, as to furnish the requisite lateral bearings for said rudder, substantially as herein set forth.

98,720.—Adding-Machine. — Edward Augustus Swain, New York, N. Y.

Claim.—The combination, with the disks or wheels D D of a counting-machine, operating substantially as herein described, of the tappets *d'''*, ratchet-wheels *d''''*, and carrying-levers E, constructed and arranged to operate as set forth.

98,721.—Carriage-Seat.—Samuel Toomey, Wilmot, Ohio.

Claim.—1. The construction of the forward hook-tenons A A with the following peculiarities, to wit: with the rectangular hooks *i i*, with bases completely filling the length and breadth of the mortises, but with their rear edges, bevelled downward and forward therefrom; and with wide shoulders *i i i* at the sides and rear, but none in front; all parts arranged in relation to one another, substantially as and for the purposes herein specified.

2. In combination with the front tenons A A, the back locking-tenons *m m*, when arranged so that they lock by springing forward in their mortises, substantially as and for the purpose herein set forth.

98,722.—Horse-Collar.—J. L. Van Wert, Tolland, Mass.

Claim.—The combination, in a horse-collar, of the padded arched metal frame A, the T-catches, for fastening the braces, the split cylinder E, having notches *f f*, and the hooks D, for attaching the neck-pad, by means of the T-hooks C, the whole constructed substantially as shown.

98,723.—Railway-Car Coupling.—Jerome B. Vedder, Gloversville, N. Y.

Claim.—The combination of a spring-jointed shank, A, spring-bearing block *i*, spring-jaws C C, and spring-jointed link B, as and for the purpose specified.

98,724. — Cut-Off Valve-Gear.—Charles W. Wailey, New Orleans, La., assignor to New Orleans Pneumatic Propelling Company.

Claim.—1. The mitre-wheel *b*, and flat bar *c*, in combination with the disk-wheel *i*, and its friction-roller *i'*, when these parts are constructed and arranged on the shaft *a* with respect to each other, and operate as described, for the purpose set forth.

2. The above combination, in combination with the rock-arm *o* and rod P, as described, for the purpose set forth.

3. The shaft *a*, mitre-wheel *b*, arm *c* with its double incline-plane blocks *j* and *i*, disk-wheel *i*, rock-arm *o*, and rod P, in combination with the mitre-wheel *e*, vertical rod H, crank *g*, and supporting-arc *f*, when these parts are constructed, relatively arranged, and operate as described, for the purpose set forth.

4. The above combination, in combination with the eccentric D, yoke E, and cam-rod F, as described, for the purpose set forth.

5. The combination and arrangement of the parts embraced in the foregoing claims, in combination with the cut-off valves of a steam or pneumatic cylinder, as herein described, for the purpose set forth.

98,725.—Mode of Operating Valves in Steam-Engines.—George I. Washburn, Worcester, Mass.

Claim.—A valve-operating mechanism, in which the valve is first locked or loaded, in opposition to the direction in which it is to move, and then subjected to pressure, which will move it instantaneously, when the resistance first referred to is removed or counterbalanced, substantially as set forth.

98,726.—Steam-Generator.—Francis William Webb, Bolton, England.

Claim.—1. A fire-box for a steam-boiler, with its front, sides, and back constructed of a single plate or sheet of metal, substantially as set forth.

2. Constructing the said fire-box with a separate tube-plate, substantially as and for the purposes set forth.

3. Securing the joints or seams of steam-boilers with oval, elliptical, or oblong rivets, inserted through holes of corresponding form, and arranged to offer the greatest resistance to the shearing-strain caused by the pressure within the boiler, substantially as set forth.

98,727, antedated January 1, 1870.—Composition Resembling Horn.—William M. Welling, New York, N. Y.

Claim.—The composition herein specified, prepared in the manner set forth.

98,728.—Moulders' Flask.—Alanson Wilcox, Green Island, N. Y.

Claim.—1. A flask-hinge having a V-shaped or inclined open joint, and one or each of its separable halves formed with an upright inside flange M, in connection with a horizontal part, J, and an outside upright leaf, H, as herein described.

2. A moulders' flask, having its wooden upper and lower parts A B, connected at one side by open-joint hinges which have one or each of the separable halves thereof formed with an upright inside retaining and projecting-flange M, in addition to a horizontal part J, and an outside vertical wing, H, substantially as herein described.

98,729.—Sheet-Iron Wash-Tub and Bucket.—David Alcorn and John Walsh, New York, N. Y.

Claim.—1. The bottom plate A, with the parts *a' a''*, body-plate B, with flaring end *b'*, foot-rim D, riveted at *c*, and having the wired flange arranged as described.

2. The bracket-handle, consisting of the hollow sheet-metal cylinder *c''*, contracted at its ends, 4 4, bracket-arms *c' c'*, having loops or eyes *c''' c'''*, arranged as described.

98,730.—Coffin.—William G. Algeo, Allegheny, Pa.

Claim.—The combination, with a burial-casket, of a revolving top, substantially as described.

98,731. — Car-Brake. — Arthur M. Allen, New York, N. Y.

Claim.—1. The arrangement of hinged "track-shoes" D, constructed and operating substantially as described.

2. The arrangement of elastic or yielding faces *f* on the rigid blocks *e* of the track-shoes, substantially as set forth.

3. The track-shoe D, pivoted at one end, leaving its other end free, in combination with the cam-lever *h*, bearing against said free end, and operating as set forth.

4. The bell-crank toggle *i*, in combination with the track-shoes D, constructed and operating substantially as set forth.

5. The single strap *l*, passing over all wheels of each side of the truck, in combination with a brake, acting against the track, and both operated simultaneously by a single lever, the whole as set forth.

6. The beam *c*, in combination with track-shoes, substantially as set forth.

7. The reversible straps *f*, forming the faces of the track-shoes, in combination with the blocks *e*, substantially as described.

98,732.—Railroad-Car Spring.—Timothy F. Allyn, Nyack, N. Y.

Claim.—1. The construction and arrangement of a plate "car-spring," having fulcra of rubber, or other elastic material, contained within and surrounded by a metallic band, in the manner and for the purpose herein described.

2. The combination of the band H with the plate-spring D, rubber E E, and wedges F and G, and rubber I, in the manner and for the purposes herein described.

3. The combination of the spring, as above constructed, with the cups B B and rubber C C, or other elastic material, in the manner and for the purpose herein described.

4. The within-described method of fastening the spring-plates together, by means of the rivet K, when the same projects downward into the band H, thereby preventing lateral displacement, as herein specified.

98,733.—Cap for Coffin-Nails.—Stephen A. Barker, Providence, R. I., assignor to New England Toy Company, same place.

Claim.—The improvement in ornamental coffin-trimmings herein described, which consists in providing the screw-cap with a notched lip, *a*, arranged to spring vertically into holding-contact with the stud *c* upon the main plate, for the purpose specified.

98,734.—Force-Pump.—William Beers and William Raynor, Milan, Ohio.

Claim.—The force-pump, herein described, having stock A, cylinder B, open at both ends, descending conduit C, dividing-disk *b*, grooved plungers D D, with openings *t t*, and expansible packing *t t*, valves *a c A' C'*, when arranged as specified.

98,735.—Machine for Jointing Barrel-Staves.—John B. Bell, Pittsburg, Pa.

Claim.—The pivoted frame *f*, constructed, arranged, and operating as herein described, in combination with the cylinder D, as and for the purpose set forth.

98,736.—Key-Guard.—Max E. Berolzheimer, New York, N. Y.

Claim.—A key-hole guard and double ratchet-guard, fastened and secured substantially as described, and constructed on a pivoted lever, to lock the key and knob-shank, and secure the key-hole, in the manner and for the purpose specified.

98,737.—Harvester.—Cornelius R. Brinckerhoff, Rochester, N. Y.

Claim.—The inclined rake-post F, when used in combination with the sweep-rake D', substantially as and for the purposes set forth.

2. The pivoted rake-bar D'', in combination with the head D, when the end held by the clasp *t* is allowed a free vertical movement, as and for the purposes specified.

3. The brace *l*, in combination with the shaft *v* and rake-head D, for the purposes herein specified.

4. The arrangement of the spring *s* upon the sweep-post F, operating substantially as set forth.

5. In combination with the folding fingers *j'* and springs *s*, the vertical post *u*, arranged to operate substantially as described.

6. The spur *r* upon the bar *J*, in combination with the lip *r'* upon the reel-arm, for the purpose of governing the "set" of the fingers *j'*.

7. The knife *p'*, on the outside divider of a harvester, substantially as shown.

8. The arrangement of the hinged bent lever R, the shaft A, and reaction-spring and gears *f* and *g*, for the purposes set forth.

9. The arrangement of the ratchet *w* and pawl *x*, with the pulley and shaft of a harvester-reel, as and for the purposes specified.

98,738.—CIRCULAR-LOOM. — Caroline Bryant, (administratrix of the estate of Mertoun C. Bryant, deceased,) Lowell, assignor to William J. Towne, Newtonville, Mass.

Claim.—The shuttle N, constructed with the eye *l* and rounded portion *5*, substantially as and for the purpose set forth.

98,739.—WATER-WHEEL.—Edward M. Buckley, Amonia Union, N. Y.

Claim.—1. An improved water-wheel, formed by the combination of the rim A *a'*, arms B, shaft C, casing D *d'*, partitions E, buckets F, one or more, arms G, flanged collar H, arms or rollers I, and guide-flange J, with each other, substantially as herein shown and described, and for the purpose set forth.

2. The partition E, constructed as described, in combination with the chutes *d'*, of the casing D, and with the rim A *a'*, and sliding buckets F, substantially as herein shown and described, and for the purpose set forth.

98,740. — PUMP. — William S. Carr, New York, N. Y.

Claim.—1. The double cup-leathers 2 and 3, facing each other, and kept apart by the ring 4, and clamped by the screw-cap *n*, and forming a packing for the piston-rod *m*, as and for the purposes set forth.

2. The aforesaid double cup-leather packing for the piston-rod, in combination with the double cup-leather piston, cylinder *a*, and valves forming the pump, as and for the purposes specified.

98,741.—SCROLL-CASE FOR WATER-WHEELS. John Chase, Paterson, N. J.

Claim.—The scroll-case, constructed of outer and inner walls or partitions, arranged to form independent scroll-courses, and divided outlets around the wheel-race, in combination with valves or gates, each made to control two passages, substantially as specified.

98,742.—WIRE CRADLE.—Louis Chevallier, Williamsburg, N. Y., and Robert Brass, Waterbury, Conn.

Claim.—1. The combination of the supporting-rocker-frame with the woven wire cradle body, each constructed and arranged as specified.

2. The wire hood, pivoted to a cradle, substantially as described, for the purpose specified.

98,743.—FOLDING CHAIR.—Thomas Babbitt Comins, Jr., Lowell, Mass.

Claim.—The above-described chair-frame, as composed of the frame A, the legs B B', the two latch ing-bars C C', the pins *g*, and the bar *e*, arranged and applied together, and to the strip or cloth D, in manner and so as to operate as described.

98,744.—GAS-BURNER.—Joseph W. Cremin, New York, N. Y.

Claim.—The combination of the heating-chamber A, cap B, conducting-tube D, check-meter C, substantially as described.

98,745.—PAPERING PINS. — C. O. Crosby, New Haven, Conn.

Claim.—In papering pins, perforating or indenting the paper between the several rows, substantially in the manner set forth.

98,746.—MACHINE FOR TENONING SPOKES. James P. Crutchfield and C. T. Whitten, Longmire's Store, S. C.

Claim.—1. The combination of the brace-frame J, hollow arms K, hollow arms L, brace-guide M, swivelled screws N, gear-wheels O P, and hand-wheels Q, with each other and with the adjustable extension-bars H Y, substantially as herein shown and described, for the purpose of adjusting the position of the brace-guide M according to the length of the hub.

2. The combination of the bottom plate C *c'*, extension stay-bar Y *y'*, movable collar and nut G *g'*, and extension-bar H *h'*, with the brace-frame J, brace-guide M, and centring-chuck E, substantially as herein shown and described, for the purpose of adjusting the position of the brace-guide M to the length of the spokes.

3. An improved spoke-tenoning machine, constructed, arranged, and operating as herein shown and described, and for the purpose set forth.

98,747. — PIPE-TONGS. — Jonathan Dunlap Davis, Fitchburg, Mass.

Claim.—The pipe-tongs, consisting of the jaws A and B, lug *b*, bolt *c*, nut *e*, and the fulcrum or bolt *g*, and nut h, constructed and arranged as described.

98,748. — CARTRIDGE-BOX. — S. Allan Day, Bowling Green, Ohio.

Claim.—The block B, provided with the circumferential grooves *a*, and having the radial holes or sockets *b*, arranged as herein described.

2. The combination, in a cartridge-box, of the block B, internal case C, and external case A, all arranged substantially as described.

98,749.—FAUCET.—John H. Dorst, New Albany, Ind.

Claim.—The combination and arrangement of the main body A, with side tube B, nut C, valve-stem D, stuffing-box E, wheel F, wing-valve G, and strainer H, all constructed as described, and operating substantially as and for the purposes herein set forth.

98,750.—STEP FOR STREET-CAR.—Albert A. Duly, New York, N. Y.

Claim.—1. The combination, with the step B, of a mat, C, hinged thereto, substantially as herein before set forth.

2. The combination of the step B, mat C, and skeleton-frame D, having open space, upon which a blow may be struck upon the mat, as set forth.

3. The combination of the step B, mat C, skeleton-frame D, and raised portion, F, substantially as set forth.

98,751.—KITCHEN-TABLE.—Ferdinand Ehrhardt, Washington, D. C.

Claim.—The improvements in kitchen-tables, with dough-trough C, pie-board D, chopping-block J, and trouing-boards K and L, when constructed and arranged as herein described, and for the purposes set forth.

98,752.—SASH-ROPE GUIDE.—Winslow W. Fifield, Medford, Mass.

Claim.—The sash-rope guide, as made with the screw *a*, and the rope-passage *b* arranged on it as described, and with the elongated mouth *f*, to the rope-passage *b*, and the lip *g* upon the lower side of the opening, such being substantially as and for the purposes as hereinbefore explained.

98,753, antedated December 14, 1869.—OSCILLATING STEAM-VALVE. — Isaac W. Forbes, La Porte, Ind.

Claim.—1. The oscillating valve, constructed substantially as herein described.

2. The balance-head K, applied and operating substantially as described.

98,754, antedated December 14, 1869. — STEAM-ENGINE VALVE-GEAR.—Isaac W. Forbes, La Porte, Ind.

Claim.—1. The rock-shaft or rock-shafts C, in combination with the incline or inclines D, substantially as described.

2. The arms E, in combination with the rock-shaft or rock-shafts, and the incline or inclines, substantially as described.

3. The lever E, on the rock-shaft C, in combination with the levers R P, substantially as described.

4. The spring M and momentum-ball N, in connection with the rock-shaft, substantially as described.

98,755, antedated December 14, 1869.—BALANCE SLIDE-VALVE.—Isaac W. Forbes, La Porte, Ind.

Claim.—The sliding-balance valve, constructed substantially as herein described.

98,756.—HOLDER FOR BROOMS AND MOPS.—Henry L. Franklin and Eugene Clark, Nashua, N. H.

Claim.—The rubber arms, as shown at B B, in combination with bracket A, slotted at *a*, as constructed, and for the purpose set forth.

98,757.—CIDER-MILL.—O. S. Garretson, Buffalo, N. Y.

Claim.—The casing for cider-mills, consisting of the hopper A' B', guiding and pulping-throat B'', and walls of discharge-passage F, cast together, and adapted as and for the purpose described.

2. The flange *g*, continued from the curved throat B'', and extended toward the periphery of the lower roller, and arranged to operate together, in relation to the upper roller, substantially as and for the purpose described.

3. The roller C, provided with a series of cutters and feeders, in combination with the hopper, extended below the top of said roller, and with the curved throat communicating with said hopper, substantially as and for the purpose described.

4. The squared heads *s*, cast with the eccentric bushings, and projecting beyond the bosses *v*, as and for the purpose described.

98,758, antedated January 1, 1870.—PROCESS OF PRESERVING GREEN CORN.—Washington L. Gilroy, Philadelphia, Pa.

Claim.—As a new article of manufacture, the pure pulp of green corn, hermetically sealed up, and preserved, in its fresh, succulent state, in suitable vessels, substantially as described, for future use as food.

98,759.—FEATHER DUSTER.—M. A. Goodenough, New York, N. Y.

Claim.—A feather duster, having the handle A perforated in its centre, the correspondingly-perforated block C, the plugs F, the jointed rods D D, and the spring E, all constructed and adjusted as and for the purpose specified

98,760.—PROPELLING BOATS ON CANALS—William F. Goodwin, Metuchen, N. J., assignor to himself, James T. Sanford, and George W. Sanford, New York city.

Claim.—1. A canal-boat having straight sides, which extend from end to end, the full length of the boat, and project in front of the rake or closed end thereof, sufficiently to enclose a propelling-wheel located in front of the bow of the boat.

2. A floating propeller-wheel, travelling in front of the boat, for the double purpose of drawing the boat and displacing the water by driving it under the bottom.

3. The floating propeller-wheel, connected by hinged arms with the driving-shaft, in such manner as to move around or vibrate upon said shaft as a centre.

98,761.—BEE-HIVE.—Joseph Gould, Grinnell, Iowa.

Claim.—1. The angular metallic stripe *a* and pins *b*, in combination with the frames I, substantially as set forth.

2. The combination of the rabbeted sections and parts A B C D, frames I, pins *b*, and angular plates *a*, all as set forth.

98,762.—ADJUSTABLE LETTERING-BLOCK.—Edward J. Griffin, Hart's Falls, N. Y.

Claim.—The combination, with the blocks A E and bar Q, of the adjustable spacing-bar I, substantially as specified.

98,763.—WASHING-MACHINE.—John Habermehl, Allegheny, Pa.

Claim.—The inclined arrangement of the tub, in combination with the centre A, open space B, and stripe or wings C, as shown and described.

98,764. — CLAY-CRUSHER. — Alfred Hall, Perth Amboy, N. J.

Claim.—1. The arrangement, respectively, upon two clay-crushing rollers, of cogs I and grooves J, as set forth, and for the purpose specified.

2. The combination of a pair of clay-crushing cylinders, grooved and cogged on their peripheries, as set forth, with a series of scrapers arranged opposite to each cylinder in the manner described.

98,765, antedated January 7, 1870.—SASH AND DOOR-CLAMP.—George H. Hall and Lorenzo D. Farra, Germantown, Pa.

Claim.—1. The adjustable jaw C, with its lever-shank D, fastening-band E, and screw F, in combination with the bar A, substantially as and for the purposes described.

2. The combination of the jaw H, lever K, and toggle-bar *m*, with the bar A, arranged substantially as described, for the purposes set forth.

3. The particular construction and arrangement, herein shown and described, of the lever K, with reference to the bar I, the jaw H, band J, bar A, toggle-bars *m*, and the lug *n*, whereby it is adapted to operate as and for the purpose set forth.

98,766, antedated January 6, 1870.—DRIVEN WELL.—John Harter, Colfax, Iowa.

Claim.—The bulged-shape reservoir B, when combined with screen D, pipe C, and section-pipe A, attached, constructed and operating in the manner and for the purpose specified.

98,767.—GAS HEATER.—David G. Haskins, Cambridge, Mass.

Claim.—1. The combination of perforated inner case B with outer case A, substantially as herein set forth.

2. The combination of draughts *a a* with tube *c*, perforated inner case B, and outer case A, as herein described.

3. The combination of draughts *b b*, gas-inductive *c*, and space *g*, substantially as specified.

4. The combination of the last-named combina-

tion with cases A and B, tube *c*, and draughts *a a*, substantially as set forth.

98,767.—Revolving Fire-Arm.—Byron R. Hill, Cranston, R. I.

Claim.—1. A reversible cylinder for a revolving fire-arm, provided with notched wheels B C, or their equivalents, at both ends, so that it can be fired from either end, as set forth.

2. The conical apertures *e f*, arranged in reverse order, in alternate succession, in the cylinder of a revolving fire-arm, as set forth.

98,769.—Pessary.—Ernst F. Hofman, New York, N. Y.

Claim.—The pessary, consisting of the parts *b c d*, in combination with the sac or covering over the bottom, substantially as and for the purpose described.

98,770. — Car-Coupling. — Cornelius F. Hornbeck, Slatersville, N. Y.

Claim.—1. The combination of the wedge-shaped link C, the groove *e* therein, the aperture *d*, the bolt *f*, the point *i*, at the end thereof, and the notch opposite thereto, the lever or arm *g*, the spring *j*, and the roller *q*, substantially as and for the purpose hereinbefore set forth.

2. The combination with the link C, the aperture *d*, the bolt *f*, the lever or arm *g*, the roller *q*, and the spring *j*, of the bar or standard *l*, the lever *m*, the spring *u*, the strap *o*, and the catch *p*, substantially as and for the purpose hereinbefore set forth.

98,771. — Sewing-Machine. — Henry A. House, Bridgeport, Conn.

Claim.—1. The combination and arrangement of the taper-pointed screw G, with the swivel-block F of the feed-bar, essentially as herein set forth.

2. The arrangement, with relation to the operating-pulley B and feed-cam C, of the open-framed feed-bar E, said pulley and cam projecting into the opening in the feed-bar, thereby allowing the use of a larger pulley and cam, and increasing the penetrating power of the needle, substantially as set forth.

3. The combination of the needle-bar or slide J, with the stationary arm L or portion K thereof slitted, as at *g*, and adjusting-screws *s*, substantially as specified.

98,772, antedated January 6, 1870.—Rotary Pump.—Charles W. Isbell, New York, N. Y.

Claim.—1. The combination, with the outer cylinder or case A, and eccentrically-hung rotating carrier D therein, of the buckets or blades E E, hinged to said carrier, but of curvatures, on their outer surfaces, corresponding to that of the cylinder, substantially as specified.

2. The combination, with the outer cylinder or case A, of the eccentrically-hung rotating carrier D, made up of a series of curves on its face, corresponding to that of the cylinder, less the thickness of the blades, hinged to said carrier, essentially as shown and described.

3. The combination, with the guiding-grooves G in the cylinder ends or covers, of the pivoted shoes F to the side edges of the blades or buckets, arranged to direct said blades, substantially as herein set forth.

98,773.—Spelling-Box.—A. Perley M. Jeffers, Allegan, Mich.

Claim.—The flexible slides D D, constructed and arranged as described, as an improvement upon the patent of David F. Dunham, dated November 13, 1860.

98,774.—Hose-Coupling.—Thomas L. Johnson and John Fitzgerald, Rochester, N. Y.

Claim.—The union nut A and male coupling D, constructed substantially as described, in combination with the spurs *s* and recesses *s'*, for the purpose herein set forth.

98,775.—Car-Coupling.—Ethan B. Keith, Galesburg, Mich.

Claim.—The draw-head A, slotted horizontally from its mouth, a portion of the distance to the rear, within which are pivoted the jaws B B, forming the sides of the mouth, and having a recess formed at their rear ends, within the draw-head, within which is placed the spring C, having hooks at each end, which catch into the jaws, and secure the ends of said jaws within the draw-head, and operated substantially as herein shown and described.

98,776.—Gas-Regulator. — Peter Keller, New York, N. Y.

Claim.—1. The cap G, attached to a screw-spindle E, in combination with the shell C and with the seat *a*, below the perforated end of the pipe B, substantially as set forth.

2. The combination of the self-regulating valve *b*, with the cap G, shell C, pipe B, and bulb A, substantially as shown and described.

98,777.—Enamelling Ovens.—Victor Keller, Allegheny, Pa.

Claim.—1. The arrangement of the flues 1, 2, 3, 5, 4, 6, all concentrating in flue *x*, and arranged and combined, with relation to the oven A', substantially as herein described, and for the purpose set forth.

2. Constructing the muffler or crown Z of the oven in two or more pieces, with lap-joints, as indicated at 12, substantially as herein described.

3. Causing the endless aprons P P to travel, and the oven-doors 8 automatically to open and close at suitable intervals, by means of suitable operating-gear, substantially as herein described, and for the purpose set forth.

98,778.—Seat-Cushion.—Richard A. Kendall, Mineral Point, Wis.

Claim.—1. The combination, with the cushions C and D, of the spring-hooks E, arranged for hooking over the front and top edges of the seat and back, and pressing against their sides, all substantially as specified.

2. In combination with the above, the extension F of the springs, as and for the purpose substantially as specified.

98,779.—Whiffletree-Coupling.—Henry Killam, New Haven, Conn.

Claim.—1. The arrangement of the plates *a* upon the ends of the straps C, to form the bearing between the two sides of the coupling and strap, substantially as and for the purpose specified.

2. The coupling D, constructed with the bearing E and head *d*, and combined with the box F, substantially in the manner described.

3. In combination with the coupling D, constructed with the bearing E and head *d*, the arrangement of the spring f, substantially as and for the purpose set forth.

98,780.—Sheet-Metal Can.—William M. Lewis, New York, N. Y.

Claim.—1. Securing the end of the can to the sides by the folds 1, 2, 3, 4, of the sheet-metal, in the manner specified.

2. The notched portion 5 of the flange 4, bent down against the side of the can at the corner or angle, combined with the folds 1, 2, 3, of the sheet-metal, in the manner specified.

98,781.—Gun-Lock.—N. C. Lock, Salem, Mass.

Claim.—The notch *f*, and the lip or catch *g*, in combination with the tumbler and dog of a gun-lock, substantially as and for the purposes described.

98,782.—Coal-Loading Device.—John F. Logan, Coal Bluffs, Pa.

Claim.—1. The arrangement of the jointed track C, supports C^3 C^4, rope C^6, pulleys C^8, counterpoise C^7, catch C^9, in combination with the jointed track H, carriage G^2, wheel and lever G, rope G^1, substantially as and for the purpose described and set forth.

2. The arrangement of the platform B, with its track B^1, standards B^2, hook B^4, rope B^5, carriage D^2, screen Aa, in combination with the hinged track C, substantially as described, and for the purpose set forth.

3. In combination with the above, the shaft E^2, carrying the drums E^1 and G, brake-wheel E^3, clip E^4, lever E^5, rod E^6, ratchet-wheel F, lever F^4, and pawl F^3, substantially as described, and for the purpose set forth.

98,783.—Chair.—Charles R. Long, Louisville, Ky.

Claim.—The detachable double seat E, constructed and adapted to be applied to chairs, as shown and described.

98,784.—Treating Whiskey and other Spirits. — Obadiah Marland, Boston, Mass., assignor to himself, John C. Crosman, same place, and Alfred E. Tilton, New York city.

Claim.—The improvement in treating whiskey or other liquors in casks, barrels, or tanks, substantially as described.

98,785.—Casket for Jewels, &c.—Jules Mathieu, Paris, France.

Claim.—1. A case or casket, consisting of a number of compartments, arranged about a fixed centre, substantially in the manner described, so that when open, the contents of all may be exposed to view at the same time.

2. The combination of the fixed receptacle A, and the compartments D and D^4, substantially as specified.

3. The combination of the compartments E and E^1, and the hinged receptacles 1, 2, 3, and 4, substantially as specified.

4. The combination of the drawer F, arranged to be opened from either side of the case, and a catch, *f*, operating as set forth.

5. The combination of the movable compartments D, the fixed cover A', and a clasp, *m*, or other fastening.

6. The combination of two or more compartments, D E, revolving as described, and provided with pins *x*, or their equivalents, for the purpose specified.

98,786.—Artificial Fuel.—P. M. McGill, Washington, D. C.

Claim.—1. Compounding an amalgamating silicious clay, particularly that known as silicate of magnesia and alumina, or aluminous clay, with coal-dust, waste, or screenings of coal and sawdust, so as to agglutinate and form, by means of kneading and drying, or baking, a solid, hard, tenacious, and combustible substance for fuel, as herein described.

2. The compounding of silicious clay and sawdust with coke-dust, as herein described, and for the purpose set forth.

3. Coal or coke-dust or screenings, when agglutinated by means of magnesia slackened with a solution of chloride of magnesium, in a more or less concentrated state, as above described.

98,787.—Brush.—Francis McLaughlin, deceased, Boston, Mass., (John Dwyer, administrator.)

Claim.—The combination and arrangement of the head A, constructed as herein described, and provided with an angular groove or furrow around the lower side, with the rubber ring *a* fitting therein, as and for the purpose specified.

98,788.—Car-Brake and Starter.—J. M. McMaster, Rochester, N. Y.

Claim.—1. The levers *c d*, provided with arms *h* and *i*, in combination with ratchets *a b* and pawls *e f*, as and for the purposes set forth.

2. The pivoted levers *p*, or their equivalents, in combination with levers *c d*, as and for the purposes set forth.

3. The projecting hub *r*, on the ratchets *a b*, when provided with a spiral groove and the notch *e''*, in combination with the spring B, as and for the purposes hereinbefore set forth.

98,789.—Manufacturing Axes.—Henry D. Morris, Baldwinsville, N. Y.

Claim.—1. The eye-pin A, with a handle, h, substantially as described, and for the purposes set forth.

2. The sliding swage-block B, provided with a cavity to receive the axe-blade, and a guide to control it upon the anvil, substantially as described.

3. The die E, provided with the boss F, substantially as described, and for the purposes set forth.

98,790, antedated January 3, 1870.—Pneumatic Valve for Organs, &c.—John R. Mortimore, New York, N. Y.

Claim.—1. Placing pneumatic pallet E in the wind-chest C of the sounding-board, substantially as herein shown and described, and for the purpose set forth.

2. In combination with the pallet placed in the wind-chest, the radiating grooves or separate air-passages F, as herein described, for the purpose specified.

98,791.—Concrete Paving-Block.—Rufus Norwood, Baltimore, Md.

Claim.—1. An improved concrete, composed of the ingredients, mixed together in about the proportions, and in the manner described.

2. Bricks or tiles composed of the concrete described.

98,792. — Suspending Upper Berth in Sleeping-Cars.—Enoch H. Paine, Louisville, Ky.

Claim.—The combination of the bolts *b b*, working with a lever, *a*, and eccentric *c*, forming together a fastening applied to sleeping-berths, as shown, and for the purposes described.

98,793.—Felt Shoe.—Charles W. Palmer, Lynn, and Charles Houghton, Boston, Mass.

Claim.—A shoe, made as described, that is, with its upper, *a*, and the part *b*, which forms its inner sole, felted in one seamless piece, and of uniform thickness, and having an auxiliary or outer sole, *c*, made of leather or other suitable material.

98,794.—Communicating-Apparatus for Hotels.—N. A. Patterson, Nashville, assignor to himself, Thomas S. Ramsey, Lenoirs, and D. E. Davenport, Decherd, Tenn.

Claim.—1. A communicating-apparatus for hotels and other buildings, consisting of a system of tubes A or I, leading from the different rooms to a common tube, terminating at the office, or other place of attendance, and arrows or balls, either hollow or solid, numbered to correspond with the number of the room to which they belong, and either having the messages printed or otherwise placed on the exterior, or enclosed in the hollow spaces, and arranged to be impelled through the said tubes by gravity or air, all substantially as specified.

2. The combination, with the tubes A or I, arranged as described, of the sounding-board O, bell-hammer P, and bell Q, all substantially as specified.

3. The flush-headed arrows E, constructed, arranged, and adapted for use with the systems of tubes, substantially as specified.

98,795.—Knob-Latch.—F. P. Pfleghar, New Haven, Conn., assignor to himself and McLagan & Stevens, same place.

Claim.—1. The arrangement of the lever I and

follower L, outside the latch-case, and combined with the latch, in the manner described.

2. The combination of the rose F, lever I, and follower L, when the said rose is constructed so as to enclose the said follower and lever outside the door-stile.

98,796.—SHOEMAKERS' PINCERS.—Theophile Pilote, Marlborough, Mass.

Claim.—The shoemakers' pincers, as made with the claw *g*, arranged and combined with the jaws, the hammer-head, and the handles, as set forth.

98,797.—LOCK FOR UMBRELLAS.—Hiram Plumb, Frankford, assignor to himself and William A. Drown, Jr., Philadelphia, Pa.

Claim.—The combination of the hooked spring-catch with the shouldered tube A, and internally eccentric key C, each being constructed, arranged, and operated as and for the purpose specified.

98,798.—BOLT-HEADING MACHINE.—Franklin B. Prindle, Southington, Conn.

Claim.—1. The combination of the holding-dies F, the end-dies S, the plunger Y, and the side-swages N, constructed, arranged, and operating in the order, as to time, substantially as described, and for the purpose specified.

2. Also, the carriers G and O, constructed as described, in combination with the clamps H and e, and their binding-keys, substantially as shown and described.

3. Also, the carrier X, constructed as described and provided with the clamp A′, in combination with the block Z and plunger Y, substantially as herein shown, and for the purpose specified.

4. Also, the means employed for securing in place the side-swages, consisting of the grooved block n and pin n′, in combination with the carrier O and clamp e, substantially as herein specified.

5. Also, the means employed for securing in place and rendering relatively adjustable the end-dies S, consisting of the carrier T, provided with the set-screws t, and the straps U, provided with the key u, substantially as shown, and for the purpose set forth.

6. Also, the means employed for imparting to the movable holding-die and side-swages a positive forward motion, in a line at a right angle to that of the cam-bars, and for withdrawing said die and swages, consisting of the elbow-bars L and p, the half-round pins or bearings g″ e″ k p″, the pins m and r, the curved edge k′, and slot p′, in combination with the carriers G and O, and the cam-bars P and K, substantially as shown and described.

7. Also, the means employed for operating the holding-dies, end-dies, plunger, and side-swages, in the order required, consisting of the cams C′, G′, H′, N′, and P′, secured to and revolving with the shaft E, and the pivoted arms D′, F′, I′, K′, L′, and R′, suitably connected to the cam-bars, all constructed and arranged to operate substantially as and for the purpose specified.

8. Also, the means employed for arresting the motion of the shaft E, when not in gear with the pulley W′, consisting of the tooth C″, the detent D″, the pivoted block F″, the link d″, the arms H″ and I″, and the lever A″, substantially as and for the purpose shown.

9. Also, in combination with the subject-matter of the last above-mentioned clause, the loose pulley W′, the disk U′, the detent V′ provided with the angular arm r′, the shaft X′ provided with the arms Y′ and Z′, and operated by means of the lever A″, all constructed and arranged substantially as described, and for the purpose of throwing said pulley W′ in and out of gear with the shaft E.

10. Also, the construction and arrangement of the various parts of the herein-before-described bolt-heading machine, substantially as shown, and for the purpose set forth.

98,799.—PRINTERS' RULE.—Conrad Reuter, Cincinnati, Ohio, assignor to "Cincinnati Type-Foundry," same place.

Claim.—Joining printers' rules, by notching them on to one another, in the manner set forth.

98,800.—CHIMNEY-TOP.—C. M. Reynolds, Mifflin, Wis.

Claim.—The arrangement of the upper flange F, adjustable cap G, pipe E, cap D, with overlapping flange *x*, projections C, perforated body B, and perforated saddle A, all substantially as shown and described.

98,801.—SCHOOL-DESK.—A. E. Roberts, Des Moines, Iowa.

Claim.—A hinge for school-desks, when constructed as described, by the end of the seat-supporting iron D, provided with journals, and fitting between a projection or lip, C, on the frame, and a removable lip, C′, secured to the same, substantially as herein set forth.

98,802, antedated November 24, 1869.—STEAM-GENERATOR.—John B. Root, New York, N. Y.

Claim.—1. The combination, with the tubes A A, arranged substantially as described, and heads or end blocks B B, having triangularly-arranged openings, *d d d*, in them, of the hollow caps E E, provided with similarly-arranged openings, *e e e*, disposed to connect with the apertures *d* in the heads of adjacent tubes, essentially as shown and described.

2. The fire-bridge, constructed of independent plates H H, arranged to encircle the tubes A A, and of parallelogrammic form on their outside edges, to constitute, when combined, a cross or dividing-wall, essentially as described.

98,803.—VISE FOR HOLDING SAWS WHILE BEING SHARPENED.—Hervy S. Ross, Millville, Ohio.

Claim.—The described arrangement of convex slab A *a a′ a″ a‴*, spring-clamps B *b* B′ *b′*, bolts C C′, and screw-taps D D′, for the purpose explained.

98,804.—METHOD OF APPLYING ANTI-FRICTION ROLLERS TO WHEELS.—William Bonham Scott, New York, N. Y.

Claim.—1. The combination, with the journal of the car-wheel or other rotating device, of a disk or disks, interposed between said journal, and anti-friction rollers, or their equivalents, as described, the disk or disks being arranged so as to form a bearing-surface for and to rotate with said journal, and to transmit such rotary movement to the rollers, substantially as and for the purposes shown and set forth.

2. The combination of the tapering journals with the tapering or conical anti-friction-rollers and the bearing-disks, interposed between the rollers and journals, and having their faces inclined, so as to fit and be in contact with the tapering journals and rollers, as shown and set forth.

3. The arrangement, in relation to the journal or axle, of the bearing-disk with which said journal is in contact, and the series of anti-friction rollers upon which said disk is supported, substantially as shown and described, so that both the disk and its anti-friction rollers shall revolve around the same axis, as set forth.

4. The arrangement, in combination with each bearing-disk with which the journal is in rolling contact, of the conical anti-friction rollers upon spindles or axes radiating from a hub mounted loosely on the spindle or axis upon which the bearing-disk of the journal rotates, substantially as shown and described.

5. The combination of the journals and their rotating disks with the anti-friction rollers, arranged to move around the axes of their respective disks, and the stationary bearing-surfaces upon which said rollers revolve, under the arrangement and for operation as set forth.

98,805.—STEAM-BOILER FURNACE.—J. Q. C. Searle, Topeka, Kansas.

Claim.—1. The combination of a hopper, extending into the fire-place of a boiler, and a water-space surrounding the hopper, as specified.

2. The combination of a fuel-supply reservoir with a grate, constructed and arranged, substantially in the manner described.

3. A series of water-tubes, bent and arranged to form a pocket, or series of pockets, for retaining the fuel, substantially as set forth.

4. The partition *t*, arranged within the coal-supply reservoir, for the purpose specified.

5. The perforated air-chamber, intervening between the casing of the reservoir and the water or steam-space, as set forth.

6. The combination of the rake D, plate or platform G, and detachable lever F, substantially as described.

98,806.—BASE-BURNING STOVE.—J. Q. C. Searle, Topeka, Kansas.

Claim.—1. A magazine-stove, in which the upper portion of the outer casing of the stove is secured directly to or in contact with the casing of the magazine.

2. A plate or partition, L, extending from the mouth of the magazine or feeder, so as to prevent the heated air or gases from passing in contact with the entire outer side of the feeder.

3. An air-chamber, Z, around the contracted lower end of a magazine.

4. A hollow perforated feeder, suspended above a fire-pot, and expanded at the lower end, so as to present an extended perforated surface for the passage of currents of air directly on to the fire.

5. The combination of a magazine, contracted at its lower end, a plate or plates, L, and a detachable flaring feeder.

6. A magazine, the lower end of which is contracted and curved, substantially as set forth.

7. A cylinder, B, arranged within the base of a reservoir-stove, and having at its upper end a perforated flange, *a′*, supporting a fire-pot, and a recessed and perforated lining.

8. The arrangement, within the base of the stove, of the fire-pot, the chambers F F^1 F^2 F^3, and the air-passages or tubes *g* g^1 g^2, substantially as set forth.

9. A fire-pot lining, consisting of detachable recessed and perforated sections *c′*, constructed and arranged within a fire-pot, as specified.

10. The combination, with a fire-pot, of a chamber, F^1, through which air can pass between the pot and an outer flue or chamber, for the passage of heated gases.

11. The combination, with a grate D, of an agitating-rod, *d*, and a dumping-rod, d^1, connected to the grate, and operating as described.

12. A stove-base, A, cylinder A′, and casing I, constructed and adapted to each other, substantially as described, so that when the cylinder is removed, the casing may be applied to and form a cap for the base.

13. The combination, with a stove, of a shallow casing or hopper, I, having a cap, J, and a slide, *n*, or its equivalent.

14. The perforated casing H, extending between the base of the stove and the enlarged part of the reservoir.

98,807.—APPARATUS FOR ROLLING METAL.—George H. Sellers, Wilmington, Del.

Claim.—1. The combination, with the compressing-rolls and the shaping-rolls, all having their axes in the same vertical plane, of mechanism to move all of said rolls toward or from a common centre or fixed axial line, as and for the purpose set forth.

2. The combination, with the adjustable horizontal shaping-rolls, of the vertical compressing-rolls, and their supporting friction-rolls, the compressing and friction-rolls being located between the bearings of the shaping-rolls, and mounted in a common adjustable frame, substantially as set forth.

98,808.—APPARATUS FOR DESICCATING SUBSTANCES.—Benjamin R. Smith and J. Campbell Harris, Philadelphia, Pa.

Claim.—1. The combination, with a drying or separating-cylinder, A, of a suction-pipe, F, attached at or near its supply end, for the withdrawal of the separated moisture, substantially as herein set forth.

2. An apparatus for expelling water from substances, consisting of a separating-cylinder, A, provided with a conveyer, *a*, and agitators, *a′*, a heating-chamber, B, a supply-pipe, E, and a suction-pipe, F, arranged and operating as herein described, for the purpose set forth.

98,809.—MEDICINE OR LINIMENT FOR TREATING NERVOUS DISEASES.—Joel F. Smith, Forest Hill, Cal.

Claim.—A nervine liniment, composed of the ingredients above enumerated, mixed and compounded in about the manner and proportions herein specified.

98,810.—STEAM-PUMP.—Thomas Snowdon, George T. Snowden, and Isaac V. Lynn, Pittsburg, Pa.

Claim.—The combination of the chambers A′, B, and C, constructed, arranged, and operating, substantially as herein described.

98,811.—ROTARY ENGINE.—Samuel M. Snyder, Brady, Pa.

Claim.—1. The hollow piston B, sliding valves *b b*, and semi-annular collar C, combined, substantially as and for the purpose described.

2. The semi-annular collar C, having both ends tapering inward, and so as to form an inclined face at one end, to direct the entering steam in the right direction, substantially as set forth.

98,812.—MEAT-CHOPPER.—Leopold Steigert, Cincinnati, Ohio.

Claim.—The arrangement of the guards L, M, and E, with relation to the chopping-block A, the cutters, and the framing, as herein shown and described, and for the purpose set forth.

98,813.—WEATHER-BOARD GAUGE.—Worden E. Stoddard, Fort Edward, N. Y.

Claim.—The arrangement of the bar A, spur B, block C, screw D, spiral spring *a*, and slide E, with shoulder *d* and flange *e*, all constructed as described, and for the purposes set forth.

98,814.—WATER-CLOSET VALVE.—Herman Strater, Jr., Boston, Mass.

Claim.—In combination with the valve-containing case, and its valve and suitable inlet and outlet-pipes, the reciprocating cap or cylinder, (over the valve,) and the stationary piston, constructed and arranged to operate substantially as described.

Also, in combination with the reciprocating cylinder *c*, the shoulders *p*, substantially as shown and described.

Also, in combination with the reciprocating-valve *c* and cylinder *c*, the spring *q*, substantially as described.

98,815.—ROOFING-TONGS.—George E. Taylor, Philadelphia, Pa.

Claim.—The combination, with roofing-tongs, of adjustable pins or stops, substantially in the manner described.

98,816.—APPARATUS FOR EVAPORATING SACCHARINE AND OTHER SOLUTIONS.—Abner Tolles, Weathersfield, assignor to himself and Almon Durkee Tolles, Royalton, Vt.

Claim.—The combination of the tube *f* and the clamp-screw *g*, with the float M and its stem *e*, the tubular discharge-valve *h*, and the tubular receiver *i*.

Also, the combination of the tubular receiver *i* and the tubular discharge-valve *h*, arranged substantially as set forth, and for application to, and to operate with the float, as specified.

Also, the combination and arrangement of the

series of openings *m* and valves *n*, with the series of evaporating-compartments A B, C, &c., and the float M, and a conduit valve-apparatus, substantially as described, for supplying liquid to the first evaporating-compartment, and regulating the flowage of such into the same, as set forth.

98,817.—VAPOR-BURNER.—William W. Tyson, Allegheny City, assignor to Philipp Weisenberger, Pittsburg, Pa.

Claim.—1. The heating or generating-plate A, formed with flanged or raised edges *a a*, substantially as shown and described.

2. The perforated jacket or shield D and nipple C, when constructed and arranged in relation to each other and the plate A, substantially as shown and described.

3. The plate A, with its flanges *a*, in combination with the perforated jacket D, substantially as shown and described.

4. The combination of the plate A, with its flanges *a*, and the pipe or nipple C, provided with the orifice *d*, all substantially as shown and described.

5. The combination of the cup E, pipe F, and plate A, formed with flanged or raised edges *a a*, all substantially as shown and described.

98,818.—NON-CONDUCTING COMPOSITION FOR COVERING STEAM-BOILERS.—James D. Van Arnum and William Ives, Troy, N. Y.

Claim.—A composition for covering steam-boilers, pipes, and other heated surfaces, consisting of the ingredients herein described, compounded and applied substantially as herein described.

98,819, antedated January 1, 1870.—VELOCIPEDE.—Anthony Wanner, New York, N. Y.

Claim.—1. The combination and arrangement of the crank or bent axle E, connecting-rods B, pedals or shoes A, wheels or rollers D, and the horizontal-sliding grooves C C, substantially as and for the purpose set forth.

2. The steering-device, consisting of pulleys F^1 and F^2, the vertical shafts O and R, cord or chain F^4, braces F^5, tube or cover F^6, and guiding-needle U, when constructed and arranged substantially as and for the purpose set forth.

3. The device for locking the pedal to the frame, and thereby preventing the vehicle from being propelled, substantially as described.

98,820.—CHUCK FOR GRINDING CRYSTALS.—J. S. Warner, Ogdensburg, N. Y.

Claim.—A crystal-grinding chuck, composed of the cup-shaped part A and face-plate or disk D, the cup being arranged for attachment to the mandrel, and the disk detachably connected to the cup, all substantially as specified.

98,821.—MILLING-MACHINE.—James Watson, Philadelphia, Pa.

Claim.—1. The revolving disk J, in combination with a radial shaft, *r*, carrying a drill, *m*, a transverse shaft, *p*, carrying a milling tool, *n*, and with the shaft H, cog-wheels *d*, *f*, and *q*, and bevel-gear *s'*, or equivalent devices for operating the shafts, substantially as described.

2. The combination of the revolving disk J, its shafts *p* and H, and cog *q*, with the arms *i i'*, driving-pinion *e*, wheel *d*, and pinion *f*, as specified.

98,822.—SHUTTLE FOR LOOMS.—Rudolf Webendörfer, New York, N. Y., assignor to himself and Carl Beiter, same place.

Claim.—1. The shuttle for looms, containing two springs, which propel it in opposite directions, as set forth.

2. The drums E F, containing the springs C D, for propelling a shuttle, and held in place by pawls *c d*, when the springs are to act as set forth.

3. The pawls *c d*, arranged to lock the drums E F in a shuttle, and acted upon by one or more arms, *f*, at the end of each stroke, as set forth.

4. The wheels *a a*, arranged on a shuttle, and revolved in opposite directions by the action of springs, substantially as specified.

98,823.—WASHING-MACHINE.—Otis H. Wood, Boston, Mass.

Claim.—The washing-machine and table combined, consisting of the box A, the top B, the washboard C, with its springs *e e*, the washers D D, the springs *g g*, guides *b b*, the connecting-rods *s s*, and bent shaft E, all constructed, combined, and arranged as shown and described.

98,824.—VAPOR-BURNER.—Henry Wellington, Chicago, Ill., assignor to himself and Truman P. Doane, same place.

Claim.—1. The mixing-chamber C, constructed and arranged, with relation to the generator A, substantially as herein shown.

2. The adjustable bell I, in combination with the generator A and vaporizing-flame, substantially as described, for the purpose specified.

3. The perforated shield L, held upon the generator A by means of the vaporizing-tube G, screws H N, and stud M, substantially as described, for the purpose specified.

4. The perforated adjustable bell I, in combination with the mixing-chamber C, substantially as described, for the purpose specified.

5. The combination, with the generator A, of the mixing-chamber C, adjustable bell I, vaporizing-tube G, and perforated shield L, substantially as herein shown and described, for the purpose specified.

98,825.—JOURNAL-BEARING.—Isaac P. Wendell, Philadelphia, Pa., assignor to himself and Stephen P. M. Tasker, same place.

Claim.—1. The construction of the journal-bearing A, with recesses *f* and openings *h*, which connect the said recesses with the oil-reservoir *a*, when said recesses and openings are constructed and arranged in relation to the wearing-surface of the bearing and the reservoir, and the recesses are filled with a porous material, through which the oil oozes on to the journal, substantially as described.

2. The combination of a porous material with an enclosed journal-bearing, where the whole pressure of the latter comes upon the journal and the said lubricating-media, and the latter is confined in recesses between which and an oil-reservoir in the body of the bearing their is an open communication for the passage of the oil, substantially as above set forth.

98,826.—PRUNING-SHEARS.—Hermann Wendt, Elizabeth, N. J., assignor to H. Seymour & Company, New York city.

Claim.—1. In combination, with the blades A B and fulcrum-pin *a*, the circular recesses D E, provided with studs *c d*, to receive and retain the spring *e*, to operate the jaws, substantially as described and specified.

2. In combination with the blades A B, the finger-bow C, by which the operation of the shears is more easily and efficiently performed, substantially as described and specified.

3. Constructing the blades A B, with their inner or cutting-faces flush, and without any "set-off," in combination with the recesses and spring for opening the jaws.

4. So arranging the spring *e* within the recesses D E that the cutting-edges of the blades shall always be kept in contact, substantially as described and specified.

98,827.—HINGE.—Daniel Werner, St. Louis, Mo.

Claim.—1. The bracket or stationary portion of the hinge, consisting of the following parts, to wit, a plate, A, a semicircular rail, B, with inclined edge C, in combination with the right-angled knee-piece G, which is constructed with the perforated offset *g*, and the anti-friction roller *h*, and central notch *a*; a rib, *d*, a lug, *b*, and a wrought-metal pintle, C, all arranged and operating substantially as set forth.

2. The knee or right angle G, constructed with a perforated offset, *g*, and an anti-friction roller, *h*, the said knee being adapted to bear against the lower corner of the gate, door, or shutter, and to extend partly behind the door, shutter, or gate, substantially as and for the purposes described.

3. The combination of the knee-piece G with an open bracket-portion, when both of said parts are constructed as herein set forth.

98,828.—WATER-WHEEL.—Willard M. Wheeler, Berlin, Mass.

Claim.—1. The bucket D, spirally curved, and of varying pitch, with the interior wing *e*, in connection with the cylinder C, having ports or water-ways through it, and a discharge both outside and inside of its base, the whole being constructed to operate substantially as described.

2. The revolving cylindrical gate G, having fixed chutes attached to and projecting obliquely from the edges of its ports, when constructed and arranged to operate substantially as herein specified.

98,829.—PLATFORM-ATTACHMENT FOR GRAIN SEPARATOR.—John Whiteside, Salinas, Cal.

Claim.—The detachable platforms G, supported by the bars *b* at one side, upon the timbers E, and upheld at the opposite side by rods *f* and *g*, or equivalent device, connected with the tables C above, substantially as and for the purpose described.

98,830.—WASHING-MACHINE.—Alexander J. Wilcox, Fall River, Mass.

Claim.—In combination with the tub A and cover B, the slotted guide-stand C, lever F, pivoted at G, and provided with a mortice, I, the shaft D and its arm H, and the stirrer-head E, having pins K, all constructed and arranged as shown and described, for the purpose specified.

98,831.—CARD-RACK.—Charles F. Wilson, Brooklyn, N. Y.

Claim.—The construction and arrangement on the strip of metal A, of the hooks C C and the tongue D, punched up from the strip, in the manner described.

98,832, antedated December 24, 1869.—VEGETABLE-GRATER.—Samuel M. Wilson, New York, N. Y.

Claim.—The combination of the grating-cylinder J, with perforations, as described, hood O, frame A K E E, gearing F I, with crank G H, and clamping-screw M, all constructed and arranged to operate substantially as herein described and shown.

98,833.—FLEXIBLE JOINT FOR TUBES.—Norman R. Bates, Titusville, Pa.

Claim.—1. A coupling-joint, consisting of tubes E and F, the part E rounded at its end, and resting upon the annulus *f*, within the part F, the upper end of F flaring, the whole covered by an elastic band, free at its centre, but held toward its ends to the parts E and F, all substantially as described.

2. The combination of the rounded ends *a* with the shoulder or seat *f*, the flaring mouth *b*, and the escape-openings *g g*, arranged at the junction of the tubes E F, substantially as before described.

3. The combination of a lateral flexible enclosing-band, H, with the tubes E F, and a clamping-device, I, J, K, substantially as before described.

98,834.—HAMES.—George J. Letchworth, Auburn, N. Y.

Claim.—The projections C, when used in connection with a socketed clasp, in such manner as to admit of the adjustment of said clasp, either upon or between the pins, as described.

REISSUES.

92,556, dated July 13, 1869; reissue 3,788.—Division A.—GRAIN-CLEANER.—Wilson Ager, Washington, D. C.

Claim.—The use of a blast or current of air to cool the friction-surfaces of a machine while decorticating grain, and to remove the separated cuticle and dust from the machine, immediately after the same are detached from the kernels, substantially in the manner as herein described.

92,556, dated July 13, 1869; reissue 3,789.—Division B.—GRAIN-CLEANER.—Wilson Ager, Washington, D. C.

Claim.—1. The combination of the stones, the screen, and the grain-elevators O, or the equivalents of said devices, substantially as set forth.

2. The stones, the screen, and the grain-elevators, or their equivalents, in combination with a blast of air, substantially as set forth.

3. So arranging the machine, that the weight of the grain kept within the screen, will regulate the amount of scouring, or the extent to which the kernels are decorticated, substantially as set forth.

4. The adjustable slides, or their equivalents, for the purpose of discharging the grain at a greater or lesser distance from the shaft, substantially as specified.

5. The continuous self-feed and discharge, in combination with the cylindrical screen, revolving on a horizontal or nearly horizontal shaft, substantially as set forth.

6. Passing the grain and the blast in opposite directions through the horizontal cylindrical screen, substantially as set forth.

91,404, dated June 15, 1869; reissue 3,790.—RAILWAY-CAR BRAKE.—Arthur M. Allen, New York, N. Y.

Claim.—1. The rising and falling shoes F, in combination with the toggles G, bars *b b*, and slide H, the latter moving in between the toggles, and thus closing and opening them, substantially as described.

2. The toggle-levers G, arms *b*, cross-head H, and lever I, in combination with the windlass J and rising and falling brake-shoes F, constructed and operated substantially as shown and described.

3. The elastic cushions *g*, in combination with the blocks *f*, of rising and falling brake-shoes F, substantially as set forth.

21,874, dated October 26, 1858; reissue 3,791.—CIDER-MILL.—John S. Hall and Abel W. Hall, Jeffersonville, Ind., and J. A. Moore and H. Burkhardt, Louisville, Ky., assignees of John Eiberweiser.

Claim.—An improved crushing mechanism for cider-mills, consisting of two rollers, the one formed with a series of longitudinal grooves or channels, and the other with a series of correspondingly-distant ribs or knives, which enter the said grooves or channels, the two rollers being arranged relatively to each other, and operating substantially as shown and described.

63,517, dated April 2, 1867; reissue 3,792.—UMBRELLA-SUPPORTER FOR VEHICLES.—Henry S. Heermance, Lenox, Mass.

Claim.—1. The combination, with a jointed umbrella-staff or support, for varying its angular position, of set-screws applied to the joints, to secure the umbrella where adjusted, essentially as specified.

2. The combination of the clamp D, ball-and-socket joint *g e*, rod *d*, and standard or support *c*, in the construction of an umbrella-support, substantially as and for the purpose herein set forth.

3. The combination of the joints *j k*, and the ball-and-socket joint *g e*, in the umbrella-support, substantially as described.

4. The combination of the joints *j*, *k*, and *m*, sub

stantially in the manner and for the purpose described.

50,489, dated October 17, 1865; reissue 3,793. — MACHINE FOR NECKING CARTRIDGE-SHELLS.—Brigham Payne, South Coventry, Conn.

Claim.—1. The reciprocating plunger D, provided with the detachable tubular die m, said die having its interior so formed as to permit the shell to protrude up into it as the latter is compressed, as set forth.

2. The combination of the reciprocating tubular die m and the stationary shaft N, when constructed and arranged to operate substantially as described.

3. The combination of a reciprocating compressing-die, a stationary expelling-shaft, and a rotating or carrying-disk, all constructed and arranged to operate substantially as and for the purpose set forth.

8,861, dated April 6, 1852; reissue 1,564, dated November 3, 1863; extended seven years; reissue 3,794. — SMUT-MILL AND GRAIN-SEPARATOR.—Daniel Shaw, Elkhart, Ind.

Claim.—1. The combination of a smutter or scourer, with an independent suction separating fan-blast or current of air, so that the separation of the dust, chaff, and other impurities from the grain, shall take place after the grain has been scoured, and after leaving the scouring-cylinder, and the dust separated from the lighter impurities, and deposited apart from the chaff and other impurities, and independent of any action of the smutter, substantially as described.

2. In combination with a smutter or scourer and a separating suction-blast, the separating and depositing in separate places of, first, the heavy or very clean wheat; second, the lighter grains or screenings, freed from dust; and third, the smut, dust, and chaff, substantially as described.

3. In combination with a smutter or scourer and a suction-fan, both arranged on and driven by the same shaft, and an air-trunk for directing the course of the blast, a regulator for changing the force or volume of the current of air without changing the speed or motion of the smutting or scouring cylinder, substantially as described.

4. The combination of a smutter or scourer and a suction separating-fan, with a wind or air-trunk, common to both the smutter and the fan-blast, and so that the contents of the smutter may pass into the column of air that rushes through the trunk to the fan, and the entire separation take place therein by the action of the fan-blast alone, after leaving the scourer, substantially as described.

5. The arranging of the smutter or scourer and the suction separating-fan within or between the legs of the blast or air-trunk in which the entire separation is made, and which passes over or around them, for the purpose economizing space and cheapening the construction of the machine, substantially as described.

42,036, dated March 22, 1864; antedated May 13, 1862; reissue 3,795.—SEWING-MACHINE.—The Willcox and Gibbs Sewing-Machine Company, of New York, N. Y., assignees, by mesne assignments, of Charles H. Willcox.

Claim.—1. The combination, with the slotted and padded feeding-dog, and its operating-eccentric, of the padded feed-regulating eccentric, all constructed and operating substantially as and for the purpose set forth.

2. The combination of the vibratory needle-arm with the reciprocating needle-bar, when connected together by means of a ball-and-socket or equivalent joint, substantially as herein shown and described.

3. The combination, with the frame of the sewing-machine, of a hinged case, for enclosing and shielding those parts of the sewing and feed-mechanism, located beneath the sewing-plate or table, substantially as shown and set forth.

79,615, dated July 7, 1868; reissue 3,796.—OVEN.—Joseph Vale, Beloit, Wis.

Claim.—1. The rotating disk or hearth H, supported by the shaft H', and revolved in any suitable manner, as and for the purpose specified.

2. The crown-plate or disk E, in combination with the fire-grates C C, covers *d d*, flues *b b*, regulating-damper *g*, flue or chimney *a a*, and ash-boxes D D, when the whole is constructed and arranged substantially as herein set forth and described to operate as specified.

DESIGNS.

3,811.—PRINTERS' TYPE.—Thomas M. Cash, San Francisco, Cal., assignor to Hagar & Co., New York city.

Claim. — The within design for a printing-type, as shown herein.

3,812.—INKSTAND.—Alonzo French, Philadelphia, Pa.

Claim.—The design for an inkstand, as shown.

3,813.—PRINTERS' TYPE.—Hermann Ilenburg, Philadelphia, Pa., assignor to MacKellar, Smiths & Jordan, same place.

Claim.—The design for printing-type, as shown.

3,814.—SAFE. — William McFarland, Williamsburg, N. Y.

Claim. — The improved design for a safe, herein shown and described.

3,815.—CLOCK-FRAME.—George B. Owen, Winsted, Conn.

Claim.—The design for a frame for clock-works, as shown.

3,816.—CASING FOR SODA-WATER APPARATUS.—James W. Tufts, Medford, Mass.

Claim.—The design for the casing of a soda-water apparatus, herein shown and described.

3,817.—EGG-CUP AND SALT-STAND.—George Wilkinson, Providence, R. I., assignor to Gorham Manufacturing Company, same place.

Claim.—The design for salt-stands and egg-cups, substantially as herein set forth.

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PATENTS.

98,835.—DEVICE FOR SOLDERING EAVES-TROUGHS.—Daniel Azire, Ada, Ohio.

Claim.—The half cylinder *d*, fastened to the base *f* by the hinges *g* and the springs *i*, provided with the wedge-bar *s*, the shaft *e*, the clamps *m* provided with the hinges *o* and screws *l*, operated by the bar *q*, arranged in the manner and for the purpose specified.

98,836.—LAMP-BURNER.—Lewis J. Atwood, Waterbury, Conn., assignor to himself and Holmes, Booth & Haydens, same place.

Claim.—1. The removable air-distributer and thimble *h*, in combination with the flattened tapering cap *d*, surrounding the wick-tube *a*, substantially as and for the purposes set forth.

2. The helix *m*, applied around the flange of the draught-plate *o*, in combination with the cone *l* and removable air-distributer, substantially as set forth.

3. A helix of wire, *m*, in combination with the deflector or draught-plate, and a filling of cord or other material, for the purposes and as specified.

98,837.—TOOL-HOLDER.—Joseph R. Bailey, Woonsocket, R. I.

Claim.—The tool-holder A B, constructed substantially as shown and described.

98,838.—TOOL-HOLDER.—Joseph R. Bailey, Woonsocket, R. I.

Claim.—A tool-holder, consisting of the bar B, for receiving the tool, and the clip C, with gib and key, for confining the same, substantially as shown and described.

98,839.—FORGING AND STAMPING-MACHINE. William Ball, Chicopee, Mass.

Claim.—1. The combination of the shaft F', cylinder E^2, and piston E^1, with mechanism for reciprocating the same in a vertical direction, and mechanism for rotating the same in a horizontal direction, substantially as described.

2. The construction and arrangement of devices herein described, or their equivalents, for connecting the crank to the piston.

3. For the purpose of connecting the piston to the sliding cross-head L, and to permit a movement of rotation to be imparted to the cylinder, the connecting-rod D, and ball-and-socket joints, as herein described.

98,840.—SHEEP-SHEARS.—William B. Barnard, Waterville, Conn.

Claim.—Connecting-pieces, formed substantially as herein set forth, interposed between the blades or blade-plates and the handles of sheep-shears, to unite them, and form a secure joint between the two, substantially as herein described.

98,841, antedated January 3, 1870.—GATE.—ISAAC C. Bennett, Clinton, Ill.

Claim.—The double posts B^1 B^2, with pulley E operating between the posts B^1 and between two bars of the gate, in combination with the line D, pulleys F, crank *e e'*, and the gate.

98,842.—VAPOR-BURNER.—William Bliesner, St. Louis, Mo.

Claim.—The vapor-burner C, provided with horizontal and vertical capillary gas-generating tube C^1, heating-knot C^2, heating-orifices C^4, and mixing-chamber C^3, all arranged for joint operation, substantially as herein described, and for the purposes set forth.

98,843. — COMBINED WIRE-CUTTER AND SHEARS. — Charles Brombacher, Tarrytown, N. Y.

Claim. — The combined wire-cutter and shears, constructed in the manner specified.

98,844.—ROUND COMB.—Elias Brown, Wappinger's Falls, N. Y.

Claim.—A combined back and side combs, made in one and the same piece, substantially as and for the purpose described.

98,845.—WASHING-MACHINE. — Milton V. Bulla and J. Benjamin Birdsell, South Bend, Ind.

Claim.—1. The division-board C, in combination with the tilting-board B.

2. In combination with the above, the screen or cage G, tubes D D, with their valves, socket E, levers H and I, as shown, for the purpose described.

98,846. — APPARATUS FOR TRANSMITTING POWER BY THE MEDIUM OF AIR.—Horace Call, Concord, N. H., assignor to himself and J. B. Rand, same place.

Claim.—The combination and arrangement of an endless apron, D, having straight or curved buckets attached to its segments, and the wheels B and C, around which the endless apron, with the wheels, revolves when placed in its position under water, in an enclosing cistern or tank, A, and a pipe, F, entering the tank at the top, and descending to the bottom, from which air is discharged to enter into and displace the water from the buckets, by the pressure upward, and cause the apron and wheels to revolve, the wheels C having suitable gearing for connecting it with other gear-wheels and machinery it is to drive, all substantially as shown and described in the specification.

98,847. — WRENCH. — George J. Capewell, West Cheshire, Conn.

Claim.—1. The keeping and adjusting-nut I, when attached to either the fixed part B, in fig. 1, or the movable jaw U, in fig. 2, by the supporting-spindle J, and arranged to operate as specified.

2. The hollow handle A, when provided with the fixed jaw B, the swinging spindle J, and spiral spring *f*, in combination with the movable part D, as described and set forth.

3. The movable jaw U, in combination with the spring *n*, the spindle J, the nut I and fixed part S, as and for the purposes herein described.

98,848.—DREDGING-MACHINE.—Octave Chanute and George S. Morison, Kansas City, Mo.

Claim.—1. The combination of the two motions, (of the motion within the bucket-frame, by which the distance between the tumblers is varied to suit the depth of excavation, and of the motion of that frame independently of this change of length,) by which the buckets are fed into the material excavated.

2. The compound or telescopic bucket-frame, of two or more parts, sliding within one another.

3. The adjustable head-blocks, regulated by screws, substantially as described.

98,849.—FOOD FOR HORSES AND CATTLE.—Edward Harry Clowser, Boston, Mass.

Claim.—An article of food for horses, composed of ingredients and compounded in the manner and for the purpose as hereinbefore stated.

98,850.—STONE-DRESSING MACHINE.—James Coulter and Herbert Harpin, Huddersfield, England.

Claim. — In a machine for dressing stone, the combination of a rotary work-supporting face-plate, with a reciprocating skeleton carriage or frame located above it, and adapted for carrying, loosely, other stones to be dressed.

Also, the combination of the flanged reciprocating frame, with the guide-pulleys, in the manner shown and described.

Also, the combination, with the hollow pillars M, of the separately adjustable screws N and sliding brackets L, as and for the purpose described.

98,851.—ADJUSTABLE RECLINING-CHAIR.—Claud H. D'Arcus, Detroit, Mich.

Claim.—1. In reclining-chairs, the arm C, in connection with the posts A and arms D, when arranged and operating as specified.

2. The arrangement of the posts A B, cross-bars *a*, arms C D, loops *e*, iron rod *d*, ratchet-bars E, and cord *f*, with any suitable material, to form the seat and back of a chair, when constructed and operating as herein described.

98,852.—ICE-CRUSHING TABLE.—Samuel H. Davis and David W. Davis, Detroit, Mich.

Claim. — The arrangement of the bars C with their sharp angular edges, and the two outside bars E with upper flat surfaces, and side and end-pieces D, in hopper-form, on leg B, as shown and described.

98,853.—Still for Whiskey and other Spirits. — Henry G. Dayton, Dayton, Ohio.

Claim.—1. The doubler, consisting of the vessels A B, constructed and combined to operate substantially as explained.

2. The pipe J, and perforated cup J′, or any equivalent means for employing steam, in the manner set forth.

98,854.—Explosive Compound.—Carl Dittmar, Charlottenberg, Prussia.

Claim.—1. The process of manufacture or preparation of a compound, which I denominate "dualin," of the ingredients, in the proportions, and for the purposes set forth.

2. Also, the new compound, herein described, called dualin, made by the process herein set forth, or its chemical equivalent.

98,855.—Clothes-Washer.—James K. Dugdale, White Water, Ind.

Claim.—The hollow rubber N O, when attached to clothes-washers, as described and set forth.

Also, the hollow rubber, in combination with sliding rod E, notches *f*, and bolt *g*.

98,856.—Clothes-Washer.—James K. Dugdale, White Water, Ind.

Claim.—The combination of the roller N, slide-board H, slide-rod E, and knob, spring-bolt *g*, or its equivalent, and notches *f*, arranged as shown and described.

98,857.—Saddle-Bag.—George W. Elliott, Rocheport, Mo.

Claim.—The manner of forming the cases B¹ and B² out of one piece, and arranging the same, substantially as and for the purpose set forth.

98,858.—Sofa-Bedstead.—William Farson, Philadelphia, Pa.

Claim.—The combination of the catch-levers H H, with the feet-bar F, arranged in relation to the hinges *f*, or other stops, as above specified, so as to lock and unlock the back E by the changes in the position of the said bar, substantially in the manner hereinbefore described.

98,859.—Travelling Sleeping-Cushion. Edward G. Fast, Washington, D. C.

Claim.—The semicircular cushion (air-cushion, of India rubber, or stuffed) A, constructed as herein described, and provided with the strap B C, for the purpose specified.

98,860.—Paper Box.—Franklin Field, Troy, N. Y.

Claim.—As a new article of manufacture, a box, composed of paper or similar material, constructed from a blank, cut along the lines 5 6, 7 8, 9 10, 11 12, 13 14, and 15 16, and folded as hereinbefore described, constituting a rectangular box, with a lid or cover, as specified.

98,861.—Harvester-Rake.—Jerome French, Independence, Iowa.

Claim.—1. The arm I, provided with hooks Q R, and rake-head M P, in combination with standards V N, cam U, provided with a flange, S, and cam-groove T, connecting-rod O, crank and shaft W X, and cam K L, as and for the purpose set forth.

2. The combination of the arm I, rake M P, cams U K L, pulley *f*, collar *e*, clutch *g*, rod A, spring Y, trough H, and clutch-pin *h*′, as set forth and shown.

98,862, patented in England, March 13, 1869. Composition for Coating Ships, Boats, &c.—Edward Vincent Gardner, Oxford street, and Patrick Moir Crane, Manchester, England.

Claim.—The employment of paraffine, as the basis of a composition or compound, or of compositions or compounds, substantially in manner and for the purposes described.

98,863. — Saw-Handle. — Reuben Gates, Parma, Ohio.

Claim.—The frame A, ring E, and handle B, when constructed, arranged, and combined with a saw in the manner shown, and for the purpose set forth.

98,864.—Universal-Geared Joints.—G. F. Green, Kalamazoo, Mich.

Claim.—The gear-wheels H H, constructed as described, in combination with the segment B and set-screw C, the centre of which segment is located in the pitch-line and point of contact of said gears, as and for the purpose set forth.

98,865.—Non-Conducting Covering for Boilers, Steam-Pipes, &c.—Washington Harris, Philadelphia, Pa.

Claim.—The shells or tiles A A, constructed and applied to steam-pipes, drums, or other heated vessels, so as to produce a non-conducting covering, either with or without the confined air-space between the said shells and the vessel covered thereby, substantially as and for the purpose hereinbefore set forth.

98,866.—Bridge.—George P. Herthel, Jr., St. Louis, Mo.

Claim.—1. A post, strut, or other compression-member, formed of corrugated metal with or without inner castings, and arranged with caps fitted at ends, and secured by bands shrunk or forged on, substantially as set forth.

2. Passing the posts or struts between the parts of the upper chord, and securing the parts by a joint casting and bolts or bands, substantially as set forth.

3. The arrangement of the lap-plate in joints of the upper or lower chords, to hold the post against longitudinal movement, substantially as set forth.

4. The plate I, receiving the braces D, and arranged between the parts of the upper chords, and also resting thereon and between the post parts, substantially as set forth.

5. The casting K, arranged between the parts of the post and the lower chords, and receiving the thrust of the wind-strut and strain of the lateral braces, substantially as set forth.

6. Arranging the parts of the post or strut vertically under parts of the compression-chord, substantially as set forth.

98,867.—Stop for the Hinged Frame of Reclining-Chair. — James G. Holmes, Charleston, S. C.

Claim.—In combination with the hinged frame of a reclining-chair, the diagonal brace C, slide F, movable plate A, and rocking cam *g*, substantially as and for the purposes described.

98,868.—Oar.—William J. Hough, Martinez, Cal.

Claim.—1. The blade *a*, constructed with a convex and concave surface, and providing it with a longitudinal groove, B, in which the rod B′ operates, substantially as set forth.

2. The transverse slot F′ in the blade, in which the pin P works to turn the edge of the blade, substantially as and for the purpose set forth.

98,869.—Reading and Writing-Stand.—George Howell, Baltimore, Md.

Claim.—1. The box R, constructed substantially as described, having its top D, side D′, and bottom hinged together, and its bottom slotted, for the purposes set forth.

2. An adjustable convertible combination reading and writing-stand, consisting of the clamp C C′, arm H, standard A, rod B, arm F, box R, bolt *b*, rod E, and reading-stand L *p m m′ k o*, substantially as and for the purpose set forth.

3. The reading-stand, composed of the adjustable slide L, top-piece P, slats *o* and *k*, arms *m m′*, rod E, and adjustable rest *z*, when constructed and arranged as and for the purpose set forth.

4. The combination and arrangement of the reading-stand and rod E, with coupling K, rod B, standard A, and base G, as described.

5. The combination and arrangement of the reading-desk, rod E, coupling *k*, and bolt *b*, with desk R D D′, arm F, rod B, standard A, base G, and clamp C C′, substantially as and for the purpose set forth.

98,870.—Wrecking-Tongs or Excavator. Robert Hunter, Charleston, S. C.

Claim.—1. The provision, in a grappling-tongs or scoop, of opening arms C C′ for the attachment of the lowering rope or chain E, as herein represented and described.

2. In the described combination, the tongs or scoop A *a a′*, crane J M, opening and lowering-devices C C′ G E I, closing and elevating-devices B B′ F D H, and governing-device K *k* N O P, constructed and arranged as represented and set forth, for the purposes shown.

98,871.—Felting-Machine.—Frederick S. Jennings, Danbury, Conn., assignor to himself, Morgan Chittenden, and Henry W. Duryee.

Claim.—1. The revolving longitudinally-fluted or corrugated rollers C C and C′ C′, when constructed and arranged to operate in the manner and for the purposes substantially as described.

2. The reciprocating jigger E, constructed with the two cross-bars, and operating in the manner and for the purpose substantially as described.

3. The revolving rollers C C and C′ C′, in combination with the reciprocating jigger E, all constructed and arranged to operate together in the manner and for the purpose substantially as specified.

4. The pulley *a′*, connecting-rod I, pulley *a″*, with sliding crank-pin, gear-wheels *b b′ b′ b′ b′*, in combination with the rollers C C and C′ C′, when arranged to operate in the manner and for the purpose substantially as described.

5. The pulley *a′*, connecting-rod I, pulley *a″*, with sliding crank-pin, gear-wheels *b b′ b′ b′ b′*, rollers C C and C′ C′, in combination with the reciprocating jigger E, when arranged to operate in the manner and for the purpose substantially as described.

98,872.—Sash-Stop and Holder.—James P. Labar, Milford, Mich.

Claim.—The arrangement of the shaft F, knob G, cords H, pulley I, spring-stops O, and pivoted rib-guides E E′, with the sashes B C, and frame A, when constructed and combined to operate substantially as herein described.

98,873. — Stove-Pipe Drum. — George W. Lore, Dexter, Mich.

Claim.—1. The rectangular inner shell B, provided with valve C and lever *c*, stop-plate D, and alternating deflecting-plates E E′, as and for the purpose set forth.

2. The combination and arrangement of the foregoing parts within the rectangular case A, in the manner and for the purpose specified.

98,874. — Metallic Alloy for Plow-Mould-Boards.—Simon L. Madge, Toledo, Ohio.

Claim.—The alloy, when made of the metals, and substantially in the proportions and for the purposes herein described.

98,875.—Medical Compound.—Peter Mays and Price Mays, Clearfield, Pa.

Claim.—The medical compound herein described, compounded of the ingredients and in the manner substantially as specified.

98,876.—Hay-Knife.—Milo Merrill, Oneida county, N. Y.

Claim.—As an improved article of manufacture, the within-described hay-knife, constructed substantially as set forth.

98,877, antedated January 10, 1870.—Cigar-Machine.—Frederick Meyer and Henry Schild, New York, N. Y., assignors to George J. Prentice, same place; said Prentice assigns to Lewis Prentice, of New York city.

Claim.—The fixed rack 6, in combination with the worm-pinion *v*, shaft *s*, roller *i*, and sliding boxes 2 2, substantially as set forth, so that the pinion *v* is disconnected from the rack 6, by drawing back the roller *i*, as specified.

98,878. — Series of Dies for Forming Axles.—Joseph Nicol, Auburn, N. Y., assignor to Sheldon & Co.

Claim. — The series of dies, constructed as described, and operating gradually on the iron, to form the square collar, swell, and arm, in the manner substantially as set forth.

98,879.—Stove.—Benjamin Nott, Albany, N. Y.

Claim.—1. In combination with a stove or other heating-apparatus, an illuminator, when such illuminator is detachably arranged thereon, substantially as and for the purpose set forth.

2. The combination of a stove-door A, with the illuminator B, when arranged with reference to each other, substantially as and for the purpose set forth.

3. In combination with the glass tubes of the illuminator B, the wire gauze B², substantially as and for the purpose set forth.

98,880.—Electro-Magnetic Car-Brake.—Joseph Olmsted, Knoxville, Ill.

Claim.—1. The combination of the axle A¹, friction-roller C, and armature E, with the friction-plate D and magnets *d d*, of an electro-magnetic battery, arranged and operated substantially as set forth, for the purpose of causing the plate D to be held in contact with the armature E, and revolve, to be released, and remain at rest, as desired.

2. The shaft B, supported, at one end, by the swinging arm B′, or its equivalent, for the purpose set forth, and the roller C, in combination with the chain *f* and lever F, substantially as shown and specified, to increase the pressure of the roller C against the axle A, and prevent it from slipping, while the brakes are acting on the wheels.

3. The shaft B, having lateral play at one end, for the purpose set forth, in combination with the friction-plate D, magnets *d d*, and wires d^2 d^3 of an electro-magnetic battery, arranged and operated substantially as specified.

98,881. — Steam-Culinary Apparatus.—Clinton I. Paine, Young America, Ill.

Claim. — 1. The arrangement of the boiler A, tubes P P, pipes J J, cap-boiler B, and lamps H H, substantially as described, and for the purpose set forth.

2. The combination of the pipes N N′, box I, and vessel M, with the cap-boiler B, tubular boiler A, and pipes J J, substantially as described and for the purpose set forth.

3. The plate L, combined with frame D, boiler A, and pipe N, substantially as described and for the purpose set forth.

98,882. — Heating-Stove. — William M. Phelps and Samuel J. Burpee, Marshall, Mich.

Claim.—The arrangement of the air-chamber *l*, entirely surrounding all the interior of the fire-chamber, excepting the draught-hole and the door, and provided with perforations in its under and upper surface, the latter being connected by vertical air-tubes, surrounding the interior of the fire-chamber, excepting the door, with corresponding perfor-

ations in the top plate of the stove, when said air-tubes are attached to the air-space and top plate of the stove by flanges or collars, all being constructed and operated as set forth.

98,883.—Mode of Producing Light by the Combination of Solid and Liquid Hydrocarbons.—Joseph Phillips, Cologne, Germany.

Claim.—The incorporation of one or several of the solid products of the distillation of wood or carboniferous bodies, belonging to the coal-series, into one or several of the liquid products of the same, or their incorporation into naphtha, petroleum, or their distillates, so as to have highly-carburetted compounds, and the combustion of these compounds by means of oxygen, for the purpose of producing light.

98,884.—Material for Tanning, Dyeing, and for other Purposes.—Francis Peyre Porcher, Charleston, S. C.

Claim—1. The use of the leaves of the gum-tree and white alder, as applied to the purposes herein-before described.

2. The hereinbefore-described processes, by which the virtues of those leaves can be extracted and prepared for use, as aforesaid.

3. The new article of manufacture herein described, produced by drying and packing the leaves of the species of plants herein named, as set forth.

4. The improved tanning-extract produced by treating the leaves of the sweet-gum, *Clethra tomentosa*, or other similar plants, substantially as herein described.

98,885.—Universal Joint for Shafting. Cyrus Roberts, Three Rivers, Mich.

Claim.—1. The combination of the shafts, the ring, and the loose thimble, all these parts being constructed to operate substantially as hereinbefore set forth.

2. The combination of the ring, having annular transversely-slotted flanges, with the loose thimble, internally flanged at one end, and having internal studs at the other, as set forth.

3. Constructing the thimble of a diameter larger than the ring, and with studs larger than the grooves in the flanges of the ring, to prevent the escape of the thimble, as set forth.

98,886.—Corn-Planter and Fertilizer.—Henry K. Roberts and George E. Roberts, Jefferson county, Ky.

Claim.—1. The parallel bars or slotted cam-yokes O O, in combination with the compound cranks P P and corn slides I I.

2. The corn-slides I I, with the single grain cups N N, and fertilizer cups M, and gum-scrapers J J.

3. The wheels B B, constructed as described, with deep grooves, and provided with the removable coverings A A, as and for the purpose set forth.

4. The corn-punchers Q Q, constructed and arranged as shown in the drawings.

5. The combination of the frame A A, the marking-lever Z, with its marker B^2 B^2, and the plows and standards F and D, with their thumb-screws E E; also the lever T, and wheel R, and spindle S, when arranged, constructed, and operating in the manner set forth.

98,887.—Horse Hay-Fork.—Luman Rogers, Pittsburg, Pa.

Claim.—1. The combination, with a handle, A, and movable jaw, d', of a pair of jaws of a harpoon hay-fork, a movable bolt, key, flange, or feather, connected with one, and interlocking with the other, substantially as described.

2. A trigger, g, in combination with a feathered or flanged locking-bolt m, the latter operating through a slot in the handle A, and into a recess or mortise in the jaws d', substantially as described.

98,888.—Leather-Splitting and Fleshing Machine.—Joseph A. Safford, Winchester, Mass.

Claim.—1. The screw-shaft C and the wedges h h, by means of which both ends of the roll B may be adjusted simultaneously, in combination with the bed-wedges i i and the adjusting-screws i' i', by means of which either end of said roll may be slightly adjusted independently of the other, substantially as described.

2. The cam-shaft D and cams K K, for adjusting both ends of the roll B simultaneously, in combination with the adjusting-screws l l, for adjusting either end of said roll independently of the other, substantially as described.

3. The combination of the adjusting-screws p p, for regulating the tension of the springs n n, and adjustable holding-down rods s s, and the screw-shaft H and wedges u u, by means of which the lower roll may be moved up or down, without changing the tension of the springs, substantially as described.

98,889.—Machine for Rolling Leather. Joseph A. Safford, Winchester, Mass.

Claim.—1. Mounting the upper roll B in boxes a a, suspended by means of the rods b b, and screw-collars c c, upon the spring d d, in combination with the cams h h, shaft e, and yielding lower roll D, substantially as described.

2. In a machine for rolling leather, adjusting the rolls with relation to each other, by moving the upper roll B in such a manner that it will be held firmly in the desired position, without yielding, during the operation of rolling, when used in combination with a yielding lower roll, substantially as described.

3. In combination with a yielding lower roll, the use of the double-toggle supports, consisting of the levers E E, the struts j j and m m, arranged and operating substantially as described.

4. The half-boxes b' and set-screws c, for adjusting the position of the lower roll D, substantially as described.

5. The within-described method of applying pressure to the rolls, by the use of the spring s and lever E, and the double toggles, arranged and operating substantially as described.

6. The combination of the spring s, the casing p, cam v v, cap w, and set-screw u, constructed and arranged substantially as described.

98,890, antedated January 10, 1870.—Cigar-Machine.—Henry Schild and George J. Prentice, New York, N. Y., assignors to George J. Prentice; said Prentice assignor to Lewis Prentice, New York city.

Claim.—1. The frame l l, with the eccentric bearings c c, in combination with the rollers g f e d, as and for the purposes set forth.

2. The tip-die, made of two parts, and hinged, in combination with the rollers, to revolve the cigar, and a spring, to press said die together, substantially as set forth.

3. The shaft g' of the roller g, formed with right and left-hand screw-threads, in combination with the button or clutch, that can be engaged with either screw-thread, substantially as and for the purposes specified.

98,891.—Current Water-Wheel.—Artaxerxes W. Sory, Prairie county, Arkansas.

Claim.—The wheel, consisting of the main shaft, radiating arms and hinged paddles, the paddles being made and hinged in sections, each section being adapted for independent action, all as shown and described.

98,892.—Plant-Protector.—Watson N. Sprague, Keene, N. H.

Claim.—The adjustable hoops or sticks c, three or more in number, extending six inches or more below the ring b, combined with the tins d, for the purpose of holding the hoops c in place, in the manner above described, in a plant-protector.

98,893.—Closing Leaks in Hose, Pipes, and Tubes.—Richard Street, Albany, N. Y.

Claim.—The combination of India-rubber projecting strips, with a clamp, substantially as and for the purpose hereinbefore set forth.

98,894, antedated January 15, 1870.—Casting Cannon.—John Blake Tarr, Fairhaven, Mass.

Claim.—1. A cast-metal cannon which has been condensed by high pressure, when in a molten state, and after it has received its general internal and external shape, substantially as described.

2. The combination of the core J with the cannon-mould, and with the mechanism described for condensing the metal, substantially as described.

98,895, antedated January 15, 1870.—Locomotive Car-Wheel.—John Blake Tarr, Fairhaven, Mass.

Claim.—1. A cast-metal locomotive driving-wheel, consisting of a tread, a web or spokes, a balance, and a hub, when such wheel has been condensed by high pressure, while in a molten state, after it has received its general final shape, substantially as described.

2. A cast-metal locomotive driving-wheel, consisting of a tread, a web or spokes, a hub and a crank, when such wheel has been condensed by high pressure, while in a molten state, after it has received its general final shape, substantially as described.

3. A cast-metal locomotive driving-wheel, consisting of a tread, a balance, a web, or spokes, a hub, and a crank, when such wheel has been condensed by high pressure, while in a molten state, after it has received its general final shape, substantially as described.

98,896.—Watch-Case.—Charles L. Thiery, Boston, Mass.

Claim.—Producing, either singly or collectively, the bead or outer finish, the "pendant-lip," the "thumb-piece," the "hinge-bearer" or stay, and the pendant of a watch-case, by striking up or impressing such parts from a homogeneous piece of metal, substantially in manner and for the purpose as before explained.

98,897, antedated May 25, 1868.—Steam-Digester for Rendering Lard, &c.—Leonard Thorn, New York, N. Y.

Claim.—1. A steam-digester, with steam coming directly from a boiler in connection with gas or odor-discharge and burning tubular grate-pipes, substantially as described.

2. The bottom man-hole plates or doors of both man-holes and attachments, in combination with my steam-digester, substantially as described.

3. The method of distributing, by means of pipes, as described, upon the substances treated, substantially as described.

4. The arch-bar, with handles and bar-nut for closing man-holes, substantially as described.

5. The process of discharging the substances treated into a conductor, substantially as described.

6. The construction of the man-hole door with hinges and double plates, substantially as described.

7. The apparatus, as a whole, in its method of operation, substantially as described.

98,898.—Machinery for Sawing Lath.—William Tuxworth, Sheridan, Mich.

Claim.—In lath-machines, the employment of an automatically-reversing feed-device, consisting of pulleys d d f f', clutch-pulleys e e', clutch G, lever H, and shifter J, provided with studs j and j', in combination with a carriage, B, the whole arranged and operating substantially as and for the purposes set forth.

98,899.—Harness Saddle.—J. L. Van Wert, Tolland, Mass.

Claim.—The combination of the saddle-tree C, pads B B, and links D, the parts being arranged as shown, and operated by the screws G G and a a and b, substantially as set forth.

98,900.—Apparatus for Rolling Metal.—John I. Williams, Millvale, Pa.

Claim.—1. In a pair of metal rolls, a fillet, s, arranged at the junction of the obliquely-inclined working-faces of each or any of the grooves, substantially in the manner and for the purposes hereinbefore set forth.

2. In a pair of metal rolls, a pair of collars d d', in combination with the obliquely-inclined working-faces of an included reducing and rolling-groove, each such collar projecting into, and operating in a groove, n or n', in the roll opposite thereto, substantially as described.

98,901, antedated January 10, 1870.—Pneumatic Reciprocating Movement.—De Volson Wood, Ann Arbor, Mich.

Claim.—A double-acting pneumatic spring, when operated by a rotating or reciprocating piston, H, as and for the purposes herein set forth.

98,902.—Washing-Machine.—Squire Ainsworth, Pittsburg, Pa.

Claim.—The washing-machine herein described, consisting of a corrugated tub, A B, rotary rubber C, rubber stem D, spring F, gears E G, step K, cap and bearing L, shaft H, bearings J, and a crank, I, or a lever, constructed, combined, and arranged as set forth, for the purposes shown.

98,903.—Drawing-Knife.—John H. Atwater, Oshtemo, Mich.

Claim.—A drawing-knife, composed of the blade A, sharpened in different bevels, and furnished at both ends with prolongations, H I, which are joined by hinges to the handles.

Also, the projections B, C, D, and E, for preventing the handles from closing too far.

98,904.—Needle-Case.—William Avery and Albert Fenton, Redditch, England, assignors to William Avery.

Claim.—The combination, with a case, A, provided with slots G, of two or more pockets, C, arranged in pairs, and the vibrating arms or cranks E, provided with thumb bits I, when the said arms and pockets are arranged together for operation, substantially as specified.

98,905.—Street-Urinal.—Moritz Bacharach, New York, N. Y.

Claim.—A street-urinal, made on an arc of a circle, or curved transversely, constructed of reticulated material, with a lining in its lower portion, and provided with the basin B and discharge-pipe b, all substantially as described.

98,906.—Leather Channelling and Folding Tool.—A. H. Bailey and William G. Bratton, Marseilles, Ill.

Claim.—1. The frame A and piece B, in combination with the cutters c c, for cutting channels in a strap, substantially as described.

2. The arm E and wheel F, in combination with the frame A, for folding a strap, and regulating the cutting of the channels, substantially as described.

98,907.—Combined Latch and Lock.—W. N. Bailey, Duplain, Mich.

Claim.—1. In combination with the plate E, constructed as described, the springs i and g, and the dog h, provided with a knob, G, on each side of the lock, all substantially as and for the purposes herein set forth.

2. The pivoted quadrant-shaped covering-plate H, provided with an arm, k, and held down in position by means of the spring l, substantially as and for the purposes herein set forth.

3. In combination with the quadrant-shaped covering-plate H and its arm k, the dog m and spring n, substantially as and for the purposes herein set forth.

4. The bar I, constructed as described, and provided with a hook, o, at its upper end, and projec-

jection *p* at the lower end, substantially as and for the purposes herein set forth.

5. The combination of the covering-plate H, dog *m*, and bar I, all constructed as described, and operating substantially in the manner and for the purposes herein set forth.

6. The combination of the bolt B, semicircular plate E, dog *h*, covering-plate H, dog *m*, and bar I, all constructed as described, and arranged to operate substantially in the manner and for the purposes herein set forth.

98,908.—SCAFFOLD.—George W. Baker, Lincoln, Ill.

Claim.—1. A folding bracket, constructed as described, of the upright frame A, with rollers B B, horizontal frame C, folding braces D D, and a hoisting-apparatus, all substantially as and for the purposes herein set forth.

2. The combination of a folding bracket, having a hoisting-apparatus, with an extension-prop when constructed substantially in the manner and for the purposes herein set forth.

3. An extension stage-plank, constructed, as described, of the perforated planks 1 1, boxes *n n*, braces *o o*, standards *p p*, braces *r r*, double standard *s*, and screws *t t*, all substantially as and for the purposes herein set forth.

4. The combination of one or more folding brackets, one or more extension-props, and one or more extension stage-planks, when all are constructed substantially in the manner and for the purposes herein set forth.

98,909. — HARVESTER-DROPPER. —William G. Beels, Independence, Iowa.

Claim.—1. The combination of bar G, slotted oscillating shaft H, and stop-hooks, arranged and operating as and for the purpose specified.

2. The combination of friction-wheels O P, shaft Q, winding-pulley R, rope S, pulleys T T^1 T^2, and spring-drum V, arranged as set forth, to reciprocate the carriage.

3. The arrangement of the hand-lever, cord W, guide-pulley, and short arm *y* of the slotted arm I, to actuate the discharger in the manner described.

98,910.—HARVESTER.—W. G. Beels, Independence, Iowa.

Claim.—1. The combination, with carriers, of the receiving-table G and dumping-table K, connected together, and operating substantially as specified.

2. The receiver G, link I, and dumper K, in combination with the crank-mechanism L N, all arranged as described.

98,911.—PLASTIC ROOFING-COMPOUND.—Russell O. Benton, Buffalo, N. Y.

Claim.—1. A plastic composition for roofing purposes, consisting of partially-distilled coal-tar, naphtha, sand, and clay, compounded substantially as and in the proportions hereinbefore set forth.

2. The composition of matter, consisting of partially-distilled coal-tar, rosin, and clay, in the proportions, and applied to the felt fabric, substantially as hereinbefore described.

3. A plastic roof, when composed of the two compounds prepared and applied as hereinbefore set forth.

98,912.—CASTER FOR FURNITURE.—Leopold Bertsche, Allegheny, Pa.

Claim.—1. The cylindrical socket E, in combination with one or more eccentrics G, said eccentrics with or without arms H, as herein shown and described, and for the purpose set forth.

2. The leg A, having one or more slots, or a single annular slot, in combination with eccentrics G and socket E, all as shown and described, and for the purpose set forth.

98,913.—TURBINE WATER-WHEEL.—Hugh Boyle, Waterloo, Iowa.

Claim.—1. A turbine water-wheel, consisting of the wheel A, having its two concentric cylinders connected by curved inclined partitions *e*, the casing B, with openings *f* and plate D, provided with the inclined chutes *i*, all constructed and arranged with the shaft C, substantially as herein described.

2. The plate D, provided with the inclined chutes *i*, in combination with a vertical discharge-wheel, A, when constructed and arranged to operate substantially as herein described.

98,914.—FENDER FOR HEATING-STOVE.—Nathaniel A. Boynton, New York, N. Y.

Claim. — The extension of fender or shield E downward, so as to form an interposing curtain outside of the stove, in combination with the separating air-space I, substantially as described.

98,915.—BASE-BURNING STOVE.—Nathaniel A. Boynton, New York, N. Y.

Claim.—The connection E, of the reservoir B, in base-burning stoves, with the fire-pot F, substantially as described, whereby the combustion-chamber D is shut off from the fire.

98,916.—TANNING AND STUFFING LEATHER. William B. Brittingham, La Fayette, Ind.

Claim. — The process of tanning and stuffing leather, herein set forth, by first treating the raw hides with a compound composed of the ingredients and in the proportions specified, and afterward stuffing the tanned hides by another compound, composed of such ingredients, and in the proportions as herein described.

98,917.—SEAL-LOCK.—Franklin W. Brooks, New York, N. Y.

Claim.—1. The seal S, of variegated glass or other material of different colors, which can be represented by photography or other means, and cannot readily be duplicated, when applied within a recess or cavity in a guard or shackle of a lock, substantially as herein set forth.

2. The guard or keeper B *b*, provided with a seal, S, of various colors, and employed to secure the key-hole of a lock of any suitable construction, or the shackle to the case of a padlock, substantially as represented and described.

98,918.—CHURN.—Samuel W. Bruce, Laguardo, Tenn.

Claim.—1. A churn, having the post C attached to its cover, with the levers D, E, and G, pivoted to it and to the bar F and dasher handles I, all constructed and arranged to operate substantially as described.

2. In combination with the post C, with the levers pivoted to it, as described, the spring H, constructed and arranged as shown, and for the purposes set forth.

3. In combination with the dasher-rods I, the dashers J, constructed as herein shown and described.

98,919, patented in England, July 28, 1868. POWER-LOOM.—John Bullough, Accrington, England.

Claim.—1. The swivel shuttle-holder g^1 l^1, actuated one way by the horizontal weft-lever *v* and band a^1, and the other way by the projecting finger y^1, in combination with the recesses r^1 s^1 and spring-pins p^1.

2. The two-armed lever c^1 f^1, in connection with the front swell a^2 b^2 and screw-head x^1, for holding back the picker at the supply-side of the loom, when required.

3. The double lever h^1 j^1, with its two ledges, in combination with the incline n^1, bowl q^1, and curved or inclined fingers s^1.

4. The flange and top swell g^2 s^2, in combination with the parts i^2, u^2, v^2, x^2, w^2, d^2, f^2, and g^2, for acting as a swell and guard, and for allowing the escape of the shuttle when raised.

5. The cross-shaped slide o^2, figs. 13 and 14, worked one way by the upright lever h^2 l^2 and stop-rod tongue, and the other way by the horizontal lever u^2 v^2, and also by the short finger s^2, at the top of one of the picking-shafts, for the purpose herein specified.

98,920, antedated January 14, 1870.—CARRIAGE-WHEEL.—John G. Buzzell, Lynn, Mass.

Claim. — Enlarging the inner ends of metallic spokes, in the manner and for the purpose substantially as herein described.

Also, the spokes C C, enlarged and strengthened at their inner ends, in the manner described, and having fitted thereon the loose tubes D, so constructed as to permit of their being screwed into the sockets in the hubs, all arranged substantially as and for the purpose herein specified.

98,921.—COTTON-SEED HULLER.—W. P. Callahan and D. R. De Rush, Dayton, Ohio.

Claim.—The arrangement of the wedging-grooves and wedges, in respect to the direction of the grinding-action, substantially as specified.

98,922.—APPARATUS FOR OILING WOOL.—Thomas A. Campbell, New York, N. Y.

Claim.—1. The combination of compressing-plates, acting as oil or liquid-lifters from the tank, in the manner described, with a revolving brush or sprinkler of the oil or liquid thus lifted, substantially as specified.

2. The combination of a pad, *k*, with the compressing-plates C C′, or working-plate thereof, when arranged and operating essentially as described.

3. The combination, construction, and arrangement, relatively to each other, of the compressing-plates C C′, and the tank A, whereby dripping or surplus supply of oil or liquid is returned to the tank, and the mixing of the contents of the latter kept up, substantially as specified.

98,923.—PLATE-HOLDER.—John Carlin, New York, N. Y.

Claim. — The plate-holder, with grooves, A, of different diameters, and the handle B, all from one piece of metal, as shown and described.

98,924.—CHURN.—John Chapple, Jasper, N. Y.

Claim.—1. The combination of the platform or bed H, stationary standard I, and hinged hanger or standard J, all substantially as and for the purposes herein set forth.

2. The combination of the churn A, hoop C, lid D, hoop *a*, ring *b*, strap E, and loop *d*, all constructed and arranged substantially as and for the purposes herein set forth.

98,925.—PIPE-TONGS.—John Clark, Astoria, N. Y.

Claim.—An improved pipe-tongs, formed by the combination of the handle A a^1 a^2, movable cam-lever jaw B, lever C, and guide D, with each other, said parts being constructed and operating substantially as herein shown and described, and for the purpose set forth.

98,926. — CHAIR-TIP. — Edward Coogan, Washington, D. C.

Claim.—1. An elastic or flexible tip for chairs and other kinds of furniture, having a globular lower or outer end, from which projects a shank, A′, in the form of an inverted truncated cone, hollow at its upper end, substantially as and for the purpose specified.

2. In combination with the above, the leg or post B, substantially as and for the purpose specified.

98,927, antedated January 10, 1870.—TELEGRAPHIC APPARATUS.—Henry Cook, Paris, France.

Claim.—The adaptation, to synchronic printing or writing telegraphic mechanism, of the double-threaded screw A, and self-reversing rider or point-carrier *a c d*, in combination with a type-truck, E, moved forward at right angles to the tracer, by the step-gear F G, the whole arranged and operated in manner and for the purpose substantially as herein specified, and shown in the figures of the accompanying drawing.

98,928. — SKIPPING-ROPE. — S. Park Coon, Milwaukee, Wis.

Claim. — As a new article of manufacture, the skipping-rope having the swelled centre, the handles C, and bells B, as herein shown and described.

98,929. — ROCKING-HORSE. — Benjamin P. Crandall, New York, N. Y.

Claim.—As an improvement in rocking-horses, the horse, mounted on a flat bed, and having its seat out of centre, in combination with the spring-strips secured to the rockers and the bed, so that the seat is elevated, the whole constructed and operating together, as herein described.

98,930. — HORSE HAY-FORK. — Edwin G. Crandall, Belfast, N. Y.

Claim.—The horse hay-fork, formed by the combination of the guard J, pulleys I and K, double latch F G, yoke B, tines A, and the pivot or fulcrum-bolt C, and strengthening-bolt E, having tubular washers for holding said tines in place, all constructed and arranged as shown and described.

98,931.—METHOD OF FORMING T-BOLTS.—John Deeble, Plantsville, Conn.

Claim.—The hereinbefore-described method of cutting the blank and forming the bolt, substantially as shown, and for the purpose set forth.

98,932.—ENCLOSED FOLDING SPRING-BED. Louis Derome, San Francisco, Cal.

Claim.—A sectional bed and bedstead, folding into a case or closet, and provided with hooks J, bar O, and side arms, with eyes thereon, all constructed, arranged, and adjusted as set forth.

98,933. — SCREW-DRIVER. — David Drummond, McGregor, Iowa.

Claim. — A screw-driver, formed of the several parts specified, and all constructed and fitted together in the manner set forth.

98,934.—RECLINING AND EXTENSION-CHAIR. John Dunn, Charlestown, Mass., assignor to himself and Jonathan Stone, same place.

Claim.—The semicircular-shaped arm L, provided with the ratchet-teeth, and engaging with the pawl P, in combination with the back H, the drop I and the pivoted bar N, substantially as shown and for the purpose specified.

Also, in combination with the above, the arm M, the pivoted toothed bar O, and the pawl R, substantially as and for the purpose shown.

Also, the means employed for extending the frame laterally, and for supporting the cushion, consisting of the rails E E′ F and F′, the arm T, the hinged foot-board K′, the swinging legs U, and the hinged supplementary leg W, all constructed and arranged substantially as shown and for the purpose set forth.

Also, the general construction and arrangement of the various parts of the hereinbefore-described device, substantially as and for the purpose specified.

98,935.—COMPOUND RAILWAY-RAIL.—William B. Dunning, Geneva, N. Y.

Claim.—Providing the inner flange of the base B, at the lap, with a detachable section, C, as and for the purposes set forth.

98,936.—LAMP-CHIMNEY.—Robert N. Eagle, Washington, D. C.

Claim.—1. A glass chimney, the elliptical body of which is elongated, with parallel or nearly parallel sides, abruptly contracted at E, forming shoulders on either side of the neck or mouth E, substantially as shown and set forth.

2. A glass chimney, with an elliptical body extended in the direction of its height, and terminating in a mouth, which has a greater diameter in the di-

rection of the depth or thickness of the chimney than has the body C at a point immediately below such mouth or neck, as shown in fig. 2.

2. A glass chimney, the parts shown at A, B, C, D, and E of which are respectively formed, substantially as set forth.

4. A lamp-chimney, having rows of concavo-convex bead-like protuberances placed along the seam formed by the joints of the mould, and in the vertical plane of the flame, substantially as set forth.

5. A flattened chimney, having shoulders at D, to form dead-air recesses, substantially as set forth.

6. A glass chimney, the sides or edges of which are parallel or gradually converging, and the flattened faces of which are also converged, to form a super-deflector below the mouth, substantially as set forth.

98,937.—Lamp-Chimney.—Robert N. Eagle Washington, D. C.

Claim.—1. A lamp-chimney, with recesses *a a* formed in the base of the chimney, in a line with the flat flame of the lamp, to serve as a guide in attaching the chimney, and for the purpose of receiving spring-points to be attached to some permanent part of the burner, to secure the proper position of a flat chimney in relation to the flame, substantially as set forth.

2. A lamp-chimney, having its elliptical throat B widened in the line of its conjugate diameter, in the manner shown at *b b* in figs. 2 and 3, and substantially as set forth.

3. A lamp-chimney, constructed with pockets *c c*, recessed at points opposite the upper corners of the flame, substantially as set forth.

4. A lamp-chimney, the body of which is formed with a flame-chamber, C, and a superimposed enlarged air-chamber, D, substantially as set forth.

5. A lamp-chimney, combining, in its construction, a cylindrical base, a flattened and vertically-elongated body, contracted above, and concluding with an elliptical extension, E, forming the mouth, substantially as set forth.

6. A glass lamp-chimney, having attached to its exterior surface a thin film of foil of reflecting-metal, protected by an exterior coating of the said refractory compound, substantially as set forth.

7. A lamp-chimney, combining in its construction the following elements, viz, a cylindrical base, an elliptical elongated body, an elliptical mouth, and a reflecting-surface of a metallic film, protected by refractory paint, substantially as set forth.

98,938.—Butter-Excavator.—N. J. Eaton, Montana, Iowa.

Claim.—A butter-cutter, whose form is the sector of a circle, and thereby adapted to eliminate a proportional part of a cylindrical mass, in the manner described.

98,939. — Washing-Machine. — Homer L. Ennes, Birmingham, Ohio.

Claim.—In combination with the swinging brush G, the wash-board herein described, having curved ribs *c c*, as specified.

98,940. — Capstan. — John Ericsson, New York, N. Y.

Claim.—1. The shafts E E, carrying the spur-wheels F, and arranged in a capstan-frame, so that their vertical adjustment will lock or disengage the chain-barrel, as specified.

2. The chain-barrels G G, fitted loose around the vertically-adjustable shafts E, to be clutched to such shafts, when the same are lowered, and liberated when they are elevated, as set forth.

3. The eccentric arbor H, arranged on a capstan, in combination with the vertically-adjustable shaft E, for the purpose of locking and liberating the chain-barrel, as set forth.

4. The chain-stoppers *p*, arranged in combination with the block *o*, on the shaft M, substantially as herein shown and described.

5. The brake I, arranged on the eccentric shaft L, in combination with the loose chain-barrel G, to operate as set forth.

6. The arrangement of the capstan-shaft B, so as to rotate but not slide in its bearings, as shown and described.

98,941.—Washing-Machine.—Thomas R. Evans, Blacksburg, Va.

Claim.—1. The combination of the adjustable upper rubber *c* with the reciprocating case C, segment-pinion *d*, and levers *e e'*, as and for the purpose described.

2. The combination of the adjustable upper rubber *c*, reciprocating case C, pinion *d*, levers *e e'*, and apron B, as and for the purpose set forth.

3. The combination, with the means to give motion, of the lower rubber *a*, upper rubber *c*, apron B, case C, pinions *d*, and lever *e*, combined and arranged as explained.

98,942.—Extension-Table.—William Farson, Philadelphia, Pa.

Claim.—The plates C, and pins or screws D, in combination with the edges of the tops A and A', and the auxiliary leaves B B', whereby the leaves are held in place, substantially in the manner hereinbefore described.

98,943.—Screw-Tap.—Christian L. Fehrenson, New York, N. Y.

Claim.—A screw-tap, provided with a single flat face, *b*, and a guiding-nipple, *d*, substantially as shown and described.

98,944. — Corn-Sheller. — Samuel Field, Oakham, Mass.

Claim.—1. The construction and relative arrangement of the shafts C, D, and I, and the gears G, F, H, and I', substantially as shown and described.

2. The peculiarly-constructed shelling-wheel L *h*, as and for the purposes described.

3. The peculiarly-constructed feeding-device, consisting of the parallel toothed ring-pieces *g*, toothed piece N, and shelling-wheel L, with arms *h*, substantially as and for the purposes set forth.

4. The peculiarly-constructed feeding-spout M M', as shown and described.

5. The combination and relative arrangement, with the parallel toothed ring-pieces *g*, and shelling-wheel L, of the toothed piece N' and ear-holder N, said parts being constructed substantially as and for the purposes set forth.

6. The combination, with the toothed feeding-rings *g*, shelling-wheel L, and ear-holder N, of the curved piece R, for guiding and holding the cob, substantially as shown and described.

7. The relative arrangement of the upright feeding-shaft I with the teeth *h* of the shelling-wheel, as and for the purposes described.

8. The combination and relative arrangement of the shafts C, D, and I, and gears G, F, H, and I', with the toothed parallel ring-pieces *g*, feeding-wheel L, ear-holding piece N, and curved cob-guide and holder R.

98,945.—Pen.—D. D. Foley, Washington, D. C.

Claim.—An improved fountain-pen, consisting of an ordinary writing-pen, with notches B B, and elastic-rubber ring N, when the notches and ring are located at the point of divergement of the nib and at the head of the split, as shown, and for the described purposes.

98,946.—Horse Hay-Fork.—Emanuel Forney and Jonas Swab, Elizabethville, Pa.

Claim.—The combination and arrangement of the shafts A A, box C, teeth D D, springs *a a*, bar E, lever G, seat H, rods I I, and bar J, all substantially as and for the purposes herein set forth.

98,947.—Horse-Power.—James Fraser and William Thomas, New York, N. Y.

Claim.—An improved horse-power, formed by the combination of the foundation-frame A, vertical shaft B, arms D, socket or centre-piece E, sweeps F, braces G, friction-wheel N, gear-wheels H and I, horizontal shaft J, gear-wheels K and L, and short horizontal shaft M, with each other, said parts being constructed, arranged, and operating substantially as herein shown and described, and for the purpose set forth.

98,948.—Table.—Lambert Freeman, New York, N. Y.

Claim.—The combination of the detachable leaves E and pivoted bars G F, with each other and with the end or ends of a table, substantially as herein shown and described, and for the purpose set forth.

98,949.—Putty-Knife.—Sela W. Gerelds, Worcester, Mass.

Claim.—The putty-knife, composed of blade A, handle B, movable pivot C, thumb-lever D D', and spring E, constructed as described.

98,950. — Portable Water-Closet. — Joseph Gilbert, Philadelphia, Pa.

Claim.—1. As a new article of manufacture, a fecal receptacle, made of any suitable material, and having a cover with a circular depression, with cross-bar for a handle, in the central portion of its upper side, constructed as and for the purposes substantially as set forth.

2. The combination of the fecal receptacle with a suitable box or case and seat, substantially as set forth.

98,951. — Threshing-Machine. — E. A. Goodes, Philadelphia, Pa.

Claim.—1. The sets of flails *f* and *h*, attached, respectively, to their shafts, having a common axis, when the parts are constructed to operate substantiantially as and for the purpose set forth.

2. The rotating fork H, constructed with toothed wings, and arranged, in relation to the tables *b c*, substantially as and for the purpose described.

3. The fan, composed of right and left screw-propeller wheels, fixed on a shaft arranged within a cylinder, J, open at the ends and in front, substantially as described.

4. The sieve, having the sides and ends perforated, as well as the bottom, and mounted centrally, on a rock-shaft, to which motion is imparted, in the manner and for the purpose substantially as described.

5. The combination and arrangement of the flails, tables *a b c*, rotary fork, sieve, and feed-rollers, and their operating-mechanism, all constructed and operating substantially as described.

98,952.—Water-Elevator. — Matthew D. Gray, Terre Haute, Ind.

Claim.—1. The crank J, having curved arms *m* and *n*, as described, in combination with ratchet-wheel G, disk F, and spring S, all arranged to operate substantially in the manner and for the purpose herein set forth.

2. The within-described arrangement of devices for elevating water, consisting of crank J, ratchet-wheel G, disk F, bases C D, spring S, shafts N O, spools E P, pawl M, and frame A, all operating in the manner described.

98,953.—Breakwater.—Louis Gutekunst, Philadelphia, Pa.

Claim.—A breakwater, consisting of a buttress, A, constructed as described, and a vertical wall, B, bearing at its centre against the horizontal buttress-beams A, and braced and secured to the latter, as set forth.

98,954.—Drag-Rake.—George H. Hackett, North Tunbridge, Vt.

Claim.—The metallic fastening D E F, constructed and combined with the handle and head of the rake, substantially as and for the purpose herein shown and described.

98,955.—Machine for Finishing Spokes. William P. Hale, Ionia, Mich., assignor to himself and H. Miller, same place.

Claim.—The combination, with the jaws B B', the bars D D, constructed as described, with lips *b b*, and connected by a circle-joint to the jaws, substantially as and for the purposes herein set forth.

98,956.—Combined Seeder and Cultivator.—J. A. Hall, Raleigh, Ind.

Claim.—1. The arrangement of the shaft *a*, wings or flanges *b b*, pulley *c*, belt *d*, roller *f*, and crank *g*, substantially as shown and described.

2. The combination of the furrow-plows I I, cultivator-plows J J, bar K, lever L, and the dropping-mechanism herein described, all substantially as specified.

98,957.—Road-Scraper.—Robert Hamilton, Franklin, Ind.

Claim.—1. In the described combination with a beam, A, handles B B', braces C C', and pivoted scoop D, constructed as represented and described, the T-head K, ears E E', and braces F F', constructed, arranged, and employed as set forth for the purpose shown.

2. In combination with a pivoted scoop, D, the spring-latch I J, adapted for operation by foot or hand, as and for the purpose specified.

3. The combined arrangement of the beam A, handles B B', pivoted scoop D E E', shoe G, T-head K, braces C C' F F', chain H, spring-latch I J, and fastenings L *l*, constructed and employed as described, as and for the purpose set forth.

98,958. — Churn. — Jacob A. Hanger and George C. Hanger, Churchville, Va.

Claim.—1. The guide-way B and brackets *i*, cast in one piece, and used as and for the purpose described.

2. The combination of the guide-way B, roller *a'*, and pitman *d*, when the former is arranged between the staff and pitman, and the latter is bent at its upper end, to form an axle for the roller, and a connecting-bar for the staff, all constructed and arranged as and for the purpose specified.

3. The means herein set forth for varying the positions of the crank-handle, so as to suit the convenience of the operator.

98,959. — Medical Compound. — Mary J. Hanson, Mauston, Wis.

Claim.—An improved medical compound, prepared of the ingredients, and in about the proportions, and in the manner substantially as herein set forth and described.

98,960.—Joint for Metal Pipes.—W. H. Harrison, Philadelphia, Pa.

Claim.—A pipe, of wrought-iron or other metal, closed, or connected to another pipe, or to a vessel or elbow, by forming on the pipe a flange, and confining or griping the said flange, substantially as and for the purpose described.

98,961.—Connection for Pipes of Malleable Metal.—W. H. Harrison, Philadelphia, Pa.

Claim.—Two or more pipes, A and A', of malleable metal, flattened at and near the ends, and adapted and secured to internal castings B, and having countersunk openings, adapted to connecting-pipes D, all substantially as set forth.

98,962.—Lantern.—E. F. Haskell, Sherman, Me.

Claim.—1. The convex arrangement of the sides A B C of the shell or case, made in one piece, substantially as specified.

2. In connection with the above, the arrangement of the inclined top E, having a reflecting-surface, all substantially as specified.

98,963. — Glass-Furnace. — John Henderson, Wheeling, West Va.

Claim.—The improved "eye-plate" for glass-furnaces, consisting of the plate A, hollow wall B, tubes E and F, connecting with a water-tank, all substantially as specified.

98,964.—Cooking-Stove.—Charles W. Hermance, Schuylerville, N. Y.

Claim.—1. In combination with a cooking-stove, or range, the cast-iron fire-box D, provided on its edge with a flange, which rests on a ledge formed on the upper part of the fire-box receptacle, whereby the box is suspended within the stove, with an air-chamber around its sides, ends, and bottom, substantially as set forth.

2. In combination with the fire-box receptacle D, as described, the employment of one or more circular grates, E, which are capable of two movements, namely, a rotary motion in a horizontal manner, and a dumping or right-angle motion from its normal position, substantially as herein set forth.

3. In combination with the suspended fire-box D, the movable wood-grate G, constructed and applied substantially as set forth.

4. In combination with a cooking-stove, the front centre flue H, communicating with, and extending from the fire-box to the oven-bottom flue-space, substantially as herein set forth.

5. In combination with the front of a cooking-stove, or range, above the fire-box, a mica door, or illuminating-window, substantially as shown and described.

98,965. — Railroad-Car Ventilator.—M. T. Hitchcock, Springfield, Mass., assignor to himself and J. W. Labaree, same place.

Claim.—The shell or case A, having the opening E therein, and the prismatic portion B upon one side, in combination with the partition-plate F, curtains C, and deflectors D, all constituting a railway-car ventilator, constructed and operating substantially as and for the purposes herein described and specified.

98,966. — Apparatus for Combing and Preparing Wool, &c.—Edward Holden, Laurel Mount, Baildon, near Leeds, England.

Claim.—The combination, with two sets of screw-gill combs *c c*, of the set of intermediate drawing-rollers d^1 d^1, the whole arranged and operating substantially as and for the purposes specified.

98,967.—Car-Door Lock.—James L. Howard, Hartford, Conn.

Claim.—A freight-car lock, provided with hooks F F, and a bolt, having arrow-head E, recessed under its wings, and longitudinal rib G, all arranged as and for the purpose specified.

98,968. — Sawing-Machine. — S. Charles Howe, Allen's Prairie, Mich.

Claim.—1. The arrangement of the shaft F with pulley E and pinion *b*, levers G and H, and the worm J, upon the main driving-shaft K, all substantially as and for the purposes herein set forth.

2. The arrangement of the shafts M N, gig-wheels L L, joint *d*, pinions *e f*, lever *g*, double pawl *i*, levers O P, and worm R, all substantially as shown and described.

3. The arrangement of the shaft I, bent lever W, pulley *r*, wheel X, wheel Y on the main shaft K, brake Z, and chain *o*, all substantially as and for the purposes herein set forth.

4. In combination with the devices claimed in the foregoing clause, the plate *k*, with lever *n*, parallel rods or guides *l l*, pivoted plate *m*, and curved grooved standard S, substantially as and for the purposes herein set forth.

5. The pivoted lever E′, provided with forked saw-guide *h*′, and spike *i*′, substantially as and for the purposes herein set forth.

6. The cross-head V, when constructed substantially as shown and described.

7. In combination with the cross-head V, crank-wheel B′, and pitman A′, the box C′, constructed as described, and for the purposes set forth.

98,969.—Road-Scraper.—James Howland, Rock Falls, Ill.

Claim.—The combination, with the sides A, arranged as described, of the guiding-wheel F, substantially as specified.

98,970.—Cultivator.—Benjamin S. Hyers, Pekin, Ill.

Claim.—1. The two straight axles B B′, independent of each other, in combination with the straps C C′, substantially as herein shown and described, and for the purposes set forth.

2. The two adjustable, laterally-inclined braces S S, in combination with the straps or clamps C C′, and tongue F, substantially as shown and described, and for the purposes set forth.

3. The sliding lug J, within the cock-eye M, provided with one or more notches, so as to allow it to pass by the clevis H, substantially as herein shown and described.

4. The cock-eye M, in combination with the sliding lug J, and rod or link, W, substantially as and for the purposes set forth.

5. The combination and arrangement of the clevis H and sliding lug J, provided with holes for pins or bolts, so as to make the plows rigid to the line of draught, substantially as herein shown and described.

98,971.—Knob for Permutation-Locks.—Henry Isham, New Britain, Conn.

Claim.—The employment, in combination with a fixed point or projection on the door, and an adjustable pointer or projection on the knob, of raised points upon the index-plate, so that the index-apparatus can be operated solely by the sense of feeling, substantially as described.

98,972.—Permutation-Lock.—Frances E. Isham, Hartford, Conn., administratrix of the estate of Henry Isham, deceased.

Claim.—1. The dog or latch, when operated by a shifting pressure, proceeding from the bolt, and operating alternately on different sides of the fulcrum of the latch, substantially as set forth.

2. The employment, in combination with the bolt H and a series of tumblers, of a latch, G, or its equivalent, hung on a fixed centre, and actuated from the bolt, in the manner above claimed.

98,973.—Chair.—William H. Jocokel, New York, N. Y.

Claim.—1. The folding seat C, supported at its rear end by the pivot *a*, and at the front by means of the arms D and D′, the latter being extended rearward of their pivots in the back B, as herein shown and described, for the purpose specified.

2. A chair, provided with a lower seat, E, under a folding seat, C, substantially as and for the purpose herein shown and described.

98,974. — Lambrequin. — Henry M. Johnston, New York, N. Y.

Claim.—The construction of lambrequins in sections, which can be adjusted to windows of different sizes, in the manner specified.

98,975.—Grain-Cleaner.—Charles Jones, De Soto, Ill.

Claim.—1. The screens D, supported by rings F and bars E, the small end of one being arranged in the same horizontal plane with, and opening into the large end of the next below, and directly over the concave disks H, as shown and described.

2. The fan P, disks H, screens D, and chutes K N O, arranged, with relation to each other, and to the case A B, as set forth and shown.

3. The arrangement, with the screens, shaft, and disks, of the chutes K, passages L, and valves M, substantially as specified.

98,976.—Tuyere.—James O. Jones, Brooklyn, E. D., N. Y., assignor to himself and Charles Hubbard, Jr., same place.

Claim.—1. The annular chamber *c* and partition *e*, in combination with the valve *i*, opening *d*, and chamber *c*, as and for the purposes specified.

2. The valve *h*, in the plate *g*, in combination with the chambers *c* and *e*, air-blast pipe *k*, valve *i*, and opening *d*, substantially as and for the purposes set forth.

98,977.—Spike-Extractor.—William Kegg, Lasellsville, N. Y.

Claim.—1. The combination of lever B, constructed as set forth, with the fulcrum-rollers E F, so as to give the greatest leverage in starting the spike.

2. Attaching the removable lever to the frame on which it is fulcrumed, by means of the groove in its side and a pin on the frame, as set forth.

98,978.—Covering for Steps.—Charles E. Kemp and Joseph N. Pattison, Philadelphia, Pa.

Claim.—1. As a covering for steps, treads and risers, hinged together and arranged for adjustment to the step, substantially as described.

2. The combination of the step-treads and risers, and the side wings C, hinged to the treads or risers, substantially as described.

98,979.—Flood-Gate.—John J. Kimball, Naperville, Ill.

Claim.—1. The combination, with the gate F, journaled between the walls B, and provided with the studs and friction-rollers K, of one or more gates, M, arranged in sluices C, behind bulk-heads D, and provided with arms N, arranged for action in conjunction with the said gates F, all substantially as specified.

2. The arrangement of the friction-rollers K and arms N, in the spaces in the bulk-heads B, substantially as specified.

98,980.—Chimney-Cleaner.—George S. Knapp, Winona, Minn.

Claim.—1. An instrument for cleaning chimneys, consisting of the head A, spring-arms C, having suitable scrapers or brushes attached thereto, and the sliding frame D, all constructed and arranged to operate substantially as described.

2. The arrangement of the cord J and the auxiliary cord L, with the sliding frame D and weight F, substantially as described.

98,981.—Railroad-Car Window.—George S. Knapp, Winona, Minn.

Claim.—1. The sash or window A, provided with the sliding rods or bolts *a* and *a*′, arranged to operate either as pivots or as fastening-devices, substantially as set forth.

2. The arm *d*, pivoted to the sash, and secured at its opposite end to the bar *e*, substantially as herein described.

98,982.—Show-Case for Silks, Cottons, &c.—George D. Leonard, New York, N. Y.

Claim.—The arrangement and combination of the endless belt C, brackets *c*, and weighted swinging trays D, with the case A, rollers B, and flexible shutters F, substantially as shown and described.

98,983.—Horse-Hoe.—N. H. Lindley, Bridgeport, Conn.

Claim.—1. The yoke D, attached to the beam upon opposite sides, and arranged in slots, so as to swing to the right or left, for the purpose and in the manner described.

2. In combination with the hoe A, the adjustable tooth E, as and for the purpose specified.

98,984.—Fly-Trap.—Michael Little, Ashley, Ill.

Claim.—The fly-trap herein described, having glass sides, B, descending shelf *m*, with springs *s*, and operating-rod A, removable feed-shelf *c*, and water-box *c*.

98,985.—Braiding-Attachment for Sewing-Machines.—James M. Lyon, Watertown, N. Y.

Claim.—The braider, herein described, having table A, elastic bent shank B, set-screw C, needle-hole *a*″ *a*″ opening into the oblong slot *a a*, provided with ledges *d d*, inclined plane *n*, and openings *b*, *c*, and *c*′, all constructed and arranged to operate as specified.

98,986.—Oil-Can Vent-Spout.—J. J. Marcy, Meriden, Conn., assignor to himself and E. Miller & Co., same place.

Claim.—In combination with the tube B, spout C, and valve *a*, a second valve, *f*, and tube D, opening into the tube B and can A, the whole constructed and arranged so as to operate as herein set forth.

98,987. — Journal-Box. — Jeremiah McIlvain, Churchville, Md.

Claim.—In combination with a journal-box, the system of holes *g h*, tubes F, reservoir E, and pistons N, constructed and arranged as described, whereby the oil or other lubricating-material may be forced to the journal, in the manner substantially as set forth.

98,988.—Farmers' Boiler.—Allen N. Merrill, Batavia, Ill.

Claim.—The boiler H, provided with the spout 4, in combination with the jacket E, cone D, fire-pot C, and base B, constructed and operating substantially as described.

98,989.—Clod-Fender.—Daniel O. Moore and Frank Reid, Everton, Ind.

Claim.—1. The curved spring E, constructed as described, its rear end being split or forked, substantially as and for the purposes herein set forth.

2. The combination of the spring E, wheel G, supporting-bar H, rod I, and nut J, all constructed as described, and arranged to operate substantially in the manner and for the purposes herein set forth.

98,990. — Runner-Attachment for Carriages.—J. W. Moore, Watseka, Ill.

Claim.—The mode of attaching the runner, substantially as shown and described, and for the purpose specified.

98,991. — Lock-Up Safety-Valve. — William Moses, Buffalo, N. Y.

Claim.—The upper guide-plate J, having steam-apertures j^2, fulcrum-lugs J^2, and guide-jaw K, when combined with double-stem steam-valve B, valve-seat I i^2, valve-lever C, and steam-escape pipe A, and the whole constructed and arranged as herein before set forth.

98,992.—Lifting-Jack.—Charles W. Mosher, East Leon, N. Y.

Claim.—The combination and arrangement of the bed A, hollow slotted stand B, piston C D, pin F, lever H, and roller K, all substantially as specified.

98,993. — Sled-Brake. — Levi P. Mosher, Stoney Creek, assignor to himself and George Y. Miller, Luzerne, N. Y.

Claim.—The combination, with a sled, of a sliding frame, D, arranged for operation by the horse's shaft B, arms A, pawls C, C′, and F, when arranged substantially as herein shown and described.

98,994.—Cooking-Stove.—Martin J. Mosher, Troy, N. Y.

Claim.—1. The two horizontal flues or chambers *b* and *h*, divided by the horizontal flue-strip b^2, and in combination therewith, and having apertures for ingress and egress of air, substantially as and for the purpose described and set forth.

2. The three flues or chambers *f*, f^2, and *l*, situated, constructed, and used for the purpose as described and set forth.

3. The two flues or chambers *f* and *d*, in combination with the chambers or flues *b* and *h*, and the

chambers or fines *f* and *f'*, as and for the purpose described and set forth.

4. The horizontal fine-strip b^3, substantially as described and set forth.

5. The fine-strips *g*, constructed, situated, and used substantially as described and set forth.

6. The dampered apertures *m* and *n*, situated, constructed, and used, substantially as described and set forth.

98,995.—METALLIC CARTRIDGE.—Sewell Newhouse, Oneida Community, Oneida, N. Y.

Claim.—A cartridge-case, having collar B in the centre thereof, perforated with two or more holes, *c*, in combination with a movable anvil, having a head and shoulder, as shown and described.

98,996.—LATH-MACHINE.—Walter B. Noyes, Manchester, N. H., assignor to himself and C. S. Baker, same place.

Claim.—1. The roller K, constructed as described, with flanges *e e* and projections *i i*, and operating in combination with the flanged adjustable yielding roller L, substantially as and for the purposes herein set forth.

2. The adjustable sliding guide T, operated by means of the arm *k*, loops *m m*, lever W, and rack-bar X, substantially as and for the purposes herein set forth.

3. Frame A, saws D D D, shafts B D J, corrugated roller G, rollers or shafts K and L, when all are constructed and arranged to operate as and for the purpose set forth.

98,997.—FEED-CUTTER.—George Parnell, Ontario, N. Y.

Claim.—1. A feed-cutter, embracing in its construction the feed-rollers D and E, adjustable cutting-knives *d*, worm gears *f*, *j*, and F, all the parts being constructed, arranged, and operating conjointly, as and for the purposes set forth.

2. In combination with the cutters *d* and feed-rollers D and E, of feed-cutters, the clutch-coupling *h*, sliding clutch h', and pulley C, as shown and described, for the purposes set forth.

98,998.—TONGUE AND THILL-COUPLING.—James I. Pock, Deansville, N. Y.

Claim.—The part A of the coupling, slotted longitudinally at its outer end, to receive the foot D of the thill-iron B, and having its fork ends curved partially around the ends of the pivot-bolt C, whereby a double bearing-surface is formed, as and for the purpose specified.

98,999.—CORN-SHELLER.—Rupert Pfeifer, Linz, Austria, assignor to himself and Jacob Nanerth, New Frankfort, Mo.

Claim.—As an article of manufacture, the hand corn-sheller herein described, consisting of the curved, smooth, and solid-backed metallic plates A A, hinged together, and provided interiorly with cylindrical pins, B, set in longitudinal strengthening-strips, arranged with a space between them, as shown and described.

99,000.—MACHINE FOR GRINDING OBJECTS CYLINDRICALLY.—J. Morton Poole, Wilmington, Del., assignor to himself, William T. Porter, and Thomas S. Poole, same place.

Claim.—A machine constructed substantially as described, for grinding objects cylindrical, whereby the object to be ground shall be supported in its bearings, that while it is free to move transversely to its axis, it shall be acted upon, in the operation of grinding, by one or two grinding-wheels, placed, one on each side of said object, and being capable of adjustment or fixation on their support, and the said object being dependent, for its transverse movement, on its contact with the surfaces of said wheels, at opposite parts thereof, as set forth.

99,001.—COMPRESSION-COCK.—James Powell, Cincinnati, Ohio.

Claim.—1. In the described combination, in a compression-cock, the solid non-rotary plug or valve A B, and the non-reciprocating rotary stem C D, constructed as represented and described, for the purposes set forth.

2. In combination with a collar, E, seated on and closing the neck F of the cock, as described, the metallic washer G and gasket H, arranged between said collar and the cap I of the cock, as shown, for the purposes set forth.

99,002.—SELF-CLEANING FILTER FOR HYDRANTS.—John Raible, Matthias Reis, and Johann Ritter, Chicago, Ill.

Claim.—1. A hydrant containing a filter, so constructed that the water shall flow through the filter when the hydrant is opened, and a portion of the water return through the filter and escape at another opening when the hydrant is closed, thereby making the apparatus self-cleaning, substantially as described.

2. The reservoir or vessel A, provided with the filtering-diaphragm A, in combination with the supply-pipe B, and the valves or cocks *d* and *j*, the latter being arranged to open and close alternately, substantially as described.

99,003, antedated January 8, 1870.—PIPE-COUPLING FOR HEATING CARS.—Henry R. Robbins, Baltimore, Md.

Claim.—A ball-and-socket joint, constructed as herein described, that is to say, having the parts A and B, screwing together at *b*, the part C, connected to the part B by the flange *c*, the part D, screwing upon the outer end of C, and the spring E, surrounding the part C, between the parts B and D, substantially as set forth.

99,004.—WATER-WHEEL.—John Rogers, Rogersville, Pa.

Claim.—1. The wheel A, with its buckets *a*, provided with the lips *c*, and curved in both their vertical and horizontal planes, as herein shown and described.

2. The hinged water-directing chutes F and ribs *i*, constructed and arranged to operate as herein described, and for the purpose set forth.

3. The gates G, provided with arms *d* and slots *h*, in combination with arm H, springs *f*, and blocks *g*, constructed and arranged to operate substantially as and for the purposes set forth.

4. The combination of the wheel A, chutes F, gates G, and arm H, constructed and arranged to operate substantially as set forth.

99,005.—KEY-HOLE GUARD.—John L. Russell, Prairie City, Iowa.

Claim.—Combining a reversible guard, C, and a reversible catch, D, so that the slide may be used on either side of the lock, in the manner described.

99,006.—LUMBER-RACK.—Charles Sach, Grand Rapids, Mich.

Claim.—An improved lumber-rack, consisting of the roller *a*, resting in perpendicular slots, as shown, the lever *c*, chain *p*, pulley *g*, and ratch *e*, the lever *d* and rope *o o*, and the inclined bed-pieces K K provided with roller *b*, when constructed, arranged, and operating substantially as and for the purposes above specified.

99,007.—ALLOY OF MANGANESE.—Elliot Savage, West Meriden, Conn.

Claim.—An alloy, substantially such as is herein described, of manganese with copper, or copper and other metals.

99,008.—PLANING-MACHINE.—John B. Schenck, Matteawan, N. Y.

Claim.—1. The combination of the transverse screw-shafts F F F'', and their sliding nuts *e' e''*

d d', edge-cutters D D', and guide *a*, with the longitudinal screw shafts E E', sliding nuts *g*, connecting-bars I, sliding nuts I', slides J, weighted lever H, stirrups H', yokes H'', and presser feed-rollers B B, when constructed and arranged in the manner and for the purpose described.

2. The combination of the revolving screw-shafts and their transverse sliding nuts and edge-cutters above described, with the guide *a*, slide-bar *b*, graduated sliding scale *b'*, and sliding index *c*, when arranged in the manner and for the purpose described.

3. The compound presser-lever, composed of the presser-foot *l''*, connecting-bar *l'*, and pivoted lever-handle *l*, and connected to sliding nut *e''*, in the manner and for the purpose described.

4. An improved planing-machine, in which is provided a means of regulating the amount of pressure upon the ends of the presser-rollers, by changing the fulcrum of the weighted lever, in the manner substantially as described.

99,009.—HAND-BARROW.—Minot S. Scofield, Stamford, Conn.

Claim.—An improved hand-barrow, formed by the combination of the jointed or hinged bars B and spikes C with the side bars A, substantially as herein shown and described, and for the purpose set forth.

99,010.—FASTENING SIDE-BOARDS TO GRAIN-WAGONS.—George Seitzinger, Seneca, Ill.

Claim.—The means herein described for fastening extra side pieces to the ordinary side-boards of a wagon, the same consisting of the metal straps *a b*, provided respectively with hooks and eyes A A', and attached to the side-boards and extra side pieces B C, as and for the purpose specified.

99,011.—BOBBIN-WINDER FOR SEWING-MACHINES.—Thomas Shanks, Baltimore, Md.

Claim.—The combination of the screw A'', gear-wheel B, and arms C C', with the frame of a bobbin-winder, the whole constructed and arranged to operate in the manner and for the purpose described.

99,012.—LIME-KILN.—F. Shelly, Alton, Ill.

Claim.—The combination, with the cupolas D, of discharge-chutes E and screening-grates E', arranged in recesses in the side of the stack A, and constructed and operating substantially as and for the purpose shown and specified.

99,013.—LOCK.—H. S. Shepardson, Shelburne Falls, Mass.

Claim.—In combination with the case G, the tumblers *a a*, &c., constructed with the slots *m* and springs *d*, arranged, as described, within the tumbler-holder H, and operating, in connection with the case F, as set forth.

99,014.—APPARATUS FOR STRAIGHTENING CAR-AXLES.—B. S. Skates, Whistler, Ala.

Claim.—The combination of the housings, having centres C and lugs or shoulders D, the adjustable track E G, a hydraulic or other jack, and wedges I or set-screws, substantially as specified.

99,015.—HOT-AIR FURNACE.—Eli Slater, Philadelphia, Pa.

Claim.—1. The arrangement of the openings *a a*, tube *e*, and combustion-chamber *g*, operating substantially as and for the purpose herein specified.

2. The combination of the tube *e* with the combustion-chamber *g* and conical air-tube *f*, substantially as and for the purpose hereinbefore set forth.

3. The combination of the tube *e* with the fire-pot *o* and grate *l*, when said tube *e* is used as and for the purpose herein specified.

4. The combination of the radiating-tubes *h h* with the combustion-chamber *g* and tube *e*, substantially as and for the purpose herein set forth.

5. The combination of the drum *i* with the radiating-tubes *h h* and combustion-chamber *g* and tube *e*, substantially as herein specified.

99,016.—SEWER-EXCAVATOR.—Francis W. Slater, Bay City, Mich.

Claim.—1. The frame A, engine C, cranks D D, shaft E, cog-wheels G H H, slotted beams J J, and bucket-shaft I, all constructed, combined, and arranged to operate in the manner set forth.

2. With the device mentioned above, the arrangement of pawls *a a*, spring *b*, slotted beams J J, adjustable braces K K, and levers *e e*, all constructed and operating as described.

99,017.—BRIDGE.—C. Shaler Smith, C. H. Latrobe, and Frederick H. Smith, Baltimore, Md., assignors to Smith, Latrobe & Co., same place.

Claim.—1. The combination, substantially as described, of wrought-iron columns or shafts, of any form of section, with cast-iron caps and feet or joints, when used to form bridge-piers, whether these piers be isolated and standing upon their own bases, or are connected by longitudinal bracing in such a way as to form a system of wrought-iron trestle.

2. In a pile composed of wrought-iron columns, combined with cast-iron, caps, feet, or joint-boxes, as described, the formation of a connection between the wrought-iron columns and their cast-iron caps, feet, or joints constituting the bridge-piers, by fitting the wrought iron into the casting, or the casting into the wrought-iron, or by other means, substantially as specified, as may be found necessary in using different sections of columns, substantially as set forth.

99,018.—RUBBER HOSE.—George C. Smith, Fishkill, N. Y., assignor to New York Rubber Company.

Claim.—As a new manufacture, vulcanized India-rubber hose, the inner elastic lining of which is extended beyond the body of the hose, so as to form a removable cap for the ends of the same, substantially as shown and set forth.

99,019.—NUMBER-PLATE FOR DOORS, &c.—James T. Smith, Washington, D. C.

Claim.—The method of arrangement of the raised or depressed indicators upon plates, knobs, or figures, as herein described, substantially as and for the purposes specified.

99,020.—BELL-PULL.—John Joseph Charles Smith, Somerville, assignor to the Metallic Compression-Casting Company, Boston, Mass.

Claim.—The hub D, constructed with the concentric segmental flanges H J, handle E, and knob F, and employed in connection with the arbor C and helical spring I, all applied and arranged as and for the purposes set forth.

99,021.—CLOTHES-SPRINKLER.—T. Rice Smith and James Mitchell, Jacksonville, Ill.

Claim.—A clothes-sprinkler, consisting of a cup or basket, of sheet-metal or other substance, and sponge, confined therein by wires, or otherwise, the said cup being made with a suitable handle, all substantially as specified.

99,022.—PICTURE-FRAME.—John Sperry, New York, N. Y.

Claim.—Constructing circular, oval, or elliptical frames, and elliptical portions of other frames, from series of strips or veneers, combined, bent, and secured together, substantially as and for the purpose specified.

Also, forming these frames, by securing together two separate forms, substantially as specified, so as to break or lap the joints of their respective sections.

99,023.—SPRING TOY-BALL.—Henry Splitdorf, New York, N. Y., assignor to himself and Jacob Weiss, same place.

Claim.—The combination of a spring-jack or figure, B, with a hollow ball or sphere, A, substantially as described.

99,024.—SHUTTLE-DRIVING MECHANISM FOR LOOMS.—Jeremiah Stever, Bristol, assignor to Isaac E. Newton, Waterbury, Conn.

Claim.—1. In combination with the respective pickers E and E′, the barrel-springs F and F′, operated by the cams I and I′, when arranged in the manner described, so as to throw the shuttle, as set forth.

2. In combination with the above, the adjusting-ratchets *d d* and pawls *e*, for the purpose specified.

99,025.—THILL-COUPLING.—Clement St. James, Pittsfield, Mass.

Claim.—1. The combination of the open tubular washer F, with the grooved projections *a′ b′* of the clip, and yoke A B, substantially as herein shown and described, and for the purpose set forth.

2. A clip, A, formed with threaded ends, and locked to the yoke by means of nuts C, held fixedly to any desired position by the bar G, as and for the purpose specified.

99,026.—PHOTOGRAPHIC CAMERA.—Isaac H. Stoddard, Ansonia, Conn.

Claim.—1. The arrangement of the links *f* and *g* and shaft A, in combination with the frame *e*, carrying the glass *d* and the slide *l*, substantially as and for the purposes specified.

2. The bar *r*, upon the slide *l*, and the bar *s* on the frame *e*, for suspending the slide *l*, as it is moved into place, as set forth.

99,027.—DIE FOR FORMING SHUTTLE-TIPS. Alson A. Stone, Shirley, Mass.

Claim.—The construction and combination of the dies *a* and *b*, for forming shuttle-tips, as described, said dies being of the form and capacity as described.

99,028.—DIE FOR FORMING SHUTTLE-SPINDLE HEADS.—Alson A. Stone, Shirley, Mass.

Claim.—The construction, in two sections or blocks, of the dies for forming shuttle-spindle heads, said dies being of the form substantially as herein described.

99,029.—WASHING-MACHINE.—George W. Stranahan, Westport, N. Y.

Claim.—1. The combination of the metallic tub or boiler A with the two wheels E F, constructed as described, and for the purpose set forth.

2. An improved washing-machine, formed by the combination of the two wheels E F, constructed as described, tub or boiler A, shaft C, crank D, sleeve H, and gear-wheels G I J, with each other, substantially as herein shown and described, and for the purpose set forth.

99,030.—BEDSTEAD-FASTENER.—Henry Swineford, Mifflinburg, Pa.

Claim.—The bed-fastening herein described, composed of the plate B, with grooved projection C, plate E, and T-shaped projection G, all substantially as herein shown and described.

99,031.—COTTON-PLANTER.—E. L. Sykes, Okolona, Miss.

Claim.—The combination of a spring-coverer, E F, with clod-movers arranged in front thereof, to throw the clods to either side, and leave the fine dirt only for covering the seed, all as shown and described.

99,032.—MODE OF COVERING HARNESS-TRIMMINGS.—Charles M. Theberath, Newark, N. J.

Claim.—The method herein described of covering harness-trimmings with a seam at or near each edge, substantially as and for the purposes herein set forth.

99,033.—HORSE HAY-FORK.—F. W. Thorla, Hoskinsville, Ohio.

Claim.—The lever trip-hook D, in combination with the plates or bars C, lever B, blade A, and prongs F, substantially as herein shown and described, and for the purpose set forth.

99,034.—CORN-HARVESTER.—Elwood Tush, Manchester, Iowa.

Claim.—The arrangement, with the receiving-box P, of the two pulleys, F and J, belt K, and cutting-hooks L, operated by the gears H and I, from the axle B, all substantially as described.

99,035.—TIE FOR HOLLOW WALLS.—Edwin Tutte, Fareham, England.

Claim.—The thin metallic plates A, either bevelled or not, on their upper edges, and arranged vertically and transversely in the cross-joints between the bricks of the two parts of a wall, their ends being enclosed by the bricks, all as shown and described, for the purpose specified.

99,036.—TRUNK-HASP.—Cornelius Walsh, Newark, N. J.

Claim.—Connecting the two parts of the hasp by means of a spring, C, secured in recesses therein, through plates *c*, rivets *c′*, and longitudinal slots *c″*, substantially as herein set forth.

99,037.—HYDRANT.—James Walsh, Philadelphia, Pa.

Claim.—1. A ball or bag, H, of elastic or flexible material, arranged for attachment to the lower end of a hydrant-pipe, D′, for the purpose of receiving the water which would otherwise remain in the said pipe after the closing of the hydrant-valve or cock, all substantially as herein set forth.

2. The said ball or bag, arranged to be compressed between a movable cup-shaped plate *q* and a stationary curved block, J, substantially in the manner described.

3. The compressing-yoke M, and valve-rod c^2, so operated, by means of a cross-piece, K′, that the rod and its valve shall remain stationary until the yoke has almost reached the limit of its upward movement, all substantially as and for the purpose described.

4. The cross-piece K′, permanently secured at one end to the yoke M, and arranged to slide, at its opposite end, between shoulders *i* and *i′* of the valve-rod c^2, all substantially as herein set forth.

5. The valve G, having an extension, *e*, on its under side, and acted on by a spring, e^1, both the valve and its extension being adapted to seats formed in the casing F, substantially as herein set forth.

6. The metal box C, having a vertical portion adapted for the reception of the lower end of the hydrant-casing A, and a flaring portion, for the reception of the upper end of the tapering box B, and arranged, in respects to the two portions, and to the surface of the ground in which the box B is embedded, as set forth, so as to preserve the said parts from corrosion or decay, as well as to effectually couple the same.

99,038.—PRUNING-SHEARS.—P. R. Walsh and G. C. Eaton, Rochester, N. Y.

Claim.—1. The cutting-bar A, having chisel *f* and hook *g*, arranged to operate substantially as set forth.

2. In combination with pruning-shears, substantially as set forth, the detachable sections B and B′, when arranged to operate as described.

3. In combination with the extension-handle of the cutting-bar A of pruning-shears, the hand-rod *h*, as shown, and for the purposes set forth.

4. Pruning-shears, when composed of the knife C, cutter-bar A having hook *g*, chisel *f*, detachable sections B and B′, and hand-rod *h*, all arranged to operate as set forth.

99,039.—STRIKE FOR LOCKS.—William Weisner, Elizabethtown, New Mexico Territory, assignor to himself and Claudius Kiefer.

Claim.—The combination, with the strike for a mortise-lock or sliding bolt, of a plate, B, hinged thereto, and arranged to swing into the mortise to close the same, when the bolt is withdrawn, and to be operated for closing either by springs or by gravity, substantially as specified.

99,040.—SUMMER COOKING-STOVE.—A. H. Wellington, Woodstock, Vt.

Claim.—The summer cooking-stove, herein described, consisting essentially of the cylindrical chamber A, draught-passages *d*, and centrally-arranged exit-flue C, substantially as set forth.

99,041.—STOVE-GRATE.—Marshall D. Wellman, Allegheny City, Pa.

Claim.—1. The arrangement, within a closed-front stove, range, or other fire-place, of the agitators, as herein described, divided at the centre of the grate, so that either part may be operated separately, substantially as specified.

2. In combination with the grate-bar B, shaft C, and agitators *d*, the sloping lining, as herein described, all arranged and operating substantially as and for the purposes specified.

99,042, antedated January 8, 1870.—REVOLVING GRATER.—Stephen S. Wilcox and Eli J. Colegrove, Linklaen, N. Y.

Claim.—A cylindrical grater, whose shaft B is hung at one end in a pivoted post, *b*, which is locked by a latch, *c*, and hook, as set forth, to allow the ready removal of the grater, substantially as herein shown and described.

99,043.—WAGON.—James S. Wilson, Allegheny, assignor to Phelps, Park & Co., Pittsburg, Pa.

Claim.—The combination and arrangement of the bolts *h* and *i*, plates *e* and *f*, provided with slots *e* and *e*, when used in connection with the axle D and coupling-pole B, the whole being constructed, arranged, and operating substantially as herein described, and for the purpose set forth.

99,044.—LET-OFF MECHANISM FOR LOOMS. Daniel Long and John Preston, Fairview, Pa.

Claim.—1. The screws S S, in combination with the slides R R and levers B and C, when operated in the manner substantially as described, and for the purpose specified.

2. In combination with the tension-bands F and G, the levers B and C, slides R R and H′ H′, and weights H H, and screws S S, the whole arranged and operated in the manner and for the purpose specified.

3. The levers B and C, loops or bows D D and E E, slides R R, screws S S, and slides H′ H′, when applied to looms, in the manner and for the purpose specified.

99,045.—MOULD FOR VULCANIZING RUBBER PENCIL-TIPS.—Joseph Banigan and George W. Miller, Smithfield, R. I.

Claim.—1. In combination with a mould for forming pencil-tips, reciprocating punchers or plungers, so arranged as to first form the tips, and then withdraw them from the mould, substantially as and for the purpose set forth.

2. The combination of the puncher-plate, matrix-plate, and reciprocating punchers, constructed and arranged, with reference to one another, substantially as and for the purpose set forth.

REISSUES.

87,487, dated March 2, 1869; reissue 3,797.—PURGING AND DRAINING SUGAR.—William H. Guild, Brooklyn, N. Y.

Claim.—1. Subjecting sugar, while being purged or drained, to the action of steam or vapor, substantially as and for the purpose herein described.

2. The process of purging sugar by spreading it over a perforated or reticulated bed or floor, and producing a vacuum, below said bed or floor, substantially as herein described.

3. The process of drying sugar by forcing or drawing currents of heated air through it, while it is spread over a perforated or reticulated bed or bottom, substantially as herein described.

16,797, dated March 10, 1857; reissue 1,952, dated May 9, 1865; reissue 3,798.—BREECH-LOADING FIRE-ARM.—William Cleveland Hicks, Sunfruit, N. J.

Claim.—1. The combination and arrangement, substantially as set forth, of the cartridge-chamber, in the barrel of the fire-arm, and the reciprocating hook, in such manner that the bill of the hook enters within the periphery of the said chamber, so that it may engage with the flange of the cartridge therein, whether the same be expanded or not.

2. Also, the combination and arrangement, substantially as set forth, of the said cartridge-chamber and the reciprocating hook, in such manner that the bill of said hook, when in its forward position, is both within the periphery of the said chamber, and in advance of the rear of the space in which the cartridge is received, so that it may engage with the front side of the flange of the cartridge, when the latter is inside of said space.

3. Also, the combination and arrangement, substantially as set forth, of the extracting-hook described, with the breech of the fire-arm, in such manner that but one side only of the flange of the cartridge is engaged with a hook inside of the cartridge-chamber, thereby enabling the cartridge-case to be readily disengaged from the extracting-hook.

4. Also, the combination and arrangement, substantially as set forth, of the hook with the breech-pin of the fire-arm, in such manner that the said hook performs the two functions of transmitting a blow to the primer, and of extracting the cartridge-case from the breech of the fire-arm.

84,637, dated December 1, 1868; reissue 3,799.—STAY-LOG FOR CUTTING VENEERS. John N. Lyman, New York, N. Y.

Claim.—The stay-log, constructed substantially as herein described, to provide for the adjustment of the log, relatively to the journals or axis of its revolution.

79,590, dated July 7, 1868; reissue 3,800.—STOVE-GRATE.—Elie Moneuse and Louis Duparquet, New York, N. Y.

Claim.—1. The latch *n*, applied substantially as specified, to retain the catch that holds up the grate, or allow said catch to be moved when the latch is unlatched, as set forth.

2. The arm *h*, catch *l*, and latch *n*, in combination with the swinging grate, substantially as and for the purpose specified.

94,845, dated September 14, 1869; reissue 3,801.—COOKING-STOVE.—Robert Scorer, Troy, N. Y.

Claim.—1. In a three-flued and water-reservoir cooking-stove, the arrangement of the expanded and contracted parts F and E, forming the rising-flue thereof, together, as shown, and in rear of the diving-flues H and H′, so as to overlap the same, substantially as described.

2. In a three-flued and water-reservoir cooking-stove, the combination of the expanded lower part F and the contracted upper part E of the rising-flue thereof, with each other and with the diving-flues H and H′, arranged substantially as described.

3. In a three-flued cooking-stove, the aforesaid expanded and contracted rising-flue E F thereof, arranged in rear of and overlapping the diving-flues H and H′, substantially as described.

4. The extension G of the oven of a three-flued cooking-stove to the flue-division plate A, and between the diving-flues H and H′ thereof, substantially as described.

5. Separating the rising exit-flue of a three-flued

cooking-stove from the diving-flues H and H' and extended over G thereof, by means of the flue-division plate A, arranged transversely from side to side of the stove, and in rear of said diving-flues, substantially as described.

6. The construction of the water-reservoir or tank D of a cooking-stove, at its side where adjoining the end of the stove, with a recessed contracted flue, E, therein, substantially as and for the purpose described.

7. The combination, with each other, of the water-reservoir D, its recessed contracted rising-flue part E, the expanded rising-flue part F, the diving-flues H and H', and the damper a, all constructed and relatively arranged, substantially as and for the purpose described.

8. The construction of the rising exit-flue of a three-flued cooking-stove, by means of the division-flue plate A, flue-plate F, and water-reservoir D, when said flue is arranged in rear of the diving-flues H and H' thereof, substantially as hereinbefore set forth, so that the escaping heat or gases of combustion shall pass upward between the said water-reservoir, the plate A, plate F, and in rear of the said diving-flues, in manner substantially as described.

83,336, dated October 20, 1868; reissue 3,802. BALANCE SLIDE-VALVE.—William M. Stevenson, Newcastle, Pa.

Claim.—The improved balanced valve, substantially as described, viz, as constructed, not only with a chamber open at top and bottom, and with grooves having openings through their bottoms, and arranged at the upper part of the valve, as set forth, but with a pair of triangular prismatic packing-strips arranged in each of such grooves, whereby such strips, when forced upward by the steam against the top of the steam-chest to make therewith a close joint, will be caused, by their action against each other, to be moved laterally against opposite sides of their grooves, so as to make close joints with such sides, the whole being as specified.

Design 3,354, dated January 26, 1869; reissue 3,803.—HINGE.—P. Corbin and F. Corbin, New Britain, Conn., assignees of Francis T. Fracker.

Claim.—The ornamentation of cast but-hinges by a recessed panel, leaving the edges of the hinge and the surface contiguous to the screw-holes raised, substantially as described and represented.

DESIGNS.

3,818.—ORGAN OR MELODEON-CASE.—George Cook, New Haven, Conn.

Claim.—The form, shape, or configuration of the organ or melodeon-case, when constructed in the shape herein described.

3,819.—TRADE-MARK.—Robert Kerr and John Pinkerton Kerr, Paisley, Scotland.

Claim.—The design for a trade-mark for thread, as herein shown and described.

EXTENSIONS.

POLLOY HUNT and GEORGE W. HUNT, of New York, N. Y., administrators of Walter Hunt, deceased.—Letters Patent No. 14,019, dated January 1, 1856.

"*Improvement in Shirt-Collars.*"

Claim.—In the manufacture of shirt-collars, or sham shirt-collars, uniting only the extremities of the lower edges of the side pieces *b b*, to the neck-band *d*, by means of any suitable fastenings, for the purpose of enabling a flat-sided collar to fit easily and gracefully about the face, substantially as herein set forth.

HENRY G. TYER, of Andover, Mass., and JOHN HELM, of New Brunswick, N. J.—Letters Patent No. 14,814, dated May 6, 1856; antedated January 9, 1856.

"*Improvement in Making Gum-Elastic Cloth.*"

Claim.—An elastic fabric, composed of two pieces of cloth, either woven with the threads of the weft in a diagonal position to the threads of the warp, or of common cloth, stretched so as to force the threads in such relative diagonal position, combined and caused to adhere together exclusively by a vulcanized compound of India rubber or gutta-percha, the two pieces of cloth being first united by the vulcanizable compound, and the compound being vulcanized after the union, substantially as set forth.

HIRAM B. MUSGRAVE, of Cincinnati, Ohio.—Letters Patent No. 14,064, dated January 8, 1856.

"*Improvement in Gas Cooking-Stoves.*"

Claim.—In combination with the concentrically-arranged gas-deflector *b* and *c*, the gas-burner with lateral vents, and capable of vertical adjustment, or equivalent devices, for the purposes specified.

ISSUE OF JANUARY 25.

PATENTS.

99,046.—CAN-OPENER.—H. C. Alexander, New York, N. Y.

Claim.—The can-opener A B, constructed and operating substantially as herein shown and described, and for the purpose set forth.

99,047.—PRINTING-TELEGRAPH.—Milton F. Adams, Boston, assignor to E. B. Welch, Cambridge, Mass.

Claim.—1. The combination of key-board B, drum C, insulator-breaks *b*, break-spring *c*, train of wheels with magnet E, escapement G, wheel G', and type-wheel L, in the manner and for the purpose substantially as described.

2. The combination of type-wheel L with roller R, lever P, cam-wheel N, escapement H, and wheel H', and magnet F, in the manner and for the purpose as stated.

3. The combination of the key-board B, drum C, insulator-breaks *b*, break-spring *c*, magnet E, escapement G, type-wheel L, with roller R, lever P, cam-wheel N, escapement H, and magnet F, when arranged in the manner and for the purpose as set forth.

99,048.—STOVE-PIPE DAMPER.—Henry Baker, Lancaster, Pa., assignor to himself and Christian G. Herr, same place.

Claim.—The arrangement of the annular flange A and fluted disk C, in combination with the short flues or annular corrugations B, constructed and operated in the manner shown and described, for the purpose set forth.

99,049.—ELEVATOR FOR HOISTING HUMAN BEINGS, MERCHANDISE, &c.—Cyrus W. Baldwin, Boston, Mass.

Claim.—1. The combination, with the elevator-carriage, and devices for raising or lowering the same, of means, substantially such as described, for effecting the equipoise of said carriage and its load during its ascent or descent, as and for the purposes set forth.

2. As a device for effecting, by means of water, the balancing or equipoise of the elevator-carriage, the combination of the tanks *a* and *b* and the bucket *d*, the said tank *a* being provided with the valve *r*, and the bucket *d* with the valve *s*, and the tank *a* and bucket *b* being combined with the elevator-carriage, by means of the ropes *g g'* and sheaves *h h'*, or the mechanical equivalents for such ropes and sheaves, and the whole operating as explained.

3. The combination of the elevator-carriage, with the counterbalancing-bucket, and two or more cisterns, arranged to operate in connection with said bucket, substantially as shown and described.

4. In combination with the elevator-carriage and the valves of the tank *a* and bucket *d*, the arrangement of the cords or chains *t* and *u*, for the purpose herein explained.

5. Passing the cord *t*, which actuates the valve *s*, through the platform of the elevator-carriage, as explained.

6. The arrangement of the endless rope, or its equivalent, and the sheaves *b' c'* and the rollers *f' f'*, or their mechanical substitutes, the lower sheave being provided with a suitable means of stopping its revolution when required.

7. The combination and arrangement of the tank *a* and the movable bucket *d*, whereby, by the overlapping or embracing of the former by the latter, water is elevated into such tank *a*, for the purpose set forth.

99,050.—INSTRUMENT FOR PLUGGING TEETH.—Marcus L. Battle, Bainbridge, Ga.

Claim.—An instrument for plugging teeth, composed of three blades, the two side blades furnished at the points with concavities, through which the plugger of the third blade passes, substantially as described.

99,051.—POCKET-FLASK.—Arthur Tappan Becker, Cohoes, N. Y.

Claim.—The combination of the fixed perforated section, the turning perforated section, (with or without the interposed perforated packing,) the mouth-piece, and the internal tube, combined and operating substantially as set forth.

99,052.—VARIABLE VALVE-GEAR.—George M. Bird, Dedham, Mass.

Claim.—1. The combination of hollow shaft or hub G and the adjustable crank pin D, when the mechanism for adjusting said crank-pin is operated through said hollow shaft or hub, substantially as described.

2. The combination of the hollow shaft or hub G the crank-pin D, the disk or plate E, and the cam J, all constructed substantially as described, for the purposes specified.

3. The combination of the cam J, its shaft J', pin *a*, and the sleeve K, provided with the spiral groove or slot *b*, and the lever L, or their mechanical equivalents, substantially as described.

4. The crank-pin D, or its equivalent, having the amount of its throw controlled by the action of the governor-balls N, when the motion of said balls is transmitted to it through the shaft or hub G, on which said crank-pin is mounted, substantially as described.

99,053, antedated January 16, 1870.—MILKING-APPARATUS.—Andrew C. Black, Kaukauna, Wis.

Claim.—A milking-stool, combining a stand for the milk-pail and a seat for the milker, each provided with an inclined turning-table, by which the level of the seat and of the pail may be maintained, when the stool rests upon an inclined or uneven surface, as set forth.

99,054, antedated January 14, 1870.—DEVICE FOR APPLYING BRAID TO FABRICS IN SEWING-MACHINES.—Eloi Bouscay, Jr., Norwalk, Ohio.

Claim.—The combination, with the presser-foot, of the self-securing adjustable attachment A E B B, constructed substantially as described, and for applying braid or trimming to the surface of fabrics.

99,055.—SPINNING-MACHINE.—Paul Bramwell, Arrow Rock, and W. C. Bramwell, Independence, Mo.

Claim.—1. The combination, in a spinner for carding wool, of a set of drawing-rolls, false twister, a draught-roller covered with points, and a tension-bar, the several parts being arranged and operating substantially as and for the purpose specified.

2. The combination, in a spinner for carded wools, of a set of feed-rolls, a tension-bar, a draught-roller covered with points, a false twister, and a set of drawing-rolls, the several parts being arranged and operating as and for the purpose herein specified.

3. The combination, in a spinner for carded wool, of a tension-bar, draught-roller covered with points, false twister, set of drawing-rolls, ring and traveller, spindle with removable bobbin, and mechanism for operating the ring-rail, so as to wind the yarn evenly on the bobbin, the several parts being arranged and operating as and for the purpose specified.

99,056.—BED-BOTTOM.—Warren R. Briggs, Boston, Mass.

Claim.—1. A spring for spring-bed bottoms, composed of a coiled spring, disposed in the form of an arch or an arc of a circle, with the chords of such arch or arc resting upon and suitably confined to the frame or support upon which the springs rest, for the purpose explained.

2. Combining or uniting two springs of the form above explained, in such manner that their longest planes shall stand at right angles to each other, the same possessing advantages before set forth.

99,057.—CUTTING-PINCERS.—Peter Broadbooks, Batavia, N. Y.

Claim.—The hinged arm B and leg A, when provided with detachable cutters *c d*, in combination with the detachable yoke C and lever D, when they are retained in position by the rib *i* and recess *e*, all arranged to operate conjointly, as and for the purposes set forth.

99,058.—SPRING-BED BOTTOM.—Archibald H. Ceiley, Springfield, Mass., assignor to J. B. Gardiner, same place.

Claim.—The combination of the connecting-rods E and G with the springs A B C D, arranged as described, and fastened to the cross-bar H, in the manner specified.

99,059.—MILLING-MACHINE.—Luke Chapman, Collinsville, Conn., assignor to the Collins Company, same place.

Claim.—The shaft *k*, combined with the grasping-device, in the manner and for the purpose described.

Also, the combination of the shaft *k*, the said grasping-device, and the handle *l*.

Also, the shaft *k*, and grasping-device, in combination with the screw at *m*, and its corresponding female screw.

Also, the shaft *k*, and the grasping-device, in combination with the milling-tool *i*, or any other milling-tool or device which can be used in its place.

Also, the holding-device on the end of shaft *k*, constructed, arranged, and operated as set forth.

99,060.—WASHING-MACHINE.—S. W. Clarke, New Milford, Conn.

Claim.—1. The arrangement and combination of the rubbing-board C, standards L L, pivots M M and E E, levers J J and spring T, as shown and described.

2. The combination of the frame *h h*, and its series of rollers, inclined as shown, with the devices set forth in the first clause of my claim, the cover P, and the mode of attaching the legs *i i i i*, by means of rods R R and dowels *d d*, as set forth.

99,061.—LIFTER FOR KITCHEN USE.—T. S. Coffin, Harrington, Me.

Claim.—The lifter, consisting of the toothed jaws A and A', the latter having the hook E, when formed on the shanks G G, at right angles thereto, curved at B, and bent outwardly, and pointed at

the ends D, as shown and described, whereby it is adapted to operate as specified.

99,062. — MANUFACTURE OF ARTIFICIAL STONE.—François Coignet, Paris, France, assignor to Coignet Agglomerate Company, Richmond, Ind.

Claim.—The process, or combination of the several physico-chemico-mechanical means, above described, of employing fat lime, or common lime, in artificial stones or monolithic structures, substantially in the manner and for the purpose set forth.

99,063, antedated January 12, 1870.—PROPELLER.—Aaron Colton, Sycamore, Ill.

Claim.—1. The two-part paddles K L, in combination with the cross-trees M, ends Y, bars X, and guides I, constructed and arranged to operate as and for the purpose specified.

2. The combination of the curved cam-rods G, cams V', connecting-rods F, lever E, and post C, as and for the purpose set forth.

3. The combination of the two-part paddle K L, cross-tree M, ends Y, bars X, cam-rods G, connecting-rods F, lever E, and post C, substantially as described.

4. The spring-device $h = 2f$, arranged to lock into the notch 3, and operate the paddle K L, as and for the purpose specified.

99,064.—MORTISING-MACHINE.—John Cox, Portland, Oregon.

Claim.—1. The frame K, carrying the cutter-head H, and provided with the system of cog-wheels D E, &c., combined with the standards F, one or both of which have teeth, in the manner set forth, for the purpose of raising and lowering the cutter-head.

2. In combination with the above, the lever A, provided with the toothed comb G, the cutter-head H, provided with the toothed comb G, the bar B, and pawl C, all arranged and operating substantially as described.

99,065. — PUNCHING AND SHEARING-MACHINE.—Williams Culver, Vineland, N. J.

Claim.—The improved machine herein described, consisting of the lever B, blades b b^1, frame A, punch C, spring c, and adjustable bed-plate D, all constructed and arranged to operate substantially as described.

99,066.—HORSE HAY-RAKE.—N. W. Curtis, Johnsburg, N. Y.

Claim.—The thills A, rake B, cross-bar C, caster-wheels a, and handles, all constructed and arranged substantially as and for the purpose described.

99,067, antedated January 22, 1870.—SEWING-MACHINE.—Job A. Davis, Watertown, N. Y.

Claim.—1. The combination, with the revolving crank F, of the shuttle-carrying pitman G, and the rocking-lever H, the whole operating substantially as described.

2. The cradle K, constructed substantially as described, and pivoted and held to the shuttle-carrier, as set forth.

99,068.—COFFEE-POT ATTACHMENT.—Marinus De Graff, Chicago, Ill.

Claim.—The herein-described apparatus, consisting of the tube C, having the enlarged base A, with the perforated reservoir B and deflector d, all constructed and arranged for use in an ordinary coffee-pot, substantially as set forth.

99,069.—EXPLOSIVE AGENT CALLED "XYLOGLODINE."—Carl Dittmar, Charlottenburg, Prussia.

Claim.—1. The process of manufacture or preparation of my new and improved explosive agent, which I call xyloglodine, substantially in the manner and for the purposes set forth.

2. The new compound called xyloglodine, made by the above-mentioned process.

99,070.—MANUFACTURE OF XYLOGLODINE AND OTHER EXPLOSIVE AGENTS.—Carl Dittmar, Charlottenburg, Prussia.

Claim.—1. The application of concentric double cylinders or worms for cooling.

2. The improved construction of my stirring-apparatus by means of hollow tubes, for thoroughly mixing the materials contained in the tank A, substantially as and for the purposes described.

99,071. — MACHINE FOR DISINTEGRATING WOOD FOR PAPER-PULP. — Hezekiah Dodge, Albany, N. Y.

Claim.—1. The grinding or disintegration of wood at a taper, by the use of one or more of the adjustable grinding-edges b, set in a hollow cone, or its equivalent, a, held by the flange-ring d, in such manner as to be readily attached to machinery for revolving the grinder.

2. The combination of one or more of the adjustable grinding-edges b, of steel or other suitable material, set at a taper or angle converging with the hollow guiding-cone a, the screws c, the flange-ring d, all essentially as hereinbefore shown and described, and substantially as exhibited in drawings, and for the purpose before mentioned.

99,072.—SHOE FOR HORSES.—Hay Downie, Corstophine, and Isaac Blue Harris, Edinburgh, Scotland.

Claim.—1. The anti-concussion pad c', formed and arranged as represented, relatively to the metal part a, so that it shall be immediately adjacent to and intimately combined therewith, and shall project a little beyond the ground face of the metallic part, and take the first bearing on striking the pavement, all substantially as and for the purposes herein set forth.

2. In combination with an anti-concussion pad, c', projecting beyond the ground surface of the metallic part a, as specified, the within-described strengthened holding-flange b, applying between the metallic part a and the foot, as and for the purposes herein specified.

3. In combination, the deeply-notched sole-shield c'', holding-flange b, and anti-concussion pad c', when the latter projects beyond the ground face of the metallic part a, and the whole are arranged and adapted to serve relatively to each other, as and for the purposes herein set forth.

99,073.—CARPET-CLEANING MACHINE.—David A. Drew, Philadelphia, Pa.

Claim.—1. The arrangement of the levers b, weights c, rollers a a, i, g, e, h, and f f, endless cords d, cams n n, and beaters m m, as herein described and shown.

2. The combination and arrangement of the brush r, fan t, branch-pipes s and s', broom u u, and brushes v v, as herein described and shown.

99,074.—CLIP FOR ELLIPTIC SPRINGS.—William Evans, Pittsburg, Pa., assignor to himself and William Coleman, same place.

Claim.—A barrel-shaped clip for elliptic springs, having slots c c, in combination with pin and cap, substantially as described.

99,075.—EXTENSION-TABLE SLIDE.—Michael Fleck, Milwaukee, Wis.

Claim.—The extension and guide-bars a b, with their grooves c, in combination with the metallic guides d, when constructed in one piece, to slide in both the upper and under grooves c, substantially as and for the purpose set forth.

99,076.—NIGHT-LATCH.—Randolph S. Foster, Madison, N. J.

Claim.—1. A knob-spindle, A, provided with a disk, B, on the inner end, having projection e e thereon, and arranged within the locking-cylinder, as shown and described, and for the purpose specified.

2. The arrangement, as set forth, of the tumbler-lock, bolt, and spindle, so that the bolt may be actuated to a full or partial movement, in the manner described.

99,077. — GRAVEL-HEATER. —William A. Gay, Newark, N. J.

Claim.—1. In combination with an apparatus for heating gravel, the fire-chamber C and the combustion-chamber D, either with or without the perforation i, arranged substantially as described.

2. The flanges I, substantially as and for the purposes described.

3. The combination of the heating-plates J J, the guide-flanges I, and the discharge-apertures H, substantially for the purposes described.

99,078.—CARTRIDGE.—Edwin Gomez, New York, N. Y.

Claim.—1. The central pin c, formed with or connected to the ball a, in combination with the roll b, enclosing the explosive material between the layers of paper or other material forming such roll, substantially as set forth.

2. The detonating cap, applied substantially as specified, in combination with the roll of paper or similar material, with the intervening explosive compound, substantially as set forth.

99,079.—CARTRIDGE.—Edwin Gomez, New York, N. Y.

Claim.—1. A projectile, having a rod, b, extending to the rear, in combination with a quick-firing fuse wound around said rod b, commencing near the ball, and fitted to be ignited at the rear end, so that the said fuse moves with the ball until it is entirely burnt, as and for the purposes set forth.

2. The cylinder c, with grooves receiving the fuse, in combination with the said fuse, applied in the manner and for the purposes substantially as set forth.

3. The folded fuse e, passing into the nipple d in the manner shown, so that the fire from the detonating cap presses into the end of said fuse, as set forth.

99,080, antedated January 17, 1870.—CORK-EXTRACTOR.—Charles Gooch, Cincinnati, Ohio.

Claim.—The portable cork-extractor, composed of the following elements, to wit, the screw A B C, tubular and bifurcated standard D E E', and bent and slotted cam-lever H I i, the whole being formed and arranged as described.

99,081. — STILL FOR HYDROCARBONS AND OTHER SUBSTANCES.—John Gracie, Pittsburg, Pa.

Claim.—1. A main still or evaporator, a, in combination with one or more separate communicating-heaters, d, the latter being arranged so as to be acted on externally by the heat, and the former being protected therefrom, substantially as hereinbefore set forth.

2. The heaters d, one or more in number, each provided with a suitable aperture for drawing off its contents, and so combined with a main still as to be detachable therefrom and removable, substantially as described.

3. A communicating-pipe, e, leading from each heater d to the main still a, and projecting above the bottom of the main still, substantially as and for the purposes set forth.

99,082.— PORTABLE LUBRICATOR. — Henry Hammond, Hartford, Conn.

Claim.—In combination with an oil-cup, the cap or top D, screw-valve stem E, feeding-orifice a, cap H, having an air-hole, b, and set or index-screw G, working through the head F.

99,083.—MOULDING AND GLAZING FORMS MADE OF PLASTIC MATERIAL.— Samuel Hart, Marietta, Ohio.

Claim.—1. Imitation seeds, grains, or berries, made substantially as described, from a plastic compound, for the uses set forth.

2. The process of reducing a mass or quantity of plastic material to a continuous succession of fixed forms, substantially as described.

3. The cavities c, in a pair of dies, cylindrical or straight, and connected together by a thread-like groove, c', substantially as and for the purposes set forth.

99,084.—BOOT-STRETCHER.—John Harwood, Albany, N. Y.

Claim.—The shaft D, bevel-wheels K and I, shaft C, and wedge L, or links Z Z, and lower sections A A, in combination with sleeve J, screw F, links M, and upper section B, of a boot and shoe-stretcher, constructed and operating substantially as and for the purpose herein shown.

99,085.—BURGLAR-PROOF SAFE.—E. M. Hendrickson, Brooklyn, N. Y.

Claim.—The construction and arrangement of the perforated plates, as described, whereby the gases from explosive substances may escape, substantially as set forth.

99,086.—COMBINED BASE-KNOB AND DOOR-FASTENER. — Hamson H. Heskett and Marcus E. Ferguson, McLean county, Ill.

Claim.—1. The combination of the stationary cylinder A, sliding cylinder B, spiral spring d', spring-catch d, and pin c, all constructed substantially as and for the purposes described.

2. The combination of the stationary cylinder A, sliding cylinder B, spiral spring d', spring-catch d, pin c, and adjustable catch e, all constructed substantially as and for the purposes described.

99,087.—STEP FOR SPINDLE TO SPINNING-MACHINES.—James P. Hillard, Fall River, Mass.

Claim.—The spindle-step A^1, and oil-cup B^1, and apertures a^2 b^2, combined and constructed as herein set forth and described, for the purpose specified.

99,088.—MANUFACTURE OF COMPOSITION-ROOFS.—Clement F. Hinman, Chicago, Ill.

Claim.—1. The use of vegetable albumen in roofing or mastic compositions, containing tar, pitch, bitumen, or other similar material, substantially as and for the purposes specified.

2. The roofing-composition hereinabove first described, consisting of tar, vegetable albumen, and mineral matter, substantially as and for the purposes specified.

3. The composition hereinabove last described, as a varnish or paint, composed of linseed-oil, resin, vegetable albumen, and mineral matter, either with or without tar, substantially as specified.

99,089. — COMBINED HARVESTER AND THRESHER.—David Howell, St. Helena, assignor to himself and Charles A. Lowe, San Francisco, Cal.

Claim.—In a machine of the described construction, the axles A, bars B, driving-wheels C C', pinion D, trundle E, pinion F, trundle G, side-gear H, trundle I, pulley J, and belt K, when combined and arranged as described, for the purpose set forth.

99,090.—CARRIAGE-JACK.—Thomas W. Johnston, Richmond, Me.

Claim.—1. A "carriage-jack," so called, consisting of a tubular post, or its equivalent, carrying an upright toothed or notched bar, having two series of teeth or notches, as described, and provided with the pawl f and lever B, organized and operating as explained.

2. The combination of the bar b, pawl f, and lever B, under such an arrangement that the latter serves the threefold purpose of elevating such bar, of releasing the hold of the pawl upon it, and of serving,

in connection with such pawl, as a drag or brake upon the bar, for the purpose, essentially, as before described.

3. The construction of the bar or riser *b*, as containing two series of teeth or notches, one being for action with the pawl *f*, to prevent descent of such bar, and the other being the agency whereby the intermittent elevations of the bar are effected, in manner and to produce results before explained.

99,091.—BASE-BURNING STOVE.—John H. Keyser, New York, N. Y.

Claim.—1. The circularly-adjustable perforated ring D, applied to the upper portion of the perforated illuminating-section C, substantially as described.

2. The combination of the open section B, basket or open pot J, illuminating-section C, and fuel-magazine G, substantially as described.

3. The bulging section C, constructed with window-openings *c*, and perforations *e*, substantially as described.

99,092.—COAL-STOVE.—John H. Keyser, New York, N. Y.

Claim.—1. The bonnet E, open in front, and arranged in the top section D, substantially as described.

2. The combination of the bonnet E, with the deflecting-flange *b*, substantially as described.

99,093.—GRAIN-SEPARATOR.—Dennis Ladd, Chicago, Ill.

Claim.—1. The construction and arrangement of the guide-board N, the grated bars M, the bonnet O, and revolving screw P, as above set forth, and for the purposes above specified.

2. In combination with the above, the carrier E, with its devices for rotation, and the tilting-box T, when constructed, arranged, and operating as and for the purposes aforesaid.

99,094.—MODE OF PREPARING SEED FOR PLANTING.—Henry Lassing, New York, N. Y.

Claim.—Covering seeds with a glutinous compound, composed substantially as described, and in the manner set forth.

99,095.—BLACKING-BRUSH.—George W. Lishawa, Cincinnati, Ohio.

Claim.—1. The stud D, arm E, and spring *e*, when constructed and arranged to operate in the manner herein set forth.

2. The construction and arrangement of the dauber F, spring *h*, and arm E, as and for the purpose set forth and described.

99,096, antedated January 9, 1870.—VELOCIPEDE.—R. E. Lowe, Upper Alton, Ill.

Claim.—1. The combination and arrangement, in a velocipede, of the coiled spring G, pulley E, shaft F, levers I J, pawls *i i*, ratchet-wheels K K, belt *c*, and pulley *d*, or their equivalents, when applied and operating in the manner and for the purposes described.

2. The swinging frame M, pivoted at its forward end and supporting the guide-wheel B, when used in connection with a velocipede, substantially as and for the purpose set forth.

3. In a velocipede, the employment of the curved traveller bar N and rollers o o^1 o^2, in connection with the swinging frame M, substantially as and for the purpose described.

4. The arrangement of the lever T, in connection with the wheel B, spring S, post R, and pivoted frame M, as herein described, whereby said lever is adapted either to swing the wheel on its pivot by a lateral pressure, or by a vertical pressure to retard the motion of the wheel, substantially as described.

99,097, antedated January 12, 1870.—HYDRANT.—Jacob R. Manny, Chicago, Ill.

Claim.—The combination of the cock B, C, and D, with the pipe F, stop *d*, and adjustable stop *e*, substantially as and for the purposes specified.

99,098.—MILKING-STOOL.—Ephraim Martin and Samuel M. Chittenden, Baldwinsville, N. Y., assignors to Daniel D. Chittenden, same place.

Claim.—The spring under the lever B, in combination with the switch-clamp B C D, and the stool A F, provided with the swinging and vertically-adjustable pail-rest E, all constructed, arranged, and operating substantially as herein described.

99,099, antedated January 14, 1870.—CORD-MAKING MACHINE.—James McIntire, Hopewell Cotton-Works, Pa., assignor to W. C. Dickey.

Claim.—The curved segments *r r*, when supported upon flexible elastic standards *u u*, and provided with an adjusting-apparatus, *v v*, and arranged in connection with the disks *c c c*, substantially as and for the purposes specified.

99,100.—COAL-STOVE.—George Rodney Moore, Philadelphia, Pa.

Claim.—1. The ash-hopper *a*, or its equivalent, applied as a medium of communication from the fire-chamber to the ash-pit, substantially in the manner and for the purpose herein set forth.

2. The annular or side draught, accomplished without a grate between the ash-pit and the fire-chamber, and below the feed-door, substantially as and for the purpose herein set forth.

3. The ribbed ring *a'*, or its equivalent, in combination with the fire-chamber above, and ash-hopper below, substantially as and for the purpose herein set forth.

4. The slide *b*, in combination with the hopper and ash-pit, substantially as set forth.

99,101.—PRINTING-PRESS.—William T. Morgans, Youngsville, N. Y., assignor to himself, G. J. Coleman, and C. H. Sedgwick & Son.

Claim.—Operating the type-roller R from the platen-frame, by means of the arms X and Y, rod Z, and arms V, substantially as described.

99,102.—DITCHING-MACHINE.—G. W. Nevill, Richmond, Va.

Claim.—1. The scoop *b*, combined with the spout *b''*, and the aprons *b'''*, in the manner and for the purpose specified.

2. The scrapers *c c'*, with their elastic arms, constructed and operating substantially as described.

3. The rollers *d'*, made wider than the rim of the cutter-wheel and narrower than the ditch at the bottom, and applied to the frame B, substantially as set forth.

4. The toothed wheel A, combined with the swivelling-post *h'*, provided with the spur *h''*, the bent arm *h'''*, spring-plate *h''''*, and pin *h'''''*, as and to the end explained.

5. The wheel A, provided with the holes *f*, and combined with the swivelling-lever *k*, the latter having a pin, and the spring-plate *k'*, substantially as specified.

99,103.—SOLDERING-MACHINE.—Daniel P. Newell, Chicago, Ill., assignor to himself, Solmon Washburn, and Charles R. Otis, same place.

Claim.—1. In a soldering-machine, the combination of heated chucks with soldering-irons, substantially as and for the purpose described.

2. The slotted frame J J, hollow soldering-irons C C, spring K, and foot-lever I, when arranged as described.

3. The slotted frame D D, crimping-wheels E E, when supported by the block H', and operated by the screw H, in combination with the recessed chucks G U, as described.

4. The recessed chucks U G, lamps F, axle T, box R, spring Q, rest S, bent lever P, rod O, foot-lever N, in combination with the slotted frame J J, hollow soldering-irons C C, and crimping-wheels E, substantially as described.

99,104.—TABLE-CUTLERY.—Josiah H. Nichols and William Bower, Beaver Falls, Pa., assignors to Beaver Falls Cutlery Company, same place.

Claim.—1. In the manufacture of handled articles of table-furniture, a cast-metal shell, combined in handles of table-cutlery, with a filling, *d*, substantially as and for the purposes set forth.

2. The filling *d*, in combination with a tang, *c*, and shell *e*, substantially as described.

99,105.—METHOD OF FIXING PIGMENTS TO FIBROUS AND TEXTILE MATERIALS.—Alfred Paraf, New York, N. Y.

Claim.—The process hereinbefore described of fixing coloring-material to fibrous and textile materials, by means of albuminous material, and a salt of lime, substantially as before set forth.

99,106.—CORN-SHELLER.—William P. Patton and William A. Middleton, Harrisburg, Pa.; said Patton assigns his right to said Middleton.

Claim.—The fixed jaw B, pivoted jaw A, with teeth *a b c*, and spring *c*, when constructed and arranged as herein shown and described, for the purpose set forth.

99,107.—COOLING-APPARATUS.—Charles F. Pike, Providence, R. I.

Claim.—1. The construction of the apparatus, or machine, substantially as herein described and set forth, and for the purposes set forth and described.

2. The ice-box A, tubes or pipes B, substantially as described and set forth, and for the purposes set forth and described.

3. The ice-box A, tube or pipe B, opening C or G, and lids D, H, and E, as described and set forth, and for the purposes set forth and described.

99,108.—HARVESTER-RAKE.—William Pimlott, Springfield, Ohio.

Claim.—1. The cam-guide C, constructed to move freely upon a bearing, and provided with a stop-latch to hold it in position, so that it may be adjusted at the will of the attendant.

2. The arrangement of the cam-hub P, and long bearing O, in connection with the cam C, and a stop-latch to hold it in the desired position, substantially as set forth.

3. The arrangement of the long bearing-head O, cam-hub P, and rake-arm head D, to retain the cam in place without the aid of bolts, substantially as described.

4. The combination of the bearing-head O, stop-bracket K, cam C, and a latch-device, to lock said arm in any desired position, substantially as desired.

99,109.—DEVICE FOR BAKING BREAD.—Abram I. Quackenbush and Guilford Hawn, Fort Plain, N. Y.

Claim.—1. The combination of the clamp, or its equivalent, with a cup, B, and pan A, substantially as described.

2. The construction of the pan A, with lips *a*, adapted to receive flanges *b*, on the cups B, substantially as described.

99,110.—SAW-HANDLE.—William W. Richardson, Chicago, Ill.

Claim.—The combined socket and ferrule B B, the flange F, the loops C C, and the screw C' C', passing through the ferrule B, into the wood handle A, and the notches E and E' and G and G in the saw-blade, when constructed and used substantially as herein set forth.

99,111, antedated January 14, 1870.—BOBBIN-HOLDER.—John Salisbury, Scituate, R. I.

Claim.—The bobbin-holder, constructed as described and shown, and having the curved pointed spring-prongs D, made to penetrate the bobbin-head A, as and for the purpose set forth.

99,112.—FIELD-FENCE.—David Sattler, Mifflin, Ohio.

Claim.—The brace-panel M L B, composed of the posts M M, with dovetail-shaped notches *m m m m'*, the bars L L, with notches *l l l l*, and the brace B, with notches *e* and *f*, the several parts being arranged as described, and used in combination with a rail fence constructed as shown, substantially in the manner and for the purpose herein specified.

99,113.—SLOTTING-TOOL HOLDER.—William Seaton, Putnam, Conn.

Claim.—The improved tool-holder, consisting of stock A, constructed as shown, nuts B C, and fastening-screw E, each of said parts being arranged, and the whole operating on a planer, in the manner specified.

99,114.—ONE-WHEEL SULKY.—James A. Sinclair, Woodsfield, Ohio, assignor to himself and Charles Messerly.

Claim.—An improved one-wheel sulky, formed by the combination of the wheel A, frame B, wheels C, with or without canopy D, seat E, thills H, and spring-bow I, with each other, substantially as herein shown and described, and for the purpose set forth.

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99,115.—PADLOCK.—Friend W. Smith, Jr., Bridgeport, Conn.

Claim.—The combination of the lock-case, the notch in the case, the spring-bolt protruding into the notch, the spring-tumbler and its restraining-shoulder, in such manner that the bolt is sprung by applying the lock to the bag, all these parts being constructed to operate substantially as hereinbefore set forth.

99,116.—PADLOCK.—Friend W. Smith, Jr., Bridgeport, Conn.

Claim.—1. The combination of the pivoted bit, passing into the barrel of the key, and the eccentric pin, these parts being constructed to operate substantially as hereinbefore set forth.

2. The combination of the fixed bits, the bits pivoted eccentrically to the axis of the key, and oscillating in planes at right angles thereto, with the eccentric pin which controls the movement of the pivoted bits, substantially as set forth.

3. The combination of the eccentric pin, the pivoted oscillating bits, and the rigid tumblers, substantially as set forth.

4. The combination of the eccentric pin, the oscillating bits, spring-tumblers, and spring-bolt, substantially as set forth.

99,117.—SAFETY-STOP FOR WATCHES.—S. Curtis Smith, Boston, Mass.

Claim.—The combination, with the "going"-barrel of a watch or other time-piece, of an annular ratchet fixed to or moving in unison with said barrel, and a spring-pawl attached to the pillar-plate, and operating in connection with said ratchet, substantially as and for the purposes shown and described.

99,118.—COMBINED PLOW, PLANTER, AND CULTIVATOR.—Thomas J. Smith, Holly Springs, Miss.

Claim.—1. The cross-bars B C D, secured rigidly and arranged cornerwise, to form the bearing for the standards I, as shown and described.

2. The improved machine, consisting of the frame A B C D, wheels E, standards I, axle F, seed-box O, cross-bars C, and draught-bars B' and C', all constructed and arranged as set forth and shown.

3. The seed-box O, o^1 o^2 o^3 o^4, constructed substantially as herein shown and described, in combination with the axle F, wheels E, and frame A B C D, as and for the purpose set forth.

99,119.—VEGETABLE AND FRUIT-PARING KNIFE.—Henry Soggs, Columbus, Pa.

Claim.—The revolving bar A, in combination with the guard H, provided with the notches *n*, for adjusting the same, constructed as herein shown and described, for the purpose specified.

99,120.—HORSE HAY-FORK.—George N. Stearns, Syracuse, N. Y.

Claim.—1. The tines B B, operated by links D D, and movable sleeve C, in combination with needle E, having eye *e*, substantially as described.

2. The combination of tines B B and vertically-movable needle E, having an eye, *e*, at or near its point, for the purpose of locking the tines, substantially as set forth.

3. The needle E, operated vertically, by means of the eccentric *g*, (or its equivalent cams,) and the lever A, substantially as and for the purpose set forth.

4. The combination and arrangement of the head A, links D D, tines B B, movable sleeve C, needle E, having eye *e*, cam *g*, and lever A, substantially as described.

99,121.—HEDGE-TRIMMER.—James M. Van Nosdall and Oliver W. Van Nosdall, Newark, Ill.

Claim.—1. The pivoted frame L in a hedge-trimming machine, when suspended and operated so as to trim a hedge at different angles, substantially as described.

2. The combination of the frame L and support S, when constructed and operating to carry knives to trim a hedge, substantially as described and shown.

3. The knives P P′ made to revolve by an equal motion, one above the other, one for trimming the side and one the top of the hedge, substantially as and for the purpose specified.

4. The combination of the pivoted frame L, pivoted support S, knives P P′, shafts J and U, cog wheels R R′, with the frame A, wheels B B′, the gearing D G H I, and frame E, as and for the purpose specified.

99,122.—THREAD-TENSION DEVICE FOR SEWING-MACHINE.—J. S. Warner, Ogdensburg, N. Y.

Claim.—The combination, with the notched disk D, of the adjustable disks A and B, when all are constructed and arranged to operate as and for the purpose set forth.

99,123.—AUTOMATIC LIGHTING-ATTACHMENT FOR LAMPS AND TAPER-BURNERS.—William H. Weeks, New York, N. Y.

Claim.—1. The combination of a lever, F *f*, and spring K, with the body and tube of a taper or lamp-burner, substantially as herein shown and described and for the purpose set forth.

2. The combination of the lever F *f*, spring K, connecting-bar G, pawl-wheel H, ratchet-wheel I, and spring J, with the spur-wheel, shaft-body, and tube of a taper or lamp-burner, substantially as herein shown and described and for the purposes set forth.

99,124.—COMPOSITION FOR LINING ALE AND BEER-CASKS.—John Werner, Mannheim, Baden.

Claim.—The compound herein described, prepared in the manner set forth, as and for the purpose specified.

99,125, antedated January 16, 1870.—RAILROAD-TICKET.—John P. Whitehead, Chicago, Ill.

Claim.—A railroad-ticket printed in duplicate, and folded in such manner that the names of the same stations will come immediately over or opposite each other, in such position that in punching, as is usual, opposite the stations, it will be impossible to punch the two tickets separately while they remain attached to each other, all arranged and contrived substantially as and for the purpose specified.

99,126.—TREADLE FOR SEWING-MACHINES. Charles H. Willcox, New York, N. Y., assignor to the Willcox & Gibbs Sewing-Machine Company.

Claim.—1. Providing the upper end of the pitman with a disk or guard-plate of sufficient size to cover, during the revolution of the wheel and crank, the hub of the wheel, the pin or stud upon which it turns, and the crank-connection between the pitman and wheel, substantially as and for the purpose set forth.

2. The combination, with the pitman and crank-pin which it carries, of a hub for receiving said pin, fixed to the driving-wheel, and arranged about centrally between the two ends of the wheel-hub or bearing, substantially as and for the purposes set forth.

3. The arrangement of the joint-pin which connects the treadle and pitman, in relation to the crank-pin connecting the pitman and driving-wheel, so that a plane parallel with the driving-wheel, and passing through the middle of the one, shall pass through the middle, or thereabouts, of the other, whereby the power is applied in a direct line with the upper bearing, and so as to prevent uneven wear, and to allow the wheel to be more easily moved, as set forth.

99,127.—TOY PROPELLER.—Arthur M. Allen, New York, N. Y.

Claim.—1. The combination, with a toy propeller, of vibrating-mechanism, operated either by the propelling-power of the toy, or by other motor, connected with the toy, so as to imitate the motion ordinarily given to the guiding-wheel, by steering, substantially as described.

2. Attaching the vibrating-mechanism on either side of the centre of the frame of the guiding-wheel, for the purpose of changing the general direction of motion of the propeller from a straight line to a curved line, substantially as described.

99,128, patented in Sweden, April 20, 1867. APPARATUS FOR PULVERIZING PORCELAIN-PASTE.—Johan Robert Alsing, Newcastle-upon-Tyne, England.

Claim.—The combination and arrangement of cylinder *a′*, lined inside with porcelain *a*, sliding shutter *d*, sieve *e*, and balls *d′*, constructed and operating substantially as specified.

99,129.—PEAT-AUGER.—Aime Nicholas Napoleon Aubin, Montreal, Canada.

Claim.—In peat-shovels, the wings F F, constructed as described, and arranged, with relation to the blades A B C D, so as to contract the load, and allow the ingress of air or water to take the place of the extracted material, substantially as hereinbefore set forth.

99,130.—PEAT-MOULDING MACHINE.—Aime Nicholas Napoleon Aubin, Montreal, Canada.

Claim.—The combination of the hinged inclined plane B, the rock-shaft D, lever G, conveyer-rod L, bearing the arm l^3, hinged cross l^2, and one or more catch-blocks l^4; the throwing-off arrangement consisting in a pedal-lever, sliding catch-block, rope or chain, push-bar, and counterweight, the whole constructed and operating substantially as hereinbefore set forth.

99,131.—SAWING-MACHINE.—Louis Bach and L. C. Christlip, Tiffin, Ohio.

Claim.—1. The standard N, provided with the movable sleeve P, when used to guide and support the arm M, substantially as set forth and described.

2. The arrangement of the guides S, between which the bar R moves, standard N, sleeve P, pitman M, and arm R, with the slide Y and cord V, all substantially as and for the purposes herein set forth.

99,132.—CHEESE-PRESS.—Albert G. Bagg, Holland Patent, N. Y.

Claim.—1. The combination and arrangement of the springs *s*, weight-box D, and table P, constructed and operating substantially as herein described, and for the purpose set forth.

2. The arrangement of the weight-box D, pulleys 1, 2, 3, rope 4, wheels *h* and *i*, ratchet K, table P, and press-board *o*, constructed, arranged, and operating as herein described.

99,133.—SHEET-GAUGE FOR PRINTING-PRESS.—Henry Barth, Cincinnati, Ohio.

Claim.—1. The combination, with the guide-plate I, of the rack *k*, pinion H, screw F *f′*, and jamb-nut G, for adjusting said guide-plate, as herein represented and described.

2. In combination with the guide-plate I, adjustable by means of rack and pinion *k* H, clamp-screw F *f′*, and jamb-nut G, as described, the longitudinal slot K, and guide L, as and for the purpose set forth.

3. In combination with an adjustable bracket, E, adjusting-pinion H *h h′*, and jamb-nut G, employed and operating substantially as herein described, the set-screw F *f f′ f″*, as and for the purposes set forth.

99,131.—FOUNTAIN-PEN.—G. A. Becker, Seymour, Conn.

Claim.—1. The arrangement of the removable piston for opening a passage for the admission of atmospheric pressure to force the ink down to the pen, substantially as specified.

2. The arrangement, with the supply-passage E, of the regulating-plug or valve G, fitting the conical seat to close the passage to the mouth K, and also to prevent the escape of ink, substantially as specified.

99,135.—REVOLVING STEREOSCOPE.—Alexander Beckers, New York, N. Y.

Claim.—1. The swinging frame for the chain of photographic pictures, formed of the side-pieces *d e*, and cross-piece *f*, firmly united together, said frame being attached by the screws or pins 2, and moved by the knob *g*, as set forth.

2. The front c^3, carrying a pair of lenses, in combination with the glass *s*, lever *t*, and grooves in the stereoscope-box, substantially as set forth, so that the front and glass can be simultaneously moved in opposite directions, as specified.

3. A septum, applied between the picture and the lens, and moved automatically and simultaneously with the picture, so as to adjust said septum the proper proportionate distance, as and for the purposes set forth.

99,136.—STEREOSCOPE.—Alexander Beckers, New York, N. Y.

Claim.—1. Introducing the diaphragm between the lenses and the eye, in a stereoscope instrument, substantially as and for the purposes set forth.

2. Adjusting the width of the diaphragm that is between the lenses and the eyes of the person using the stereoscope, for the purposes set forth.

3. An adjustable diaphragm of ground glass or other translucent material, to intercept and soften the rays of light, in the manner and for the purposes set forth.

4. A diaphragm of glass or other translucent material, made with the vertical edges where the rays of light are intercepted the thickest, and combined with a stereoscope instrument, substantially as and for the purposes set forth.

99,137.—JOINERS' PLANE.—George Cyrus Beckwith, Boston, Mass.

Claim.—The stock, as composed of the two jaws A B, and their clamping and expanding dowels or screws *a a* D, substantially as set forth, in combination with a separate throat-piece, F, as explained.

Also, the combination of the arm *l* and the cammed lever L, applied to the duplex extension-screw D, and arranged with the plane-cutter E and the cap-iron H, as explained.

99,138.—SEWING-MACHINE.—Joseph Bennor, Philadelphia, Pa., assignor to himself and Abraham Rex, same place.

Claim.—In combination, the wheel D, the cam-groove *d*, for operating the needle through the needle-arm F, the crank or wrist-pin *j*, for operating the shuttle, the shuttle-driver, and its cam-plane *u*, and the pitman H, all substantially as described.

Also, in combination with the described mechanism that moves the feeding-foot forward and back, the inclined plane *u*, on the shuttle-driver, for giving said foot its rising motion, as and for the purpose described.

Also, in combination with the plate or cover K, the catch 1, the keeper 2, and projection 3, and thumb-knob 4, for holding said plate when in place and for the ready removal of the same, substantially as described.

99,139.—STONE-CHANNELLING MACHINE.—Virgil W. Blanchard, Bridport, assignor to himself and A. J. Severance, Middlebury, Vt.

Claim.—1. A stone-channelling tool, which has a continuous motion, both of rotation on its axis and of progression in the line of the channel, substantially as and for the purpose set forth.

2. The sliding bar C, provided with box R, in combination with the revolving channelling-tool M, operating as described.

3. The sliding bar C, provided with rack-bar *e*, in combination with pinion *t*, worm-spindle *n*, spur-wheel *h*, and crank *m*, all arranged to operate substantially as described.

99,140.—DASH-BOARD FOR CARRIAGES.—John Bland, Thomaston, Ga.

Claim.—Dash-boards for buggies and other vehicles, having the fronts and falls made of sheet-metal, and the front arranged to project below the end of the body, and to lap over the top, and support the wire D, and the fall hinged to the said wire, all substantially as specified.

99,141.—PROCESS FOR EXTRACTING, MANUFACTURING, AND REFINING SUGAR.—Jules Emile Boivin and Désiré Loiseau, Paris, France, assignor to Charles Frederich Chandler, New York.

Claim.—1. The saccharo-carbonate of lime, produced substantially as herein specified.

2. The application of the saccharo-carbonate of lime, herein specified, to the extracting, manufacturing, and refining of sugar, as set forth.

99,142.—RAILROAD-TIE LIFTER.—Elijah Bomar, Wartrace, Tenn., assignor to himself and William Young, same place.

Claim.—The within-described track or tie-raiser, consisting of a base for supporting the same upon the ties or upon the ground, a vertical post or standard for supporting the lifting-lever, a cross-bar, and a series of hooks for communicating the motion of the lever to the tie, the parts being all constructed and arranged substantially as and for the purpose set forth.

99,143.—DESULPHURIZING-OVEN.—John C. Brewster, New York, N. Y.

Claim.—1. The combination, with a furnace provided with a revolving table, of the mechanism for operating the revolving table, consisting of the grooved bed *d*, groove *c*, gear *c*, pinion *b*, and anti-friction-rolls *f*, substantially as described, and for the purposes specified.

2. The combination, with the revolving table, of the wipers *h*, for automatically removing the min-

eral from the furnace, substantially as described and specified.

99,144.—CASTING HOLLOW CYLINDERS.—John W. Brittin, Black Rock, Conn.

Claim.—The hollow core A, in combination with the mould within which it is placed, substantially as shown and described.

99,145.—MANUFACTURE OF INSULATORS FOR TELEGRAPH-POLES.—Homer Brooke, New York, N. Y.

Claim.—1. The process of manufacturing glass insulators, having screw-threads in their interior, by first forming them, and making the cavity or hole therein by one press C, and then transferring them, before setting and while in the mould, to or under a second press, D, that produces the screw-thread in their interior, substantially as specified.

2. The screw-press D, having its plunger fitted or provided with a form-retainer, E, and screw-tap *e*, for operation on the heated glass in the mould, after the same has been shaped or formed, externally and internally, by previous pressure, essentially as herein set forth.

99,146.—CORSET SKIRT-SUPPORTER.—J. W. Brooks, Boston, Mass.

Claim.—The combination, with a corset, of a skirt-supporter, having one or more adjustable extension-straps, *b f*, by which it may be raised or lowered, or extended or projected more or less from the person of the wearer, substantially as and for the purpose described.

Also, in combination with the stiffener of a corset skirt-supporter, the hooks and eyelets, or strap and buckle, or other similar adjustable fastening-devices, for moving and holding said stiffener further from or nearer to the person of the user or wearer, substantially as and for the purpose described.

99,147.—INK-RETAINING ATTACHMENT FOR PENS.—Albert G. Brown, Hartford, Conn.

Claim.—The concave bowl *d*, attached by means of the straight piece *e* and the spirals *e' e'*, to the cross-bar *f*, whose ends are formed into clips for embracing the edges of a pen or holder, the whole being arranged and constructed substantially as described, for the purpose set forth.

99,148.—WEIGHING-SCALE.—Dennis Buoy, Danville, Pa.

Claim.—1. A weight, *i*, constructed of spherical form, and employed in combination with a scale having a beam or lever provided with holes or cups *e''*, substantially in the manner and for the purpose set forth.

2. The combination, with the weigh-beam E, constituting a lever of the first order, of the supplementary lever D, of the third order, interposed between said beam and the dish-frame, as described, for the purpose set forth.

99,149.—DIE-PRESS.—William Burke, Brooklyn, N. Y.

Claim.—1. The combination and arrangement, substantially as shown and described, of the three V-bearings 8 8 8', to the sliding head B, and the correspondingly-arranged gibs or boxes C C C', the one of which is made adjustable, substantially as specified.

2. The sliding head B, with its three V-bearings 8 8 8', arranged as described, the solid frame A, or box-part thereto, the stationary gibs or boxes C C, and the adjustable gib or box C', all constructed and arranged, with the lever, essentially as shown and described.

99,150.—MILK-PAN.—Nelson C. Burnap, Argusville, N. Y.

Claim.—In combination with a milk-pan, the semi-cylindrical conductors *c* and upright cylinder D, when constructed to operate as described.

99,151.—CURTAIN AND MAP-FIXTURE.—James William Burns, Medway, Ohio.

Claim.—In combination with the cords *d d*, for rolling the curtain from the bottom, the cords *e e* and rings *c c*, for operating the bar *b'* from the top, as described, for the purpose set forth.

99,152.—SHUTTLE FOR LOOMS.—W. H. Burns, Grafton, assignor to Jonathan Luther, Worcester, Mass.

Claim.—The coiled lever-spring *d*, constructed as described, and arranged with the heel of the spindle, as and for the purposes herein specified.

99,153.—STEAM-GENERATING HEATER.—C. A. Buttles, Milwaukee, Wis.

Claim.—1. The steam-generator F G, constructed of two parts, one surrounding the fire-pot, and the other at the upper end of the stove, the two parts being connected together by pipes H H, substantially as specified.

2. The combination and arrangement of the lever and valve K, and the chains *c c'*, with the case of the heater, the draught-door L, and cold-air damper M, substantially as specified.

99,154.—IMPLEMENT FOR SLITTING AND JOINING RAGS FOR CARPETS.—B. F. Cady, Chittenango, N. Y.

Claim.—The tying-apparatus herein described, having frame A, screw B, handle D, blade E, with its notch G and spring and shield H, constructed and arranged to operate substantially as specified and shown.

99,155.—MORTISING-MACHINE.—Matthew E. Campfield, Newark, N. J.

Claim.—1. The ratch-wheel *e*, flexible catch *n o*, when constructed and arranged substantially in the manner and for the purposes shown.

2. The cam-lever *k*, arm *q*, and treadle *p*, when used in combination with the ratch-wheel *e*, and flexible catch *n o* in a power mortising-machine, and operated in the manner and for the purposes specified.

99,156.—HANGER FOR SHAFTING.—Wilson W. Carey, and George W. Harris, Lowell, Mass.

Claim.—1. The guide *g'*, oiling-device *q*, and projections *h h*, in combination with the ball-and-socket joint *g'* and *d*, when arranged to operate as described and set forth.

2. The adjustable stem *c*, with its socket *b*, lined with Babbitt or its equivalent soft metal, when arranged to operate in reference with the ball-and-socket joint *d* and *g'*, substantially as described and set forth.

99,157.—PLANING-MACHINE.—Wilson W. Carey and George W. Harris, Lowell, Mass.

Claim.—1. The pivoted table *a* and *b*, herein described, when constructed and operated in the manner and for the purposes specified.

2. The arrangement of the gauge or rest, herein described, with table *a* and *b*, planing-cutter *f*, as and for the purpose specified.

3. The arrangement of the swinging frame *q q*, feed-rolls *q' q'*, gears *s'* and *t*, with table *a* and *b* and spring *t t*, all being constructed and operating as herein described, and for the purpose specified.

99,158.—NEEDLE AND ARM FOR SEWING-MACHINE.—Mary P. Carpenter, San Francisco, Cal.

Claim.—The combination, with the needle-arm, provided with the clamp *l*, the opening *e*, and slot *d*, of the needle, having the passage *a*, the flattened ends *k*, and the lugs or projections *b*, the whole constructed and arranged to operate substantially as and for the purpose specified.

99,159.—AUTOMATIC BARREL-FILLER.—S. C. Catlin, Cleveland, Ohio.

Claim.—1. With the barrel-filling apparatus, the combination of the float G, lever P, adjustable rod T, and the tripping-hook L, arranged and operating substantially as and for the purposes described.

2. In combination with the lever P and float G, the balancing-weight W, substantially as and for the purpose described.

3. The orifice *k*, in the tube E', and the screw-valve *j*, in combination with a barrel-filler, whereby liquid may be discharged, for testing or other purposes, substantially as set forth.

4. The tubes E' and B', collar *n*, and hollow conical end *g*, arranged in combination with each other, and with the valve I, substantially as described, and for the purposes described.

99,160.—MACHINE FOR REMOVING THE "BLOW-OVER" ON GLASS JARS, &c.—John Chambers, Birmingham, Pa., assignor to himself and David Chambers, same place.

Claim.—1. The method of removing the "blow-over" from the articles of glass-manufacture, by presenting the mouth of each article to and pressing it against a disk which is caused to operate with an oscillating rotary motion, substantially as described.

2. A disk *g*, mounted on a shaft, and caused to operate with a regularly-wabbling or oscillating rotary motion, substantially as described.

3. Making the operative face of the disk *g* of glass, substantially as described.

99,161, antedated January 17, 1870.—TOOTH-BRUSH.—R. K. Chandler, Ruther Glen, Va.

Claim.—A tubular or hollow tooth-brush handle having a concavity, *b*, in one end, and forming a permanent or detachable part of the back of the brush, substantially as described and shown.

99,162.—CHIMNEY-COWL.—Linus N. Chapin, New Lisbon township, N. Y.

Claim.—The base-plate A, provided with the rims B and E, the ribs N, and the spindle G, in combination with the cowl H, or its equivalent, substantially as and for the purpose specified.

Also, the employment of the rims B and E upon the base-plate A, by means of which a groove or gutter is formed for the reception of the lower edge of the cowl, substantially as herein shown and described.

Also, protecting the openings F from the direct action of the wind, by means of the overlapping projections E', substantially as herein set forth.

Also, the cowl H, constructed in the peculiar form shown, in combination with the frame I, K, and L, substantially as described, and for the purpose set forth.

Also, the curved link or loop M, and the key or pin *m*, substantially as and for the purpose specified.

99,163, antedated January 12, 1867.—SHOEMAKERS' TOOL.—J. A. Clippinger, Newton, Iowa.

Claim.—1. The frame B, provided with the screw C, when used substantially as set forth.

2. The gauge-block G, when provided with the flanges *e*, *i*, and *o*, either together or separately, when used substantially as shown.

3. The adjustable gauge-block G, in combination with the forepart-iron *d*, when used substantially as specified.

4. The cap H and vise L, when constructed substantially as described, and for the purposes set forth.

5. The adjustable gauge-block G, shank-iron *e*, forepart-iron *d*, screw C, and frame B, when combined and used substantially as set forth.

99,164.—BIRD-CAGE.—G. F. J. Colburn, Newark, N. J.

Claim.—The lower section of a bird-cage, made of reticulated material, having openings *b b* therein for the feed-cups, and a door R, of the same material, as set forth.

99,165.—RAILROAD-RAIL AND BASE-PLATE.—Watts Cooke, Peterson, N. J.

Claim.—1. The construction and arrangement of an "endless railroad-rail and base-plate," and supplemental plate C, in the manner, and for the purpose herein described.

2. The combination of the base-plate B with a detachable bar or plate, so that when the rail A is applied to the same, the whole may be fastened and held firmly in position by the spikes D D, in the manner and for the purpose herein set forth.

3. The rail A, when it has formed upon it the projection or ledge *d*, when combined with the base-plate B and detachable plate C, in the manner and for the purpose herein described.

99,166.—VELOCIPEDE.—Jesse A. Crandall, Brooklyn, N. Y.

Claim.—The rod *e* and the bar H, pivoted, at their ends, to the foot-supports *d d*, and, at the middle of their length, to the extension or arm *b* of the cross-piece B, and on opposite sides thereof, said bar H having an arm, *f*, carrying a pin, *g*, which works in a slot of the rearwardly-extended arm *h* of the axle C, all operating as set forth, and for the purpose specified.

99,167.—SHEET-GAUGE FOR PRINTING-PRESSES.—George B. Cummings, Cambridge, Mass.

Claim.—The arrangement of the drop *a*, the spring *b*, and the catch *c*, with the gauge A, all being combined and operating substantially in the manner and for the purposes described.

99,168.—CHEESE-CUTTER.—G. W. Cushman, Aiken, S. C.

Claim.—The pivoted knife B operated by rack C and pinion D, in combination with the rotating platform E, curved graduated plate F, and frame A, constructed and arranged to operate as herein described for the purpose specified.

99,169.—PLATFORM-SCALE FOR HAY OR CATTLE.—Daniel H. Dewey, Canton, Ill.

Claim.—1. In combination with the double platform-levers A B, connected at their points *o o*, the scale-beams C D, the adjusting spring-rod or double hanger *f*, and the sliding poise *d*, having a pivoted graduating-index, *e*, arranged and operating substantially as described.

2. The adjustable cattle-pen, with swinging sides E E, having braces G, provided with stops *n*, in combination with sills F, substantially as described.

99,170, antedated January 12, 1870.—SODA-FOUNTAIN.—Gustavus D. Dows, Boston, assignor to himself, Calvin Dows, same place, and George S. Cushing, Lowell, Mass.

Claim.—A soda-fountain, made as a closed vessel, with trunnions, and with an inlet-pipe reaching from the top to near the base of the fountain and within it, and with a controlling-valve or cock, when such fountain is provided with a perforated diaphragm or obstructions, substantially as specified.

99,171.—WATER-PROOF FABRIC.—Thomas M. Drown, Philadelphia, Pa., assignor to W. A. Drown, same place.

Claim.—A fabric rendered water-proof by the application of spermaceti, as set forth.

99,172.—FLEXIBLE JOINTS FOR WATER-PIPES.—Michael C. Duffey, Washington, D. C.

Claim.—The joint or connection D *d d'*, constructed of elastic material, and adapted for use in the manner and for the purposes herein set forth.

99,151. — CURTAIN AND MAP-FIXTURE. — James William Burns, Medway, Ohio.

99,159. — AUTOMATIC BARREL-FILLER. — S. C. Catlin, Cleveland, Ohio.

Claim.—The lower section of a bird-cage, made of reticulated material, having openings *b b* therein

structed of

the manner and for the purposes herein set forth.

99,173. — EGG-BEATER. — Timothy Earle, Valley Falls, R. I.

Claim. — The improved egg-beater, herein described, consisting of the handle A, bevel-gear B, head-block, with pinion H, spindle D, outer band E, and inner band F, and the rotary beater G, the whole constructed and operating as described.

99,174.—BRICK-KILN.—William Ennis, Philadelphia, Pa.

Claim.—A kiln, surrounded by, and communicating, through a perforated inner wall, with an annular chamber, F, and having a central perforated flue, C, from which the products of combustion are conducted radially across the kiln to the chamber F, as described.

99,175. — RECTIFYING WHISKEY DURING DISTILLATION. — Henry Fake, Williamsburg, N. Y., assignor to himself and Charles A. Todd, New York city.

Claim.—The process herein described for producing rectified whiskey, the same consisting in treating the beer or mash by means of lime-water and charcoal, substantially as set forth.

99,176.—HARNESS-OPERATING MECHANISM FOR LOOMS.—George S. Faulkner, Indianapolis, Ind.

Claim.—1. The rocking-cams D, in combination with the shouldered shoes *c c* of the upright treadle C, all constructed and arranged substantially as and for the purpose set forth.

2. The combination of the cams D, hung in a vertical plane over the fulcra of treadles C, lifting-jacks G, longitudinal reciprocating jacks E, reciprocating bars F, with the pattern-chain or cylinder H, all arranged and operating substantially as and for the purpose set forth.

99,177. — LOOM. — George S. Faulkner, Indianapolis, Ind.

Claim.—The bifurcated lever D D′, and rod H, connecting said lever with the crank I, and the eccentric F on the shaft G, arranged to give positive motion to the pattern-cylinder or chain J, in combination with the pawl O, attached to the lever D D′, and the cord N and lever M, for giving the required motion to the cam-shaft Q, all arranged and operating substantially as and for the purpose set forth.

99,178.—KEY-HOLE GUARD AND PROTECTOR. Henry M. Flanagin, Penn's Grove, N. J., assignor to himself and Joseph R. Elkinton, same place.

Claim.—1. The bed-plate *a*, with key-hole lining *b*, and sliding protection-plate, in combination with the door lock B, substantially as described, and for the purposes set forth.

2. The wheel *c′*, with lever *f*, or its equivalent, plates *d* and *d′*, and cap *g*, in combination with sliding protection-plate *c*, substantially as described, and operating as and for the purpose set forth.

99,179. — LEVER AND STUMP-PULLER. — Joseph G. Fox, Oregon, Wis.

Claim. — 1. The combination of the lever and tackle-powers with the platform or bed-piece, in the manner above described.

2. The mode of constructing the lever proper, with the top-bar, fulcrum, and braces, in the manner described.

99,180.—PRESERVING MEAT.—Henrik Gahn, Upsala, Sweden.

Claim.—The compound for preserving meat, fish, organic substances, &c., substantially as herein described.

99,181.—HAY-LOADER.—Cyrus B. Garlinghouse, Carpentersville, Ind., assignor to himself, Samuel F. Bateman, and Byrdine Harris.

Claim.—1. The combination of the contracting teeth F F, the guides F′ F′, the bars G G G, the eccentric disk D′, the crank A A, and the lever H H, when constructed, combined, and used substantially as herein set forth.

2. The contracting teeth F, hinged to the supporting-bars G, and so arranged, in relation to the guides F′, as to gradually narrow the body of hay as it is lifted from the ground to the carrier, substantially in the manner herein set forth.

99,182.—DRIER.—Henry Garrett, Linneus, Mo.

Claim. — The combination, substantially as described, of the chambered drying-house A B *b b′ c c′ c″ c‴*, cleats *a*, removable open-bottom trays D *d*, heating-apparatus F G H I *i*, and steam pipes J K L *l*, for the object stated.

99,183. — MACHINE FOR GRINDING PEARL BUTTON-BLANKS.—John D. Hall, Philadelphia, Pa., assignor to James A. Largay, same place.

Claim. — 1. A revolving grinding or polishing-wheel, E, in combination with the recessed revolving plate G and with a revolving brush or its equivalent, whereby the contents of the recesses in the said plate may be removed therefrom, as set forth.

2. So arranging the said plate G, that it shall revolve in a plane obliquely, in respect to that in which the under side of the grinding-disk revolves as set forth.

3. The combination of the revolving plate G, the revolving brush, and the hood *n*, above the opening *k*, in the platform H.

4. The combination, with the revolving grinding-wheel, of a perforated plate, G′, revolving above a plate, M, as described.

5. The plate M, rendered adjustable in respect to the plate G′, as set forth.

99,184.—LIGHTNING-ROD AND CONDUCTOR. James W. Hankenson, Minneapolis, Minn., assignor to himself and Winslow Baker, same place.

Claim.—1. The lightning-conductor A, when composed of a series of copper stripe, made in semi-tubular form, with flange-like edges, and jointed together by slots and tongues, substantially as shown and described.

2. In combination with conductor, A, the zinc attachment C, with face curved to correspond with the shape of the conductor, and having two slots, through which the conductor is passed, and thereby secured, substantially as described.

99,185.—HARNESS-SADDLE HOOK. — Robert Hart, Dunkirk, N. Y.

Claim.—The hook C, provided with a square boss, *c*, arranged with the flanged opening *b*, of the gig-tree, and secured in place by a screw, D, substantially in the manner and for the purposes herein-before set forth.

99,186.—DRYING, PRESERVING, AND COLORING WOOD OR OTHER FIBROUS MATERIAL. Herman Haupt, Philadelphia, Pa.

Claim.—1. Drying wood and other fibrous material, or impregnating the same with preservative or coloring substances, by the process and means substantially as herein described.

2. The method of drying wood, or other vegetable substance of cellular structure, by two or more successive applications of steam or other heated vapor, followed, each, by condensation, producing a vacuum more or less perfect, substantially as set forth.

3. The combination of the herein-before-described process, of drying wood and other vegetable substances of cellular structure, with the process, herein set forth, of impregnating said substances with and by immersion in coloring or preservative matters.

4. The combination of the drying and impregnating-processes herein described, when the impregnation is effected under pressure.

99,187. — SLATE-FRAME. —William Hersee, Buffalo, N. Y.

Claim.—The metal tubes *a a′*, having their ends bent inwardly, to form a groove, *b b*, receiving the bevelled edges of the slate A, and tongues *c*, at their ends, which project into the wooden side-pieces B B′, in connection with the encircling flexible corner-straps *d d*, when the parts are constructed and combined to operate as herein described.

99,188.—PACKING-CASE FOR TOBACCO.—S. F. Hess, Rochester, N. Y.

Claim.—As an improved article of manufacture, the tobacco-package A, provided with a detachable cover, having an "ogee" edge, and a corresponding-shaped croze in the staves, the parts all being connected as shown and for the purposes set forth.

99,189.—APPARATUS FOR STEAMING YARN.—John H. Higgins, New York, N. Y.

Claim.—1. The combination of a steaming-frame or structure, made up of or carrying a series of inclined dripping-plates or trays, arranged, the one above the other, and net or open-work yarn-carrying frames, substantially as and for the purpose or purposes specified.

2. The combination, in the one apparatus, of a lower carriage-portion or wheel-base A, the main frame or frame-sections B B′, with their arms or branches *b b′*, and the inclined dripping-plates or trays C, essentially as shown and described.

3. The dripping-plates or trays C, provided with stretching or straining-screws *e*, and nuts *d* at their ends, in combination with the frame-sections B B, and intermediate carrying-rods or supports *f f*, substantially as described.

99,190.—DOUBLE WASH-BOARD.—Henry F. Hildebrand, Baltimore, Md.

Claim. — A wash-board, consisting of the side pieces A A, cross-bars B B′, and rollers D, the board being adapted for use on either side, all constructed as shown and described.

99,191.—JEWELLERS' CHUCK.—Lysander S. Hill, Grand Rapids, Mich.

Claim. — The combination of the solid-necked head-block A, annular screw-rim C, and the screw-socket attachment B, provided with the chamber for the wax, when constructed and operating substantially in the manner described.

99,192.—BATTERIES FOR ELECTROTYPING.—Peter S. Hoe, New York, N. Y.

Claim.—1. As a new and improved article of manufacture, a battery constructed of glass, substantially in the manner and for the purposes set forth and specified.

2. The combination, with a battery constructed of glass, of the case, lined with paraffine or similar material, substantially as described, and for the purposes specified.

99,193.—AIR-PUMP.—Joseph W. Hopkins, Brooklyn, N. Y., assignor to himself and William H. M. Pye, same place.

Claim.—The movable seat-plates *i* and stem-bar *r*, in combination with the disk-valves and the cylinder and piston of a pump, substantially as and for the purposes set forth.

99,194.—WAGON-BRAKE.—Charles M. Howell, Andover, N. J.

Claim.—Operating the brake-shoes A A by means of a vibrating shaft, M, having arm L thereon, rod K, evener I, connecting-rods H H, levers E, rods F, and shafts C, all constructed, arranged, and operated in the manner described.

99,195.—RAILWAY-CAR AXLE.—Frank Hudner, New York, N. Y.

Claim.—A divided car-axle, when combined with a coupling composed of the male and female parts *d* and *e*, screw-collar *f*, jam-nut *m*, annular washers *j*, and "step" *n*, when constructed and operated as and for the purposes hereinbefore shown and described.

99,196.—HOLDBACK FOR CARRIAGES.—Jameson Hunlock, Wyoming Valley, Pa.

Claim.—The spring C, tube B′, bolt D, and thill A, all arranged and constructed as herein shown and described, and for the purpose set forth.

99,197.—WINDOW-SCREEN.—Daniel N. Hurlbut, Chicago, Ill.

Claim.—1. The spring I, in combination with the cross-piece F and screen-frames A and B, when constructed and operating substantially as and for the purposes specified and shown.

2. The guide-strips C, provided with the lips or projections P, in combination with the screen-frames A and B, when constructed and operating substantially as and for the purposes set forth.

99,198. — GRAIN-DRILL AND BROADCAST-SOWER.—Joseph Ingels, Milton, Ind.

Claim. — 1. In combination with the ratcheted gear-wheel G and arm I, the former loose and the latter fast upon the shaft C, the spring-pawl H, constructed and arranged to operate in connection therewith, substantially as described.

2. In combination with the front tube-board, and the series of openings *k* through it, a series of sectional and independent scalloped scattering or spreading-spouts, K, for dropping grain broadcast, as and for the purpose described.

3. In combination with the shaft C, the sleeve or boss N, and the latch-lever M, so that the latter may be supported on the shaft, without turning with it, substantially as described.

99,199.—FRICTION-CLUTCH.—Simon Ingersoll, Brooklyn, N. Y.

Claim.—The cam B, constructed as described, in combination with the lever E and cap or plate *b*, substantially in the manner and for the purpose described.

99,200.—PAPER PAN, BOWL, BOX, AND DISH. John W. Jarboe, Green Point, N. Y.

Claim.—The manufacture of bowls, pans, boxes, dishes, and other articles of similar character, by striking, stamping, or pressing them to the desired form from paper-board or sheets of paper, substantially as specified.

99,201, antedated January 14, 1870. — METHOD OF WOOD-WORKING.—Nicholas Jenkins, New York, N. Y.

Claim.—The method herein described, of producing carved ornaments in wood, by revolving cutters, traversed within a series of patterns applied in succession within the same chase, or within similar chases, the same being constructed and arranged to operate in the manner herein set forth.

99,202, antedated January 14, 1870.—VARIETY-MOULDING MACHINE. — Nicholas Jenkins, New York, N. Y.

Claim.—1. The removable table V, and pin set therein, arranged to serve relatively to the carriage E, frame-work A, and cutting-arbor B′, and having the plain legs V^1 and the screw legs V^2, for fixing the table in an invariable position relatively to the said arbor, all as herein set forth.

2. In combination, the cutter *b*, raised and lowered as specified, the stationary surface V, and the adjustable pin W, having its cylindrical part smaller than the threaded part, adapted for joint operation, substantially as and for the purposes herein set forth.

3. The changeable threaded sockets X, in combination with the changeable pins W, adjustable vertically, as represented, and with the table V and rotating cutter, adapted to move vertically, all sub-

stantially as and for the purposes herein set forth.

99,203.—RING SPINNING-FRAME.—Barton H. Jenks, Bridesburg, Pa.

Claim.—1. A horizontally-traversing tooth, t', applied to a vertically-vibrating plate S^2, in combination with a rotating heart-cam T, constructed so as to communicate such movements to the spindles as will produce cops of the specified form, substantially as described.

2. The combination, with the heart-cam T, and a vibrating plate, S^2, which carries the tooth t', of a pawl, W, and a ratchet-wheel, r^1, the former being pivoted to the cam-shaft n, and the latter being keyed to the screw-shaft r, so that at every upward movement of said plate S^2, the tooth t' will be moved a given distance in a direction with the length of the heart-cam T, substantially as described.

3. A heart-cam constructed as set forth, and applied fast to a short rotary shaft, n, which is arranged at right angles to the length of the bars I, in combination with a tooth, t', which receives vertically-vibrating movements, substantially as and for the purposes described.

4. The horizontal transverse rock-shafts H H', carrying the lifting-arms g g', and arms p p, the latter being connected by a rod, p^1, in combination with a vertically-vibrating plate, S^2, traversing-tooth, t', and a heart-cam T, all constructed, arranged, and operating substantially as described.

5. The spur-wheel r^6 on screw-shaft r, and the spur-wheel b^4 on a hand-wheel shaft, b^5, in combination with a vibrating tooth-carrying plate, S^2, and with a heart-cam, constructed and arranged to operate substantially as described.

6. A vertically-adjustable ring-rail, J, in combination with vertically-reciprocating rails K L, and adjustable steps m, applied to the arms g', substantially as described.

7. The worm b, on the end of the spindle-driving shaft, the pinion b^1, the shaft E, and the covered oil-box E^1, all arranged substantially as and for the purpose described.

99,204.—PERFORATED CIGAR-BOX.—Ralph S. Jennings, New York, N. Y., assignor to himself and Charles F. Jones, Woodside, N. J.

Claim.—A cigar-box, constructed of perforated paper-board A, and covered with thin cedar veneer B, as and for the purposes specified.

99,205.—MILL FOR GRINDING CORN, &c.—James J. Johnston, Allegheny, Pa., assignor to himself and John Lockie, Washington, D. C.

Claim.—1. The combination of two disks, one within the other, and of different diameters, each rotating with a different speed and in opposite direction, and provided with cutting and grinding surfaces, substantially as herein described.

2. Constructing the rings 3 and 4 of the disks f and D of cast-iron, and subsequently annealing and subjecting them to a process of cementation, as herein described, and for the purpose set forth.

99,206.—CHURN.—Joseph B. Johnston, St. Matthews, Ky.

Claim.—1. The cover C C', constructed with a groove, c, in its under surface, substantially as and for the purpose set forth.

2. The combination of the cover C C' and the vessels A and B, substantially as and for the purpose set forth.

3. A churn, combining in its construction an outer vessel, A, inner vessel B, cover C C', spindle D, with dashers D^1, revolving in one direction, and a hollow shaft, E, with dashers E^1 placed upon but revolving in an opposite direction to said spindle, substantially as shown and described.

99,207.—SLEIGH.—C. P. Kimball, Portland, Me.

Claim.—1. The improved brace b, that is, when made together with the scraper a, and to support, or aid in supporting the same, as herein set forth.

2. The described combination of the brace b, having, as a part of it, the scraper a, with the two posts c and e, and with the runner d, as set forth.

99,208.—CULTIVATOR.—Joseph G. Knapp, Madison, and Samuel D. Libby, Blooming Grove, Wis.

Claim.—1. The form of the side knives, made of steel, iron, or both combined, as described, and for the purposes hereinbefore set forth.

2. The setting the knives, in the manner and for the purposes substantially as hereinbefore set forth.

3. The iron or other metallic chair, substantially as and for the use and purposes hereinbefore set forth.

4. The combination of the broad, straight knife in front, with the side knives, all made and set substantially as described, with the metallic chairs on the side-beams, as described, also, the same combination of similar knives set in beams by means of mortises, or otherwise, substantially as and for the purposes hereinbefore set forth.

99,209.—MACHINE FOR ROUNDING SHOT.—Charles Koehler, Rosiclare, Ill.

Claim.—The boxes A, provided with inlets a, when said boxes are arranged and secured in a centre sliding frame, B, clamped by rods c c', and subjected to a reciprocating motion, as set forth.

99,210.—RAILWAY-CAR WHEEL.—A. Komp, New York, N. Y.

Claim.—1. The annular disk A, either solid or in sections, provided with a curved flange, a, in combination with the tire B cast thereon, substantially as shown and described.

2. The annular disk A, either solid or in sections, provided with an internal flange, b, in combination with the hub C, cast thereon, substantially as specified.

3. The secondary disk, either solid or in sections, in combination with the disk A, either solid or in sections, and with the tire B and hub C, all constructed and connected substantially in the manner set forth.

99,211.—MAGIC LANTERN.—A. Krüss, Hamburg, Germany.

Claim.—1. The combination of the lantern X Y W V, the opaque partitions S T U, (dividing the same into two compartments—one for the lamp, and the other for the object,) the doors A F, concentration-lenses B C, and object-glass R E, all constructed and arranged as and for the purposes herein specified.

2. The combination and arrangement of the lantern X Y W V, partition S T U, lamp I K P D, removable chimney N, door F, and plate or flange L, for closing the open space M, which allows the passage of the lamp-chimney, as explained.

99,212.—CLAMP.—Jacob S. Ladow, Mechanicsville, N. Y.

Claim.—1. The improved clamping device, constructed and operating as herein described.

2. The screws H, operated simultaneously, in combination with the sliding pieces B, sliding bed-plate C, and stationary bed-plate D, substantially as and for the purpose described.

99,213.—SAD-IRON HEATER.—Elliot Lewis, Lockport, N. Y.

Claim.—1. A cover, constructed of any metal susceptible of polish, and provided with a non-conducting handle, when used as described, for the purpose of preventing the radiation of heat.

2. Part A, of the heater, provided with the non-conducting handle C, and spring-catch D, in combination with the part B, provided with the perforation E, when constructed to operate substantially as described.

99,214, antedated January 21, 1870.—DEVICE FOR DESTROYING INSECTS.—William H. Lewis, New York, assignor to Richard A. Lewis, Brooklyn, N. Y.

Claim.—The funnel d and opening c, applied to and combined with the glass chimney of a lamp, as and for the purposes set forth.

99,215.—COFFEE-CLEANER AND POLISHER.—H. C. Lockwood, Baltimore, Md.

Claim.—1. The springs o, in combination with the wings W, when constructed and arranged to operate substantially as and for the purposes specified.

2. The coffee-cleaning and polishing apparatus herein described, having cylinder A, shaft B, springs o, and wings W, when constructed and arranged to operate substantially as specified.

99,216.—NON-CORROSIVE METALLIC ROOFING.—Oliver T. May, Canastota, N. Y.

Claim.—As an article of manufacture, a non-corrosive metallic roofing, composed entirely of tin, copper, and lead, in the proportions substantially as herein set forth.

99,217.—SEED-PLANTER.—Noah Mendenhall, Greensburg, Ind.

Claim.—1. The combination and arrangement of the annular perforated rim D with projecting pins d, seed-slide C, rock-shaft C^1, levers C^2 and C^3, link C^4, and spring C^5, substantially as and for the purpose set forth.

2. The spring H, in combination with mechanism herein described, for operating the same, substantially as and for the purpose set forth.

3. The fenders N N, when arranged substantially as and for the purpose set forth.

99,218.—STONE-PLANING MACHINE.—Andrews T. Merriman, Chicago, Ill.

Claim.—1. In a stone-planing machine, the top and side-cutters, constructed and combined to cut the top and one or more edges of a stone simultaneously, substantially as described.

2. The tool-box U, having the side bars A' of the hinged front plate X, adapted to enclose the sides of the back plate W, substantially as described, for the purpose specified.

99,219.—IRONING-TABLE.—Samuel Merritt, Erie, Pa.

Claim.—1. The braces a, having slots b', and stops a', in combination with the hinged legs C C, and latch b, and table A, all constructed to operate in the manner described.

2. The combination of the hinged legs C C, cross-piece C', with the thumb-screw f and nut in table A, in the manner and for the purpose described.

3. The combination of the table A, having the construction above described for folding and holding the legs, and the support B, having metal plate d'', with the post D, having bracket d, with pintle d' attached thereto, in the manner and for the purpose described.

99,220, antedated January 14, 1870.—STEAM-ENGINE-GOVERNOR CUT-OFF.—George Milbank, Chillicothe, Mo.

Claim.—1. The cam-plate L, pivoted at E, and vibrated by the connecting-rod M and an eccentric from the shaft C, when arranged and constructed with the governor G, lever H, link K, and pin f, to operate the cut-off valve F, substantially as set forth.

2. The cut-off valve F, operated through the cam-plate L, by the eccentric on the shaft C, with the main valve B, operated through the lever d, pivoted at the same shaft E, with the cam-plate L, all arranged and constructed substantially as set forth.

3. The valve B, constructed with the passage b' and openings b, and arranged with the valve F and the seat A, the latter having the curtailed ends a', substantially as set forth.

99,221.—ROLLING-MILL.—James Montgomery, New York, N. Y.

Claim.—1. The removable hollow dies L M, inserted into and secured and made adjustable in their seats in the rolls, substantially as set forth.

2. The pulleys, belts, and steam-tighteners, arranged and employed for starting, stopping, and reversing the rolls, substantially in the manner described.

3. The hollow shaft B', provided with internal wings or flanges, to produce currents of air to assist in keeping the journals cool.

4. The fly-wheels, constructed with wooden or other elastic arms, segmental rims, and tie-rods, substantially as described.

99,222.—BOILER-STAND.—Jordan L. Mott, Mott Haven, N. Y.

Claim.—A boiler-stand, made up in sections or portions A and B, each of a hollow and tapering form, open at their widest ends, to facilitate nesting, and secured together by a screw-bolt, C, substantially as shown and described.

99,223.—POWER LOOM.—T. H. Müller, New York, N. Y.

Claim.—1. The combination, with the jacquard and guide-frame, of four, more or less, links, connected to the frame of the jacquard, by adjustable screws, and extending from bell-crank levers, which receive an oscillating motion from the driving-mechanism of the loom, so that, by the guide-frame, the jacquard is steadied during its ascent and descent, and, by the adjustable screws, the uniform tension of the upper and lower shed can be preserved, substantially as shown and described.

2. The stationary shuttle-guide, provided with upright spindles and cog-wheels, and arranged and operated as described, in combination with a reciprocating reed-carrier, substantially as specified.

3. The combination of a beam, which can be raised and lowered, and which supports the shuttle-guides, and the shafts and pinions of the shuttle-driving mechanism, with an intermediate pinion, mounted on an adjustable bracket, and serving to transmit the motion from the reciprocating racks to the shuttle-driving mechanism, substantially as described, so that the shuttle-guides and the shuttle-driving mechanism can be raised and lowered for different warps, without throwing the latter out of gear with the reciprocating racks, as set forth.

4. The combination of the reciprocating pusher, connected, by links, substantially as described, with pins projecting within the shuttle-guide boxes, and moved in one direction by springs, and in the other by the shuttle, with the bell-crank lever that acts on the belt-shipper, so as to stop the loom when the shuttle fails to fully enter the guide-box, as set forth.

5. The arrangement of a three-armed locking-lever, w x y, secured to a sliding bolt v, and held in position by a knife-edged spring-stop, b^1, in combination with the sliding racks E E', and with self-adjusting tappet-arms c^1, substantially as described.

6. The combination of the locking-spring g^1 and knife-edged stud, in the three-armed lever w x y, with the sliding bolt v and racks E E', substantially as and for the purpose set forth.

7. The brake-lever j^1, acting on the circumference of the disk h^1, and released by the forked bar l^1 and lever m^1, when arranged as described, and combined with the reciprocating racks, to counteract the momentum of the same, substantially as set forth.

8. The locking-device, consisting of movable notched cam-pieces i^1, and a stud secured in a lever, which is released by the forked bar l^1 and lever m^1, in combination with the reciprocating racks E E', and with the shuttle-driving mechanism, to regulate the stroke of said racks and of the shuttle, substantially as described.

9. The combination, with the shuttle, of a fusee and its tension-spring, substantially as and for the purpose described.

99,224. — POCKET-SAFE FOR FRICTION-MATCHES.—Junius S. Norton, Hartford, Conn.

Claim.—The device composed of the collar *c* and the spring catches *s s*, one or more in number, combined with the slotted tube *a*, substantially in the manner described, for the purpose set forth.

Also, the combination of the device composed of the collar *c* and spring-catches *s s*, one or more in number, with the slotted tube *a* and the friction-match cord *d*, substantially in the manner described, for the purposes set forth.

99,225, antedated January 20, 1870.—BASE-BURNING STOVE.—Frank Z. Obermeyer and William Halle, Milwaukee, Wis.

Claim.—1. Magazine A, fire-chamber U, pipes D and E, upper furnace I, partition L, drum K, and outlet-pipe S, substantially as described.

2. Magazine A, fire-chamber U, pipes D and E, upper furnace I, partition L, drum K, water-reservoir F, and damper P, constructed and arranged substantially as described.

99,226. — ADDING-MACHINE. — Homer Parmelee, Philadelphia, Pa., assignor to Edward D. Peck, same place.

Claim.—1. The mode of operating the interior wheel M from the exterior one B, by means of the pin A', projected through the pin-holes by the operation of the springs H and E, acting in conjunction in the manner described.

2. The combination of the circular numeral-wheel B with the interior stationary dial-plate K, one or more interior numeral-plates, M, and springs H E, which, together with pin A', operate the several plates, so as to turn in the same direction, and also add up two or more columns of figures, as described.

99,227. — POST-AUGER. — Hiram C. Partridge and James Preston, Bainbridge, N. Y.

Claim.—1. The manner of holding the plate D upon the stem A, by means of the auger-part C, and nut G screwed on the stem, one below and the other above said plate, substantially as herein set forth.

2. The combination and arrangement of the stem A, handle B, auger-part C, with flange *a*, plate D, cutter *b*, washer E, and nut G, all constructed as described, substantially as and for the purposes herein set forth.

99,228.—HAY AND COTTON-PRESS. — I. N. Patten and D. G. Marden, Memphis, Tenn.

Claim.—1. The arrangement of the boldfast-blocks E, (constructed as described,) upon the rods D, so as to clasp the shafts F' in their grooves, and retain them in any desired position, all as set forth.

2. The arrangement of eccentric pulleys G, and self-adjusting boldfast-blocks C E, as and for the purpose specified.

99,229.—PAINT OR COATING FOR ROOFS.—Dorwin Dorman Pennoyer, Colebrook, N. H., assignor to himself and Albert Harvey Brooks, same place.

Claim.—The composition, made of the ingredients, and in the manner and for the purpose substantially as hereinbefore explained.

99,230.—AUTOMATIC WAGON-BRAKE.—Samuel J. Pickerill and Francis M. Pickerill, Indianapolis, Ind.

Claim.—The combination and arrangement of long lapping brake-bars L L, with spring S, check-chains C C, and anti-friction rollers *r r*, all constructed, arranged, and operating substantially as set forth, and for the purposes described.

99,231.—APPARATUS FOR RAISING AND LOWERING WEIGHTS.—Jonathan Pickering, Stockton-on-Tees, England.

Claim.—A hoist, consisting of frame C, spindle D, and the wheels A and B, having their peripheries provided with chambers, *a*, when constructed and arranged to operate in connection with chains F and G, substantially as herein described.

99,232. — SPRING-NUT. — Daniel R. Pratt, Worcester, Mass.

Claim.—1. A spring-nut, constructed and arranged in the manner and for the purpose herein described.

2. The combination of the casing A, nut B, and the springs *x c'*, *x c''*, and *x c'''*, in the manner and for the purpose herein described.

3. The combination of a nut and outer casing with a spring or springs to form a spring-nut, in the manner and for the purpose herein described.

99,233. — ELECTRO-MAGNETIC RAILROAD-SWITCH ALARM.—Theodore A. B. Putnam, New York, N. Y.

Claim.—The spring A, bar and arm D P, and conductor H, in combination with the battery B, wire V, electro-magnet, armature, and alarm, for the purposes as herein described and set forth.

99,234.—LOW-WATER INDICATOR AND FEED-WATER REGULATOR.—Robert Berryman, Philadelphia, Pa.

Claim.—1. The vessel A, or its equivalent, in combination with flexible or jointed pipes P and P^2, of different diameters, connected to the boiler, and forming communications between the said vessel and the water-space of the boiler, the whole operating in conjunction with the weighted lever L, or its equivalent, as a medium for giving an alarm, or regulating the flow of the feed-water, substantially as set forth.

2. The said vessel, in combination with a steam-whistle, and with the within-described devices for operating the whistle.

3. The rod G, adjustable in respect to the lever R, for the purposes described.

99,235.—WASHING-MACHINE.—Thomas Rees, Judson, Minn.

Claim.—1. The rotating vessel D, mounted in the rotating frame B, with the pulleys E, F, and *g*, arranged to operate as set forth and shown.

2. A washing-machine, consisting of a suitable vessel for holding the clothes and water, so mounted and arranged as to have imparted to it the twofold or compound motion, as described and shown.

99,236. — PULVERIZING-ATTACHMENT FOR PLOWS.—Anthony A. Rhoades and Wiley Tash, Berlin, Ill.

Claim.—1. The detachable blades D, constructed and secured to the supporting-bar C, substantially in the manner herein shown and described, and for the purpose set forth.

2. The combination of the detachable blades D, adjustable supporting-bar C, and adjustable brace-bar E, with each other, said parts being constructed and connected with an ordinary plow-frame, substantially as herein shown and described, and for the purpose set forth.

99,237. — SHINGLE-MACHINE. — Charles F. Rice, Brookfield, Mass.

Claim.—1. A vertically-reciprocating carriage, F, moved up to the saw and retracted therefrom, respectively, by means of springs H H and step K, each being arranged as set forth.

2. The arrangement, upon the frame, of the hooked springs M, and the angle-iron a^2, as and for the purpose specified.

99,238.—GRAIN-DRILL FEED.—John L. Ritter, Liberty, Ind.

Claim.—1. Grooves G G in metallic feed-boxes, when arranged substantially as and for the purpose described.

2. Groove H in bottom of hopper, when arranged substantially as and for the purpose set forth.

3. Slide I operating in grooves G G H, substantially as and for the purpose set forth.

99,239.—COTTON-BALE TIE.—James Woods Rogan, Memphis, Tenn.

Claim.—The buckle A, provided with the break J, and with the tongue E, having shoulders *g*, in combination with the hoops C and C', the latter having a T-shaped slot or aperture, all arranged as set forth and shown.

99,240.—PRESERVING BUTTER.—Jacob F. Saiger, Shelby, Ohio.

Claim.—The combination of boracic acid, sulphite of soda, and saltpetre, with butter, in the proportions substantially as described, and for the purpose specified.

99,241.—MANUFACTURE OF DOOR-KNOBS, UMBRELLA-HANDLES, AND OTHER MOULDED ARTICLES.—William Sanderson and James J. De Barry, New York, N. Y.

Claim.—1. As a new manufacture, articles of various designs, formed of any suitable composition, and having metallic surfaces applied, substantially as and for the purposes set forth.

2. The employment, in connection with any composition article and a metallic, partial or entire, surface-covering, of inserted metallic soldering-surface or surfaces, substantially as and for the purposes specified.

99,242.—HANDLE FOR KNIVES, FORKS, &c. William Sanderson and James J. DeBarry, New York, N. Y.

Claim.—Forming handles of knives and other instruments, of any suitable composition, moulded over a metallic core, (adapted to receive the tang of the instrument,) and covered with a metallic jacket, all substantially as described.

Also, a handle, made substantially as described, and adapted to be manufactured and applied to various instruments.

Also, the peculiar manner of forming a perfect joint in the metallic cover, by a rib or feather raised on the soldering-strip, substantially as described.

Also, forming the handle with a depression, and combining with the bolster-plate, filling, and jacket, a binder or strengthening-band, *s*, substantially as and for the purposes set forth.

99,243.—NECK-YOKE.—Clark S. Sanford, Lena, Ill.

Claim.—The neck-yoke described, consisting of the yoke A, flanged bars B, pinion C, and ways *d*, the whole being combined and arranged as and for the purpose described.

99,244.—LIFTING-JACK.—Benjamin Schopf and Christian Schopf, Pittsburg, Ind.

Claim.—The lifting-beam A, fulcrum-standard B, operating lever C, check F, and angular cheek E, when arranged to operate as described.

99,245. — ANIMAL-TRAP. — H. Seehausen, Memphis, Tenn.

Claim.—The drop-door C, rod D, and apron E, combined with the cage A, (or its equivalent,) when the same are arranged to operate substantially as and for the purposes described.

99,246.—TABLE.—Thomas J. Shannon, Lawrenceburg, Ind.

Claim.—The combination of the table-top A, separable legs F, and fastenings D E, H J, and K L, arranged to operate substantially as herein set forth.

99,247.—SHOVEL-HANDLE.—John L. Shaw, Grand Rapids, Mich.

Claim.—A combined shovel-handle and tamping-bar, constructed by attaching to an ordinary wooden shovel-handle the metallic hand-piece or cylinder C, when constructed and operating substantially as above set forth.

99,248. — MANUFACTURE OF PARCHMENT-PAPER.—Alexander J. Sheldon, Buffalo, N. Y., assignor to Colin Campbell, same place.

Claim.—1. The process of treating paper, by passing it through a bath of pure commercial sulphuric acid, and then immediately into a water-bath, substantially as and for the purpose hereinbefore set forth.

2. The process of passing the paper through an alum-bath, preparatory to treating it with acid, substantially as hereinbefore described.

99,249.—CARRIAGE-SPRING.—Carr Sheldon, Middleburg, N. Y.

Claim.—In combination with the ordinary elliptic spring A and the additional leaves B, the leather or rubber buffers R R, substantially as shown and described.

99,250. — PROCESS OF RENDERING LARD, TALLOW, AND OTHER FATS.—Amor Smith, Baltimore, Md.

Claim. — The process of rendering fatty animal products, by subjecting them, while confined in a close tank or digester, to the action of highly-heated air, introduced from a heater, under pressure, substantially as set forth.

99,251.—PROCESS FOR TREATING FISH TO OBTAIN OILS AND FERTILIZERS.—Amor Smith, Baltimore, Md.

Claim.—The process for treating fish, in rendering their oils and preparing the scrape for use as a fertilizer, by rendering the oil in a close tank under action of highly-heated air, introduced under pressure, and subsequently pressing and grinding the scrap with or without further desiccation, substantially as set forth.

99,252.—APPARATUS FOR RENDERING FATTY ANIMAL MATTER.—Amor Smith, Baltimore, Md.

Claim.—1. The combination of the pressure-blast, heating-furnace, tank, and revolving receptacle B, in an apparatus for rendering fatty animal matter, substantially as set forth.

2. The combination of the tank A, receptacle B, and receiver D, arranged substantially as set forth.

3. The combination and arrangement of the tank A, receiver D, opening D', and valves E, substantially as set forth.

4. The combination of a pressure-blast, heating-furnace, the connecting-pipes, close tank A, and receiver D, arranged to receive the melted oleaginous matter as it flows from the tank, and so retain it as to maintain a pressure above that of the atmosphere in the tank, substantially in the manner set forth.

5. The combination of the pressure-blast, heater, tank, receiver, and trough for a stream of water, with the connecting-pipe, substantially as set forth.

99,253.—PROCESS FOR RENDERING RANCID ANIMAL FATS, AND FOR DISINFECTING THE GASES EVOLVED. — Amor Smith, Baltimore, Md.

Claim. — The process for rendering rancid fatty animal matter, and disinfecting the gaseous products, by subjecting such materials to the action of hot air, introduced under pressure, into a close tank, in which they are contained, and then conducting away such offensive vapors or gases as may be evolved, and discharging them below the surface of a stream of running water, substantially as set forth.

99,254. — APPARATUS FOR PRESERVING AND FREEZING.—Daniel E. Somes, Washington, D. C.

Claim. — 1. The reservoir A, cooling-chamber C, interior chamber C', ice-receptacle or receptacles D, and blower E, substantially as and for the purpose set forth

2. In combination with the elements of the preceding clause, the pipe F, substantially as and for the purpose set forth.

99,255.—FERTILIZER.—I. W. Speyer, Hamburg, Germany.

Claim.—1. A manuring-compound, substantially as described.

2. The within-described process for producing a manuring-compound, substantially such as specified, by treating the minerals obtained from the mines of Staasfurt, in the manner set forth.

99,256.—BINDING-ATTACHMENT FOR HARVESTERS. — Benjamin W. Squires, and Charles M. Clinton, Ithaca, N. Y., assignors to Sewell D. Thompson and David P. Goodhue, same place.

Claim.—1. The combination and arrangement of the two pairs of clasping-tines, the two foot-levers moving the tines, and the inclines for the lower ends of the tines, substantially as set forth.

2. The arrangement of the frame at the base of the clasping-tines, fast to the pivots of each pair of tines, whereby two or more pairs of tines are made to act in unison, substantially as set forth.

3. The combination of two or more pairs of tines, the grooved plate K causing the closing of the tines, the groove L in its plate or standard, guiding the rising of the tines, the tine-frame M, and lever-frames N N′, and foot-levers, substantially as described.

4. The combination and arrangement of the platform B, the tines D, and moving-appendages K M, N, L, for the purpose of an attachment to a reaper or harvesting-machine, substantially as set forth.

5. The clasping-forks or tines D, in or upon a harvester-platform, when by the described or equivalent moving-means, they both clasp and raise the bundle to be bound, for the purpose of binding grain, substantially as set forth.

99,257. — RAILWAY-CAR BRAKE. — Joseph Steger, New York, N. Y.

Claim.—1. The lever E, pivoted at one end, bearing at a point between its ends against the cord or chain C, and connected at its free end with the operating-lever G, and arranged substantially as and for the purpose described.

2. The continuous cord or chain K, in combination with the lever G and lever E, and connection C, substantially as and for the purpose described.

99,258. — CLOCK-CALENDAR. — William A. Terry, Bristol, Conn.

Claim. — 1. The combination of the pawl or dog a a^1, the trip-pin a^2, interposing lever d, and the wheels D and C, substantially as and for the purpose described.

2. The improved mechanism described, for operating a calendar-movement, consisting of the oscillating lever I, carrying with it the pawl p, which engages with the teeth of wheel D, and moves the same one tooth each day, and the pawl or hook e, which engages with the pawl a^1 on the wheel D, at the end of each month, (or end of each short month,) and thereby moves said wheel one or more teeth in addition to that moved by the pawl p, substantially as described.

3. The week-disk L, constructed with each name opposite an opening therein, in combination with the month-disk A, and the dial G, concentrically mounted, so that the indications on the disk A are shown through the openings in the disk L, substantially as described.

4. The combination and arrangement of the pawl p, wheel D, and pointer B, the whole combined and arranged so that the pointer B can be rotated in either direction, substantially as and for the purpose described.

5. The combination of a calendar-mechanism with a clock-striking mechanism, so as to be operated thereby, substantially as and for the purposes described.

99,259. — MACHINE FOR THREADING BOLTS. Nicholas Thomas, Chicago, Ill.

Claim.—1. The combination of the sleeve H, provided with the concentric rings I I′, having the outside edge of the inner ring I′ bevelled, and having the inside edge of the outer ring I bevelled slightly at the face, and then square, and having the aperture between the said rings I I′ constructed to form a series of eccentrics, with dies, having inclined hooks, constructed with a square top, as a bearing against the square part of ring I, and a plain or square bearing at the juncture of the hook to the die on the under side thereof, to rest on the edge of the ring I′, substantially as and for the purpose specified.

2. The combination of the dies, with inclined projections, rings I I′, sleeve H, collar F, pins G, and set-screw A, with the shaft E, substantially as described.

3. The dog or catch d, in combination with the spring S′, the rod N, and the adjustable arm p, constructed and operating substantially as and for the purpose specified.

99,260.—PAINT-BRUSH.—George K. Thompson, Greene, N. Y.

Claim.—The ferrule B, constructed and arranged to operate in the manner and for the purpose set forth.

99,261.—CLOCK.—Thomas Thompson, Washington, D. C., assignor to himself and John T. Vinson, same place.

Claim.—1. The arrangement of the compensating-rods B B, holding the pendulum-rod suspended between them, so that the lower end of the pendulum-rod is always at the same distance from the teeth of the escapement-wheel, substantially as described.

2. The locking and unlocking-device, consisting of the rod h, dog g, rod i, weight m, and squared portion n on shaft i, arranged to operate substantially as described.

99,262.—WATER-PROOF SHOE.—William H. Towers, Boston, Mass.

Claim.—As a new article of manufacture, a boot or shoe, whose upper is composed of a textile fabric saturated with a preparation substantially as herein described, so as to render it impervious to external moisture, but remaining pervious to air and perspiration, for the purpose and to produce results hereinbefore explained.

99,263.—WINDOW-BUTTON.—S. Curtis Trubee, Brooklyn, N. Y.

Claim.—The latch D, provided with the notch e, arranged to operate in connection with the locking-lever C, as herein shown and described.

99,264.—COOKING-STOVE.—Charles Van De Mark, Phelps, N. Y.

Claim.—The damper-rings A A, with concentric damper-flanges a a, substantially as and for the purpose herein specified.

Also, the side and rear flues H H and I, arranged substantially as and for the purposes herein set forth.

Also, the flue M, in front of, and the flue N immediately over the oven, in combination with the flues H H and I, and with the back, diving, and bottom-flues K K and L, substantially as herein specified.

Also, the construction of the damper-ring O, in combination with the boiler or heater P, as herein described.

99,265.—SMOOTHING-IRON HANDLE.—Theodore Van Tassell and Richard Starr Pollock, San Francisco, Cal.

Claim.—The removable handle, formed by the two clamps or nippers B B, and connected by the wooden pieces C C and rod D, acted on by the spiral spring E, in combination with the slotted holes, provided in the heater-block, constructed in the manner substantially as described, and for the purposes set forth.

99,266.—LIQUID-METER.—Franz Wagner, New York, N. Y., assignor to himself, John W. Crump, and William A. Lynch, same place.

Claim.—1. The arrangement of the rotating valves D D′, connected, through suitable rods b b', with two reciprocating pistons B B′, and operating in the manner and for the purpose substantially as described.

2. The rotating valves D D′, with their respective chambers r r' and s s', in combination with the passage-ways n n', m m', and v v', and communicating, through the passages p p' and w w', with the ends of the cylinders A A′, the whole being arranged substantially as and for the purpose set forth.

99,267.—ROOFING-MATERIAL.—Pelag Werni, Chicago, Ill., assignor to himself and James W. Morrison, same place.

Claim.—A roofing-material, composed of clay, horse-manure, and glue, substantially as specified.

99,268.—MACHINE FOR SHRINKING TIRE.—William Werts, Chicago, Ill.

Claim.—The combination of the treadle S, arm L, roller M, chains Q R, springs P P, cam H H′, dogs C C′, braces I, clamp B, and bed A, as set forth.

99,269.—LATHE-DOG.—J. B. West, Geneseo, N. Y.

Claim.—The combination of the toothed chuck B with the live-centre A, when so arranged as to be self-clamping by the action of a screw-thread or threads, or other equivalent means, substantially as described.

99,270.—FIRE-EXTINGUISHER.—C. G. Wheeler, Chicago, Ill.

Claim.—The combination of the two methods of crushing and upsetting, by means of the improved device, consisting of the stirrup B and the screw-rod C, constructed and arranged substantially as described, so that the acid shall be certain to be discharged, whether the screw be turned in the one or the other direction, as set forth.

99,271. — CURTAIN-HOLDER. — George W. Yount, P. P. Reister, A. L. Keeports, and William Yount, Littlestown, Pa.

Claim.—As a new article of manufacture, the within-described curtain-holder, consisting of the double-curved bows B, C, and D, connected together at their lower ends by means of a spiral coil, and made double and interlocking at or above their vertical centres, substantially as and for the purpose shown.

99,272.—SPIRAL-CURRENT WATER-WHEELS. John Zimmerman, Owatonna, Minn.

Claim.—1. A current water-wheel, having a spiral bucket, whose concavity is outward, and mainly at the greatest practicable distance from the shaft, as shown and described.

2. A bucket, attached to its shaft by winding a portion thereof spirally about the same, but leaving an open channel, a, as and for the purpose specified.

99,273.—PRINTING-TELEGRAPH.—Samuel S. Laws, New York, N. Y., assignor to the Gold and Stock Telegraph Company.

Claim.—1. The combination, with the type wheel H, in a telegraphic printing-apparatus, of mechanism substantially such as described, for imparting to said wheel a step-by-step motion, in an advance or retrograde direction, as set forth.

2. The endless inking-ribbon, passing between the type and paper, in combination with the type-wheel and printing-lever of a telegraphic printer, substantially in the manner set forth.

3. Imparting to the endless inking-ribbon of a telegraphic printing-instrument, a feed-motion, by gearing from the type-wheel shaft, substantially as described.

4. The ink-fountain F, in combination with the endless inking-ribbon, type wheel, and printing-lever, of a telegraphic printer, substantially as set forth.

5. The endless inking-ribbon, combined with a cylindrical weight, F, substantially as specified, for maintaining the proper tension on said ribbon, as specified.

6. The arm of the printing-lever, which carries the impression-roller, made in two parts, connected by a hinge-joint, and controlled by a spring and set-screw, substantially as and for the purposes described.

7. The serrated drum g^6, ratchet-wheel g^3, and pawls g g^1, in combination with the printing-lever D, and its recoil-spring, substantially as and for the purposes set forth.

8. Two magnets, arranged to act, in the manner specified, upon the impression-lever, in combination with the type-wheel, substantially as specified.

9. The unison-lever H^4, operated by an independent electric circuit, in combination with the type-wheel or indicating-device, actuated by a separate electrical circuit, substantially as and for the purposes described.

10. The arrangement of an armature, acting upon the side of the core of an electro-magnet, in addition to the armature acting on the face of said core, substantially as and for the purposes set forth.

11. The electrical circuits, for affecting an advance or retrograde movement of the type-wheel, in combination with the separate electrical circuit for effecting the printing, substantially as specified.

12. The electrical circuits, arranged and connected, substantially as specified, for effecting an advance or retrograde movement of the type-wheel, and either circuit serving to give the impression when the other circuit is closed, substantially as specified.

13. A type-wheel, containing letters, figures, and fractions, or fractional signs, to be impressed upon a strip of paper by magnetism, substantially as specified.

99,274. — APPARATUS FOR CARBURETTING AIR.—James F. Spence, Brooklyn, N. Y., and Lovias D. Towsley, Newark, N. Y.

Claim.—1. The carburetter, having a fixed interior supply-tank, B, and a fixed surrounding carburetting-chamber, C, surmounted by the gas-supply reservoir D, all arranged in the same vessel, communicating with each other, and operating in the manner and for the purpose herein described and shown.

2. The tube I J, arranged at the bottom of the supply-tank, so as to communicate directly with the bottom of the annular carburetting-chamber C, in combination with the supply-tube H, for the purpose of supplying only so much of the hydrocarbon to be vaporized, as is equal in depth to the distance between the open end of said tube H and the bottom of the tank, as herein described and shown.

3. The series of vertical tubes M, in combination with the annular carburetting-chamber C, the corrugated open cylinder N, and the gas-supply reservoir D, arranged in the manner and for the purpose herein described and shown.

4. The tube H, connected to and made adjustable within a fixed supply-tank, B, for the purpose of regulating the quantity of the hydrocarbon within the carburetting-chamber, irrespective of the supply in the tank, as herein described and shown.

5. The combination of the enclosing-case A, the interior hydrocarbon-tank B, the annular carburetting-chamber C, the gas-supply reservoir D, the equalizing-tube H, and the communicating-pipe I J, the whole constructed, arranged, and operating substantially as before described.

99,275.—BENCH-PLANE.—Louis D. Tredway, St. Louis, Mo.

Claim.—The metallic face-plate C, constructed as described, in combination with the vertical clamping-screw F, the horizontal front adjusting and bracing-screw G, and the fixed thimble H, the whole constructed and arranged as described.

99,276.—PAINT-BRUSH.—Jacob Rayls, Washington, Ill.

Claim.—1. The construction of the expanding-ring, in two parts, with its device for preventing their displacement in expanding, in combination with the cone G and screw I, substantially as and for the purposes set forth.

2. In combination with the expanding-ring E, cone G, and screw I, the arrangement of the bristles A, ring B, head C, and handle D, all as shown, and for the purposes set forth.

REISSUES.

3,804. — BREWING ALE, BEER, &c.—James McCormick, Boston, Mass.

Claim.—In the process of brewing, subjecting the wort or mash liquid to charcoal, or its equivalent, either alone or in combination with other materials, and either in combination or not with a screen or screens, substantially as and for the purpose described.

3,805. — LAMP-BURNER. — William F. Rippon and George A. Johnson, Providence, R. I.

Claim. — The combination, in a wick-tube, of a kerosene or other oil-lamp, *n*, of a spring, A, and friction-roller D, acting in conjunction with the ratchet and the wick-tube, substantially as specified.

Also, the combination of the same, when the said spring, and the part of the tube in which it acts, are corrugated, and all constructed and arranged substantially as specified.

3,806.—SKATE.—Harshaw Scott, New York, N. Y., assignee, by mesne assignments, of Stockton H. Evans and Ludwig Gentsch.

Claim. — 1. The combination of a clamp, operating directly in front of the heel, with side clamps E E, containing inwardly-projecting edges, substantially as and for the purpose set forth.

2. The clamp directly in front of the heel, capable of adjustment to the size of heel, substantially described.

3. The arrangement of a vertically-adjustable plate over the fore part of the skate, substantially as and for the purpose set forth.

3,807.—Division A.—FURNACE FOR ROASTING AND TREATING ORES.—Charles Stetefeldt, Austin, Nevada.

Claim.—The combination of a shaft, vertical, or nearly so, with a fire-place at or near the bottom, a flue leading from the upper part of the shaft, and an auxiliary fire-place for heating said flue.

3,808.—Division B.—PROCESS OF TREATING SILVER-ORES. —, Charles Stetefeldt, Austin, Nevada.

Claim.—The process of chloridizing silver-ore by dropping a mixture of pulverized ore and salt through a vertical, or nearly vertical shaft, through which the products of combustion are ascending.

3,809. — STEAM-GENERATOR. — Henri L. Stuart, New York, N. Y., assignee of John F. Boynton.

Claim.—1. The equalization of the temperature of various parts of steam-boilers, by injecting water into the steam-space of such boilers, substantially as set forth.

2. The apparatus herein shown and set forth, or its equivalent, when used for this purpose, the same operating in the manner set forth, to equalize the temperature of steam-boilers, substantially as described.

3,810.—PRINTING-TELEGRAPH. — The Gold and Stock Telegraph Company, New York, assignees of Edward A. Calahan, Brooklyn, N. Y.

Claim. — 1. A type-wheel, receiving its motion from a magnet in one main circuit, and a magnet in a second main circuit for giving the impression, in combination with means for moving the paper by the reverse movement of the armature of the magnet of the second main circuit, substantially as set forth.

2. Two or more type-wheels, moving independently and controlled by magnetism, and arranged so as to print jointly or separately upon one strip of paper in two or more lines, substantially as specified.

3. The combination of the type-wheels *k* and *l*, magnets *f* and *i*, with the magnet *e* and impression-roller *n*, or its equivalent, substantially as set forth.

4. The reverse ratchet-wheel *q*, and stop or pawl *r*, in combination with the ratchet-wheel *p* and pawl 5, for moving and holding the type or character-wheel, substantially as set forth.

5. The stop-pawl *s*, in combination with the armature-lever *n*, type-wheel *l*, ratchet-wheel *q*, and pawl *s*, for adjusting or holding the type-wheel in position while the impression is being made, substantially as specified.

3,811. — HOISTING-APPARATUS. — The Warrior Mower Company, Little Falls, N. Y., assignee of Henry Black.

Claim.—1. The combination of the carriage D, having the wheels C C arranged to travel upon the track B, and the automatic pawl I, and the automatic adjustable brake G, or their equivalent, when used as and for the purpose set forth.

2. The adjustable brake G, so constructed that it may be set to any required distance from the sheave E.

3. The combination of the parts above described, by which, at the moment the load to be hoisted reaches the proper elevation, the fall F is griped automatically by the brake to the sheave D, or other part of the carriage, and there held until the carriage, with its suspended burden, has been propelled by the horse, or other moving power, forward, its load discharged, and then returned, drawn by the weight W, to its original position, and then automatically released from the gripe and allowed to run freely over the sheave D, down, for reloading.

3,812. — PRINTING-TELEGRAPH. — Gold and Stock Telegraph Company, New York, N. Y., assignees, by mesne assignments, of Henry N. Baker.

Claim.—1. In a telegraph-printer, a magnet for producing or controlling the impressions actuated by electrical impulses, and situated in a main circuit, distinct from and independent of the electrical impulses and circuit which control the movements of the type-wheel, so that the impressions can be taken on the paper, independently of any other operation, substantially as set forth.

2. A roller, actuated by a weight or spring, for feeding the paper, in combination with a type-wheel, actuated or controlled by a magnet, in one main circuit, and the impression-mechanism, substantially as specified, actuated by a magnet in another main circuit, and liberating the mechanism that feeds the paper, substantially as set forth.

DESIGNS.

3,820. — CARRIAGE-BODY. — Abel S. Clapp, New York, N. Y.

Claim.—The design of the carriage-body as shown.

3,821.—WRENCH.—A. Kindermann, Cleveland, Ohio.

Claim. — The design for a wrench, as described and shown.

3,822.—SCABBARD.—Virgil Price, New York, N. Y.

Claim.—The design for scabbards, as shown.

3,823. — DOOR-ESCUTCHEON. — Joseph A. Ruff, Somerville, Mass., assignor to the Russell & Erwin Manufacturing Company, New Britain, Conn.

Claim.—The ornamental design for a door-escutcheon, substantially as described and shown.

3,824.–DOOR-ESCUTCHEON.–Joseph A. Ruff, Somerville, Mass., assignor to the Russell & Erwin Manufacturing Company, New Britain, Conn.

Claim.—The design for a door-escutcheon, substantially as described and illustrated by the accompanying photograph.

3,825.–DOOR-ESCUTCHEON.–Joseph A. Ruff, Somerville, Mass., assignor to the Russell & Erwin Manufacturing Company, New Britain, Conn.

Claim. — The ornamental design for a door-escutcheon, substantially as described and shown in photograph.

3,826.–DOOR-ESCUTCHEON.–Joseph A. Ruff, Somerville, Mass., assignor to the Russell & Erwin Manufacturing Company, New Britain, Conn.

Claim. — The ornamental design for a door-escutcheon, substantially as described, and shown in the accompanying photograph.

EXTENSIONS.

WILLIAM S. BOOTH, of New Britain, Conn., administrator of H. M. CLARK, deceased. Letters Patent No. 14,086, dated January 15, 1856.

"Improvement in Machines for Heading-Bolts."

Claim.—1. The arrangement herein shown and described, of the two heading-dies (N *n*,) when operating together, in such a manner that while neither die is in motion nor at rest without a like action of the other, the one, or internal heading die *n*, receives an abrupt accelerated motion towards the close of the joint advance movement of the two dies, by means of the arrangement of the dies in the general slide *o*, in combination with the lever *q*, or its equivalent, acting in concert therewith, essentially as and for the purposes set forth.

2. Giving to the gauge *f* the several intermittent movements specified, upwards, downwards, and laterally, whereby, after performing its office of gauging, it moves away to give room for the heading-dies to operate, and, afterwards, suddenly descends to detach the bolt from the clamp, and by said action, or blow, to clear itself of any adhering scale or dirt, as described.

BENJAMIN F. AVERY, of Louisville, Ky.—Letters Patent No. 14,044, dated January 8, 1856.—

"Improvement in Plows."

Claim.—The lock-joint for holding the landside to the short landside and mould-board, the same consisting mainly of A-shaped projection *g*, hook *n*, and flange *h*, and their counterparts, in the short landside.

Also, the ears or lugs *d d*, cast on the inside of the mould-board, for the purpose of fastening the mould-board handle.

MARY G. PRATT, administratrix of RANDAL PRATT, deceased, late of Marple township, Pa.—Letters Patent 40,067, dated January 8, 1856; reissue No. 1,893, dated February 28, 1865.

"Improvement in Horse Hay-Rakes."

Claim.—1. A wheeled rake with a stand-board or platform, C, two sets of treadle-levers, two foot-boards and a lifting and a pressure-bar, arranged and operating substantially in the manner and for the purpose described.

2. A wheeled rake, with a hand rail, a standboard, treadle-levers, foot-boards, and a lifting and pressure-bar, arranged and operating substantially in the manner and for the purpose described.

3. The arrangement of the pressure-bar *k* upon k^1 k^1, which are independent in their rising movements, of the treadle-levers k^2 k^2, but are dependent upon said levers, or their equivalent, in their depressing movement, substantially as and for the purposes herein set forth.

4. The arrangement, in a wheeled rake, of independently articulating teeth, a lifting-bar, a pressure-bar, and treadles, substantially in the manner and for the purposes herein described.

5. The arrangement with rake teeth which terminate on their axial-rod as described, of a pressure-bar, and a lifting-bar, such bars having separate movements imparted to them, and both acting on the teeth at points in rear of the axial-bar *b*, substantially as herein described.

6. The concentric arrangement of the lifting and pressure-bars, or either of them, in combination with the extending of the frames or levers of said bars in front of the axial-bar *b*, and with the arrangement of the bars G and *k*, in rear of the axial-bar *b*, substantially in the manner and for the purpose described.

7. A treadle-frame, with lifting-bar G, pivoted concentric with the axis of motion of the rake teeth, in the manner and for the purpose set forth.

MARY G. PRATT, administratrix of RANDAL PRATT, deceased, late of Marple township, Pa.—Letters Patent No. 40,067, dated January 8, 1856; reissue No. 1,894, dated February 28, 1865.

"Improvement in Horse Hay-Rakes."

Claim. — 1. Constructing a wheeled horse-rake, with a vibrating clearer to its teeth, so that the attendant or driver, while riding on the rake-carriage, can operate the clearer and the rake teeth, substantially in the manner and for the purpose described.

2. The arrangement and connection of a vibrating clearer, with a vibrating rake, so that converse vibrating movements can be imparted to the rake teeth, and to the clearer, at the same time and by the one actuating contrivance, while the machine is in operation, and the attendant, who vibrates the rake and clearer, is mounted upon the machine, substantially as herein described.

MARY G. PRATT, administratrix of RANDAL PRATT, deceased, late of Marple township, Pa.—Letters Patent No. 40,067, dated January 8, 1856; reissue No. 1,895, dated February 28, 1865.

"Improvement in Horse Hay-Rakes."

Claim.—The staple guides *p* to rake teeth, substantially as and for the purposes set forth.

STEPHEN J. GOLD, of West Cornwallis, Conn.—Letters Patent No. 14,158, dated January 29, 1856.

"Improvement in Apparatus for Heating Buildings by Steam."

Claim. — The automatic governing of the draft and the shutting off of the same, by the forcing of water from the boiler by pressure of steam, under the circumstances and substantially as specified, or, in other words, establishing the hydraulic seal.

Also, the automatic government of the valve *a* by the forcing of water from the boiler by pressure of steam, under the circumstances, and substantially as set forth.

CHARLES H. BROWN and CHARLES BURLEIGH, of Fitchburg, Mass. — Letters Patent No. 14,125, dated January 15, 1856; reissue No. 2,754, dated August 27, 1867.

"Improvement in Valve-Gear for Steam-Engines."

Claim. — 1. The cam-shaft S, when so arranged with reference to the main shaft K of the engine, as to revolve at a rate of speed less than that of the said main shaft of the engine, substantially as and for the purpose described.

2. The within-described arrangement of two or more cams, A, upon the shaft S, and with reference to the induction-valves, substantially as and for the purpose described.

3. The shouldered levers *d*, having adjustable fulcra *e*, in combination with a cam or cams, A, for operating the valves and varying the point of cut off, substantially as set forth.

4. Arranging the governor, with reference to the shouldered levers *d*, so that it will control the position of their fulcra *e*, and thereby regulate the velocity of the engine, substantially as described.

5. The manner of arranging the steam and exhaust-valves, with relation to the cylinder H and shaft S, substantially as and for the purpose set forth.

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PATENTS.

99,277.—Roofing-Composition. —Thomas R. Abbott, Lowell, Mass.

Claim.—The composition of petroleum, rosin or pitch, and silica, or any analogous substance, when used in its natural state, without grinding, or otherwise mechanically reducing to fineness, except by sifting, as herein described, said ingredients being combined and used substantially as and for the purpose specified.

99,278.—Mode of Attaching Horses to Vehicles. — Jacob K. Andrews, East Lampeter township, Pa.

Claim.—The combination of the lever-hooks and connecting-rods with the single-tree, either before or behind the horse, when applied to a pole or pair of shafts, substantially as described, for the purpose set forth.

99,279, antedated January 19, 1870.—Railway-Rail Chair. — Richard Anthony, Pittston, assignor to himself and Thomas Williams, Luzerne county, Pa.

Claim.—1. The tie C, having a projection formed on its lower side, so as to bear upon the shoulders and sides of the chair B, and constructed so as to be locked by the keys D, or their equivalents, substantially as set forth.

2. The tie C, keys D, chair B, and rail A, when all are combined in the manner and for the purpose described.

99,280. — Powder-Keg. — L. Austin and Joshua E. Hall, Cleveland, Ohio.

Claim. — The body A, with shoulders D D, in combination with wooden head E and auxiliary head H, in the manner as described, and for the purpose set forth.

99,281. — Boot and Shoe. — Samuel Babbitt, Brazil, Ind., assignor to himself and George W. Orr, same place.

Claim.—1. A boot or shoe, having the several uppers and series of soles, as specified, all being constructed and fitted together in the manner set forth.

2. A boot or shoe-upper, formed of two sheets of leather, and one of woollen fabric, the former being fitted with separate seams, and the latter interposed between them, in the manner described.

99,282, antedated January 20, 1870.—Sun-Shade for Horses.—Edward T. Balch, Philadelphia, Pa.

Claim.—The sun-shade A, in combination with the strap B, steady-piece C, and the pin D, substantially as and for the purpose shown and described.

99,283.—Sewing-Machine.—William Black, Hagerstown, Ind.

Claim.—The described arrangement of mechanism for operating the needle-arm, and the shuttle-carrying lever, the same consisting in the slotted link *h*, connecting the crank H to the needle-arm, and the link *f* connecting the free end of the shuttle-carrier to the lower arms of the needle-bar.

Also, in connection with the above-named arrangement, the lifting-cam *m* on the crank, and the side cam *k*, on the driving-wheel or pulley, for imparting the positive movements to the feeding-dog.

99,284.—Trunk.—Thomas Bond, East Brookfield, Mass., assignor to Daniel J. Clark, W. F. Doggett, and S. M. Burr, Columbus, Ohio.

Claim.—The combination and arrangement of the rebated bottom B *b*, rebated top C *c*, bent body-pieces A A, and bent rims A′ A′, the whole constructed and secured as herein specified, and constituting an improved manufacture of travelling-trunks.

99,285. — Gas-Meter. — Thomas Brattan, Birkenhead, England, assignor to A. H. Dixson.

Claim.—1. The fountain-casing A^1, connected to the casing A, as represented, and arranged to supply water thereto, as required, to maintain an invariable level therein, so long as the water in the fountain is above that level, and also to enclose the mechanism conveying the motion to the registering-wheels, the float and valve, and the regulating-case A^2 A^3, and its connections, all substantially as herein set forth.

2. The inner casing A^2 A^3, the duplex tube or passage D^2 D^3, the part D^2 being open to receive water, and the part D^3 being open to receive gas, as indicated at *d*, combined and arranged as represented, relatively to the fountain-casing A^1 and the main casing A of a gas-meter, for the purposes herein set forth.

3. Adjusting the tube D^2 D^3 up and down through stuffing-boxes, as represented, by means of the wire D or an equivalent connection, leading to the outside of the apparatus, substantially as herein set forth and described.

4. The lever I and float J, in combination with the valve G and connection *g*, and with a fountain-reservoir, A^1, for a gas-meter, as and for the purposes herein set forth.

99,286.—Seed-Planter.—George W. Brown, Galesburg, Ill.

Claim.—1. The foot-levers K K, made and arranged substantially as shown and described, and for the purposes set forth.

2. Uniting the shanks *x x* with the side pieces L L, by means of a joint. *d′ d′*, substantially as described and shown, and for the purposes set forth.

3. Combining the joints *d′ d′* on each end of the axle S, with the yielding joint *r r* which enables the machine to conform to an uneven surface, substantially as described, and for the purposes set forth.

4. The wheels B B, shanks *x x*, clasps *d′ d′*, and axle S, all combined, arranged, and constructed, substantially as shown and described.

5. The combination of the yielding jointed axle S, cross-bars Q Q′, and seed-boxes E E, all arranged and constructed to widen and narrow the planting of the seed-planter, substantially as shown and described.

6. Combining the door *o′*, or its equivalent, and cross-bar C′, for the purpose of disengaging the latter from the seed-plates *y y*, substantially as shown and described.

7. Attaching the marker K′ to the forward part of a seed-planting machine, substantially as described.

8. The yielding cut-off *y′*, when made and arranged to operate substantially in the manner shown and described.

99,287.—Roller-Jaw Temple for Loom.—William H. Burns, Grafton, assignor to Jonathan Luther, Worcester, Mass.

Claim.—1. A temple, having a grooved shell jaw, in combination with a roller, or rollers, mounted on their arbors to move laterally, and when grooved and toothed, all as and for the purposes described.

2. The swing-stand, in combination with temples for looms, when constructed as and for the purposes herein described.

99,288.—Fence-Post.—M. K. Butterfield, Eddyville, N. Y.

Claim.—The flanch *a* and point *c*, as an improvement upon my fence-post patented September 21, 1869.

99,289.—Lamp-Extinguisher.—S. C. Catlin, Cleveland, Ohio, and A. Corbin, Ellenville, N. Y.

Claim.—In combination with a wick-tube of a lamp, the sleeve *c*, with the circular top *d*, and the extinguisher and self-trimmer *e*, constructed, arranged, and operating substantially as and for the purposes herein shown and described.

99,290.—Envelope-Machine. — Henry W. Chamberlin, New York, N. Y.

Claim.—1. The mechanism herein described, the chief elements of which are the roller B, brush A, rack G, rods D and E, and cam-levers C, for depositing the gum on the seal-tab of the envelope, substantially as set forth.

2. The combination of the coil O, pipe Q, pump R, tubes X and A′, and the cross-head B′, by which air, artificially heated, and either with or without driers combined with the gum, is forced, in a constant blast or current, on and beneath the gummed surface, while the tab is contained in its air or drying-chamber, and during its passage to the plunger, substantially as described.

3. The adjustable plunger, constructed substantially as described, for the purposes specified, viz, for folding paper thicker or thinner.

4. The mechanism, viz, bent levers *d d*, operated by spring *f*, by which the apertures in the foundation are closed while the envelope is in process of formation, substantially as and for the purpose specified.

5. The pusher *m n*, for discharging the envelopes, constructed and operating with the parts connected therewith, consisting of the jaws *s s*, rod *p′*, springs *u* and *x*, cross-tie *t*, and discharge-lever *r*, and bar *q*, substantially as described.

6. The double eccentric-pin, in combination with an envelope-machine, substantially as and for the purposes set forth.

7. The combination of the hinged shield M with roller B, operating as set forth.

8. The stop-lever S′, by which gum-brush and picker are held above the action of the cams while the envelope-blanks are being placed in the machine.

9. The apron J′, when arranged on pivots, and retained in place by the counter-spring *o*, so as to operate as and for the purpose set forth.

99,291, antedated January 20, 1870.—Apparatus for Extinguishing Fires.—Isaac H. Clark, Boston, Mass.

Claim.—Regulating the passage of liquid or material from the upper to the lower chamber by means of the gate *i*, or its equivalent, substantially as set forth and explained.

99,292.—Horse Hay-Fork.—Simeon Clark, Howard, N. Y.

Claim.—The arrangement of lever E, hook *d*, and arm *b*, to fasten the vibrating frame D of the hay-fork, in the manner described, and for the purpose specified.

99,293. — Animal-Trap. — W. J. Clarkson, Gourdin's Depot, North-Eastern Railroad, S. C.

Claim.—The trapping-appliance, composed of the wheel B, shield D, spring E, spring-shaft F *f′*, pawl and ratchet G H, and locking and tripping-devices J K *k* L a^1 *d′*, mounted in a platform, A, detachable and removable from the receptacle C, and constructed and arranged as represented and described, for the purpose set forth.

99,294. — Fertilizer. — John Commins, Charleston, S. C.

Claim.—A fertilizer-compound, of the ingredients, mixed together, in the proportions substantially as described.

99,295, antedated August 1, 1869.—Baling-Press.—Peter K. Dederick, Greenbush, N. Y.

Claim.—The levers L L, connected at their upper ends between the timbers J J of the follower F, when said levers are applied to the follower at separate points on opposite sides of the centre, substantially for the purpose as set forth.

99,296.—Baling-Press.—Peter K. Dederick, Albany, N. Y.

Claim.—The levers H H, with their lower ends widened or extended downward between the track-rails, or provided with the arms R, with the power applied below the face of the track or tread of the lever-rollers, substantially as set forth.

99,297.—Baling-Press.—Peter K. Dederick, Albany, N. Y.

Claim.—1. The guides or slots L, in connection with the levers K, rods M, and follower or beater N, substantially as set forth.

2. The combination of the levers K, rods M, and rests W, to support the rods when removed from the follower, substantially as described.

3. The ropes Z Z′, sliding block *d*, and wreathed rope Y, arranged substantially as described and for the purposes set forth.

4. The sheaves or wheels Q and R, in combination with the capstan C, rope S, hoisting-rope T, and follower or beater N, substantially for the purpose set forth.

5. The trip-block P, in connection with the beater N and rope T, substantially as specified.

99,298.—Chain or Band.—John H. Doerr, Philadelphia, Pa.

Claim. — The construction of springs, chains, or endless bands of a number of detachable sections or links, each provided with the peculiarly-formed head or hook *a*, and the slot or eye *e*, contiguous to said head, in the manner and for the purposes substantially as set forth.

99,299. — Mould for Making Combined Ingots of Steel and Iron. — Patrick Doyle, Newark, N. J.

Claim. — The combination, with the plain-sided mould *a b c*, whether having one or more of the sides *b* detachably connected or not, of one or more plates, *f*, arranged for operation substantially as specified.

99,300.—Electro-Magnetic Machine.—A. E. Dupas, New Orleans, La.

Claim.—1. The multipolar electro-magnet C C′ C″, when constructed and applied as described, in connection with the double-vibrating frame E, for the purpose set forth.

2. The double-vibrating frame E, in combination with the rectangular partially-hollow armatures D D′, for the purpose set forth.

3. The mode herein described of making magnetising-coils, for the purpose set forth.

4. The engine herein described, as a whole, for the purpose set forth.

99,301.—Meat and Vegetable-Chopper. S. F. Emerson, Seville, Ohio.

Claim.—1. The combination of the knife-beam M, provided with slot N, and vibrated around suitable journals at one end, knife-standard J J, and the eccentric O, arranged on shaft P, and working in slot N, the several parts being constructed and arranged to operate as and for the purpose specified.

2. The knife-standard J J, secured on vibrating-beam M by pivot-pin *f*, and provided with arm I, having a collar, *i*, to slide on guide-rod H, when said guide-rod is placed outside of the hopper C E, and the bearings of the pivot pin *f* in said standard, and the hole in the collar *i*, are triangularly arranged in the plane of said standard, as and for the purpose specified.

3. The combination of the knife-beam M, knife-standard J, and pivoted guide-rod U, said guide-rod being arranged parallel to the knife-beam, and having the distance between its pivots equal to the distance between the pivot-line of the knife-standard, and the axis of vibration of the knife-beam, as is hereinbefore specified.

4. The combination of the forked arm Q, on the knife-beam M, pivoted lever R, drag-rod W, and hopper C E, with ratchet-rim D, the several parts being arranged as is herein specified.

5. The knife-standard J K J *a*, consisting of the bed-plate *a*, side-pieces J J, and handle K, uniting the side-pieces J J above the pivot-pin holes in s id side-pieces, as and for the purpose specified.

99,302.—Printers' Chair.—Amasa J. Finch, New York, N. Y., assignor to Margaret A. C. Finch, Shellsburg, Wis.

Claim.—The printers' chair above described, so constructed that the sitter may turn and reach in all directions, consisting of spring I, hinge G, stops H, board E, screw D, seat F, support A C, and springs B, all arranged as set forth.

99,303.—Machine for Bending Stirrups. Dempsey Forest, Mottomosa, Texas.

Claim.—The improved method of forming stirrups, by means of the clamping-jaws, recessed, as described, and the forming-lever F, all substantially as specified.

99,304.—Thatch Roof.—Lionel Foster, Burlington, Iowa.

Claim.—1. A thatched roof, in which the several layers or courses of straw are secured to the slats by means of a stretched wire or cord, C, and by separate loops, E E, substantially as herein shown and described.

2. A thatched roof, in which the several layers or courses of straw are secured to the slats by means of the wire or cord C, fastened at the ends and at intervals along the courses, substantially as herein shown and described.

3. A water and fire-proof thatched roof, when coated to make it so, substantially as herein shown and described.

99,305.—Joist-Protector.—H. Galmann and Charles Ruhe, Buchanan, Pa.

Claim.—The joist-protector above described, with or without partitions C C.

99,306.—Coloring Marble.—Smith Gardner, New York, N. Y., assignor to the International Marble-Coloring Company, New York.

Claim.—Coloring marble, or other substances, through the entire mass, by infiltration and molecular attraction, as herein described.

99,307.—Apparatus for Raising Water.—J. L. Garlington, Snapping Shoals, Ga.

Claim.—The adjustable case M, in combination with the frame, and with the weight E and bucket A, as and for the purpose specified.

99,308, antedated December 1, 1869.—Straw-Cutter.—George S. Garth, Mill Hall, Pa.

Claim.—The combination, with the plate C and lever F, of the bracket B and parallel projection D, when the latter is provided with the circular stud K and curved projection L, and the lever E is provided with the socketed and grooved disk F, and both the disk and projection arranged for clamping together by the bolt A, substantially as specified.

99,309.—Punch and Die for Punching Tubes.—John Gibbs, Brooklyn, E. D., N. Y., assignor to himself and Calvin H. Carter, Waterbury, Conn.

Claim.—In combination with the die A, partition B, and mandrel C, the punch F, all arranged and operating substantially as herein shown and described, and for the purpose set forth.

99,310.—Threshing-Machine.—E. W. Griffin, Pepperell, assignor to himself and F. S. Brown, Cambridge, Mass.

Claim.—1. The serrated beater *b*, constructed and arranged upon the hub and axle *d'*, in combination with the frame A, the crank *d*, and the disks *a a*, all substantially operating in the manner and for the purpose set forth.

2. The construction and arrangement of the toothed plate or disk *a*, with its spring-device and attachment to the frame A, and in combination with the said frame and the beaters *b b*, &c., all operating substantially in the manner and for the purpose described.

3. The corrugated feed-box *c*, in combination with the parts of the machine, viz, the frame A, the beaters *b b*, &c., and the disks *a a*, operating for the purpose specified.

99,311, antedated January 29, 1870.—Stump-Extractor.—Albert Gummer, Omro, Wis.

Claim.—1. The secondary frame G, with the rollers C and F, the pulleys H, H, and V, in connection with the pulleys B, B, and I, and the cord D D and 3 3, when used in the manner described and set forth.

2. The lever 7, with the tackle-pulley 6 and ropes 4 and 5, when used in the manner and for the purpose set forth.

3. The pieces N N, with the roller L, the wheel P, and cord or rope 8, when used as set forth.

4. The stay-pieces 2 2, as and for the purpose set forth.

99,312.—Churn.—Floyd Hamblin, Madrid Springs, N. Y.

Claim.—1. The arrangement of the scoop or cup-shaped paddles, in two or more spiral lines, around the shaft, alternately opposed to each other in the direction of the pitch, substantially as specified.

2. The combination, with the shaft and paddles, of the parallel bars D, substantially as specified.

99,313.—Water-Elevator.—W. G. Hamilton, Milton, Wis.

Claim.—The combination, with the buckets A B, arranged for emptying as described, of a tilting-spout, arranged to be restored to the discharging-position after the buckets have passed, by gravitation, and provided with a stop, G, all substantially as specified.

99,314.—Street-Lamp.—J. F. Harly, Kipton Station, Ohio.

Claim.—1. A lantern, constructed of two concavo-convex sections, A B, in the manner substantially as described, and for the purpose set forth.

2. A lantern, constructed of the sections A B, provided with a cap, I, sleeve A', arms K, and collar L, and arranged in connection with the post J, so as to revolve thereon in the manner as described, and for the purpose set forth.

99,315.—Lock-Nut.—Garet G. Heermance, Claverack, N. Y.

Claim.—1. The combination of the pointed locking-screw C and the nut A, substantially as and for the purpose herein set forth.

2. The combination of the nut A with the movable and pointed piece D and the locking-screw C, substantially as and for the purpose herein set forth.

99,316.—Culinary Steamer.—John H. Heritage, Wilmington, Del.

Claim.—1. The combination of the colanders D, the pan F, auxiliary heater *a'*, and box A, as herein described, and for the purpose specified.

2. The stands C, longitudinal steam-pipe B, supply-pipe M, escape-pipe L, waste-pipe K, and catch *f*, constructed, arranged, and operating substantially as herein shown and described, and for the purpose set forth.

99,317.—Bit-Stock.—Royall S. Hildreth, South Adams, Mass.

Claim.—The sleeve J, spring K, and the jaws F, when the same are constructed, arranged, and operated in combination with a bit-stock, substantially as and for the purposes herein shown and described.

99,318.—Railway-Car Replacer.—Horace H. Holmes, Elmira, N. Y., assignor to himself, J. D. Dale, Ira S. Beers, and J. H. Dale.

Claim.—1. A portable switch or car-replacer, composed of a wooden wedge, A, covered on both sides with sheet-metal, and provided with the pivoted rail B and swivel D, attached thereto, all constructed and arranged to operate as and for the purpose set forth.

2. In combination with the above, the wedge A', constructed and arranged as and for the purpose set forth.

99,319.—Horse Hay-Rake.—Charles Howard, West Hurley, N. Y.

Claim.—The combination and arrangement of the handle D, lever P, bell-crank L, and cross-bar *u*, standards T, rake-head A, and brace R, as herein described and shown.

99,320.—Elastic Lanyard.—J. E. Jones, Waretown, N. J.

Claim.—A lanyard, formed by combining a spring made of short blocks, C, placed between flanged plates B D, to obviate the central bulge, a threaded rod, A, and nut F, to take up the slack, and the sliding cross-bar G, and rods E, to prevent the twisting off of the nut, all constructed and arranged, with respect to each other, in the manner described.

99,321.—Electric Clock.—Samuel A. Kennedy, Attleborough, Pa., assignor to the Kennedy Electric-Clock Company, New York city.

Claim.—1. The method of vibrating a pendulum, having a magnet attached thereto, by the repulsion of a single electric coil, always having the same polarity as the end of the magnet opposite thereto, and whose connection with the battery is intermittently broken.

2. For the use and purposes of an electric clock, the employment of a clock-train, consisting of a single wheel, M, driven directly by the pinion of the ratchet, which is in turn driven by the pendulum-lever.

3. Regulating the angle and extent of catch of the driving-pawl of a clock, by means of the rock-shaft P' and screw P, arranged and operated in the manner described.

4. The combination of the set-screw W, slide U', and its parts, and the spring T at the top of the pendulum, to adjust the length of the latter, substantially as herein shown and described.

5. Rendering the resistance of the lever S to the pendulum uniform, by always arresting the gravitating movement of said lever at a fixed point, in the manner described.

6. Also, the manner of adjusting the position of the electric coil F, by having a slotted bar, Y, with set-screw extending through it into the board or tablet A, substantially as shown.

99,322, antedated October 21, 1869.—Blowing-Apparatus for Organs, &c.—Michael James Kerigan, Boston, Mass.

Claim.—The combination of the curved radial arm *b*, the arm *c*, the connection-strap *g*, and the arc *a*, the whole being for application to the bellows and pedal, in manner as described.

Also, the arrangement described, of the curved radial arm *b*, the connection-strap *g*, the arc *a*, and the arm *c*, with the bellows and pedal.

Also, the combination and arrangement of the stop-hook *d* and the projection *e* with the arms *c* and *b*, the bellows, the strip *g*, the arc *a*, and the pedal D.

99,323.—Machine for Moving Boats on Canals.—William R. King, Washington, D. C.

Claim.—1. The combination of the axle D E, knee-joint E G F, wheels E and F, and brace G H, by means of which the resistance of the boat is made to compress the wheels against the rail A B, and thus secure the tractile force required to propel the boat, substantially as and for the purposes set forth.

2. The combination of the knee-joint E G F, wheels E and F, rail A B, and brace G A, substantially as and for the purposes set forth.

3. The flexible and extensible connection of the axle with the boat, by means of the universal joint K and the telescopic joint J, substantially as and for the purposes set forth.

99,324.—Composition for the Manufacture of Water, Gas, and Drain-Pipes. William P. Kirkland, San Francisco, Cal.

Claim.—1. Treating glutinous oils with acids to produce a gum, substantially as described, and for the purpose set forth.

2. The use of the said oleaginous gum, when so produced, and combined with asphaltum, pitch, or rosin, as and for the purpose specified.

99,325.—Sash-Holder.—David R. Kline, Allentown, Pa.

Claim.—The lever A, with its cam or eccentric B, and slot *c*, in combination with the pin *d*, the opening D of the sash, with its double inclines or bevels, and the mortise *g*, in the case or frame of the window, substantially as shown and described.

99,326.—Computing-Arrangement for Weighing-Scales.—H. D. Lathrop and Albert Gay, Bedford, Ohio.

Claim.—The revolving apron D, provided with a scale of cost, G, and scale of price, H, as arranged in relation to each other, to operate in combination with the scale-beam B, in the manner substantially as and for the purpose set forth.

99,327.—Blind-Slat Machine.—François Leclère, Watertown, N. Y., assignor to Moses Eames, same place.

Claim.—1. The yielding feeding-heads b^2 b^2, in combination with a device for pricking slats, substantially as described.

2. The converging spring-guides B^1 B^1, for guiding the slats properly to their work, substantially as described.

3. Supporting the slats, during the operation of tubular tenoning-saws upon them, by means of slat-holders *c c*, applied to intermittent rotating wheels E E, substantially as described.

4. The adjustable stop-gauges g^2, applied to the slat-holders *c*, substantially as described.

5. The spurred wheels E E, adapting for receiving and holding slats, and presenting them to tenoning, shouldering, and discharging-devices, substantially as described.

6. The cams or tripping-wedges A^4, and dogs A^5, in combination with rotary slat-holders *c*, applied and operating substantially as described.

7. The combination of shouldering-saws I, with devices applied to wheels E, for holding and rotating the slats, when presented to said saws, substantially as described.

8. The stops *i i*, in combination with wheels E, carrying slat-holding devices, substantially as and for the purposes described.

9. Communicating an intermittent rotary motion to wheels E, carrying slat-holding devices, by means of the segment spur-wheels F, which also rotate the said slat-holders, substantially as described.

99,328.—STALK-CUTTER.—Joel Lee, Galesburg, Ill.

Claim.—1. Suspending the cutters W, by oscillating arms Z, inside of the roller, substantially as described, and for the purpose set forth.

2. The combination and arrangement of the cams D and R with the cutters W, having either a smooth or a sickle-edge, substantially as described, and for the purpose set forth.

3. The combination and arrangement of the wheels P, having slotted arms *p*, with the arms Z and cutter W, substantially as described, and for the purpose set forth.

4. The arrangement of the pin *i*, and removable cam D, for throwing the cutter out of gear, substantially as described, and for the purpose set forth.

5. The scraper V, combined and operating with the roller B, cutter W, and arms Z, substantially as described, and for the purpose set forth.

99,329. — ROLLING-MILL FOR ROLLING GROOVED METAL ARCHES.—W. S. Levake, Cleveland, Ohio.

Claim.—The combination and arrangement of the tapering rollers C C, guides O O', circular bed E, with the small rollers A A, the set-screw *b*, adjusting-screws *d d'*, and graduated plates *i i*, the whole being constructed, arranged, and operating as and for the purpose set forth.

99,330.—BOLT FOR DOORS.—Jacob Levy, New York, N. Y.

Claim.—The bolt D, spring H, rod O, pin P, cord L, pins K and J, and spring I, all combined and operated substantially as and for the purpose herein stated.

99,331.—HORSE HAY-RAKE.—William H. Long, Eddyville, Iowa.

Claim.—1. Adjustable runners *b*, applied to the tines of a turning-rake, substantially as described.

2. The laterally-movable catches h h, applied to handle E, constructed with bevelled lugs *h' h'*, and arranged beneath the laterally-movable catches *g g*, substantially as described.

3. The angle-levers *f*, rods *e*, pivoted cross-handle F, catches *g g*, and spring *s*, applied to the rake-handle E, and arranged to operate substantially as described.

4. The laterally-movable catches *g g h h*, springs P *s*, angle-levers *f*, rods *e*, cross-handle F, and a slotted handle, E, arranged, constructed, and operating substantially as described.

99,332.—COMPOSITION FOR PAINT.—Robert Love, New York, N. Y.

Claim.—The manufacture of the herein-described compound, which I denominate "Love's Excelsior Paint," substantially as described.

Also, the compound herein specified for the purposes set forth.

99,333.—VALVE AND PISTON-PACKING.—Joseph Marks, Boston, Mass.

Claim.—The construction herein shown, of a piston-packing for main valve, cut-off, or throttle-valves, or pistons of steam-engine, the same consisting of the three series of sectional or segmental plates *p*, *r*, and *s*, and the inner spring *t*, or its equivalent, the plate being provided with the radial tongues for preventing escape of steam, and the whole being arranged and operating as herein shown and explained.

99,334. — TAG-ATTACHMENT. — Thomas P. Marston, New York, N. Y., assignor to himself and N. M. Phillips, same place.

Claim.—In combination with a tag, the peculiarly formed hole E *e* in the attaching-plate D, adapted to receive a loop, C *c*, and to aid in confining the same by turning the one relatively to the other, so that the loop shall rest in the short branches *e e* of the hole, as herein set forth.

2. The loop C *c*, in combination with the folded or bent piece D, and matching into and confined therein in the manner shown, and adapted to serve as a tag-attachment, as herein set forth.

3. The entire combination and arrangement of all the parts shown, to wit, the folded clasp or plate D, with hooks d^1 d^2 formed thereon, in the manner shown, the loop C *c* matching as represented in the hole E *e* in the clasp, and the tag A *a*, connected and adapted to apply on the edge of a piece of cloth or analogous material, as herein set forth.

99,335. — PENCIL-SHARPENER. — Jacob McClure, Nashua, N. H., assignor to C. D. Copp and E. J. Copp, same place.

Claim.—1. Making the interior of the cone of a pencil-sharpener of an angular form, substantially as and for the purposes described.

2. In combination with a pencil-sharpener, the guide projections or shoulders *e e*, substantially as and for the purposes set forth.

99,336, antedated January 15, 1870.—PAPER-FOLDING MACHINE.—William Mendham, Philadelphia, Pa.

Claim.—1. The shield E, arranged and operating as and for the purpose described.

2. The curved points *i i*, arranged for conjoint operation with the shield E, in the manner set forth.

3. The guides P P' or W W', for conducting the folded sheet from the last pair of rollers to the packing-trough, as described.

99,337.—EGG-BEATER.—Nathaniel C. Miller, Stroudsburg, Pa.

Claim.—In the arrangement of the beater E with its slot-head and connection F, cam-wheel H, crank A, in combination with the arm for connecting it to the table C, thumb-screw G, as shown.

99,338.—PAINT-BRUSH.—George G. Morris, Boston, Mass., assignor to himself and William W. Eastham, same place.

Claim.—A paint-brush, having a cap, *d*, made of pasteboard, treated and applied and rendered hard and impermeable, substantially as described.

99,339.—ILLUMINATOR FOR STOVES, &c.—Benjamin Nott, Albany, N. Y.

Claim.—Illuminators for stoves, furnaces, &c., made of glass or other translucent factitious substance, in the forms herein shown, in combination with a suitable frame, as described.

99,340.—HARVESTER-RAKE.—Aaron Palmer and Charles W. Palmer, Brockport, N. Y.

Claim.—1. The combination of the lifting-arm sliding on the rake-arm, its stud *t*, and the guide O on the rake-post, all these parts being constructed to operate substantially as hereinbefore set forth.

2. The combination of the rake, the sleeve D, the pendent rod *d*, the sleeve E, and its segment-gear, with the pinion on the open sleeve, all these parts being constructed to operate substantially as hereinbefore set forth.

3. The combination of the bracket, the reel-shaft, the open sleeve H, and the sleeve D, all these parts being constructed to operate as hereinbefore set forth.

4. The combination of the bracket, reel-shaft, open sleeve, the sleeve carrying the rake-arm, and the lifting-arm, all these parts being constructed to operate substantially as hereinbefore set forth.

5. The combination of the rake, the arresting-stud on the rake-post, the segment-gear on the sleeve E, and the gear W on the open sleeve on the rake-shaft, all these parts being constructed to operate as hereinbefore set forth.

99,341, antedated January 29, 1870.—TABLE-FORK.—James Patterson, San Francisco, Cal.

Claim.—A fork, with the prongs C C and B B, constructed and arranged to operate as and for the purpose set forth.

99,342.—SELF-ACTING MULE FOR SPINNING.—Seth D. Paul, Woonsocket, R. I.

Claim.—1. The cone-pulleys, in combination with the rolls, spindles, and carriage, by the means substantially as described, for the purpose of increasing the speed of the rolls, spindle, and carriage, while the carriage is running out.

2. The cone-pulleys, combined with the carriage, substantially as described, for the purpose of increasing the speed of the carriage while running out.

3. The clutch A, lever B, latch C, and worm-wheel G, arranged and operating substantially as described.

4. The clutch A, lever B, latch C, pulley *s*, pulley 20, intermediate gears 2, 3, 4, or their equivalents, in combination, for the purpose of increasing the speed of the rolls.

5. The friction-cup 16, in combination with the bevelled portion 15 of the clutch A, to stop the delivering-rolls, as described.

6. The cup 16, bevelled surface 15, in combination with the clutch A and lever B, arranged and operating substantially as described.

7. The wheel P, lever V, finger S, cam P, and lever X, arranged and operating substantially as described, for the purpose of regulating the head-twist.

8. The wheel P and lever V, in combination with cam W, substantially as described.

9. The shell *a*, worm *b*, shaft *c*, wheel *e*, gear *f*, cam W, rack *g*, slide-bar *i*, finger *l*, and stand 30, arranged and operating substantially as described.

10. The shell *a*, in combination with the shaft *c* and cam W, as described.

11. The latch *m*, finger *l*, slide-bar *i*, bar *h*, and rack *g*, in combination, substantially as and for the purpose specified.

12. The combination of latch *m* and lever X, having the finger 32, substantially as and for the purpose described.

13. The spring *r*, in combination with the plate *o*, latch 21, and ratchet-gear 22, substantially as described.

14. The cone-pulley *s*, clutch *t*, or its equivalent, forked lever *u*, and cam 40, operating substantially as and for the purpose set forth.

15. The chain-gear 12, chain 14, in combination with screw 11, nut 10, and shipper 7, substantially as described.

16. The pulley 41, loose on the hub of friction-clutch *t*, in combination with pulley *s*, substantially as described.

17. The pulley W^2, in combination with cone-pulley *s*, and friction-clutch *t*, substantially as described.

18. The cone-pulley *s*, in combination with the gear 80 and pulley W^2, substantially as described.

19. The scrolls 83 and 84, in combination with the cone-pulleys *s* and 20.

99,343. — CAMERA-SCREEN. — F. Peabody, Louisville, Ky.

Claim.—The combination, with the screen A, arranged in the camera-box, as described, and provided with the coiled springs E, of the thumb-bit H L, pin G, and slotted arm, constituting the raising and locking-device, all substantially as specified.

99,344.—LOCK.—N. Petré, New York, N. Y.

Claim.—The arrangement of the case A, bolt-plate B, eccentric C, and raised cap D, when the eccentric is operated by a pin-key and friction-spring, and when the parallel movement of the bolt-plate is controlled by the cap, and the whole is arranged to operate substantially in the manner and for the purpose set forth and described.

99,345, antedated January 24, 1870.—RAILWAY-CHAIR AND FISH-JOINT. — D. C. Pierce, Chicago, Ill.

Claim.—1. The jaws C, of a railway-chair, substantially such as is herein described, having the lips *b* extended up alongside of the body of the rail, and forming a bearing for the head of the rail, as set forth.

2. The lips *b*, extended laterally, alongside of the rails, to form a fish-joint, substantially as described.

3. The base-plate A, with the chocks B fitted therein, and adapted to the jaws C, substantially as described, to form a bearing for the jaws C, as set forth.

99,346, antedated January 31, 1870.—RAILWAY-FROG.—D. C. Pierce, Clayton, N. Y.

Claim.—1. A railway-frog, consisting of the plates A and C, frog point E, guard-rails F, and elastic material D, all constructed and arranged substantially as herein described.

2. In combination with a railway-frog, as herein described, the end-pieces B, constructed and arranged substantially as and for the purpose set forth.

3. In the construction of railway-frogs, inserting the frog-points and guard-rails, provided with flanges at their base, through the frog-plate, substantially as herein described and for the purpose set forth.

99,347.—LADIES' SAFETY-BELT.—Mary G. Porter, Charlestown, Mass.

Claim.—Attaching the supporting-flaps to the belt by means of elastic straps, all arranged as and for the purpose described.

99,348.—MACHINE FOR POLISHING MARBLE.—Edwin Price and Elijah B. Price, Norwalk, Conn.

Claim.—The arrangement of the transversely-travelling bed B, in the manner and for the purpose substantially as herein described, moving in concert with the vibrating frame L and rubbers N N, working longitudinally, as set forth, and actuated by the endless screw E, horizontal gears C C, and pitman D D, or their equivalents, as set forth and described.

99,349.—FRUIT-PRESERVING HOUSE.—Jesse Prior, Adrian, Mich.

Claim.—The construction of a fruit-preserving house or apartment, with separate air-tight chambers, of sufficient capacity to receive the barrels or other packages of fruit, when provided with means for exhausting and admitting air, all substantially as and for the purpose herein described.

99,350.—GROOVING-MACHINE.—W. G. Raoul, Independence, La.

Claim.—1. The arrangement of disks A B, cutters D E, mandrel C, feeding-table G, and adjusting-devices S T, as and for the purpose specified.

2. The combination, with a feeding-table, G, of an adjusting-ring, I, and clamping-ring K, when arranged substantially as specified.

99,351.—FARE-BOX FOR RAILROAD-CARS.—W. G. Raoul, Independence, La.

Claim.—1. The combination of the transparent cylinders *a b*, having apertures *m m'*, *n n'*, and aprons *p q*, with gears *f f*, rack *h*, levers *g g*, spring *o*, and pins *k k'*, all arranged as set forth.

2. In combination with subject-matter of above clause, the cash-drawer and the striking-device S *v u*, all as shown and described.

99,352.—Feed-Cutter.—William H. Rosser and James Stiver, Mill Hall, Pa.

Claim.—1. The combination of inclines *l*, with a cutter, *c*, when arranged substantially as and for the purpose set forth.

2. The combination of the inclines *l*, springs A, pivot-pin C, washer *f*, with the extension A′ and lever D, all constructed and arranged as shown and described.

99,353.—Step-Support for Mill-Spindles. John Russell, Prairie, Mo.

Claim.—The combination of the hollow tubular support D, jointed rods F, lateral arms I, guide-plates G K, and adjusting-screws L, with the step E, all arranged as set forth, and operating to retain the spindles always in a true perpendicular position with respect to the bed stone.

99,354.—Railway-Car-Journal Lubricator.—Thomas Sayles, Chicago, Ill.

Claim.—1. Fastening the pads to the plate H, by means of the wire B, substantially as shown and described.

2. Fastening the coiled spring O to the plate H, as shown and described.

3. Combining the support K, wick D, and jacket G, in manner and for the purpose described.

99,355.—Composition for Moulding from Plaster of Paris.—Gustave Schlueter, Brooklyn, N. Y.

Claim.—1. Combining the dry gum or adhesive matter with the dry plaster and coloring-matter, substantially as herein described.

2. As an article of manufacture, a composition, formed of plaster, gum, and coloring-matter, in the proportions specified, and for the purpose set forth.

99,356.—Gear-Cutting Machine.—William Sellers, Philadelphia, Pa.

Claim.—1. The combination of the adjustable column A, adjustable shaft L, and adjustable plate T, arranged with reference to each other, to the arm C, and to the subsidiary mechanism, substantially as described, so that the direction of the axis of the shaft L being fixed, the column A can be adjusted laterally and about its own axis, and the plate T be adjusted laterally and about an axis perpendicular to a plane passing through the axis of the column, and the power to drive the cutter be transmitted through the axis about which the adjustments are made, substantially as and for the purpose specified.

2. In combination with the driving cone-pulley and traversing cone-pulley, the use of two carrying-pulleys, one having a fixed, and the other a movable bearing, weighted at the end, and carrying, respectively, the driving and slack side of the belt, in the manner and for the purpose set forth.

99,357.—Device for Connecting Horses to Vehicles.—Alexander Shaler, New York, N. Y.

Claim.—1. The combination of the thill-plate B, one or more ears C, sliding rod J, coiled or equivalent spring L, eye K, thumb-piece M, and harness-plate E, having one or more eyes D formed upon it with each other, substantially as herein shown and described, and for the purpose set forth.

2. The combination of the strap or cord N with the thumb-piece M of the device B C D E J K L M, and with the thill A, substantially as herein shown and described, and for the purpose set forth.

99,358.—Fire-Alarm Signal-Box.—George W. Shawk, Cleveland, Ohio, assignor to the Cleveland Fire-Alarm Company.

Claim.—A fire-alarm telegraph apparatus-box or case, when constructed with an inner door, C, for the protection of said apparatus, and provided with a counterbalanced curvilineal lever E, for winding said apparatus, in the manner substantially as described, and for the purpose specified.

99,359.—Apparatus for Sinking Pneumatic Piles. — Theophilus Elsworth Sickels, Kennett's Square, Pa.

Claim.—The diaphragm, substantially as herein described.

99,360.—Apparatus for Sinking Pneumatic Piles. — Frederick Elsworth Sickels, Chicago, Ill.

Claim.—1. Forming an air-lock within the pile, by using, temporarily, a portion of the sides of the pile, to aid in making the air-lock, substantially as herein described.

2. Excavating the material, by using two different pressures of air in combination, substantially as herein described.

3. Lessening the friction in the descent of the pile, by blowing a current of air upward along its sides, substantially as herein described.

99,361.— Cotton-Seed Planter. — Bryan Smith, Falkland, N. C.

Claim.—1. The bed-piece A, with marker B, and drag C, when constructed and arranged to operate as and for the purposes specified.

2. The combination and arrangement of the shafts G, O, and T, with the wheels H, K, L, M, P, and R, seed-box N, slides *d*, and roller D, brushes *h*, and spurs *i*, when constructed and arranged to operate as and for the purposes specified.

99,362, antedated January 20, 1870.—Gaff-Block for Vessels. — Christopher D. Smith, Bridgeport, Conn.

Claim.—The combination of a block, such as described, with the gaff of a vessel, for the purpose of preventing the fouling of the sheet.

99,363.—Wind-Wheel.—E. S. Smith, Macomb, Ill.

Claim.—1. The combination of a fan-shaft, formed of a twisted bar, with a fan, when the latter is free to move upon the former, as described, for the purpose set forth.

2. The combination of the box B, supporting the mill, with the standard A, in the manner described, for the purpose set forth.

3. The employment of a float, in connection with a brake *d*′, and wheel J, in the manner described, for the purpose set forth.

4. The combination of the fans L, fan-shafts K, and springs M, in the manner described, for the purpose set forth.

5. The combination of the eccentric lever *d*′, weighted brake *d*, wheel J, cord, and float, in the manner described, for the purpose set forth.

6. The pumping-box N, with wrist *n* and sleeve *n*′, when operated as described, for the purpose set forth.

7. The windmill described, consisting, essentially, of the standard-box B, guiding-fan, crank-shaft F, head I, wheel J, fan-shafts K, fans L, and pumping-box N, with the connections, when constructed and arranged as described, for the purpose set forth.

99,364. — Clothes-Wringer.—Albert H. Spencer, Providence, R. I.

Claim.—1. The improvement in clothes-wringers herein described consisting of the elastic curved clamp L, in combination with the headed screws *m*, by which the clamp may be tightened or loosened, for the purposes set forth.

2. The improvement, herein described, in the means for preventing the disconnection of the cog-wheels, consisting of the journal-block D, provided with its upward-projecting member D′, the same being arranged with relation to the springs E and F, in the manner and for the purposes set forth.

3. In combination with the double inclined water-shed K, the intermediate strip O, constructed as and for the purposes described.

99,365.—Button. — John A. Spooner and John Ellerby, Brooklyn, N. Y.

Claim.—A button made of two flanged parts, A B, which are connected by clamping the fabric between them, as set forth.

99,366, antedated January 29,1870.—Threshing-Machine and Separator. — Abraham Staffer and Peter Staffer, Salt Creek, Ind.

Claim.—1. Supporting the spikes of the concave part of the thresher on transverse bars A, capable of oscillation, and provided with arms B, for adjusting and securing by wood pins, substantially as specified.

2. The combination of the horizontal reticulated carrying-screen C′, extending from the thresher nearly to the end of the machine, with the supplementary carrier D, each being operated as shown and described.

3. The arrangement, with reference to the shaker and carrier C′, of the crank-shafts E F, and connecting-rod I, for the purpose of imparting to it a vertical and horizontal movement, at the times and in the manner described.

4. The combination, with the carriers C′ D, and the screen R, of the elevators P, arranged as specified.

5. The sheet-metal screen, provided with the projecting lips S, substantially as specified.

6. The arrangement, with the screen and the concave receiver, of the radial plates T, substantially as specified.

99,367.—Manufacture of Iron. — David Stewart, Kittanning, assignor to himself and Samuel M. Kier, Pittsburg, Pa.

Claim.—Mixing granulated iron and *a* fluxing and cinder-forming material with molten cast iron, substantially as herein described, for making blooms or ingots, suitable for the purposes of manufacturing iron and steel.

99,368.—Manufacture of Iron. — David Stewart, Kittanning, assignor to himself and Samuel M. Kier, Pittsburg, Pa.

Claim.—The use of charcoal, coke, bituminous and anthracite coals, or their equivalents, separately or combined, when used in combination with the process described in Letters Patent, granted to me on the 13th day of July, 1869, for the manufacture of blooms or ingots.

99,369.—Railway Water-Elevator.—Arthur A. Stivender, Ocala, Fla.

Claim.—1. The combination, with the pump Z, of the weight K, rope G, pulley I, weight-elevating devices C D D′ F L M N O P Q R S, tripping-device T T′ *a b c d d f*, and pump-operating media U V W, all constructed and arranged substantially as herein represented and described, for the purposes set forth.

2. In combination with the pawls Q Q of the elevating-mechanism, and the pump-driving weight, the "tripper" T T′, the gravitating rod *b*, provided with an arm *a*, tappet *c*, and notches *d*, the spring-pawl *e*, and the tappet *f*, adapted to operate substantially as described, for the purpose specified.

3. In combination with the "tripper," T T′, and the slotted arm *a*, the spring T², arranged and operating substantially as and for the purposes set forth.

4. In combination with the weight K, rope G, drum F, and the ratchet-wheel P, pawls Q Q, levers R R, link S, rock arm D′, and shaft D, for operating said drum F, all constructed and arranged substantially as herein set forth. The "treadle" C, constructed as herein represented and described, so as to receive two positive movements from each wheel passing over it, and to operate without the aid of springs, as shown.

99,370.—Rammer for Packing Tobacco.—John Reid Sutton, Brooklyn, N. Y.

Claim.—1. The combination, with the rammer D, of the projection E and punch F, arranged for operation, substantially as specified.

2. The combination of the rammer, punch, and sleeve, all substantially as specified.

99,371.—Brick-Machine.—H. D. Thorp and J. G. Lehr, Harlan, Ind.

Claim.—The levers H and conical rollers K, constructed and arranged as set forth, in combination with a cam-wheel, M, as and for the purpose specified.

99,372.—Machine for Packing Tobacco. John H. Trowbridge, New Haven, Conn.

Claim.—1. Automatically packing fine-cut tobacco, or other material, into paper or metal-foil wrappers, or both, by machinery, when the various operations of feeding, measuring, and wrapping, necessary to complete the package, are performed in union with each other, substantially as hereinbefore shown and described.

2. The hopper C and the drum *a*, with the feeding-combs or fingers *b*, having a reciprocating or eccentric motion imparted to them as the drum revolves, all arranged and operating as hereinbefore shown and described.

3. The carrying-trough E, composed of the endless belts e^1, e^2, and e^3, in combination with the hopper C, the separating and measuring-combs F and F¹, and the receiving and forming-case H, all arranged and operating substantially as and for the purposes hereinbefore shown and described.

4. The separating and measuring-combs or fingers F and F¹, arranged and operating substantially as and for the purposes hereinbefore shown and described.

5. The plungers G or L, in combination with the carrying-trough E, the receiving and forming-case H, and the case M, arranged and operating substantially as and for the purposes hereinbefore shown and described.

6. The receiving and forming-case H, constructed and operated as and for the purposes hereinbefore shown and described.

7. The employment, in machines for making packages of fine-cut tobacco or other material, of the bed I, as constructed and arranged for receiving the metal foil or paper sheets for wrappers, and operating as an assistant folding-device, in combination with the case H, and the folding-knives b^1, b^2, b^3, b^4, b^5, and b^6, substantially as hereinbefore shown and described.

8. The folding-knives b^1, b^2, b^3, b^4, b^5, and b^6, arranged and operating substantially as and for the purposes hereinbefore shown and described.

9. The box or holder M, arranged for the purposes hereinbefore shown and described.

99,373.—Driven Well.—Isaac Trump, San Francisco, Cal.

Claim.—The tube B, with slots *c*, shank A, with pin D sliding in slot *c*, and enlarged head, with hollow point *a*, the whole being combined as and for the purpose described.

99,374. — Water-Wheel. — B. W. Tuttle, Galena, Ill.

Claim.—1. The combination of the wheel *a* a^1 a^2 with the gate and bucket-adjuster *b* b^1 b^2, when the parts are constructed and arranged substantially as and for the purpose described.

2. The combination of the wheel *a* a^1 a^2 with the gate and bucket-adjuster *b* b^1 b^2 and annular supporting-ring *c* c^1 c^2 c^3, when the parts are constructed and arranged as and for the object specified.

99,375.—Base-Burning Stove.—Henry B. Van Benthuysen, Lock Haven, Pa.

Claim.—1. An alternating, and a combined rotary and alternating base-burner magazine.

2. The cogs F and adjustable lever H and fulcrum-pin, in combination with a rotary and alternating magazine.

3. Suspending a rotary and alternating magazine on friction-rollers, or their equivalent, substantially as and for the purpose described.

4. A magazine, made wholly or in part of vertical sections or staves, each stave having an overlapping

joint, curved, so that when brought together, the overlap forms a hollow tube.

5. A double-walled fire-chamber, independent of the casing, having a free circulation of air between the rings, the inner ring perforated and loosely joined, in combination with a solid cap, open base-plate, and rotary and alternating grate, substantially as set forth, and for the purposes described.

6. The coke-breaker O, fixed in position or attached to a movable lever, I, and entering the base of the magazine, substantially as described.

7. The diving and exit-flues, in combination with my double-walled fire-chamber, and rotating grate and magazine, substantially as set forth.

8. The magazine-lid W and jointed lever Y, in combination with the brackets T T, substantially as and for the purpose described.

9. The grate M and lever A, substantially as set forth.

10. Constructing the magazine wholly or in part of vertical sections or staves, having tubular joints.

11. Constructing the grate M one or more inches larger in diameter than the base of the magazine, in combination with a fire-chamber, having its inner wall perpendicular or inclined inwardly, and perforated, substantially as and for the purpose described.

99,376. — REGULATOR FOR MACHINERY.—Theodore C. Van Wyck and William Kent, Poughkeepsie, N. Y.

Claim.—1. The method above described of regulating the evolution of a weighted rope or spring-power, by applying the principle of friction, by means of the devices shown and described, and for the purpose specified.

2. The combination of the frictional disks F G with weighted levers D D, to retard the velocity of the shaft C, at the time and in the manner described.

3. The combination of threaded sleeve and nut H K with spring I, to increase the amount of friction and lessen the maximum of speed, as set forth.

99,377.—SUBSOIL-PLOW.—William Watkins, Joliet, Ill.

Claim.—The combination and arrangement of the share A, braces C C, crooked bar B, shin D, brace I, beam E, block F, and handles P P, as and for the purposes set forth.

99,378.—SPARK-ARRESTER.—Edward Waud, Eugene City, Oregon.

Claim.—The combination of wheel I, revolved by the ascending gases, with the worm G, arranged substantially as shown and described, and for the purpose specified.

99,379.—GANG-PLOW.—Samuel Welch, Belpassi, Oregon.

Claim.—The construction, combination, and arrangement of the axle A, bounds N, post G, with friction-roller, sliding groove F, plow-frame E, lever B, joint-bolt K, lever C, post I, and fulcrum D, as shown and described.

99,380.—SHIELD FOR SEWING-MACHINES.—Mary W. Welty, New York, N. Y.

Claim.—A sewing-machine shield, provided with the ears *b c* at its front end, the said ears fitting the edge of the cloth-plate of the machine, to hold the shield in line with the same, as set forth.

99,381.—LIGHTNING-ROD.—J. D. West, New York, N. Y.

Claim.—A lightning-rod, constructed in sections of square metallic tubes, and connected by means of the square plug, fastened substantially as described.

99,382.—RAILROAD SIGNAL-BOX.—Ezra B. Westfall, Williamsport, Pa., assignor to himself and Frank Thomas, same place.

Claim.—1. The combination, with the fixed signal-box, having sides of differently-colored glass, horizontally arranged, of the horizontally-reciprocating light-chamber, constructed and operated in the manner described.

2. The combination of the fixed signal-box, the horizontally-arranged glasses of different colors, and the horizontally-movable light-chamber, having tight ends, to prevent the light from shining through any glass save that opposite to which it is placed, all these parts being constructed as set forth, for joint operation.

3. The combination, as set forth, of the perforated fixed signal-box, with the perforated horizontally-sliding light-chamber, constructed as described, to secure proper ventilation, and a clear, steady flame.

4. The combination of the fixed signal box with the horizontally-reciprocating light-chamber, and the day-signal, moving simultaneously with the night-signal, these parts being constructed for joint operation, as set forth.

5. The combination of the fixed signal-box and the reciprocating light-chamber with the horizontally-sliding rod C, arranged and operated as set forth.

6. The combination, with the railroad signal-box, having glass sides of different colors, and the perforated top and bottom, of the horizontally-movable lamp-chamber, having closed ends, open sides, and a perforated top and bottom, a day-signal, moving harmoniously with the night-signal, and a connecting-rod, passing through the box, to operate the signals without opening the box, all these parts being constructed for joint operation, as set forth.

99,383. — WASHING-MACHINE. — Linton Wharton, Richland, Iowa.

Claim.—1. The combination of the box or case A, fixed board B, reciprocating board C, straps I and F, posts D, and vibrator, all substantially as specified.

2. The straps F and I, the latter passing under the box A, in combination with the vibrator F', and with the vertical posts D, when the latter are provided with holes for adjustment of the strap-hooks, all arranged and operating as and for the purpose set forth.

99,384, antedated January 20, 1870.—FIRE-PLACE GRATE.—William E. Whitehurst, Norfolk, Va.

Claim.—A grate, constructed as described, and having the two methods of dumping specified.

99,385.—CLOTHES-LINE CLAMP.—George W. Wilbar, Taunton, Mass.

Claim.—The combination of the cam B, the arc or rim D, the lip C, and the stop E, substantially as and for the purpose hereinbefore set forth, the whole forming a new article of manufacture.

99,386.—ELECTRIC CLOCK.—Elisha Wilson, New York, N. Y.

Claim.—1. The arrangement, as shown and described, of instrumentalities, whereby the electric impulse is applied to the pendulum after it has reached the limit of its arc, when its backward movement is begun, all as set forth.

2. The slide J, provided with two disks, *b b'*, one of which is a conductor and the other a non-conductor, and caused to operate upon the conductor K, at the time and in the manner described.

3. The vibrating conductor K, arranged between the slide J and cap F, as and for the purpose specified.

4. The conductor K, in combination with the circuit-slide and the pendulum-adjustment of the pendulum, without disturbing the electrical action, substantially as herein set forth.

5. The adjustable knife-edge, in combination with the pendulum, substantially as herein described, for the purpose of an electric clock.

99,387.—COMPOUND FOR BATING AND RAISING HIDES.—George W. Adler, Philadelphia, Pa., assignor to himself and George Bochins, same place.

Claim.—A compound for treating hides and skins, composed of the ingredients herein set forth, in or about the proportions specified.

99,388.—WAGON-TONGUE SUPPORT.—Isaac Albright, Jr., and Joel Y. Bloomingdale, New Salem, N. Y.

Claim.—1. The double spring E, constructed as and for the purpose herein shown and described.

2. The combination of bracket C, cross-piece D, and double spring E, with the tongue and front axle of a wagon, as herein described and set forth.

99,389.—TOY PROPELLER.—Arthur M. Allen, New York, N. Y.

Claim.—The oblique joint, in the connection between the front and hind wheels of a toy propeller, substantially as set forth.

99,390. — PRUNING-KNIFE. — Henry Alter, Lakeport, Cal.

Claim.—1. In combination with the knife B, traversing in the slot *a*, the arrangement of the lever C, pivoted on the bar A, and operating the knife, substantially as described.

2. The combination, with the lever C, of the saw E, pivoted thereon, substantially as described.

99,391. — WOOD PAVEMENT.—William W. Ballard, Elmira, N. Y.

Claim.—A pavement, constructed of blocks, having bevelled sides and square ends, when the blocks are so set on a proper foundation, that a wedge-shaped space, *a*, is formed between their sides, which touch at the bottom, and a square space, *b*, between their ends, which are apart, and when the said spaces *a* and *b* are filled in with concrete, or any other suitable material, as herein described and shown.

99,392.—TOOL FOR TONGUING AND GROOVING.—Edward F. Bengler, Williamsport, Pa., assignor to himself and Gabriel S. Post, same place.

Claim.—The tonguing and grooving-tools C and B, when constructed substantially as shown and described, for the purposes specified.

99,393.—BILLIARD-CUSHION.—John Berlien, Chicago, Ill.

Claim.—1. A cushion for billiard-tables, consisting of the steel strip C, having the strips or bars *g g* attached thereto, the whole secured in place, substantially as described.

2. The reinforce or strip *f*, secured to the upper edge of the spring or strip C, substantially as set forth.

99,394.—APPARATUS FOR CENTRING SHANKS OR EYES IN BUTTONS.—William H Blake, Waterbury, Conn., assignor to himself and Charles M. Mitchell, same place.

Claim.—The combination of the two jaws *d d*, with the recessed and slotted plate E, constructed and operating substantially as described, so as to centre the shank upon the back, as set forth.

99,395.—PRINTING-PRESS.—Thomas W. Bracher, New York, N. Y.

Claim.—The carriage D, carrying the roller M and spring-pawl S at one end, and formed with a handle, G, at the other end, in combination with the toothed rotating cushion N, form C, and stop T, the parts being constructed and operating together as herein described.

99,396. — HYDRANT. — Timothy C. Bride, Quincy, Ill.

Claim.—The automatic hydrant herein described, having cylinder B, plunger C, with coiled spring *m*, cylinder D, and box F, with valve *b*, and spring *g*.

99,397.—HARVESTER-RAKE.—Cyrus Buckwalter, Davenport, Iowa.

Claim.—1. The rake-bars C D, guide-bar E, collar D', pitman H, standard B, pulley and block H', belt and pin *h h'*, and platforms A A', all combined and arranged as and for the purpose specified.

2. The standard B, rotating guide-bar E, rotating collar D', reciprocating pitman H, pulley-block H', and belt and pin *h h'*, all combined and arranged as and for the purpose specified.

3. The rotating guide-bar E, rotating collar D', and rake-bars C D, constituting a horizontally-moving apparatus, constructed and combined as and for the purpose explained.

99,398.—MITRE-BOX.—John Bullard, Hyde Park, Vt.

Claim.—In the mitre-box herein described, the arrangement of the gates D D, frames C, screws *g g*, slide E, gauges *f f*, applied to the gates D, set-screw F, block G, frames *s s*, and cross-piece H, all constructed and arranged in the manner specified.

99,399. — FIRE-ESCAPE. —William Burditt and George H. Burditt, Boston, Mass.

Claim.—1. A fire-escape, consisting of a tube of canvas, or other flexible material, of sufficient diameter to permit of the passage of a person through it, but which is reduced in such diameter by folding or gathering, and by being surrounded by a spiral, elastic, or yielding band, as a consequence of which, persons, in descending through it, can regulate their descent, substantially as and for the purpose set forth.

2. The entrance-apertures A^2, substantially as and for the purpose set forth.

3. The arrangement of the main tube of the escape, with reference to the entrance-apertures A^2, substantially as and for the purpose set forth.

4. The elastic supports D, in combination with the entrance-apertures, substantially as and for the purpose set forth.

5. The arrangement of the frame C, bow C^1, supports C^2, and hood or tube A, substantially as and for the purpose set forth.

99,400.—LOCK-SPINDLE FOR SAFES.—A. G. Burton, Rochester, N. Y.

Claim.—The arrangement of the gear-wheels *b b* within the body of the door, in combination with a lock or bolt-work arranged on the back side of the door, and the knob-spindle out of line with the lock or bolt-work spindle, substantially as specified.

99,401.— PRINTING-TELEGRAPH. — Edward A. Callahan, Brooklyn, N. Y.

Claim.—1. A train of gearing and a fly applied, substantially as specified, to render gradual a motion derived from the movement of the armature of an electro-magnet, substantially as specified.

2. The combination of the following devices: an electro-magnet and armature, a fly and train of gearing, a disk and pawl, and an actuating-spring or weight, the parts being constructed and arranged so that the actuating-spring or weight is moved by the armature, and gives motion to the regulating-fly, substantially as set forth.

3. The spring 24, in combination with the train of gearing, fly, armature, and adjusting-device 50, whereby the speed of movement is regulated by the adjustment of the spring 24, substantially as set forth.

4. The arrangement of three electro-magnets, and their connections, substantially as specified, so that the first shall regulate the movement of the type-wheel, and direct an electrical current through the second magnet; the third magnet is brought automatically into action, to give the impression, when the circuit through the second magnet is broken by the stopping of the type-wheel, substantially as set forth.

5. The lever *l'*, arm 11, and yielding circuit-closer 18, in combination with the armature e^1, to close and break the circuit to the magnet *n*, as set forth.

6. The ratchet-wheel *l*, dog 10, and lever *l'*, in

combination with the pawl *s*, disk *r*, fly *s'*, and circuit-breaker *v*, substantially as set forth.

7. The lever *v*, with the arms 30 and 33, in combination with the armature n^1, lever n^2, arm 35, and inclines 34, and circuit-closer 31, substantially as set forth.

8. A swinging arm 30, yielding incline 34, in combination with a circuit-closer having a limited movement, substantially as specified, so that the circuit is broken at the end of the movement by the action of the incline.

9. The means herein specified for giving motion to the feed-wheel of a printing-telegraph, the same consisting in a pawl and plate, swung by the armature-lever upon the axis of the feed-wheel, in combination with a disk having a roughened periphery, substantially as set forth.

99,402.—MACHINE FOR FORMING SHEET-METAL TUBING.—Mortimer M. Camp, New Haven, Conn., assignor to himself, D. Goffe Phipps, and E. I. Foote, same place.

Claim.—The rolls A, B, and B', constructed and arranged as described, and for the purpose specified.

99,403, antedated January 27, 1870.—SUBMERGED PUMP.—Perrin H. Cardwell, Knoxville, Tenn.

Claim.—The arrangement, with the cylinders A A', having supply-ports *e e' i i'*, and exhausts *m m' n n'*, of the pipes *c c'* and chamber C, all the said parts being constructed and combined so as to operate together, substantially in the manner and for the purposes set forth.

99,404.—APPARATUS FOR BINDING GRAIN.—George W. Chandler, Mason, N. H., assignor to himself, Henry I. Whitney, same place, and Albert A. Whitney, Battle Creek, Mich.

Claim.—1. The combination, with the main grain-platform B, rake C, and operating chain *b*, of the hinged arm *c d e*, and lever F, the parts being arranged in relation to each other, substantially as and for the purposes set forth.

2. The combination, with the swinging lever F, and dog *i*, of the movable end A of the grain-board, substantially as and for the purposes set forth.

3. The combination, with the auxiliary platform H, of a turning fork, K, substantially as and for the purposes set forth.

4. The combination, with the turning fork K, of the peculiar mechanism herein described, for operating the same.

5. The construction and arrangement of the enclosing arms P Q, and compressing chain L, substantially as and for the purposes set forth.

6. The combination, with the compressing arms P Q, of the peculiar mechanism herein described, for operating the same, consisting of the segment gears, groove cam *g*, arm 8, and rod 9, connected and arranged for operation, substantially as set forth.

7. The combination, with one or more protecting fingers *g*, of a protecting and compressing-finger 15, substantially as and for the purposes set forth.

8. The combination, with the band-arm O, and auxiliary platform H H^3, of a band-hook *y*, for drawing the band under and in front of the gavel or bundle, substantially as set forth.

9. The combination, with the tier, of a band-tightener, N, substantially as and for the purposes set forth.

10. The band-tier and band-cutting device, constructed and arranged as set forth.

11. The combination, with the band-arm O, and the catch-finger X, of the lip 58, and spring 59, for catching and holding the band, substantially as shown and described.

12. The parts 44, 45, 46, 50, and 51, for clamping and holding the ends of the bands during the operation of tying the knot, combined and arranged substantially as and for the purposes set forth.

13. The combination, with the jaws 45, of the band holder, of the levers 47 and 48, and curved flange 46, substantially as and for the purposes set forth.

14. The combination, with the curved flange 49, on the under side of frame G, of the oscillating guide 74, and lever 48, substantially as and for the purposes set forth.

15. The combination, with the hollow spindle 42, of the tier, provided with a flange-head, 43, of the guard T, and knot-former V, substantially as and for the purposes set forth.

16. The combination, with the rod, of the knot former V, of the hook 71, and dog 72, provided with a thumb, 70, substantially as and for the purpose set forth.

17. The combination, with the tier 41, and knot-former V, of the gear 39, provided with a cam groove, 63, and connecting-pieces 64, 65, 66, 67, 68, and 69, arranged in relation to each other, substantially as and for the purposes set forth.

18. The combination, with the frame G, and tier 41, of the band-steadying fingers *o' t'*, and angular guard *w'*, substantially as and for the purposes set forth.

19. The combination, with the guard T, of the guard-fingers 13 and 14, as and for the purposes set forth.

20. The arrangement, with the enclosing arm P, of the compressing and guard-finger 15, 16, as and for the purposes set forth.

21. The combination, with the shipper-bar W, of the head piece 17, and springs 38 and 39, substantially as and for the purposes set forth.

22. The combination, with the frame G, and the shipper-bar W, of the latch-piece X, and spring 35, substantially as and for the purposes set forth.

23. The combination, with the segment 25, and clutch-guide 28, of the clutch dogs 20, and 26, provided with projections a^2 c^2, substantially as and for the purposes set forth.

24. The combination, with the clutch-dog 20, and latch-piece X, of the spur m^2, as and for the purposes set forth.

25. The clutch-guard 22, provided with the projection 37, and stop-notch 30, as and for the purposes set forth.

26. The combination, with the band-arm O, band-tightener N, guide, eyes, and twine-spool S, of the band-supporting spring *v*, said parts being arranged in relation to each other, as and for the purposes set forth.

27. The combination, with the auxiliary platform H H^3, of the spring safety-fork 82, substantially as and for the purposes set forth.

28. The construction and arrangement of the discharging-fork Z, and the mechanism for operating the same, substantially as and for the purposes set forth.

99,405, antedated January 28, 1870.—CARRIAGE-HUB.—John P. Chandler, Wilton, Me.

Claim.—The malleable iron skeleton-hub and fastenings described in the specification and drawings.

99,406, antedated January 24, 1870.—METHOD OF ÆRIAL TRANSIT.—Robert A. Chesebrough, New York, N. Y.

Claim.—1. A method of ærial transit, composed of two cables, inclined in opposite directions, arranged substantially as herein shown, on which coaches suspended therefrom may run in either direction by their own gravity.

2. The combination of the towers or buildings A, the inclined cables D and E, the elevators K, and the coach L, all operating substantially as described.

99,407.—OIL-CAN.—P. C. Clark, Philadelphia, Pa.

Claim.—The combination and application of shaft B with thumb-lever A, and arm C with spring F and valve-rod D, hereinbefore described, and for the purposes set forth.

99,408.—APPARATUS FOR ADMINISTERING MEDICATED VAPORS.—J. C. Cook, New Haven, Conn.

Claim.—The combination of the tank A, perforated receptacle D, flexible pipe H, and pipe J, with valve *a*, all constructed and arranged as described, for the purpose of vaporizing medicines into a vacuum, and allowing the air to unite therewith, to form a medicated vapor, substantially as herein set forth.

99,409.—MACHINE FOR PLANING IRON.—Alfred B. Couch, Worcester, Mass.

Claim.—The combination, with the lateral and vertical feed-screws of an iron-planer, of the feed-gears *d*, *e*, and G, the sliding gear *f*, substantially as and for the purposes set forth.

99,410.—SOLDERING-MACHINE.—E. T. Covell, Brooklyn, N. Y.

Claim.—1. An elongated slot or opening, formed between two bars or plates, or in a single plate, in combination with a suitable solder-pan, substantially as herein set forth.

2. The auxiliary reservoir A, provided with an opening or conduit, *b*, when combined with the soldering-pan B of a soldering-apparatus, substantially as herein described.

3. The combination of the piston or plunger C with the reservoir A and solder-pan B of my improved soldering-apparatus, substantially as herein set forth.

99,411.—MACHINE FOR JOINTING BARREL-STAVES.—Harry A. Crossley, Cleveland, Ohio, assignor to himself and Ada D. Crossley.

Claim.—1. The combination of the mechanism herein described, to wit, the sliding journal-boxes *g g*, connecting-links *f f*, with sliding boxes, to work on the right-and-left screw *h*, the disk H, and shaft G, for adjusting the cutting-flanges or disks C C to a more or less direct line, for jointing staves, when operating in the manner and for the purpose specified.

2. The cutting-disks C C, constructed, arranged, and operating in the manner and for the purposes herein described.

99,412.—WATER-PROOF STOCKING.—Frederick Curtis, Boston, Mass.

Claim.—A water-proof or impervious stocking or covering for the foot or leg, or both, composed of a material sufficiently thin, or otherwise so made, as to be worn under an outside shoe or protecting covering, for the purposes before alluded to and explained.

99,413.—SPRING-BOLT AND CLIP.—John Deeble, Plantsville, Conn.

Claim.—The hereinbefore-described spring-bolt and clip, substantially as and for the purpose shown.

99,414.—ELECTRO-MAGNETIC MACHINE FOR MEDICAL PURPOSES.—Luis Drescher, New York, N. Y.

Claim.—1. The hinge-jointed rod B, provided with a graduated scale thereon, and combined with the plate C or plates C' C' of a galvanic battery, and with a supporting-bar or plate D above the same, substantially in the manner and for the purposes herein set forth.

2. The combination of a movable platina plate on the armature-spring or lever of an electro-magnetic machine, with the adjusting and connecting-screw of the battery-circuit operating therewith, all substantially in the manner herein set forth.

3. The combination of a movable, adjustable insulated fork H, with the armature-spring or lever of an electro-magnetic machine, substantially as and for the purpose herein set forth.

4. The combination of a reotrope, J, with the circuit-wires and electrodes of an electro-magnetic machine, when said reotrope is arranged and made to operate substantially as herein described.

5. The combination, with an electrode, T, of metallic conducting-strips P P', switch-bars R R', insulated points *t t' t''*, and rod W, all arranged, connected, and made to operate substantially as and for the purpose herein set forth.

99,415.—FURNACE FOR MELTING AND REFINING IRON AND OTHER METALS.—Adolph Faber Du Faur, New York, N. Y.

Claim.—1. In reverberatory or gas-furnaces, the stack *h*, constructed and arranged substantially as described.

2. Extending the neck *g* so as to terminate below the stack, substantially as shown and described.

3. So arranging the stack *h* and neck *g* that the latter shall extend around the stack on all sides, whereby the gases and products of combustion will be caused to enter the stack on all sides thereof, substantially as set forth.

4. The air-heating apparatus *k*, in combination with the stack *h*, substantially as shown and described.

99,416.—CLASP FOR TRUNKS, &c.—Theodore R. Dunham, Newark, N. J.

Claim.—1. The catch B, constructed as described, with side projections *b b*, and having the elastic A and loop C attached on either end, substantially as herein set forth, with the fastening D, provided with lugs *d d*, substantially as and for the purposes herein set forth.

2. The combination of the elastic A, catch B, projections *b b*, loop C, with the fastening D, and lugs *d d*, all constructed and arranged substantially as and for the purposes herein set forth.

99,417.—MILK-BOX.—C. W. Eastwood, New York, N. Y.

Claim.—The combination of the boxes A and B, substantially as and for the purpose hereinbefore set forth.

99,418.—ADJUSTMENT OF WHEELS ON THE AXLES OF RAILWAY-CARS.—Richard Eaton, Eaton Lodge, England.

Claim.—1. The shaft E, carrying the eccentrics *e e*, or their equivalents, as herein described, in combination with the hub B and locking-wedges *a a'* of a "changeable-gauge" car-wheel and axle, substantially as herein set forth.

2. The spring S, in combination with the eccentric *d* upon the shaft E, and with the box D supporting the same, substantially as herein described.

99,419.—COOKING-STOVE.—George M. Eckert, St. Louis, Mo.

Claim.—The arrangement, beneath the oven of a cook-stove, of longitudinal forward and return flues, which are both vertically and longitudinally tapered, substantially as described.

99,420.—HANDLE FOR CHILDREN'S CARRIAGES.—R. G. Elder, New York, N. Y.

Claim.—A handle for children's carriages, provided with a metallic top, A, substantially as shown and described.

99,421.—FOUR-WHEEL PROPELLER.—R. G. Elder, New York, N. Y.

Claim.—The open frame A, elevated above the front wheels to clear the same, through the medium of the bolster G, the parts being so constructed and arranged as to allow the rider's feet to protrude through the frame and rest directly on the axle, and the front wheels to turn under the said frame, as and for the purpose herein described.

99,422.—JOURNAL-BOX.—Seth C. Ellis, Jersey City, N. J.

Claim.—The holding-screw D, arranged in a position tangential to the shaft, in combination with the sliding or self-adjusting cap C and stationary portion A of the box, substantially as specified.

99,423.—VALVE OF ROTARY ENGINE.—Walter Fitzgerald, Boston, Mass.

Claim.—The rotating valve L, with its notches *o p*, in combination with the cylinder B, and one or more revolving pistons, constructed and operating substantially in the manner and for the purpose set forth.

99,424.—RAILWAY-CAR BRAKE.—William G. Foster, Apalachin, N. Y.

Claim.—1. The spring *h* and chain *g*, in combination with the spring *h'*, when constructed substantially as described, and operating, in connection with the shaft *f* and lever E, as and for the purpose set forth.

2. The bevel-pinion *a*, working in the semicircular frames attached to the truck-frame, and the bevel-pinion *b*, secured to the longitudinal shaft B, when each of said parts is constructed, and all are arranged to operate as and for the purpose set forth.

99,425. — CIRCULAR-KNITTING MACHINE.—William Franz and William Pope, Crestline, Ohio.

Claim.—The flanged cam-cylinder A, having its inner surface cut away, except in the part occupied by the cams, so as to form a wide groove, B, extending vertically from the shoulder A', on which the heels of the needles rest, to the flange C, and communicating, at each end, with the narrow groove D, above the cams, all substantially as and for the purpose set forth.

99,426. — CIRCULAR-KNITTING MACHINE.—William Franz and William Pope, Crestline, Ohio.

Claim.—1. The combination, with the cylinder A, and detached cogged ring B, of the thread-carrier C, attached to the latter, and revolving a regulated distance independently of the cylinder, and all constructed substantially as set forth.

2. In combination with the cylinder A, provided with the lugs H, the detached cogged ring B, having lugs F G, so placed that the ring may be revolved through a portion of its arc of oscillation independently of and without communicating motion to the cylinder A, substantially as described.

3. The combination of the cylinders A and Q, detached cogged ring B, and bed-plate P, when constructed and arranged in relation to each other, substantially as set forth.

4. The arrangement, in relation to each other and to the centre of rotation of the machine, of the thread-carrier C, provided with the two eyes, as described, the thread-guide T, and take-up spring S, substantially as set forth.

5. The combination of the cam K, adjustable cam J, sliding guides D and E, and thread-carrier C, all constructed and operating substantially as set forth.

99,427.—MANUFACTURE OF FLOUR.—William Freudenau, St. Louis, Mo.

Claim.—The manufacture of flour by first crushing the wheat between cylinders, and then running it through burrs, substantially as herein described, and for the purpose of completing the flouring-operation.

99,428.—ATTACHING THE MAIN-SPRING OF WATCHES.—Charles D. P. Gibson, Boston, Mass.

Claim.—The detached connecting-piece *b*, when constructed with a hook or projection, *c*, substantially as and for the purpose described.

99,429.—VENTILATOR.—Robert A. Goodyear, Binghamton, N. Y.

Claim.—The sash-strip *a*, and elastic material, at *i*, applied in the manner specified, to allow ventilation to take place between the upper and lower sashes, as set forth.

99,430.—SPRING MOTOR.—Richard Grimm, New York, N. Y.

Claim.—The C-spring B, the cords D D, and winding-pulley F, combined, arranged, and operating substantially as described, through a train of gear-wheels, with a worm-wheel, K, on the driven shaft L.

99,431.—LEATHER-SAMMIER.—D. C. Guttridge, Pittsburg, Pa., assignor to himself and R. A. Dunn, same place.

Claim.—1. The combination, in a leather-sammier, of the rollers B B, and the scraper L, in the cross-bar M, under said rollers, all substantially as specified.

2. In combination with the rollers B B, the movable slides G G, controlled by the thumb-screws H H through the cap-pieces K K, substantially as specified.

99,432, antedated August 1, 1869.—SHEATHING-BOARD FOR BUILDINGS.—W. E. Hale, Chicago, Ill.

Claim.—As a new article of manufacture and trade, the herein-described fabric for covering the roofs, sides, and walls of buildings.

99,433.—ELEVATOR.—Melancthon Hanford, Boston, Mass.

Claim.—1. In an elevator for hoisting merchandise, &c., the employment of two hoisting-drums, or sets of drums, with one or more ropes, or their equivalents, for each drum, combined with right and left driving-worms, and intermediate gears, for the purpose and substantially under the general disposition herein shown and explained.

2. The general arrangement and combination of the carriage *d*, and its frame, the drums *e e*, mounted, and provided with the gears *o o*, as explained, and the worms *p p*, mounted upon the shaft *q*, the latter being provided with reversible fast pulleys, and with a loose pulley and belts, and the whole arranged and operating as hereinbefore set forth.

99,434.—FLY-NET FOR HORSES.—Jacob M. Harman, Orangeville, Pa.

Claim.—A fly-net, composed of flat ribs, pierced with parallel holes, arranged diagonally across the rib, and lashes inserted in said holes, so as to form a diagonal stitch, in the manner described.

99,435. — SUPPORTING-COLUMN FOR ELEVATED RAILWAYS.—Charles T. Harvey, Tarrytown, N. Y.

Claim.—A supporting-column, constructed of two or more solid rods, *a*, secured in sockets *b* of the base-plate B, substantially as described.

2. The arrangement of the sockets *b*, on the under side of the rail-frame C, in combination with the rods composing the column, substantially as set forth.

3. The combination of braces *g* and fastening of straps *e f*, or equivalents, with a supporting-column, A, substantially as described.

4. The employment of rings or equivalent devices, in connection with the base-plate B *b*, and rods *a a*, for the purpose of levelling said rod, as set forth.

99,436.—COOKING-STOVE.—Levi Hermance, Lansingburg, N. Y.

Claim.—1. In combination with a cooking-stove, a dead-air chamber, formed by an extension of the stove and the water-reservoir, for the purpose of heating the water in the same, substantially as herein set forth.

2. The dead-air chamber D, formed on the outside of a cooking-stove, as described, for the purpose of heating the water in a water-reservoir, substantially as herein set forth.

3. The combination of a stove with the reservoir C and dead-air chamber D, substantially as and for the purposes herein set forth.

4. A reservoir or water-tank, attached to a cooking-stove, when said reservoir or tank is placed upon or within a chamber or hot-air space, formed outside of the walls of a stove, substantially as herein set forth.

99,437.— CHAMBER-PAIL.—George A. Higgins, New York, N. Y.

Claim.—1. A portable chamber-pail, with a discharge-opening in the bottom, in combination with a valve for closing the said opening, substantially as set forth.

2. The flange *g*, at the top of the chamber-pail, upon which a band of India rubber is applied, surrounding the exterior of such flange, and covering the top surface, as and for the purposes set forth.

3. The chamber-pail cover, made as a hollow vessel, entirely closed at the bottom, and with an opening at the top, for receiving water for rinsing said pail, as set forth.

4. The water-vessel *h*, flange *i*, funnel and tube *k*, and exit-holes *l*, forming the cover of a chamber-pail, as and for the purposes specified.

99,438.—COFFEE-POT.—George Hotte, New York, N. Y.

Claim.—The platform A, forming the top of the ash-pan B and the support for the fire-pot C, in combination with a vessel, provided with an internal tube, F, fitting over the fire-pot C, substantially as shown and described.

99,439.—HARVESTER-GEARING FOR CHANGING SPEED.—Moses G. Hubbard, Syracuse, N. Y.

Claim.—1. The combination of the two main gear-wheels of unequal size, with two ratchet-hubs of corresponding size, arranged substantially as and for the purposes described.

2. The combination of the above-described change-able-speed device, with the divided shaft arranged for the attachment of the double continuous driving-wheels, substantially in the manner and for the purposes set forth.

99,440.—SCHOOL-DESK.—A. J. Hull, Sterling, Ill., assignor to Novelty Iron Works Manufacturing Company, same place.

Claim.—1. The circular projection *d*, provided with the hub *e*, bar *f*, and lugs *i i*, all substantially as and for the purposes herein set forth.

2. In combination with the above, the washer *h*, provided with a cavity or recess fitting over the bar *f*, for the purpose of keeping the screw *m*, which passes through the same, from turning, substantially as herein set forth.

99,441.—CHAIR-BOTTOM.—Platt C. Ingersoll, Green Point, N. Y.

Claim.—1. The combination and arrangement, substantially as specified, of the metal braces E E E E, formed with loops *a a a a* at their inner ends, the spiral spring C, and the metal straps D D, with the chair-frame or seat.

2. The arrangement of rubber bars or strips *b* within the loops *a* of the braces E, in combination with the spring C and metal straps D, essentially as shown and described.

99,442.—LANTERN.—John H. Irwin, Philadelphia, Pa.

Claim.—1. The air-chamber or space B, in combination with the air-tubes C, when said tubes are inserted in the top of said chamber, as and for the purpose specified.

2. The thumb-piece I, in combination with the globe-holder F, when constructed and arranged substantially as and for the purposes described.

99,443.—LAMP-BURNER.—John H. Irwin, Philadelphia, Pa.

Claim.—1. A lamp-burner, provided with an outer imperforate jacket A, fitted at its lower edge to engage with a collar, H, or its equivalent, to give the burner two supports, as set forth.

2. The jacket A and cone A', formed of one piece, with a shoulder, *a*, in combination with the perforated frame B, fitted to said shoulder, for the purpose of gauging the adjustment of the wick-tube, as set forth.

3. A burner, with a jacket, A, cone A', and deflecting-plate D, at the top of the wick-tube, all constructed and arranged, substantially as described.

4. A burner, constructed with the jacket A, and perforated frame B, substantially as described, in combination with the air-chamber G, provided with a collar, H, or equivalent, as set forth.

99,444. —HARVESTER-DROPPER.—Cyreneus D. Jeffries, Wooster, Ohio.

Claim.—A dropping-device for harvesters, consisting of two series of curved arms, D and H, attached to an oscillating shaft, G, when constructed and arranged to be operated as herein shown and described, so that one series, D, may receive and drop the grain, and while dropping it, that the other may stop the grain on the apron from leaving it, as set forth.

99,445, antedated January 24, 1870.—ROCKING-CHAIR.—Olaüs Jensen, Christiania, Norway.

Claim.—1. A rocking-chair, A, provided with an adjustable step, C, and hand-lever, I, in combination with a platform, P, provided with a recessed block, G, loops *h*, and slide H, all constructed and arranged to operate as herein shown and described.

2. The locking-device, consisting of the lever I, slide H, and recessed block G, when constructed and arranged to operate substantially as herein described, and for the purpose set forth.

99,446.—DOVETAILING-MACHINE.—Dedrick Jordan, Charlestown, Mass., assignor to A. S. & J. Gear & Co., New Haven, Conn.

Claim.—1. The form or pattern, constructed substantially as herein described, and combined with the clamping-device to hold the two pieces to be dovetailed, and so as to be presented to the cutter and guided around the same, in the manner set forth.

2. In combination with the form or pattern, constructed as herein described, the cutters S, constructed so as to be attached to the spindle by the conical-headed screw M, that portion of the spindle beneath the head forming the guide, against which the former is moved, as herein described.

99,447. — SADDLE-TREE.—Israel Landis, St. Joseph, Mo.

Claim.—The Mexican bars A A, formed with raised projections and plane surfaces B', in combination with the flat English seat and cantel B, when made in the form, and connected together in the manner shown and described.

99,448. — SPRING-HOLDER FOR WAGON-SEATS.—James A. Leforgee, Decatur, Ill.

Claim.—The self-supporting spring-holder B, and the means of fastening the springs in the same, by means of the dowel E, substantially as and for the purpose hereinbefore set forth.

99,449.—HAY-FORK.—James E. Lobdell and Leroy H. Smith, Centre Lisle, N. Y.

Claim.—1. The detachable tines F F, with dovetail notch *d*, in combination with bar S, having notch *a*, substantially as shown and described.

2. The tines F F and bar *s*, constructed as described, in combination with rod E, draught-rope *k*, and pulley P, substantially as described, and for the purposes set forth.

99,450.—WASHING-MACHINE.—Peter Lockie, Rochester, N. Y.

Claim.—The combination and arrangement, in a washing-machine, of the cylinder, with internal radial slats *g*, the peripheral rounds *f*, forming a wedging space, as shown, the box A, with perforated bottom *b*, overhanging the angular space *s*, and the cleat *m*, with space *n*, and return-passage *p*, when the parts are constructed and operate as described and shown.

99,451.—HARVESTER.—William R. Low and Augustus Adams, Sandwich, Ill.

Claim.—1. An open harvester-platform, consisting of the frame D, vibrating bars F and F′, and pieces J and J′, constructed and operating substantially as and for the purposes described and shown.

2. The combination of the grate G, provided with springs S, with the vibrating bars F F′, and pieces J J′, operating substantially as described and shown, and constructed substantially as specified.

3. The binder's table M M, having the bundle-receptacle T hinged thereto, in the manner described and for the purpose specified, and the whole being pivoted to the harvester to economize space, when desired, substantially as specified.

99,452.—FERTILIZER, OR FISH-GUANO.—Orazio Lugo, Baltimore, Md.

Claim.—1. The improved fertilizer or guano, prepared by treating fish by the process herein described, so as to obtain the maximum amount of nitrogenized materials, as set forth.

2. The compound fertilizers produced by combining the highly-nitrogenized product, herein described, with phosphates, plaster, or with either or all of the other substances, as above set forth.

99,453.—HINGE FOR SHOW-CASES.—John McAdams, Brooklyn, N. Y.

Claim.—The combination of the sleeves D D′ with the buts A A′, the spring C, and the centre or joint-pin B, all constructed and arranged substantially as shown and described.

99,454.—COMBINED FAUCET, MEASURE, AND FUNNEL.—Thomas McMahon, Williamsburg, N. Y.

Claim.—1. A faucet, having two bowls A A′, and chamber B, and taps or keys D D, when the latter are united by a lever, E′, and the whole are so combined and arranged as to operate substantially as described.

2. A faucet, having bowls A′ A′, chamber B, taps or keys D D, connected by lever E′, and funnel-shaped exit-tube C, when the same are so combined and arranged as to operate substantially as described.

99,455.—EXTENSION-BEDSTEAD.—Frederick Menzer, San Francisco, Cal.

Claim.—A bedstead, in which a sliding extension of the bottom is combined with hinged and folding ends, so as to be capable of forming a complete bedstead, of double or increased width, constructed as above described.

99,456.—METALLURGIC FURNACE.—James Montgomery, Sing Sing, N. Y.

Claim.—1. A furnace-grate, so arranged and combined with operating-mechanism, that it may be moved under and change the disposition of the fuel, substantially in the manner and for the purpose set forth.

2. A crucible for metallurgic uses, constructed substantially as set forth.

3. Arranging a crucible within the chamber of a metallurgic furnace above the fuel, and so as to be exposed to the heat ascending from below, and passing above it with the draught toward the uptake, substantially as set forth.

4. In combination with a metallurgic furnace, a crucible supported upon water-arches, protected by a refractory material, substantially as set forth.

5. In combination with, and arranged within such a furnace, an upper crucible, E, and lower crucible P, substantially as set forth.

6. The mode of expelling bubbles of air or other gaseous substance from molten metal by the action of revolving paddles, substantially as set forth.

7. The wheel, with hollow shafts, arms, and paddles, and having openings in the latter, when arranged to be rotated within a mass of metal, and in combination with a pipe, through which a blast may be forced into the molten mass, substantially as set forth.

8. The hollow shaft of the wheel K, in combination with the slotted tubular spindle, by which the blast is directed only into the paddles immersed in the molten metal, substantially as set forth.

9. The combination of the wheel K, oscillating arms to which it is attached, and rods and cylinder, by which it is swung into or out of the furnace.

10. The diaphragm G, arranged within the furnace, substantially as and for the purpose set forth.

11. The combination of the diaphragm and crucible E, arranged in relation to each other within the furnace, substantially as set forth.

12. The section D^3 of the uptake, in combination with the hollow walls of the furnace, so arranged that the steam generated by the heat of the furnace, may be retained and superheated in the top of said section D^3, substantially as set forth.

13. A metallurgic furnace, constructed with a hollow metallic shell filled with water, and protected by a refractory inner lining, substantially as set forth.

14. The air-chamber D^4, surrounding the uptake, for retaining and heating atmospheric air or other gaseous substances, under pressure, in combination with pipes for conducting such air or gaseous substance, or both, and discharging it or them within the mass of molten metal contained in the furnace, substantially as and for the purpose set forth.

15. In combination with a metallurgic furnace, an air and steam-chamber, with connecting-pipes and cocks, for discharging steam and air in regulated quantities into the mass of molten metal contained within the furnace, substantially as and for the purpose set forth.

16. The blower-trunk, in combination with the valve placed therein, to regulate the direction of the blast directed upon the fire, and deliver it either below or above the grates, or partly below and partly above, substantially in the manner set forth.

17. A hollow damper, arranged to have a current of water passing through it.

18. In combination with the diaphragm G, the water-damper H, arranged to operate substantially in the manner and for the purpose set forth.

19. In combination with the lower crucible P, the water-damper Q, arranged to operate substantially as set forth.

20. In combination with the crucible E, in which the work of purification is performed, hot-air and steam-chambers, with the regulating-cocks, a flexible hose, and a hollow rabble, for introducing the hot air and superheated steam, in regulated quantities, into the mass of molten metal contained in the crucible, substantially as set forth.

99,457, antedated January 24, 1870.—HORSE HAY-RAKE.—John Morgan and William Cline, Jr., Clayton, Ind.

Claim.—1. The arrangement of the beams A A, wheel B, seat L, rake C, rods F F, and draught-bar G, all substantially as shown and described.

2. In combination with the above, the wheels D D, arms E E, lever H, arm K, and spring I, all constructed and arranged substantially as shown and described.

99,458. — HAT-SHAPING MACHINE. — Jean Prosper Marlot, Paris, France.

Claim.—The gearings C C′ C″, the crank D, the levers F, the nuts G, the screw H, the rods J, the guides K, the springs L, and the sectors *b*, operating in combination with the forming-dio M, substantially as and for the purpose described.

99,459.—STOVE-PIPE JOINT.—H. B. Morrison, Le Roy, N. Y.

Claim.—1. The combination and arrangement, with the ends A A of the elbow, of interposing rings B B, of wedge-form, which are connected with each other and with the said ends of the elbow by a loose joint or seam, in such a manner that a reverse turn may be given to the rings to change the angle or bend of the elbow, as herein described.

2. In combination with said parts, the seam or joint, consisting of the bread beads *a a*, fitting one within the other, as described.

3. The combination of the tension-rod C with an elbow having a loose joint or joints, substantially as set forth.

99,460.—DEVICE FOR HOLDING TOGETHER THE DIFFERENT PARTS OF BUREAUS AND OTHER ARTICLES OF FURNITURE.—D. A. Mullane and J. O. L. Murray, New Orleans, La.

Claim.—Providing the elbow-bracket A with the transverse recess B, as herein described, for the purpose set forth.

99,461, antedated January 26, 1870.—LIGHTNING-ROD.—David Munson, Indianapolis, Ind.

Claim.—A lightning-rod point, formed with two wings *b*, extending in opposite directions, and at an angle to part *a*, substantially as and for the purpose described.

99,462.—PHOTOGRAPHIC-PRINTING FRAME.—Peter Murphy, New York, N. Y., assignor to E. and H. T. Anthony & Co., same place.

Claim.—The clamping segmental button, formed on the stem *i*, nut *k*, and segmental disk-head *o*, in combination with the swinging back *c*, of a photographic-printing frame, as and for the purposes set forth.

99,463.—CORN-HARVESTER.—William Murray, Alexandria, Va.

Claim.—1. The roller *m*, arms *p* and *w*, rods Y and *c′*, rake *a′*, and lever R, when combined with the platform K, and arranged to operate as specified.

2. The arrangement herein shown, of the shaft F, pinions *e* and *f*, crank *g*, rod *n*, cutting-bar O, knives *r*, and reel P, with its curved arms as described, when the same are combined with the platform K, and discharging-apparatus specified.

99,464.—MEDICAL COMPOUND FOR CURE OF DROPSY.—Jasper Newton and Ira Barfield, Richland parish, La.

Claim.—A medical compound, containing whiskey, or other alcoholic liquor, in combination with the root, or the extract thereof, of the *Asclepias Syriaca*, or silk-weed, when prepared as aforesaid, for the cure of dropsy or dropsical affections.

99,465. — THILL-COUPLING. — Fred Norris, Freedom Plains, N. Y.

Claim.—The combination of the grooved clip B, ears C C, forked shaft-iron D, rubber G, and bolt I, all constructed and arranged as described, and for the purposes set forth.

99,466.—BOOT AND SHOE-SHAVE.—Sumner Packard, Grafton, Mass.

Claim.—1. The conical-pointed adjusting-screws *e e*, substantially as and for the purposes set forth.

2. The arrangement, in the handle A, of the blade B, and the holding-screws *d d*, said screws being inserted from the front of the handle, so as to press against the shanks *a*, and cause the blade to take a direct bearing upon the handle, in the manner and for the purposes set forth.

3. A boot and shoe-shave, composed of the handle A, blade B, guard-plate E, holding-screws *d*, and adjusting-screws *f* and *c*, said parts being arranged to operate as shown and set forth.

99,467.—TOOTH FOR GRAIN-DRILLS.—Charles E. Patric, Macedon, N. Y.

Claim.—1. The arrangement of the draw-bar B, links *b b*, locking-stud *a*, and spring *d*, substantially as and for the purpose set forth.

2. The locking-stud *a*, links *b b*, and bosses or stops *i i*, in combination with the open or divided drag-bar B, operating substantially as set forth.

99,468, antedated January 21, 1870.—MANUFACTURE OF SOAP.—Henry A. Pease, Hartford, Conn.

Claim.—1. The combination of ingredients described, forming the composition designated herein as the "preliminary product," the same being compounded together by the process described herein as the "preliminary process."

2. As an article of manufacture, the compound designated herein as the "preliminary product."

3. The combination of ingredients, described herein, forming the compound designated herein as the "final product," the same being compounded together by the process described herein as the "final process."

4. As an article of manufacture, the compound described herein as the "final product.

99,469.—GRAIN-FAN.—Isaac Pennington, Tiffin, Ohio.

Claim.—In the grain-fan herein described, an improved arrangement of parts, consisting of the frame A, fan B, crank *b*, connecting-rods *d e*, lever E, frame F, with sieves G H and bottom I, spouts J K, hopper N, and adjustable slide O, when said parts are constructed, arranged together, and operated as described.

99,470. — COMPOUND TOOL.—Augustus S. Perban, Washington, D. C., assignor to himself, Alonzo Bell, and Amos Hadley, same place.

Claim.—The implement herein described, composed of the handle A, hatchet C, claw E, screw-driver and chisel H, saw and can-opener H′, and the tape-measure N, all being constructed and arranged to operate substantially in the manner and for the purpose specified.

99,471.—RAILWAY CATTLE-CAR. — Charles F. Pike, Providence, R. I., assignor to Henry C. Mahurin and Charles Smead, Boston, Mass.

Claim.—1. The outer sliding wall of a stock-car, constructed as shown and described, in combination with the sliding doors K, as and for the purpose hereinbefore set forth.

2. The adjustable partitions F, constructed of wire-net-work, and furnished with pintles G and H, and bolts I, in combination with the iron bars E, E′, and E″, as and for the purpose shown and described.

99,472. — SELF-FEEDING WOOD AND COAL COOKING-STOVE.—Joseph F. Pond, Cleveland, Ohio.

Claim.—1. A chute constructed in a semicircular form, attached to the feeding-door; also, a semicircular sliding valve, to close the fuel-receiver, the same being operated by the opening and closing of the door, or by a rod attached to the semicircular sliding valve.

2. A series of sliding valves, *u u*, attached to the under side of the top M, operating to and from the fuel-magazine R, to control the heat to each of the compartments separately.

3. The plate L, with its supporting-partitions *m m m*, to separate the series of griddle-holes, so that the heat may be directed to any one of them.

4. The movable plates *n n*, attached to the diaphragm-plate L, for closing up a portion of the openings N under the cooking-places, as described.

5. The extended fire-pot or top oven-plate G, with openings *k k* at the outer edge, to admit flame and heat down the sides and under the baking-oven, and the corresponding openings F F in the outer edge of the oven-bottom B, to convey heat to any part of the oven of circular or oval base-burning cooking-stoves.

6. Jointed rods or handles, for operating dampers in stoves, substantially as herein described.

7. In a circular or oval metal tube, or fire-pot, for base-burning stoves, the opening S in the lower edge of the fire-pot *a*, extending down to the grate *g*, and the shutter T to close the same, as and for the purposes herein described.

8. An adjustable moving plate or false bottom *b b*, to regulate the space E for the heat under the bottom of stove-ovens, the same to be operated by thumb-screws or equivalent devices.

9. The division-plates *d d*, between the base A and the oven-bottom B, to convey the heat to the front or rear portion of the ovens.

10. The construction and mode of forming the fastenings for stove-legs, and the oblong openings in the base or bottom-plate of stoves, to insert and secure the same.

99,473. — SPRING-HEADED SCREW-BOLT.—Daniel R. Pratt, New York, N. Y.

Claim.—1. The construction and arrangement of the cap A, containing within it the springs 1, 2, 3, or either of them, when combined with the bolt B and its head B', in the manner and for the purpose herein described.

2. The within-described method and means of attachment and securing the springs and bolt within the cap, in the manner and for the purposes herein set forth.

99,474.—OIL-CLOTH CUTTER.—Jonas Rauch, Selin's Grove, Pa.

Claim.—1. In combination with a platform, A, having forked clamp B, clamp C, and guide-channel *c*, the knife K, provided with the guards *v v*, pivoted to the sides of the blade, and toothed back *r'*, for cleaning out the groove of the platform, as specified.

2. The forked spring-clamp B, operated by a thumb-screw, and resting partially on the rubber cushions *r r*, as specified.

3. The knife K, provided with toothed back *r'*, and having the guard-bars *v v* pivoted to the sides of the blade, as specified.

99,475. — RAILWAY-CAR SPRING. — F. W. Rhinelander, New York, N. Y.

Claim.—1. A spiral spring, for railroad-cars, and other purposes, made of a metallic rope or strip, composed of strands of wire, braided or twisted together, substantially in the manner shown and set forth.

2. A spiral spring, for railroad-cars and other purposes, composed of strands of wire, of different elasticities, or of elastic and non-elastic strands, braided or twisted together, substantially in the manner shown and set forth.

99,476.—CLAMP FOR FORMING HORSESHOE-CALKS.—Jeremiah Rhoads, Niles, Mich.

Claim.—1. A clamping-swage, consisting of the block A, the stirrup or clamp C, constructed and arranged to operate substantially as described.

2. The combination of the die or block A, the stirrup or clamp C, and the adjustable eye-bolt B, all constructed and arranged as set forth.

99,477.—FLOORING-SET.—T. M. Richardson, Stockton, Me.

Claim.—The deck and flooring-set herein described, consisting of the standard A, dog B, staple C, and wedge D, constructed and arranged substantially as specified.

99,478. — SHOULDER-BRACE.—S. S. Ritter, Philadelphia, Pa.

Claim.—The combination of the plate A, shoulder-straps *a a a' a'*, front and rear attaching-straps *e e* and *f*, the former being adapted to slide on the shoulder-straps, and the latter attached to the plate, all constructed and arranged to operate substantially as described.

99,479, patented in England, January 6, 1869.—DECORATIVE SLAB FORMED FROM PLASTIC MATERIALS.—Edwin Robbins, Somers Town, England.

Claim.—Transferring a decorative design or surface from a table or other surface or mould to plaster, cement, or other plastic material, such decorative design or surface, upon the table or other surface or mould, being brought in contact with the plastic material before such plastic material is set or hardened, and so that when hardened, the decorative design will be transferred from the table or other surface or mould to, and fixed in the surface of the plastic material, substantially as hereinbefore described.

99,480, antedated January 24, 1870.—KNIFE-CLEANING MACHINE.—Thomas Roberts, Lynn, Mass.

Claim.—The arrangement of the vessel *a*, hollow tube *c c*, roller *d*, and perforated vessel *b*, as combined and arranged with the frame and table, and the apparatus to give motion to the machine, as shown and described.

99,481. — SEWING-MACHINE FOR MAKING GLOVES.—Bruno Rudolph, Berlin, Prussia.

Claim.—In combination, with the looper D, arranged upon the vertical spindle D^1, and constructed so as to receive a reciprocating rotary movement, as described, the needle *d* and finger *a*, the two disks *f* and *h*, operating to hold and feed the work, substantially in the manner set forth.

99,482.—LAMP.—James F. Russell, Washington, D. C.

Claim.—A lamp, provided with inlet-tubes H, the mouths of which are located above the base of the chimney, beyond the influences of any currents established at this point, and exit-tubes I, so located as to be fully within the influence of any such currents, for the purpose of producing a continuous influx of fresh air to the interior of the lamp, and the expulsion and consumption of any gases generated within, substantially in the manner described.

99,483.—WAGON-JACK.—P. B. Russell, Malone, N. Y.

Claim. — The construction and arrangement of the standard B, with its slot *a* and grooves *b c*, elevating-piece C, having projections *b' a'*, cams D F, handle E, and connecting-bar I, all substantially as shown and described.

99,484.—HASP FOR TRUNK-LOCKS.—A. V. Ryder, New York, N. Y.

Claim. — 1. A trunk-lock, in which the hasp B, when closed, is made to lie within a recess, *s*, formed in the face-plate of the lock or outside surface of the trunk, substantially as specified.

2. The hasp B, formed with its joint *d* on the back or inside face of it, in combination with the recess *f* in the face-plate of the lock or outside surface of the trunk, essentially as shown and described.

3. The combination of the hasp B, having its joint *d* arranged as described, of the recesses *e* and *f* in the face-plate of the lock, or outside-surface of the trunk, substantially as specified.

99,485.—METHOD OF PROTECTING THE ENDS OF VULCANIZED INDIA-RUBBER OR COMBINATION HOSE.—Junius Schenck, Brooklyn, N. Y.

Claim.—1. Protecting the ends of vulcanized India-rubber or combination hose by means of a metallic cap or cup, substantially as in the manner described.

2. As a new article of manufacture, for protecting the ends of vulcanized India-rubber or combination hose, the metallic cap or cup, the same being applied and used substantially as shown and set forth.

99,486. — HEAD-BLOCK FOR SAW-MILLS.—George Selden and O. C. Briggs, Erie, Pa., assignors to George Selden.

Claim.—1. The lever A and connecting-bar C, in combination with the hawk-bills D and D', when the same are arranged as and for the purposes set forth.

2. The lever A, connecting-bar E, toggles G and G', in combination with the hawk-bills D and D', when the same are arranged as and for the purposes set forth.

99,487. — COMPOUND FOR COLORING AND PRESERVING THE HAIR.—Gibson Smith, Groton Junction, Mass.

Claim.—The combination of hyposulphite of soda and glycerine, substantially for the purpose set forth.

99,488.—DRIER.—Marshall P. Smith, Baltimore, Md.

Claim.—1. A drying-chamber or oven, constructed with pipes for the admission of hot air and for the removal of the vapor, in the manner and for the purposes substantially as described.

2. In combination with the subject-matter of the foregoing, the application of the fan-blower, in the manner and for the purposes shown.

99,489.—STOVE-PIPE SHELF.—Job Smythe, Willing, and Chauncey Dexter, Independence, N. Y.

Claim—The tray B, hooks H, hinged strip D, and set-screw E, combined and arranged together, as set forth and shown.

99,490.—COMBINED HEDGE-TRIMMER AND STALK-CUTTER.—J. G. Sprague, Lexington, Ill.

Claim.—1. The arrangement of the shaft R, arms *k k*, knives *m m*, braces *n n*, bars P P, with guides *o o*, arms O O, and treadle N, all constructed as described, so as to be readily removed from the carriage, substantially as herein set forth.

2. The arrangement of the tongue L, bar *i*, staple *f*, boxes *e e*, and rod *d*, all as shown and described.

3. In combination with the cross-bar G, the knife T, when both are so arranged with journals and journal-boxes, or their equivalents, that the knife can be operated both laterally and perpendicularly, substantially as and for the purposes herein set forth.

4. The combination and arrangement of the standards W W, bar *t*, arms *v v*, bar *z*, and fork *y*, substantially as and for the purposes herein set forth.

99,491.— BASE-BURNING PARLOR COOK-STOVE.—David L. Stiles, Rochester, N. Y.

Claim.—1. The arrangement, in a parlor-stove, of the adjustable diaphragm D D, when combined with the open space C, in such a manner as to adapt said space to use, either as an oven or ash-chamber, as herein described.

2. In a base-burning parlor-stove, the construction of the body A, and its upper portion B, surrounding the magazine, in such a manner as to leave space outside the said upper portion B for the boiler-holes G G, the whole arranged as described, and for the purpose specified.

3. In combination with the fire-pot K, and the oven-space C, the arrangement of the series of draught-holes *a a*, situated above said oven-space, and opening into the top of the fire-pot, as described.

99,492.—SCAFFOLD.—Henry Swineford, Mifflinburg, Pa.

Claim.—1. The combination of the hinged bar E, hinged brace G, cross-bar H, slotted bars *b b*, and screws *a a*, all substantially as and for the purposes herein set forth.

2. The combination and arrangement of the bar E, brace G, bar H, slotted bars *b*, uprights A A, frames I J, platform K, and windlass L, with ropes *h i*, all constructed and operated substantially as set forth.

99,493. — TUNNELLING RIVERS. — William Sykes, Sheffield, England.

Claim.—1. The method of constructing subaqueous tunnels, by means of a shield, adapted to be floated and sunk into its proper position, and to receive a lining of masonry, substantially as set forth.

2. The shields or sections 1 2, constructed with open bottom and ends, and provided with penetrating grids *a b*, turrets *c*, elevated chambers *d*, and removable ends *f*, substantially as described, for the purpose set forth.

99,494, antedated January 21, 1870.—TWINE-CUTTER.—George C. Taft, Worcester, Mass.

Claim.—The twine-cutter herein described, having spring-bar *b*, and knife *d*, arranged upon the shield *a*, and adapted for attachment to the operator's garment by the pin *c* and hook *f*, or their equivalents, substantially as specified.

99,495.—MACHINE FOR DRILLING METALS.—George C. Taft, Worcester, Mass., assignor to Thomas H. Dodge, same place.

Claim.—1. The combination of cam J, having a many-sided hole formed therein with a many-sided supporting-piece, *c*, and the shank or spindle F, said parts being arranged in relation to each other, substantially as and for the purposes set forth.

2. The combination, with the feed-arm H, and lever-piece G *e*, of the cam-piece J, substantially as and for the purposes set forth.

3. The combination, with the stand P and bed A, of the stop-piece O Q, said parts being constructed substantially as and for the purposes set forth.

99,496.—DYE FOR COLORING WOOL.—George W. Talbot, Providence, R. I.

Claim.—A new dye for coloring, produced by the combination of extracts made from domestic barks, woods, or plants, with the foreign dies, such as fustic, cam-wood, madder, nut-galls, sumach, hypernic, Brazil-wood, weld, bar-wood, logwood, and red saunders, in any and all combinations necessary to produce the various colors.

99,497, antedated January 24, 1870.—PAINT FOR SHIPS' BOTTOMS.—Theodore D. Teal, Philadelphia, Pa.

Claim.—The composition herein set forth, prepared in the manner and for the purpose specified.

99,498.—SEED-SOWER.—John Henry Thomas, Springfield, Ohio.

Claim.—1. The sliding spouts *a a'*, arranged under the hopper, in such a manner that they can be adjusted to deliver the grain at front or rear at will, substantially as described.

2. The combination of the sliding spouts *a a'* with the spouts *b* and *c*, arranged to operate as herein set forth.

3. The sliding spouts *a a'*, with the spouts *d* pivoted thereto, substantially as described.

99,499.—COTTON-PLANTER.—T. T. Thorne and G. T. Thorne, Whitaker's Station, N. C.

Claim.—1. The construction of the straight cylinder A, with its straight knives *t* on the inside, oblong apertures *i*, with their adjustable flange B on the outside, and centre wheel C, when combined and operating as herein described, and for the purpose set forth.

2. The post J, coverer H, with its jointed lever F, and side bars E, as attached to the side bars D, when arranged and operating as herein described, and for the purpose set forth.

99,500.—MANUFACTURE OF OILS FROM PETROLEUM.—Charles Toppan, Wakefield, Mass.

Claim.—The within-described process of treating heavy paraffine-oil, as and for the purpose set forth.

Also, as a new article of manufacture, the products resulting from the filtration of heavy paraffine-oil, substantially as set forth.

99,501.—CORN-HARVESTER.—J. H. L. Tuck, Ottawa, Ill.

Claim.—1. The combination of the revolving cutter H, horizontal carrying-belts J, railing N, gate

X', platform I, discharge-rope S, bevel-gear E and E', cords or bands g, upright shafts L and L, and the main platform A, arranged, operating, and constructed as and for the purposes set forth.

2. The rope-spinning apparatus, composed of the box O, the revolving clamp P, and the pressure-foot Q, when forming part of a machine for cutting corn-stalks in the field, substantially as described.

99,502.—Milk-Tempering and Cooling-Apparatus.—Ichabod B. Tuttle, East Randolph, N. Y.

Claim.—1. The troughs I I, connected with the rails B B, in combination with the discharge-pipes f f, and elongated funnels a a, in one end of each pan D, operating for the purposes described.

2. The arrangement of the water-heating apparatus G, the water-cocks h h h, and the conduits f f f, for the purposes herein specified, in combination with the above-described milk-cooling and tempering-apparatus.

99,503.—Drawing-Frame for Flax, Hemp, &c.—Charles Wall, New York, and John Stewart, Brooklyn, N. Y.

Claim.—The combination, with the drawing and condensing-apparatus A A', of the combing and drawing-apparatus, consisting of the revolving comb-cylinders L, endless carrying-belt K, rollers N', and feed-devices, all substantially as specified.

99,504.—Breech-Loading Fire-Arm.—William G. Ward, Edgewater, N. Y.

Claim.—1. The hammer and firing-pin G, provided with the groove g^2, and cam-groove g^3, in combination with the steady-pin E, and breech-pin F provided respectively with the studs e and f^3, when constructed and operating as shown and described.

2. The hammer and firing-pin G, provided with the projection g^4, and cam Y, in combination with the breech-pin F, provided with the slot L, and the steady-pin E, formed with the inclined rear end, when constructed and operating as shown and described.

3. The pin or bolt d, working in an opening in the recoil-block, and operated by the trigger-bolt or other projection in the breech-pin, for ejecting the cartridge-shell, substantially as shown and described.

4. The spring-ping t, in combination with the breech-piece B, as described, so that said plug serves the purpose of centring the cartridge, and acts as a valve to prevent the passage of dirt, or gas and smoke, as set forth.

5. The double-armed trigger, provided with the safety-bolt M', substantially as shown and described.

99,505.—Revolving Fire-Arm.—Rollin White, Lowell, Mass.

Claim.—1. The combination of the fixed piston D, the hollow cylinder E, spring S, rammer R, and segmental groove in the barrel, partially enclosing the cylinder E, substantially as described.

2. A cartridge-ejector, with a coiled spring enclosed in it, for the purpose herein set forth, so constructed that there will be no slot or opening into the part that enters the chamber, substantially as and for the purpose set forth.

3. A support for the front end of the rammer or cartridge ejector, substantially as herein represented and described, to prevent said front end from being bent or sprung by accidental knocks or blows.

4. The latch or gate L, in combination with a spring-stop, to arrest and hold it in a horizontal position, as described, so that it will serve as a guide for inserting cartridges into the chambers of the revolving cylinder, as well as a gate, to keep the cartridges in their chambers, as described.

99,506.—Rake for Harvesters.—William N. Whiteley, Springfield, Ohio.

Claim.—1. The post E, cast in one piece with the guide-cam F, and secured by adjustable fastenings at the bottom, substantially as and for the purpose set forth.

2. The arrangement of the stud H, shaft J, and pulley I, as shown and described.

99,507.—Shingle-Machine.—Dunham Wilkes, Nineveh, Ind.

Claim.—The arrangement of gearing c d, shafts E J, elevated bearing K, fly-wheel w, and pulley e, in connection with knife G, and gauge H, uprights B B', sills A A', and staples L, to form a portable shingle-machine, as described.

99,508.—Swivel-Shackle.—William Williams, Vallejo, Cal., assignor to himself and Daniel Harrington, same place.

Claim.—A swivel-shackle or coupling, with the openings a in the link D, and the corresponding lugs on the bar C, substantially as herein described.

99,509.—Car-Brake and Starter.—J. Wall Wilson, New York, N. Y.

Claim.—1. The arrangement of the eccentrics P or P' in the body of the swinging shoes E or E', and fast on their shafts I or I', which carry operating radial pins m or m', for operation, substantially as specified.

2. The combination, with the brake-shoes E E', of the friction-wheels or brakes F F', the ratchet-wheels or racks D D', the starting-springs M M', together with their pawls, and the chains rods, and mechanism by which the shoes E E' or the friction wheels F F' may be operated at pleasure, as required, essentially as herein set forth.

99,510.—Paddle-Wheel.—Adam Wingard, San Francisco, Cal.

Claim.—1. The tripartite or three-parted buckets or floats, consisting of the tapering wings b b b, with their boxes d d, each bucket revolving upon an axle, a, substantially as and for the purpose herein described.

2. A paddle-wheel, composed of one or more hubs B B, each of said hubs being provided with radiating arms C C, and each arm being provided with a tripartite bucket, similar to that herein described, substantially as herein set forth.

99,511.—Self-Acting Mule for Spinning. Edward Wright, Worcester, Mass.

Claim.—1. The combination, with the draught-scroll M and cone-pulleys I and J, of the friction-clutch O, gears k i, and belt g, substantially as and for the purposes set forth.

2. The combination of the regulating-arm W, provided with a series of holes, z, and guide-cam B', with the connecting-cord w and shipping-slide T, substantially as and for the purposes set forth.

3. The combination, with the shipping-slide T, of the diagonal guide-rod V, arranged in relation to the cone-pulleys I and J, substantially as shown in the drawings, whereby the pressure-pulleys 8 bear upon the band g, at equal distances from their respective cone-pulleys, as the band g is shifted from one end of the pulleys to the other, for the purposes set forth.

4. The combination, with the flanged wheel e^1, drum d^1, and dog 1, of the friction-wheel A^1, friction-band k', pin 3, and cam B', substantially as and for the purposes set forth.

5. The combination, with the flanged wheel e^1 and carriage-frame R, of the cord a^1, substantially as and for the purposes set forth.

6. The combination, with the flanged wheel e^1, cord a^1, and carriage-frame R, of the drum d^1, weight-cord c^1, and weight g^1, or equivalent device, as and for the purposes set forth.

7. The combination, with the rod L' and ratchet-bar D', of the lever K', and projection r on the carriage, substantially as and for the purposes set forth.

8. The perpendicular slide-bar C', provided with notches n', substantially as and for the purpose set forth.

9. The combination, with the slide-bar C', of the catch-spring w', substantially as and for the purpose set forth.

10. The combination, with the slide-bar C', of the ratchet bar D', pawl-rod F', and springs m' and 4, substantially as and for the purposes set forth.

11. The combination, with the perpendicular slide-bar C' and horizontal slide-bar Q, of the inclined flange 5, substantially as and for the purposes set forth.

12. The combination, with the pinion 62, of the rocker 59 and sliding rack 58, substantially as and for the purposes set forth.

13. The combination, with the carriage-frame R, of the adjustable lever 66, substantially as and for the purposes set forth.

14. The combination, with the lever 66, of the adjusting-screw 69 and spring 70, substantially as and for the purposes set forth.

15. The combination, with the carriage-frame R and rocker 59, of the notched and bevelled rack 58 and lever 66, substantially as and for the purposes set forth.

16. The combination of the backing-off slide 28, having the slotted head 33, with the upright arm of the catch-dog 45, as and for the purposes set forth.

17. The combination, with the slotted projection 42, on the right-hand hanger O', and slotted head 33, on the slide 28 of the shackle-bar 39, stud-bolts 40, 41, and swing-arm 44, substantially as and for the purposes set forth.

18. The combination, with the backing-off slide 28, of a double-switch, 34, and lever 35, for operating the backing-off clutch, substantially as and for the purposes set forth.

19. The combination, with the double switch 34 and arm or lever 35, of a centralizing spring, 51, substantially as and for the purposes set forth.

20. The combination, with the slide 52, for disconnecting the faller-mechanism, of an inclined lug, 57, for operating the winding clutch-lever 17, substantially as and for the purposes set forth.

21. The combination, with the carriage-frame R, of the slide 52 and arm 53, for disconnecting the faller-mechanism, substantially as shown and described.

22. The combination, with the carriage-frame R, of the backing-off slide 28, substantially as shown and described.

23. The combination, with the backing-off slide 28, of the lever 37 and stop-guard 38, substantially as and for the purposes set forth.

24. The combination, with the backing-off slide 28 and disconnecting-slide 52, of the swing-piece 55, and pins 54 and 56, substantially as and for the purposes set forth.

25. The combination, with the winding-drum W' and clutch V', of the cords 8 and 9, substantially as and for the purposes set forth.

26. The combination, with the carriage-frame R, winding-clutch V', and devices for operating the same, of an adjustable screw or bolt, 74, and spring 71, substantially as and for the purposes set forth.

27. The combination, with the bevelled ratchet-bar D', of the rod I' and slide J', substantially as and for the purposes set forth.

99,512.—Broom for Stables, &c.—Thomas Wright, New York, N. Y., assignor to John A. Holmes, same place.

Claim.—The ring a, nails or screws d, and tapering handle c, as shown, in combination with the clamp f, for confining the folded fibres, as specified, and, in combination with the foregoing, the cap h, as and for the purposes described.

99,513.—Stone-Cutting Machine.—Hugh Young, Middletown, Conn., and James L. Young, New York, N. Y.

Claim.—1. The projecting or overhanging frame C C, in combination with the upright frames B B and main frame A, arranged in the manner and for the purpose set forth.

2. The vertical frame D, with its parts g g g g, and adjustable pillow-blocks, in combination with the projecting frames C C, and saw or milling-tool X, substantially as described.

3. The combination of the saw or milling-tool X, when provided with the shaft e, pulleys J J and I I, with the tables E and F, and their feeding-devices, composed of the screw H, nut G, gearings T T, shaft Z, and cones R'' R''', substantially as and for the purpose set forth.

4. The screens, sieves, strainers, or porous diaphragms, L, in combination with the apron K and the saw or milling-tool X, for the purpose herein set forth.

99,514.—Tool for Cutting Stone, &c.—Hugh Young, Middletown, Conn., and James L. Young, New York, N. Y.

Claim.—The cutter B of hard steel, combined with the block A of a milling-tool, circular saw, or wheel, when said cutter is embedded into said block, and both are made in the manner and used for the purpose set forth.

99,515.—Railway-Brake Shoe.—Edward H. Zitzman, Philadelphia, Pa., assignor to Albert A. Freeman, same place.

Claim.—The mode of attaching the shoe B to the sole S, by means of the hook H, lug F, lug L, opening N, opening O, stem T, and button D, substantially in the manner and for the purpose specified.

99,516.—Mould-Board for Plows.—F. E. Sessions and Samuel A. Knox, Worcester, Mass.

Claim.—A metallic mould-board for plows, made by the process, and in the manner substantially as above described.

99,517.—Boot-Jack.—Charles Brown, Charlottesville, Va.

Claim.—As a new article of manufacture, a portable boot-jack, made of a leather strap or other equivalent material, and provided with a slit, a, cut lengthwise of the strap, as herein shown and described.

REISSUES.

3,813.—Division A.—Varnish.—Damon R. Averill, New Centreville, N. Y.

Claim.—The above-described compound, consisting of water and acetate of lead, or other preparation of lead containing oxygen, with spirits of turpentine, and coal-tar, or its oleaginous equivalents, substantially as and for the purpose set forth.

3,814.—Division B.—Manufacture of Varnish.—Damon R. Averill, New Centreville, N. Y.

Claim.—The acetate of lead, or its eqivalents, alkali, and water, in combination with pigments, as and for the purpose esentially as specified.

3,815.—Cooking-Stove.—Esek Bussey and Charles A. McLeod, Troy, N. Y., assignees of Esek Bussey.

Claim.—1. A diving-flue cooking-stove, with the exit-flue so constructed as to enclose, on the sides and bottom, the culinary boiler or hot-water reservoir B.

2. A diving-flue cooking-stove, with the exit-flue constructed across the bottom and up the rear upright side of the culinary boiler or hot-water reservoir, B.

3. A diving-flue cooking-stove, constructed with an exit-passage, F, below the top of the oven, and an exit-flue E E', in combination with an uncased reservoir, B, attached to the rear of the stove, and placed just above such exit-passage, and so arranged that the gases of combustion, in passing through such exit-flue, will impinge upon or come in direct contact with said reservoir, substantially as and for the purposes hereinbefore specified.

4. An exit-passage, F, constructed in the rear of a diving-flue cooking-stove, and below the top of the oven, in combination with an uncased reservoir, B, attached to the rear of the stove, the bottom of which reservoir is also below the top of the

oven, and so arranged that the gases of combustion will come in contact with and heat such reservoir, by a direct draught from the fire-box to the smoke-pipe.

3. In a cooking-stove, wherein the rear-end vertical plate, or a portion of the same, has been removed for the purpose of heating a reservoir placed in the rear thereof, the shield-plate *w w*, in combination with the uncased reservoir B and the rear-end vertical flues K, L, and L′, substantially as and for the purposes hereinbefore described and specified.

3,816.—Treatment of Leather.—Nathan C. Russell, Gloversville, N. Y.

Claim.—1. The employment of fat liquor in the treatment of leather, substantially as specified.

2. The process, substantially as herein described, of treating bark-tanned lamb or sheep-skin, by means of a compound composed and applied essentially as specified.

3,817.—Reflector for Lamps.—William Gustavus Schmidlin and Jeremiah W. Driscoll, New York, N. Y.

Claim.—1. The reflector, formed of two or more truncated conical or pyramidal sections, *d e*, flaring away from the flame, substantially as and for the purposes specified.

2. The reflectors *l m*, combined with the conical or pyramidal sectional reflectors *d e*, substantially as and for the purposes specified.

3,818.—Division A.—Needle for Sewing-Machines.—Hannah G. Suplee, San Francisco, Cal.

Claim.—The within-described needle, for sewing-machines, having a slot or opening, A, from the eye, with points *c d* and projection *b*, substantially as and for the purpose set forth.

3,819.—Division B.—Needle for Sewing-Machines.—Hannah G. Suplee, San Francisco, Cal.

Claim.—The sewing-machine needle described, having the circular eye *a*, inclined slotted opening *b*, with overlapping points and projection *c*, all constructed and arranged as described, for the purpose set forth.

3,820.—Printing-Telegraph.—The Gold and Stock Telegraph Company, New York, N. Y., assignees by mesne assignments, of Thomas A. Edison.

Claim.—1. The adjustable stop, *g* or A, in combination with the click *b* or *c*, and ratchet-wheel D, substantially as specified, whereby the position of the wheel D, when blocked and stopped, can be adjusted by the stop *g* or A, substantially as set forth.

2. The adjustable stop *g* or A, click *b* or *c*, ratchet-wheel D, and lever E or F, in combination with the type or character-wheel C, and an electro-magnet to give motion to the lever, substantially as and for the purposes set forth.

3. The clicks *b c*, levers E F, magnets I J, and ratchet-wheel D, in combination with the stops *e f g* A, substantially as specified, for moving a type or character-wheel with a step-by-step motion, in either direction, substantially as specified.

4. The unison-lever L, in combination with the type or character-wheel, and a separate electro-magnet, M, substantially as specified.

DESIGNS.

3,827.—Stool-Pan and its Cover.—John Clarke, Boston, Mass.

Claim.—The design for stool-pan and cover, as represented and described.

3,828.—Ornamenting Glass-Ware.—J. H. Hobbs, Wheeling, West Va.

Claim.—The design for glass-ware, as shown and described.

3,829.—Ornamenting Glass-Ware.—William Leighton, Jr., Wheeling, West Va.

Claim.—The design for glass-ware or hot-cast porcelain, consisting of a wreath of blackberries, leaves, and stems, as shown.

3,830.—Carpet-Pattern.—Charles T. Meyer, Newark, N. J., assignor to Edward C. Sampson, New York city.

Claim.—The design or pattern for floor oil-cloth, carpets, or other fabrics, shown and described.

3,831.—Carpet-Pattern.—Charles T. Meyer, Newark, N. J., assignor to Edward C Sampson, New York city.

Claim.—The design or pattern for floor oil-cloths, carpets, or other fabrics, shown and described.

3,832.—Carpet-Pattern.—Charles T. Meyer, Newark, N. J., assignor to Edward C. Sampson, New York city.

Claim.—The design or pattern for floor oil-cloths, carpets, or other fabrics, shown and described.

3,833.—Sash or Shutter-Lift.—Emery Parker, New Britain, Conn., assignor to The Russell & Erwin Manufacturing Company, same place.

Claim.—The design for sash or shutter-lift, substantially as described, and shown in the accompanying photographic view.

3,834.—Stem for Glass-Ware.—Daniel C. Ripley, Birmingham, Pa.

Claim.—The improved design for stems for glass ware, consisting of side-stems *a a*, united by a thin solid web, *d*, substantially as shown and described.

3,835.—Medal of Elias Howe, Jr.—Allen B. Stockwell, New York, N. Y., sole surviving administrator of the estate of Elias Howe, Jr., deceased.

Claim.—The design for a medal, as shown.

3,836.—Bottle.—Loren J. Wicks, Bridgeton, N. J., assignor to himself, William Selser, Charles N. Selser, John A. Selser, George W. Turner, and John H. Poole.

Claim.—The design for the body and part of the neck of a bottle, substantially as represented in and by the accompanying drawing.

ISSUE OF FEBRUARY 8.

PATENTS.

99,518.—Cut-Off Valve-Gear.—A. W. Almqvist and F. W. Ofeldt, New York, N. Y.

Claim.—1. A mechanical movement, composed of the following elements: The spring B, lever D, stop-plate E, or equivalent, and stop-pin F, with or without the spring G, in combination with the axles or fulcra A and C, substantially as described and shown, for the purposes set forth.

2. The combination of the collar *b′*, and set-screws *a″*, with the sleeve or collar *a′*, substantially as shown and for the purpose set forth.

99,519.—Threshing-Machine.—Benjamin Ayars, Greenwich, N. J.

Claim.—1. In the threshing-machine herein shown, the combination, with the case and frame A, of the feed-apron D, with its perforated end, the toothed cylinder B, bed C, chute P, shoe E, bars I, fan N, the crank-shaft and its fly-wheel, and the inclined platform O, when the said parts are constructed and arranged as herein shown and described.

2. The double adjustable box J, screw K, and bolt-holder or clamp M, arranged substantially as described, for the purposes set forth.

99,520.—Hay-Crane or Carrier.—B P. Barackman, Linesville, Pa.

Claim.—The block C, in combination with the crane A B and the trip G, constructed as described, for the purposes set forth.

99,521.—Pump.—John S. Barden, Providence, R. I.

Claim.—1. The barrel A, cylinder N, lugs *l*, rings *g g′*, and supports *d*, all constructed, combined, and arranged substantially as described.

2. The barrel A, cylinder N, upper and lower packing-rings, supports *d*, and rings *g g′*, all constructed and arranged substantially as set forth.

99,522.—Flooring.—William Baum, Hoboken, N. J.

Claim.—The transverse rails D, secured to the under sides of the flooring-boards, in combination with the rails C on the beams, all arranged as described, to hold the boards in place, as specified.

99,523.—Window-Stop.—William L. Beckwith, Olmstead, Ohio.

Claim.—A window-stop, consisting of the side strips B B C C, in the window-frame, which fit into corresponding grooves in the sash, the sash sliding on said side strips, top and bottom strips *a b*, bevelled projections *c c′*, and strip *d*, all constructed, arranged, and operated as set forth.

99,524.—Neck-Yoke Tug.—George Bennett, New Pennington, Ind.

Claim.—The neck-yoke tug, or coupling, composed of the ferrules A B, and the described swivel-joint E E′ F G H J, for the purpose set forth.

99,525.—Base-Burning Fire-Place Heater.—Bentley C. Bibb and Philip Klotz, Baltimore, Md., assignors to Bentley C. Bibb.

Claim.—1. A fire-place heater, which is constructed with an intermediate radiating-section, forming a descending-draught chamber, E, fire-chamber R, and ascending-draught chamber or flue E^1, substantially as described.

2. The walls surrounding the fire-chamber R, formed of a front illuminating-wall, B, and a rear wall, H, in combination with a chamber, E, a hollow base-section, A, and a direct draught-flue, E^2, arranged to operate substantially as described.

3. The chamber *s*, formed between the upper portion of the magazine F and the cylinder C, and communicating with the chamber E, through passages A E^1 E^2, E^3, substantially as described.

4. The combination of chambers E E^1 with the hollow base-section A, and a chamber or space, *s*, substantially as described.

5. The division-plate *p′*, applied in the space *s*, substantially as described.

6. Air-heating box N, provided with a deflecting-plate, P, and arranged at the back of the top section or cylinder C, upon plate M, substantially as described.

7. A fender-base plate, M, in combination with a fender-rail, composed of the fixed portions L L, and intermediate portion or portions L′ L′, permanently connected to, but movable on the stationary portion or portions, substantially as and for the purpose set forth.

99,526.—Siphon.—Jabez A. Bostwick, New York, N. Y.

Claim.—1. The combination of a suitable valve with the end of a siphon-tube, and with a chain or cord passing through the tube, and secured to a weight, or to any suitable point of attachment independent thereof, substantially as herein described.

2. The combination of a siphon-tube B, with a sleeve or collar, C, secured to a tank or other vessel, A, to permit a free vertical movement of the tube, and with a side-rod passing through a flange on said sleeve, to prevent a rotation thereof, all substantially as herein set forth.

3. The combination of a spring, K, with a sliding siphon-tube, B, arranged and operating substantially in the manner and for the purpose herein set forth.

99,527.—Sediment-Chamber for Lamp-Posts.—George C. Bovey, Cincinnati, Ohio.

Claim.—The sediment-chamber D, constructed separately from the lamp-post, to be used in combination with such post, and with the service-pipe E, and gas-pipe B, substantially as above described.

99,528.—Metallic Cartridge.—Francis Everett Boyd, Boston, Mass.

Claim.—1. A cartridge, consisting of a metal shell, head, washer, and nipple, when these several parts are each constructed and all combined together, as set forth.

2. The combinations of the flared recess, small nipple, and extra vent-holes, the whole being and operating substantially as described.

99,529.—Water-Reservoir for Cooking-Stoves.—Esek Bussey, Troy, N. Y.

Claim.—1. The use and construction of a water-reservoir for a cooking-stove, having its wall, C and C′, next the stove, curved, bent, or formed in the manner and for the purpose as described and set forth.

2. The use and construction of the flue or pipe D, or its equivalent, (being a part of the water-reservoir,) in combination with the back ascending flue and the descending flue or flues of a cooking-stove, substantially as and for the purpose described and set forth.

3. The use and construction of the curved or bent plates E, or their equivalent, for the purpose and in the manner substantially as described and set forth.

4. A damper or dampers, constructed in the rear upright flue division-plate or plates, so that when open, the gases of combustion, in their passage from the fire-box to the smoke-pipe, will pass down in the rear of the oven only, and return upward to exit-passage, thereby heating the oven with a direct draught.

5. A damper or dampers, constructed in the rear upright flue-division plate or plates, in combination with a water-reservoir placed behind the rear flues of a diving-flue cooking-stove, so that when open, the gases of combustion, in their passage from the fire-box to the smoke-pipe, will heat the water-reservoir and rear of the oven at the same time, without passing around the oven.

99,530.—Improvement in Puncturing and Tubular Stopper for Sealed Cans.—Alexander Campbell, Charlestown, Mass.

Claim.—1. The discharging-stopper, as composed of the cork B, the eduction-tube C, and the perforator or cutter D, arranged or applied together as explained, and for use with the cap, substantially as described.

2. The cap A, as set forth, in its combination with the discharging-stopper, as described, and for use in a can, as specified.

99,531.—Railway.—Hiram Carpenter, New York, N. Y.

Claim.—The combination of the stone tie, plate, India rubber, and chair, constructed and arranged substantially in the manner and for the purpose described.

99,532.—Water-Wheel.—Ira Carter, Champlain, N. Y.

Claim.—The flaring wheel, with ellipse-curve

paddles, to which the water is applied inside, and discharges outside, in combination with the frame and water-case, having adjustable ports, substantially as shown and described.

99,533.—ADDING-MACHINE.—Gilbert W. Chapin, Brooklyn, N. Y.

Claim.—1. The register-wheels V, provided with gear-wheels W, ratchet-wheels X, pawls Y, spring-arms or frames Z, and single teeth or pins B' C', in combination with the adjustable sliding frames T and R Q, substantially as herein shown and described, and for the purposes set forth.

2. The two shafts M N, placed one above the other, and provided with ratchet-wheels O P and gear-wheels D' E', in combination with the gear-wheels W of the register-wheels V, substantially as herein shown and described, and for the purpose set forth.

3. The sliding spring-ratchet bars E F G, in combination with the vertical grooved plate D, and with the ratchet-wheels O P, attached to the shafts M N, substantially as herein shown and described, and for the purpose set forth.

4. A series of alternate long and short levers, with spring-keys attached thereto, when operated by the means specified.

5. The combination of the pivoted lock-plates K', and pins L' M', with the units and tens levers H, substantially as herein shown and described, and for the purpose set forth.

6. The combination of the pawl, single-toothed ratchet-wheel G', gear-wheel F', and sliding rack-bar H', with the register-wheels V, shaft U, and adjustable sliding frame T, substantially as herein shown and described, and for the purpose set forth.

99,534.—STEP AND BOLSTER FOR COTTON-SPINDLES.—Charles H. Chapman, Shirley, Mass.

Claim.—1. The combination of the boxes K and H, with the base D and spindle L, operating as either bolster or step, substantially as described, and for the purpose set forth.

2. The combination of the oiler M with the box K, operating substantially as described, and for the purpose set forth.

99,535.—SHIFTING CUTTER-THILL.—L. S. Clark, Bethel, Conn., assignor to himself, G. S. Peck, and G. W. Lyon.

Claim.—1. The combination of the links *g g*, hooks H, movable bar C, fixed bar D, clasps E, and fastenings I, with the runners A and thills B, all arranged as and for the purpose specified.

2. The combination of the bars D and C with the runners of a one-horse sleigh or other one-horse vehicle, arranged and operating substantially as and for the purposes described.

99,536.—SEED-DRILL.—Joseph B. Clemans, Kansas, Ill.

Claim.—1. The combination and arrangement of the runner E, spring F, and seed-tube G, substantially as shown, and for the purpose described.

2. The combination and arrangement of the runner E, seed-tube G, spring F, chains P and J, lifting cross-bar O, and lever K, substantially as shown and described.

99,537.—TRAP.—Daniel Cole, Scott township, Pa.

Claim.—The construction of cage-trap B, inside of frame *a*, the rolling thimble and arm D, made and used as herein described and for the purpose set forth.

99,538.—GANG-PLOW.—John Cox and Solomon Cox, Eugene City, Oregon.

Claim.—1. The bars *f g h*, when combined with the upright bar E and plow-beams D D, substantially in the manner and for the purpose herein shown and described.

2. The ratchet-wheel *l* and loose lever H, when used in combination with the pawl *n*, and with the ropes or chains *m*, substantially as herein shown and described.

99,539.—RAILWAY-CAR BRAKE.—Jay M. Crosby, Marathon, and William Ballard, Caroline, N. Y.

Claim.—The combination of the steam-pipe E, the lever or handle *i*, the steam-cocks A and *f*, or the slide-valve H, and the steam or valve-chest *d*, the cylinder C, the plunging-rod *g n*, the rod, cord, or chain *j*, the levers or arms O *b* and *q*, the rods or chains *r* and *s*, and the cords or rods *x*, *y*, *t*, and *s*, substantially as and for the purpose hereinbefore set forth.

99,540.—FLOATING VELOCIPEDE.—Oliver A. Davis, Brooklyn, N. Y.

Claim.—1. The combination of the large gear-wheel B, cranks D, whether provided with stirrups or not, small gear-wheel E, and bevel-gear wheels F and G, with each other, with the shaft H, screw I and boat A, substantially as herein shown and described, for the purpose set forth.

2. The combination of the adjustable seat L with the gear-wheel B, supports C, and cranks D, substantially as herein shown and described, and for the purpose set forth.

99,541.—MALTING GRAIN.—Rudolph d'Heureuse, New York, N. Y.

Claim.—The mode of controlling or accelerating the process of steeping grain for malt or other purposes, first, by regulating the temperature of the grain in the steep; second, by admitting the steep-water into the steep at or near the bottom; third, by adding such chemicals, or to prepare the steep-water in such a manner as will be found most effectual to quickly do the work; all of which, either separately or jointly done, substantially as hereinbefore described, and for the purposes set forth.

99,542.—SAD-IRON HEATER.—Robert Drake, Newark, N. J.

Claim.—The combination, in a gas-burning sad-iron, of the perforated tube A, fastened in the combustion-chamber, as shown, the air-orifices *d*, *e*, and *f*, and the inclined surfaces C C, arranged substantially as and for the purposes herein described.

99,543.—HAND-CULTIVATOR.—Lewis Duvall, Big Spring, Ky.

Claim.—The handles E and F, when arranged as described, in combination with the share A, shank C, and bar D, substantially as herein set forth.

99,544.—MACHINE FOR EMBOSSING HATS.—Rudolph Eickemeyer, Yonkers, N. Y.

Claim.—1. In combination with a rotating hat-block, an embossing-tool or roller, held in a swinging frame or its equivalent, substantially as described, so as to be capable of impressing a figure in spiral lines upon a hat revolving with the hat-block, substantially as described.

2. In combination with the revolving hat-block, embossing-tool, and swing-frame, the guide O and cam-guide *s*, whereby the position of the embossing-tool is regulated, and the regularity of the spiral figure upon the tip and crown of the hat insured, substantially as described.

3. In combination with the revolving brim-board and embossing-tool, the swing-frame and mechanism whereby it receives motion for guiding the embossing-tool, to impress a spiral figure upon the brim of a hat, substantially as described.

99,545.—RAILWAY-CAR BRAKE.—Daniel M. Elder, Monmouth, Ill.

Claim.—1. The levers O O' and sliding bars Q Q', provided with slotted projections *p*, or their equivalent, combined and operated substantially as and for the purpose set forth.

2. The arrangement of rabbeted draw-bars D' D'', having slots *d* and draw-bar D, having slot *d'* or shoulders *e*, with bolts G, bolt E, and bars F, the whole constructed and operating substantially as and for the purpose specified.

3. The combination of lever O and sliding bar Q with levers *L l*, rods *c* and *m*, stud H, brake-beams K K', and brakes *a*, substantially as and for the purpose specified.

4. The combination of lever O' and sliding bar Q' with levers L' and *f*, link *g*, rod *b'*, cams *c'*, brakes *a'*, and stud H', substantially as and for the purpose specified.

5. The combination of draw-bars D D' D'', studs H H', and levers L L', with levers O O' and sliding bars Q Q', substantially as and for the purpose specified.

99,546.—VELOCIPEDE.—George D. Emerson, Calumet, Mich.

Claim.—1. The combination of the frame C, the stirrups, spring-treadle arms, rock-shaft, and countershaft, substantially as specified.

2. The combination on the frame *c*, between the fore and hind wheels, of the countershaft I, pulleys P P', sliding clutch and pulleys on the wheel A, when arranged substantially as specified.

3. The combination and arrangement of the sandals *a*, plates or frames *b*, and uppers, when the said frames or plates are pivoted to the treadle-arms, substantially as specified.

4. The combination, with the stirrups pivoted to the treadle-arms, of the radius-rods O, substantially as specified.

5. The combination, with the stirrups and rock-shaft, of spring-treadle arms, substantially as specified.

6. The combination, with the frame and the wheel B, of the segmental steering-wheel cords and guide-pulleys, when arranged substantially as specified.

7. The combination, with the frame *c*, of the cranked rock-shaft T', guide-rollers T, spring-lever and hooked arm, all substantially as specified.

8. A velocipede-frame, composed of two bent bars of wood, shaped, arranged, and secured together, substantially as specified.

99,547.—RAILWAY-CAR WHEEL.—John N. Farrar, Pepperell, Mass., assignor to himself and George E. Brown, South River, N. J.

Claim.—1. In combination, with the tread-surface a^2, the tire D, formed with two right-angled flanges, for the purpose of protecting the central flange a^1 from abrasion and rapid wear, as set forth.

2. The improved method, herein described, of constructing wheels for cars, and similar wheels, by interposing an elastic material between the tread-surface and tire, and protecting the bearing flange from wear by a flanged tire.

3. The combination of the ring collar-plate E with the flanged metallic tire D and wheel A, substantially as herein shown and described, and for the purpose set forth.

99,548.—TURBINE WATER-WHEEL.—James J. Faulkner, McMinnville, Tenn.

Claim.—The arrangement (by concentric shafts, geared above the water-level in the manner set forth, of oppositely-revolving turbines, one below and receiving water from the other, the said wheels having similar but reversely-directed buckets, which extend outwardly, in lines tangential to a circle within the circumference of the wheel, and inclined somewhat backward toward their outer edge, so as to counteract the centrifugal tendency of the water, as described, in combination with the annular gate V and oblique chutes T, substantially as and for the purpose set forth.

99,549.—WASHING-MACHINE.—B. F. Fellman, Sellersville, Pa.

Claim.—The sliding frame K, consisting of the slotted bar *p*, cross-piece *q*, and rod *m*, in combination with the operating-lever L, arranged at the side of the machine, and with the vibrating rubber J, substantially as described.

99,550.—FRUIT-JAR.—A. E. Fife, Rochester, N. Y.

Claim.—The construction of the can or jar, with the angular shoulder *a*, plain neck *c*, and projecting bead *b*, when employed in connection with the stopper B, in such a manner as to seal at the three points described, and to form the air-space *g*, in the manner and for the purpose specified.

99,551.—PRINTING-PRESS.—Merritt Gally, Rochester, N. Y., assignor to Allen Carpenter, same place.

Claim.—1. A reciprocating plate, in combination with wheels, rollers, or guides, moving in or upon oppositely-inclined ways, substantially as herein set forth.

2. A pressure ink-fountain, for printing-inks, substantially as herein set forth.

3. The combination of rods and springs T, journal boxes R, and guards S, substantially as herein set forth.

99,552.—WASHER AND WRINGER.—D'Alembert T. Gale, Poughkeepsie, N. Y.

Claim.—1. The board C, arranged in a frame, A, and made reversible therein, to be used for washing, in combination with roller D, as set forth.

2. The rollers D E, arranged on the frame A, for the purpose of operating alternately with the reversible reciprocating wash board, substantially as herein shown and described.

3. A combined washer and wringer, consisting of the frame A, reversible wash-board C, rollers D E, and springs F, all arranged to operate substantially as herein shown and described.

99,553.—TRUNK-LOCK.—Edward L. Gaylord, Terryville, Conn.

Claim.—1. The combination of a handle, E, provided with springs, F, and toes, *e'*, with the hasp-plate C, substantially as herein shown and described, and for the purpose set forth.

2. The combination of the flexible covering, made of leather, enamelled cloth, or equivalent material, with the lock and hasp, either or both, substantially as herein shown and described, and for the purpose set forth.

99,554.—GAS-PRODUCING FURNACE.—William Gerhardt, New York, N. Y., assignor to himself, Thomas Daffin, and Thomas Banes, Philadelphia, Pa.

Claim.—1. In a gas-producing furnace, a double-inclined grate, consisting of pipes *c* and *c'*, and of bars *a*, arranged substantially in the manner described.

2. The bars *c'* of the furnace, open at their inner ends, perforated beneath with a number of holes, *f*, and furnished with air, under pressure by a pipe, F, all substantially as herein set forth.

3. The combination of the said pipes *c'* with water-tubes I, when the latter are contained within the former, and are likewise open at their inner ends, and perforated beneath with a number of small holes, all substantially as herein described.

4. The perforations of the water or steam-tubes I, so arranged, in respect to the openings *f* of the air-pipes *c'*, that jets of combined steam and air may be projected downward from the latter openings into the space beneath the grate.

5. The combination and arrangement, substantially as herein described, of the air-pipes F, C, G, H, and H'.

6. The gas-flues K, L, and M, arranged within the furnace at different heights above the grate, and communicating with pipes R and R', substantially as herein set forth.

7. The valves *f'* in the said gas-flues, for the purpose specified.

8. The combination, substantially as herein described, of the branches *m* and *m'* of the pipes H' and R', for the purpose specified.

9. The valve *p*, arranged within the branch *m'*, for the purpose of regulating the passage of air from the branch *m*.

10. The charging-hopper c, furnished with a hinged bottom, and with a cover-plate, arranged to be operated independently of each other, substantially as herein set forth.

99,555. — HORSE-POWER. — C. H. Gifford, Potsdam Junction, N. Y.

Claim.—The arrangement of the wheel A, driving-wheels E E, centre pinion wheel F, bevel-wheel H, and pinion I, in combination with the lever D, post B, and platform or bed C, substantially as and for the purposes herein shown and described.

99,556, antedated February 5, 1870.—FASTENING STOVE-DOOR LINING.—Henry G. Giles, Troy, N. Y.

Claim.—The nibs C, or their equivalents, in combination with a stove-door lining, as and for the purposes herein set forth.

99,557.—GUN-WIPER.—C. F. Gilletto, Sparta, Wis.

Claim.—1. The wiper A, composed of vulcanized rubber, and consisting of the truncated cones *a a a'*, when constructed and arranged to operate substantially as herein described.

2. The wiper A, constructed as aforesaid, the screw-spindle B, and nut C, when combined and arranged to operate as described.

99,558. — VEHICLE-SPRING.—John Goller, Los Angeles, Cal.

Claim.—1. A wooden spring, K, slotted from the initial point of the bend out to the end thereof, and strengthened throughout the curve by a steel-spring plate, I, in the centre, and a circumjacent steel-spring plate, A, all as shown and described.

2. A spring, whose end works easily against some elastic material in the socket of a circumjacent steel band, A, and is thereby allowed to readily contract and expand longitudinally, in the manner set forth.

99,559.—NOSE-RING FOR HOGS.—O. P. Goodman, Chillicothe, Ohio.

Claim.—The hog-nose ring herein described, consisting of the pin A *a a'*, constructed as specified, and a head, B, cast thereon, substantially as set forth.

99,560. — CORN-STALK-CUTTING KNIFE. — George D. Goodsell and Noyes E. Babcock, Rockford, Ill.

Claim.—As a new article of manufacture, the implement described, having the handle A, cimeter-shaped blade B, with a smooth edge upon its convex surface, and a serrated edge upon its concave, whether made with or without the strengthening-piece C, as described, for the purpose set forth.

99,561.—SCIENTIFIC PLAYING-CARDS.—Caleb Goodwin, Chicago, Ill.

Claim.—1. The scientific cards herein described, when printed in four colors, and arranged in classes substantially as and for the purposes specified.

2. Cards, having an illustrated centre, with the scientific and common names, order, class and race or character, printed on the margin or border, as a new article of manufacture.

98,562.—RAILWAY-CAR COUPLING.—Robert Green, Boonton, N. J.

Claim.—The catch-plate E, arranged to turn in a slot, F, on the draw-head, to shut behind projections G, on shelves H, to move between guides L, and to be fastened by locking-catch Z, all as shown and described.

99,563.—MODE OF CONNECTING PITMEN TO CUTTER-BARS.—William Green, Ashland, Ohio.

Claim.—The device described, consisting of the bar A, heel B, and pitman C, when constructed as described, for the purpose set forth.

99,564.—VENTILATING MILLSTONES.—Amos Grube, West Hempfield township, Pa.

Claim.—The construction and application of adjustable side flues B, in combination with the perforations or openings *b*, from the flue through the opening *a*, in the ordinary open top case or curb A, for the purpose specified, substantially in the manner shown.

99,565.—DOOR FOR CANNON STOVE.—Conrad Harris and Paul W. Zoiner, Cincinnati, Ohio.

Claim.—An annular door or register, surrounding the base of a cannon stove, for the purpose of regulating the supply of air to the fuel, as herein represented and described.

99,566.—ANTI-FRICTION JOURNAL-BEARING. R. G. Hatfield, New York, N. Y.

Claim.—1. In combination with a journal, the revolving bearing-ring C, arranged and operating substantially as and for the purposes described.

2. The revolving friction-roll frame D, in combination with the bearing-ring C and journal B, arranged and operating substantially as and for the purposes set forth.

3. The stand H, guide-stand I, friction-roll frame D, and bearing-ring C, in combination with a journal, substantially for the purposes described.

4. In the construction of the anti-friction journal-box, the recess J, or its equivalent, operating in conjunction with the friction-rolls, substantially as herein shown and described.

99,567, antedated August 27, 1869.—VELOCIPEDE. — Gustavus L. Hausknecht, Brooklyn, N. Y.

Claim.—1. The herein-described device, of providing said rotating axles A or B with anti-rattling collars *u u*, made of leather or suitable material, in combination with the friction-rollers *t t*, with journal-boxes *s s*, arranged and operating together, substantially as described and set forth.

2. The rotating axles A or B, in combination with the hubs or wheels revolving on the ends of said axles, and the friction-rollers *t t*, with journal-boxes *s s*, the whole being arranged and operating together, substantially as described and set forth.

3. For the turning-arrangement, the combination of front axle B with the front wheels, the journal-boxes *s s*, cross-bar *v*, reaches *a a*, with front cross-bar *a*, coupled by king-bolt *w*, being arranged and operating in a one plane movement, substantially as described, for the purposes set forth.

4. In the driving or propelling-arrangement of the vehicle, the manner of producing rotary motion of the notched wheels *d d*, and shaft *k*, by the alternate working forth and back of the treadle-levers *e e*, said levers being provided with pawls or dogs *l l*, operating on notched wheels *d d*, substantially as described and set forth, or the equivalents thereto.

5. The additional movable treadle-bars *g g*, sliding in slots *h h* of said treadle-levers, for operating said levers, substantially as described, and for the purposes set forth.

6. The rods or bars *i i*, jointed to the treadle-levers, for operating said treadle-levers, arranged substantially as described, for the purpose set forth.

7. The employment of bars *a* and *a'*, for the purpose of limiting the alternate motion of treadle-levers, in combination with the said treadle-levers, its appurtenances, and the notched wheels, substantially as described and set forth.

8. The combination of bars *a* and *a'*, the treadle-levers *e e*, notched wheels *d d*, and reversible dogs or pawls *l l*, for the purpose of stopping the running motion of the vehicle, substantially as described and set forth.

9. For the steering-gear of the vehicle, the herein-described device of the combination of rotating front axle B, with both front wheels running over the ground, and the friction-roller journal-boxes *s s*, with friction-rollers *t t*, the whole being actuated and working from the king-bolt *w* by means of lever *x* and connecting-rod *z*, and communicated substantially as described, for the purposes set forth.

10. For braking the velocipede, the band or belt C, of suitable material, to regulate the speed of the velocipede in descending hills, arranged and operating substantially as described and set forth.

99,568.—SHEET-MUSIC TURNER AND HOLDER.—F. J. Herpers and M. M. Sommer, Newark, N. J.

Claim.—1. The combination of the spring-turning arms D, retaining-button, ratchet, and spring-pawl, arranged on a suitable holder, all substantially as specified.

2. The combination, with the holder jointed at M, and provided with the legs N P, of the spring-lever O, substantially as specified.

99,569.—WATER-WHEEL.—G. A. Houston, Beloit, Wis.

Claim.—1. A water-wheel, with buckets, constructed between inclined rims, substantially as described.

2. In combination with the wheel, constructed between inclined rims, the case C, when constructed with port-holes, through an inclined surface thereof, substantially as described and shown.

3. The combination of the wheel, the case C, and gate D, when constructed and arranged so as to operate substantially as specified and shown.

4. The combination of the arm E and levers *e*, when constructed and arranged to operate a water-wheel gate, substantially as described and shown.

99,570.—FURNACE.—Joseph B. Hoyt, Stamford, Conn.

Claim.—1. The inclined grate-bars *c c*, having openings running up and down such incline, in combination with the grate-bars *b*, having longitudinal openings, as and for the purposes set forth.

2. The inclined grate-bars *c c*, in combination with the chutes A and hoppers *k*, substantially as and for the purposes set forth.

3. The chutes A and hoppers *k*, for effecting a gradual supply of fuel upon the fire-bed, in combination with air-inlets *i i*, adjacent to the fuel, as supplied for the purposes specified.

4. The perforated bridge-wall *l*, and combustion-chamber *c*, in combination with the fire-chamber *d*, and means substantially as specified, for feeding the fuel gradually to the fire.

99,571.—APPARATUS FOR SEPARATING GOLD AND SILVER FROM PULVERIZED QUARTZ. Edward A. Hyde, Ann Arbor, Mich.

Claim.—1. The cylinder C C C', constructed as described, in combination with the heads D and E, substantially as set forth.

2. In combination with the cylinder C C C', the feeding-apparatus, containing the wheels O O, with eccentric sliding arms U U, substantially as and for the purpose described.

3. In combination with the cylinder C C C', the feeding-apparatus, containing the endless chain with floats or pistons, substantially as and for the purpose described.

4. In combination with the cylinder C C, the fire-brick H', substantially as set forth.

99,572.—METHOD OF ATTACHING FLOAT AND SINKER TO FISHING-LINES.—James Ingram, Troy, N. Y.

Claim.—In combination with the wire loop C, attached to the float or sinker, the pin *d*, as and for the purposes described.

99,573.—FEED-WATER HEATER FOR STEAM-GENERATORS.—Enos B. Johnson, Chicago, Ill.

Claim.—A feed-water heater, consisting of the chest A, serpentine steam-pipes C, and shelves E, all combined to operate substantially as herein shown and described.

99,574.—WORKING SCRAP AND OTHER IRON. George W. Jones, Ormsby, Pa.

Claim.—In the process specified, raising to a working-temperature the iron or steel, while it is enclosed in a casing as described, and welding or closing up all joints in the casing at the first action of the rolls or hammer thereon, so as to produce a finished bar at a single heat, substantially as above set forth.

99,575. — POTATO-DIGGER. — George W. Knight, Camden, N. J.

Claim.—1. The fork P, secured to the handles C, upon wheels, the said forks being shaped, as shown, so that the potatoes pass over it, and down the conductor G, into the basket H, in the manner substantially as herein shown and described.

2. The legs K, arranged and operating in combination with the shafts C, fork P, and axle B, in the manner and for the purpose herein described.

99,576.—OPERA-CHAIR.—Bernhard Koechling, New York, N. Y.

Claim.—The chair-back B, having the hooks *a*, in combination with the side frames A, which have the hooks *c* and the supporting-stops *b*, substantially as herein shown and described.

99,577.—KEY.—Joseph Linder, Seneca Falls, N. Y.

Claim.—The slotted key, containing the pivoted plate B, which carries the bit *a* and the cam *c*, and is acted upon by the spring *d*, substantially as herein shown and described.

99,578. — HOISTING-MACHINE. — Matthew Lynch, New York, N. Y.

Claim.—1. The combination of the beam G, guide-pulleys F, and box or platform H, with the endless rope E, to adapt said rope to serve both as a hoisting-rope and as a guide or way to the said box or platform, substantially as herein shown and described.

2. The combination and arrangement of the wheel J and gear-wheel M with the weighted rope I K, box or platform H, small gear-wheel N, shaft C, and wheel D, around which the endless rope E passes, substantially as herein shown and described, and for the purpose set forth.

3. The combined brake and pawl and ratchet-wheel P O, in combination with the operating-rope Q, shaft C, gear-wheels N and M, wheel J, weighted rope I K, and box or platform H, substantially as herein shown and described, and for the purpose set forth.

99,579.—FENDER FOR FIRE-PLACE STOVE. John Martino, Philadelphia, Pa.

Claim.—A horizontally-swinging gate, C, in combination with fixed sections, and a base, A, constituting a new and improved fender, substantially as described.

99,580.—FENDER FOR FIRE-PLACE STOVE. John Martino, Philadelphia, Pa.

Claim.—A fender, which is constructed with a continuous guard-rail, beneath which is an opening provided with a sliding section or door, substantially as described.

99,581.—FIRE-PLACE GRATE.—G. H. McElevey, New Castle, Pa.

Claim.—1. The separate open grate-back D, in combination with an ordinary grate, and with the recess B, formed in the rear of said grate, substantially as herein shown and described, and for the purpose set forth.

2. The recess B, formed in the rear of the grate, and extending above the said grate, in combination with the open grate-back D, substantially as herein shown and described, and for the purpose set forth.

3. The thin metal or tile plate E, whether made solid with, or separate from the open grate-back D, in combination with the said open grate-back D, and with the upwardly-extended recess B, substantially as herein shown and described, and for the purpose set forth.

4. The metal plate F, in combination with the recess E, open grate-back D, and plate E, substantially as herein shown and described, and for the purpose set forth, whether said plate F be pivoted or stationary.

5. The combination of the rod G, with the pivoted plate F, open grate-back D, and grate C, substantially as herein shown and described, and for the purpose set forth.

99,582.—GRATE-BAR.—William McMonnies, Brooklyn, N. Y.

Claim.—The construction of grate-bars, for steam and other purposes, with wrought-iron caps and cast-iron bodies, substantially as shown and described.

99,583.—MEDICINE FOR CURE OF FEVER AND AGUE.—Jacob Hamton Morris, Enton, Ohio.

Claim.—The medicine, for the cure of fever and ague, composed of the within-named ingredients, substantially as described.

99,584.—GRATE.—Howell Mulford, Philadelphia, Pa.

Claim.—1. The combination and arrangement of the grate-fork C, with the sliding bar or damper E, substantially as shown and described, in combination with the sliding grate B.

2. The holder D.

99,585.—HOT-AIR FURNACE.—Edmund D. Norcross, Augusta, Me.

Claim.—1. The arrangement about the ash-pit and lower part of the hot-air chamber of an air-heating furnace, of a jacket or equivalent device, constituting a heat-radiating surface, communicating with the fire-box, so as to receive the heat and other products of combustion evolved from the fuel, substantially as and for the purposes set forth.

2. In an air-heating furnace having a considerable portion of its heat-radiating surface in the form of a box or conduit disposed at or near the bottom of its hot-air chamber, and about or near its ash-pit, suspending this radiator from the dome by upright flues in such manner that variations in length of these flues shall not result in loosening of or injury to the joints between such flues and dome and radiator, or other part, for the purpose explained.

3. The mode herein described of uniting the dome *g*, pipes *i*, and base-radiator or box *j*, that is, by means of the short rods or bolts *k* and *m*, and the ears *l l' n n'*, or their equivalents, for the purpose explained.

4. The combination and arrangement of the upright flues *i i*, dome *g*, yoke or conduit *j*, and smoke-flue *o*, in manner and for the purpose as hereinbefore explained.

5. In combination with the fire-pot and dome of an air-heating furnace, a range of upright flues, when one end-pipe of such range is in communication with the interior of the dome, and with a closed flue or conduit extending about the lower part of the fire-box or ash-pit, and the opposite end-pipe in communication with a smoke-discharge flue and the said conduit, essentially as explained.

6. In an air-heating or other apparatus, applying the grate to the furnace thereof in such manner as to lower its front edge, for convenience in removing clinkers, non-combustible matters, &c., when such grate is capable of being entirely removed from such furnace.

99,586.—LOOM.—John R. Norfolk, Salem, Mass.

Claim.—1. A shuttle-carriage, with the rollers arranged on its upper side, and in contact with the under side of the race-plate, so as to communicate motion to the rollers in a direction reverse to that of the shuttle, the said rollers being held up to the race plate by springs or their equivalents, substantially in the manner described and shown.

2. A shuttle, carried through the warp by a shuttle-carriage, and guided in its passage across the lay by a series of guides on the upper side of the race-plate, which will allow the warp to pass freely between said guides, and so arranged as to prevent the shuttle from deviating from its proper course, or flying out while in its passage through the warp, and provided at its ends with rollers journaled on spring-bearings, and arranged in contact with the rollers in the top of the shuttle-carriage.

3. The continuously-rotating flanged or grooved wheels K and shuttle-carriage C, connected by cords or equivalents, the wheels being constructed substantially as described, so that the shuttle-carriage is reciprocated from a continuously-rotating shaft.

4. The wheels K and cord O, in combination with the cam S and shifting-bar, or their equivalents, to guide the cords on and off the flange, as described.

99,587.—RAILWAY-RAIL FASTENING.—William Palliser, of the Army and Navy Club, Pall-Mall, England, assignor to Joseph Valentine Smedley.

Claim.—1. The lapping or folding wedges C C', arranged between the chair and web of the rail, held in place by fillets *c*, or their equivalent, and tightened by bolt and nut, the bolt passing through a recess, *c'*, in the inner inclined faces of the wedges, substantially as set forth.

2. The combination of nut and washer, one at least of which is conical, and split from end to end, and the other recessed, substantially as and for the purposes described.

99,588.—MANUFACTURE OF IRON AND GRANULATING THE SAME.—William H. Perry, Sharon, Pa.

Claim.—1. Granulating molten cast-iron by bringing it in contact with a vertical revolving wheel, the face of the wheel being kept wet, either by streaming water or steam on to it, or by a partial submersion of the operative face of the wheel in water, substantially as described.

2. A revolving granulating-wheel, in combination with one or more pairs of crushing-rollers, substantially as described.

3. A hood, *b*, having a gate or gates, for the supply of molten iron, in combination with a granulating-wheel, substantially as described.

4. A hood, *b*, hopper-shaped at its lower end, in combination with a granulating-wheel, and one or more pairs of crushing-rolls, arranged substantially as described.

99,589.—HAY-GATHERER.—W. E. Phelps, Elmwood, Ill.

Claim.—The arrangement of the revolving rake E F H, having trippers K, supported upon the bearing-wheels G, and connected by draught-bars D to the axle A, supported on wheels C, all being constructed and arranged substantially as described, for the purpose specified.

99,590.—BASE-BURNING STOVE.—J. A. Price, Scranton, Pa.

Claim.—1. The central cover B, combined with the vizor *b*, as and for the purpose described.

2. The cover B, vizor *b*, chute *a*, and orifice *a'*, all combined and arranged as and for the object specified.

99,591.—HORSE-POWER.—James M. Rand, Chicago, Ill.

Claim.—The combination of the stationary platform C, apron B, guide *d*, and belt of rollers *d'* D, all constructed and arranged to operate substantially as described.

99,592.—GROOVING-MACHINE FOR SHEET-METAL.—Charles H. Raymond, Southington, Conn.

Claim.—The grooving-machine, consisting of the tubular tapering jaw *a*, socket *b*, side pieces *c*, and ∩-shaped upper jaw *d*, slide-rack *f*, pinion *e*, and roller *l*, constructed and arranged relatively to each other, as described.

99,593.—PIN FOR ARTIFICIAL TEETH.—Hiram M. Raynor, New York, N. Y.

Claim.—The combination of the continuous wire B, forming a series of connecting-pins, with the rubber C and teeth D, as and for the purpose specified.

99,594.—CLOTHES-WASHER AND DRIER.—Edwin Rees, Stoddartville, Pa.

Claim.—1. The combination of the furnace C D, perforated fender E, rack or frame M', and boiler or chamber B, with each other and the box A that contains the clothes-washing device, substantially as herein shown and described, and for the purposes set forth.

2. The combination of the rubber-roller X, provided with the projections *x'*, of the same material, the detachable rubber-board N, constructed as described, sliding frame O, and spring-clamp P Q, with each other, with the box A, and with the chamber B and its attachments, substantially as herein shown and described, and for the purpose set forth.

3. The combination of the vertically-sliding frame S with the rubber-board N, sliding frame O, and box A, substantially as herein shown and described, and for the purpose set forth.

4. The combination and arrangement of the gearing E' G' F' H' and rack I' with the sliding frame O that carries the rubber-board N, so as to communicate a reciprocating motion to said sliding frame, by a continuous movement of the driving-gearing, substantially as herein shown and described, and for the purpose set forth.

5. The rinsing device J' K', in combination with the box A, that contains the washing device, and with the shaft D', substantially as herein shown and described, and for the purpose set forth.

6. The arrangement of the gearing L Y Z A' B' C', whereby reciprocating motions of different rapidity are given simultaneously to the several operating parts of the machine, substantially as herein shown and described, and for the purpose set forth.

7. The combination of the fan-blower H with the furnace C, box A, and with the gearing K L Y Z A' B' C', substantially as herein shown and described, so that the said fan-blower may be thrown into and out of gearing with the said gearing, when required, as set forth.

99,595.—MODE OF SPLITTING ROCK.—John Robb, New York, N. Y.

Claim.—The herein-described improved mode of splitting or separating rocks, by means of concussive force imparted to water or other liquids placed in the holes made in the rock, through the medium of plunger D, above the water, fitting the holes, and arranged to receive the said force from a hammer, drop, or other device, all substantially as specified.

99,596.—SAW-FRAME.—Thomas H. Rollins, Detroit, Me.

Claim.—A buck-saw frame, provided with a straining-lever, D, loop-rods G E, perforated plate I, cross-bar C, and sockets J, all constructed as described.

99,597.—SUSPENSION BRIDGE.—Jarvis Royal, White Rock, Ill.

Claim.—1. Using the main cable of a suspension bridge in sections, supported on a central pier, substantially as and for the purposes described.

2. The main cable A, when fastened at one end to the intermediate pier C, and at the other to the bridge abutment at or near the pier B, as and for the purpose specified.

3. Supporting the shore ends of a suspension bridge above the main cable, substantially as shown and described.

4. The arrangement of the sub-cables E, in combination with the main cable of a suspension bridge, substantially as shown and described.

99,598.—DENTAL ARTICULATOR.—George F. Schaffer, New York, N. Y.

Claim.—The box A, applied to a dentist's articulator, to serve as a joint for the two parts of the same, as set forth.

99,599.—PLANING-MACHINE.—John B. Schenck, Matteawan, N. Y.

Claim.—1. The combination of the crank-screw H, support J, nut I, with the bar F, slides G G, sliding in oblique grooves in uprights D, and in horizontal slots in hangers E E, cylinder-axle boxes C C, and cylinder B, all constructed and arranged to operate in the manner and for the purpose described.

2. The combination of the devices above claimed, with the retaining-bolts and nuts K K, in slots L L, of the supports of the axle boxes C C, in the manner and for the purpose described.

3. The cylinder B, provided with knives or cutters B', having grooves or serrations in their cutting-edges, when said grooves or serrations are placed in the several knives, in the manner and for the purpose described.

99,600.—SAWING-MACHINE.—John B. Schenck, Matteawan, N. Y.

Claim.—1. The tipping-table B, supported on the half-round trunnions C C, whose axial line is coincident with the saw-line and the top of the table, which line is not changed by the tipping of the table, and carrying the adjustable feed-rolls F F', and the means of adjusting them, so that the table and rollers may all be tipped, and held in an inclined position, as herein described.

2. The combination of the centrally-pivoted bar *m*, connected at its ends to the slides H H', having ears I', with the screws I, roll-carriers G, and rolls F F', constructed and operating in the manner and for the purpose herein described.

3. Rendering stationary the slides H and feed-rolls F, by removing the screws *v*, and inserting them in the holes *w*, while the feed-rolls F' remain free to adapt their positions to the varying thicknesses of the lumber to be sawed.

99,601.—CARRIAGE-STOP.—William Schoch, Plumsteadville, Pa.

Claim.—A removable jointed fly or "shoot," for a carriage-top, arranged substantially as herein shown and described.

99,602.—STEAM-ENGINE.—Peter Shellenback, Middletown, Ohio, and John Harton, Seymour, Ind.

Claim.—1. The piston-rod B, provided with a double channel, one for the live steam, and the other for the exhaust, substantially as and for the purpose specified.

2. The cylinder A, in combination with the piston-rod and its head H, constructed and operating substantially as and for the purpose described.

3. The tubular piston-rod B, and head H, in combination with the valves *e f h*, operating in the manner and for the purpose described.

4. The collar M, in combination with the piston B, cylinder A, and steam-chest C, substantially as and for the purpose described.

5. The exhaust-chamber E, in combination with the tubular piston-rod B, arranged and operating in the manner and for the purpose specified.

99,603.—MOP AND SCRUBBER-HEAD.—E. H. Shoemaker and Samuel McCleery, Franklin county, Ohio.

Claim.—The arrangement of the keepers with its end pieces B B, in combination with the cylinder E, provided with tubes K K and sockets G G, as shown, for the purpose described.

99,604.—BOOT-PATTERN.—Elias Shopbell, Ashland, Ohio.

Claim.—1. A pattern for cutting the fronts of boots, constructed with diagonal extension-links or plates H G, plates A B C and D E F, and slots *b*, all combined and arranged to operate in the manner substantially as described, and for the purpose set forth.

2. A pattern for obtaining and cutting the depth of the heel of boot-backs, when constructed with diagonal extension-plates or links T U, in combi-

nation with the plates B Q, adjustable heel-plate P, and slots *b*, all arranged to operate in the manner as described, and for the purpose set forth.

3. A pattern for cutting the backs of boots, constructed with diagonal extension-links N O, plates J K and L M, and slots *b*, combined and arranged to operate substantially in the manner as described, and for the purpose specified.

99,605.—NEEDLE-WRAPPER.—Alfred Shrimpton, Redditch, England.

Claim.—The method of inserting needles in a compound strip, formed of a fabric, C, and paper A, which is then secured in a wrapper, in the usual way, all as described.

99,606.—ROTARY PROVISION-SAFE.—Austin Sly and Samuel S. Ford, Lebanon, N. H.

Claim.—The revolving screen, containing the cup *d*, pan *e*, shelves *j j*, sliding shelf *g*, and door or doors *i*, all arranged and combined substantially as herein shown and described.

99,607. — CARRIAGE AXLE-BOX.—Alfred E. Smith, Bronxville, N. Y.

Claim.—Forming the ledge or ledges G and annular groove F on the face or back of a solid-headed axle-box, D, in combination with the cap H, having on its inner circumference the ledge or ledges of metal, J, for locking into the annular groove F, when combined with the cap-nut L, having a flange, M, or its equivalent, substantially as described, and for the purposes hereinbefore set forth.

99,608.—LAUNDRY-BENCH.—Albert H. Spencer, Providence, R. I.

Claim.—1. In combination with the platform A, the adjustable upright B and braces C, arranged substantially as described.

2. In combination with the platform A and a suitable upright, B, the folding legs F, substantially as described.

3. The improved laundry-bench herein described, combining the folding legs F, adjustable upright B, and braces C, for the purposes specified.

99,609. — SAD-IRON HEATER. — Ferdinand Stadler, Philadelphia, Pa.

Claim.—The sliding door *i*, constructed as specified, and the fender *k*, in combination with the openings *g g g*, the grate *x*, and the ash-pit *y*, substantially and for the purpose as set forth.

99,610. — COMPOSITION OR FILLING FOR COACH-PAINTERS.—John W. Tully, Delano, Pa.

Claim.—1. The employment, in coach-filling, of powdered pumice-stone, for the purpose specified.

2. Coach-filling composition, composed of ground slate, white lead, or its equivalent, powdered pumice-stone, and varnish, as set forth.

99,611.—MECHANICAL MOVEMENT.—James C. Vancleave, Hamburg, Arkansas.

Claim.—The combination and arrangement of the fly-wheel A, cranks *a*, rods *c*, springs E, levers H and *u*, and arms *y*, substantially as and for the purposes specified.

99,612.—CHURN.—Richard P. Wells, Dayton, Ohio, assignor to himself and John P. Comly, same place.

Claim.—The equilateral triangular box A, provided with rollers E, ping D, and lid B, having bar F, screw G, and hook I, when supported in bearings K by journals, one of which has the hole C, as and for the purpose hereinbefore specified.

99,613. — COOKING-STOVE. — Alexander White, Geneseo, Ill., assignor to himself, Alexander H. Hammond, and Isaac D. Ruggles, same place.

Claim.—1. The construction and arrangement of the grate B, substantially as and for the purpose specified.

2. The combination of the grate B with the projections *t t*, substantially as and for the purpose specified.

99,614. — CURRENT WHEEL. — Eugene A. White, Boston, Mass.

Claim.—The combination and arrangement of the floats *e*, *f*, and *g*, the pins *p*, and connecting-rods *h*, for the purposes above set forth, and substantially in the manner above described.

99,615.—MANUFACTURE OF YEAST FOR DISTILLERS.—Joseph Wolff, Lexington, Ky.

Claim.—The process for making distiller's yeast, substantially as herein shown and described.

99,616.—FARE-BOX FOR STREET-CARS.—W. W. Wormood, Dubuque, Iowa, assignor to himself and C. Hathaway, same place.

Claim.—A circular or other formed pay-box, arranged for oscillation upon trunnions, and provided with the receiving shelf F, guard-shelf I, and otherwise arranged substantially as specified.

99,617. — GRAIN-PLATFORM FOR HARVESTERS.—John P. Adriance and Thomas S. Brown, Poughkeepsie, N. Y.

Claim.—1. The combination, substantially as set forth, of the following elements in a harvester, namely, a quadrant platform, an adjustable apron attached to said platform at its rear or discharging-end, and a sweep-rake which moves about a perpendicular, or nearly perpendicular axis.

2. In combination with the platform of a harvesting-machine, a rear or second guard-rail, C, supported at one end only, arranged and operating substantially as set forth.

3. The combination of a quadrant platform, an adjustable apron, and a rear or second guard-rail, all arranged and operating substantially as set forth.

99,618. — COMPOSITION FOR PREPARING WOOD FOR PAINTING.—John Babcock, Cambridgeport, Mass.

Claim.—The within-described composition, made of the ingredients set forth, and mixed together, substantially as and for the purpose specified.

99,619.—NECKTIE.—John Bachelder, Norwich, Conn.

Claim.—The retainer E, provided with the notched perforation *b*, elastic cord *c*, and eyelet *d*, with or without the plate I, combined and arranged as described.

99,620. — HASP-FASTENING FOR FRUIT-CRATES.—Francis R. Baird, Norfolk, Va.

Claim.—The above-described hasp-fastening, bent at right angles to fit under the edge of the slat, and furnished with a bevelled edge and slot for automatically securing it upon a single spring-fastening, secured upon the inside of the slat.

99,621.—STEP-LADDER.—John H. Balsley, Dayton, Ohio.

Claim.—The construction of step-ladder sides of strips of wood or other material, the strips having a greater width than thickness, and the edge of one jointed to the side of the other, thus forming an angle, to give vertical and lateral strength with the least amount of material, all substantially as set forth.

99,622.—BRACKET-HINGE FOR LADDERS.—John H. Balsley, Dayton, Ohio.

Claim.—A metal bracket, constructed as described, to form a support for a ladder-top, and a joint for the leg, without the use of any attachment to said leg or support.

99,623.—CHAIN-SHACKLE. — Elijah Bangs, Provincetown, Mass.

Claim.—The combination and arrangement of the auxiliary screw-bolt C and the elastic washer D with the bowed link A of the chain-shackle, and with the main bolt B socketed and provided with a female screw, substantially as described.

99,624.—MANUFACTURE OF STEEL.—Julius Baur, New York, N. Y.

Claim.—1. The above described process of making steel, by combining or alloying metallic chromium with metallic iron, so that the metallic chromium shall be present in the finished product, substantially as set forth.

2. The foregoing process of making steel, or what may be termed a substitute for steel, by combining or alloying metallic chromium with metallic iron, in such a manner that the metallic chrominm shall be present in the finished product, and shall be the only agent which imparts to such product the qualities of steel, substantially as described.

99,625.—CULTIVATOR.—Daniel G. Benner, Holmesville, Ohio.

Claim.—The combination and arrangement of the main centre beam *a*, side beams *d*, braces *n m*, and handles *r r p p s h*, the parts being constructed and operated substantially as set forth.

99,626.—VISE-CLAMP.—Bror Folke Bergh, Boston, Mass.

Claim.—The vise-clamp herein described, consisting of the strained iron ground-plate A, having a facing, *c*, of copper, yellow brass, or other soft metal, constructed and arranged to operate as specified.

99,627. — PACKING FOR STEAM-ENGINES, PUMPS, &c.—William Beschke, Philadelphia, Pa.

Claim.—1. Fibrous material, saturated with the chemical compound herein described, for the purpose set forth.

2. The process herein described for preparing packing from fibrous materials, the same consisting in saturating them with adhesive substances, and applying mechanical pressure, as set forth.

3. The mode herein described for forming packing into suitable shapes for various purposes, as described.

4. The mode of putting up, for transportation, packing prepared by the process herein described.

5. The devices herein described for securing the several layers of packing in cylindrical form, as described.

6. The new article of packing made by the several operations and processes herein set forth.

99,628.—PRESERVING FRUITS, VEGETABLES, &c.—Lyman Bradley and Thomas D. Phillips, Buffalo, N. Y., assignors to themselves and A. D. Denny, same place.

Claim.—Preserving fruits, vegetables, &c., by the conjoint and simultaneous application of steam and sulphurous-acid gas, or other equivalent antiseptic agent, whereby the latter, in the required quantity, properly diluted, is equally diffused throughout the mass, during the parboiling process, substantially as hereinbefore set forth.

99,629.—AERIAL SHIP.—Martin Braun, Cape Vincent, N. Y.

Claim.—1. An aerial ship, consisting of the body A′, the balloon A″ B C″ D, the elevating blades L, and propelling-blades O, the screw-rod S, with its adjustable weight *y*, and the rudder B″, all constructed, shaped, and arranged to be operated substantially as herein described.

2. The balloon A″ B C″ D, constructed of three or more gas-tight compartments, and shaped and connected to the body of an aerial ship, as herein described, and for the purpose set forth.

3. In combination with the balloon A″ B C″ D, the elevating-blades I, and vertical shaft T, when constructed and arranged to operate substantially as herein described, and for the purpose set forth.

4. The propelling-blades O, pinions R, and heads A, in combination with the shaft T and platform T′ U W, with its row of cogs *s*, and track X, all constructed as herein described, and for the purpose set forth.

5. The screw-rod S, with its adjustable weight *y*, constructed and arranged to be operated as described, for the purpose of balancing the ship, as set forth.

6. The horizontal shaft Y, provided on its inner end with a handle or lever, and on its outer end with a steering or balancing-blade or rudder B, shaped as shown, and arranged to operate as described and for the purpose set forth.

99,630.—AMALGAMATOR.—John C. Brewster, New York, N. Y.

Claim.—The combination and arrangement of the series of perforated plates C′ C′, within the amalgam-reservoir C, the basin A, and the receiving and discharging-tubes B D E, the whole constructed and operating substantially as described and set forth.

99,631. — BASE FOR SUMMER-PIECE AND GRATE-FRAME.—Andrew Brown and William Patterson, Brooklyn, E. D., N. Y.

Claim.—The base *c* for the movable summer-piece and grate-frame, substantially as and for the purposes specified.

99,632. — RAILWAY-CAR COUPLING. — Leopold F. Buschmann, New York, N. Y.

Claim.—1. The combination of the hook B, slide D, and locking-catch E with the draw-head A.

2. The handle F, provided with shoulders *g g*, in combination with the drawhead A, catch E, stop *e*, slide D, and hook B, substantially as set forth.

99,633.—CORSET FASTENING.—William B. Cargill, Waterbury, Conn.

Claim.—1. A blade for corset-hooks, consisting of two flexible strips, *a a′*, the inner ends of which overlap, and are rigidly connected to each other at a single point, substantially as described.

2. The combination of the two flexible strips *a a′*, permanently secured together at a single point, and a clasp or its equivalent, arranged to retain the overlapping end of one strip in contact with the other, without preventing the sliding or play of the said strip, as specified.

99,634, antedated January 29, 1870.—BELT-TIGHTENER.—M. C. Chamberlin and A. Clawson, Plain View, Minn.

Claim.—The curved bar D, provided with the knob or handle H and rod G, when used substantially as shown.

2. The collars L, when used to secure the pulley K at any desired point on the bar G, substantially as set forth.

3. The arrangement of the curved bar D, rod G, pulley K, collars L L, handle H, curved and slotted plate M, and screw N, all substantially as shown and described.

99,635.—FOUNTAIN-PEN.—Richard H. Chinn, Washington, D. C.

Claim.—The shape and construction of the cylindrical pen A, having a slanting oval end, and tapering spring-point F at the side, regulated by a screw and nut, H, and a notch, G, in the rear, to be attached to any kind of a handle or pen-holder, as herein described.

99,636, antedated January 28, 1870.—BED-BOTTOM.—I. A. Clippinger and Samuel S. Pratt, Newton, Iowa.

Claim.—A bed-bottom frame, A, having its ends formed in the shape of a dovetail, as herein shown and described, in combination with the spiral springs *b*, slat C, and elastics E, when constructed and arranged as set forth, for the purpose of easy attachment to and removal from a bedstead-frame.

99,637.—Treating Argillaceous Limestones, to obtain Hydraulic Cement, &c.—François Coignet, Paris, France, assignor to "Coignet Agglomerate Company of United States," New York city.

Claim.—1. The utilization of the residuum arising in the manufacture of lime, by mixing the pulverized residuum with the calcined limestone at the time the latter is being sprinkled, substantially as herein set forth.

2. The process herein described of obtaining from argillaceous limestone, at a single burning, three distinct products, viz: first, flour of lime; second, light, slow-acting cement; third, heavy, slow-acting Portland cement.

3. In the manufacture of lime, the method of burning Portland limestone, so called, at the temperature required to bake Portland cement, substantially as set forth, whereby that portion of the stone producing bad cements may be eliminated by vitrification and reduction, when dry, so as to leave an hydraulic lime.

4. Eliminating from the calcined limestone all of the lime not containing enough clay, and preserving the excess of lime, by means of slaking effected by submitting the whole of the limestone which has been burnt at the temperature specified to a sprinkling of water on coming out from the kiln, the limestone being in such condition that the heat of the steam produced will cause the complete slaking of all such portions as are capable of being slaked.

5. Separating or reducing, by means of grinding, as herein described, the fragments or pieces of lime charged with clay, which, although slaked, still have a certain cohesion, the product arising from the grinding operation being a light, slow-acting cement, substantially as set forth.

99,638.—Machine for Bending Rake-Teeth.—Columbus Coleman, Allegheny City, Pa.

Claim.—The combination and arrangement of the disk D, movable form *g*, guide A, grooved roller *f*, sliding-head B, spring C, and lever J, constructed, arranged, and operating with relation to each other substantially as herein described, and for the purpose set forth.

99,639.—Rudder for Vessels.—Stephen G. Coleman, Providence, R. I.

Claim.—Additional wings or blades *a' a'*, attached to an ordinary rudder or rudder-post, substantially as described.

99,640.—Grate-Bar.—Henry Collinson, Dorchester, assignor to himself and N. M. Hazen, Andover, Mass.

Claim.—1. A furnace-grate, consisting of two or more sections or seats of frames, each of the frames being provided with loosely-fitting grate-bars, and so journalled and connected with the frames of the same section that each section of frames may be shaken or tilted from the outside, independently of the other, substantially as herein described.

2. The frames D provided with the journals, and having recesses for the reception of the bars *c*, as set forth.

3. The main frame, consisting of the bars B and C, constructed and arranged substantially as described.

99,641.—Machine for Combing Cotton, &c.—Hezekiah Conant, Providence county, R. I.

Claim.—In a machine for combing cotton or other fibrous material, the combination of a combing-cylinder, E, with an upper set of vibratory nipping-jaws, provided with feeding-rollers, and a lower set of similar jaws, provided with delivery-rollers and collecting-apron, arranged with relation to the said delivery-rollers substantially as shown and described.

99,642.—Furnace Grate-Bar.—Jonathan Cone and William K. Kelly, Bristol, Pa.

Claim.—1. A rocking grate for steam-generator and other furnaces, having its journals, or the points where it rests upon its supports, eccentric to its axis, substantially as and for the purpose set forth.

2. A furnace-grate, having an elliptical upper surface and a bearing-surface eccentric to its axis, substantially as and for the purpose set forth.

3. The flange F, upon the inner end of the bar A, substantially as and for the purpose set forth.

4. The combination of the cradle B and the eccentric journal upon the end of the bar A, substantially as and for the purpose set forth.

5. A grate-bar, having an elliptical upper surface, in which there are two series of apertures parallel to each other, and an eccentric bearing-surface, and a projection at or near its end, for rocking said bar, all substantially as and for the purpose specified.

99,643.—Horse Hay-Rake.—John H. Cook, Hagerstown, Md., assignor to Hagerstown Agricultural Implement Manufacturing Company, same place.

Claim.—The angular plate D E, to hold the ends of the rake-teeth securely in the groove, when constructed and combined with the rake-head in the manner herein described, and for the purpose set forth.

99,644.—Toy.—Charles L. Combs, Washington, D. C.

Claim.—A doll or top, constructed to balance in various positions, by means of a gyroscope wheel concealed within it, substantially as herein described.

99,645.—Oven.—Alexander Crumbie, Jersey City, N. J.

Claim.—The combination of an automatic stop mechanism, substantially as herein described, with the reel and bread-holders of a baker's reel-oven, and the mechanism for moving the same, the combination being substantially as herein described, whereby the bread-holders are moved forward and stopped, and held at the proper place at the oven mouth for discharging and recharging.

Also, in the above specified combination, making the index-wheel, which constitutes a part of the stop-motion, with adjustable stops, adjusted to give the required position of the bread-holders at the mouth of the oven.

99,646.—Fire-Plug.—James Curran, Baltimore, Md.

Claim.—1. The bisected casing H, provided with flanges *b b* and vertical slots, in which the set-screws L L are adjusted, substantially as and for the purposes herein set forth.

2. The combination of the central column A with collars *a a*, and the bisected casing K with flanges *b b* and set-screws L L, all substantially as and for the purposes herein set forth.

3. The cup I and box J, secured, as described, between the column A and cap H, substantially as and for the purposes herein set forth.

99,647.—Knitting-Machine Needle.—John F. Daniels, Lake Village, N. H.

Claim.—The needle A, having its latch-pivot, C, made with the enlarged middle part *a*, and smaller shouldered bearings *b b* at the ends, substantially as and for the purposes herein specified.

99,648.—Mop and Rubber Scrubber.—Biram C. Davis, Binghamton, N. Y., assignor of one-third to William M. De Long, and one third to William F. Mills, same place.

Claim.—The combination and arrangement of the frame A, clamps D E F G, series of rods I I I, and thimble-nut J, the whole being arranged substantially as shown and described, for the purpose specified.

99,649.—Bib-Cock.—Joseph H. Davis, Allegheny City, Pa.

Claim.—A "bib-cock" made of cast-iron, and subsequently annealed, all substantially as herein described.

99,650.—Angle-Valve Cock.—Joseph H. Davis, Allegheny City, Pa.

Claim.—An "angle-valve cock" made of cast-iron, and subsequently annealed, all substantially as herein described.

99,651.—Globe-Valve Cock.—Joseph H. Davis, Allegheny City, Pa.

Claim.—A "globe-valve cock" made of cast-iron and subsequently annealed, all substantially as herein described.

99,652.—Check-Valve Cock.—Joseph H. Davis, Allegheny City, Pa.

Claim.—A "check-valve cock" made of cast-iron, and subsequently annealed, all substantially as herein described.

99,653.—Valve-Cocks made of Cast-Iron and Subsequently Annealed.—Joseph H. Davis, Allegheny City, Pa.

Claim.—A new article of manufacture, viz: a valve-cock constructed of cast-iron, and subsequently annealed, substantially as herein described.

99,654.—Machine for Making Paper Twine.—R. V. De Guinon, South Bergen, N. J.

Claim.—The disk J, provided with journals E^1 E^2, turning in bearings A A, the journal E^2 having an opening bored through it to receive the tube I, the bore of which is made of the exact size of the cord to be produced, and the whole constructed and operating substantially as described.

99,655.—Pianos.—Andreas F. Dessau, Washington, D. C.

Claim.—1. The tuning-pins *c*, when operating substantially as and for the purposes set forth.

2. The string-holding pins *b*, when constructed with a shoulder, *b'* and a screw-end, in combination with the tuning-pins *c*, substantially as and for the purpose set forth.

3. The pins *b*, when operating and secured in the metal frame A'', without passing into the wood frame, substantially as and for the purposes set forth.

99,656.—Sheet-Metal Roofing.—Joseph Diehl, Clayton, Pa.

Claim.—The combination and arrangements of the holding-down knee-plates E, having two flanges *e e'* with the lining B and sheets D, substantially in the manner and for the purpose above set forth.

99,657, antedated February 5, 1870.—Shaft-Coupling.—Charles F. Du Vall, Milwaukee, Wis.

Claim.—1. A coupling, consisting of pieces A, B, and D, constructed substantially as described.

2. A, B, C, D, and E, constructed substantially as described.

99,658.—Brick-Machine.—Thomas Ellis and William A. Ellis, Philadelphia, Pa.

Claim.—The brick-machine herein described, having the revolving hopper A arranged to feed the moulds H H, attached thereto, as specified.

99,659.—Sectional Fly-Wheel.—Henry L. Farr, Indianapolis, Ind., assignor to C. A. Greenleaf, J. L. Mothershead, and Edwin J. Peck, same place.

Claim.—A fly-wheel or pulley, constructed of two or more sections or radial divisions, combined and united at centre and circumference, substantially as herein described.

99,660.—Machine for Measuring Horses for Collars.—William H. Flynn, Somerville, Mass., assignor to himself, Thomas J. McCormick, and E. P. Edstrom, Jr.

Claim.—In combination with the main strip or scale-piece *a*, the fixed arm *b*, having the neck-piece *d*, and the movable arm *e*, having the breast-piece *f*, substantially as described.

Also, in combination with the main strip *a* and arms *b* and *e*, the slide *g*, substantially as described.

99,661.—Writing-Slate.—John H. French, Albany, N. Y.

Claim.—1. The frame A, containing slots in the inner edge of the opposite pieces, or a groove in the inner edge of one of the pieces, to admit of the insertion, on one or both sides of the slate, of one, two, or more cards of card-board, or other material, containing lessons in writing, printing, arithmetic, picture-drawing, and map-drawing, either any one separately, or two or more, or all combined, substantially as and for the purposes described.

2. The cutting away of any portion of the thickness of the slate on the edge or edges, so as to admit of the insertion, between the slate and the groove in the frame, of the edge or edges of one or more cards containing lessons in writing, printing-arithmetic, picture-drawing, and map-drawing, substantially as herein described.

99,662.—Fruit-Jar.—William Galloway, Philadelphia, Pa.

Claim.—A preserving-vessel, provided with a packing-ring unconfined externally, and projecting above the mouth or neck of the vessel, in combination with a cap having a horizontal flange which bears on the edge of the packing, substantially as described.

99,663.—Atmospheric Transportation.—Rufus H. Gilbert, Washington, D. C.

Claim.—1. The construction and arrangement of tube A, supported on arches, or in any suitable way, when provided with the gates L L, reservoirs K K, and elevating-platform D, and blower I, with the connecting-pipes, all substantially as herein set forth.

2. In combination with the tube A, with its gates and elevating-platform, and the blower and connecting-pipes, the cylinders C C, with pistons, ropes, and pulleys, all arranged to operate as set forth.

3. The construction and arrangement of the gates L, moving in ways P, and weights T, in combination with the rod V and lever W, substantially as set forth.

4. In combination with the gates thus hung, and operated by the rods and levers, the safety-valve Z, located near the gates, as and for the purpose herein set forth.

5. The combination and arrangement of the telegraph-device Y, consisting of the conducting metallic pins a^2 a^3, ground-wires D^2, telegraph-wire B^2, and spiral wires C^2, all substantially for the purposes and in the manner herein set forth.

99,664.—Corset.—Thomas S. Gilbert, Birmingham, Conn.

Claim.—A corset constructed by combining several stays A laced together so as to form a whole, substantially in the manner herein set forth.

99,665.—Exploding Compressed Powder.—Edwin Gomez, New York, N. Y.

Claim.—The vein of quick-firing explosive material, combined with, and introduced through the consolidated mass of explosive material, substantially as and for the purposes set forth.

99,666.—Metallic Cartridge.—Edwin Gomez, New York, N. Y.

Claim.—1. A sheet of paper, or similar material, coated with an explosive compound, and rolled or coiled, and inserted into and combined with a metallic cartridge-case, so as to separate the powder by the intervening sheet, and retain the powder from shaking out, by said sheet-metal case, as and for the purposes set forth.

2. The cavity at the end of the coil or roll of paper, for the projectile, formed by the wider portion *b'* of the paper containing the explosive material, between its layers, substantially as and for the purposes specified.

99,667.—Turn-Table.—Clemments A. Greenleaf, Indianapolis, Ind.

Claim.—1. Centrally-divided truss-beams A A, in combination with a central supporting-box B, when the two ends of each beam are brought together to form a continuous truss, independent of and exterior to said box, substantially in the manner and for the purpose herein set forth.

2. Projecting stripe or lugs *e e* and flanges *e' e'*, formed upon each division of a divided truss-beam, A, and combined with a central box, K, sustaining said beams, when said stripe and flanges embrace, or partially embrace and overlap the edges or corners of said box, substantially as herein set forth.

99,668. — Towel-Drier. — Selim Elijah Grout, West Concord, Vt.

Claim.—The improved towel-drier, as made with the ears F, and T-pieces E, and the arms G, arranged together, and with the clamp A A', in manner as specified and represented.

99,669.—Spring-Power. —Albert C. Hallam and James W. McKee, Brooklyn, E. D., N. Y.

Claim.—1. The treadle or foot-lever *l*, in combination with the winding-gear of the spring-power, substantially as described.

2. The lever *l* and spring *k*, in combination with the friction-strap *j*, drum *i*, and spring-power, substantially as set forth.

3. The pawl *f*, provided with the stop A, in combination with the spring *g*, substantially as herein specified.

99,670. — Knitting-Machine. — Henry V. Harts and Julius Feiss, Cleveland, Ohio.

Claim.—1. In a knitting-machine, the combination of the two cam rings C D, moving in opposite direction, with the gear-wheels *b b*^{1} *b*^{2}, for operating them, substantially as and for the purposes specified.

2. The rings R R, constructed substantially as shown and described, when applied to a knitting-machine for the purpose of raising the needles out of their grooves, in narrowing the fabric.

3. The V-shaped take-off plates T T^1, connected to a central axle by the arm T^2, and adjustable by means of the ring E and worm-screw E', when constructed and operating substantially as described, and for the purpose of supporting and adjusting the take-off devices.

4. The take-off apparatus, (supported by said plates T T^1,) consisting, essentially, of the parts *t* *t*^{1}, *t*^{2}, *u u*^{1}, *v*, *s s'*, *e*, all constructed and operating in connection with the cam *u*^{2} and needles *a a'*, substantially as set forth, and for the purpose of taking up the yarn after it has been delivered to the last needle of one row, and delivering it to the first needle of the opposite row.

5. The combination of split hook *t* and sliding thread-lifter *u*, when constructed and operating as specified, and for the purpose of seizing and holding the yarn at the end of one traverse of the yarn-guide, and then dropping it as the first needle in the opposite row is presented.

6. In combination with cam-rings C D, revolving in opposite directions, and with the needle-plates A B, having needles arranged only on one side, a thread-guide, G, reciprocating back and forth over the needles, substantially in the manner and for the purposes set forth.

7. The combination of the crank-pin *g*^{1}, on the needle-cylinder, with the sliding yoke H, constructed as described, and fitted in bearings h h', and with the yarn-guide G, friction-bowl *g*^{1}, rod K, and pin *g*, substantially as described, for the purpose of operating the said yarn-guide and the indicator at the same time.

8. The combination of the working-parts of the indicator, substantially as described and represented, said working-parts consisting, essentially, of the rod K', wheel L, crank *k*, lever or pitman *k* wheel L', and the usual pawls and springs to hold them against the ratchets, all constructed, arranged, and operating as and for the purposes set forth.

99,671.—Shipping and Unshipping-Hooks. Noah Havermale, Canton, Ill.

Claim.—The construction, arrangement, and combination of the several parts, lettered A, C, D, E, F, I, J, K, and L, each constructed, and arranged, and combined, substantially as hereinbefore set forth, as and for the uses and purposes herein named, and I expressly disclaim all other parts and uses.

99,672.—Writing-Desk.—William Hofer, New Haven, Conn.

Claim.—1. The combination of the leaf or top of a table or desk with the blotting-rolls B and C, receptacle F, and spring-cover G, all constructed and arranged so as to operate as described.

2. In combination with the leaf or top of a table or desk, and the blotting-rolls B and C, the arrangement of the ink-well cover I, so as to be operated in the manner described.

99,673.—Apparatus for Drying Fish and other Substances.—William J. Hooper, Theodore Hooper, and Orazio Lugo, Baltimore, Md.

Claim.—1. A kiln, by which the fish or other substances, animal or vegetable, are kept separated, by perforated pipes, wire, or their equivalents, in order that the air or other heated gases may readily come in contact with the substances above mentioned, for the purpose set forth.

2. The basket or baskets herein described, with movable bottom, substantially for the purpose set forth.

3. The top or cover of the kiln, with a perforated false top or perforated pipes, as herein described.

4. The door D of the kiln, for the purpose as herein described.

5. The kiln with a steam or heated gases jacket for the purpose of controlling the heated air or gases in the kiln itself.

99,674.—Twisting-Tubes for Spinning.—Charles D. House, Lake Village, assignor to Orlander G. Neal, Laconia, and John F. Adams, Manchester, N. H.

Claim.—1. The adjustable conical delivery-jaws B B, hinged to the twisting-tube of a spinning-machine, and operated by the variable sliding cam or weight D, as shown and described.

2. The hinged jaws B B, having upward projections or ears *d d*, and broad plane inner surfaces to the delivery-points *c c*, as shown and described.

99,675.—Extensible Advertising-Frame. Daniel G. Howell, Danby, N. Y.

Claim.—1. An advertising-frame, so constructed that the side-pieces and letter-holding bars may be indefinitely extended or multiplied, substantially as described and shown.

2. The combination and arrangement of the side pieces *a*, *b*, *c*, *c'*, and *d*, letter-holding bars F F, letter-blocks and bottom piece B, substantially as and for the purposes set forth.

99,676.—Wash-Board.—John H. Hubbell, West Salem, Ohio.

Claim.—The construction and arrangement of the several parts of a wash-board, viz: boards C and B, rods D, and frame A, substantially as described.

99,677.—Smelting and Refining Iron.—William W. Hubbell, Philadelphia, Pa.

Claim.—1. The supply of the pulverized nitre, with and by means of atmospheric air, above the molten mass of iron, at the point or place of fusion of the metal, by means of the feed-tube or shoe *c*, connected to the ordinary blast-tayere of the furnace, or its equivalent shoe or tube at the eye of the fan-blower, substantially as described.

2. Also, the smelting of the iron repeatedly or successively, by this same process before claimed, so as to be able to accumulate it, in a purified condition, to make very large castings stronger and more pure, as described.

99,678, antedated January 31, 1870.—Railway-Car Brake.—E. N. Huntsman, Allegheny, Pa., assignor to himself, William M. Claney, I. L. Miller, and James T. Blair, same place.

Claim.—The arrangement of the brakes A A' B B', springs *h*, pulleys C, levers *f f' l*, and cords or chains R J, constructed, arranged, and operating substantially as herein described, and for the purpose set forth.

99,679. — Elevated Railway. — Walter Hyde, New York, N. Y., assignor to himself and Walton Townsend, same place.

Claim.—1. The sectional or divided ropes C, secured independently to arms projecting from supporting-posts, substantially as and for the purposes set forth.

2. The bridge K, arranged to span the space between the aforesaid divided ropes or cables.

3. The hook connecting the upper and lower cables, constructed and arranged substantially as described, and for the purposes set forth.

99,680.—Double-Acting Pump.—William H. Ivens, Trenton, N. J.

Claim.—1. The arrangement of the cylinders A B, one within the other, forming an annular water-space, communicating with the ingress or foot-valves *g*, at each end thereof, and with the supply-apertures E, as and for the purpose described.

2. The arrangement of the annular valves in steps, one above another, as and for the purpose set forth.

3. The annular valves *g g'*, constructed and operating substantially as shown and described.

99,681.—Double Cylinder Force-Pump. William H. Ivens, Trenton, N. J.

Claim.—1. The arrangement of the discharge-valve seat C, at the end of the cylinders, and in relation to the receiving-valves in place thereof, substantially as and for the purpose set forth.

2. The arrangement of a chamber or passage, E, between the two cylinders of the pump, for communication with an air-chamber, G, as shown and described, for the purpose set forth.

3. The arrangement and combination of the slotted lever F, wrist-pins *i*, with the piston-rods *a* of the pump, and the driving-shaft *e*, so that by reversing the motion of the said driving-shaft, a greater or lesser leverage may be applied, substantially as and for the purpose set forth.

99,682.—Machine for Moulding, Rounding, Channelling, and Stamping Soles of Boots and Shoes.—Albert Jeffers, Lynn, Mass.

Claim.—1. As a means of moulding a sole, the combination of the moulding-block *o* and the shaping-last or bed *o*^{1}, when the former is supported by the spindle *p*, and actuated by the rack *t*, pinion *q*, and lever *v*, and the latter is affixed to or makes part of the travelling tablet *d*^{1}, the whole being as before explained.

2. In combination with the travelling tablet *d*^{1}, the bolt *u*^{1}, operating in connection with a notch in the tablet to estop its movement, essentially as explained.

3. In a machine for moulding, rounding, channelling, and stamping soles, the combination of a bolt and a shipping-lever, with the travelling tablet or last, and the movable semi-clutch, whereby, upon one movement of said shipper, the bolt is withdrawn from connection with the tablet, and the clutch is locked to its fellow clutch, and *vice versa*, such arrangement of parts being productive of results hereinbefore enumerated.

4. Supporting the mould-block and its suspensory upon a carriage which is susceptible of lateral adjustment upon the supporting cross-head or superstructure of the machine, the same being for the purpose of securing correctly the relationship or coincidence of the said mould-block and the shaping-last or bed below it, should such adjustment become desirable, the advantages of such an arrangement being hereinbefore alluded to and explained.

5. In combination with the travelling tablet, arranged and driven as explained, the tongued rail, or its equivalent, whereby the correct position of the tablet upon the machine-table is insured, for the purpose explained.

6. As a means of exerting great pressure upon the mould-block, the employment of the lever *v* sliding at its forward end on a fulcrum, as explained, and operated in a horizontal plane by the arm *z*, or its equivalent, and in vertical oscillations by the crank-wheel *f*, and rod *a*^{1}, or their substitutes, in manner and operating as set forth.

7. In combination with the lever *v* and mould-block *o* and its suspensory, the construction of the connecting-rod *a*^{1}, whereby its length may be varied and adjusted for the purpose before alluded to.

8. The combination and arrangement of the mould-block *o*, operated by the rack *t* and pinion *q*, and carried by the tubular carriage *k*, the furcated or slotted cross head *j*, or its equivalent, and the lever *v*, the latter being mounted, provided, and operating as explained.

9. The combination and arrangement of the bolt *u*^{1}, the shipping-lever *r*^{1}, with its fork *q*^{1}, and the tubular hub or semi-clutch *l*^{1}, the latter operating in connection with its fellow-clutch *o*^{1}, and the bolt with the notch of the tablet, the whole being combined and operating as herein explained.

10. In combination with the travelling tablet *d*^{1} and the bolt *u*^{1}, the shipping-lever *r*^{1}, for maintaining the depression of the said bolt at such times as the periphery of the tablet recedes therefrom, to prevent premature entrance of such bolt into the path of movement of the tablet.

11. As a means of effecting alternate advances and retreat of the head-block of the machine, and its adjuncts, with respect to the supporting-last thereof, the arrangement of the bell-crank lever *d*^{2}, and treadle *j*^{2}, united by the pitman *l*^{2}, the same operating as explained.

12. The travelling tablet *d*^{1}, with its top extended to enclose its operating-rack and pinion, and form the rib *k*^{1}, substantially as shown and described.

99,683.—Method of Forming Teeth on Rollers.—Asa Johnson, Brooklyn, N. Y.

Claim.—The method herein described of forming teeth or corrugations on rollers, gear-wheels, &c., substantially as set forth.

99,684.—Machinery for Corrugating and Moulding Sheet-Metal.—Asa Johnson, Brooklyn, N. Y., assignor to himself and William H. Johnson, New York city.

Claim.—As my improvement in machines for corrugating and moulding sheet-metal, constructing the surface of each roll of two or more sections, or series of longitudinal ribs or projections, and corresponding sections or series of grooves or depressions, in order to produce the same rolls on two or more plates, two or more different styles of corrugations or mouldings, substantially as herein set forth.

99,685.—Power Washing-Machine. — Josee Johnson, New York, assignor to himself and Joseph W. Oakman, Brooklyn, N. Y.

Claim.—1. A loose plunger or beater, operating within a reciprocating box of a washing-machine, substantially as shown and described and for the purposes set forth.

2. The box G, constructed as described, and provided, on the under side of its bottom, with tracks *b b*, in combination with the wheels *c c*, shafts *d d* and B, fly-wheels D D, and adjustable pitmen E E, arranged as described, with the bed A, for supporting the shafts *d d*, and wheels *c c*, and main shafts B, substantially as shown and described.

99,686.—CROSS-HEAD SHIFTER.—Charles R. Joyce, Alexandria, Va.

Claim.—The device described, consisting of the bars A A *a a*, sliding plate B, with bolt *b* and nut *b*², and straps D, when combined and arranged as described, for the purpose set forth.

99,687.—MACHINE FOR SPREADING TOBACCO-LEAVES.—Martin M. Kluck, Hartford, Conn., assignor to himself and Herman Glafcke, same place.

Claim.—The stationary cylinder *d*, the movable cylinder *c*, and the connecting-band *s*, when constructed, arranged, and operated substantially as described, for the purposes set forth.

Also, the combination of the cylinder *d* and the band *s*, constructed, arranged, and operating substantially as described, for the purpose set forth.

Also, the process, set forth herein, of spreading tobacco-leaves.

99,688.—VAPOR-BURNER.—John C. Love, Philadelphia, Pa.

Claim.—1. A burner composed of a base, B, of a central tip, F, and of inclined arms or tubes which communicate with the feed or wick-tube, and with the interior of the said tip F, substantially in the manner described.

2. The arrangement of the two inclined hollow arms D, internal tubes C, and tip F, as described.

3. The base B, having openings and passages communicating with and arranged in respect to each other substantially in the manner described.

99,689.—VAPOR-BURNER.—John C. Love, Philadelphia, Pa.

Claim.—1. The generating-chamber B, its openings *r*, and plate or bottom A, curved, or inclined downward from the centre of the chamber to the openings *r*, substantially as and for the purpose described.

2. The combination of the vaporizing-chamber, tube or tubes extending into the same, and a series of openings, *r*, arranged directly above or on a line with the bottom of the chamber, as specified.

3. A coil of wire, *s*, or its equivalent, arranged within the vaporizing-chamber, as specified.

4. The combination of the two conducting-tubes A A, chamber B, its central tube *t*, upper and lower openings *r r*, and channel *i*, all arranged as described.

99,690.—CARTRIDGE-SHELL EXTRACTOR.—John M. Marlin, Hartford, Conn.

Claim.—The revolving chambered breech A, provided with the circular channel *a*, herein described, in combination with the flanched head *z* of a cartridge-extractor, constructed and arranged to operate as specified.

99,691.—CARRIAGE-WHEEL.—Robert W. McClelland, Springfield, Ill.

Claim.—The combination of the hub A, provided with the raised centre B, the spokes C C, and the bands D and D, provided with the pins or studs *d d*, substantially as and for the purpose shown.

99,692.—REGISTER AIR-FLUE.—William L. McDowell, Philadelphia, Pa.

Claim.—In combination with the valve-plate and frame of a register or ventilator, the lever C, sector D, and pawl or detent E, substantially as and for the purpose hereinbefore set forth.

99,693.—REVOLVING FIRE-ARMS.—John C. Miller, Danville, Ky.

Claim.—1. The cylinder D, constructed as described, with two circular shoulders or projections O and P, of different thicknesses, one at each end, each of said projections having a journal, substantially as and for the purposes herein set forth.

2. The gains or recesses H and K, constructed as described, and for the purposes set forth.

3. The springs G and L, constructed as described, and for the purposes set forth.

4. The combination of the gains or recesses H K, and springs G L, all constructed as described, and for the purposes set forth.

5. The combination and arrangement of the breech A, arm B, barrel C, cylinder D, springs G L, recesses H K, and projections O P, all substantially as and for the purposes set forth.

99,694.—OVEN.—Daniel Moore, Davenport, Iowa.

Claim.—1. The arrangement of the furnaces with openings S S, the oven O, chambers B B, formed by arches C C below the oven, arches D F and chamber E above the oven, chamber G at back end of the oven, and exit-flues H H in front, substantially as described.

2. The arrangement of the hot-air flues K K with dampers *d d* in the outside wall, communicating with the interior of the oven, and of the ventilating-flues M and N, substantially in the manner and for the purpose herein described.

99,695.—HARVESTER-CUTTER.—Charles K. Myers, Pekin, assignor, for one-half, to Horace Turrell, Tazewell county, Ill.

Claim.—1. The sickle-rod A, when constructed with ledges *e e*, as stays for the cutting-sections, substantially as described.

2. The cutting-sections B, constructed with lugs *a a* and slots *d d*, substantially as shown and described.

3. The combination of the block or wedge C, its nipple or lug *i*, or equivalent stay, screw h and block *b*, and block or stop *k*, for the purpose of retaining and tightening the cutting-sections in the sickle-rod, substantially as described.

99,696.—WOOD-TURNING LATHE.—Nathan Norris, Charles S. Black, and Horace S. Black, Buchanan, Mich.

Claim.—1. The cutters I, secured to the knife-bar N, the same being pivoted in the vibrating-frame H, all the parts being constructed, arranged, and operating substantially as shown and described, and for the purpose specified.

2. The combination of the bed A with the head and tail-blocks B and C, rock-shaft F, provided with lever *e*, and cams G G', links M M', the vibrating-frames H and L, the steady-rests K, and inclined planes *l*, when constructed, arranged, and operating substantially as shown and described, and for the purpose herein specified.

99,697.—STOVE-LEG.—William R. Oatley, Rochester, N. Y.

Claim.—The stove-leg A, when locked in its seat by a suitable transverse key, *b*, substantially as and for the purposes set forth.

99,698.—CALIPER.—T. C. Page and George W. Hadley, Chicopee, Mass.

Claim.—1. The bridle or yoke C, made of a loose slotted screw, applied so as to embrace the legs of calipers, and provided with a nut, D, substantially as specified.

2. Calipers made of common wire, in the manner described, having a coiled spring head and legs, confined by a slotted screw-yoke, and adjusted by a threaded nut, all as and for the purpose set forth.

99,699.—MACHINE FOR PICKING COTTON AND OTHER WASTE.—George F. Palmer, Rochester, N. H.

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Claim.—1. The main cylinder *d*, made with a series of serrated plates set at tangential angles, and secured to heads which are capable of adjustment around the shaft, substantially as shown and described.

Also, in combination with the main cylinder, serrated plates, set angularly to the axis as well as at lateral angles, substantially as described.

Also, in combination with the main cylinder, the feed-roll, having the feed-teeth *e* and the hooks *f* arranged alternately, substantially as described.

Also, in combination with the main cylinder *d*, a worker or workers, provided with serrated peripheral plates, the teeth of which set at angles relatively to the main cylinder, substantially as shown and described.

Also, in combination with the workers *n o p*, the stationary brushes *s*.

Also, in combination with the main cylinder *d*, constructed as described, the receiver *u*, having hooking teeth formed on the peripheries of rings, substantially as shown and described.

Also, the combination, with the cylinder *c*, having the feed-teeth *e*, and the hooking-teeth *f*, of the throat-piece *h*, constructed and arranged as described.

99,700.—HAT-SIZING MACHINE.—Augustus Pellase and Francis Degen, Newark, N. J.

Claim.—1. The arrangement of elastic working-surfaces on the hands G, substantially as shown and described.

2. The set-screws *e*, in the arms H, in combination with the hands G, pivoted to said arms, substantially as set forth.

3. The travelling apron D, in combination with the platform E and with the hands G, substantially as described.

4. The springs *g*, in combination with the arms H, hands G, and platform E, substantially as set forth.

99,701.—KNIFE-GUARD.—Dan Perry, North Providence, R. I.

Claim.—1. The folding knife-guard G, for cutting-blades, constructed as described.

2. The combination of the guard G, pivot P, screw S, and projection E, with blade B and handle H, substantially as and for the purpose herein set forth.

99,702.—DEVICE FOR SECURING SHOVELS AND PLOW-SHARES TO STANDARDS.—Joshua Pierpont, La Harpe, Ill., assignor to himself and Sidney S. Tuttle, same place.

Claim.—The iron or metal ring D, with shank thread and nut, or their equivalent, in connection and combination with the iron or metal thimble E, constructed and operated as and for the purpose herein described.

99,703.—TRUSS.—Daniel Pomeroy, New York, and William Pomeroy, Brooklyn, N. Y.

Claim.—The combination of the frame-work or rim A with the extension F and the finger-pad B, forming a compound hernial pad, constructed substantially as above described, for the uses and purposes set forth.

99,704.—SEWING-MACHINE.—Alonzo Porter, Rochester, N. Y., assignor to himself, Elisha G. Marshall, and Sarah R. Young, same place.

Claim.—The rotating shaft B, provided with the mechanism for operating the needle-bar and needle, the fly-wheel D, having the eccentric L cast with it in one piece, the pitman K, the adjustable stud *n*, the crank-head I having the curved slot, the working-shaft C, the adjustable looper *m*, the feed-operating cam M, the feeding-dog O and its adjusting and supporting-devices, and the presser, its pin, *t*, and roller *s*, when all are constructed and arranged as described.

99,705.—HAMMER.—John P. Radle, Albany, N. Y.

Claim.—A hammer, the handle of which is strengthened by means of the bolt E, and having at the other end of the handle a socket, E, which is provided with wrench, countersink, screw-driver, and perforations for bending wire and other purposes, as herein described.

99,706.—SCAFFOLD AND LADDER.—J. E. Ranch, Selin's Grove, Pa.

Claim.—1. The arrangement upon the lower end of the ladder A of the braces B B and segmental bars C C, substantially as shown and described.

2. The combination of the cross-bar E, wheels G G, arms H H, points *e e*, braces *d d*, lever *f*, and cord *e*, all substantially as and for the purposes herein set forth.

3. The carriage I, platform K, and latch N, constructed and arranged to operate in connection with the rounds of the ladder, substantially in the manner and for the purposes herein set forth.

4. In combination with the carriage I and sliding ladder D, the bars R R, substantially for the purposes herein set forth.

5. The combination of the foundation-frame B C, ladders A D, top frame E G H, carriage I, platform K, latch N, windlass O, bars R R, and rollers P S, all constructed and arranged to operate substantially in the manner and for the purposes herein set forth.

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99,707.—FLANGING-APPARATUS.—Edward Regan, Indianapolis, Ind.

Claim.—The flanging-device, composed of the die A, screw B, bracket C D E, and nut and lever F and G, constructed and arranged and operating substantially as and for the purpose set forth.

99,708.—STRINGING AND TUNING PIANO-FORTES.—William J. Richards, Ferdinand M. Sofge, and Joseph H. Richards, La Fayette, Ind.

Claim.—1. The combination of the rack *d* with the conical screw *c* turning freely in the head *a b*, as and for the purpose set forth.

2. The head *a b*, having an oblique bearing for the screw *c*, as and for the purpose described.

99,709.—SPLINT FOR FRACTURE OF CLAVICLE, &c.—Haynes L. Richardson, New York, N. Y., assignor to William Pomeroy, Daniel Pomeroy, and Julius R. Pomeroy, same place.

Claim.—The improved compound splint, for fractures of the clavicle, humerus, and scapula, formed of the semi-cylindrical arm-piece A, and the semi-cylindrical side-piece B, with or without the arm-pit pad C, constructed and applied substantially as described.

99,710.—MACHINE FOR TARRING PAPER FOR ROOFING, &c.—John Roberts, Waltham, Mass., assignor to himself, C. Hart Smith, Baltimore, Md., and Levi Willcutt, Boston, Mass.

Claim.—1. A machine for saturating paper for roofing purposes, consisting of a frame A, having mounted therein the rollers D, vertically-adjustable frame H, provided with the rollers *g*, *h*, and *i*, the movable and adjustable rollers F and G, and rollers I and E, all constructed and arranged to operate as herein described.

2. The movable and adjustable pressure-rollers F and G, with their loose bearings *c* and *d*, when constructed and arranged substantially as herein described, and for the purpose set forth.

3. In combination with the roller E, the roller I, with its wrapping of cord *b* or its equivalent, substantially as and for the purpose set forth.

4. In combination, the movable roller D provided with loose collar *a*, the vertically-adjustable frame H, with the rollers *g*, *h*, and *i*, mounted in its end-

pieces L, and the sword or split-roller E, constructed and arranged to operate as described, and for the purpose set forth.

99,711.—JOURNAL-BOX.—James T. Robinett, Petersburg, Va., assignor to himself, William Mahone, and Joseph P. Minetree, same place.

Claim.—The method of connecting the box A and lining B, substantially as set forth.

99,712.—CASTING AUGER GATE-HINGE.—Benoit Roux, Cincinnati, Ohio, assignor to M. Greenwood & Co., same place.

Claim.—An "auger"-hinge, whose male member is cast in one piece and at one operation, in the manner herein designated.

99,713.—FISH-NET.—Philander G. Sabins, Westport, assignor to himself and William H. Pierce, Fall River, Mass.

Claim.—1. The combination, with the leaders *g* and rings *d e*, of the hooked spring-rods *b*, as described, for purpose set forth.

2. The purse-net *c*, provided with the bait-box *a*, in combination with the spring-rods *b* and leaders *g*, as and for the purposes described.

99,714. — STOP-COCK. — Joseph Seeberger, Troy, N. Y.

Claim.—A stop-cock, with a stem to the plug, said stem being provided with a thread, and moving in a nut or cover, as described, the plug being of conical form, and having a water-way through it, and adjusted to be forced tightly against its seat when closed, and to move more perfectly free thereof at all other times, whereby nearly all friction and wear are avoided, and the plug and seat rendered adjustable, as hereinbefore described, for the purposes set forth.

99,715.—HOSE-COUPLING.—George Sewell, Brooklyn, N. Y.

Claim.—1. A hose-coupling, composed of the portions A B B, with grooves *b b*, in combination with the collar C, having cam-flanges or inclined planes *c c*, so as to operate as described.

2. A hose-coupling, composed of two parts, duplicates the one of the other, in combination with locking cams or inclined planes, substantially as herein set forth.

99,716. — MOULDING-CUTTER. — Thomas J. Shannon, Lawrenceburg, Ind., assignor to himself and James L. Haven & Co., same place.

Claim.—The herein-described moulding-cutter, whose periphery is formed by two or more eccentric circular arcs, in the manner substantially as specified.

99,717. — LIFTING-JACK.—Amenzo Shaver, Warnerville, N. Y.

Claim.—A lifter or jack, having a travelling lever-head, A, with the toothed bars *f* and springs *p*, arranged within and upon a frame, and operated as herein set forth.

99,718.—TOAST-RACK. — Daniel Sherwood, Lowell, Mass., assignor to Woods, Sherwood, & Co., same place.

Claim.—The toast-rack, constructed of twisted wire, composed of the frame A and E, the legs B, the segments C, and handle D, united together substantially as described and specified.

99,719.—HARROW.—Henry Shirk and Cyrus Shirk, Lebanon, Pa.

Claim.—The sulky-harrow herein described, having sulky A, harrow B, rods C and D, treadle E, hook F, lever H and ratchet S, constructed and arranged to operate substantially as specified.

99,720.—CHURN.—John W. X. Smith, Independence, Iowa.

Claim.—The arrangement, upon the shaft I, of the elliptical-shaped dasher-slats *b b*, inclined on one side of the shaft from front to rear, and inclined on the other side of the shaft from rear to front, the two sets forming an X, through which the cream is passed by means of the pinion H, cog G, shaft D, and handle E, all as set forth.

99,721.—CARTRIDGE.—William H. Smith, Charlestown, Mass.

Claim.—In a "pin-fire cartridge," an opening passing radially through the wall thereof into the recess for the reception of the cap, and closed by means of a removable plug, so that said cap may be placed in position within said cartridge, or removed therefrom, after the same is charged, substantially as and for the purpose specified.

99,722. — DEVICES FOR VENTILATING AND COOLING OR WARMING BEDS.—Daniel E. Somes, Washington, D. C.

Claim.—1. A bed-sack or mattress, in combination with an air-duct extending to the outside of the building in which said bed is placed, substantially as and for the purpose set forth.

2. An air-duct surmounted with a revolving hood, in combination with a bed or bedstead, substantially as described and for the purpose set forth.

3. An air-duct with an evaporating apparatus, in combination with a bed, substantially as set forth.

4. An air-duct, with an enclosing cylinder, B^1, and an evaporating apparatus, in combination with a bed, substantially as and for the purpose set forth.

5. An air-duct cooled by a packing of ice, or warmed by means of warm water, steam, or the products of combustion, when such duct is extended to the outer air, in combination with a bed, substantially as set forth.

6. A flue or tube, connected with a chimney, in combination with a bed, substantially as and for the purpose set forth.

7. A flue with gas jets, in combination with a bed, substantially as and for the purpose set forth.

99,723.—LOCOMOTIVE-TENDER LOADER.—Albert H. Spencer, Providence, R. I.

Claim.—1. The herein-described method of supplying locomotive-tenders with fuel or water, which method consists in using the traction of the moving locomotive, acting through chains, or any proper connection, to raise the buckets, boxes or other delivering apparatus, so that their contents may be discharged into the tender, substantially as set forth.

2. In combination with a hoisting apparatus, the lever H, operating substantially as described, for the purpose specified.

3. In combination with a hoisting apparatus, the self-operating brake E, arranged to operate substantially as described, with relation to the hoisting-chain, for the purposes specified.

4. The combination of the fuel-box or water bucket with the elevating chain and shaft L, or its equivalent, for the purposes set forth.

5. For use in combination with a suitable hoisting mechanism, and attached to a locomotive, the shaft L, arranged to readily attach to and be detachable from the hoisting chain, substantially as described.

99,724.—BUTTON-FASTENER FOR SHOES.—Charles F. Spencer, Rochester, N. Y.

Claim.—1. The supporting-plate, notched at one side, and having secured at its opposite side a hook or pin, whose point projects over or into the notch, and all operating together substantially as described.

2. The recessed supporting plate *a*, provided with the spurs *b b*, in combination with the pin or hook *d*, substantially as and for the purpose described.

99,725.—WATER-COOLER.—John H. Stone, Philadelphia, Pa.

Claim.—A sheet-metal water-cooler, having a stratum, F, of felt, paper, or other like porous material, in direct contact with the inner side surfaces of the exterior vessel, and leaving the space E, for confined air, between the said stratum F and the exterior surface of the inner vessel D C, as and for the purpose hereinbefore set forth.

99,726, antedated August 9, 1869.—FENDER FOR FIRE-PACE HEATERS.—David Stuart and Lewis Bridge, Philadelphia, Pa., assignors to Stuart, Peterson, & Co., same place.

Claim.—A hearth-plate of a fire-place stove, in combination with a fender-rail composed of the two fixed portions B and B' and disconnected detachable portion C, all substantially as set forth.

99,727.—AUTOMATIC WATER CUT-OFF.—D. F. Sweet, Oseego, Mich., assignor to himself and L. A. Leighton, same place.

Claim.—The combination of the receiver A with its valve-seats and valve D, the weight G within the pipe C, and the cup K connected to one part of said valve, under the cut-off H and pipe B, the several parts constructed and operating substantially as herein set forth.

99,728.—PROCESS OF TREATING PETROLEUM. Joseph A. Tatro, Hartford, Conn.

Claim.—The process described, of applying the said ingredients, in about the proportions specified, to the whole product arising from the distillation of crude petroleum oil, for the purpose set forth.

99,729.—NUT FOR SCREW-BOLTS.—Nathan Thompson, Brooklyn, N. Y.

Claim.—The outer shell or follower E, constructed with a circular recess, *c*, and reduced hexagonal or angular inner cavity or portion *b*, in combination with the nut D, constructed as at *a* and *b*, to correspond, and formed with an outer head or collar, *e*, for operation in connection with an annular or other spring, F, substantially as shown and described.

99,730.—DRAUGHT-BAR FOR HORSE-CARS.—Joseph Trent, Millerton, N. Y.

Claim.—The combination, with the platform of a street-car, of a lever C rod D, and volute or other suitable spring, substantially as and for the purposes herein specified.

99,731.—CLIP FOR HARNESS.—Charles M. Tripp, Pittsburg, Pa.

Claim.—A new article of manufacture, viz: the clip A, for harness, provided with openings D B and spiral opening C, constructed and arranged as herein described, and for the purpose set forth.

99,732.—STREET-RAILWAY CAR.—Mahlon P. Turner, Des Moines, Iowa.

Claim.—1. A street-railway car, having centrally-located wheels, and the double-acting brake pivoted as shown, said brake operated through cords K K, or equivalent devices arranged in either end of the car, to be within reach of the driver, all substantially as specified.

2. In combination with the car A and its centrally-placed double-flanged wheels C C, the employment of two or more flangeless wheels D D, shaft or shafts I, bars E E, and springs G G, or their respective equivalents, whereby a street-car is run upon a single line of rail, while the outer wheels rest upon the earth, substantially as set forth.

99,733. — EXPELLING VOLATILE MATTER FROM PEAT AND OTHER MATERIALS.—Thomas George Walker, New York, N. Y.

Claim. — 1. The circulating current of steam through superheating-pipes, in combination with the drying-chambers for subjecting peat or other material to the action of the superheated steam, substantially as specified.

2. The cylinder *f* and steam jacket, in combination with the drying-chamber and connecting-pipe, whereby the vapors from the drying-chamber are condensed and made to warm the material as it enters the apparatus, as set forth.

3. A current of superheated steam directed upon the material as it is passed in a layer or reduced form from one vessel into another, for depriving the same of moisture or carbonizing it, substantially as set forth.

99,734. — WATER-ELEVATOR. — Benjamin Wieland, Oneco, Ill., and Daniel S. Young, Monroe, Wis.

Claim.—1. In combination with the pivoted bucket C, provided with an elongated lip, *c*, the tank or trough B, having cam-face *b* and discharging-rod F.

2. A ladder chain, D, arranged to carry a series of water-buckets, C, in combination with the notched disks G, having flanches or guards *m*.

3. The registering water-elevator, herein described operated by clock-work, and provided with an endless chain, D, of pivoted buckets C C, arranged to discharge their contents before passing over the wheel.

99,735.—CLEANSING PAPER WHEN REDUCED TO PULP FROM COLORING-MATTERS.—Salmon W. Wilder, Lawrence, Mass.

Claim.—The employment of water, a foraminous cylinder, and a couching apparatus, substantially in manner as described, in the treatment of paper pulp containing coloring matters, preparatory to such pulp being bleached or otherwise treated for being converted into paper.

99,736.—SAFETY-BOX FOR BANK PORTERS. William Wiler, Philadelphia, Pa., assignor to himself and Lucien Moss, same place.

Claim.—A box or case constructed so as to be secured by a metal strap or belt applied substantially as described.

99,737. — APPARATUS FOR TRANSMITTING POWER. — Blasius Williams, Jefferson, Texas.

Claim.—1. The combination of the levers G and L and weights M with the shafts C P, when arranged to operate substantially as herein set forth.

2. The combination of the proportional levers G and L, when arranged in relation to each other and to the weights M, substantially as set forth.

3. The combination of the proportional levers G and L and weights M, when arranged in sets of two, or of even numbers, substantially as set forth.

99,738.—ARTIFICIAL FUEL.—Henry Wurtz, New York, N. Y., assignor to James Lorimer Graham, same place.

Claim.—The use, as a material for the purpose of concreting or conglomerating combustible substances by heat, either with or without pressure, of Grahamite, either alone or in combination.

99,739. — COMPOSITION FOR MOULDINGS, PICTURE-FRAMES, &c. — Henry Wurtz, New York, N. Y., assignor to James Lorimer Graham, same place.

Claim.—1. The use, as material for moulding by heat and pressure into any useful or ornamental form, of Grahamite and compositions thereof, with other substances.

2. The use, as materials for moulding by heat and pressure into any useful or ornamental form, of the constituents of Grahamite, called by me *alpha resinoid* of Grahamite, or *viscosine* extracted from Grahamite by solvents, as specified, either alone or in any form of composition with other substances.

99,740.—PREPARING ANHYDROUS GRAHAMITE. — Henry Wurtz, New York, N. Y., assignor to James Lorimer Graham, same place.

Claim.—The method, substantially above set forth, of heating Grahamite in a vessel, partially closed, until its combined water has been expelled, and it has undergone semi-fusion.

99,741.—CHEMICAL PRODUCT CALLED FUSED OR ANHYDROUS GRAHAMITE. — Henry Wurts, New York, N. Y., assignor to James Lorimer Graham, same place.

Claim.—The new article of manufacture or chemical product above described, produced substantially as above set forth, and called by me fused or anhydrous Grahamite.

99,742.—UNIVERSAL JOINT.—Anton Zwiebel, Burlington, Wis.

Claim.—A universal joint, constructed as described.

Also, the notched forks C C, in combination with the bevelled flange D D and the screw *e*, substantially as and for the purpose set forth.

Also, the notched forks C C, having their edges *c c* in one and the same straight line, in combination with the coupling-heads A A and coupling-ring B, constructed with flanges, substantially as and for the purpose described.

99,743. — SEWING-MACHINE. — William T. Smith, West Zanesville, Ohio, assignor to himself and William T. Maher.

Claim.—1. The combination with the needles *m* and *n* and supporting-table, of the shuttles D D′ and their operating arms, constructed and arranged substantially as and for the purpose described.

2. The adjustable and fixed feed-wheels E E′, the fixed and adjustable shuttle-frames H H′, and the fixed and adjustable needles *m n*, all arranged substantially as described, whereby the machine may be converted from a double to a single stitching machine.

3. The eccentric K, in combination with its enclosing-slide R, the enclosing arm L of the shuttle-drivers J, and the connecting rod S, which gives motion to the feeding-wheels, arranged and operating substantially as shown and described.

4. The combination of alternately oppositely-moving shuttles D D′, the needles *m n*, the fixed and adjustable feed-wheels E E′, the fixed and adjustable shuttle-frames H H′, constructed and arranged as herein described, with the double-socketed joint M, and the compound arms J J¹ J² J³, the whole arranged and operating as described.

REISSUES.

3,821.—CORN-POPPER.—J. H. Bigelow, Worcester, Mass.—Patent No. 93,271, dated August 3, 1869.

Claim.—1. The combination, with the handle and popper-box, of a coiled wire socket or ferrule, whereby the handle can be easily and conveniently attached and detached, for the purposes stated.

2. The combination of the wire socket or ferrule and its connections with the popping-box, in such a manner that the strain, in lifting or using the popper, will be borne by the metal flange or binding around the upper edge of the popper and the wires which support and pass under the bottom of the popper-box.

3. The combination and connection of the coiled wire socket or ferrule with the popping-box, by means of wire connections.

4. The connection of the coiled wire socket or ferrule with the metal flange or binding attached to the upper edge of the popping-box by two wire connections, which extend laterally from each other, in front of the socket, to the points where they are attached or hooked into the metal binding on the upper edge of the popping-box.

5. The combination, with the wire socket or ferrule and wooden handle, of a retaining wire, substantially as described.

6. The combination, with the socket or ferrule and handle, of a shoulder on the latter, for the purposes as stated.

3,822.—HORSESHOE.—George T. Chapman, New York, N. Y.—Patent No. 74,892, dated February 25, 1868.

Claim.—1. The continuous detachable calk B combined with the part A, substantially as specified.

2. The pins *a*, arranged and applied with the continuous or other calks and the part A, in the manner described.

3. The screws *c*′, arranged and applied with the continuous or other calks and the part A, substantially in the manner described.

4. The screws *c*, arranged and applied with the continuous or other calks and the part A, substantially in the manner described.

3,823.—STOP-VALVE.—Joseph H. Davis, Allegheny City, Pa.—Patent No. 85,288, dated December 29, 1868.

Claim.—Constructing the valve-chamber A and chambers B and B′ of the body of the valve-cock so that they shall be of the same diameter, said valve-chamber being arranged at an angle to the axis of the body of the valve-cock, as herein described, and for the purpose set forth.

3,824.—CEMENT WATER-PIPE.—Edwin Dayton, Meriden, Conn.—Patent No. 77,465, dated May 5, 1868.

Claim.—1. The joint of a cement-lined paper water-pipe, formed by correspondingly tapering the ends of the separate section, so that when closed they may form a pipe of uniform diameter, substantially as shown and described.

2. The short pipe E, of tapering shape, fitting into the adjoining ends of the pipes A and B to form a water-tight joint and coated equally upon the under and outer sides with cement, as shown and described.

3. The packing-ring or band D, applied to pipe-sections previous to the application of the cement, substantially in the manner and for the purpose as herein shown and described.

3,825.—SEWING-MACHINE.—George L. Dulaney, Mechanicsburg, Pa.—Patent No. 37,617, dated February 10, 1863.

Claim.—1. The vertically-acting needle-arm, formed of one piece of metal, as indicated at *w z Y s &c.*, figs. 1 and 2, which performs the several different offices or mechanical functions, as herein set forth and described.

2. The intermittently-acting shuttle-carrier device i^2 k^2 p^2, and guide-rod r^1, fig. 4, combined with the gravitating self-acting shuttle-adjusting device s^2 t^2 u^2, fig 4, as shown and described.

3. The gravitating self-adjusting slotted feed device o^2 o^3 p^3 q^4, fig. 3, formed and hung as shown, and combined with the vertically-reciprocating needle-bar, and operated in the manner described.

4. The self-acting gravitating pad p^2 s^2 o^2 o^3, as constructed and combined with the self-acting gravitating feed device o^3 o^2 p^3 q^4, the lever device x^2 x^3, the curved bar or tension device y^2 y^3, and the small dependent, flexible fork-like device z^3, figs. 1, 2, and 3, substantially as shown and described.

5. The shuttle O^2 O^3, constructed with the bottom slot or depression O^4, fig. 4, and the combination therewith of the gravitating self-acting shuttle-adjusting device s^2 t^2 u^2, substantially as shown and described.

6. The vibrating lever or slack-thread adjuster f^2 f f^2 g^2, fig. 1, as constructed, when combined with the needle-bar or arm *w z Y s &c.*, and operating substantially as set forth and described.

7. The curved bar or tension device y^2 y^3 z^3, figs. 1, 2, and 3, in combination with the vibrating lever or slack take-up device f^2 f^3 g^2 h^2, so as to produce the desired effect, in the manner as shown and described.

8. A tension-wheel, free to move on its supporting spindle, and composed of two pieces or disks of thin sheet-metal, placed face to face, each piece having flexible radial arms and intermediate spaces, the arms being so bent that those of one disk shall diverge from those of the other disk, thereby leaving between them an angular space for the thread.

9. A tension wheel, having a provision for imparting and controlling a yielding pressure for adjusting the tension, through the instrumentality of sheet-metal of bowed or dishing form, and a regulating screw, substantially as described.

10. The combination of disks having flexible radial arms and flexible dished centres, with a screw-threaded spindle, a supporting standard, and an adjusting nut or nuts, substantially as shown and described.

3,826.—Division A.—REFLECTOR.—Isaac P. Frink, New York, N. Y.—Reissue No. 146, December 24, 1861.—Patent No. 1,249, dated April 17, 1860.

Claim.—1. In a reflector in which the illuminating rays are thrown down below the source from which they proceed, a reflecting surface or series of reflecting surfaces, as set forth, lined, covered, coated, or plated with either plain, corrugated, or figured glass, in combination with another reflecting surface, placed above or over the first surface, when suitable space is provided between the upper and lower surfaces for the passage of air and for ventilation, substantially as described.

2. The combination of the beads *b* and *b*′, or either of them, with the lower reflecting surface or series of surfaces, substantially as set forth.

3. The adjustable section, in combination with the lower reflecting surface or series of surfaces, substantially as described.

4. The combination of the reflector, as described, with the adjustable section and the beads *b b*′, in the manner set forth.

3,827.—Division B.—REFLECTOR.—Isaac P. Frink, New York, N. Y.—Reissue No. 146, December 24, 1861.—Patent No. 1,249, dated April 17, 1860.

Claim.—1. A reflector which is in the form of an oblong truncated pyramid, and which is lined with glass or other diaphanous material, substantially as and for the purposes shown and described.

2. The combination, with the metallic body of a reflector, of a glass covering or lining therefor, applied in sections or panels, substantially as and for the purposes described.

3. The combination, with the body of a reflector, of a cross-bar or string-piece, or its equivalent, provided with a nut and set-screw, the whole arranged and operating substantially as set forth.

3,828.—PNEUMATIC PUMP.—William H. Guild, Williamsburg, N. Y.—Patent No. 51,175, dated November 28, 1865.

Claim.—1. In combination with the cylinder, piston, and eduction-valves of air or vacuum pump, a reservoir for water, and separate induction and eduction-passages for such water, so arranged that the air-eduction valves, when closed, shall be covered, or nearly covered with water, substantially as and for the purpose set forth.

2. In combination with the cylinder, piston, and induction-chamber or chambers of an air or vacuum pump, the pipes *f* for supplying water to such chambers and cylinder, substantially as and for the purpose set forth.

3. Arranging the air-induction valve chambers *b b*, below the upper inner surface of the cylinder, so that the water which is being pushed forward by the piston may be forced into said chambers, and thus expel the air therefrom, substantially as and for the purpose set forth.

4. The arrangement of the main air-induction chamber *d*, induction-valve chambers *b*, induction-valves *c*, and ports *e* and *i*, substantially as herein described, whereby provision is made for covering the said induction-valves with water, as the piston arrives at or approaches their respective end of the cylinder, substantially as and for the purpose set forth.

5. The arrangement of air-eduction chambers *r*, passages *s*, and openings *t*′ and *u*, in relation to the eduction-valves in the cylinder-heads, substantially as and for the purpose set forth.

6. The water-pipes *f f*, and check-valves *h h*, applied in combination with the induction-valve chamber of an air or vacuum pump, to regulate the induction of water from a suitable reservoir at each stroke of the pump-piston, substantially as and for the purpose set forth.

3,829.—BRANCH STOP-COCK FOR MAINS.—R. A. Hill, for himself and H. C. Lane, assignee of R. A. Hill, Washington, D. C.—Patent No. 90,541, dated May 25, 1869.

Claim.—1. In combination with the four converging pipes of two cross-mains, a cylinder and stop-cock for receiving the water simultaneously from the four main pipes, and discharging it below the mains into the large eduction-pipe G, and for shutting it off, substantially as set forth.

2. In combination with the cylinder B and stop-cock C and four branch pipes, the vertically elongated induction passages C^2 and A', substantially as and for the purpose set forth.

3. The stop-cock and cylinder, in combination, when respectively constructed with a flange or flanges, *c*, and corresponding recesses to confine the stop-cock, substantially as set forth.

4. The combination of the four pipes, cylinder, and stop-cock, and stem C^3, lever E, having a segmental rack and pinion, F, for operating the stop-cock in letting on shutting off the water, with the eduction-pipe G, substantially as set forth.

5. The arrangement of the eduction-pipe G, to carry off the water flowing through the mains below the level of the branch, substantially as set forth.

3,830.—MACHINE FOR GRINDING AND PRESSING APPLES, GRAPES, &c.—C. B. Hutchinson, Auburn, N. Y.—Patent No. 37,079, dated February 3, 1863.

Claim.—1. The combination and arrangement of a grinding-mill and press, together with the several parts, constructed substantially as described, and for the purpose set forth.

2. The grinding apparatus herein shown, provided with the side opening or depression, when attached to the press-screw, the whole attached to the legs, which also carry the curb.

3. The guide-stem N, in combination with the follower K, when said stem is so arranged as to extend up and rest against the mill so as to prevent tilting and avoid the necessity of steadying by the hand of the operator, as herein shown and described.

3,831.—COTTON-SEED HULLER.—Pierre Paul Joseph Martin, Paris, France.—Patent No. 29,393, dated July 31, 1860.

Claim.—The prismoidal reversible knives or cutting-bars *a*, in combination with the scored hulling-cylinder A and scored concave B, or either, essentially as and for the purpose herein set forth.

3,832.—DENTISTS' TOOL-RACK.—Ira A. Salmon, Boston, Mass.—Patent No. 62,368, dated February 26, 1867.

Claim.—A tool or plugger-rack, or instrument rack, made with its teeth wedge-shaped or beveled, substantially in the manner and for the purpose, and for use as described, whether such teeth be pins inserted in the base plate of the rack, or be projections extended from a plate or bar fixed in such base.

Also, A tool or plugger made with a hole, so arranged in its shank, as described, as to adapt it to operate with the mallet and beveled tooth of the rack, in manner substantially as hereinbefore explained.

3,833.—METALLIC CARTRIDGE.—Rollin White, Lowell, Mass.—Patent No. 33,805, dated November 26, 1861.

Claim.—1. A cartridge-case, consisting of two or more metal tubes, movable longitudinally with reference to each other, substantially as and for the purpose specified.

2. A metallic cartridge-case, with a reinforcing cup to strengthen its base, the inner side of said cup

being bevelled from its rear to its front end, substantially as and for the purposes described.

3. The cavity *f*, in the base of the cartridge-case, to receive a pellet or cap primed with fulminate, in combination with the shoulder or anvil *i* and vent *e*, substantially as described.

4. The cap or pellet *g*, so applied to the base of the cartridge that it will be caused to operate as a valve to close the vent thereof by the force of the blow of the hammer or plunger, or of the explosion of the charge.

5. The cap or pellet *g*, with a sharp or bevelled edge, *i*, substantially as and for the purpose set forth.

6. A fixed anvil, which may be solid with, or an attached portion of, the cartridge-case, in combination with the cavity *f*, for the purpose of a firm bearing to support the cap or pellet against the blow of the hammer, or equivalent, for insuring the explosion or ignition of the priming.

DESIGNS.

3,837.—CARPET-PATTERN.—Jonathan Crabtree, Philadelphia, Pa., assignor to William Hogg, Jr., same place.

Claim.—The design for a carpet-pattern, substantially as described and as represented in and by the accompanying drawing.

3,838.—CARPET-PATTERN.—Jonathan Crabtree, Philadelphia, Pa., assignor to William Hogg, Jr., same place.

Claim.—The design for a carpet-pattern, substantially as described and as represented in and by the accompanying drawing.

3,839.—METAL CAN.—Horace Everett, Philadelphia, Pa.

Claim.—The design for a metal can, as described, and as represented in and by the accompanying drawing.

3,840.—BREAD-TOASTER.—Samuel Fawcett and Henry R. Corkhill, Rochester, N. Y.

Claim.—The design for bread-toasters, &c., herein described, substantially as set forth

3,841.—EQUESTRIAN STATUETTE.—Nicholas Müller, New York, N. Y.

Claim.—The design for the rider and the equipments of rider and horse, as above shown and described.

3,842.—BAPTISMAL FONT.—Daniel C. Ripley, Birmingham, Pa.

Claim.—The improved design, consisting of a bowl, font, or basin, arranged on a stem or base, and between radially-diverging arms, substantially as described and shown.

3,843.—GROUP OF STATUARY.—John Rogers, New York, N. Y.

Claim.—The design for a group of statuary, as herein shown and described.

3,844. — PAIR OF GATE-HINGES. — Benoit Roux, Cincinnati, Ohio, assignor to M. Greenwood & Co., same place.

Claim.—The design for a pair of gate-hinges, substantially as herein represented.

3,845.—SATCHEL-FASTENING.—George Sieben, Newark, N. J., assignor to James H. White, same place.

Claim.—The design for a satchel-fastening, as shown and described.

ISSUE OF FEBRUARY 15.

PATENTS.

99,744.—PIPE-COUPLING.—William D. Alford and J. H. Pitkin, Cuyahoga Falls, Ohio.

Claim.—In combination with the joint or coupling of heating-pipes made tight by packing driven into the socket around the inserted end of the pipe, the lugs cast in the bottom of the socket and upon the end of the pipe to prevent them from being drawn apart, together with the space around the pipe in the socket to receive the packing, substantially as and for the purpose described.

99,745, antedated February 9, 1870.—CIGAR-MACHINE.—William G. Ayres and Seth L. Cole, Brooklyn, N. Y.

Claim.—The combination of the table M, having the edge V shaped as described, with the slotted frame S S, and rollers C D and O, as and for the purpose described.

99,746.—CABINET.—Robert Bacon, Boston, Mass., assignor to himself and Joseph Lincoln, Jr., same place.

Claim.—A cabinet when provided with shelves H H', brackets H², working-board P, cover O, and working-board K, arranged and operating substantially as described, and for the purpose set forth.

99,747.—WASHING-MACHINE.—Fortune L. Bailey, Freeport, Ind.

Claim.—The construction and combination of the false bottom B and the cones G G with irregular corrugations, as at 1, 2, 3, 4, and 5, tubular shaft D, lever F, handle *e*, and device to connect cones and shaft and attaching lug A, as shown and described.

99,748.—FIRE-PLACE BACK.—James I. Bard, New Orleans, La.

Claim.—A grate-back for fire-places, in which the lower section or part thereof is straight and vertical, whilst the remaining upper portion of it consists of the two reverse curves B and C, when the same is provided with an opening, D, and the two side ledges or jams E E', and the whole is cast in a single piece, substantially as herein described for the purpose set forth.

99,749.—GRIPPER AND GAUGE FOR PRINTING-PRESSES.—Henry Barth, Cincinnati, Ohio.

Claim.—1. The spring guides or gauges H, or their equivalents, attached to the clamps, so as to be adjusted therewith, substantially as set forth, for the purposes stated.

2. The wide opening paper-clamp or finger N, in combination with the short-stroke friskets E, arranged to operate substantially as and for the purposes set forth.

99,750.—FRAME FOR DYEING IN VARIOUS COLORS FOR MANUFACTURE OF SCOTCH PLAIDS, &c.—Charles Barton, Paterson, N. J., assignor to Dexter, Lambert & Co.

Claim.—The arrangement and use of the frame B, consisting of two bars, *n* and *m*, lined with India-rubber pieces *v*, capable of being firmly secured together by suitable bolts, *w*, or their equivalents and provided with a casing or chamber, C, on the upper side, substantially as and for the purpose hereinbefore set forth.

99,751, antedated January 29, 1870.—GOVERNORS FOR STEAM AND OTHER ENGINERY.—Joseph Bell, Cincinnati, Ohio.

Claim.—1. The combination of the handle A and spring E, as described.

2. The combination of the handle A, spring E, and weighted pawl D, as described.

3. The lever N, receiving its power from a spring, X, as described.

4. The combination of the screw T, nut S, spring X, and lever N, as described.

5. The brace C, having the slot described for the handle A to move in, in combination with the handle A and pawl D, as described.

99,752.—BOILER FOR COOKING-STOVES.—Frank S. Bissell, Pittsburg, Pa.

Claim.—The box or seat *e*, when cast with E or the top of the stove, with its flange *b*, in combination with the boiler A, provided with a projecting lower rim or flange, D, as herein described.

99,753.—WASH-BOILER.—Charles D. Blinn, Port Huron, Mich.

Claim.—1. In automatic wash-boilers, the bar C, provided with loops *f* and cords *g*, operating as and for the purpose set forth.

2. In combination with the bar C provided with loops *f* and cords *g*, the cradle B provided with apertures *a* and *b* and projecting corners *f*, when constructed and arranged to operate as and for the purpose set forth.

3. The wash-boiler above described, composed of the boiler A, the cradle B, the bar C, and the cover D, when each of said parts is constructed and all are combined and arranged to operate as and for the purpose set forth.

99,754.—AIR-PISTOL.—Reuben Brooks, Jr., Rockport, Mass.

Claim.—1. The combination of the barrel A, rib B, and bulb C, substantially as described and for the purpose set forth.

2. In combination with the cylindrical bore of the barrel of air-pistols, the conical chamber *h' g'*, substantially as described and for the purpose set forth.

99,755.—FOLDING BEDSTEAD.—W. H Buell, Laughlintown, Pa.

Claim.—The bars B B in combination with the brace C, arranged and operating as and for the purpose specified.

99,756.—SLATE-FRAME.—Ebenezer Butler, Salina, N. Y.

Claim.—A slate-frame, upon the outer side of each section of which is formed, by any means, a rail or bar, for the purpose hereinbefore specified.

99,757.—BANK NOTES, BONDS, REVENUE STAMPS, &c.—George W. Casilear, Washington, D. C.

Claim.—As an improvement in bank notes, or other similar papers representing value, leaving the spaces for signatures or other written portions entirely blank or free from engraving, and subsequently ruling in by machine over such blank spaces a lace-work ground design in fluid inks of opposite actinic powers, to be subsequently written over with ordinary writing-fluid, substantially as and for the purpose set forth.

99,758.—RULING-MACHING.—George W. Casilear, Washington, D. C.

Claim.—The combination with a ruling-machine, of the waved wheel B and vibrating lever F, or their equivalents, substantially as and for the purpose set forth.

Also, the combination of two or more sets of pens with the waved wheel B, to produce the crossed and interlaced ruling shown in fig. 15, substantially as set forth.

99,759.—GAUGE FOR PAPER-CUTTING MACHINES.—Cyril C. Child, Boston, Mass.

Claim.—1. The spaced and numbered band W, made and operating substantially as and for the purpose herein described.

2. In combination with the band W, pulleys P P' and lever-nut N, operating substantially as and for the purpose set forth.

99,760, antedated January 31, 1870.—WINDOW-FRAME.—A. J. Cleveland, Baltimore, Md.

Claim.—In combination with the window-frame A, provided with the catches *b b* and *i i* and the notch *c*, the beads *e e* and A, the former having the hooks *f f* and tenons *g*, the latter the slides *j* and recess *k*, all constructed and arranged as herein shown and described, for the purpose specified.

99,761.—FRICTION-CLUTCH MECHANISM.—Moses G. Crane, Newton, and A. M. Polsey, Boston, assignors to William Smith Hall, Quincy, Mass.

Claim.—In combination with the pawl arm, the griping keys *j j*, substantially as described.

Also, the arrangement of the keys to swivel, substantially as described.

Also, in combination with the keys, a screw or its equivalent, for relative adjustment of them, substantially as described.

99,762.—SAFETY-VALVE.—George W. Cushing, Chicago, Ill., assignor to himself and Horatio Anderson, same place.

Claim.—1. The combination, with the valve-stem B and spring seat L, the inverted cone-shaped coiled spring G, constructed and arranged as herein shown and described, for the purpose specified.

2. The screw-threaded valve-stem B, provided with the collar C, guide D, and lock and jam-nuts E F, as herein shown and described, for the purpose specified.

3. The combination of the index-finger P with the valve-stem B and graduated valve A, substantially as described, for the purpose specified.

4. The combination of the guard I placed within the dome with the valve-stem B and lifting-bar J, substantially as described, for the purpose specified.

5. The combination of the guard H with the projection D of the valve stem, and guiding the same and lower end of the steam-pot N, substantially as described, for the purpose specified.

6. A steam-dome, for converting a safety-valve into a lock-valve, provided with a series of chambers or pipes having their discharge-openings in reverse positions with relation to each other, substantially as described, for the purpose specified.

7. A steam-dome, for converting a safety-valve into a lock-valve, provided with a projecting flange, rim, or ring, to enclose the joints formed by the connection of said dome to the valve-seat and steam-pot or valve-case, substantially as described.

8. The combination of the steam-dome M and valve and spring-seats K L and the steam-pot N, when constructed as shown and connected together by means of the lock-bolts R and nuts S, substantially as herein described, for the purpose specified.

99,763.—FRUIT-JAR.—William H. Daniels, Bryan, Ohio.

Claim.—The stopper B, having inclined sides, and provided with an annular recess, *b*, in its lower end for holding the packing-ring, in combination with a fruit-jar having an inclined mouth, provided with an interior annular recess, *a*, into which the ring is forced and compressed by the stopper, as shown and described.

99,764.—TOBACCO-BOX.—Charles Doering, Charlestown, Mass.

Claim.—Combining in a tobacco-box one or more convenient recesses for holding sponge or other absorbent, with an air-space, which, together with the absorbent, shall completely envelop the tobacco, the whole being separated from it by perforated partitions, substantially as described.

99,765.—SPRING-BED BOTTOM.—Charles H. Dunks, Detroit, Mich.

Claim.—The spring B, having its point *a* turned vertically downward, and provided with packing *b*, in combination with the bars C and A, when each of said parts is constructed as shown and described, and all are arranged to operate as and for the purposes set forth.

99,766.—HAY-DRAG.—Daniel Eddelman and Amos Eddelman, Madison, Ind.

Claim.—A hay-drag, composed of the runners A A, standards B B, bar D, pins E E, and dragging bottom C, loosely articulated, in the manner and for the purposes substantially as specified.

99,767, antedated December 20, 1869.—Stirrup and Spur for Saddles.—Henry Fellows, Bloomington, Ind.

Claim.—The arrangement of a spur upon one side of one of the horns of a stirrup, in the relation shown to the upper end of the stirrup.

99,768.—Corn-Sheller.—Daniel E. Field, Leaksville, N. C., assignor to himself and Collett Leventhrope, New York city.

Claim.—The combination of the wheel *a* and the two rings *c c*, containing the fixed and movable teeth *f f f f* and *g g*, arranged and operated as described, for the purposes set forth.

99,769.—Gas-Carbureting Apparatus.—John Gair, New York, N. Y., assignor to himself and Joseph J. Walton, Newark, N. J.

Claim.—1. The tube containing a porous packing, through which the tube *i* passes, in combination with the burner *h* and nozzle *d*, substantially as set forth.

2. The gas-holder *f*, in combination with the blow-tube *m*, reservoir *a*, burner *h*, and packed tube *b*, as and for the purposes set forth.

99,770.—Sleigh-Knee.—John P. Garland, Newbury, Vt.

Claim.—The combination in a sleigh-post of the metal forked post A, with shoulder E and ears *a a*, surmounted by threaded bolts, the whole arranged as described.

99,771.—Wagon-Spring.—Lewis L. Gordon, Detroit, Mich.

Claim.—In buck-board wagons the combination of the wooden springs D placed closely side by side, with uniform surfaces above and below, with each other, and with the riders F and F', when each of said parts is constructed as described, and all are arranged to operate as and for the purpose set forth.

99,772.—Mop-Wringer and Scrubbing-Brush.—Lewis L. Gordon, Detroit, Mich., assignor to Richard W. Hutchinson, same place.

Claim.—The construction of the rod A, with its slide C, rod H, and its adjusting screw I, in combination with head C and its device for connecting it to the brush, as shown and described.

99,773.—Process and Material for Ornamenting Textile Fabrics.—Carl Günther, Berlin, Prussia, assignor to Frederick Volkman, same place.

Claim.—The yellow and the white varnishes, made of the ingredients described or their equivalents, in the manner and for the purposes set forth.

Also, the process described of ornamenting textile fabrics by the application of said varnishes, together with metals or colors or both, in the manner set forth.

Also, as a new article of manufacture, textile fabrics ornamented as described, by the processes set forth.

99,774.—Car-Truck.—Aaron Higley, Cleveland, Ohio.

Claim.—1. The combination of the springs D G and collar F with the arms C' suspending-brace H, and belts E, when the several parts are constructed and arranged to operate together in the manner and for the purpose specified.

2. The cap or collar F, when constructed in the manner and for the purpose of receiving and retaining springs D and G, as set forth.

99,775.—Shovel Blank.—George W. Jope, Pittsburg, Pa., assignor to himself and William Buntan.

Claim.—The blank R, of specific form shown, with curving lines A^1 A^2, as and for the purpose described.

99,776.—Elliptic Spring.—Frank Keeler, Bridgeport, Conn., assignor to Tomlinson Spring and Axle Company, same place.

Claim.—In elliptic springs, the rubber packing *e e*, the friction-thimble *d d*, the bolt *c*, having the rib *g* formed on its side, with a corresponding recess in the ear of spring, all combined and arranged as herein set forth.

99,777.—Metallic Hearth.—Oliver Kells, Steubenville, Ohio.

Claim.—A hearth, consisting of a metallic shell, *a*, having a filling of non-conducting substance *b*, substantially as described and for the purposes herein before set forth.

99,778.—Sofa-Lounge.—Charles Kurfiss, Louisville, Ky.

Claim.—The combination of the box-like extensible head-rest, hinged frames E F, bottoms of interwoven serge or like material, the back G, dovetailed slide N, hinged legs D, and frame A B C, all constructed and arranged as described.

99,779.—Spring-Bed.—Hermon W. Ladd and George F. Ladd, Chelsea, Mass.

Claim.—1. The detachable spring-clamp W, substantially as and for the purpose described.

2. The combination with the spiral springs and longitudinal spring-slats, of the spring-clamps, when made separate from the springs, for the purpose described.

3. The combination of spring-clamps, either separate or part of the springs, for the purpose described, with the spiral springs and longitudinal spring-slats, when the springs and slats are united by means of metal or other suitable material passing over the top surfaces of the spring-slats, and connected with the coils of the springs.

99,780.—Match-Machine.—L. T. Luther, Oak Grove, Pa.

Claim.—1. The frame A, combined and arranged with the transfer frame, when constructed to operate as described.

2. The knives K, bell-crank and pitman D, herein described, in combination with the shaft operated by the balance-wheel F all the parts being constructed, arranged and operating as specified.

3. The arrangement of the shaft operated by the balance-wheel F, with a friction-wheel attached thereto, the carriage E, lever J, and carriage G, when constructed and operating as described.

99,781.—Screw-Driver.—William H. Martyn, Boston, Mass.

Claim.—The combination of the screw-driver A C with the tube or socket B, when all the parts are constructed to operate as shown and described and for the purpose set forth.

99,782.—Apparatus for Frizzling Cloth.—Schamu Morits Moschcowitz, New York, N. Y., assignor to Wheeler & Wilson Manufacturing Company, Bridgeport, Conn.

Claim.—1. The frizzling-tool, constructed substantially as herein described.

2. The combination of the reciprocating needle-arm, presser-foot, supporting-table, and feeding device of a sewing-machine with a frizzling-tool, constructed substantially as herein set forth.

99,783.—Sewing-Machine.—Nicholas Meyers, Buffalo, N. Y., assignor to Globe Sewing-Machine Company, same place.

Claim.—1. The motor-shaft A, vibrating lever *a'''*, connecting rods *b b''*, elbow-lever *b'*, and shuttle-carrier *c'*, all constructed and arranged to operate in combination, substantially as described.

2. The combination of the needle-carrying bar with the flanged tubular screw *e* and needle-confining block, the latter having a screw projecting laterally therefrom passing through the tubular screw, and held by nut e^4, all constructed substantially as described, for the purpose of adjusting the position of the needle with reference to the carrying-bar.

3. The pivoted controller-bar l^4, combined with the vibrating looper-block l^1 and elbow-levers l^2 l^3, so as to guide the curved looper, substantially as specified.

4. The covering plate d', having a hole for the needle, the face of the shuttle-race, and the grooved adjustable block k^1 in the face of the race, when so combined and arranged, substantially as described, that the groove in the block coincides with the hole in the covering plate, and that the block may be adjusted in position below the covering plate, to make the race face continuous for the operation of the shuttle, or leave an opening in the race face, through which the looper may operate when the shuttle is removed.

5. The connecting bar l^5, having the slot l^6 and arm m^5, adjusting mechanism m^1 m^2 and arm m, connected with the shuttle-operating lever b', all combined for the purpose of throwing the looper in or out of operation, as described.

6. The sliding lever h', provided with the rider h'', and combined with the feed-lever h, working on the adjustable fulcrum i', the whole being operated by the eccentric *a* upon the motor-shaft A, substantially as described.

99,784.—Grubbing-Axe and Hook Combined.—Philetus W. Norris, Detroit, Mich.

Claim.—The combined axe and grubber A B, constructed as shown and described, provided with an elliptical eye, into which an ordinary axe-handle is secured, and operating as and for the purposes set forth.

99,785.—Fastening Handles to Cutlery.—Elias G. Ost, Shelburne Falls, Mass.

Claim.—The bent iron handle A, with grooves B B, blade D, tang C concave on both sides, and having slots E E, when constructed and arranged as described.

99,786.—Mechanism for Relieving the Pressure on Shuttle-Box Swell.—Joseph Potter, Danielsonville, assignor to George L. Lyon, Brooklyn, Conn.

Claim.—The combination with the pivoted lever F and protecting-rod, of the rod I, roller E, and the dog on the connecting-arm B, or of their equivalents, substantially as and for the purposes hereinbefore set forth.

99,787.—Compound Railway Rails.—Daniel R. Pratt, New York, N. Y.

Claim.—A compound railroad rail composed of the two parts A and B, and each of said parts has formed upon its outer sides the ribs or projections C C, constructed, arranged, and bolted together in the manner and for the purpose herein described.

99,788.—Beading Machine for Sheet Metal.—Charles H. Raymond, Southington, Conn.

Claim.—1. The hollow arms *a* and *b*, and gear-box *c*, cast together, in combination with the shafts *e* and *h*, bearing 2, 3, 4, and 5, gears *f k*, and rollers *n n*, substantially as and for the purposes set forth.

2. The V-shaped slide upon the arm *a*, in combination with the gauge *w* and rollers *n n*, as and for the purposes set forth.

3. The gauge *w*, formed with one side straight and the other convex, in combination with the rollers *n n* and arms *a b*, between which arms said gauge is clamped, as set forth.

99,789.—Oil-Can.—Patrick Scanlan, Indianapolis, Ind.

Claim.—The oil-can A furnished with the steam-chamber F, and tubes G and H, in combination with the water-chamber D, all constructed and arranged substantially as and for the purpose set forth.

99,790.—Spring-Bed Bottom.—John L. Secomb, Detroit, Mich.

Claim.—In combination with the spring bars E, with the guide-rods F, and transverse bars B and G, the frame composed of the bars A and B, the bars C, the spiral springs D, and slats H, when constructed as described and arranged to operate as set forth.

99,791.—Compound Propeller Pump.—Thomas Shaw, Philadelphia, Pa.

Claim.—The alternate stationary and revolving propeller-wheels, arranged in a tube with blades of reversed angles in the manner and for the purpose set forth.

99,792, antedated February 14, 1870.—Self-Working Rotary Corn-Planter.—John Simonton, Taylorsville, Ind.

Claim.—1. The construction of a cylinder, B, in a manner to serve as a receptacle for grain and a running gear for a planter, with marking bars E for marking out the ground, constructed and arranged and operating as described, for the purposes set forth.

2. The valves C, constructed and arranged within the cylinder B, substantially as shown, in combination with the guides D and springs L, as and for the purpose specified.

99,793.—Furnace for Burning Edgings, Sawdust, &c.—Ira O. Smith, Muskegon, Mich.

Claim.—The furnace above described, provided with the grate B, the doors C, D, and G, and the openings covered by them, the smoke openings F, and the flue E, when constructed, arranged, and operating as and for the purpose above set forth.

99,794.—Engraving Machine.—J. Civilian Spencer, Phelps, N. Y.

Claim.—1. The combination of the type or forms *w* and tracer *g* with the graver *d*, in connection with the arms or levers D F G and swinging frame E, substantially as herein set forth.

2. In combination with the above, the adjustable spring-bed H, provided with the clamp-blocks *b b* and adjusting screw *p* or equivalent, substantially as described.

3. The form-table B, provided with the adjustable clamp-bar *u* and screws *v v* or equivalent, in combination with the type or forms *w*, tracer *g*, graver *d*, and endless cord or band *y*, substantially as herein set forth.

99,795.—Tool for Making Splints.—Charles F. Stewart, Corunna, Mich.

Claim.—In combination with the plane-iron *d d* E, the arrangement of the passage *c*, the tongue C, and the groove B, when constructed and operating as and for the purposes aforesaid.

99,796.—Fence.—M. Vanwormer, Troy, Ohio.

Claim.—1. A fence-post, D, made of metal, with a sharpened upper end and a flattened lower end, and with shoulders *i i*, substantially as described.

2. The posts D, in combination with sections *a a*, and splicing-pieces *b*, as described in the specification, and shown in figs. 1, 3, and 4, or substantially the same.

99,797, antedated February 6, 1870.—Harvester Knife.—George J. Wardwell, Rutland, Vt.

Claim.—A corrugated plate, B, having a scalloped cutting edge, substantially as described.

99,798.—House Trimmings.—J. R. Webber, Morris, Ill.

Claim.—Providing casings and other similar house trimmings, which are to be secured flat to the studs or wall, with grooves on the outer back corners to receive the lath and plaster and hold them in place, as and for the purpose described.

99,799.—SCAFFOLD.—George W. Wells, Lawton, Mich.

Claim.—In portable scaffolds, the latch *g*, the strap hinge *e*, the pin *f* and the collar A, in combination with the braces C and C′, notched as described, when constructed and operating as and for the purpose set forth.

99,800, antedated February 11, 1870.—LUBRICATOR FOR BEARINGS OF SHAFTS.—Peregrine White, Dixmont Centre, Me.

Claim.—The automatic lubricating apparatus, made in manner, for the purpose, and so as to operate substantially as described.

99,801, antedated January 29, 1870.—STOVE FOR BURNING STUMPS.—Henderson Willard, Grand Rapids, Mich.

Claim.—The stove A A, made in two or more sections, hinged, and so constructed that it may be enlarged or contracted when used, as and for the purposes herein fully set forth.

99,802.—ELEVATING APPARATUS.—George G. Winans, Scranton, Pa.

Claim.—The combination of the standard C, box D, platform F, stay-rope H, windlass G, and reata I, all constructed and arranged substantially as described.

99,803.—DRILLING-MACHINE.—Edward J. Worcester, Worcester, Mass.

Claim.—In combination with the screw *c* and the ratchet-wheel *b*, the double adjustable eccentric *e e*, lever *f*, and dog *g*, in the manner described and for the purpose set forth.

99,804.—FARE-BOX FOR STREET-CARS.—W. H. Young, Chicago, Ill.

Claim.—The case A A′, money-box B B′, divided into compartments by means of partitions D, in combination with the perforated cylinder C, lamp F, dome G, surmounted by a knob, Z, and provided with an inner cylinder W and flange X, for holding the dome to the perforated cylinder C, as and for the purpose set forth.

99,805.—PROCESS OF WELDING CAST OR BESSEMER STEEL.—John Absterdam, New York, N. Y.

Claim.—The within-described process of welding cast or Bessemer steel to cast or Bessemer steel, either old or new, or to wrought iron, by placing between the surfaces to be united a thin plate or layer of steel of cementation, puddled steel, or case-hardened wrought iron, and treating the pile as set forth.

Also, a bar or slab, or sheet, composed of either two or more bars of cast or Bessemer steel, either old or new, or of a bar of cast or Bessemer steel and a bar of iron, united by the agency of an interposed plate or layer of steel of cementation, puddled steel, or case-hardened iron, substantially in the manner herein set forth.

99,806.—MODE OF COVERING MOLDS AND OTHER ARTICLES WITH A METALLIC SURFACE.—Joseph Alexander Adams, Brooklyn, N. Y.

Claim.—Coating or covering moulds or other articles with a metallic surface, by the process substantially as hereinbefore described and specified.

99,807.—PADDLE-WHEEL.—David Anderson, Philadelphia, Pa.

Claim.—The combination of the coupling chains B B, the paddles *a′ a′*, and the friction-rollers *a″ a″* of the wheel with the stationary guide-bearing C on the vessel, substantially as and for the purpose hereinbefore set forth.

99,808.—PLANING-MACHINE.—Moses L. Andrew, Cincinnati, Ohio.

Claim.—In the described connection with the feed-rollers A A′ and swinging arms C C′, the double incline bar L M M′, lever N, and rack O, operating substantially in the manner and for the purpose specified.

99,809.—CARRIAGE-WHEEL HUB.—Simeon Atha, West Liberty, Ohio.

Claim.—A wheel hub, when constructed of a metal box, A, provided with circular central flanges *a a* and wedge-shaped partitions B, cast in one piece, and wooden boxes D E being secured in the metal box A, all being constructed and arranged substantially as herein described and shown.

99,810, antedated February 5, 1870.—WOOD-TURNING LATHE.—Loring Atwood and Edward Ripley, Rutland, Vt., assignors to themselves and Baxter D. Whitney, Winchendon, Mass.

Claim.—The chuck M when pivoted as herein described, thereby allowing its axis to be turned from the line of the centers of the lathe, as and for the purposes specified.

99,811.—SOAP MIXTURE.—Jacob M. Austin, York, Pa., assignor to himself and William Tash, same place.

Claim.—The soap mixture, consisting of the ingredients in substantially the proportions herein described.

99,812.—GLOBE-VALVE.—J. W. Baldwin, Laconia, N. H.

Claim.—A conical valve, A, and valve-seat B, provided with screw-threads *b* in their peripheries fitting each other to tighten the valve, which is operated by a screw of equal fineness with the said screw-threads, substantially as and for the purposes herein specified.

99,813.—SPRING FOR RAILWAY-CARS.—C. M. Banks, Roxborough, Philadelphia, Pa.

Claim.—1. The rollers B B, arranged between the springs C C¹, &c., and guided in the grooves *b* of the box A, as set forth.

2. The ribs *c*, provided in the box and cover to hold the springs the requisite distances apart, as set forth.

3. The springs C C¹, &c., arranged in the box A and cover D, in combination with the rollers B B, substantially as herein shown and described.

99,814.—ROTARY WINDOW-WASHER.—Gottleib M. Barth, Philadelphia, Pa.

Claim.—1. A frame or plate revolving freely on its center and connected to or carrying a brush or brushes in combination with a series of curved water passages arranged in the frame or plate so as to impart a rotary motion to the latter on the escape of the water, as specified.

2. The combination of the said revolving tubes, or their equivalents, and the brushes with the flaring shield D and its vanes *m m*, arranged as described.

99,815.—SASH-HOLDER.—Charles Bean, North Providence, assignor for one-half to James Langley, Jr., Providence, R. I.

Claim.—As a new article of manufacture, the improved sash-fastener herein described, consisting essentially of the cylindrical casing A, hinged flap C hinged directly to it, connecting rod E, spring F, and lever G, also pivoted to the casing, all constructed and operating as and for the purposes specified.

99,816.—UMBRELLA.—Charles Becker, New York, N. Y.

Claim.—The peculiar combination of the jointed ribs or stretchers *x x*, *y y*, and *z z*, substantially as and for the purpose specified.

99,817.—CAR-COUPLING.—W. W. Bell, Chicago, Ill.

Claim.—The link H and the tumblers B B, in combination with springs E E and braces G G, all constructed, arranged, and operating substantially as herein set forth and for the purpose specified.

99,818.—RAILWAY CAR-COUPLING.—Charles W. Benson, Frederick City, Md., assignor for one-half to Richard C. Waters, same place.

Claim.—1. The post C, serving as a spring support, and also as an abutment for coupling-bars, in combination with the hinged gates E, substantially as described.

2. The two hinged or pivoted gates E E, adapted to form the sides of the coupling-box, the springs D D, applied to bar C, behind said wings, and a longitudinally movable wedge G, arranged in front and at the upper ends of said gates E E, substantially as described.

99,819, antedated February 14, 1870.—CHURN.—H. H. Bigard, E. H. Kellogg, and N. A. Prentiss, Fowler, N. Y.

Claim.—1. The combination of the springs H with the recessed shaft D, whereby the loose spur-wheel G is rendered easily removable and the top readily withdrawn.

2. The combination of a series of four-sided beaters with concave faces, arranged upon arms perpendicular to and intersecting each other at their centers, and with points or corners which pierce and divide the cream as they pass through their planes of rotation.

99,820.—COMBINED REEL AND RAKE FOR HARVESTERS.—Samuel H. Bingman, Laurelton, Pa.

Claim.—1. The reels C D and rake G, having central oblong slots *a a a* to embrace a guide-shaft, B, and continuous edge racks *b b b* which gear into pinions *c*, *d*, and *g* on a driving shaft, H, so as to operate substantially as and for the purpose herein specified.

2. In combination with the rake G, constructed and operating as described, the clutch I, as and for the purpose set forth.

3. The combination and arrangement of the reels C D, rake G, shaft B, pinions *c d g*, driving shaft H, and clutch I, substantially as herein set forth.

99,821.—HOE.—Lester L. Bond, Chicago, Ill.

Claim.—The herein-described hoe, provided with an elongated and sharp shank or blade, as a new article of manufacture.

99,822.—GATE.—Charles S. Bonney, Syracuse, N. Y.

Claim.—The hinges B and C when constructed substantially as specified, and the catch F, when all the parts are arranged and used as and for the purpose set forth.

99,823.—INDIGO SOAP.—Henry C. Borgner, Lebanon, Pa.

Claim.—The combination of bar-soap, lye, borate of soda, pearlash, rosin, soap-bark infusion, spirits of turpentine, benzine, alcohol, ammonia, glycerine, and indigo, in the manner and proportions and for the purpose specified substantially as described.

99,824.—INSTRUMENT FOR DIVIDING CIRCLES.—Milton Bowker and Joseph L. Stratton, Fitchburg, Mass.

Claim.—1. The springs *d*, points *l*, or their equivalent, for the purpose specified.

2. The combination of the adjustable center point *o*, set-screw *n*, the wire quadrant *g*, set collar *i*, thumb-screw J, springs *d*, points *l*, pointer *e*, nut *f*, arms *a c*, and quadrant *b*, with their graduations, all constructed, combined, and arranged as herein above specified and shown.

99,825.—HANDLE FOR CROSS-CUT SAWS.—E. M. Boynton, Grand Rapids, Mich.

Claim.—The hook-bolt 2, with its nut 3, in combination with the socket 1, provided with the ribs 1′ 1′ for securing the handle to the saw, substantially as described.

2. In combination with the hook-bolt 2, the nut 3 provided with the slots 9, so that when detached from the saw the same may be used as a set, substantially as described.

99,826.—CLAMP.—Samuel C. Bradley, New Haven, Conn., assignor to Charles E. Thompson & Co., same place.

Claim.—A clamp, composed of the beam A, constructed with the fixed arm B and grooves *a*, in combination with the adjustable arm C, having the slide *d* arranged thereon, and operating in the manner described.

99,827.—SASH-HOLDER.—E. K. Breckenridge, West Meriden, Conn.

Claim.—The herein described window-spring, as an article of manufacture, consisting of the socket A cast in two pieces, constructed with a slot, *d*, and provided with a bolt, B, and its arm C, and with a serrated ledge *a*.

99,828.—BOLT-WORK FOR SAFE DOORS, &c.—Martin Briggs, Rochester, N. Y.

Claim.—Tying or locking the opposite jambs of a safe together by arms extending from jamb to jamb, having hook joints or equivalent, to prevent spread or expansion by gunpowder or wedges as herein described.

Also, the arrangement as a whole, consisting of the bars or plates C C′, arms D D, connecting rods E E, friction rollers *g g*, and gears *l m*, the whole operating in the manner and for the purpose specified.

99,829.—TABLE-LEAF SUPPORT.—Warren R. Briggs, Boston, Mass., assignor to M. G. Briggs, same place.

Claim.—The construction and arrangement upon the leaf of the table, and in relation to the slots in the table frame, of the rod *f* with its lip *f* and the curved supports *g*, in the manner shown and set forth.

99,830.—PLOW.—T. E. C. Brinly, Louisville, Ky.

Claim.—The combination of the cast-iron standard A and the wrought metal heel-piece B, when the former is provided with a recess for the latter, substantially as and for the purpose set forth.

99,831.—SEAL LOCK.—Franklin W. Brooks, New York, N. Y.

Claim.—So arranging the glass seal S under the plate C or C′, constructed as described and attached to the lock by the permanent hinge *c* or *c′*, as that the seal must be broken before the key can be inserted, substantially as set forth.

99,832.—SCHOOL-DESK.—John David Browne, Madisonville, Ohio.

Claim.—The standard A A, provided with the angular guides or grooves *b b* and *b′ b′*, in combination with the folding desk B and seat E, provided with the pivot or fulcrum-pins *a a* and *a′ a′*, constructed and arranged to operate as shown and described, for the purpose specified.

99,833.—HAY-TEDDER.—Robert Bryson, Schenectady, N. Y.

Claim.—1. The toothed and slotted rack-bar K, arranged to impart, through the spur-wheel *s*, reciprocating motion to the tines *d d*, as specified.

2. In combination with the slotted rack-bar K, the shaft *s*, eccentric *z*, and guard-pins *t t*, constructed and arranged to operate as specified.

3. In combination with the internal wheel *a'*, the revolving frame C, provided with pinion, and the fork shafts E E provided with spur-wheels *s s*, and operated automatically by the slotted toothed rack K, eccentric *z*, and guard-pins *t t*, as specified.

99,834.—BRIDLE.—Mathew Hay Buchanan, Washington county, Va.

Claim.—A new and improved bridle-bit, curb, and draw-rein, combined as above stated, and in such a manner as with little strength of the rider to easily and effectually restrain wild and restive horses.

99,835.—GRAIN-SEPARATOR.—Hiram Burdick, Monroe, Wis.

Claim.—1. The horizontally-reciprocating rake P R in combination with lever S and sieves I I I, all arranged to operate substantially as and for the purpose described.

2. The combination of the lever *e*, oblique bearing *i*, bar *h*, lever S, and rake P R, all constructed and arranged to operate substantially in the manner and for the purposes herein set forth.

99,836.—WASHING-MACHINE.—Oscar S. Burgess, Sr., Battle Creek, Mich.

Claim.—1. The construction and arrangement of the dipping slats *a* and *a'*, ends or heads B B, bolts *b'*, in combination with reservoir A, as shown and described.

2. The arrangement of the pipe *d*, with cover D, in combination with tub *a''* and platform A, as shown and described.

3. The arrangement of the fire-box O and pipe D', in combination with cylinder B, reservoir or box A, stop-cock *c*, crank *d*, platform *h*, and tub *a'*, all arranged as shown and described.

99,837.—CURTAIN-FIXTURE.—Thomas Burgin, Rutland, Vt.

Claim.—The combination of the roller with ratchet I, slotted bracket G, and lever E, constructed and arranged to operate as herein described, for the purpose specified.

99,838.—HEAD-BLOCK FOR SAW-MILLS.—John H. Burket, Findlay, and George Burket, Bluffton, Ohio.

Claim.—1. The knee F provided with the weighted lever *d*, in combination with clamps *e* and rack *a*, substantially as and for the purpose set forth.

2. The arrangement of lever G, pawl *g*, weighted lever *d*, pawl *e*, and clamps *e*, knee F, and rack *a*, substantially in the manner and for the purpose herein set forth.

3. The weighted forked lever C, rod D, cranks *b b'*, upright plate K, with projection *i* and hinged incline H, and rack *a*, all the parts being constructed and arranged substantially in the manner and for the purpose herein shown and set forth.

99,839.—BOILER FURNACE AND FLUE.—W. H. Burns, Unionville, Mo.

Claim.—1. A boiler furnace combining the curved side walls B, ledge D, incline F, throat E, curve G, and inlet doors C C, with flues H, all as and for the purpose specified.

2. The flues H and smoke-stack, formed of a gradually-increasing diameter outwardly, to allow the heated air to expand as it progresses.

99,840, antedated February 10, 1870.—TEASEL-GRADING MACHINE.—George A. Burrough, Providence, R. I.

Claim.—1. In a teasel-grading machine, the graduated slots or spaces formed by the annular flange *j*, and the adjustable sections *l*, for the purpose set forth.

2. In combination with said slots, the radial rotary arms *d*, caps *e*, and supports *i*, arranged as and for the purpose set forth.

99,841.—SLATE-FRAME.—S. B. Bushfield, Jr., Parkersburg, West Va.

Claim.—The slate-frame B, provided with receptacle *a* and corrugated sliding bar *b*, substantially as and for the purposes herein set forth.

99,842.—WASHING-MACHINE.—N. W. Calhoun, Upper Tract, West Va.

Claim.—The combination with the box C of the hinged wash-boards *a a'* and central boards *a'*, chains *q r*, rubber box *b f*, bars *h*, sock-shaft *p*, springs *m*, and standards *i*, the rubber being operated by means of the levers *i*, all constructed substantially as specified.

99,843.—WARPING-MACHINE.—Samuel Campbell, Palmer, Mass., and Duncan McFarlane, Troy, N. Y.

Claim.—1. The application to a warping-machine of a removable traversing bugle and operating mechanism, guide pins *a a*, and plate E, whereby it may be adapted to common or skein warping, in the manner described.

2. The combination of a bugle which collects, guides, and lays the yarn in skeins with the pins *a*, arranged as described.

99,844, antedated January 5, 1870.—BLIND-HINGE.—Charles B. Clark, Buffalo, N. Y.

Claim.—Constructing the pintle *h* and socket *g* with the ogee sides *h' h'* and *g' g'*, in the manner and for the purpose shown and described.

99,845.—LATCH.—James A. Clarke, New York, N. Y.

Claim.—1. The combination of the rod D, knobs E and K, one or both, spring I, lever F, latch-block G, casing H, and cap M, substantially as herein shown and described and for the purpose set forth.

2. The combination of the hasp L, knob E, rod D, spring I, lever F, latch-block G, casing H, and cap M, substantially as herein shown and described and for the purpose set forth.

99,846.—PISTON-PACKING.—John Clark, Harrisburg, Pa.

Claim.—The combination of the adjustable packing D provided with the ears *d*, with the bushing C, rods *e*, and partition B, in the manner and for the purpose described.

99,847.—FOLDING BEDSTEAD.—Thomas G. Clifford, New York, N. Y., assignor to himself and William B. Clifford, same place.

Claim.—The case, divided centrally into the two parts A and B, each provided with folding legs C and D, arranged so as to be fixed as described, and also with the central supports *f*, the whole being constructed, combined, and arranged so as to be opened or set up as described.

99,848.—DIE AND PLUNGER.—J. H. Cole, Millbury, assignor to Samuel P. Emerson and Amos White, Worcester, Mass.

Claim.—As an improvement in the die for which Letters Patent were granted me on the 26th April, 1869, the formation of the lower portion of the die with the straight part *d* and opening *e*, substantially in the manner and for the purposes herein shown and specified.

99,849.—FISH-JOINT FOR RAILWAY-RAILS.—Hiram Cook, Norwich, Conn.

Claim.—The combination and arrangement of an abutment, *e*, and recesses *d*, as described, with the chair A and rails B C and a fishing or fishings, *b c*, applied to the rails.

Also, the combination and arrangement of the hole *g* and its headed spike *f*, and the recesses *d*, with the chair A and rails B C, and a fishing or fishings, *b c*, applied to the rails, the whole being substantially as set forth.

Also, the combination and arrangement of the abutment *e* and the spike *f* with the chair A, the recesses *d* of the rails B C, and with a fishing or fishings, *b c*, bolted to the rails, the whole being substantially as explained.

99,850.—HARVESTER.—Grant T. Coolman and Charles M. Young, Corry, Pa.

Claim.—1. The combination of the main frame, the hinged coupling frame, the shoe fixed to the coupling frame, and the finger-beam hinged to the shoe and frame, the stud, the elbow lever and its chain *h*, with the lifting lever and the chain *i*, attached to the coupling frame, the whole constructed for joint operation, substantially as set forth.

2. The combination of the suspended main frame, the coupling frame, the tongue hinged to the frame, the lifting lever pivoted on the tongue, and the slotted bracket and set-screw, all constructed and arranged as set forth for joint operation.

3. The combination of the shipping lever, the oscillating endwise-moving rock-shaft, the loose shifting forks, and the clutches, the combination being and operating substantially as set forth.

4. The combination, substantially as set forth, of a shipping lever, an oscillating sliding shaft, carrying shifting forks, cams to move the shaft endwise, and a spring to hold the clutch in gear.

99,851.—WHEEL FOR CARRIAGES AND OTHER VEHICLES.—Almond F. Cooper, San Francisco, Cal., assignor to himself and John G. Tappan, Boston, Mass.

Claim.—The wheel A, with its flange *a*, in combination with the grooved plate D, the elastic rings *c d*, and one or more series of elastic blocks or springs, the whole constructed and operating substantially as described, for the purpose set forth.

99,852.—BRICK-KILN.—Richard D. Cox, Philadelphia, Pa.

Claim.—1. The combination and arrangement of combustion-chambers extending across the kiln, pigeon-holed walls D separating the combustion-chambers from the compartments B and pigeon-holed chimneys E, with dampers E', arranged in relation to one another substantially as set forth.

2. In combination with a series of compartments, B, arranged in the same line in a rectangular kiln, the combustion-chambers C extending entirely across the kiln, having fire-doors at both ends, and arranged to separate the kilns, the pigeon-holed walls intervening, so that a horizontal draft may be carried in straight lines through a series of compartments, substantially as set forth.

99,853.—INSTRUMENT FOR DESCRIBING SPIRALS, &c.—Germond Crandell, Washington, D. C.

Claim.—The combination and arrangement of the screw *b*, carrying at one end the solid or hollow tracing wheel *c*, held in place rigidly or loosely by the clamp-screw *h*, with the square-faced centre block *e*, having within it the nut *d*, through which the said screw *b* passes, and provided with the adjustable point *a* to a yoke or stirrup, which, by means of the screw nut *f*, may be made to clamp the through screw *b* when desired, the whole forming a drawing instrument capable of describing a spiral line or a circle, and also as a gauge, a parallel, or taper straight line, substantially in the manner shown and described.

99,854.—PICTURE-FRAME FASTENING.—John D. Crocker, Norwich, Conn.

Claim.—A picture-frame button, which is constructed with a beveled lip *c*, on its periphery, as herein described.

99,855.—STEAM-ENGINE.—J. E. Culver, Hudson, N. J.

Claim.—1. The method, above described, of applying steam pressure continuously to one side conjointly with steam pressure intermittently to the other side, to reciprocate a piston.

2. A cylinder, through one end of which steam presses continuously, and through whose opposite end steam is intermittently supplied to and exhausted from it, by suitable mechanism, in combination with a steam-boiler to supply the steam for both purposes.

3. The arrangement of the steam-cylinder J or J' and its valves within the boiler, and wholly or in part beneath the water therein, as and for the purpose specified.

99,856.—PAINT.—Thomas H. Currey, Cincinnati, Ohio.

Claim.—The composition of ingredients substantially in the proportions and for the purposes herein specified.

99,857.—DEVICE FOR ATTACHING SPITTOONS TO FLOORS OF RAILROAD-CARS.—John S. Daggett, Hope, Me.

Claim.—1. The spittoon-holder herein described, consisting of a frame-work of proper size, capable of being secured to the floor, substantially as described.

2. In combination with such a frame-work the slotted arm D.

3. In combination with a ring-holder the arm D, substantially as shown and described.

99,858.—DRIVE WELL-TUBE.—Deloss A. Danforth, Elkhart, Ind.

Claim.—1. An external drive well-tube, constructed by perforating or incising the sheet metal, and then rolling or striking down the protruding lips of said punctures to a flat surface, so as to reduce the openings to the degree of fineness desired, substantially as set forth.

2. The case or screen, with turned-in edges *d*, constructed as described, in combination with the collar or ring *c* of tube, forming a shoulder thereon, and screw point B, having the jam-nut *b* secured thereto, and provided with shoulder *g*, substantially as set forth.

99,859.—MACHINE FOR DIGGING SWEET-POTATOES.—Robert Darlington and Elvy L. Watson, Auburn, N. J.

Claim.—The split pickers B B, the revolving knives C C working in the pickers, in combination with the plow D, with two shanks.

99,860.—APPARATUS FOR GENERATING ILLUMINATING GAS.—Darius Davison, New York, N. Y.

Claim.—1. The combination with the vaporising retort of a liquid supply tank, made adjustable in height to vary the feed by gravity to said retort, substantially as specified.

2. The tank P, divided into upper and lower chambers as described, and provided with a valve float for regulating the supply from the upper to the lower chambers, also with an air inlet valve and air pipe, connecting the upper spaces of said chambers, essentially as herein set forth.

3. The arrangement in an apparatus of the character described of the condenser with the primary gas-producing retort and return-retort or retorts for the gas after its passage through the condenser, essentially as described.

4. The combination of the check-valve W with the vaporising retort D and supply-tank P, essentially as herein described.

5. The combination of the one flat or level-bottomed vaporising retort D with two or more gas-producing retorts A B C, connected together for operation as described.

6. The arrangement for feeding the liquid to be converted into gas through the bottom of the va

rough, Providence, R. I.

Claim.—1. In a tessel-grading machine, the graduated slots or spaces formed by the annular flange

99,849.—Fish-Joint for Railway-Rails.—Hiram Cook, Norwich, Conn.

Claim.—The combination and arrangement of an abutment, *c*, and recesses *d*, as described, with the

John D. Crocker, Norwich, Conn.

Claim.—A picture-frame button, which is constructed with a beveled lip *c*, on its periphery, as herein described.

C P O——870

toined vaporising retort D with two or more gas-producing retorts A B C, connected together for operation as described.

6. The arrangement for feeding the liquid to be converted into gas through the bottom of the va

perizing retort at one end in a vertical direction upwardly by means of the pipe T, connecting the same with the empty tank P, substantially as shown and described.

99,861.—Flour-Bolt.—A. J. Dibble, Franklin, N. Y.

Claim.—The arrangement of the coarse hulling wire-cloth D, on the reel next the flouring-cloth G, and the middlings-cloth E, over the wire-cloth on an enlargement of the reel, and so as to deliver into a separate receptacle, all substantially as specified.

99,862.—Refrigerator.—Henry M. Diggins, Cincinnati, Ohio.

Claim.—1. A refrigerator whose interior is divided into two compartments H and I by means of the L-formed receptacle partition F G, as and for the purpose set forth.

2. The described arrangement of the cold-water tank, L-receptacle F G, discharge pipe P, and faucet O.

99,863.—Tool for Checking Timber.—Arthur W. Dorr, Lake Valley, Taho P. O., Cal.

Claim.—The stock A having handle B and knife *b*, and provided with heads *a* forming recesses *a'*, in combination with the knives *c*, bearing backs *f* and the spring-knife *c d*, all constructed, arranged and operating substantially as set forth for the purpose specified.

99,864.—Attachment for Hot-Air Registers.—Octavius A. Ebert, Baltimore, Md.

Claim.—1. The construction of the case A, with a bonnet, G, a removable water-pan, I, and a dust-trap, *g*, substantially as described.

2. The chamber B', constructed within the case A of a hot-air moistening and purifying device, substantially as described.

3. The guard C, removable from and adapted for use in conjunction with the moistening and purifying apparatus, substantially as described.

99,865.—Shifting Buggy-Top.—David Eldridge, Salem, Ohio.

Claim.—The combination of the seat E with the frame B, irons C C, rail A, and top D, constructed as described, and secured together by means of the lugs *a a*, projections *b b*, bolts *d d*, and nuts *e e*, substantially as and for the purposes set forth.

99,866.—Machine for Laying out Doors and Sash.—Seth C. Ellis, Jersey City, N. J.

Claim.—1. The circularly-traveling scribing heads D, constructed of a disk, *c*, and scriber-holding side arms or wings *g*, essentially as shown and described.

2. The combination and arrangement relatively to each other of the inclined bed B, with its end stop E, and the revolving scribing heads D, made adjustable along their shaft C, and constructed to operate essentially as herein set forth.

99,867.—Spring-Brace for Carriages.—William Evans, Eureka, Wis.

Claim.—In combination with the fixed standard D, provided with stop *i*, the swivel bar *a*, brace *b*, adjustable brace *c*, and rubber cushions *z*, constructed and arranged to operate as specified.

99,868, antedated February 7, 1870.—Machine for Rolling Railroad-Chairs. David Eynon, Richmond, Va.

Claim.—1. In a machine for rolling railroad-chairs, constructed substantially as described, the combination of the forming rolls B B' with the straightening rolls C C' when one of the straightening rolls has a vertical bodily movement, as and for the purpose set forth.

2. In combination with the straightening rolls C C', the shaft D, braces E E, and lever *d*, as and for the purpose set forth.

99,869, antedated February 7, 1870.—Machine for Slotting Railroad-Chairs. David Eynon, Richmond, Va.

Claim.—1. The removable guide G in combination with the cams F F¹ F², when arranged to operate substantially as and for the purpose specified.

2. The arrangement of the movable guide G with reference to the cutters or punches E E, when such guide is operated by the cams F F¹ F² or their equivalents, substantially as and for the purpose set forth.

3. The arrangement of the eccentrics or cams D D' with reference to those designated by the letters F F¹ F², in combination with the cutters E E' and guide G, substantially as and for the purpose set forth.

99,870.—Hand Clothes-Washer.—Peter Falardo, Newark, N. J., and George H. Snow, New Haven, Conn.

Claim.—1. The combination of a pump with a wash-board, when arranged to operate substantially as shown and described, for the purpose specified.

2. The combination of the roller J K, cord G, rod F, and spiral spring, with the board A, as shown and described, for the purpose specified.

3. An improved hand washing-machine formed by the combination of the corrugated board A, hollow leg or legs B, pump-barrel C, stationary valve or valves D, movable piston or valve E, piston-rod F, cord G, guide-pulleys H, bow I, rubbing roller J K, spring L, passage or tube M, and chamber N, with each other, substantially as herein shown and described, and for the purpose set forth.

99,871.—Skeleton Corset.—D. H. Fanning, Worcester, Mass.

Claim.—A skeleton corset, in which the upper and lower supporting pieces B C, vertical bone or stiffener, supporting pieces E, clasp supporting pieces F G, and back eyelet pieces H H are composed of tapes woven with suitably-shaped pockets, the whole combined together by means of a central zone-shaped belt, substantially in the manner described and shown in the accompanying drawings.

99,872.—Combination Padlock.—George K. Farrington, Alcatraz Island, Cal., assignor to himself and Frederick and Victor Schuls.

Claim.—1. The bolt-plate *i*, provided with a recess for the bolt-wheel, and operated as described, for the purpose set forth.

2. The bolt *g*, bolt-wheel *f*, the change-plate *d*, the receiving plate *e*, the top plate *l*, the rivet-pin *c*, the lid or front plate *a*, the filling *m*, and the case *b*, combined and arranged substantially as described and specified.

99,873, antedated February 3, 1870.—Insulator for Telegraphs.—Stephen L. Finley, Morrisania, N. Y., assignor to himself and Marshall Lefferts, New York city.

Claim.—The cap *g*, sitting down over the insulator *b*, and inclosing the clamping mechanism *f* that secures the wire to the insulator *b*, substantially as set forth.

99,874.—Boom for Vessels.—Eugene G. Gaillac, Cutler, Me.

Claim.—1. The rollers *z z* herein described, arranged to operate between the jaws of a boom or gaff and the mast saddle, as specified.

2. In combination with the clapper *b*, the roller *z*, secured to its lower end, as and for the purposes specified.

99,875.—Candlestick.—Samuel Gardiner, Jr., New York, N. Y.

Claim.—1. The duplex socket F *f f*, constructed with two elastic ends, to adapt it to clasp the standard D and the candle, and be adjustable upon the former, substantially as herein described.

2. The combination of the base B *b b²* and separable standard D, connected together in manner substantially as herein set forth.

99,876.—Blowing Apparatus.—Rufus H. Gilbert, Washington, D. C.

Claim.—1. In combination with the other parts of an atmospheric engine or blower, the valves H, at one or both ends, when centrally pivoted and moved as described.

2. The combination with said valve of an automatic agency for opening it to a point from which it shall close by gravity or by the tension of a spring, as set forth.

3. The spring-catch constructed and arranged to operate the valves, as set forth.

4. The auxiliary spring, spring-catch and valves, as and for the purpose set forth.

5. The valve, when made with one side enlarged or weighted to act automatically by gravity, as set forth.

6. The bell-crank constructed and operating with the spring-catch and valves, as set forth.

7. The arrangement of the exit-pipe or openings in combination with the valves and connections, as and for the purpose set forth.

8. In combination with my improved blower, the friction-roller, as set forth.

9. In combination with the spring-catch, bell-crank, lever, and connecting rod, the arm D, operating as and for the purpose set forth.

99,877.—Pump.—Roscoe J. Gould, Newark, N. J.

Claim.—1. The combination and arrangement in a double-acting pump, having an open-ended cylinder B, of a circumferential valve-plate, C, a circumferential casing, D, partitions C' I I, and heads E E', to form the valve, supply, and discharge-chambers, as herein shown and described, for the purpose set forth.

2. The combination in a double-acting pump, having an open-ended cylinder, B, of the concentric circumferential spaces L L' and M N, separated by the valve-plate C, and divided respectively by partitions C' and I I into the valve-chambers and the supply and discharge-chambers, as set forth.

3. In combination, the piston A, cylinder B, valve-plate C *c*, casing D O P, partitions C' I *c' d*, I *c' d*, stays K K, removable valve-seats H' *h'* H' *h'*, valves H *h* H *h*, heads E *e c'* E' *c'*, packing G J, and bolts F F, as constructed and arranged in the manner shown and described, to form an improved double-acting pump.

99,878.—Vapor-Burner.—B. D. Greene, Sturgis, Mich.

Claim.—1. The bisected disk E, constructed and arranged as described, substantially as and for the purposes herein set forth.

2. The burner I, constructed as described of the parts *a b* and cap *d*, all substantially as and for the purposes herein set forth.

3. A vapor cooking-stove, consisting of the outer and inner shells A D, circular bisected disk E, generator G, and burner I, all combined as and for the purpose set forth.

99,879.—Manufacture of Lozenges and Confectionery.—Ernest Greenfield, New York, N. Y.

Claim.—The process herein described for printing in different colors for the completion of mottoes, sentences, words, designs, ornaments, or borders upon lozenges or confectionery.

99,880.—Crackers or Meat Biscuits.—Ernest Greenfield, New York, N. Y.

Claim.—The heretofore-detailed combination, for the purpose of providing an improved nutritive cracker for food, which shall remain, from the peculiarity of its composition, proof against the mutations and decomposition produced by atmospheric and other chemical agencies.

99,881.—Apparatus for Refrigerating. Alfred Guthrie, Chicago, Ill., assignor to himself and A. E. Goodrich.

Claim.—1. The combination of the water-reservoirs F F, pump-valves D D, and air-pump A, substantially as herein set forth.

2. The combination of the compressed-air chamber G, water-well H, and steam-generator R, substantially as herein made known.

3. The combination and arrangement of the water-reservoirs F F, valves D D, air-pump A, air-compressing reservoir G, valve-chest M, air-engine I, air-receiving or expanding chamber K, water-well H, and steam-generator R, when constructed and operating substantially as herein described, and for the purposes herein set forth.

99,882.—Railway-Car Axle-Box.—John T. Hagerty, Camp Point, Ill.

Claim.—The spiral windlass A, in combination with the lubricator B, when constructed and operating as herein described, and for the purposes set forth.

99,883.—Egg-Beater, &c.—William Henry Haines, Newark, N. J., assignor for one-half of his right to Thomas Albert Sandford, same place.

Claim.—The duplex conoidal spring, combined with the metallic or wooden vessel, attached together, as shown in the drawings annexed, for the purposes heretofore mentioned and described.

99,884.—Pump.—Morgan P. Hall, Gayville, Ill.

Claim.—The arrangement of the valved air-inlet, constructed as described, at the side of the piston-chamber, and at some distance above the lowest point of depression reached by the piston on its downward stroke, all as shown and set forth.

99,885.—Coloring Matter to be used in Vulcanized Rubber.—John Halliday, Lynn, Mass.

Claim.—The coloring matter, substantially such as described, for coloring India rubber or allied gum, and consisting of the oxide of antimony, or equivalent metallic oxide, which has been treated with garancine and cochineal, substantially as herein above described.

99,886.—Brick-Kiln.—Silas M. Hamilton, Baltimore, Md.

Claim.—1. A continuous kiln A, divisible into compartments by sliding doors, in combination with removable chimneys and steam-draught jets, substantially as set forth.

2. In combination with a continuous kiln and chimney D, the steam-pipe C² arranged to swing on a joint, substantially as set forth.

3. In combination with a kiln and steam-jet pipe, removable slotted chimney-pots, substantially as and for the purpose set forth.

4. In combination with the kiln A and steam-draught jets, the upper circulation flues G built in the body of green bricks placed in the kiln, substantially as described.

5. In combination with the kiln A and its furnaces, the jet-pipes C¹ and superheating pipes H, substantially as set forth.

6. In combination with the kiln A, divisible into compartments, a return flue F, carried from end to end under the floor of the kiln, substantially as set forth.

99,887.—Brick-Kiln.—Silas M. Hamilton, Baltimore, Md.

Claim.—1. Providing a series of kilns, set in a circle around an interior space, accessible by a passage or break between any two of said kilns, with fire-doors at both the outer and inner sides of the kilns, as herein shown and described.

2. Providing a progressive kiln, substantially such as herein described, with sliding partitions, to form, when desired, separate chambers, and also with steam-draught jets in the chimneys, when said parts are arranged substantially as herein shown and described.

3. In combination with a kiln, a movable furnace, placed outside of the walls, and capable of being moved from one compartment to another, substantially as set forth.

4. In combination with a circular kiln, having an opening, L, the flue M, for connecting the ends of the kilns, substantially as set forth.

99,888.—THRESHING-MACHINE.—George B. Hamlin, Willimantic, Conn.

Claim.—The curved flail arms or beaters B, passing through suitable apertures in the shell of the cylinder, and attached by a hinge joint, or its equivalent, to the interior of the cylinder, substantially as shown and described, for the purposes specified.

99,889.—SAW-SET.—H. A. Harris, Center, Texas.

Claim.—A saw-set, consisting of the perforated bar A and of the L-shaped gauge C, adjustable by means of a set-screw, G, all combined and operating substantially as herein shown and described.

99,890.—THILL-COUPLING.—Albert S. Harry, Wooster, Ohio.

Claim.—The combination of the reach G with roll F, hook and clip B C E, and rubber pad H, all constructed, arranged, and operating substantially as specified.

99,891.—SPLIT RING.—Thomas S. Hattersley, Trenton, N. J.

Claim.—A split ring, as shown, described, and represented, for the purposes set forth.

99,892.—RELAY FOR TELEGRAPHIC INSTRUMENTS.—Edward S. Hidden, Millburn, N. J.

Claim.—1. The combination of a float with a reservoir and single coil and two prongs and cups, both at the same end of the float, the combination being and acting substantially as described.

2. The reservoir, open at bottom, in combination with a float and prongs and cups arranged below the reservoir, the combination being substantially such as specified.

3. In combination with the relay, as described, the leveling contrivance, as specified.

4. In combination with a reservoir open at the bottom and a float and prongs, two mercury cups, adjustable vertically with reference to the reservoir, substantially as described.

5. In combination with a float, reservoir, and coil, all substantially such as described, a guide applied to the float near the end thereof where the prongs are located, substantially as specified.

6. The cups, with a screw on the outside thereof, in combination with the revolving nut and the connecting wires, which prevent revolution and permit vertical movement of the cups, and in combination with these elements the jam-screw plug and the flanges, whereby the nut may be jammed, as described.

7. The weight attached to the screw-plug, when the nut in which the latter rests is supported by gimbals, as described.

99,893.—REVOLVING FIRE-ARM.—Byron R. Hill, Cranston, R. I.

Claim.—The conical apertures *e f*, arranged in reverse order in alternate succession in the cylinder of a revolving fire-arm, as set forth.

99,894.—LUBRICATOR.—Timothy Holland, New York, N. Y.

Claim.—1. The combination and arrangement of the hollow screw-clamp C, having an overlapping projection or collar, *a*, on or near its upper end, with the reservoir A and stem B, substantially as specified.

2. The stopper D, formed of a cork, *d*, screw pin *f*, provided with a lower head and rigid cap *e*, arranged in relation to each other, essentially as shown and described.

3. The stem B, constructed to operate as a valve, when turned with the reservoir A, as specified.

4. The construction, substantially as shown and described, of the valvular stem B of the reservoir A, with a longitudinal passage down it, and side orifices *f f*, and with a reverse screw-thread, *i*, on it, for operation in relation to the cap or stopper of the reservoir, as specified.

99,895.—SCHOOL DESK AND SEAT.—M. L. Holt and L. C. Abbott, Eaton, Ohio.

Claim.—1. In combination with the desk C and seat E, the slots *a* in the standards A, for adjusting the desk and seat as herein described.

2. The combination of the bar *f* with its circular projection, washer h with its projection *i* fitting in the slot *d*, and its bolt and nut, all constructed and arranged as described for the purpose set forth.

99,896.—TREATING FISH AND ANIMAL MATTERS TO OBTAIN OILS, FATS, AND OTHER PRODUCTS.—William J. Hooper and Theodore Hooper, Baltimore, Md.

Claim.—The rendering of oils and making fertilizers from fish and the rendering of fats and making fertilizers from animal substances by treating said fish and animal substances in vacuum or partial vacuum, in connection with hot air or other gases, substantially in the manner and for the purpose as herein set forth.

99,897.—HORSE HAY-RAKE.—Benjamin F. Horton, Ithaca, N. Y.

Claim.—1. The combination of the hinged bars E and H with the rake-head N, these parts being so arranged that the strippers are raised from the material raked, and the rake-teeth, at their highest elevation, are held between the two bars E and H, substantially as set forth.

2. The combination of the rod J with the described stripper-frame, by the eye or staple O, on one or more of the strippers I, when the said rod is also secured to the post K of the driver's seat or equivalent place, substantially in the manner figured and described.

3. The combination of the rake head N, the arm E', the bar E, the hinge G F, the stripper-frame H I, and the rod J, operating together substantially as and for the purposes set forth.

99,898.—BREECH-LOADING FIRE-ARM.—B. B. Hotchkiss, New York, N. Y.

Claim.—1. The bolt B, adapted to both slide forward and backward, and turn or partially rotate relatively to the barrel, in combination with a guide having a rounded corner, so as to change the end motion of such bolt into a turning motion, by a continuous movement, and thus relieve the cartridge from shock, substantially as and for the purposes herein set forth.

2. The curved groove *n'*, arranged and operating as specified relatively to the projection *o'*, so that the turning up of the handle B' draws back the firing-pin *e*, substantially as and for the purposes herein specified.

99,899.—PRIMER FOR CARTRIDGES.—B. B. Hotchkiss, New York, N. Y.

Claim.—1. The within-described primer for cartridges, having an internal piece, B, and an external piece, D, permanently combined, with the fulminate between, and having a hole, *b*, adapted to direct all the flame in line with a central hole in the cartridge, and to protect the material of the shell from destructive action of the fulminate, all substantially as and for the purposes herein set forth.

2. The within-described combination and arrangement of the cartridge with the compound primer B C D, having a hole, *b*, in line with the hole *a* in the cartridge-shell, the whole being adapted to serve relatively to the firing-pin or analogous exploding means and to the contents of the cartridge, as herein set forth.

99,900.—OYSTER-DREDGE WINDLASS.—W. T. Howard and Oliver Reeder, Baltimore, Md., assignors to Oliver Reeder and Samuel R. Waite, same place.

Claim.—1. The combination, with the drum and sliding clutch E, of the toothed disk H, pawl I, segmental disk L, and bevel-faced disk G, all arranged for operation substantially as specified.

2. The combination, with the frame A, of the support K for the segmental disk L, all substantially as specified.

99,901.—ATTACHMENT FOR LAMP-CHIMNEYS.—John Hughes, New Berne, N. C.

Claim.—The spring-band or collar D, provided with the button *c*, spring *e*, and socket for the support of a reflector, in combination with the perforated chimney, substantially as and for the purposes specified.

99,902.—ADJUSTABLE DIAL FOR TRAVELERS' WATCHES.—Edwin James Hulbert, Portland, Conn., and Aime Nicholas Napoleon Aubin, Montreal, Canada.

Claim.—1. In watches, more particularly intended for travelers, the dial F, having a hole, *f*, through which can be read the name of one of the places of which it is desired to ascertain the time, and on which are inscribed ordinary figures indicating the hour and minutes.

2. The detachable segment A A, on which the names of cities and places are inscribed, the whole constructed and operated substantially as herein set forth.

99,903.—GRAIN-SEPARATOR.—Herbert A. Hummer, Frenchtown, N. J.

Claim.—In combination with the grain-separator of a threshing-machine, the removable supports D D, provided with half staples *m m'*, and the rigid connecting-rod E, constructed and arranged as herein shown, to balance the separator C, and to give it a vertical as well as horizontal motion, substantially as specified.

99,904.—OBTAINING MADDER EXTRACT.—James Hunter, Philadelphia, Pa.

Claim.—The treatment of madder-root, first with hydrochloric and next with sulphuric acid, and then with heated water, in a close digester under pressure.

99,905, antedated February 5, 1870.—CLOD AND CORN-STALK FENDER.—George H. Jackson, College Corner, Ind.

Claim.—A clod-fender, combining in its construction a series of rods, curved in such a manner that their rear ends shall assume a horizontal position, a bar or beam to which the rods are secured, an angled iron for securing the fender in position, and an arm for securing the fender to the beam of a plow, substantially as and for the purpose set forth.

99,906.—CRIMPING-MACHINE.—Samuel W. Jamison, New York, N. Y.

Claim.—1. The combination in a crimping-machine of the sliding cross-head, which carries the crimping jaws, with the tripping rod, clutch, and system of gearing for transmitting motion to said cross-head, under the arrangement substantially as described, whereby the movement of the cross-head may be reversed or arrested at pleasure, as set forth.

2. The arrangement of the reversing gears and clutch by which motion is communicated to the sliding cross-head with the large and small gear-wheels, which impart movement to said reversing gears, substantially as described, so that the cross-head shall be caused to ascend more rapidly than it descends, for the purposes stated.

3. The arrangement of the crimping jaws upon two axes, the one horizontal, the other vertical, substantially in the manner set forth, so that they may be tilted or rocked endwise to conform to the position of the crimping form, and may also vibrate upon a vertical axis to allow for inequalities in the material to be crimped.

4. The employment with the laterally-vibrating jaws of stops or set-screws to limit the vibration of the jaws and to hold them in close contact with any portion of the leather to be crimped, substantially in the manner shown and set forth.

5. The construction and arrangement of the crimping jaws, the set-screws and slotted plate by which it is supported, and the socketed plate and spindle by which said slotted plate is held in position, substantially as shown and set forth.

6. The combination with the crimping jaws of the double helical cam-disks, the brackets provided with corresponding cams and the set-screws or spindles and nuts for maintaining said parts in position, under the arrangement substantially as described, so that the jaws may be set and held at a greater or lesser distance apart to conform to the thickness of the material to be crimped.

7. The employment in a crimping-machine of an adjustable form or tree, arranged so that the toe can be more or less elevated, in order to crimp at various angles according to the shape of the leather or other material operated on.

8. The combination with the adjustable tree or form of crimping jaws oscillating in a plane parallel with the tree, so that said jaws may be adjusted to conform to whatever position the tree may occupy, as set forth.

9. The arrangement of the adjustable tree or form so that it shall move in the arc of a circle, of which the pivot or point of oscillation of the crimping jaws is the center, substantially as set forth.

10. The employment with the tree or crimping form of laterally self-adjusting brackets for supporting the same, substantially as described, so as to equalize or distribute evenly the pressure of the jaws upon the leather on both sides of the form.

11. The combination with the crimping jaw of the sliding clamp or corner-stretcher and lever and cam for operating the same, substantially as set forth.

12. The combination with the hinged ways of a system of levers operated by a treadle or otherwise, to spread said ways so as to relieve the pressure and strain of the jaws on the leather or form whenever necessary, substantially as shown and set forth.

13. The combination with the hinged ways of the set-screws and pointers or gauges, for limiting the movement and determining the parallelism of the ways, substantially as set forth.

99,907.—PIGMENT FOR DISTEMPER PAINTING.—Henry M. Johnston, New York, N. Y.

Claim.—As a new article of manufacture, pulverized, sized or adhesive pigments, substantially as described.

99,908.—REFLECTOR FOR LAMPS.—Frederick Judson, Castleton, N. Y.

Claim.—The lamp-chimney reflector constructed with a closed fixed reflecting body portion *b*, and with wings *a a* branching up and out from said portion *b*, and with a supporting device *c d*, all being constructed of ductile or flexible material, which may be bent into the desired form by the user to adapt it for the special use intended, substantially in the manner described.

99,909.—WATER-METER.—Joseph F. Kelley, Washington, D. C.

Claim.—The combination and arrangement of the water-tube B, the removable T-shaped section A, and the removable screw-tap *b*, by which the attachment and support of the registering mechanism is rendered compact, its removal and replacement effected with facility, and admitting of the cleaning out of the tube when clogged, in the manner herein shown and described.

99,910. — KINDLING-WOOD ELEVATOR. — James E. Kelsey, Brooklyn, N. Y.

Claim.—1. The combination of the guide-pieces G, constructed as described, with the hopper F and floor A of the elevator way, whether said pieces be attached to said hopper or to said floor, substantially as herein shown and described and for the purpose set forth.

2. An improved kindling-wood elevator formed by the combination of the wide floor A, either with or without the side pieces B, rollers C, belt D, buckets E, hopper F, and guide-pieces G, with each other, said parts being constructed and operating substantially as herein shown and described and for the purpose set forth.

99,911.—FENCE.—James Kerr, Corsicana, Texas.

Claim.—1. The packing device consisting of the frame D, having the flanged or spurred wheels and water-cistern, as described, and used as specified, in combination with the box A, for the purpose set forth.

2. The pulleys at either end of the box A, in combination with the packing device, as described, and for the purpose specified.

99,912.—YARD AND TANK-CRANE.—Lewis Y. Ketcham and James Taynton, Port Jervis, N. Y.

Claim.—The arrangement and combination of the balanced valves *a b* and waste-valve *d* with their connecting apparatus, consisting of rods *e* and *c* and lever H, substantially as herein described.

99,913.—MACHINE FOR SMOOTHING SPOKES. Horatio Keyes, Terre Haute, Ind.

Claim.—1. The combination of the movable frame H I T T, carrying-centers P R Q S, screw-shaft A L, sliding pinion K, spur-wheels N O, pattern V, and polishing belt Y, all arranged and operating in the manner and for the purpose specified.

2. The threaded mandrel A, arranged in bearings C C′ of the frame, in combination with loose pulleys E F, clutch-sleeve G, gears K N O, centers P Q, and nut I, the said parts constituting the feeding mechanism, and being constructed and arranged as described.

3. The pattern U, with enlargements V and W thereon, constructed as described, in combination with the wheel X, the said parts operating to remove the spoke away form the belt at the end of each traverse, as set forth.

4. The combination of sliding hand-lever G′, cords G^1 G^2, weighted bars F^2 F^3, tilting lever F^1, tongue E^1, sliding bar D′, and shifter C′, all operating together to ship and unship the clutch in the manner specified.

5. The combination of sliding bar I^1, having pins P^1 I^2, with wheel O, and pins K^1 K^2, and the spring-catches *d*, to limit the movement of the mandrel by throwing the clutch out of connection with both of the pulleys, as set forth.

6. The combination of the eccentric lever L^1, connecting link L^2, connecting pin *e*, and the point pin *f*, to operate the tail spindle R, in the manner described.

99,914. — TRACE-BUCKLE FOR HARNESS.— William R. Knowles, Columbiana, Ohio.

Claim.—The construction of a metallic harness-buckle in one piece, with only a top, bottom, and back loop, when riveted to the trace or traces, and having formed upon it a cross-bar containing a pivot or tongue to enter into a saddle-strap, in the manner and for the purpose herein described.

99,915.—BLACKBALLS FOR BOOT AND SHOE-MAKERS.—George A. Knowlton, Natick, Mass.

Claim.—Blackball, composed wholly or in part of stearic acid or stearine of commerce, all as and for the purposes set forth.

99,916. — STOVE-SHELF. — John G. Krichbaum, Youngstown, Ohio.

Claim.—The adjustable shelves B C and upright bar D, constructed and arranged in the manner set forth, and used in combination with stove A, for the purpose described.

99,917.—SLIDING SQUARE AND CALIPER.— Lysander L. Lamb, Fitchburg, Mass.

Claim.—A sliding square provided with the movable part B and spring C, when constructed as described for the purpose set forth.

99,918. — NECK-TIE. — George Lane, New York, N. Y.

Claim.—A neck-tie formed in sections, the ends of which are finished so as to be reversible as front or exposed ends, substantially as shown and described.

99,919.—LOCK-NUT.—Maurice Laughorne, Washington, D. C.

Claim.—1. The combination of a ratchet-washer with a screw-threaded nut provided with a spring-detent, substantially as and for the purpose specified.

2. The combination of a ratchet-washer with a screw-threaded nut provided with a spring-detent, and with a screw-threaded bolt or axle, substantially as and for the object set forth.

99,920, antedated February 14, 1870.—SHOW-CASE FOR SPOOLS AND OTHER ARTICLES.— J. N. Leonard, Rockville, Conn.

Claim.—1. The arrangement, relatively to the outer case A, of the nuts or buttons D E, for operating the vertically-revolving stand B of shelves, and similarly hung or moving shutter C, essentially as shown and described.

2. The revolving stand B, having shelves *a* arranged to encircle it, so that their upper or carrying surfaces incline downwardly towards the axis of the stand, substantially as specified.

99,921.—ROAD-SCRAPER.—Cyrus Little, Van Wert, Ohio.

Claim.—The arrangement of the scoop A, with projections *b*, catches *l*, beams B, springs *k*, catches *a*, rod F, rods *c*, handles D, and rod and spring *d e*, all substantially as set forth.

99,922. — BOAT-DETACHING APPARATUS.— Samuel L. Lord, Surry, Me.

Claim.—The arrangement of the socket B and hook C, as combined and arranged with the bolt D, lever E and block I, for the purpose above described and substantially in the manner above set forth.

99,923.—RAKE AND TEDDER COMBINED.— Joseph M. Low, Portlandville, N. Y.

Claim.—1. The bars *f f*, stops *a a*, and stationary head I, combined substantially as and for the purpose described.

2. The combination and arrangement of the shaft J, lever K, arms *g g* and *h h*, bars L L, and curved levers *l l*, all substantially as and for the purposes herein set forth.

3. The frame M, provided with strap-hinge *m m* for fastening to the axle A, and supported by the supports *n n*, substantially as shown and described.

4. The adjustable standards R R, with cross-bar P, provided with swivel-boxes *p p* for the upper ends of the fork-arms to pass through, substantially as and for the purposes herein set forth.

5. The collar *r*, provided on each side with a hollow pin, *s*, and nut for securing the fork *t*, substantially as herein set forth.

6. In combination with the collar *r*, constructed as described, the nut *u* and spring *w*, substantially as and for the purposes herein set forth.

7. The sprocket-pinion *z*, toothed collar *y*, spring *z*, in combination with the T-shaped levers *b′ b′*, all arranged to operate as and for the purposes set forth.

99,924. — MANUFACTURE OF FERTILIZERS AND IN EXTRACTING OILS AND FATS.— Orazio Lugo, Baltimore, Md.

Claim.—1. Treating the desiccating fish, offals, scraps, crackling, blood, and other animal matter, for the production of guanos or fertilizers and oil and fat with sulphurous acid (SO_2) or with nitrous fumes and sulphurous acid separate or in connection with hot air, steam, or vapors of water at high temperature, or with gases from the combustion of fuel or other suitable gases, either under pressure or not, for the purpose set forth.

2. The improved fertilizer produced by treating fish, offals, scraps, cracklings, blood, and other animal matter with sulphurous acid, or with nitrous fumes and sulphurous acid in connection with hot air or other gases or vapors, as herein set forth.

99,925.—WOOD-BENDING MACHINE.—James W. Martin, Philadelphia, Pa., assignor to himself and William A. Drown, JR., same place.

Claim.—The apparatus above described for bending hooks upon the ends of canes, umbrella-handles, and analogous articles formed of round wood, consisting essentially of the bending-stock A B F, sectional grooved links *g*, and lever I *j*, all constructed and arranged as and for the purpose specified.

99,926, antedated February 5, 1870.—FEED-HOPPER.—Judson Mattison, Oswego, N.Y.

Claim.—The combination, substantially as herein set forth, of an inner movable lining plate or surface, with the interior of a stationary feed-hopper, A, or of a stationary lining plate, F, therein, for the purpose of securing the free delivery of flour, grain, or other pulverulent or granulated material therefrom, substantially as herein described.

99,927.—APPARATUS FOR GENERATING GAS FOR HEAD-LIGHTS.—Hiram S. Maxim, New York, N. Y., assignor to Rodley McAlister & Co., same place.

Claim.—1. The combination of the tank with the generating apparatus by means of a telescopic pipe, in the manner and for the purpose substantially as described.

2. Heating the generator at top and cooling it at bottom, in the manner and for the purpose substantially as described.

3. The pendent tube H of the generator, or its equivalent, for removing the heavy oil from the gasoline fluid, in the manner and for the purpose substantially as described.

4. The combination of the horizontal disks of wire-gauze or perforated sheet metal with the generator, to prevent the disturbance or agitation of the fluid within it by the motion of the locomotive, substantially as described.

5. The combination of the small generator *c* with the burning tube M, and its contracted vent and air-induction vents for vaporizing and burning the heavy oil from the botton of the generator, in the manner substantially as described.

6. The combination of the sub-vaporizing and carbureting apparatus with the heating chamber, in the manner and for the purpose substantially as described.

7. The combination of the chimney N with the heating chamber G, for the purpose of drawing in the heating flame from the burning tube M, substantially as described.

8. Separating the heavy or refuse portion of the gasoline fluid from the lighter and best portion of it, and vaporizing and burning the same to produce the heat for converting the lighter portion into an illuminating gas, in the manner and for the purpose substantially as described.

9. The combination of an auxiliary flame with a gas locomotive head-light for heating and vaporizing the fluid, substantially as described.

10. The perforated sheet metal or wire-gauze screen S, in combination with the superheater R, in the manner and for the purpose substantially as described.

11. The combination of the perforated sheet-metal or wire-gauze disk Y with the air-tube W, below the burner T, constructed and operating substantially as described.

12. The combination of the needle with the valve K, in the manner and for the purpose substantially as described.

99,928.—MACHINE FOR CUTTING WAX FOR ARTIFICIAL FLOWERS, &c.—Mary Jane McColl, Chicago, Ill.

Claim.—1. The interior projections J, for compressing and preserving the sides of the sheets, substantially as specified.

2. The false sides C, for changing the size of the sheets, substantially as set forth.

3. The employment of extra false bottoms, in combination with the false sides C, substantially as and for the purposes described.

4. The heaters I, when provided with recessed openings *m*, in combination with the cutter-head E, substantially as and for the purposes specified.

5. The combination of a box, A, adjustable to different sizes, and provided with the projections J, with the bottom B, screw P, wheel M, lever L, provided with the pawl *g*, and cutter-head E, when constructed and operating substantially as set forth.

90,929. — HARVESTER. — J. B. McCormik, Dayton, Ohio.

Claim.—1. The arrangement of the binders' platform G, receiving table F, and tilting platform H, with respect to each other, as and for the purpose specified.

2. The tilting platform H, pivoted as described, the inclined support J, lever K, and strap L, all constructed and arranged as set forth to form a bundle receptacle which may be operated by the binders in the manner described.

59,930.—ORNAMENTAL CORNICE.—Thomas J. McGeary, Newark, N. J.

Claim.—An improved cornice cast in sections with its ornamental parts, the sections being covered at their junctions by a leaf or other ornamental design, all as set forth.

99,931.—FEED-CUTTER AND THRESHER.— Norman McLeod, Clio, S. C.

Claim.—1. The feed-rollers B, provided with a roughened coating of emery, red lead, and japan, as herein described, and operated by the belt G and pulleys H H, substantially as specified.

2. The combination with the cutter or beater-arms I of the cutters D and balancing rim L, when constructed and detachably connected substantially as specified.

99,932.—WEATHER-STRIP.—William Miller, Boston, Mass.

Claim.—An improved rubber moulding, formed by uniting soft-rubber packing, to form the flange, with a hard-rubber projecting part, substantially as herein shown and described, and for the purpose set forth.

99,933.—CORN AND COB-CRUSHER.—Jacob M. Mowrer, Milheim, Pa.

Claim.—The breaker composed of the two sets of breaker-arms C C and D D, one set at one end projecting from their shaft B, in directions at right angles or thereabout to those of the other set at the other end of the shaft, substantially as and for the purpose herein specified.

99,934.—STOVE-LINING AND FIRE-BRICK.— Christian Muir, Lockhaven, Pa.

Claim.—1. The manufacture or preparation of the compound which I denominate "adamantine stove fire-brick," of the ingredients and proportions and for the purposes set forth.

2. The application of my compound to all the purposes for which fire-bricks are used.

99,935.—MANUFACTURE OF INDIA-RUBBER AND GUTTA-PERCHA GOODS.—John Murphy, New York, N. Y.

Claim.—The combination of carbolic acid or its equivalents with India-rubber or other elastic fabrics, so as to preserve the same, substantially as above set forth.

99,936. — WHIFFLETREE. — J. V. Norton, Plainville, N. Y.

Claim.—The curved whiffletree extended forward to constitute part of the traces, and suspended as set forth.

99,937. — LOZENGE-MACHINE. — Charles A. Oehl, Portsmouth, N. H.

Claim.—1. In a machine for cutting lozenges, crackers, &c., the combination of a printing-cylinder and inking-rollers, for the purpose of printing the design upon the sheet or paste before passing it to the cutters.

2. The inclined plane or trough, in combination with the cutter-bar or cutters, as and for the purpose described.

3. The combination of the printing-cylinder with the inclined trough and cutters, so arranged and geared as to have consecutive and reciprocating motion, as and for the purpose set forth.

4. The arrangement of the belt and inclined trough, whereby the separation of the lozenge and waste is effected.

99,938.—HEDGE-TRIMMER.—David Oliver, Galesburg, Ill.

Claim.—1. The combination and arrangement of the bars S and S′ and bolts V V and cutter-wheel N, substantially as described and for the purpose set forth.

2. The arrangement of the uprights W W, brace X′ and bars S S′, substantially as described and for the purpose set forth.

3. The guard Z pivoted at Z′, as and for the purpose described.

4. The sickle-toothed knives P when attached to a rotary cutter and operating with the knives D D, substantially as described and for the purpose set forth.

5. The serrated edged knives P″ P‴ combined with the forward cutter-wheel O and guard R, in the manner substantially as described, and for the purpose set forth.

99,939.–HORSE HAY-RAKE.–John K. O'Neil, Kingston, N. Y.

Claim.—The jointed teeth-bars C C, substantially as and for the purpose herein specified.

Also, the downwardly curved jointed teeth-bars C C, in combination with nearly horizontal rake-teeth D D, substantially as herein represented and described.

Also, springs E E, in combination with jointed teeth-bars C C, substantially as and for the purpose herein set forth.

99,940.—SHINGLE-MACHINE. — William H. H. Palmer, Rockville, R. I.

Claim.—1. The arrangement of the spiral springs *e* with relation to the radial ribs *d* of the frame C, and the lever I, provided with the jaw H and rods *f g* and jaw G, whereby the block is held, as shown and described.

2. The platform J, pivoted to the center of the revolving frame and provided with the weighted lever K, that has the projecting pin *j* to carry the platform with the revolving frame, substantially as set forth.

3. The platform J, combined with a frame, L, and lock-bar O, substantially as and for the purpose herein shown and described.

4. The cam-lever L, acting upon the jaws G H so as to lock the blocks securely while they are being sawed, as set forth.

5. The arrangement, with relation to the rotary frame C and the saws, of the rotary trimmer N, provided with the case M, constructed and operating as specified.

99,941. — SCAFFOLD BRACKET. — Edward Parker, Plymouth, Conn.

Claim.—The herein-described scaffold bracket, consisting of the two legs A and B, adjusting segment C, one or both of the legs divided so as to form lateral braces, and the whole constructed so as to be fixed upon the roof, as herein set forth.

99,942.—HUB FOR CARRIAGE-WHEELS. — William C. Pearsall, McMinnville, Tenn.

Claim.—The projections *c*, constructed with cavities *e* in their inner faces, and arranged on the band B to give lateral support to the spokes C, as shown and described.

99,943.—STOP-VALVE FOR STEAM AND OTHER ENGINERY.—S. J. Peet, New York, N. Y.

Claim.—1. Inclosing a valve, made of two or more separate divisions, by a rubber covering or ring, substantially as set forth.

2. Tinning the surfaces of the valve and shell which are exposed to the action of the sulphur of rubber, substantially as and for the purposes described.

99,944.—STOP-VALVE FOR STEAM AND OTHER ENGINERY.—S. J. Peet, New York, N. Y.

Claim.—1. Connecting the stem C and divided valve D D to each other, by means of screw-threads formed thereon, and arranged substantially as shown and described.

2. Arranging the stem C in the valve-shell, in such a manner that it can slide up and down therein when the valve D D is slackened, and remains locked when the valve is expanded, substantially as described.

3. The wings J J, on the divided valve D D, in combination with the grooves I I in the shell, substantially as set forth.

99,945.—PREPARING CERTAIN KINDS OF COTTON-WASTE FOR CLEANING MACHINERY. Anthony Peple, East Billerica, Mass.

Claim.—Utilizing cotton or other waste material by enclosing it in a woven or porous bag or envelope, substantially in manner and for the purpose as before explained.

99,946.—COMBINED HARROW, ROLLER, AND SEED-SOWER.—Charles E. Pierce, New York, N. Y.

Claim.—1. The harrow R and R′, in combination with the center frame G and G′.

2. The frame G, standard G′, and bolts K, which together form the center piece connecting the two harrows, and to which axle I is held, as described.

3. In combination with the harrow and hopper, wheel A′, lever B, with pin B′ and slot attached, crank D, with pin D′ attached, and lever C attached to sieve A⁴, as described and for purposes set forth.

4. The recessed roller and lateral braces F′, in combination with the standard E and brace P′.

99,947.—HAY-LOADER.—Almon E. Preston, Battle Creek, Mich.

Claim.—1. The combination and arrangement of the pivoted frame C I C, pivoted struts B B, and adjusting ties D D, substantially as set forth.

2. In combination with the above-named devices, the sheaves F F, G G, and H, and ropes R R, all being constructed and arranged substantially as described.

99,948.—RAILWAY-RAIL SPLICE.—Richard Randolph, Washington, D. C.

Claim.—1. A splice formed of a piece of rail, B, and held in place by clamps constructed as described of grooved clamp-pieces *f f*, spring-washers F, and curved bolt D D, all arranged substantially in the manner and for the purpose shown.

2. The construction and arrangement of the guide-plugs G G, substantially as described.

99,949.—PROCESS AND APPARATUS FOR THE MANUFACTURE OF SALT.—Dexter Reynolds, Albany, N. Y.

Claim.—The vessels A B and C when constructed and adjusted in connection with a steam-generator, so as to operate substantially in the manner and for the purposes herein described.

99,950.—UMBRELLA.—Horace T. Robbins, Boston, Mass.

Claim.—In combination with the ribs or stretchers of an umbrella-frame, the stops or supports *g*, substantially as and for the purpose specified.

99,951. — HORSE-POWER. — Cyrus Roberts and John A. Throp, Three Rivers, Mich.

Claim.—1. The combination with the frame of the rigid thrust-braces secured to its front and rear ends, on opposite sides of and crossing the frame in the manner described.

2. The combination of rigid thrust-braces on opposite sides and ends of the frame, with flexible tension-braces, each extending from one rigid brace to the other, substantially as set forth.

3. The combination of thrust-braces with tension-braces, arranged to pass either above or below the frame, as set forth.

4. The combination of the rear thrust-brace with the straining-rod, these parts being constructed to operate as set forth.

5. The combination of the frame, thrust-braces, tension-braces, and straining-rod, all these parts being constructed to operate substantially as set forth.

6. The combination with the main frame of the reversible bed-plate, these parts being constructed to operate substantially as herein before set forth.

7. The combination of the stirrup H, the adjustable swivel bearings, and the line-shaft, all these parts being constructed to operate as set forth.

8. The combination of the bed-plate, adjustable stirrup I, and line-shaft, all these parts being constructed to operate as set forth.

9. The combination of the bed-plate, line-shaft, the swiveled bearing in the stirrup H′, and the adjustable stirrup I on the opposite end of the bed-plate, all these parts being constructed to operate as set forth.

10. The combination of the line-shaft and tumbling rod by the jaw and roller joint, constructed as described, to permit the rod to be turned at right angles to the shaft.

11. The combination of the jointed tumbling-rod and removable straining-rod, these parts being constructed to operate as set forth.

12. The combination of the vibrating bearing-roller, its adjusting screw, and the slotted bracket on the upper ring of the bed-plate, all these parts being constructed to operate as set forth.

13. The combination with the frame of pivoted slotted intersecting supporting-standards, constructed to operate as set forth.

14. The combination of the line-shaft, the journal-box supporting its end, the stirrup H′, and the oil cup, all these parts being arranged as set forth for joint operation.

99,952.—PLATED NEEDLE.—Robert J. Roberts, New York, N. Y.

Claim.—As a new article of manufacture, needles provided with non-corrosive coatings of gold, silver, copper, or other like metals, applied by gilding, plating, or tinning, substantially as specified.

99,953. — STEAM PUMPING-ENGINE. —William H. Roberts, Mauch Chunk, Pa.

Claim.—1. The combination with the regulating cylinder A of the described arrangement of induction-pipes C C′ and discharge-pipe G, as and for the purpose set forth.

2. The combination with the foregoing of the check-valve E, as and for the object specified.

99,954. — HEATING STOVE.—William Frazier Ross, Davenport, Iowa.

Claim.—1. The combination of the siphonic air-duct A B with a stove or other fire-place, substantially as and for the purposes herein before set forth.

2. The combination with the inside leg of the siphonic air-duct, of the fuel-box B, with the side C C′, and the combination of dampers D D′, with apertures, in the side of the fuel-box, substantially as and for the purposes herein before set forth.

3. The combination with the fire-box E and air-tight ash-box I, of the air-tight sliding bottom G, substantially as and for the purposes herein before set forth.

99,955.—PENCIL.—Franklin Rowell and E. C. Loud, Springfield, Mass.

Claim.—1. The encircling marks or creases and shoulders around the stock of the pencil, substantially as and for the purpose herein before set forth.

2. The combination of the scale of inches, with the fractional divisions marked and numbered, substantially as and for the purpose herein before set forth.

99,956.—COLORING VULCANITE OR HARD RUBBER. — A. D. Schlesinger, College Point, Long Island, N. Y., assignor to the India-Rubber-Comb Company.

Claim.—The compound of India rubber, sulphur, and oxide of antimony, prepared substantially as described, and ready to be vulcanized by heat, as set forth.

Also, the process, substantially as described, for producing vulcanite of a light red or vermilion color, which process consists in thoroughly mixing India rubber, (or allied gum,) sulphur, and oxide of antimony, and subjecting the said compound to a vulcanizing heat, substantially as described, and for the purpose set forth.

99,957. — HARNESS-HOOK. — John Seaman, New York, N. Y.

Claim.—An improved adjustable back-band plow hook, A, constructed and operating substantially as herein shown and described, and for the purpose set forth, as a new article of manufacture.

99,958.—APPARATUS FOR FORGING METALS. Thomas Shaw, Philadelphia, Pa.

Claim.—1. The combination of the free and unattached hammer-block and devices to co-operate therewith, to produce a cushion of atmospheric air for sustaining it at a distance above the anvil, the free and unattached hammer and devices to co-operate therewith to produce a cushion of atmospheric air for arresting its upward movement, the frame for guiding the hammer-block and hammer when in motion, and the anvil *p*, substantially as and for the purpose set forth.

2. The combination of the chambered block *k*, plunger *i*, chambered hammer *g*, and piston and valve *n o*, substantially as and for the purpose set forth.

3. The combination of the hammer-block *k* with one or more pistons *r* connected thereto, and one or more stationary air-cylinders *s*, substantially as and for the purpose set forth.

4. The combination of the friction-bar *u*, spring *v*, and lever *m* with the frame *e* and hammer *g*, substantially as and for the purpose set forth.

99,959.—MEDICAL COMPOUND.—George V. Sheffield and John A. Sheffield, Northbridge Centre, Mass.

Claim.—An improved medical compound, composed of the ingredients and prepared in the manner substantially as herein shown and described and for the purpose set forth.

99,960.—CHURN.—Nicholl Shelton, Odessa, N. Y.

Claim.—The combination and arrangement of the churn A, standards C C, loops *a a*, hooks *b b*, staples *d d*, dasher-staff B, spring G, collar *e*, and set-screw *h*, all substantially as and for the purposes herein set forth.

99,961.—CALIPERS.—William Siar, Franklin, Pa.

Claim.—The calipers herein described, having the folding graduated arcs D D' pivoted to the arm A, and extending out, one on each side of it, and the pointer I attached to the arm B, all constructed and arranged to measure the internal as well as the external diameters of objects, as specified.

99,962.—FEEDING MECHANISM FOR SEWING-MACHINES.—George A. Smith, Philadelphia, Pa.

Claim.—The adjusting screw or worm attached to and vibrating with the feed-bar, in combination with a radius bar and vibrating arm.

99,963. — HOT-AIR FURNACE. — William Smith, Cicero, Ind.

Claim.—In combination with the upright cylindrical case A connected with a furnace, and provided with the air-ducts *d d* having dampers *h h*, the wind-wheel herein described, having upright shaft *a* and inclined blades B B, all constructed and arranged to operate as specified.

99,964, antedated February 10, 1870.—COTTON-BALE TIE.—William M. Smith, Augusta, Ga.

Claim.—1. An improved cotton-bale tie, consisting of piece A A A A with its oblong angular hole D D D D, V-shaped notches G G, depressed incision C C, and shoulders E E, substantially as and for the purposes herein set forth.

2. The combination of the piece A A A A with the piece H H H H having its upper corners rounded as shown, and the hole I I, substantially as and for the purposes herein set forth.

3. The band B when provided with the curled end R, and attached to the plates A A A A and H H H H, substantially as and for the purposes herein set forth.

99,965, antedated February 5, 1870.—TABLE CASTER.—William M. Smith, Augusta, Ga.

Claim.—In combination with table A, caster B C D, toggle-joint G G G G, operating one or more fans or fly brushes by means of spiral spring J, wire L, cord M, and piece O, substantially as and for the purpose set forth.

99,966. — HORSE-RAKE. — Wesley Squier, Edon, Ohio.

Claim.—The horse-rake herein described, having the rake G, lever L, arms *v*, chains *y*, arms H H, axle A, cross-bar F and rod O, constructed and arranged to operate as specified.

99,967.—TREADLE FOR SEWING-MACHINES. Frederick Stamler, Hamburg, N. Y.

Claim.—Providing a treadle with a foot-board or foot-boards, arranged so as to have an independent axis from that of the main shaft A, substantially as shown and set forth.

Also, the combination of main shaft A, adjustable lever B, and adjustable frame E, and hinged foot-board F, substantially as specified.

99,968, antedated February 6, 1869.—GRAIN-HARVESTER AND BINDER.—Lyman B. Stilson, Minneapolis, Minn., assignor to himself and John W. Childs, same place.

Claim.—1. The combination of the apron F, provided with the teeth *n*, the stationary stripe or rod *d*, and the spring stripe or rods *g*, when arranged to operate substantially as described.

2. The combination and arrangement of the foot-lever *j*, rod A, and arm *v*, for operating the cut-off by the foot of the binder, substantially as described.

3. The combination of the eccentrically-pivoted table K, spring *r*, and catch M, with foot-lever *p* attached, all arranged to operate substantially as described.

4. The combination of the main frame A, suspended from the axle B, the latter provided with the lever J, the rod *l*, hinged segment *u*, with its lever *w*, and rack *r* mounted on the frame V, and all arranged as described.

99,969.—COOKING-STOVE. — David Stuart, Philadelphia, Pa.

Claim.—The combination, substantially as described, of an oven with the boiler of a cooking-stove or range.

99,970.—MACHINE FOR GRINDING AND POLISHING BITS.—James Swan, Seymour, Conn.

Claim.—1. In combination with a machine for manufacturing bits, the telescopic shaft formed of the parts O P, substantially as and for the purposes described.

2. The mechanism herein before described for moving the bit laterally from the buss or grinder for giving the outside "clear" to the lips of the bit, substantially as set forth.

3. The teeth *s* and lever *v* for operating the shaft, substantially as and for the purposes described.

4. In combination with the telescopic shaft T, the buss or grinder B, and the carriage E, with the several mechanisms connected therewith, substantially as and for the purposes herein shown and described.

99,971, antedated December 21, 1869.—TOASTING-FORK.—Harrison H. Taylor and George H. Graham, Rochester, N. Y.

Claim.—The bread-toaster herein described, consisting of the wire jaws A B, the lower one having double bearing-points *c c* and the upper one a single bearing-point, *c'*, which allows a swivel action, in the manner and for the purpose specified, said jaws being closed by ring *b*, or any equivalent device.

99,972.—AUTOMATIC HEAT-REGULATOR FOR HOT-AIR FURNACES.—Albert H. Tingley, Providence, R. I.

Claim.—1. The combination of the diaphragm F, or its equivalent device, sensitive to changes in temperature, in a heat-regulator, with the damper for checking the fire-draught by means of the vibrating lever G, provided with adjustable resisting springs J J', or equivalent weights, substantially as described.

2. The combination of the damper I, the segment of a hollow prolate spheroid, N N', and the draught-pipe E, substantially as described, for the purposes specified.

99,973.—BUILDINGS.—Jules Touaillon, San Francisco, Cal.

Claim.—A building, constructed with its superstructure separate and distinct from its foundation, the two parts being separated by means of balls arranged substantially as described, for the purpose set forth.

99,974. — TRESTLE-TREE FOR VESSELS.—Henry Townsend, Jr., Philadelphia, Pa.

Claim.—1. A metallic trestle-tree, with a beveled orifice, as shown at fig. 3 and letters *d d d d*, so as to form a band to a ship's mast, as shown at fig. 1 and letters *a a*, as herein described.

2. A beveled shoulder to a mast-head, as shown at fig. 2, for the purpose set forth.

3. The combination of the truss-clamp *b b* and stay braces *f f f*, with a mast-head and trestle-tree, all substantially as herein described.

99,975.—MANUFACTURE OF PARAFFINE AND PARAFFINE OIL.—Herbert W. C. Tweddle, Pittsburg, Pa.

Claim.—1. The process of producing paraffine, herein before described, by an exhaustive distillation of the heavy oil at a comparatively low temperature, by the use of steam in a vacuum still with or without a fire heat, so as to drive over the paraffine vapors undecomposed, substantially as described.

2. The production, by the process herein before described, of a lubricating oil as a new article of manufacture, possessing the distinctive and distinguishing features above set forth, viz: almost entire freedom from the blue and green tints which characterize the paraffine oils of commerce.

3. The use, in the distillation of oil, of a vacuum or partial vacuum in connection with steam, common or superheated, inside the still and an auxiliary fire outside, substantially as described.

99,976.—APPARATUS FOR ASCERTAINING THE AMOUNT OF ACID IN LIQUIDS.—Henry Twitchell, Cincinnati, Ohio.

Claim.—1. The mode of determining the amount of acid in any liquid, by the height to which water or other suitable fluid is forced, (by means of the specified contrivances or their equivalents,) in a glass tube, graduated so as to indicate directly the amount of acid contained in the liquid tested.

2. The apparatus, in its combination and parts as above described, for the purpose of ascertaining the percentage of acid contained in wine, must, or other acetic liquids.

99,977.—FOLDING CRATE.—Frank R. Van Dake, Jackson, Miss.

Claim.—The top A, bottom B, sides C C, and gates D D, brace-bands E E E' E' and hasps G G, when the latter are so arranged as to furnish a folding crate that can be secured thereby, either in the crate form or folded as a package, substantially as described.

99,978.—FERTILIZER FROM GLUE RESIDUUM. Anthony Van Haagen and William Adamson, Philadelphia, Pa.

Claim.—1. A fertilizer composed of glue residuum, treated substantially in the manner described.

2. The said fertilizer in combination with charcoal or other equivalent absorbent.

99,979.—SOAP PRODUCT FROM GLUE RESIDUUM.—Anthony Van Haagen and William Adamson, Philadelphia, Pa.

Claim.—Soap made from glue residuum by the treatment of the same, substantially in the manner described.

99,980.—HORIZONTAL WIND-WHEEL.—Jerome A. Vaughn, Downieville, Cal.

Claim.—A horizontal windmill having the vanes C pivoted at one side, and operated by the rods G, connecting the outer edges of each pair of opposite vanes so as to cause one to open and the other to close simultaneously, as herein described.

99,981. — GRAIN-DRILL TOOTH. — Frederick Villard, Mount Enton, Ohio.

Claim.—1. The combination, with a grain-drill tooth, of a wheel or roller, B, arranged at its lower end, and adapted to be supported rigidly at such projection as to prevent the tooth dragging, as set forth.

2. The wheel or roller B, employed and operating substantially as specified, and mounted in vertically-adjustable bearings, substantially as shown and described, for the purpose set forth.

3. The combination with the pivoted link or frame G forming the attachment of the tooth to the beam, the segmental slot *g*, bolts H H', yoke G', and notched wedge I, arranged and operating substantially as described, for the purpose set forth.

4. The hopper J, attached by transverse pivotal bolts *j j*, and adapted to be adjusted to retain its horizontality, as described, for the purpose set forth.

5. The hopper base L, constructed separate from the tooth proper, as described, for the purpose set forth.

6. The combination of the link or frame G pivoted to the beam and adapted to be adjusted as desired, the tooth proper A E attached to said link or frame by means of a hinge-joint, a^2 a^3 N, and wooden pin M, the wheel or roller B arranged in the lower end of the tooth and adapted to be adjusted vertically as desired, the hopper base L arranged on the link or frame G separate from the tooth proper, and the hopper J mounted on the base L and adapted to be adjusted as desired, substantially as represented and described, for the purpose set forth.

99,982.—HAY AND MANURE-FORK.—Frederick Villard, Mount Eaton, Ohio.

Claim.—1. In combination with the cross-head C and tines D of the fork or scoop, the flanged or abutment *c'*, projections *d d'*, plates E, bolts F, and nuts *d³ f*, forming the fastening of said tines, substantially as shown and described.

2. The combination in the catch G of a combined hay and manure-fork, constructed substantially as herein shown and described, of a perforation, *g'*, for the attachment of a trip-cord, and a treadle, *g*, through which to operate it in the respective uses of the implement, as herein set forth.

3. The frame A, as constructed of the form represented, and provided with the sockets *a* and bolts O, arranged as shown and described, to adapt it for the reception of removable handles, as set forth.

4. The handles N, as constructed with the axial pins *n*, perforations for the reception of attaching bolts O, and cavities *n'*, formed and arranged as set forth, to adapt them for attachment.

5. In combination with the frame A B, fork or scoop C D, and opening catch G *g g'*, the removable latch J, removable clevis-block L *l*, and removable handles N N, substantially as shown and described, for the purpose set forth.

6. In combination with the frame A B, fork or scoop C D, and spring-catch G *g g'*, the removable latch J' and removable pulley-block L' *l'*, substantially as shown and described, for the purpose set forth.

99,983.—CHIMNEY-COWL.—Friedrich Villard, Mount Eaton, Ohio.

Claim.—1. The counterbalance 4 arranged on the front or funnel end of the revolving top, as described, for the purpose set forth.

2. The blade or flange 5 arranged and operating substantially as and for the purpose specified.

3. The spindle-step I provided with the box-metal bearings *i' i''*, substantially as represented, for the purpose set forth.

4. In combination with the lower bearing *i''* of the spindle-step I, the perforated cap K, employed and operating as and for the purpose described.

5. The spindle G constructed with the conical shoulders *g* and *g'*, as described.

6. The spindle-socket 6 arranged within the horizontal portion of the top, and provided with the set-screw H in its front side, as represented, for the purpose set forth.

7. The bed-plate B constructed with the studs or bosses *b'*, as represented and described, for the purpose set forth.

99,984.—WASHING-MACHINE.—John V. Wackerman, Buffalo, N. Y.

Claim.—The wash-tub A, in combination with the corrugated wash-bed B, rubbing-head D, suspending rods D provided with coiled springs E', and nuts and toothed rack A^1 and catches or pawls A^2, when said rack and pawls are located on the top of the sides of the tub A, as constructed and described.

99,985. — CHURN. — Friedrich Wegner and Charles Schleeter, West Troy, N. Y.

Claim.—The combination of the revolving drum B, slats *e* and *e*, detachable head C, recess *k*, pins *g*, grooves *h h'*, spring-catch *i*, constructed and arranged substantially as described, for the purpose set forth.

99,986.—APPARATUS FOR DIFFUSING VAPORS THROUGH CUSHIONS, MATTRESSES, &c.—William Welch, Montreal, Canada.

Claim.—A vapor-fumigating apparatus, having a series of shelves, over which pass perforated steam-pipes, the shelves being preferably provided with suitable ribs for sustaining the articles to be fumigated above the pipes and shelf surfaces, substantially as shown and described.

Also, in combination with a closet provided with a system of steam-pipes, having perforations opening into the chamber, hollow steam-shelves or steam-conductors traversing the chamber or the walls thereof, substantially as described.

99,987.—Combination Toy.—Robert Went, Brooklyn, E. D., N. Y.

Claim.—The combination of the horizontal movement of the tables E and the vertical movement of the swing carriages H with the driving-wheels A, arranged and operating substantially as and for the purposes set forth and described.

99,988.—Windmill.—H. M. Wheeler, Woodbine, Iowa.

Claim.—1. The case B, gates *d*, cords *e*, and springs *f*, in combination with the wheel A, provided with buckets *b*, all constructed and arranged to operate substantially as and for the purpose set forth.

2. In combination with the case B, gates *d*, cords *e*, and springs *f*, the strap *g*, and drum D, when constructed and arranged to operate substantially as and for the purpose set forth.

99,989.—Metallic Abutment for Bridges. Alpheus Wheelock, Fort Wayne, Ind.

Claim.—The construction herein described, consisting of the hollow corner columns A, to be filled with cement, the side column C, braces E G, and ribbed plates D, all forming a hollow abutment, which may be filled with suitable material, as and for the object specified.

99,990.—Steam-Piston Packing.—Jerome Wheelock, Worcester, Mass.

Claim.—In combination with the packing ring A the springs B, the latter fitted to the former, and operating substantially as shown and described.

99,991.—Cam-Lever.—Silas Whitman, Londonderry, Vt.

Claim.—The combination of the cam A, with its circumferential flange B and handle C, with the grooved grasp and slide E and keeper F, all substantially as set forth.

99,992.—Motive-Power Apparatus.—Horatio Wilkins and William H. Sangster, Paris, Ky.

Claim.—1. The employment of a series of metal tubes or rods with a suitable heating apparatus beneath them, whereby contraction and expansion of said tubes or rods is had, which causes the operation of suitable mechanism for a motive-power, substantially as set forth.

2. The tubes or rods B B with slotted plates C C, levers E E, and set-screws *c c*, all substantially as and for the purposes herein set forth.

3. The combination of the tubes or rods B B, levers E E, toothed levers G G, or their equivalents, and pinions *b b*, all of which are on one shaft, substantially as and for the purposes herein set forth.

99,993.—Machine for Re-Turning Crank-Pins of Locomotives.—Nathan Wright, Cleveland, Ohio.

Claim.—The combination of the rotating cogged tool-holder D, carriage C, and slide or rest B, pinion-shaft G and feed-screw F, with the centering plate A, substantially as and for the purpose herein specified.

99,994.—Bee-Hive.—John M. Youart, Indianapolis, Ind.

Claim.—1. The combination of the vertically-slotted frame board D and swinging frames C, said frames being provided with loops, which are passed over pins on the board D, and are provided with metal guards *x*, as shown, all inclosed within the case A, substantially as set forth.

2. The arrangement of the board D and frames C, as above described, upon one end of the elongated hollow base B with screen *e* and opening E, when said opening leads from the case A, into incline spaces at the base of the board D, from which spaces a narrow passage is formed for the bees up within the hive, between the board D and the front of the case A, substantially as set forth.

3. The elongated hollow base B with a central partition, one end forming a dark chamber, H, with openings leading into it from the side and covered openings I and tubes *i* on the top, the other end provided with a screen-covered drawer, J, with the movable board *r*, all constructed as and for the purposes set forth.

4. The combination and arrangement of the base B with drawer J and chamber H, screen *e*, case A, with boards D, frames C, honey frames G, cover N, and cap P, all constructed and used substantially as and for the purposes set forth.

99,995.—Animal Trap.—William F. Collier, Worcester, Mass., assignor to Howe, Bigelow & Co.

Claim.—1. The combination with the door and corner-wires of the frame of the trap, of locking devices so constructed and arranged as to be conveniently raised to open the door and set the trap, but which locking devices will descend when the trap is sprung, and lock the door to the corner-wires of the frame.

2. The combination with the door of the trap and the sides of the frame of a locking device which can be conveniently raised to open the door and set the trap without tipping or turning the latter over.

3. A locking-bar, the ends of which are hooked to the corner-wires of the frame, and so arranged that when the door closes it will fall or descend upon the outside thereof, and thus prevent its being opened by the animal within the trap.

4. The combination with the door of the trap of a guard-wire or wires, *f*, substantially as and for the purposes set forth.

5. The combination with the door of the trap and the locking-bar, or other locking devices employed, of inclined ways, substantially as and for the purposes set forth.

99,996, antedated August 16, 1869.—Low-Water Indicator.—Robert Berryman, Philadelphia, Pa.

Claim.—1. A vessel or chamber, C, in combination with devices for indicating the presence of water in and its absence from the vessel, and with pipes or openings for the passage of steam and water from the boiler, when the steam-passage or channel is larger than the other passage, for the purpose described.

2. A steam-whistle, gong, or other steam-alarm, in combination with pipes or openings for the passage of steam and water from a boiler, when the steam-passage or opening is larger than the water-passage, for the purpose specified.

3. The combination of a vessel, a pipe extending from the upper part thereof to the low-water line, and a second pipe extending from the lower part of the vessel through the larger pipe, and to a point below the end of the latter, for the purpose set forth.

4. A vessel communicating with a tube, P^3, or its equivalent, through pipes B P, when the pipe P projects below the end of the pipe B, and when the pipe P^3 communicates with and is arranged in respect to a boiler, substantially as set forth.

5. A vessel, H, operating in a casing, C, substantially as described, and perforated at the top, for the purpose set forth.

6. The tubes *i i'*, in combination with the perforations in the vessel H, as specified.

7. The combination of a vessel, C, communicating with the boiler through pipes of different diameters, and a blow-off cock S, substantially as and for the purpose described.

99,997.—Sucker-Rod Coupling for Oil Wells.—Adam Good, Jr., Titusville, Pa.

Claim.—1. The jaws F, constructed and arranged as described, in combination with the socket-pin A and connecting rod B, substantially as described.

2. The jaws F, countersunk in the sides of the pin and the connecting rod, so as to form a clamping joint flush with the outer sides of said pin, as herein described and shown.

3. The combination of the jaws F, the locking bolt G, the hollow pin A, and the connecting rod B, the whole constructed and applied as herein described.

4. The hollow pins A, open at both ends, for the purpose of reducing the weight of the sucker-rod, substantially as herein described.

5. The hollow pins A, provided with interior shoulders *d e*, for strengthening and bracing the flush joint formed as herein described and shown.

99,998.—Circulating-Tube for Steam-Generators.—John C. Stevens, South Norwalk, Conn.

Claim.—1. The spiral tube as a circulating medium in a water-tube of steam-generators, substantially as described.

2. The circulating tube, so constructed that the water will descend through it in a spiral course, and ascend around it in direct contact with the interior of the water-tube, also in a spiral course, substantially as described.

3. The circulating tube C supported within the water-tube A by its folds, substantially in the manner herein described.

99,999.—Hinge.—Timothy Smith, Boston, Mass.

Claim.—The hinge described, consisting substantially of the pieces B B', slide D, spiral spring E, and plate F, arranged and operating substantially as described.

REISSUES.

3,834.—Feed-Water Heaters and Filters.—James Armstrong, Bucyrus, Ohio. Patent No. 81,971, dated September 8, 1868.

Claim.—1. The pans B B', when constructed and arranged substantially in the manner shown and described.

2. The combination of the steam-pipe G, chambers F and F', substantially in the manner shown and described.

3. The chambers F F' and the filters *e* and *f*, when constructed substantially in the manner shown and described.

4. The arrangement of the pans B B' and the disk B'', substantially in the manner described.

5. The valve *h*, when constructed substantially as shown and described.

6. The combination of the pipes G H I, valve *h*, and the chamber A, when constructed and arranged substantially as and for the purpose shown and described.

7. The described feed-water heater and filter, provided with a movable top, as shown and described.

3,835.—Manufacture of Cast-Steel.—William W. Averell, Bath, N. Y., assignee of Louis La Brecho-Viger.—Patent No. 95,358, dated September 28, 1869.

Claim.—1. The use of the admixture of pulverized plumbago compressed or not with iron ores, iron sand, or iron, to make cast-steel in one operation.

2. The use of the admixture of pulverized anthracite coal compressed or not with iron ores, iron sand, or iron, to make cast-steel in one operation.

3. The use of the admixture of pulverized coke compressed or not with iron ores, iron sand, or iron, to make cast-steel in one operation.

4. The use of the admixture of pulverized plumbago, pulverized anthracite coal, pulverized coke, compressed or not with iron ores, iron sand, wrought iron, iron scraps, shavings, chips, and sponge, in a crucible or in a reverberatory or reheating, or puddling, or air-furnace, or in what is called and known as a Siemen's furnace, to make cast-steel in one operation; the said mixture, if used in a furnace, to be covered or not with a flux of glass, or blast-furnace or other furnace cinders, or with glass-making materials, or with slabs of soapstone or with tiles or fire-bricks, or if the ore or carbon used contain earthy matters the slags or scoriæ which they will furnish may render other covering unnecessary.

5. The use of the admixture of powdered charcoal compressed with pulverized iron ores, or iron sand, or iron sponge, in a crucible to make cast-steel in one operation.

6. The use of the admixture of pulverized charcoal compressed or not with iron ores or iron sand, in any of the furnaces, and with or without the covering mentioned in number four of this claim, to make cast-steel in one operation.

7. The use of the above admixtures in the following proportions, viz: from one to thirty-five per cent. of the said carbons in weight of the ore or iron, according to the purity of the ores and of the carbon used, and according to the quality of the steel to be produced.

3,836.—Corn-Planter.—James Campbell and William Campbell, Harrison, Ohio, assignees of James Campbell.—Patent No. 54,642, dated May 8, 1866.

Claim.—1. A grain-box whose front portion is supported and pivoted upon a curved fender-plate, F, and whose rear portion is supported in notched posts G *g* G' *g'*, or their equivalent, substantially as described.

2. The grain-box E *o o'*, having the pivoted front and perforated rear portion in the described combination with the hook P Q *q q'*, for the purposes set forth.

3. In a grain-box, E, provided with a revolving grain-measuring floor or disk, I *i*, and a gated indentation, *c'*, the oblique section or portion *c''* of the wall extending from the said indentation *c'* in a line eccentric to the disk I, and trending away from the center thereof, for the purpose set forth.

4. The cut-off brush J when secured by the head L and clamps K *k k'* in the manner represented, to adapt it to be raised, lowered, or rotated as required to insure its efficient action and uniform wear.

5. The combination with the driving-wheel C of the circumferentially-grooved axle C' *c c'*, and staples *d d*, substantially as and for the purpose set forth.

6. The arrangement of hook P, revolving grain measure I, pinion M, worm-shaft N, worm-shaft journal-box *q*, and post G, substantially as set forth.

7. The arrangement in the rear of the drill-tooth S and some distance below the drop-plate, of the upwardly and rearwardly flaring dropping spout R, as and for the purposes designated.

3,837.—Alcholic Liquor from the Rhubarb Plant.—Joseph H. Deacon, Lumberton, N. J.—Patent No. 86,284, dated January 26, 1869.

Claim.—An alcoholic-liquor, obtained by distillation from the rhubarb-plant, substantially as described.

3,838.—Surge-Reliever.—John J. Emery, Owl's Head, Me., for himself and E. R. Cheney, Boston, Mass., assignee of John J. Emery.—Patent No. 94,950, dated September 21, 1869.

Claim.—A chain-stopper or holder, arranged to clutch the cable in combination with an elastic bearing therefor, so that the same device shall perform the double function of a chain-stopper or holder and surge reliever, substantially as set forth.

3,839.—Apparatus for Scraping and Working Hides.—Henry Lampert, Rochester, N. Y.—Patent No. 60,636, dated December 18, 1866.

Claim.—1. The rotary beam A, in combination with the reciprocating worker *g*, for the purposes set forth.

2. The worker *g*, provided with either the knife *f* or scraper *e*, or both, and pivoted bar A, in combination with a suitable device for imparting to the same an alternate reciprocating and vertical movement, substantially as described.

3. The rotary beam A, provided with a suitable vertical adjustment, for the purposes set forth.

4. The pivoted supporting bar A, either yielding or rigid, in combination with the cross-head F, pitman G, and link *i*, arranged to operate substantially as described.

5. The screw-rod *j* and nut *k*, in combination with the worker *g*, spring A, and pitman G, constructed and operating substantially as and for the purposes set forth.

3,840.—MANUFACTURE OF FERTILIZERS OR GUANO FROM FISH.—Orazio Lugo, Baltimore, Md.—Patent No. 97,939, dated December 14, 1869.

Claim.—1. The use of hot air, with or without the solution of benzole, benzine, light kerosene, and petroleum and phenol, (carbolic acid,) or its equivalents, for the purpose and in the manner substantially as herein set forth.

2. The use of the hydrocarbons, or their equivalents, in the connection herein described and for the purpose set forth.

3. The use of phenol (carbolic acid) or its equivalent, for the purpose and in the manner substantially as herein described.

4. As a new article of manufacture, the fertilizer or guano, prepared by treating fish in a kiln, vessel, or chamber, by means of currents of hot air, substantially as set forth.

3,841. — RAILROAD-STATION INDICATOR.—Amos C. Rodgers and Lewis Shaffer, Fort Washington, Pa., assignees of A. C. Rodgers.—Patent No. 95,046, dated September 21, 1869.

Claim.—1. The combination of a notched wheel, devices for rotating the same, operated by a lever, F, and a sliding-bar, D, operated by said devices so as to be elevated before the movement of the wheel, substantially as described.

2. The combination of the wheel C, having ratchets inclined in opposite directions on its opposite faces or sides, and pawls I I′, arranged at opposite edges of the wheel, and operating substantially as described.

3. The combination of the wheel C, its ratchet-teeth and notches, the pawls I I′, lever F, catches J J′, levers E E′, and lock-rod D, all arranged and operating substantially as described.

4. The combination of the vibrating arms *f f′*, lever F, or its equivalent, levers H H′, and the pawls and catches I I′, J J′, or their equivalents.

5. The arrangement in respect to the pawls I I′ and ratchet-wheel C of the inclined guides *t t*, for the purpose described.

3,842.—MANUFACTURE OF HOSE, TUBING, AND OTHER RUBBER FABRICS.—Junius Schenck, Brooklyn, N. Y.—Patent No. 90,397, dated May 25, 1869.

Claim.—1. The application of carbolic acid in the manufacture of hose, belting, tubing, and packing, and other fabrics, so as to preserve them from decay, substantially as herein set forth and described.

2. The improved hose, belting, tubing, and packing herein described, prepared by using duck or other fabric impregnated with carbolic acid or its equivalent, substantially as herein set forth.

3,843.—Division No. 1.—STEAM-HEATER.—Joseph Shackleton, Rahway, N. J.—Patent No. 87,301, dated February 23, 1869.

Claim.—The utilizing the waste or escaping heat from a boiler or furnace for reheating exhaust steam by means of the superheater H, in connection with the system of heating as substantially herein described.

3,844.—Division No. 2.—STEAM-HEATER.—Joseph Shackleton, Rahway, N. J.—Patent No. 87,301, dated February 23, 1869.

Claim.—The combination of the described system or apparatus for heating by reheated exhaust steam, with the condensing arrangement, substantially as specified.

3,845.—Division No. 3.—STEAM-HEATER.—Joseph Shackleton, Rahway, N. J.—Patent No. 87,301, dated February 23, 1869.

Claim.—The combination of an automatic compensating valve with an apparatus for reheating and heating, as and for the purpose substantially as described.

3,846.—SEEDING-MACHINE.—Willard A. Van Brunt, Horicon, Wis.—Patent No. 94,252, dated August 31, 1869.

Claim.—1. The arrangement, in combination, of the lifting bar E and bent pieces *e*, as and for the purpose specified.

2. The bent rods *e′*, constructed and arranged as set forth, in combination with the bar E, bent pieces *e*, as described and for the purpose specified.

3. The plate H, with lug A and set-screw A′, when used in combination with drag-bar and tooth, as described.

4. The boxes M M, when constructed of the two parts *m m′* inclosing between them the disk, as described, each of said parts *m m′* being cast in a single piece, substantially as set forth.

DESIGN.

3,846.—BOTTLE.—George Joseph Byrne, New York, N. Y.

Claim.—The design for a bottle, as shown.

3,847.—BOTTLE.—George Joseph Byrne, New York, N. Y.

Claim.—The design for a bottle, as shown.

3,848.—BOTTLE.—George Joseph Byrne, New York, N. Y.

Claim.—The design for a bottle, as shown.

3,849.—TOY STEAM-ENGINE.—Walter Holt, Brooklyn, N. Y.

Claim.—The design for toy steam-engines herein shown.

3,850.—CLOCK-CASE.—Elias Ingraham, Bristol, Conn.

Claim.—A new and original design or pattern for a clock or time-keeper case, substantially as shown and set forth.

3,851.—CLOCK-CASE.—Elias Ingraham, Bristol, Conn.

Claim.—The design or pattern for a clock or time-keeper, substantially as shown and set forth.

3,852.—SHADE FOR GAS OR LAMP-BURNERS. John Letchworth, Philadelphia, Pa., assignor to Hartell and Letchworth, same place.

Claim.—The design for a lamp-shade, substantially as described, and as illustrated in and by the accompanying drawing.

3,853.—SHADE FOR GAS OR LAMP-BURNERS. John Letchworth, Philadelphia, Pa., assignor to Hartell & Letchworth, same place.

Claim.—The design for a lamp-shade substantially as described, and as illustrated in and by the accompanying drawing.

ISSUE OF FEBRUARY 22.

PATENTS.

100,000.—SUN-BONNET FOR HORSES.—John Anderson, Brooklyn, N. Y.

Claim.—1. The straps or bands (elastic or otherwise) G G resting on the horse's head before and behind the ears, and securing a constant current of air, as shown and specified.

2. The elastic or other fastenings I I, when attached to the bridle with a view to facility of attachment and removal, as explained in preamble and specification.

100,001.—SEED-PLANTER AND FERTILIZER-DISTRIBUTER.—Joseph Arrington, Livingston, Ala.

Claim.—1. The combination and arrangement of the detachable hopper K, detachable bars F, detachable feed boards H, whether provided with teeth or brushes, dropping roller or cylinder L, whether provided with teeth or recesses, guide hopper S, conducting spout T, crank M, connecting rod N, crank P, and gauge-wheel Q, with each other, and with the plow frame A B C, substantially as herein shown and described, and for the purpose set forth.

2. In combination with the hopper S, spout T, opening plow D, and the frame A B C, the covering block V, when arranged to be adjusted vertically by means of rods X, bar Y, and screw-nuts, whereby said coverer maintains a fixed relation to the plows, as shown and described.

100,002.—PRINTING-PRESS.—Henry Barth, Cincinnati, Ohio.

Claim.—1. The inking-roller housings, constructed with open bearings *c*, and pivoted to levers H H′ fulcrumed upon the operating arms I I′, in combination with springs N, for pressing the roller-frame toward the form-bed, substantially as set forth.

2. The guard or fender P Q R R′ R″, substantially as set forth and for the purpose designated.

3. The provision of a pair of double-threaded springs, N *n* N′ *n′*, at each side of the roller frame, for the object stated.

100,003, patented in England November 10, 1868.—PROCESSES AND APPARATUS FOR THE MANUFACTURE OF IRON AND STEEL. Henry Bessemer, London, Great Britain.

Claim.—1. The melting or fusion of malleable or wrought iron and steel, or other similar carburets of iron difficult of fusion, in a furnace constructed so as to be capable of sustaining a high internal pressure, by compressing the gaseous products of combustion within the said furnace, which contains the said iron or steel, to such a high pressure as will raise the temperature of the said furnaces sufficiently high to fuse or liquefy the malleable or wrought iron or steel, or other similar carburet of iron difficult of fusion, which is contained therein.

2. The melting or fusing of malleable or wrought iron and steel, or other similar carburets of iron difficult of fusion, in furnaces supplied with a blast or current of compressed air, and in which furnaces the gaseous products of combustion are, by reason of the smallness of the escape aperture or apertures, prevented from escaping from the furnace until the pressure of such gaseous products contained in every part of the said furnace is substantially in excess of one pound per square inch above the external atmospheric pressure.

3. Determining the pressure of and the rate of discharge of the gaseous products of combustion from furnaces employed for the fusion of malleable or wrought iron and steel, and other similar carburets of iron difficult of fusion, when working with the gaseous products of combustion under high pressure, by employing simple contracted escape openings, in lieu of valves or traps.

4. The construction and employment of cupola-furnaces for fusing malleable or wrought iron and steel, or other similar carburets of iron difficult of fusion, such furnaces having a domed or covered top, with a door, (for the admission of fuel and metal,) which door is faced with fire-brick or other refractory material, and is provided with a close external metal fitting for preventing the escape of the gaseous products of combustion confined under pressure within the furnace.

5. The mode of opening or shutting the feeding-door of furnaces for melting malleable iron and steel, or other similar carburets of iron difficult of fusion, and confining the gaseous products therein, by means of a compound screw apparatus, constructed and applied in the manner herein described.

6. The arrangements for regulating or altering the pressure of the gaseous products of combustion in furnaces employed for the fusion of malleable or wrought iron and steel, or other similar carburets of iron difficult of fusion, by means of movable escape apertures of different areas of outlet, and also by diminishing or increasing the outlet by the insertion or removal from the escape aperture of pieces of fire-clay, or other refractory material, as herein described.

7. Mounting on axes, through which air and water may be passed, the cupola-furnaces employed in the fusion of malleable or wrought iron and steel, and other similar carburets of iron difficult of fusion, when such fusion is effected by the accumulated heat resulting from the retention of the gaseous products of combustion under high pressure within the said furnace.

8. The arrangement for preventing the escape of flame and heated products of combustion through the joints of feeding or other doors of furnaces employed under pressure, as described, for the fusion of malleable or wrought iron and steel, and similar carburets of iron difficult of fusion, by means of currents of air or steam supplied to the joint at a greater pressure than that of the confined gaseous products within the furnace.

9. Cooling the metal fitting or parts adjacent to the feeding or other doors or openings of furnaces employed under the pressure of the gaseous products of combustion, as herein described, to fuse malleable or wrought iron and steel, or other similar carburets of iron difficult of fusion, by suitable channels formed in the parts to be cooled, through which a stream of water is passed.

10. Closing or securing the feeding or other doors of furnaces employed under pressure of the gaseous products of combustion for the fusion of malleable or wrought iron and steel, or other similar carburets of iron difficult of fusion, by means of air, steam, water, or other fluid pressure acting on a piston or plunger, in connection with such feeding or other doors.

11. The regulation of the pressure of gaseous matters contained in furnaces employed in the fusion of malleable or wrought iron and steel, or other similar carburets of iron difficult of fusion, by means of a loaded valve faced with fire-brick or other analogous refractory material.

12. The fusion of malleable or wrought iron and steel, or other similar carburets of iron difficult of fusion, by the combustion of carbonic oxide, carbureted hydrogen, or other combustible gases with atmospheric air, such gas or gases and atmospheric air being forced into and ignited in furnaces, the escape aperture of which is so small as to cause the products of combustion to accumulate to high pressure within the furnace, so as to effect the fusion of said iron or steel.

13. The fusion of malleable or wrought iron and steel, or other carburets of iron difficult of fusion, by the combustion of liquid hydrocarbons in high-pressure furnaces, the fusion being effected under the accumulated heat arising from the compression and retention of the gaseous products of combustion under pressure within the furnace in which the said iron or steel is fused.

14. Coating the surfaces of pieces of malleable or wrought iron and steel, or other similar carburets of iron difficult of fusion, with clay, lime, silica, or mixtures thereof, or other materials capable of fusing into a glassy or vitreous covering, and thus protecting their surfaces from oxidation or carburation and the fusion of such coated pieces in cupola or other furnaces where the gaseous products of

combustion are retained under pressure, as herein described.

15. The fusion in crucibles of malleable or wrought iron and steel, or other carburets of iron or alloys of iron, with other metals, and the fusion of materials which yield malleable iron or steel when melted, such crucibles being heated in chambers or furnaces in which the gaseous products of combustion are retained under high pressure, as herein described.

16. The fusion of malleable or wrought iron and steel, or other similar carburets of iron difficult of fusion, in reverberatory furnaces in which the gaseous products of combustion are retained under high pressure, so that an accumulated heat is thereby obtained capable of fusing the said iron and steel.

17. In the construction of reverberatory furnaces employed for the fusion of malleable or wrought iron and steel, or other similar carburets of iron difficult of fusion, closely enveloping the brick-work or other equivalent refractory lining of such furnaces with a casing or jacket of riveted iron or steel plates, calked at the joints or made of cast-iron, bolted securely together, such casing being sufficiently strong and tight at all points to withstand great internal pressure.

18. The fusion or remelting and heating of pig or crude iron in high-pressure furnaces in which the gaseous products of combustion are confined under high pressure, as described, and the conversion of such metal so melted and highly heated into malleable iron or steel by blowing air through such metal according to the Bessemer process, as is well understood.

19. Lining high-pressure furnaces, employed for the fusion of malleable or wrought iron and steel, or other carburets of iron, under the pressure of the gaseous products of combustion contained therein, as described, by ramming or pressing plumbago moistened with water and fire-clay into the cavity or space to be lined.

20. The construction of high-pressure furnaces employed in the fusion of malleable or wrought iron and steel, or other carburets of iron, under pressure of the gaseous products of combustion, as herein described, with tweers or pipes made of fire-clay or of plumbago for the conveyance of a blast of air into such furnaces.

21. In the construction of reverberatory gas-regenerative furnace, or other furnaces employing gaseous fuel, the closely enveloping of the fire-brick or other refractory lining of such furnaces with a shell of plate iron or steel, riveted, calked, and rendered tight at all laps and joints; or when such shell is made of cast-iron, well bolted together and rendered tight at all joints, such iron, steel, or cast-iron shells being sufficiently strong and tight to withstand safely a great internal pressure.

22. The general arrangement of the furnaces and apparatus for the fusion or melting of iron and steel, substantially as herein described.

100,004.—Hanging Crank-Shafts.—James M. Bougler, Williamsport, Pa.

Claim.—The application to crank-shafts of a swinging or sliding-box which will allow the crank-shaft to vibrate freely of its own accord, as herein described.

100,005.—Manufacture of Water-Proof Fabrics from Waste Rubber.—Marcar Wahram Beylikgy, New York, N. Y.

Claim.—1. The herein-described method of utilizing refuse rubber by applying it to the manufacture of water-proof fabrics, as set forth.

2. The regained rubber refuse called caoutchoucite, obtained substantially in the manner herein shown and described.

3. The herein-described method of recovering the solvent of chloride of sulphur after the same has been used for vulcanizing rubber, as set forth.

100,006.—Cellar-Hoist or Elevator.—Henry L. Bowers, Harrisburg, Pa.

Claim.—The peculiar combination and arrangement of the elevating table A, stair uprights B B, and winch C, the whole constructed and operating substantially as herein set forth.

100,007.—Vegetable-Cutter.—William A. Boyden and Charles J. Mann, Altoona, Pa.

Claim.—The cutter described, consisting of the base-plate, standards, frame A, slide B, knife C, plates D, with set-screws *a'*, removable box E, with thumb-screws *b'*, pitman F, wheel G, and crank K, when combined as described, for the purpose set forth.

100,008.—Coal-Shovel.—James F. Brewer, Plantsville, Conn., assignor to S. Stow Manufacturing Company, same place.

Claim.—As a new article of manufacture, a shovel, consisting of the sheet-metal pan A and cast-metal shank B, cast on to the pan A, substantially as described.

100,009.—Organ or Melodeon Action.—John C. Briggs, Ansonia, Conn.

Claim.—The combination of two sets of levers B C, keys D, springs *e e*, cam-drum E *b*, and rods F G, all constructed and arranged as and for the purpose specified.

100,010.—Seat-Fastener.—Lorenzo Brown, Odessa, N. Y.

Claim.—1. The lever nut D and rod C combined, when the rod passes through the nut eccentrically and the nut acts as a cam, substantially as and for the purposes described.

2. The rod C and lever nut D, in combination with the seat A and rail B of the wagon-body, all constructed and arranged as specified.

100,011, antedated February 17, 1870.—Reclining Chair.—William A. Bury, Crosse Isle, Mich.

Claim.—The arrangement of the ratchet and its connection with the foot-rest and reclining back, in combination with the chair, as shown, and for the purposes described.

100,012.—Umbrella.—Alonzo B. Caldwell, Syracuse, N. Y.

Claim.—1. The combination with the main stretchers and braces of an umbrella, of the auxiliary stretchers F and braces E, hinged together and to the main stretchers and braces, substantially as described, and for the purposes set forth.

2. In combination therewith, the conductor M and spout G, substantially as shown and described.

100,013.—Water-Heater for Green-Houses.—S. E. Chubbuck, Boston, Mass., assignor to himself, Isaac Y. Chubbuck, and S. E. Chubbuck, Jr., same place.

Claim.—The arrangement, in an arched series rising and converging in longitudinal alternations from front to rear and rear to front, of a continuous pipe at either side of the fire-chamber, substantially as described and shown, for the purposes set forth.

100,014.—Head-Rest.—Elbert P. Cook, Cartersville, Ga.

Claim.—1. An improved portable head-rest, formed by the combination of the strips A B C, straps D, hinges E, pawl F, ratchet-teeth G, adjustable jaws H, straps J K L, and cover M, with each other, substantially as herein shown and described, and for the purpose set forth.

2. The adjustable jaws H, in combination with the adjustable sliding central strip B, substantially as herein shown and described, and for the purpose set forth.

100,015.—Bee-Hive.—H. B. Cooper, Memphis, Tenn.

Claim.—The combination of the lower outer opening in the door and the upper entrance in the side or partition, as and for the purpose set forth.

100,016.—Grate-Bar.—Thomas S. Davis, Lancaster, Pa.

Claim.—1. The grate-bar formed of the longitudinal bearer, having a V-shaped upper edge, and with the transverse bars *b b*, the upper surfaces of which are flat or nearly so, and are above the upper edge of the bearer *a*, as set forth.

2. The grate-bar formed by combining the bearer *a*, cross-bars *b*, longitudinal bars *c c*, and transverse bars *d e i*, as and for the purposes set forth.

100,017.—Steam-Heater for Burnishing-Irons.—Joseph M. De Lacy, Trenton, N. J.

Claim.—The device herein described, for heating sad-irons by steam, consisting, essentially, of the box A, provided with recesses B B, inlet and outlet-passages C D, the whole constructed and arranged substantially as and for the purposes set forth.

100,018.—Switch Signal.—Henry A. Efner and Charles Boynton, Marshall, Mich.

Claim.—The stationary post and burner A *a*, in combination with a revolving signal, C, operated by the movement of the switch-lever L, or of the switch-rails, through the connection and intervention of the rack-bar, pinion, and hollow sleeve, or their equivalents, substantially in the manner and for the purpose set forth.

100,019.—Jib-Hank for Vessels.—H. K. Eldridge, Cambridge, Mass.

Claim.—As a new article of manufacture, a jib-hank, composed of the yoke *a*, bolt *c*, and roller *b*, said parts being constructed and arranged for joint operation, as shown and set forth.

100,020.—Dining and Ironing-Table and Quilting-Frame.—Thomas Elkins, Albany, N. Y.

Claim.—The construction and arrangement of the standards A, swinging brackets D, top pieces E E and F, rollers G, with their adjuncts, so as to combine a dining-table, ironing-table, and quilting-table or frame, substantially in the manner set forth and described.

100,021.—Marine Drag.—John Faunce, Washington, D. C.

Claim.—In a marine drag the combination of the guys and their toggles with the disk and its openings, for the ready connecting and disconnecting of said guys and disk, the whole being arranged to operate substantially as and for the purpose set forth.

100,022.—Collar and Hame for Harness.—James H. Ferguson, Greenville, Ind.

Claim.—1. The combined hames and collar, consisting of the wooden parts A A, bail-connection K M N, pads E and G, and extensions I I, all constructed and arranged substantially as shown and described.

2. The bail K, pivoted at one end to one part of the said combined hames and collar, and connected with the other by the staple M and catch N, substantially as specified.

100,023.—Nut-Lock.—Oswald S. Freeland, Newport, R. I.

Claim.—1. The nut A, having ratchet teeth C formed upon the inner surface of its recessed middle part, substantially as herein shown and described, and for the purpose set forth.

2. The stem D, pawl E, and spring F, in combination with the grooved bolt B and nut A, constructed substantially as herein shown and described, and for the purpose set forth.

100,024.—Stove-Grate.—George Froh, Philadelphia, Pa.

Claim.—The pivoted section D and upward-vibrating section E of a dished circular grate, in combination with the shaking and dumping handle *f*, substantially as and for the purpose hereinbefore set forth.

100,025, antedated February 5, 1870.—Churn.—Heman Gardiner, New York, N. Y.

Claim.—1. The cams L, having on their sides or edges a rack, M, in combination with the lifting-plate F, having attached to its lower surface a pinion-wheel, G, substantially as described, for the purpose of simultaneously lifting and rotating the dasher, as set forth.

2. The combination of the spring J, dasher-rod E, dashers N^1 and N^2, having the paddle P attached, with the adjustable lifting-plate F, having a pinion-wheel, G, attached thereto, substantially as described.

3. In combination, the shaft K, cams L, with the rack M attached thereto, lifting plate F, with wheel G attached thereto, and churn A, and air-pump R, all as one general combination, for the purposes set forth.

100,026, antedated February 12, 1870.—Door-Knob.—John W. Grogan, Brooklyn, N. Y., assignor to himself and James Duffy, same place.

Claim.—The shells *c* and *b*, interlocked or connected as specified, and the joint covered and strengthened by the coating metal that surrounds the knob and forms a surface for the same, substantially as set forth.

100,027.—Apparatus for Cooling and Purifying Beer, Water and other Liquids.—John P. Gruber, New York, N. Y.

Claim.—1. A liquid-cooler adapted for cooling liquids under pressure from a reservoir or other head, which consists of a liquid-chamber inclosing an ice-chamber, and inclosed by a non-conducting wall, in combination with an in-flow pipe, *g*, and a draw-off cock, P, substantially as and for the purposes described.

2. The removable ice-bucket J, in combination with the cooler, substantially as herein described.

3. A filtering apparatus, constructed substantially as described, in combination with the liquid-cooler, constructed substantially as described.

100,028.—Tire-Setting and Cooling Apparatus.—C. B. Guy, Postville, Iowa.

Claim.—The combination of the tilting frame arranged for adjusting the spindle as described, the trough N, and foot-treadle I, all substantially as specified.

100,029.—Cask for Containing Fermentable Beverages.—John Hamilton and Robert Paterson, Glasgow, Great Britain.

Claim.—1. The application of a collapsable cask, constructed substantially as hereinbefore described, for containing fermentable and aerated beverages.

2. The arranging of the stops for the rolling packing ring on the inside of the outer shell, and the forming of the hollow 15 on the ram to receive the ring, substantially as and for the purposes hereinbefore set forth.

3. The providing of the cask with a safety outlet for the gas, substantially as hereinbefore described.

100,030.—Railway-Rail.—Alonzo Hanmer and David Grim, Pittsburg, Pa.; said Alonzo Hanmer assigns his right to Philip L. Grim, Beaver county, Pa.

Claim.—The channels *f f* in the tongue D, in combination with the ribs *e e* in the groove C, as a

means of uniting the head or crown of a two-part rail to the web or base without the use of bolts, rivets, or wedges, as shown and set forth.

100,031.—HALTER.—William M. Harris, Dixon, Ill.

Claim.—The combination with the throat-strap A, and nose-strap H, of the rings F I G and K, straps L and tie-strap N, when all are arranged substantially as specified.

100,032.—CORN-PLANTER.—George D. Hayworth, Decatur, Ill.

Claim.—1. The combination of the knotted cord and crotch vibrating plates K, connected to the rocker-plate M, and together by the rods L, when arranged for each knot to produce an advance and return movement of the said crotch-plates and rocker-plates, substantially as specified.

2. The combination of the rocker-plate M and crotch-plate P, when the latter is arranged as specified, to permit the movement of the rocker-plate both before and after its movement, substantially as specified.

3. The combination of the tilting crotched plates K, and rocker-plate M and connecting-rods, crank S, shaft T, and hand-lever D, substantially as specified.

4. The arrangement with the bar E of the pulleys F and supports H, when the latter are arranged for vibration, substantially as specified.

100,033, antedated February 12, 1870.—GRAIN-DRILL.—Martin Hayden, Dowagiac, Mich.

Claim.—1. The rock-shaft *j*, having the arms K, N, and *q*, when arranged as set forth.

2. The slotted adjustable agitators I, with vibrating bar G, substantially as specified.

3. The hinged bar marked 8, having the slotted brackets 10, arm 13, rod 14, lever 15, and circular rack 16, when arranged as described.

4. The oscillating bar *x*, having the crotch-plate *z*, guard-irons *w*, draft-bars *c*, rods 4, and stirrups 6, attached as shown, for the purposes set forth.

5. The combination and arrangement of a grain-drill, combining the above-named parts with the frame A, the wheels B, drive-wheels *s*, pinion M, hopper D^1, seed-box D^2, vibrating bars G and O, curved lever R, post T, spout *u*, pipe *v*, lever F, pendent arms P and H H, bar W, tongue *y*, suspension-rods 11, springs 12 and 18, and standards C, the sharp curved guards, marked 20, all constructed and operated substantially as set forth.

100,034.—REFRIGERATOR.—Adam Heinz, Buffalo, N. Y., assignor to himself, John L. Fisher, and George J. Munschauer, same place.

Claim.—The combination and arrangement of the hoppered bottom B B, removable platform drawer E, and the gutters or troughs C and D, for the purposes and substantially as herein described.

100,035.—MEAT-CUTTER.—William B. Heintzie, Williamsburg, N. Y.

Claim.—The combination of toothed and slotted disk C on vertical shaft B, pinion *a* on horizontal shaft D, the annular knives *b* on shafts E E, the plate F held in place by rack and pinion *c d* on shaft *e*, and the bed G, placed upon rails H, with the scraper I, all constructed and arranged as set forth.

100,036.—REGISTERING-PUNCH FOR RAILROAD CONDUCTORS.—Austin D. Hoffman, Chicago, Ill., assignor to himself and Charles H. Morse, same place.

Claim.—1. A card or paper-punch, which is so arranged by means of the jaws A B, handles C D, and gearing V T P M R S W, that the number of holes punched in a card or ticket may be registered by the hands N L on their dials, as set forth.

2. The combination of the jaws A B, bell F, handles C D, gearing V T P M R S W, hammers *e'*, bar H, spring Z, and punch I, as and for the purpose set forth.

100,037.—TILL-ALARM.—Austin D. Hoffman, Chicago, Ill., assignor to Charles H. Morse, same place.

Claim.—The case I, provided with flanges J J, for replacing the pins after they have been thrown out by the bar G, in combination with the pin-wheel X, rod E, pin-plate B, knob C carrying the rotating band D, the whole operating with reference to bell S, lever R supporting hammer T, forked standard K, bar G, and till A, as set forth.

100,038.—ELECTROPLATING WITH ANTIMONY.—James Spooner Howard, Mansfield, assignor to himself, E. Adams, Jr., Attleborough, T. E. Grover, Mansfield, and N. Carpenter, Attleborough, Mass.

Claim.—The solution, substantially as given above, for electroplating with antimony.

100,039, antedated February 5, 1870.—COMPOUND FOR CURE OF COUGHS, COLDS, &c.—William H. H. Irwin, Philadelphia, Pa.

Claim.—A compound for coughs, colds, &c., composed of the above-named ingredients, in or about the proportions aforesaid.

100,040.—CULTIVATOR.—Nathan L. Isgrigg, Moore's Hill, Ind.

Claim.—1. The nut *f* upon the brace rod F, serving, with the nut *f'*, the double purpose of securing the share to the standard and both to the brace, as set forth.

2. The combination and arrangement of the beam A, standard C, brace F, nuts *f f'*, and slotted share I J K, substantially as and for the purpose described.

100,041.—STEAM-GENERATOR.—James Jacobs, Maysville, Ky.

Claim.—The combination with the series of pans, so constructed that the water will overflow from one to the other in succession, of the pocket E, as shown and described.

100,042.—PLOW.—A. C. Judson, Grand Rapids, Ohio, assignor to E. O. Judson.

Claim.—The improved plow formed by the land-side A, extended to form a cutting edge, *b*, the mold-board B, and the standard C, filling the entire space between said mold-board and land side, and extending rearward and upward at the angle shown, to allow the attachment of handles thereto, all constructed and arranged as shown, and for the purpose set forth.

100,043.—COMPOUND TO REMOVE GREASE FROM CLOTH, SILK, PAPER, &c.—Martinus B. Kimm, Grand Rapids, Mich., assignor to himself and George G. Stetcelee, same place.

Claim.—A composition of matter to extract grease and oil from cloth, silk, velvet, paper, and other articles, made from the ingredients above named, compounded and prepared substantially as set forth.

100,044.—LATCH FOR GATES.—James Kindel, Wilmington, Ohio.

Claim.—The combination of the fixed latch F, doubly-inclined rail or slot E, and independent catches K K', extended each to the other side from which it is pivoted, and operated by a cord or wire, L, attached to its free end, all substantially as and for the purpose set forth.

100,045.—CULINARY VESSEL.—G. Landrine, Jersey City, N. J.

Claim.—1. As a new and improved article of manufacture, a combination tea-kettle, formed of the parts A, B, and C, constructed, arranged, combined, and operating substantially as and for the purposes described.

2. In combination with the parts A, B, and C, the cap E, substantially as and for the purposes set forth.

100,046.—CLASP FOR SECURING WHIP-SOCKETS TO DASH-BOARDS.—Zephaniah A. F. Lefébere and James H. Davis, Plattsburg, N. Y.

Claim.—Attaching whip-sockets to the dash-boards by means of the rings A B, made in two parts, hinged together at one end, and arranged to fasten by spring-catches at the other, and either provided with the curves D or screw-holes for attachment to the iron or wood bars of the said dash-boards, all substantially as specified.

100,047.—TOOL-HOLDER FOR GRINDSTONES.—Philip Leonard, Sharon, Pa.

Claim.—The combination of the plates A E, bed H, tool-slide I, screw K, scraper L, posts C, and set-screws D, or journals, all constructed and arranged substantially as specified.

100,048.—TREMOLO FOR ORGANS.—John R. Lomas, New Haven, Conn.

Claim.—The disjointed connection R, composed of the cranks H and P, when used in combination with the wind-motor B and fan K of a tremolo for organs, substantially as and for the purpose described and set forth.

100,049.—VEGETABLE-CUTTER.—Georg Lutz, John Schultheis, and Michel Florentin, Newark, N. J.

Claim.—1. The peeling-knife *j*, attached to the lever H, and held by the spring against the side of the fruit, substantially as and for the purpose herein shown and described.

2. The cutters *e e*, arranged in two or more rows upon a shaft, G, the several rows containing different numbers of cutters to regulate the width of strips to be cut, as set forth.

3. The combination of the vertically-adjustable knife E, frame F, and screw *f*, with the cutters *e*, which are secured in several rows upon the shaft G, all arranged as set forth.

100,050.—COMMERCIAL PORTFOLIO.—Samuel E. Mandlebaum, St. Louis, Mo.

Claim.—1. The arrangement of the cylinders B, disk-wheels C and their figure columns, with the slit A, date-card *a'*, and the case A^1, substantially as and for the purpose described.

2. The case A, hinged board D, their slate face D^1, and interest-table faces F, arranged substantially as set forth.

3. The bill books G, page-marked and arranged as described, when combined with an "expired-time" table H and a square I, substantially as set forth.

100,051.—HARVESTER.—James McCaffery, Waterloo, Iowa.

Claim.—The combination and arrangement of rack E, chute D, platform I, treadle M, and table L in a harvesting-machine, substantially as and for the purposes herein shown and described.

100,052, antedated February 11, 1870.—DUMPING-WAGON.—Edward Miller, Milwaukee, Wis.

Claim.—A dumping-wagon constructed with frame A, pieces C C, dumping-boxes D D, wheels B B, and axles H H, substantially as described.

100,053.—SERIES OF DIES FOR FORMING THE HEADS OF KING-BOLTS.—Robert R. Miller, Plantsville, assignor to himself and J. B. Savage, Southington, Conn.

Claim.—The series of dies A, B, and C, for forming the clip-arms and wings of the lower ends of king-bolts for wagons, said dies being constructed and operating substantially as herein shown and described.

100,054.—SMUT-MILL AND SEPARATOR.—Jonathan Mills and Albert G. Waldo, Milwaukee, Wis.

Claim.—The improved arrangement of parts in the smut-mill and separator herein shown, consisting of the box B, smooth burr or emery scourers C and D, fans E, and shaft F, with air-conveyer Q, partition R, sieves O, operated by eccentrics W W on shaft M, with fans N N' and air-conveyer S, when said parts are constructed, arranged, and operated as shown, and for the purpose set forth.

100,055.—SPIKE FOR RAILWAYS.—James Montgomery, New York, N. Y.

Claim.—The spikes A D, provided respectively with one or more projections *c* and recesses *e*, and adapted for combined use, substantially as described.

100,056.—BALANCE SLIDE-VALVE.—George R. Moore, Philadelphia, Pa.

Claim.—The combination of the valve with the elastic plate or its equivalent, by means of the balancing levers *a b c*, substantially as and for the purpose herein set forth.

100,057.—OINTMENT FOR BRUISES, BURNS, &c.—J. T. Mulkey, Walton's Ford, Ga.

Claim.—The compound herein described, formed of the ingredients and in the proportions mentioned, substantially as and for the purpose set forth.

100,058.—RAILWAY OIL-CAR.—S. W. Murray and B. P. Lamason, Milton, Pa.

Claim.—1. In combination with the wooden center-frame, of the car body, the brackets N and side tubes M, constructed and arranged substantially as and for the purpose herein set forth.

2. The dovetail packing E', substantially as described.

3. In combination with the brackets N, the iron posts S, and hand-railing R, constructed substantially as and for the purpose herein described.

4. The ring D', in combination with the cover B' provided with a grooved periphery, and attached to the tank by any suitable means, substantially as herein described.

100,059.—PAPER-FEEDER.—Oliver Norelius, Minneapolis, Minn.

Claim.—1. The combination of pump G, chamber L, pipes *l* and *k*, cock K', with its moving gear-pipes H and H'; also, pump F and pipe F', substantially as and for the purpose hereinbefore set forth.

2. The combination of the dipping table I with friction-cam *i'*, friction-plate N, connection N', lever O, and cam P, substantially as and for the purpose hereinbefore set forth.

100,060.—STAY FOR TRUNK LIDS.—Daniel C. O'Connor, New York, N. Y.

Claim.—The slats C C', provided with curved slots G H, rivet F, and traveling rivet K, arranged and operating substantially as and for the purposes described and set forth.

100,061.—WINDMILL.—Walter Peck, Rockford, Ill.

Claim.—1. The ring *f'*, in combination with the fans *f*, crank-levers H, rods *h' h'*, and collar E, substantially as described.

2. The regulating-fan I, in combination with the bell-crank lever C^1, and elbow-lever C, as and for the purpose set forth.

3. The rod C attached to the collar E, constructed substantially of the bent ends d^2, and semicircular pieces *x x*, substantially as described.

4. The rods d^2, operated by the lever *d*, in combi-

nation with the collars D D′ and elbow-lever C, arranged and operated as and for the purpose described.

100,062.—WASHING-MACHINE.—Benjamin Pine, New York, N. Y.

Claim.—1. The combination of the valves or pivoted plates F and I with the perforated plates E and G of the washer, substantially as herein shown and described, and for the purpose set forth.

2. The combination of the swinging presser G I H and the end plates E F, whether fixed or detachable, with each other and with the tub A, connecting-rod or bar J, crank gear-wheel N, small gear-wheel O, shaft P, and crank Q, substantially as herein shown and described, and for the purpose set forth.

3. The combination of the block L and rubber spring M with the slotted and recessed bar J, and with the pin or bolt K by which the said bar J is pivoted to the bar or bars H of the presser, substantially as herein shown and described, and for the purpose set forth.

100,063.—TANK FOR RENDERING LARD.—David Pinger, St. Joseph, Mo.

Claim.—1. The arrangement of a conical or other inclined bottom C with the body A of a tank, and the arrangement therewith of a seat-plate, c, cap D, tie-rod E, all substantially as set forth.

2. The arrangement of the steam-pipe F, to deliver steam near the apex of the inclined bottom C in a rendering-tank, substantially as set forth.

100,064.—FRICTION-CLUTCH.—Francis A. Pratt, Hartford, Conn., assignor to Pratt, Whitney, & Co., same place.

Claim.—1. The combination of the screw-collar *p* for the purpose of adjusting the pulley *a* in its relative position with the wheel *c* upon the shaft *b*, substantially as set forth.

2. The actuating pressure-dogs *f*, hung upon a fulcrum pin in the ears *e*, one part *g′* extending over and acted upon by the cam or wedge-collar *i*, and the other part *g* outward in a line nearly at right angles with the former and acting against the friction-wheel *c*, substantially as set forth.

3. The combination of the fixed collar *d* with the dogs *f* and clutch-collar *i* for compressing and locking the wheel *c* in close contact with the wheel *a*, substantially as set forth.

4. The combination of the fixed collar *d*, adjusting screw-collar *p* actuating collar *i*, with the pulleys or wheels *a c* and dogs *f* arranged upon the shaft *b*, substantially as set forth.

5. The driving-pins *e*, in combination with the friction-wheel *c* and collar *d*, substantially as set forth.

100,065.—DRAW-BRIDGE.—T. Willis Pratt, Boston, Mass., assignor to himself and Boston Machine Company.

Claim.—The application to draw-bridges of the above-described mode of equalizing the weight borne upon the wheels and carriages, substantially as described, and for the purpose set forth.

100,066.—STEELYARD.—William B. Preston, North Chelsea, Mass.

Claim.—A steelyard made with a slide on the scale-beam, when said slide is surrounded by a ring capable of turning thereon, and to which the weighing poise is attached, substantially as and for the purpose described.

100,067.—PICTURE ENVELOPE.—Robert Price, New York, N. Y.

Claim.—The combination of a picture and letter envelope in one, as described and shown in the drawing, for the purposes described.

100,068.—THOROUGH-BRACE.—James E. Requa, Sonora, Cal.

Claim.—The thorough-brace consisting of the flat belt A, formed of braided wires, and the connection B C, the swivel loops being made broad and straight at their outer ends to receive the ends of the belt, all constructed and arranged as shown and described.

100,069.—BOOK-BINDING.—George H. Reynolds, New York, N. Y.

Claim.—1. The endless string *c*, arranged to bind the several sections of a book to the strapping after they were already bound together, substantially as herein shown and described.

2. The herein-described manner of disposing the secondary binding string *c* by carrying it around the ends of each section and under the parchment strips, substantially as herein shown and described.

3. The transverse strings *f*, interwoven with the outer binding string *c*, substantially as herein shown and described, for the purpose specified.

100,070.—WARPING-MACHINE.—Roscoe C. Reynolds and Cyrus I. Barker, Lewiston, Me.

Claim.—The arrangement of fast and loose pulleys on the driving-shaft of a warping-machine, to be brought into frictional contact for imparting a slow movement to the machine at starting, through the medium of the frictional action of the loose pulley (moving at full speed) on the fixed pulley, previous to shifting the belt, all substantially as specified.

100,071, antedated February 10, 1870.—PROCESS OF BLEACHING AND CLEANING VEGETABLE FIBERS.—Edwin T. Rice, New York, N. Y.

Claim.—1. The combined process of treating vegetable fibers, yarns, or fabrics, substantially as herein described, preliminary to the application of chlorine or other bleaching agents.

2. The combined process of treating and bleaching vegetable fibers, yarns, or fabrics, substantially as described herein.

100,072.—INSTRUMENT FOR DRAWING GEOMETRICAL LINES.—William Ritchie, Wilmington, Ill.

Claim.—1. The combination, with each other, of the bar A, roller B, pivoted center arm F, and arc G, all arranged as described, to constitute a drawing-instrument, as specified.

2. The grooved block I pivoted to the drawing-board and adapted to receive the center arm F of the drawing instrument, as set forth.

3. The combination of the grooved trammel-arm and friction-wheel with the center, each of said parts being constructed and arranged as and for the purpose specified.

100,073.—STOVE-SHELF.—John R. Robertson, Syracuse, N. Y.

Claim.—The extensible standard A, composed of the dovetailed sockets B B′ B″, and connecting rods R R′, combined and arranged as and for the purpose herein specified.

100,074.—WEATHER-STRIP.—Horace A. Robison, Cleveland, Ohio.

Claim.—The spring E, in combination with the sections B B′, and the continuous elastic spring-hinge C, running the entire length of said sections in the angular grooves, arranged to operate conjointly, substantially as and for the purpose set forth.

100,075.—SASH-HOLDER.—Charles W. Rockhold, Peoria, Ill.

Claim.—The sash-lock and fastener C D, consisting of cams A B, with arms *b d*, the arm *b* of the one having a slot embracing pin *e* of arm *d* of the other, in combination with spiral spring *f*, constructed, applied, and operated either by a turn, draw, or push-key, substantially as described.

100,076.—CHURN.—Rice Farrar Ross, Marshall county, Miss.

Claim.—The double serrated center-dasher A and external vertical slotted dasher B B, in combination with the flanges or arms C D, the cog-wheels *g h*, shafts *a* and *b*, as described above and contained and specified.

100,077.—TRUNK-STAY.—Edward Semple, Chicago, Ill.

Claim.—1. The trunk-stay consisting of the brace A, pivoted to the top C, and provided at its opposite end with the shoulder *b′* and arm B′, in combination with the plate D, all constructed and arranged to operate as described.

2. In combination with the brace A, provided with shoulder *b′* and arm B′, and the plate D, the locking-bolt or slide F, constructed and applied as set forth.

100,078.—HARVESTER-RAKE.—David B. Shirk, Brunersville, Pa.

Claim.—1. The arrangement of the two-armed rake-holder M N, one arm hinged between the lugs O, and the other arm free, when said arm is perforated for a headed bolt, and provided with an adjustable cylindrical piece or washer, P, and conic pulley Q, in the manner and for the purpose shown and specified.

2. In combination with the adjustable washer and pulley P Q, the arrangement of the horizontally-hinged switch E, vertically-swinging switch C, fixed segmental cam D, in combination with the main cam-way A, for governing the motion of the rakes or blinds, in the manner and for the purpose set forth.

3. In combination with the switch B, and its prolonged tongue *b* and lug *x*, the arrangement of the connecting-arm U, sliding shaft V with its projection H, for operating the switch B at pleasure, in the manner and for the purpose described.

4. The combined arrangement of the cam-way A with its segment D, switches B C, lugs O, and grooved chain-way E, adjustable chain-guide pulley F, when all are supported on a single shaft or column G, which is slotted and perforated for a central shaft, V, in the manner and for the purpose set forth.

100,079.—FAUCET-FILTER.—Montgomery P. Simons, Philadelphia, Pa.

Claim.—A faucet having a supplemental passage *b*, a filtering chamber B, and a three-way key F, constructed and arranged in relation to each other substantially in the manner hereinbefore described.

100,080.—PORTABLE GAS-GENERATOR.—William Snodgrass, Macomb, Ill., assignor to himself and J. Marcellus Browne, same place.

Claim.—In combination with the valve *m*, the carbureter or vaporizing chamber A and reel B, constructed as shown and described, force-pump D and furnace R, the whole combined to operate substantially as and for the purpose specified.

100,081.—COMPOUND TO BE USED AS AN ARTICLE OF DIET.—William D. St. Clair, Chicago, Ill.

Claim.—The fluid extract of bran, substantially as herein described.

100,082, antedated February 12, 1870.—LEATHER-SPLITTING MACHINE.—Caleb S. Stearns, Marlborough, Mass.

Claim.—The yielding brake E with its concave under surface, in combination with the carrying-cylinder B and the knife C, the brake being so arranged as to hold the leather in position until delivered to the edge of the knife, substantially in the manner and for the purpose set forth.

Also, the roll H, in combination with the yielding brake E and the carrying-cylinder B, substantially as and for the purpose described.

Also, the springs *f d*, in combination with the brake E and cylinder B, when the springs are so constructed and arranged that the brake will yield until arrested by the gauge-screws, before the cylinder can be depressed, substantially as and for the purpose set forth.

100,083.—SPRING-CHAIR FOR CHILDREN.—Mathias Stephan, Canton, Ohio.

Claim.—In combination with the plate-spring C, the auxiliary and adjustable fulcra-spring E, for the purpose of regulating the tension of said plate-spring to the weight to be carried by it, substantially as described and represented.

100,084, antedated February 18, 1870.—WATER-RAM.—Kimball W. Stetson, Kingston, Mass.

Claim.—1. The elastic ring or casing, or rubber or analogous yielding material, H, in combination with the rigid covering part H′, and adapted to form therewith a movable side or diaphragm for the fluid-cavity G by the direct compression or expansion of the yielding material, substantially as and for the purposes herein set forth.

2. The valves *a* and *b*, arranged to operate in combination with the diaphragm H H′, substantially in the manner and for the purpose herein set forth.

3. The rings *i*, in combination with the diaphragm H H′, so as to brace and support the elastic material, substantially in the manner set forth.

4. The double-chambered hydraulic ram above described, having the valves *a b* communicating with the chamber G, and having the valve C and driving-pipe communicating with the chamber or passage D′, and having a suitable diaphragm or yielding partition to separate the chamber G and passage D′, and arranged for joint operation substantially as and for the purposes herein set forth.

100,085.—STEAM-GENERATOR.—C. J. Stolbrand, Columbia, S. C.

Claim.—The outer spherical shell A and the inner spherical vessel or steam-chamber B, combined and operating substantially as and for the purposes herein shown and described.

100,086.—STEAM-WAGON.—E. P. Talcott, Blair, Nebraska.

Claim.—1. The arrangement of mechanism for propelling the wagon from the piston-rod J, in the manner described.

2. The combination of spring-pawls T and ratchet-wheels *u* with cams P′ arranged on the ends of shaft O to operate the legs Q′, at the times and in the manner described.

3. An improved steam-wagon, constructed, arranged, and operating substantially as herein shown and described, and for the purpose set forth.

100,087.—CASE FOR CURING AND TRANSPORTING TOBACCO.—George E. Tuckett, Hamilton, Canada.

Claim.—The metallic quadrangular box herein described, with wooden or metallic heads, when constructed with the corrugations *s*, as and for the purposes specified.

100,088.—HORSE-POKE.—Myers J. Van Aken, Sturgis, Mich.

Claim.—An animal poke, which, at its rear, is fastened to the body, and at its forward portion is attached or suspended to the head of the animal, in the manner and for the purpose herein described and represented.

100,089.—SAW-GRINDING MACHINE.—George Walker, Middletown, N. Y.

Claim.—1. The combination with the stone presser and push-bar D^1, of the plates D^2, arranged for operation substantially as specified.

2. The arrangement of the presser M, with the slides Q, for adjustment of the ends forward or back,

and to or from the face of the stone, substantially as specified.

3. The combination with the presser and slides Q, of the wedges R, and hand-levers I, substantially as specified.

4. The belt-shifting apparatus, constructed and arranged for operation, substantially as specified.

100,090, patented in England, September 8, 1868.—STEAM AND AIR-ENGINE.—George Warsop, Nottingham, England.

Claim.—The combination of the boiler, the fire-box, and the air-dispersers, all these parts being constructed to operate substantially as hereinbefore set forth.

Also, the combination of the boiler, the fire-box, the air-supply pipe, and the air-dispersers, all these parts being constructed to operate substantially as hereinbefore set forth.

Also, the combination of the boiler, fire-box, air-supply pipe, air-heater, and air-dispersers, all these parts being constructed to operate substantially as hereinbefore set forth.

Also, the combination of the boiler, air-pump, air-supply pipe, and the air-dispersers, all these parts being constructed to operate substantially as hereinbefore set forth.

Also, the combination of the boiler, air-pump, air-pipe, heater, and the air-dispersers, all these parts being constructed to operate substantially as hereinbefore set forth.

Also, the combination of the boiler, steam-cylinder, crank-shaft, air-pump, air-pipe, heater, and exhaust-pipe, all these parts being constructed to operate substantially as hereinbefore set forth.

100,091, antedated February 17, 1870.—MALT-KILN.—John G. White, Albany, N. Y.

Claim.—1. The construction of the front wall or plate H of the combustion-chamber C of a base-burning heater for malt-kilns with perforations, *d d*, substantially as herein shown, and for the purpose set forth.

2. The combination of a base-burning heater with flue F, substantially as and for the purpose herein shown and described.

3. The mode of heating air for the kilns, by passing the same into the combustion-chamber C, substantially as herein shown and described.

100,092.—CAR-COUPLING.—John Whiteford, Pond City, Kansas.

Claim.—The combination of the lever-cam G, and stud H, with the bumper-head A, metallic plunger or cushion B, and spring C, substantially as herein shown and described, and for the purpose set forth.

100,093.—SAFE.—Lewis F. Whiting and Franklin Smith, Boston, Mass.

Claim.—Constructing a burglar-proof safe as described.

100,094.—BOLT-FEEDER FOR MILLS.—Benjamin A. Wing, Galesburg, Mich.

Claim.—1. In the bolt-feeder here shown, the helical metallic plate A, in combination with the cylinder E, when said parts are constructed and arranged to operate as herein shown and described.

2. In combination with the above, the ring K and regulating device G H I, when arranged to operate as herein shown and set forth.

100,095.—DEOXIDIZING AND CARBONIZING IRON ORES.—Charles Adams, Philadelphia, Pa.

Claim.—The deoxidizing of ores and carbonizing iron by the use of carbonic oxide at the degree of temperature, under regulated and measured pressure, within and by means of a furnace or apparatus constructed and operating substantially as described.

100,096.—VULCANIZED RUBBER HOSE.—Henry A. Alden, Matteawan, N. Y., assignor to the New York Rubber Company.

Claim.—As a new manufacture, hose composed of vulcanized India rubber and canvas, or equivalent material, as described, having one or more of the canvas plies formed of a band or ribbon wound spirally, or arranged in rings, or in an equivalent manner, so as to leave intervals between the rings or between the folds of the spiral, as and for the purposes set forth.

100,097.—HAND-MOTIVE CARRIAGE.—John Allgaier, Philadelphia, Pa.

Claim.—1. The cranked axle E, having one end round and a projection to catch against the hub of the wheel, and the other end square, so as to receive a permanent driving-wheel, as set forth.

2. The combination of the levers D D′, arranged on a carriage as specified, the rods F F and crank-axle E having one end round and the other end square, and provided with a projection to catch against the hub of the wheel, as described.

100,098.—WHEELBARROW.—Henry Alter, Lakeport, Cal.

Claim.—In combination with the front standard F, formed by curving the side timbers A, the wheel-block consisting of the cross-piece *a* and axle standards *d*, and provided with the curved braces *b* to support the standards F, substantially as described.

100,099.—PHOTOGRAPHIC SCREEN.—Jonas A. Anderson, Chicago, Ill.

Claim.—1. The frame A, provided with the rollers E F to bear the canvas G, and a locking device to hold said rollers and canvas at any desired point, for the purpose specified.

2. The rollers C D E F, with the ratchets H I and pawls J K and the unlocking device L, all constructed and arranged substantially as set forth.

100,100.—BROADCAST SEEDER.—William S. Archer, Dayton, Ohio.

Claim.—1. The feeding-wheels H and I in their arrangement to the seed-box D, partition I, and with reference to each other, substantially as described, and for the purpose specified.

2. Pivoting the seed-box D on the shaft Q, for the purpose specified, and the manner of suspension from an axle by the arm S, substantially as described.

3. The strap E or equivalent device to adjust the feed-box with reference to the feeding-wheels, for the purpose specified.

4. The combination and arrangement of the several parts, viz: seed-box D, partition O, slide P, wheels H and I, shaft Q, arm S, pulleys M and L, and band N, in combination with a horse-rake, substantially as described.

100,101.—RAILROAD SWITCH.—Jno. L. Arms, St. Louis, Mo.

Claim.—1. The arrangement of the slide *s* with the levers E E′ F F′, the shaft G, arm *g*, and connecting devices H I K, with the switch-levers and switch-rails, substantially as and for the purpose set forth.

2. The switch-bar *d*, pivoted at d^2, when combined with the locking-block *d* and check-plate d^2, substantially as and for the purposes set forth.

100,102.—POTATO-CULTIVATOR AND DIGGER.—William J. Avery and Tunis Laberteaux, Marshall township, Mich.

Claim.—The combination and arrangement of the right and left plows J J, the scoop D, endless belt-screen E, and cylinder picker-screen F, and the devices for raising and lowering the frame C, with its attachments, said frame C being hung within the frame A, all constructed and operating substantially as described.

100,103.—COAL-ELEVATOR.—Alson S. Bailey, Chicago, Ill.

Claim.—1. The elevator-frame, constructed as shown, with the sections laying at different angles, so that the elevating buckets are carried more nearly

perpendicular on some sections of the frame than on others.

2. The combination of the sections A, B, and C of the elevator frame, when hinged together, substantially as and for the purposes specified and shown.

3. The combination of the frame-work *a b*, pulley E, cog-wheels *e* and *d′*, rag-wheels *d*, endless chains *f*, pulleys G G′ and H H′, section C with its casing *l*, and the hoisting apparatus P P′ L, constructed and operating substantially as specified and shown.

4. The combination of the elevating-truck or bucket I, wheels *i*, chain and tram-way or track *t*, substantially as and for the purpose specified.

5. The feeding apparatus M, substantially as and for the purpose specified and shown.

100,104.—HORSE HAY-RAKE.—A. B. Barnard, Worcester, Mass.

Claim.—The arrangement of the rake-head C, the spring B attached to and passing through the divided tooth-holder D, and the tooth A, all constructed and operating substantially as described.

100,105.—COTTON-PRESS.—Charles J. Beasley, Petersburg, Va.

Claim.—1. The combination of the hand-lever H, having projection L thereon, with the pawl G G¹ I, block K, and detent F, to operate the ratchet-wheel and shaft, in the manner and for the purpose set forth.

2. The arrangement with the drum-shaft and the beam R of the links N, bolts O, and yokes Q, all substantially as specified.

100,106.—ALARM-GUN.—C. J. Beasley, Petersburg, Va.

Claim.—1. An alarm-gun which is provided with double vents and nipples, and so arranged that its barrel will also constitute the hammer, substantially as herein shown and described.

2. The combination of the notched sliding rod E with the pivoted double-vent gun C, springs D D, and frame A, all arranged and operating substantially as herein shown and described.

100,107.—HOT-AIR FURNACE.—Oscar Bellman and John W. Garver, Hagerstown, Md.

Claim.—1. The arrangement of a series of air-tubes, F, above the fire-chamber in combination with the hot-air chamber A, when placed in front of fire-chamber, substantially as set forth.

2. An arched series of tubes, G, above the fire, substantially as set forth.

3. A smoke flue, when both sides of the same within the furnace are made entirely or chiefly of series of air-tubes, substantially as set forth.

100,108.—PAINT-BRUSH.—Christopher S. Benjamin and Edward Story, Washington, Ill.

Claim.—The devices herein described for constructing paint-brushes, consisting of the tapering ferrule A, screw-cap B, toothed compressing-ring K, with its clasp *m*, and the expanding-wedge F, when arranged to operate in the manner substantially as specified.

100,109.—MANUFACTURE OF PAPER.—E. B. Bingham, Newark, N. J.

Claim.—Passing the pulp or "stuff" through the screening-vat, or any suitable screening device, after it leaves the pulp or rag-engine, and before introducing it to the finishing, brushing, or grinding-engine, or before passing it through the last of such engines, where more than one is employed, as herein specified.

100,110.—HEATER AND VENTILATOR.—Geo. W. Blake, New York, N. Y.

Claim.—The combination with a radiator, when arranged relatively to the window or wall of an apartment, as described, of an automatic valve to an opening made in the window or wall, said valve being so arranged and operating as that it serves to admit air through the radiator to the apartment, but is self-closing against egress therefrom, substantially as specified.

100,111.—MACHINE FOR GROOVING SHEET-METAL.—Charles F. Bliesenick, Providence, Pa.

Claim.—The combination and arrangement of the adjustable grooving-roller, the feed-roller *i*, gearing *e f*, the gauge F, beams B C, and *n* standard or framing A, all operating substantially as set forth.

100,112.—NEEDLE FOR SEWING-MACHINE.—John L. Boone, San Francisco, Cal.

Claim.—A sewing-machine needle split above and below the eye, as described, when the point of the side finger *b* is rounded and reduced below the general outline of the needle, substantially as and for the purposes herein set forth.

100,113, patented in England, February 23, 1869.—STOP-COCK.—Joseph Breeden, Birmingham, England.

Claim.—1. The arrangement and combination of the perforated diaphragm *e* and perforated hollow plug *i* i^2, bearing directly on said diaphragm, as herein shown and described; and

2. The combination and arrangement of the perforated disk or plate *n* and perforated hollow plug *i* i^2, bearing directly on said disk or plate, as shown and described, the said diaphragm or plate being pressed closely against the said plug by the pressure of the liquid or fluid entering the tap or stop-cock as specified.

100,114.—CLOTHES-DRYER.—Benoni S. Brown, Chicago, Ill.

Claim.—1. The combination of the upright flue and endless rack, substantially as described, for the purpose specified.

2. The arrangement of the upright flue or box A B C, with its endless rack E F, openings H, for the introduction of air, the adjustable cranks and pawl, and tightening spring substantially as herein shown and described.

100,115.—TUBE-STOPPER.—William Brown, Hoboken, N. J.

Claim.—1. The combination and arrangement of the bolt A, with its nut C, the reversely arranged cones D D, and the packing-ring E, substantially as and for the purpose herein set forth.

2. The chamber F, arranged between the truncated ends of the cones, and filled with suitable cement, in combination with said cones D D, the packing-ring E, bolt A, and nut C, essentially as shown and described.

100,116.—SEAT FOR CARS, &c.—James Casseday, Philadelphia, Pa., assignor to himself and James D. Holt, same place.

Claim.—The back or base of a seat composed of a number of curved or elliptical springs, secured to a frame and arranged side by side, but so far apart as to permit dust to pass between them, in combination with a covering of plush or other suitable fabric resting directly on the springs, all substantially as set forth.

100,117.—PORTABLE FURNACE.—Thomas Chadwick, Newton, Iowa, assignor for one-half his right to F. W. Cozad, same place.

Claim.—The combination and arrangement of the tapering pot A, with its upper flange and ledge B, perforations C D E, and removable open cover F, which rests on the ledge B, whereby a draught is had through the perforations under the ledge down through and out the bottom of the pot, substantially as herein set forth.

190,118.—Blind-Slat.—Milton W. Clark, Worcester, Mass., assignor to R. Ball & Co.

Claim.—As a new article of manufacture, a revolving blind-slat, provided with a square offset *c'*, formed in the shoulder of each tenon *a*, in the manner and for the purposes herein shown and set forth.

100,119.—Altitude Instrument.—Hall Colby, New York, N. Y., assignor to himself and George G. Colby, Washington, D. C.

Claim.—1. An instrument for determining at the same time both the altitude and zenith distance of celestial or terrestrial objects, which consists of the arc G' of 180°, a level, P, a horizon-plate, *b*, telescope *a a²*, and a double-vernier balance, A, in combination with a stop-lock or catch, substantially as described.

2. The combination with the vernier balance A of a tension device, consisting of tension-springs *d d*, cord *e*, and a pulley, *d'*, substantially as described.

100,120.—Feather-Renovator.—Abel D. Cook and James Graves, New Madrid, Mo.

Claim.—1. Forming the interior wire-gauze or perforated cylinder E in sections, sliding into each other telescopically, substantially as herein shown and described and for the purpose set forth.

2. The combination of the partition I, damper J, and pipe G, with the stove or furnace F and fan-blower H of a feather-renovator, substantially as herein shown and described, and for the purpose set forth.

100,121.—Children's Carriage.—William E. Crandall, New York, N. Y.

Claim.—1. The frames A, connected together by a seat, C, forming the body of a riding device and allowing the feet to project through it, when combined and operating substantially as described.

2. The box D, connected to the frames A, in combination with the seat C, substantially as and for the purpose described.

3. The wheels F or rockers B, in combination with the body and seat A C, substantially as and for the purpose described.

4. The frames A, seat C, box D, bed B, and wheels G, combined and operating together, substantially as described.

100,122, antedated February 11, 1870.—Wagon-Spring.—John N. Crannell, Champaign, Ill.

Claim.—In combination with the springs A B and bolts C C, the clevises D D, screw and headed rod E, forked rod E', plates F F', and rubber spring G, all constructed and operated substantially as set forth.

100,123.—Bag-Holder.—Leonard Crofoot, Pavilion, N. Y.

Claim.—1. The spout B resting in frame A, and constructed with the discharge-opening *h* in its bottom and the abutment H at its end, the whole arranged as described and operating in the manner and for the purpose specified.

2. In combination with the above, the clamp G, operating as described.

3. The construction of the frame, consisting of the pivoted legs C D and the pawl-frame E, as herein set forth.

100,124.—Combined Mowing-Machine and Hay-Tedder.—J. H. Dater, Eagle Mills, N. Y.

Claim.—1. The driving-shaft C of the cutter-bar, and a suitable frame D, in combination with the shaft H, crank-shaft E, and intermediate gearing, all arranged as described, on a mower.

2. A swinging frame D, spreader F G, and the shafts and gear-wheels above described, all arranged as and for the purpose specified.

100,125.—Machine for Rolling Car-Coupling Pins.—William Davis and Joseph While, Cleveland, Ohio.

Claim.—1. The combination of the herein-described grooved and collared rollers B C, constructed and arranged in relation to each other, and operating in the manner substantially as and for the purpose set forth.

2. The punches L, springs *a*, cams A', as arranged in combination with the rollers B C, substantially as and for the purpose set forth.

100,126, antedated February 18, 1870.—Faucet.—James M. A. Dew, Chicago, Ill.

Claim.—1. The combination of the tubular extension *a* of the cap A with the sliding valve B having the packing *w*, when arranged to operate as described, so that the opening of the outlet-passage shall close the passage around the stem *b* of the valve, as set forth.

2. The steel washer G, affixed on the cap A, and the piece of steel H, inserted at the rear point *n* into the body of the handle C, substantially as and for the purposes herein set forth and specified.

100,127.—Mold for Forming Blown Glassware.—Hiram Dillaway, Sandwich, Mass.

Claim.—A mold, for forming or shaping bottles and other blown glassware, circular in section, having its molding surface formed on the inner faces or edges of pieces or blocks, with open spaces between them, substantially as described.

Also, forming each jaw of a mold of a series of pieces of gas-retort carbon, or gas corrosion, having spaces between them, each of which pieces forms one of the faces of the mold, substantially as shown and described.

Also, in combination with the jaws *a a*, the molding-blocks or pieces, removably attached thereto, substantially as described.

Also, in combination with the jaws and mold-blocks or pieces, the stocks *f*, for receiving the blocks, substantially as shown and described.

100,128.—Combined Cotton-Chopper and Cultivator.—John D. Dunn, Griffin, Ga.

Claim.—1. The hoes H H, constructed as described, with a sharp ridge, *a*, running longitudinally in the center, and other ridges *b b*, from the center ridge to the edges, substantially as and for the purposes herein set forth.

2. The wheel D, provided with arms E E, leaving spaces G G between them, and said arms provided with movable hoes H H, constructed as described, and operating substantially as and for the purposes herein set forth.

100,129.—Gate.—Charles H. Eggleston, Marshall, Mich.

Claim.—1. The lever E, which forms the step for the lower journal of the gate when hung on a horizontal axis, whereby as the said lever is vibrated, the gate is first raised and unlatched and then made to open or close by gravity, substantially as described.

2. In combination with the subject of the first clause, the serrated hanging bar D, adjustable gate with brackets C, the wedge *i*, post A, with eye-bolts *b*, and the mechanism for operating the gate, when all the parts are constructed and arranged and operate substantially as described.

3. The pivoted linked bars F, in combination with the vibrating levers E for operating double gates, substantially as set forth.

100,130.—Watch-Regulator.—D. W. Eldredge, Boston, Mass.

Claim.—The combination of the pointer-lever or arm *c* with the movable index-scale or arc *c*, when the pointer-arm is connected to one arm of the index-lever, and by moving it moves the scale in the opposite direction, substantially as shown and described.

100,131, patented in England November 3, 1865.—Improvement in Manufacture of Copper and in Separating other Metals Therefrom.—James Balleny Elkington, Birmingham, England.

Claim.—The smelting copper ore so far as to obtain an impure metal therefrom, then casting the same into plates, and by means of electricity dissolving these plates and depositing the pure copper onto other plates, whilst the metals with which it was contaminated are left in a pulverulent state.

Also, the general arrangement of the dissolving-house with its inclined water-tight floor draining into a tank at its lower end, and with the dissolving apparatus arranged thereon, substantially as herein described.

Also, so arranging the apparatus that a flow of the solution may be established from time to time from the bottom of one jar to the top of the next, so that the solution may be prevented from settling into different layers of different strengths.

Also, the use as described, of a solution prepared by boiling and washing the deposit from the furnace-culvert.

Also, the smelting ores containing eight ounces of silver or more to the ton of ore, so as to obtain the silver and copper in the metallic form and alloyed together, and then separating the metals by dissolving and redepositing the copper by means of electricity.

100,132.—Construction of Chairs.—Harry H. Evarts, Chicago, Ill.

Claim.—The combination of the bracket A, when so constructed as to clasp and fasten to the leg of the chair by a partially-surrounding flange, with the chair-seat and leg, substantially as and for the purpose specified and shown.

100,133, antedated February 14, 1870.—Bedstead.—Harry H. Evarts, Chicago, Ill.

Claim.—The corner piece A, provided with the flange C, in combination with the legs, ends, and side pieces of a bedstead, when all are constructed and arranged substantially as described and shown.

100,134.—Street Pavement.—Edgar M. Fowler, New York, N. Y., assignor to Henry G. McGonegal, same place.

Claim.—The dividing or intervening strips C when grooved substantially as specified, and used in connection with the blocks B, for the purposes set forth.

100,135.—Machine for Cutting Soap into Slabs.—Joseph Gallipo, Cohoes, N. Y.

Claim.—1. The combination of a soap-cutting or slabbing machine with rollers on which it is supported and moves, the rear rollers being mounted on a swinging axle, substantially as described.

2. The swinging cutter-frame G and the movable cross-piece E, in combination with the main frame A and the traveling rack-frame C, substantially as described.

3. The revolving cylinder Q of the cutter-frame in combination with the strands which compose the cutters, and with the detent and ratchet which lock the cylinder after being strained or wound up, substantially as described.

100,136.—Brick-Machine.—Benjamin M. Gard, Urbana, Ohio, and Emery R. Gard, Chicago, Ill.

Claim.—1. The opening *j*, through one part of the tub bottom, and the raised portion *k* on the opposite part thereof, the former to let down the clay into the moulds, the latter to admit of the ejection and removal of the pressed brick, substantially as described.

2. The oil-trough cam-way, with the adjustable plate *f* therein, as and for the purpose described.

3. Arranging the clay-hopper or tub, knives, screw-plates, tub bottom, mould-wheel, cam-way, on and around the same central shaft, substantially as described.

100,137.—Strainer for Coffee-Pot.—C. L. Gilpatric, Hyde Park, Mass.

Claim.—As an article of manufacture, the herein-described strainer B, consisting of the semicircular sieve connected to a metal hood provided with an interior spring, C, said hood being so formed as to pass around the end of the spout, and be held by said spring, all as shown and described.

100,138.—Base-Burning Stove.—John H. Goodfellow, Troy, N. Y., assignor to himself and R. S. Goodfellow, same place.

Claim.—1. The combination of a detachable expanding feeder with the case and fire-box of a stove, substantially as herein shown and described and for the purpose set forth.

2. The detachable expanding feeder D, constructed substantially as herein shown and described, in combination with the case or cylinder B and fire-box C, as and for the purpose set forth.

3. The flue-strips J, whether placed in vertical or horizontal directions, in combination with the fire-box C and lower flue-strips or flange K, and so arranged as to receive the air to supply the draught above the central line of the fire-box, and conduct it one or more times about said fire-box before it escapes through openings in the lower flue-strips or flange K, into the ash-pit below the grate, substantially as herein shown and described and for the purpose set forth.

4. The gas-ring L, formed with an inward projection or swell around the upper edge of the fire-box, in combination with the flue-strips J and K and with said fire-box, substantially as herein shown and described and for the purpose set forth.

5. The vertical strips M and N, in combination with the flue-strips J and K and fire-box C and outer case B, substantially as herein shown and described and for the purpose set forth.

6. The opening O formed in the flue-strip K, at the front of the fire-box C, and communicating with the ash-pit, substantially as herein shown and described and for the purpose set forth.

7. The combination of dampers placed in the front and sides of the stove, either or both, with the sets of flue-strips J K and M N, or either of them, substantially as herein shown and described, to regulate the draught of the stove, as set forth.

100,139.—Sewing-Machine.—William O. Grover, Boston, Mass.

Claim.—The combination and arrangement of the double-headed vibrating arm, the driving-shaft, having its axis arranged parallel to the plane of vibration of said arm, and the vibrating eye-pointed looper, the whole constructed to operate substantially as before set forth.

Also, the combination and arrangement of the double-headed vibrating arm, the driving-shaft, having its axis arranged parallel to the plane of vibration of said arm, the vibrating eye-pointed looper, and the reciprocating toothed advancing-instrument, the whole constructed to operate substantially as before set forth.

100,140.—Grip Pulley.—Andrew S. Hallidie, San Francisco, Cal.

Claim.—The arrangement of the griping-jaws E, when held in recesses *d* by enlarged corners *c*, and provided with a free space, G, beneath their meeting ends, so as to allow them to be rocked or tilted upon their lower or bearing-surface, substantially as and for the purpose set forth.

100,141.—Steam-Generator.—Joseph Harrison, Jr., Philadelphia, Pa.

Claim.—1. A strengthening-web, *b*, arranged in the neck between two spheres, substantially as set forth.

2. A slab or section composed of spheres, arranged and jointed as herein set forth.

100,142.—WINE-PRESS.—C. F. Hartmann, Nazareth, Pa.

Claim.—The construction and arrangement of the bottom D, with its grooves or channels *d d*, situated directly under the grates *g g*, and removable block or bed *l*, projecting partially over said grooves and sustaining the grates in combination therewith, substantially as herein set forth.

100,143.—SKY-LIGHT.—George Hayes, New York, N. Y.

Claim.—1. The metallic bar or rafter A formed of a hollow sheet metal body, *a*, stay-plate *f*, and hollow molding *d*, fitted together and arranged to form rebates *b b* for the glasses, and gutters *c c*, substantially as specified.

2. The combination of the cap-plates D, with the hollow metal bars or rafters A, essentially as shown and described.

3. The clips I, in combination with the cross-gutters *h*, and main gutters *c c*, substantially as specified.

100,144. — FEED-WATER PURIFIER FOR STEAM-GENERATORS.—H. K. Hazlett, St. Louis, Mo.

Claim.—The tanks A B, baskets D E, and pipes *a b c*, when constructed, arranged, and operating substantially as and for the purpose shown and specified.

100,145.—HEDGE AND TREE-TRIMMER.—Caleb E. Healy, New London, Ohio.

Claim.—The blade A, blade *g*, arms *e d*, and lever *f*, with the handles B and H, constructed, combined, and arranged to operate as and for the purpose set forth.

100,146.—RAILWAY-CAR COUPLING.—Thomas R. Herd, Allegheny City, Pa.

Claim.—The coupling A, with the link S and pin R, in combination with the carriage A^1, recess B, spring *B'*, rollers A^2, step C, and spring D, when constructed, arranged, and operating substantially as described, and for the purpose set forth.

100,147.—COUPLING CARS.—Thomas Hess, West [illegible]n, Pa.

Claim.—The gravitating hooks B B, provided with rear extensions, in combination with the catch-bars A A, constructed and applied to the car in the manner shown, and the shafts E E, provided with tappets and hand-levers, all arranged and operating in the manner set forth.

100,148.—METALLIC ROOFING.—Thomas N. Hickcox, Brooklyn, N. Y.

Claim.—1. A corrugated sheet-metal shingle, made of an arched or reversely-inclined form, in direction of its length, essentially as and for the purpose or purposes herein set forth.

2. A metallic roofing or covering made of a series of corrugated shingles, constructed substantially as shown and described.

100,149.—ROTARY STEAM-ENGINE.—Jacob W. Hill, Jefferson, and Thomas Roberts, Panora, Iowa.

Claim.—1. In combination with the shaft-wheel of a rotary steam-engine, the wedge-shaped piston-blocks *b b*, when constructed and arranged to operate as specified.

2. The valve-gates B B, salient in the direction of rotation, provided with the expanding packing-plates *c c*, and operated by the springs *a a*, and the direct action of the wedge-shaped piston-blocks *b b*, as specified.

3. In combination with the valve-gates B B, the rotating wheel C, having the slots *s s* and cut-off face *m m*, when constructed and arranged to operate substantially as herein described.

4. The rotary steam-engine, herein described, provided with hinged valve-gates B, rotating wheel C, having wedge-shaped piston-blocks *b b*, steam slots *s s*, and cut-off face *m* and exhaust-ports *e e*, arranged to be always open, when constructed and operated substantially as herein set forth.

100,150.—LOCK FOR WAGON-SEAT.—Edgar Hitt, Poundridge, N. Y.

Claim.—The nut *b*, fitted into a socket in the case A and provided with a slot to receive the nose *f* of the arm B, to which the seat of a wagon or other vehicle is to be fastened, so as to operate in combination with said arm, substantially in the manner herein shown and described.

100,151.—MASTS OF VESSELS.—Edgar E. Holley, New York, N. Y.

Claim.—1. The elastic or yielding shrouds *f* in combination with oscillating mast A, substantially as described.

2. The plates *g*, guide-rods *i*, and springs *h* in combination with the shrouds *f*, substantially as set forth.

3. The foot-piece *m* and convex block *n* in combination with the mast A and keel B, substantially as described.

4. The saddle C and movable stops E in combination with the oscillating mast A, substantially as set forth.

100,152.—QUADRANT AND SEXTANT.—Frederick Holzach, New Orleans, La.

Claim.—The bar I and vibrating ring *d*, with its vertical arms *e e* balanced upon a point in the center of the middle radius of the instrument, substantially as described, for the purpose specified.

100,153.—SIGNAL APPARATUS.—Abel H. Huntington, Galesburg, assignor to William McKee, Neponset, Ill.

Claim.—The switch-ways *c* and *d*, in combination with the block D, tube A, base B, and grooves *a*, when constructed and arranged to operate substantially as and for the purposes specified.

100,154, antedated February 16, 1870.—GRAIN-CONVEYER.—Olof Johnson and Carl O. Wall, Galva, Ill.

Claim.—1. The arrangement of a trough, D, with the conveyer B, over a series of bins, K, said trough being provided with openings and slides for closing the same at will over each bin, all substantially as described.

2. The elastic cushions *d d*, when affixed to the blocks *b b* of the grain-conveyer B, substantially as and for the purpose specified.

3. The trough or box D, arranged as described, when used for grain-conveying, substantially as herein set forth and specified.

4. The combination of the adjustable pulleys E with the conveyer B, having its elastic belt C provided with the elastic cushions *d*, all constructed and arranged to operate substantially as and for the purpose set forth.

100,155.—EGG-BEATER.—Frank Krandelt, San Francisco, Cal.

Claim.—1. The vessel A with its curved bottom B^2 and conical projection B, substantially as and for the purpose herein described.

2. The cover D with inside gear, in combination with the shaft L, pinion N, and beater P, substantially as and for the purpose described.

3. The arms G^2 secured to the shaft C and carrying the shaft L, the whole being operated by the beveled wheel J and beveled pinion K, substantially in the manner and for the purpose above described.

100,156.—STEAM CLOTHES-WASHER.—Martin T. Lamb, Davenport, Iowa.

Claim.—1. A steam clothes-washer, A, having the ends of its cover B bent loosely about the free ends of the rim E, and its sides connected to the sides of the rim by the bent strips or pieces F, as herein shown and described.

2. In combination with the cover B and tube C, the cap D, provided with the deflectors E, the whole constructed and arranged substantially as and for the purpose set forth.

100,157.—PITMAN-CONNECTION.—Salem T. Lamb, New Albany, Ind.

Claim.—1. The ball-wrist C, projecting from one side of the knife-heel as shown, in combination with the pitman, constructed as described, to form a socket for said ball-wrist.

2. The spring L, provided with the pin N, in combination with the nut K and ratchet M, for the purpose described.

3. The wrist-pin E, constructed with the conical flange O, to fit a corresponding seat, as and for the purpose set forth and described.

100,158.—PITMAN-JOINT FOR HARVESTERS.—Salem T. Lamb, New Albany, Ind.

Claim.—1. In combination with the ball G, formed on the end of the pitman N, and in the position described, the box therefor, constructed with the cap H, steady-pin J, and draw-bolt K, as and for the purpose set forth.

2. The combination and arrangement, as described, of the clamping-bolt K and nut Q, constructed as set forth, with spring S and ratcheted recess R, for the purpose of holding the nut at any desired point.

3. The spring pawl S, constructed with the lip *s*, in connection with the nut Q and ratcheted recess R, substantially as described.

100,159.—PITMAN-JOINT FOR HARVESTERS.—Salem T. Lamb, New Albany, Ind.

Claim.—1. The combination of the hooks M and G, constructed substantially as described, in connection with the heel C of a harvester cutter-bar.

2. In combination with the hook G, to make an eye for a pitman-joint, the nut I, constructed with the teeth J and the detent K, substantially as described.

3. In combination with a hook, M, at the end of the pitman, a hook, G, constructed and arranged as described, so that all adjustment for lost motion shall be toward the heel of the cutter-bar, as set forth.

100,160.—SOLDERING-MACHINE.—Joseph Le Comte, Brooklyn, N. Y.

Claim.—1. The machine A, with hollow or solid forming rollers or mandrels *o o o' o'*, and suitable bearings *u u u' u''*, levers D and D', with joints *n*, in combination with blast-pipes G G, arranged for the purpose set forth.

2. The arrangement of the blast-pipes G G and P P, with jets or tweers 1, 2, 3, 4, 5, 6, 7, 8, for the purpose of soldering both ends of a metallic can, C, or other vessel at the same time, in combination with the machinery herein described and set forth.

3. The cylindrical chucks or formers *o o o' o'*, provided with bearings *u u u' u''*, levers D D', eccentric joint *n*, in combination with gas-pipes G G, and internal air-pipes P P, with jets arranged between the standards S S, as described, for the purpose set forth.

190,161.—RUFFLING ATTACHMENT FOR SEWING-MACHINE.—Arthur M. Leslie, Chicago, Ill., assignor to himself and Cornell, Ward, and Comings.

Claim.—1. The ruffler for sewing-machines, consisting of the two elastic plates A E, constructed as described, the former being provided with the curved slot to admit of the movement of the ruffler about its holding screw, in order to adjust the position of the plates, with relation to the feed and foot, to regulate the fulness of the gathers or ruffles.

2. An adjustable locking device, in combination with a ruffler for sewing-machines, which shall bear against the presser-foot and hold the ruffler in position with reference to the feed-surface, substantially as described.

100,162.—PUMP.—G. W. Low, Ravenna, Ohio.

Claim.—The lever A, link B, and slotted plate or opening E, in combination with the pump-rod C and stalk D, when arranged in relation to each other substantially as and for the purpose set forth.

100,163.—MANUFACTURE OF FERTILIZERS FROM ANIMAL SUBSTANCES.—Orazio Lugo, Baltimore, Md.

Claim.—1. The use of phenol, (carbolic acid,) and hydrocarbons or their equivalents, in connection with or without heated gas or vapors, for the purpose and in the manner substantially as set forth.

2. As a new article of manufacture, the antiseptic manure or fertilizer from animal matter, by the process for the manufacture of which is herein set forth.

100,164.—CLAMP FOR STAY-LOG.—John N. Lyman, New York, N. Y.

Claim.—1. The clip C, constructed to straddle the stay-log, as described, and to bear upon its one flange *b'*, while it is extended to project beyond the other flange *b*, and is provided with an adjusting stop-screw, *d*, for operation in connection with an attaching-screw, *f*, relatively to the stay-log and timber carried by it, substantially as specified.

2. The clip C, provided with the extension *g* and screw *h*, and its adjusting stop-screw *d*, and attaching-screw *f*, essentially as specified.

100,165.—STONE AND STUMP-EXTRACTOR.—James B. Lyons, Milton, Conn.

Claim.—1. The arrangement and combination of the prongs C C with the cross-bar *d*, enlarged central portion *c*, when secured to the beam A, for operating substantially in the manner and for the purposes specified.

2. The arrangement and combination of the beam A, staple H, and doubletree G, operating in the manner and for the purposes herein set forth.

100,166.—PUNCH AND PRESS.—W. Stinson Lord, Crawford, Miss.

Claim.—The combination of the frame A, having the slots *a b c*, the perforated and slotted head B, the lever L, and the notched stem or punch-stock D, substantially as and for the purpose set forth.

100,167.—ROOFING AND FLOORING.—Patrick N. Mackay, Virginia City, Nevada.

Claim.—A flooring and roofing compound similar to that herein described, when composed of the ingredients above enumerated, mixed and compounded in about the manner and proportions described.

100,168.—POTATO-DIGGER.—Orsan E. Mallory, Batavia, N. Y., assignor for one-half his right to Salmon B. Lusk, same place.

Claim.—The combination of the adjustable digger *b* with the revolving paddle-wheel *g* and the adjustable clearer *e* and the open revolving cylinder in the rear, substantially as described and for the purposes set forth.

100,169.—FENCE.—Harris Harding Margeson, San Francisco, Cal.

Claim.—1. Constructing a fence with the angular apertures in the rails to render it adjustable, substantially as herein described.

2. The combination with the rail B of the plate C and bolt *b*, when constructed and arranged to operate substantially as described.

100,170.—SHEEP-SHEARING TABLE.—Joseph R. Marshall, Marion, Pa.

Claim.—1. The pivoted frame B C C' *c*, the stocks *c'*, and box A, combined and arranged substantially as and for the purpose set forth.

2. The box A, shelf *a*, reels *h*, and keeper *h''*, all combined and arranged substantially as and for the purpose explained.

3. The box A, shelf *a*, pivoted frame B C C′ *c*, and stocks, all combined and arranged substantially in the manner described.

100,171, antedated February 10, 1870.—Extensible Gas-Tube for Chandeliers. Hugh L. McAvoy, Baltimore, Md., assignor to himself and Samuel Ault, Jr., same place.

Claim.—1. The flexible pipe A, coiled in suitable form, and having this form or shape supported by one or more elastic wires, B, extending longitudinally thereof, and attached thereto, substantially as herein shown and described.

2. In combination with the extensible pipe A B, the guides E F E F, provided with the stops *e f e f*, substantially as and for the purpose set forth.

3. In combination with the extensible pipe A B and drop D *d d′*, constructed and connected substantially as shown, the deflector G, constructed, arranged, and employed substantially as represented and described, for the purpose set forth.

100,172.—Implement for Under-Cutting Sand-Cores in Flasks.—William L. McDowell, Philadelphia, Pa.

Claim.—The combination with the plate A, provided with a suitable cavity, *a′*, for the reception of the core of the sliding tongue *b′*, and spring C, substantially as and for the purpose hereinbefore set forth.

100,173.—Car-Coupling.—Edward T. McKean, Hammonton, N. J.

Claim.—In railway-car couplings, attaching the bumper-head to parallel guide-rods which extend longitudinally under the car bottom and play in boxes at either end of said guide-rods, the boxes at the front ends of said rods being deeply slotted, so as to allow a vertical movement of the front ends of said rods.

Also, the combination of the bumper-head B, the guide-rods C playing vertically in the slotted boxes D, and the spring G for regulating the vertical movement of the bumper-head, as set forth.

Also, the combination of the bumper-head B, the guide-rods C playing vertically in the slotted boxes D, the draw-bar H, the connecting-bar *g′*, and cross-head K′, for the purpose of a vertical, simultaneous, and coincident movement of the said draw-bar and bumper-head, as set forth.

Also, the combination of the draw-bar H, the cross-heads K and K′, the connecting-bars *g* and *g′*, and the guide-rods C, for the purpose of a horizontal independent movement of said draw-bar, as set forth.

Also, the combination of the bumper-head B, the guide-rods C, the boxes D and E, for the purpose of a horizontal independent movement of said bumper-head, as set forth.

Also, pivoting the draw-bar upon the connecting-bar of a cross-head, substantially as set forth.

Also, the draw-bar, H, substantially constructed, arranged, and operating as above set forth.

Also, the devices by which the draw-rod S is released, consisting of the links J, the hook k, the chain *k*, the levers L and N, and roller M, when constructed and operating as set forth.

Also, the bumper-head B, provided with the guide-rods C, in combination with the draw-bar H, when constructed, arranged, and operating substantially as set forth.

100,174.—Soldering-Furnace.—John McPherson, Baltimore, Md.

Claim.—1. The draught-chamber *b*, when placed in the lower part of the furnace *a*, so as to render the latter base-burning, substantially as described.

2. The reversible grate *b″*, constructed and operating substantially as and for the purpose set forth.

3. In combination with the draught-chamber *b*, the discharge-chamber *c*, constructed and operating as specified.

100,175.—Grinder for Rattler for Cleaning Castings.—George Miller, Johnston, R. I.

Claim.—1. The cylinder, constructed with two heads G and a sectional lagging or body, D, a portion of which is removable by sections, substantially as and for the purpose specified.

2. The roller E, when combined and arranged with the cylinder G, as described.

100,176.—Jack for Carriage-Springs.—Robert R. Miller, Plantsville, Conn., assignor of half interest to J. B. Savage.

Claim.—A jack or spring-holder having the wings *c c* or an enlarged bearing surface, substantially as and for the purpose described.

100,177.—Fifth-Wheel Head for Carriages.—R R. Miller, Plantsville, Conn., assignor of one-half interest to J. B. Savage.

Claim.—1. A fifth-wheel head or circle as formed with a concave rest or bearing-surface B, as and for the purpose set forth.

2. The wings D D projecting laterally from the rest B and serving to increase the area of the bearing-surface, substantially as and for the purpose explained.

100,178.—Die for Forming Head of King-Bolts.—F. B. Morse, Plantsville, Conn.

Claim.—1. The V-shaped die C D, constructed as described, so as to form the head of king-bolts at one operation.

2. The trimming dies, constructed as described, to trim the surplus metal from the head of king bolts.

100,179.—Drive-Well Tube.—John M. Mott, Chicago, Ill.

Claim.—The combination and arrangement of the wire cylinder A, cone B, and rings D and E, when the wires are clamped between rings D and E, as specified, for the purposes set forth.

100,180.—Horseshoe.—Albert L. Murphy, Philadelphia, Pa.

Claim.—1. Heel and toe-calks F and F′, formed upon a single bar or frame, B, when the latter is arranged for ready attachment to or detachment from a horseshoe.

2. The bar or frame B, having elastic forked arms *d* and *d′* formed at their extremities into hooks or clamps *e*, arranged to pass around and embrace the opposite sides of a horseshoe, as set forth.

3. The combination with the said elastic arms, connected permanently together at their inner ends, of a tightening-screw, G.

4. The plate A, at the front end of the bar or frame B, and connected at its centre to the frame, but free at the ends, so that the latter may be bent inward, for the purpose described.

100,181.—Harvester-Dropper.—Ephraim Myers, Creagerstown, Md.

Claim.—1. The combination of the bent rods *a b*, rod *d*, and weights E E, all constructed and arranged as described, so as to give the platform the bouncing motion, substantially as and for the purposes herein set forth.

2. The combination of the slatted platform D, hinged to the rod *b*, the weight E, and cut-off *g*, all substantially as and for the purposes herein set forth.

3. The combination of the platform D, cut-off *g*, rods *a b d e*, weights E, and foot-lever G, with a suitable connecting device, all constructed and arranged as described, and operating substantially in the manner and for the purposes herein set forth.

4. The combination of the bent rods *a b*, rods *f f*, and cut-off *g*, all substantially as and for the purposes herein set forth.

100,182.—Water-Filter, Liquor-Cooler, and Refrigerator.—William Frank Nickels, Philadelphia, Pa.

Claim.—1. The combination of a water-reservoir, A, pipe F, filter H, and ice-chamber, into which the said pipe projects, and where it is coiled to form a support for the ice, all substantially as described.

2. The receptacles D, combined with a filter or cooler, substantially as and for the purpose specified.

100,183.—Cultivator.—A. B. C. Nusbaum, Sacramento, Cal.

Claim.—1. The rotary cylinder or polygon H, having its teeth or shares attached to it as shown and described, when said cylinder or polygon is fitted within a swinging frame connected to the axle A, as described, and driven or rotated from the driving-wheel C through the medium of a chain, F′, fitted over pulleys F I, having concave peripheries provided with transverse ribs, substantially as shown and described.

2. The combination of the swinging frame G, cylinder or polygon H, with spirally-attached teeth, driving-chain F working over the pulleys F I, when all are constructed and applied to and used in connection with a suitable frame mounted on wheels C C′, one of which is used as a driver, substantially as herein shown and described.

100,184.—Safe.—David O. Paige, Detroit, Mich.

Claim.—1. The bars D D′ and D″, of any suitable metal, when combined in layers and arranged relatively to each other, substantially as described, shown, and set forth, and for the purpose specified.

2. In the construction of safes, the employment of the plates C and C′ of the hard and soft steel described, when said plates are constructed and secured together, substantially as described, shown, and set forth.

3. The combination of the angle plates A and A′, the lining and covering plates B and B′, the bars D D′ and D″, and the plates C and C′, with the bolts F and F′, the rivets E, and the nuts G and G′, constructed and arranged substantially as and for the purpose set forth.

4. The bolts F and F′, made of the hard and soft steel described, with the hard and soft steel in alternate diagonal layers, substantially as and for the purpose set forth.

100,185.—Bridge.—Charles H. Parker, Boston, Mass.

Claim.—1. A truss having its vertical posts or compression members fractional lengths of the curved top member, and sloping ends combined in the end panels or bays, substantially in the manner and for the purpose specified.

2. A compression member of a truss, constructed in the manner and for the purpose specified.

3. The cast-iron eye or end of the compression member of a truss, constructed with lips to fit the web of the beam, shoulders to fit upon the flanges of the beam, and a recess to receive the encircling strap E, in the manner and for the purposes specified.

4. The thrust-block or skew-back, constructed in the manner and for the purposes specified.

5. The encircling bar or strap L, used in connection with the thrust-block, so as to hold the chord-bars of the bridge, and at the same time to partially receive the thrust of the top member of the truss, in the manner and for the purposes specified.

6. The plate P, used in the manner and for the purposes specified.

7. The combination of the top and bottom members of a truss with the thrust-block, its encircling bar or strap, and the stiffening-plate P, under the arrangement shown and described.

100,186.—Cap for Metallic Cans.—George H. Perkins, Brooklyn, N. Y.

Claim.—The combination of the mouth-piece or ring A, sheet-metal cap or plug B, and male screw-cap C, constructed substantially as described.

100,187.—Wagon.—Eli Petteys, Chestertown, N. Y.

Claim.—1. So connecting the double-tree of a wagon that the points of attachment of the whiffle-trees shall be in line with the wheels, in a four-wheeled vehicle, as and for the purpose set forth.

2. The arrangement of a neck-yoke with a double-tree of the same length, when the two are so connected that the draft of the wagon will of necessity be in direct line with the wheels of the same, as and for the purpose specified.

100,188.—Subsoil Plow and Scraper Combined.—J. Reynolds, Crystal Springs, Miss.

Claim.—The combination of the scraper F and standard G with the beam A and plow D C, substantially as herein shown and described, and for the purpose set forth.

100,189.—Eraser Attachment for Pencils, &c.—George H. Richards, New York, N. Y.

Claim.—An attachment to pencils, pen-handles, &c., consisting of the ferrule *a*, sleeve *b*, standard *c*, and tubular revolving head *d*, pivoted between said standards, said parts being constructed and arranged for joint operation, as shown and specified.

100,190.—Wagon-Seat.—David H. Richardson, Henrietta, N. Y.

Claim.—The combination of the stationary end parts A A, provided with the flanges *d d*, and bearings *h h*, with the cross-board B, seat C, and springs *g g*, arranged and constructed as and for the purpose herein set forth.

100,191.—Life-Raft.—John Rider, New-York, N. Y.

Claim.—1. The combination of the hoops *a*, when connected with the bars *c*, as described.

2. The combination of the connecting-bars, the hoops, and the collapsible cylinders, substantially as described.

3. The adjustable bars *k*, in combination with the hoops, as set forth.

4. The slotted bar *l* in combination with the hoops *a* and slats *c*, all substantially as described.

100,192.—Car-Coupling.—H. S. Root, Muncy, Pa.

Claim.—1. The frame E when pivoted between the arms of the frame F, substantially in the manner and for the purposes described.

2. The frame F pivoted to the sides of the draw-head, and operated substantially in the manner and for the purposes set forth.

100,193.—Boat-Detaching Apparatus.—John Ross, San Francisco, Cal.

Claim.—In combination with the device, consisting of the bent-pin E, eye *d*, and chain F, the spindle J, crank I, and pin H, for drawing, holding, and releasing together the chains F from the two ends of the boat, substantially as and for the purpose set forth.

100,194.—Wardrobe-Hook.—J. B. Sargent, New Haven, Conn.

Claim.—Wardrobe-hooks constructed with two driving-points, one or both of which are beveled, as shown and described.

100,195.—Lock.—Zebadiah Sargent, Rochester, N. H.

Claim.—The arrangement as well as the combination of the spring *i* and its stud *k* with the bolt and the slide, arranged together, and in the bolt-case, and with respect to the recess *e* thereof, as set forth.

100,196.—Separator to be Used in Distilling Liquors.—George W. Shaw, Buffalo, N. Y.

Claim.—1. The arrangement of the apparatus as a whole, consisting of the upright separators A B, with condensing tubes *d d*, and drum D, the connecting pipe or pipes F, with condensing tubes *f f*, and the eduction pipes *e e* and *h h*, leading to trap E, the whole operating in manner and for the purpose specified.

2. The construction and arrangement of the separators A B, with the dome *z*, separated condensing tubes *d d*, and drum D, with convex bottom *k*, as herein set forth.

3. The combination and arrangement of the supplementary condensing pipes *f f* with the circulating pipe F, in such a manner as to produce the united effect of creating a circulation of the water through said condensing pipes, and of condensing the vapor within the circulating pipe, as set forth.

4. The combination of the submerged trap E, arranged as described, with separators A B, and circulating pipe F, in the manner and for the purpose specified.

100,197.—APPARATUS FOR TOWING RAFTS, &c.—E. O. Shepardson, St. Louis, Mo.

Claim.—The arrangement of a tow-line, D D′, on the sides of a vessel, when said line passes over drums G G′, said drums being connected by proper gearing with an intermediate pinion, the whole operating as and for the purposes set forth.

100,198.—PAPER-BOX MACHINE.—Daniel Simmons, Jr., New York, N. Y.

Claim.—The block *c*, arbor *a*, and pyramidal frustum 3, in combination with the contractile ring *f*, studs *h*, spring-clamp *k*, and latch *i*, substantially as set forth.

100,199.—DITCHER AND GRADER.—J. G. Sisson and Lark Delana, Arcola, Ill.

Claim.—The frame A, plows B and H, levers G and K, and keeper D, when combined so as to form a ditcher and grader, substantially as shown.

100,200.—HARVESTER-RAKE.—E. W. Skinner, Madison, Wis.

Claim.—1. The adjustable segmental guide-track F, in combination with the beat-armed reciprocating rake E D, for the purpose of regulating the position and inclination of the rake-teeth with relation to the apron of the machine, substantially as described.

2. The combination of the weight L and slotted sleeve M with the rake and its arm, for the purpose specified.

3. In combination with the harvester-rake E D, the universal joint and adjustable track F, for the purpose specified.

100,201.—BRAKE AND RATCHET FOR ELEVATING AND LOWERING BUCKETS.—Isaac T. Smith, Richmond Va.

Claim.—The interior segmental rim upon the ratchet-wheel, to prevent the pawl from falling back into the ratchet whilst in rapid motion, and thus preventing accidents, as above described and set forth.

100,202.—NEGATIVE PLATE FOR A "SMEE" BATTERY.—Luther L. Smith, Brooklyn, N. Y.

Claim.—1. The making and use of a solid nickel plate or of a plate made of copper, brass, lead, or any other metal, and coated with nickel, as a negative plate for a Smee battery.

2. A solid nickel plate or a plate made of copper, brass, or any other metal, and coated with nickel, to be used for a negative plate for the Smee battery, as a new article of manufacture.

100,203.—STEAM-ENGINE GOVERNOR.—William Smith, Philadelphia, Pa.

Claim.—The combination of the arms G G, constructed substantially as described, with the head *d* of the central shaft D, by means of the radial sockets *g g* of said head and pins *m m*, whereby a free and easy tangential movement of the balls H H is effected, as and for the purpose hereinbefore described.

100,204, antedated February 16, 1870.—RAILWAY-CAR COUPLING.—Elias F. Sneider, West Penn, Pa.

Claim.—1. A coupling-block, on the upper surface of which are arranged a link, B or B′, hooks *c* and *h*, an inclined projection, *f*, and guiding-rib *i*, all substantially as and for the purpose set forth.

2. The combination of the coupling-blocks A and A′, when constructed and arranged to operate with respect to each other substantially in the manner described.

100,205.—FURNACE.—Thomas Speakman, Camden, N. J.

Claim.—1. The arrangement of the pipe J, bent downwardly, on the chimney D of a furnace, substantially as and for the purposes set forth.

2. The combination of the tube K (fig. 2) with the flue C and barrel L, substantially as and for the purpose set forth.

3. The combination of the fan H, bent pipe J, and the damper on the top of the chimney D, when arranged to operate substantially as and for the purposes herein set forth.

100,206.—SHIFTING-BAR FOR SLEIGHS.—A. J. Spencer, Middletown, Conn.

Claim.—In combination with the tubular bar B and rod C, and the shafts arranged thereon, as described, the turning plates *d*, to throw the shafts forward or back in the manner described.

100,207.—FASTENING FOR OVERSHOES.—Helen Ekin Starrett, Lawrence, Kansas.

Claim.—The combination of the rubber overshoe A and strap *a*, when the latter is arranged to pass under the heel of the wearer, and adapted to be folded and secured to the inner sole of the shoe, when not required for use, as and for the purpose set forth.

100,208.—MANUFACTURE OF GAS FROM PETROLEUM.—Levi Stevens, Washington City, D. C.

Claim.—The process herein described of forming a mixed gas or vapor by uniting steam and hydrocarbon in a heated receiver, the contents of such receiver being kept under pressure, as above set forth.

100,209, antedated August 22, 1869.—FOLDING CHAIR.—Alexander W. Stewart, Glasgow, Scotland.

Claim.—In a folding chair having crossed legs A B A′ B′, (the legs A A′ being extended up to form a back,) a seat, C, hinged at or near its front edge to the tops of the legs B B′, supported at or near its rear edge upon a cross-rod or pivot, *c*, and folding down at the rear of the legs when the pivotal rod *c* is placed at such distance from the points of intersection of the crossed legs, relatively to the position of the hinge *e*, as to cause the seat to begin to drop as the legs begin to fold.

100,210.—MECHANICAL LEECH.—Frederick A. Stohlmann, Brooklyn, and Andrew H. Smith, New York, N. Y., assignors to Frederick A. Stohlmann.

Claim.—1. The rotating tubular scarifier *a*, rod *b*, and spring *d*, in combination with the head *c*, trigger *h*, and case *e*, substantially as specified.

2. In combination with the foregoing, the screw-thimble *k*, to adjust the depth of cut, as specified.

100,211.—HEATING AND VENTILATING APPARATUS.—B. F. Sturtevant, Jamaica Plain, Mass.

Claim.—For producing and heating currents of air, the combination of a boiler, engine, blower, exhaust-steam-condensing apparatus, (operating to condense by the air set in motion by the blower,) and pump, or other suitable device for returning the condensed water to the boiler.

Also, in combination with the elements first claimed, an apparatus for extracting and utilizing the heat escaping in the volatile products of combustion.

Also, in combination with the elements first claimed, the series of distributing-pipes *n*, leading from the blower.

Also, in combination with the elements first claimed, the series of collecting or return pipes *h* leading to the blower.

Also, the combination of one or more return pipes *h*, and one or more delivery-pipes *n*, with a cold-air inlet-pipe, *g*, and a valve or equivalent device for regulating the proportion of fresh air to be heated and circulated.

Also, the arrangement of the water heater between the condenser and the pump, substantially as and for the purpose described.

100,212.—GRAIN-DRIER.—B. F. Sturtevant, Jamaica Plain, Mass.

Claim.—In combination with a bin or chamber for reception of grain or granular matter, the series of wire-cloth inlet and outlet-pipes or conduits connected with an air-moving apparatus for causing passage of air or aeriform fluids through said matter, for the purpose described.

Also, a lap-jointed pipe of wire cloth, coated with metal, so that the crossings of the wire and the parts of the joints are soldered by the coating.

Also, the combination in a grain-bin of the chamber *c* and series of wire-cloth pipes *e*, with the series of wire-cloth pipes *f* and chamber *d*.

Also, the combination of a blower and heater with a grain-bin, provided with an air-supplying and distributing apparatus, so connected with the blower as to move air repeatedly through the contents of the grain-bin.

Also, the combination, with the apparatus last claimed, of an adjustable air-inlet for admitting fresh air to be mingled with the repeatedly-circulated air, to supply the place of air allowed to pass off from the grain-bin, or escaping therefrom in leakage.

100,213.—PACKING FOR PISTON-RODS.—Charles Thayer and David McPherson, Rome, N. Y.

Claim.—The cylindrical casing D, screw-cap *b*, cylindrical packing rings, passage *e*, chamber *g*, spring *a*, and stuffing-box and gland C A, all constructed and arranged substantially in the manner shown and described.

100,214.—WASHER FOR SCREW-BOLTS.—Nathan Thompson, Brooklyn, N. Y.

Claim.—1. A compound washer, consisting of a case or shell having an annular groove in one side, of sufficient depth to contain the correspondingly-shaped annular follower, between which and the bottom of said groove is the interposed spring or packing, substantially as described.

2. The cup or case portion E, formed with a recess, *a*, open at its one side or face, in combination with a follower portion, F, arranged to fit said recess, and the two portions formed with one or more protuberances *b* and recesses *c* on their edges, and containing a spring or springs, G, in between them, essentially as shown and described.

100,215.—antedated February 14, 1870.—CORN-PLANTER.—E. A. Thrush, New Kingston, Pa.

Claim.—A corn-planter consisting of the frame A, having the shovels E and F and hoppers G, arranged as shown, and provided with the wheels B, double-crank axle *h*, pitman *a*, and cross-rod *c* for operating the seed-slides, in the manner herein set forth.

100,216.—SCREW-PROPELLER.—Charles G. Toenes, Jersey City, N. J.

Claim.—A screw-propeller having two narrow wings *a* alternating with two wide wings *b*, substantially as shown and described.

100,217.—ESCAPEMENT FOR TIME-PIECES.—Michael Tromly, Cincinnati, Ohio, assignor to himself and W. L. Hasbrouck, same place.

Claim.—The pallet *d*, combined with the arm *d″*, pin *x*, and cam-groove d^3, as and for the purpose set forth.

100,218.—SHEARS.—Friedrich Ulrich, Brooklyn, E. D., N. Y.

Claim.—1. The movable handle C, formed at one end with a palm-rest and thumb-groove, and at the other with an open slot forming a fork, in combination with a pin on the cutting-blade, substantially as set forth.

2. The stationary jaw A, having secured to it the cutting-blade *a*, and continued into a supporting base *b*, and stationary handle *c*, in connection with the cutting-blade B, and handle C, substantially as and for the purpose described.

3. The roller-caster *d* in the stationary handle *c* of shears, substantially as set forth.

4. The palm-rest *k* and the thumb-groove *l*, in the handle C, substantially as described.

100,219.—FRUIT-LADDER.—James H. Verity, Lansing, Mich.

Claim.—1. The fruit-ladder, with the suspended platform D and upper platform L, all pivoted and arranged as described, the ladders being convertible into an extension-ladder, as and for the purpose set forth.

2. In combination with the upper platform L, the basket-holder *n* pivoted to the platform, as and for the purpose described.

100,220.—AUTOMATIC LATCH.—Edward Voigt, Philadelphia, Pa.

Claim.—1. An arm, H, vibrating freely to a limited extent, in combination with a spring, so arranged that when the said arm turns in one direction and beyond a given point, it will resist the motion of the same, when the said spring and arm are arranged on a frame substantially as described.

2. The combination of the arm H, a lever, G, vibrating adjacent to the arm, and projecting over the latter, a spring, *j*, bearing on the lever, and a lug, *l*, limiting the movement of the lever, substantially as described.

100,221.—GEARING FOR HARVESTERS.—A. H. Wagner, Chicago, Ill.

Claim.—The combination of the bevel-gear wheels F, I, O, and O′, and the pinions K, M, M′, and P, with the axle B and crank-shaft R, substantially as and for the purpose specified.

Also, in a reaping or mowing-machine, two driving-gears moving in opposite directions, both positively actuated by the same wheel, and each caused to mesh with and impart motion to the crank-shaft pinion, substantially as and for the purpose described.

100,222.—MACHINE FOR MAKING HORSE-SHOES.—James T. Walker, Albany, N. Y.

Claim.—1. In a machine for making horseshoes, constructing and arranging the male or movable die with its operative surface at right angles to the line of motion imparted to it, and the female or stationary die with its operative surface inclined to said line of motion, the inclination being equal to the difference between the thickness of the toe and heel of the shoe, substantially as described.

2. In combination with the male and female dies, constructed and arranged as above claimed, the projection *t*, or its equivalent for holding the heel of the blank apart, and for preventing contraction while it is being pressed into shape, substantially as set forth.

3. The combination in a horseshoe-making machine of a reciprocating former of such shape as will, by bending the bar around it, give to the ex-

ternal edge of the blank the exact shape of the finished shoe; mechanism to strip the blank off the former; mechanism to withdraw the former out of the path of the male die; a vertically-reciprocating male die, and laterally-moving female dies made in two parts; all constructed and operated to form a pressed horseshoe, as set forth.

4. In a machine for making horseshoes, constructing the shoe-forming dies, as herein described, so that the shoe is beveled on its outer edge as it is being pressed into shape.

5. The combination of the eccentrically cam-grooved wheels K, levers M, rods L, and feet N, all substantially as and for the purposes set forth.

6. Arranging the friction-roller H on the head of the plunger E, in a plane parallel to, but on one side of that which passes through the center or axis of the shaft C, for the purposes set forth.

7. In combination with the former S, the elongated bending levers V V, provided with hooks *i i* at their front ends on their under sides, pivoted to the bed of the machine and operated through the medium of the cams T T for the purpose of guiding and preventing the twisting or springing of the iron bar before the blank is formed, and for knocking inward the heel of the blank after it is formed, substantially as set forth.

8. The combination of the foot or clearer *m*, with mechanism for operating the same, substantially as described, and with the male die I, for the purposes set forth.

9. The combination of the laterally-moving female dies Y Y, provided with an incline, *o p*, and bevel *r*, with the vertically-reciprocating male die I, with its creasers *s* and projection *t*, all operating substantially as set forth.

10. In combination with the laterally-moving female dies Y Y, in a horseshoe-making machine, the angular metal clearers *n n*, secured to the bed of the machine, and passing through grooves made in the heels of the dies, for operation as set forth.

100,223. — SHINGLE-MACHINE. — Gustavus Walton, Minneapolis, Minn.

Claim. — The arrangement of feeding devices, consisting of the cone pulley B, shaft A, clutch *b*, leather-covered friction-wheel C, lever-pawl and ratchet H, iron friction-wheel F, shaft G, and frame *a a*, the whole being constructed as herein described for the purpose specified.

100,224.—APPARATUS FOR PRODUCING BUTTER FROM CREAM.—Stanton D. Warner and Owen W. Thomas, Richmond, Ill.

Claim.—The construction and arrangement of the cylinder A, having a perforated concave bottom, perforated concave plunger E, filtering substance F, bar C, and adjustable weighted lever D, substantially as shown and described.

100,225.—CANCELING-STAMP. — William A. Wheeler, New York, N. Y.

Claim.—The arrangement of the stamp C with cutting or canceling device *g g*, dial K, piece N, and detent *m*, when operated in the manner and for the purpose herein set forth.

100,226. — HOOK FOR HARNESS. — Abner White, Macon, Ga.

Claim.—A hook for use in connection with harnesses, combining in its construction a plate of metal, B, hook C, and button-headed stud D, arranged substantially as and for the purpose specified.

100,227.—REVOLVER.—Rollin White, Lowell, Mass.

Claim.—1. The supplemental barrel P, when the same is arranged so that its breech is in front of the cylinder, substantially as and for the purposes set forth.

2. The combination with a revolving fire-arm of a supplemental barrel, when the same is arranged above the cylinder and ordinary barrel, as shown and described.

3. The combination with the auxiliary barrel P of a revolving fire-arm, of a firing-pin, arranged to work through the cylinder, as set forth.

4. The combination with the hammer of a fire-arm provided with an adjustable beak or projection, of the firing-pin, arranged and operating as set forth.

5. The combination and relative arrangement of the tumbler, sear, and trigger, whereby the sear can play into and out of the tumbler-catches, as described, and the trigger is located forward of the rear end of the cylinder, as shown.

6. The arrangement of the main-spring J within the stock, and in relation to the hammer E, so that when the hammer is cocked the pressure of the main-spring will be mainly on the pivot thereof, instead of mainly in opposition to the sear, as and for the purposes specified.

100,228.—BROOM-BRACE.—Freeman O. Willey, Wilmette, Ill.

Claim.—The broom-brace, consisting of the strips A, ring *i*, corrugations B, and one or more adjustable bands *c*, substantially as described.

100,229.—SAND-PAPER HOLDER FOR FINISHING THE SOLES OF BOOTS AND SHOES.—Herbert L. Willis, South Easton, Mass.

Claim. — A sand-paper holder for finishing the soles of boots and shoes, composed of two parts, A B, hinged together at one edge, and fastened together by screws, or the equivalent thereof, with or without the enlarged holder, composed of hinged parts C D similarly arranged, substantially as herein specified.

Also, the pins *g g* and holes *h h* in the opening edge of the parts A B and C D of the holder, for the purpose set forth.

100,230.—MACHINE FOR MAKING NAILS AND SPIKES. — Thomas Wood, Matteawan, N. Y.

Claim.—1. The combination of the two sets of matrix rolls H H^1 and H^2 H^3, respectively, constructed substantially as set forth, with the intermediate guide and clamping-jaws, substantially as described and shown.

2. The combination of the rolls H^2 H^3, the holding-jaws C^3 C^4, and mechanism to reciprocate the latter with either greater or lesser velocity than that given to the dies on the rolls, substantially as and for the purpose set forth.

3. In combination with the driving-shaft and movable jaw, the parts B^2 B^4 B^5 B^6 B^7 and C^1, constructed and arranged to operate substantially as set forth.

4. In combination with the rolls H^2 and H^3, the cross-heads C and C^6, bars C^1 and C^2, and jaws C^3 and C^4, arranged to operate substantially as set forth.

5. In combination with the shear-plates E E^1, constructed and pivoted substantially as described, the connecting-rods D^2, arms D^4, and oscillating-shaft D^5, substantially as set forth.

6. In combination with the two pairs of matrix rolls and their operating mechanism, the spur-pinion F, ratchet-wheel F^1, catch f^2, and oscillating arm F^3, substantially as set forth.

7. In combination with the crank, pitman, and frame carrying the jaws, the crank B^2, pitman, and eccentric, when said cranks are constructed and arranged to operate substantially as set forth.

100,231.—DITCHER. — C. F. Woodruff, Newbern, Tenn.

Claim.—The guide-rods *c*, guards *e*, and pins *c''*, combined and arranged substantially as described.

100,232.—REVERSIBLE PERCOLATOR.—Samuel Woolston, Vincentown, N. J., and William Corfield, Philadelphia, Pa.

Claim.—The reversible percolator, with the partitions A and B and the air-pipes E and C, substantially as and for the purpose hereinbefore set forth.

100,233. — HOOK FOR HARNESS. — Gustav Bernd and Adolph Bernd, Macon, Ga.

Claim.—1. The plate A, constructed substantially as shown and described, or so that when in use the hook shall rest upon said plate, and be kept from contact with the strap to which the plate is attached, as and for the purpose set forth.

2. In combination with the plate A, constructed as described, the hook B, substantially as and for the purpose set forth.

100,234.—CAP FOR POWDER-BOXES USED FOR DOMESTIC PURPOSES. — Henry A. Bartlett, Philadelphia, Pa.

Claim.—The metallic cap of a bluing or powder-box, having the distributing closed perforations cut within and forming a part of the metal of said cap during the operation of forming said cap, as herein shown and described.

100,235.—GRAIN-DRIER.—B. F. Sturtevant, Jamaica Plain, Mass.

Claim.—A grain-drier made up of a tube of wire-cloth or other suitable perforated or foraminous material, surrounded by another similar tube, partition, or screen, so as to leave a space between the inner and outer wire-cloths for reception of granular matter, when so combined with the air-heating and blowing apparatus, constructed substantially as described, as to cause currents of air to pass through the grain, for the purpose specified.

Also, in combination with the apparatus claimed, an outer case, *j*, provided with a return pipe, *e*, leading to a heater, and from that by a pipe, *d*, to the air-moving apparatus for reheating air which has passed through the grain.

Also, an arrangement of air-passages which, in connecting the inner air-space with the air-moving apparatus, pass through the space allotted to the grain.

Also, the combination of the heating and blowing apparatus, constructed substantially as described, and grain-bin with one or more wire-cloth air-distributing pipes.

Also, the inlet and outlet passages, controlled by the valves *v* and *w*, combined with the valve *u* and pipe *e*, for the purpose specified.

100,236.—PRESSURE-BLOWER WHEEL.—B. F. Sturtevant, Jamaica Plain, Mass.

Claim.—A blast-wheel made with the dishing concavo-convex shrouding, substantially as described.

100,237.—PRESSURE-BLOWER WHEEL.—B. F. Sturtevant, Jamaica Plain, Mass.

Claim.—A blast-wheel having a series of peripheral outlets, substantially as and for the purpose specified.

Also, a blast-wheel in which the side shroudings are continued by deflection toward, and meeting or nearly meeting in the center of the wheel, so as to form a peripheral shrouding.

100,238.—HOT-AIR BLOWER.—B. F. Sturtevant, Jamaica Plain, Mass.

Claim.—A blower in which heated aeriform fluids may be admitted to the action of the fan-wheel through side openings remote from the shaft, substantially as and for the purpose described.

Also, in such a blower, the central opening for admission of air, with the register or valve for regulating the amount of air admitted, substantially as and for the purpose described.

Also, the passage-ways for the incoming current of heated fluid, connected with the blower sides and with shaft-supporting tripods, so that the position of said passage-ways may be changed as desired without changing the position of the blower-case or the relation of the tripods with reference to the belts operating on the pulleys.

100,239.—PRESSURE-BLOWER.—B. F. Sturtevant, Jamaica Plain, Mass.

Claim.—A blower-case made with a scroll or spiral air-passage beginning and ending on parallel planes which are square or at right angles with the axis of the blast-wheel shaft, and open to receive air from the fan-wheel and to conduct it through a constantly-increasing passage to the outlet for the blower.

Also, the blast-wheel made with a flat perforated shrouded ring *u* uniting the side shroudings *t t*.

Also, the arrangement, with the described volute blower-case of side plates *c*, with circular joint edges.

Also, the arrangement, with a fan-wheel, having its peripheral shroudings reticulated or perforated, of screens *m*, for the purpose described.

Also, the arms *g*, which support the hub *h*, united by a ring fitting into the groove in the side of the blower for adjusting the arms with reference to the belt.

Also, the screw-threaded holes in the bushings *p*, combined with plugs or fillings of leather screwed therein.

Also, the improved blower, consisting of the peculiar scroll-shaped case, provided with screened side openings and containing a fan-wheel having a perforated peripheral shrouding so mounted as to be freely rotated within the case.

Also, a blower-case made up of dishing side plate as shown, to give side chamber room for the blast-wheel, surrounded by a scroll-shaped chamber which receives and conveys the air from the blast-wheel when made circular in planes which are radial from the center of the blast-wheel.

100,240. — COMPOUND AIR-HEATER AND STEAM-CONDENSER.—B. F. Sturtevant, Jamaica Plain, Mass.

Claim.—In combination with a rotary blower which has its delivery end provided with a series of distributing-pipes, a heater and cooler for utilizing the heat contained in exhaust steam, by transmission of the said heat into air-currents, said heater or cooler being composed of a case having a steam-inlet and outlet air-tubes, and air inlet and outlet passages, substantially as described.

100,241. — COMPOUND AIR-HEATER AND STEAM-CONDENSER. — B. F. Sturtevant, Jamaica Plain, Mass.

Claim.—The combination and arrangement of a rotary blower and compound heater and cooler, having vertical or nearly vertical tubes for the steam, and transverse passages for the air, all substantially as shown and described.

100,242. — COMPOUND AIR-HEATER AND STEAM-CONDENSER. — B. F. Sturtevant, Jamaica Plain, Mass.

Claim.—The arrangement of the tube-case *k* within an air-case, *f*, so that the air will pass around the tube-case, as well as through the tubes, substantially as and for the purpose specified.

Also, the tube-case, attached to and supported by the air-case by conections located at points reinforced by the castings between the ends of the tube-case, so as to leave the tube-case free to expand and contract under thermal changes.

Also, the air-case extension, constructed in removably attached parts *k* and *g*, to afford easy access to the tube-case, substantially as described.

Also, a tube-case in the steam-passages of which on the periphery are arranged deflectors *i*, substantially as and for the purpose specified.

Also, the arrangement of the blower and tube-case separated from each other a fixed distance and having between them the removably attached air-pipe, substantially as described.

100,243.—UNITING TUBES TO TUBE-SHEETS. B. F. Sturtevant, Jamaica Plain, Mass.

Claim.—The method of preparing tubes and tube-sheets, and uniting them by flanging the tube-holes in the tube sheets, soldering the ends of the tubes to the tube-hole flanges, turning over the ends of the tubes or not, as may be desired, and strengthening the union between the tubes and tube-sheets by inserting ferrules in the ends of the tubes and soldering them thereto, substantially as described.

REISSUES.

3,847.—INSULATOR.—Louis A. Canvet, New York, N. Y.—Patent No. 48,906, dated July 25, 1865.

Claim.—The glass insulator J, provided with an internal screw-thread, in combination with a wooden pin or bracket, having a corresponding screw-thread formed thereon, substantially as described.

3,848.—WEATHER-STRIP. — F. C. Gridley, Hudson, Wis.—Patent No. 56,209, dated July 10, 1866.

Claim.—1. The combination of the grooved strip C and the hinged (or equivalent) strip D, arranged to operate substantially as described.

2. The combination of the movable strip D and the lever E, constructed and arranged to operate substantially as set forth.

3,849.—MACHINE FOR ENGRAVING CALICO-PRINTER'S ROLLERS.—John Hope, Thomas Hope, and Heber Le Favour, Providence county, R. I., assignees, by mesne assignments, of John Hope and Thomas Hope.—Patent No. 13,402, dated August 21, 1855.

Claim.—1. The combination and arrangement of the two sets of measuring markers i i i i, the hold-back rods E F, and roller, with the plane surface table B, the same being not only to enable the design to be transferred, it being brought forward in regular sections, but to be maintained flatly upon the table, as described.

2. The two measuring indices Q R, in combination with the large pulley M and the shaft of the driving roller of the cylinder to be engraved.

3. The means for giving a partial rotary motion to the shell or cylinder during the operation of engraving the same in a pantographic engraving-machine, which consists in the employment of a friction driving-roller, A, operated by a tracer, V, through intermediate suitable connecting mechanism, substantially as herein described.

4. In combination with suitable supports for preventing endwise or lateral movements of the shell or cylinder to be engraved, the employment of a friction driving-roller, A, for giving an axial motion to the cylinder during the operation of engraving, when such driving-roller is arranged so as to have a movement independent of the governing tracer, to admit at proper times of the extra rotation of the cylinder, to bring up a fresh section of its surface, substantially as herein described.

5. The arrangement of the pattern-table, the tracer, and its carriage, the several other carriages, the mechanism for operating each, the wheel M, its shaft, and the supports of the roller to be engraved, the whole constituting an important improvement in engraving machinery and securing to it important advantages in operation as well as in construction.

3,850.—MACHINE FOR BENDING WOOD.—William P. Letchworth, Buffalo, N. Y.—Patent No. 31,095, dated August 18, 1868.

Claim.—The former A, grooved to the contour of the inside of the finished hame, as herein described, so that hames may be completely fashioned to their proper cross-sectional form, and then bent as and for the purpose set forth.

3,851.—TILE-MACHINE.—F. M. Mattico, Detroit, Mich.—Patent No. 20,266, dated May 18, 1858.

Claim.—1. The cut off valve O connected by the rod O' to the lever Q, suitably pivoted and provided at its upper end with a friction-wheel, Q', and operated alternately by the cam S attached to the sweep C, and by the mechanism impelling the plunger H, as described, shown, and set forth.

2. The arrangement, in the tile-machine herein shown, of the cams I and K upon the same side of the shaft B, and with the plunger H, when said cams have respectively such a contour and such a relation to each other that by their action the forward motion of the plunger H is less rapid than its backward motion, and that a lost motion occurs at each revolution of the shaft aforesaid while the box is being filled with clay, all as herein shown and described.

3,852.—WRENCH.—The Collins Company, Collinsville, Conn., assignee of Lucius Jordan and Leander E. Smith.—Patent No. 50,364, dated October 10, 1865.

Claim.—1. The step E, made substantially as described, and for the purpose set forth.

2. The step E, rigidly fastened to the bar A, as described, whereby it is rendered capable of supporting the back pressure of the screw-rod C.

3. The combination of the step E, the screw-rod C, rosette D, and the nut F, substantially as and for the purpose described.

4. As a new article of manufacture, a wrench as described, with the ferrule or step E, and nut F, secured substantially as described.

DESIGNS.

3,854.—ORNAMENTING GLASSWARE.—Thomas B. Atterbury, Pittsburg, assignor to William Doyle, Birmingham, Pa.

Claim.—The design for ornamenting glassware, a curtain or drapery design, as shown and described.

3,855.—ORNAMENTING GLASSWARE.—John Bryce, Pittsburg, Pa.

Claim.—The design for glassware shown, consisting of strawberry stems, leaves, and fruit, formed *in relievo*, and arranged substantially as described.

3,856. — PIANO-CASE. — George H. Davis, Boston, Mass.

Claim.—1. In forming the corners of the case by small vertical planes diagonal to the sides, so as to form a diagonal face at the corner, which may be ornamented in conformity with the sides of the case, or independently, as is described.

2. In combining with the diagonal face formed on the corner of the case, an ornamental console or tablet, such as is shown in the drawing.

3. In forming the console or ornamental tablet in the manner shown in the drawing.

3,857.—LAMP-CHIMNEY.—Edward Foster, Boston, Mass.

Claim.—The design for a lamp-chimney, substantially as represented in the accompanying drawing, and as hereinbefore described.

3,858.—CASTER.—George B. Garrett, Philadelphia, Pa.

Claim.—The design for cruet-casters, as shown.

3,859.—STOVE-PLATE.—Nicholas S. Vedder, Troy, N. Y.

Claim.—The design for the plates or parts F, I, L, O, and R of a cooking-stove, as herein described and shown.

3,860.—STOVE-PLATE.—Nicholas S. Vedder, Troy, N. Y.

Claim.—The design for a door or doors or plate or plates of a cooking-stove, as herein shown and described.

3,861.—STOVE-PLATE.—Nicholas S. Vedder, Troy, N. Y.

Claim.—The design for a door or doors or a plate or plates of a cooking-stove or range, as herein specified and shown by the accompanying photographic illustration.

3,862.—STOVE-PLATE.—Nicholas S. Vedder, Troy, and Tobias S. Heister, Lansingburg, N. Y., assignors to Nicholas S. Vedder.

Claim.—The design for the above-named plates or parts of a stove, as shown in the aforesaid photographic illustration.

3,863.—STOVE-PLATE.—Nicholas S. Vedder, Troy, and Tobias S. Heister, Lansingburg, N. Y., assignors to Nicholas S. Vedder.

Claim.—The design for a door or doors or a plate or plates of a stove, as herein specified and shown.

3,864.—STOVE-PLATE.—Nicholas S. Vedder, Troy, and Tobias S. Heister, Lansingburg, N. Y., assignors to Nicholas S. Vedder.

Claim.—The design for the above-named parts of a parlor-stove, as shown in the aforesaid photographic illustration.

3,865.—STOVE-PLATE.—Nicholas S. Vedder, Troy, and Tobias S. Heister, Lansingburg, N. Y., assignors to Nicholas S. Vedder.

Claim.—The design for a foot and a door or doors, or a plate or plates of a cooking-stove, as herein specified and represented by the accompanying photographic illustration.

3,866.—STOVE-PLATE.—Nicholas S. Vedder, Troy, and Tobias S. Heister, Lansingburg, N. Y., assignors to Nicholas S. Vedder.

Claim.—The design for the plates or parts A, H, L, O, and R of a cooking-stove, as herein described and shown.

3,867.—STOVE-PLATE.—Nicholas S. Vedder and Francis Ritchie, Troy, N. Y., assignors to Nicholas S. Vedder.

Claim.—The design for the above-named plates or parts of a stove, as shown in the aforesaid photographic illustration.

3,868.—PRESSURE-GAUGE CASE.—Edwin A. Wood, Utica, N. Y.

Claim.—The design for a pressure-gauge case, as shown.

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PATENTS.

100,244.—SUCTION-HOSE.—Albert F. Allen, Providence, R. I.

Claim.—The improved suction-hose herein described, consisting of the seamless hose of textile fabric treated with a suitable water-proof compound, and the spirally-laid wire lining, substantially as described.

100,245. — MAIN-SPRING BARREL FOR WATCHES.—John P. Allen, Springfield, Ohio.

Claim.—1. In combination with the body and cap or head, that together form a main-spring barrel, the inclined hooks on one, and the beveled holes in the other, for forming a connecting and disconnecting mechanism between the two parts, substantially as and for the purpose described.

2. In combination with the body and cap or head of a main-spring barrel, the beveled surfaces *c c*, so that the expansive force of the main-spring, when broken or unhooked, against the rim of the body, shall not produce undue friction between the two parts, but aid to separate them, substantially as and for the purpose described.

100,246.—WATCH-REGULATOR.—John P. Allen and William E. Banta, Springfield, Ohio.

Claim.—In combination with the regulator indicator of a watch, and the segment that operates upon the hair-spring, the spring fork or fingers on the former, and the round pins upon the latter, so that every movement of the indicator shall be positively transmitted to the segment, without lost motion or play between them, as in ordinary cogged segments, as described and represented.

100,247.—STOP-MECHANISM FOR CARDING-MACHINE.—C. W. Anderson, Grosvenor Dale, Conn.

Claim.—1. The combination of the mechanism for operating the belt-shipper from the funnel when the sliver breaks, consisting of the vertical swinging bar F, levers C E and springs D *d*, when constructed and arranged with respect to each other, in the manner described.

2. The combination with the pivoted lever F and the rollers *h h'* of the loosely-pivoted roller H, constructed and arranged as described, with one end resting over the journal of the movable roller *h*, and the other provided with a graduated cam, bearing against a pin projecting from the lever F, by which the belt-shipping mechanism is operated when the sliver doubles or crowds between the rollers, all as set forth.

3. The combination with a pivoted bar, F, for operating belt-shipping mechanism, of a funnel G affixed to the top thereof, and a vibrating lever, H, resting with its cam end against the pin *i*, and operated by the elevation of the loosely-journaled roll *h'*, all arranged as specified, and for the double purpose of throwing the driving-belt from the fast pulley whenever the sliver breaks or doubles between the rolls.

100,248.—CHAMELEOTROPE.—Smith W. Anderson, New York, N. Y.

Claim.—1. The holder F, secured upon a rotating shaft, A, for the purpose of holding a colored disk or plate in an eccentric position to produce a varying display of colors, as set forth.

2. The combination of the lever D with the shafts C and A, and with the holder F, all arranged to produce a somewhat uneven motion of the shaft A, as specified.

100,249.—STEAM-TRAP.—John Ashworth, North Andover, Mass.

Claim.—1. The combination, with the movable chamber, of the discharge-valve placed at the bottom of the same, the lever for operating the valve, and the fixed stop or fulcrum for the lever, all co-operating substantially as described.

2. The combination of the movable chamber and its accessories for discharging the condensed water, and the counterpoise and its accessories, and the flexible pipe that connects the space to be drained with said chamber, in such a manner that, by the heating and cooling of the pipe, or some other part of the apparatus that will produce the same result, the expansion and contraction thereby produced will so change the relative preponderance of the counterpoise and chamber as to adapt the apparatus to the conditions of work and rest, substantially as described.

100,250.—FASTENING FOR NECK-TIES.—John Bachelder, Norwich, Conn.

Claim.—1. The interlocking loops *c* and *d*, operated by one or more springs for the purpose of holding the supporting-band or ends of a neck-tie.

2. The combination of the interlocking loops *c* and *d* with the spring *a*, base plate *b*, and shield *e*, substantially as described and for the purpose specified.

100,251.—WAGON.—J. H. Barr, Mansfield, Ohio.

Claim.—In combination with the coupling-bars J J, the adjusting-bars K K, substantially as and for the purposes described.

100,252.—ROCK-DRILL.—A. Blatchly, Central City, Colorado.

Claim.—1. The combination with the cylinders and wheel B, provided with grooves H^2, of the rotary cam-disks H, yokes I, and bridges, when arranged substantially as specified.

2. The arrangement of the hollow shaft D, packing-rod E, cylinder-head and cam-wheel, substantially as specified.

3. The arrangement of the hollow shaft, tapered pistons F, concave piston-heads and springs G, substantially as specified.

4. The combination with the drill-carriage, having projections *u*, of the cam-projections P, when the latter are formed to discontinue their action upon the carriage previous to the blow of the drill, substantially as specified.

5. The combination with the drill-shank, provided with grooves, as specified, of the spring clamping-jaws *b*, and clamping-ring *g*, when arranged to clamp and release the said jaws, substantially as specified.

6. The arrangement of the shoulder K of the drill-carriage and clamping-jaws, substantially as specified.

7. The combination with the drill-shank of the feeding-jaws *a*, when arranged substantially as specified.

8. The combination with the drill-shank of the holding-jaws *b* and feeding-jaws *a*, arranged substantially as specified.

9. The combination with the holding and feeding-jaws of the cam-rings, pins, and jaws *l*, substantially as specified.

10. The combination with the cam-rings *m* of the bar *n*, crank *p*, and key *q*, all substantially as specified.

11. The combination with the drill shank of the toothed-wheel *t*, projection s^2, and spring-lever s^1, all arranged substantially as specified.

100,253.—WASHING-MACHINE.—William A. Brown, Philadelphia, Pa.

Claim.—1. The combination and arrangement of shaft S, pinion I, gear-wheel K, pinion L, and shaft *u*, with agitator A, substantially in the manner and for the purpose set forth.

2. The grated or perforated false bottom F and protector W, constructed substantially as and for the purpose set forth.

3. The combination and arrangement of central revolving agitator A with protector W, false bottom F, and hollow shaft *u*, substantially in the manner described.

100,254.—IRON BRIDGE.—Henry C. Brundage, Buffalo, N. Y.

Claim.—1. The key H^3, in combination with the united bearing and angle blocks and chord bars, substantially as hereinbefore described.

2. A compression or top chord composed of Z-beams, united by lateral bolts B^1 and rivets B^2, as hereinbefore described.

3. The arrangement of the angle-bearing block K, with its lugs K′ and the diagonal rods D and E, passing through the notched flanges of the upper chord beams and the column capital L, substantially as hereinbefore set forth.

4. The grooved seat and countersunk bolts *m′*, as a means of uniting tie-beams M and angle blocks K K.

5. The combination of center core C^1, of cast-iron, with T-bars C^2, of wrought-iron, and banding hoops C^3, to constitute a post or column, in the manner substantially as hereinbefore set forth.

100,255, antedated February 16, 1870.—HYDRANT.—S. G. Cabell, Quincy, Ill., and A. Q. Ross, Cincinnati, Ohio.

Claim.—1. The combination of the reservoir A, stand-pipe F, and piston-head E, with the valve-seat C, provided with a perforated cap, D, and check-valve, all constructed and arranged to operate substantially as herein described, and for the purpose set forth.

2. The perforated cap D, in combination with the valve-seat C, when constructed and arranged to operate substantially as herein described, and for the purpose set forth.

100,256.—SPRING-BED BOTTOM.—J. B. Campbell, Cincinnati, Ohio.

Claim.—The construction and arrangement of the flexible bands C C and stiff bands D D, in combination with the springs A A, having vertical projections *a a* and *b b*, and with the cross-bars B B and slats E E, as and for the purpose herein specified.

100,257.—BED-LOUNGE.—Henry S. Carter, Chicago, Ill.

Claim.—1. The folding part B of a bed-lounge, provided with an adjustable head, D, which is so arranged by means of a hinged stop, I, that it may be elevated to form a suitable lounge, and also so that it will form a support for the folding part when opened, as set forth.

2. The combination of the adjustable head D, stop I, folding part B, spring-heads G, depending rods K, and slats L, with the body of the lounge P, as and for the purpose described.

100,258.—TAG-MACHINE.—Charles H. Chapman, Shirley, Mass., assignor to A. G. Snell, same place.

Claim.—1. The adjustable sliding frame E E^1 E^2, in combination with the feeding-in device C^9 C^{10} C^7 C^8, substantially as described and for the purpose set forth.

2. Combining with the sliding frame E E^1 E^2 the cam-plate D^6, cam D^4, and rod D^5, operating substantially as described, and for the purpose set forth.

3. Combining with the feed-rollers the yielding bands P P, substantially as described and for the purpose set forth.

4. The arrangement of the folding guide L L^1, in combination with the yielding bands P P of the feed-rollers C^6, whereby the folded part of the tag is directed onto the yielding part of the roll, operating substantially as described and for the purpose set forth.

5. In combination with the tag-machine the wiper H^3, operating substantially as described and for the purpose set forth.

100,259, antedated February 19, 1870.—COAL-HOISTING APPARATUS.—Lewis S. Chichester, Brooklyn, N. Y.

Claim.—The bucket *f*, provided with the handles *t*, in combination with the bail *g*, stops *n*, swinging frame *e*, and pulley *k*, the parts being arranged and operating substantially as set forth.

Also, the stops *n*, upon the swinging frame *e*, in combination with the hoisting-rope or chain *h*, bail *g*, and bucket *f*, as and for the purposes specified.

100,260.—LAMP-BURNER.—Michael Henry Collins, Chelsea, Mass.

Claim.—The spring presser F, as composed of the spring *e* and the clasp *p*, or means of applying such spring to and enabling it to be removed from the wick tube or burner.

Also, the arrangement as well as the combination of the guide notches *f f* and circular opening *e* in the rest C, with the notched springs *g g*, combined and arranged with the annulus *c* of the deflector supporter, substantially as explained.

100,261.—SPOKE-LATHE.—Charles B. Conant and Hiram Thompson, Worcester, Mass.

Claim.—1. The combination with the shafts E and F, pulleys O P R S, and their belts, as shown and described, of the shipper-bar A, spring *k*, and double clutch Q, as and for the purposes set forth.

2. The combination with the shipper lever *i* of the tripping-lever *m*, substantially as and for the purposes set forth.

3. The combination of carriage B and dog T with tripping-lever *m* and lever *i*, substantially as and for the purposes set forth.

4. The combination with carriage B and shipper-lever *i* of the dog Y, provided with a stop-pin, 11, substantially as and for the purposes set forth.

5. The combination with the gears G H I of the loose operating-pulley K, provided with a pawl or pawls and ratchet-wheel L, said parts being arranged in relation to each other as and for the purposes described.

6. The combination with the swinging frame V of the bar 3 and spring 8, substantially as and for the purposes set forth.

7. The combination with the swinging frame V and bar 3 of spring 5, substantially as and for the purposes set forth.

8. The combination with bar 3 and spring 4 of the dog Y, substantially as and for the purposes set forth.

9. The relative arrangement of the hinged frames V and 18, having their pivots or axes of oscillation in the same horizontal plane, substantially as and for the purposes set forth.

10. The combination with the hinged frame V, and its cutter-head U and guide-wheel W, of the hinged frame 18 and its supporting and steadying-wheels 21 and 22, as and for the purposes set forth.

11. The combination with frame 18 of the supporting-levers 19 and 20, adjustable connecting-rod 24, and spring 25, arranged substantially as and for the purposes set forth.

12. The combination with the laterally-adjustable stand 27 and center 28, herein described, for supporting one end of the pattern, of the hinged frame 18 and adjustable devices which it carries for supporting the pattern and blank spoke against the action of the cutters and guide-wheel, substantially as described.

13. The combination with the upper end of the frame V, and journal of the guide-wheel W, of the set-screw *x*, upright flanges 1, and clamp-screws 2, as and for the purposes described.

100,262.—FOUNDATION FOR BUILDINGS.—Almond F. Cooper, San Francisco, Cal.

Claim.—1. The frames A and C, separated by India-rubber buffers B or other equivalent spring, substantially as and for the purpose herein described.

2. Erecting buildings upon elastic cushions or springs to relieve them of the effect of shocks, substantially as herein set forth.

100,263.—ROCKING-HORSE.—Jesse A. Crandall, Brooklyn, N. Y.

Claim.—1. The combination of cross-bars G H, arms *e e′*, rods *d d′*, with springs I I′, and shafts *a b*, all constructed, arranged, and fitted together, to operate in the manner and for the purpose specified.

2. The arrangement, in the body of a rocking-horse, of springs which operate alternately to assist in throwing the horse forward and backward, in the manner shown and described.

100,264.—SAFETY-HATCH FOR BUILDINGS.—George N. Creamer, Trenton, N. J.

Claim.—1. The hatch, moving horizontally across the entire hatchway, with a slot extending in the line of its movement, through which the hoisting-rope depends, substantially as and for the purpose described.

2. The combination with the slotted hatch, moving entirely across the hatchway, of the ledge-supports and the tenons and mortises, to prevent the hatch being lifted, substantially as described.

3. The combination with the hatch, of the peculiar locking-tumbler, constructed and operating substantially as described.

4. The combination with the hatch and the system of pulleys and cords, of the spring drums, substantially as and for the purpose described.

5. The combination with the hatch and the tripping-cord of the friction-arm or bracket P, substantially as and for the purpose described.

6. The combination with the hatchway of the rails, when set off from the framing of the hatchway so as to leave openings between the rails and framing, substantially as and for the purpose described.

7. The combination with the mechanism for opening the hatch of the spring drums for automatically closing the hatch, substantially as described.

8. The combination with the tripping-cord and the hatch of the marking-blocks, substantially as and for the purpose described.

9. The arrangement of the pulleys and spring drums, substantially as described, whereby the operating mechanism is all placed out of the way, and does not obstruct the floor, substantially as described.

10. The combination with the hatch of a cord, J, for pulling it open, and a cord, I, for closing it, substantially as described.

100,265.—SELF-ACTING HATCHWAY-HOIST.—George N. Creamer, Trenton, N. J.

Claim.—1. The combination of the hatch and the operating mechanism of the hatch with the hoisting apparatus, so as not to obstruct the floors, substantially as and for the purpose described.

2. The combination of the hatch and the operating mechanism of the hatch with the hoist, so that the same power which raises the bulks may at the same time operate the hatch, substantially as described.

3. The combination with the hoist of the hatch and the mechanism for operating the hatch, so that the hoist may raise or lower and the hatch open or close simultaneously or independently, substantially as described.

4. The combination with a hoist of a horizontally-sliding slotted hatch, substantially as and for the purpose set forth.

5. The combination with the hoist of the horizontally-sliding slotted hatch and the locking-tumbler, substantially as and for the purpose described.

6. The combination with the hatch of the weights K K′, cords, pulleys, and foot-treadle, whereby the hatch is made to open automatically.

7. The self-opening and self-closing and locking hatch, substantially as described.

8. The combination with the hoist of the cogged wheel N and partially cogged drum O, whereby the action of the gearing is rendered intermittent, substantially as and for the purpose described.

9. The combination with the hoist of the wheels N and O, the bell-crank and the rods or cords for throwing the mechanism into or out of gear, substantially as described.

10. The combination with the bell-crank, rods, or cords, cog-wheels N and O, and foot-lever of the button for keeping the mechanism in gear without detaining the operator for that purpose, substantially as described.

11. The combination with the hatch of the weights K K′, the system of pulleys and cords, the gearing and the bell-crank and treadle mechanism, when all arranged and operating substantially as herein described.

12. The rocking frame *O′* for the drum O, as and for the purpose described.

13. The combination with the hatch of the reversible gears N and O, in such manner that they will operate the hatch whichever way they are rotated, substantially as described.

14. The combination with the hoist of the pulleys n^1 *n*, the cog-wheel N, and the sector cog-wheel O, mounted on the rocking frame *O′*, substantially as and for the purpose set forth.

15. The combination of the cord P, the weight K′, and the cogged drum O mounted in the rocking frame, substantially as and for the purpose described.

16. The combination with the cord P and weight K′ of the cord *k′* and its pulleys, substantially as and for the purpose described.

100,266.—GRAND PIANO.—George H. Davis, Boston, Mass.

Claim.—The combination of the symmetrically-shaped case, the symmetrically-shaped sounding-board, with the bridge placed centrally upon it, and of such height as to bring the strings close to it; the iron frame to support the strain of the strings adapted to such form of case and sounding-board, and to receive a set of strings arranged in a horizontal flat scale; the series of strings so arranged,

and an action arranged at the front end below the level of the strings, all substantially as described.

100,267.—VENTILATOR.—Edward Mortimer Deey, New York, N. Y.

Claim.—1. The air-conducting pipe M L O P, constructed and arranged, in combination with the fire-place D and the evaporator E, substantially as and for the purpose herein specified.

2. In combination with the foregoing the movable grate E, with open bearings G G and G' G', for the purpose set forth.

100,268.-HYDROCARBON BURNER.-Adolphe De Landeée, Paris, France.

Claim.—1. The particular construction of upper half *b* of said grate, with its sliding and regulating-plate *c* and accessory parts.

2. The particular construction of lower half or door *c*, with its trough *i*, supply-pipe *j k*, and accessory parts, all attached to said door *c*.

3. The method of feeding air by two separate currents, one above and the other below the flame of burning liquid, substantially as specified.

100,269.—COMPOSITION FOR ROOFING, PAVING, &c.—Edward J. De Smedt, New York, N. Y., assignor to New York Improved Anthracite Company, New York city.

Claim.—Coal-tar or coal-pitch, or their chemical equivalents, combined with the substances termed and known as Ritchie mineral and Albertite, either or both, substantially as and for the purpose herein set forth.

100,270.—VAPOR BURNER.—Henry C. De Witt, Waukegan, Ill.

Claim.—1. The construction and arrangement of a metallic gas-generator and burner, when the same has combined within it the air-inlet chamber *b*, mixing-chamber *h*, reservoir *a*, tubes *e* and *g*, and thumb or set-screw *d*, in the manner and for the purpose herein described.

2. The combination and arrangement of the thumb or set-screw *d* (containing within it the jet *c*) with the air-inlet chamber *b* and tube *g*, in the manner and for the purpose herein described.

100,271, antedated February 17, 1870.—UMBRELLA-FRAME.—Harry E. Donor, New York, N. Y., assignor to himself and Robert E. Brett, same place.

Claim.—In an umbrella-frame, the ribs C and stretchers C', having their ends bent laterally or at a right angle to the staff, whereby each is adapted to be individually or separately detached from the other and its respective notch, as herein shown and described, for the purpose specified.

100,272, antedated February 16, 1870.—RAILWAY-CAR COUPLING.—John W. H. Doubler, Chicago, Ill., assignor to himself, J. M. Clendening, S. C. Hayes, and Thomas F. Rooney, same place.

Claim.—1. A spring, P, and movable block or rod J, when constructed and arranged so as to operate in a car-coupler, substantially for the purpose specified.

2. The arm-lever I and springs P, when constructed and arranged to operate the coupling-hook H, substantially as and for the purposes specified.

3. The piece D, bumper B, and hook H, when constructed and arranged substantially as and for the purposes specified and shown.

4. The sleeve F, when constructed and arranged so as to strengthen the coupling-pin, substantially as described and specified.

5. The combination of the ordinary link-and-pin bumper-head and hook-coupler above described, when so constructed and arranged that either or both can be used for coupling the cars, substantially as specified and shown.

100,273.—BREAKER-ROLLER.—Edwin Douden, Lykens, Pa., assignor to himself and Charles Broome, same place.

Claim.—A smooth-faced roller, A, having holes *a'* of uniform size, combined with detachable slotted teeth B fitting therein, and having hooks *b'* formed upon the forward parts of their bases to fasten inside of the said holes, all as shown and described, and for the purpose specified.

100,274. — CARBURETER. — Cleaveland F. Dunderdale, New York, N. Y.

Claim.—The combination and arrangement of the perforated tube D, the cover or funnel G, the curtain H, encircling the perforated tube D with the inlet and outlet tubes, and with the liquid contained in the chamber E with each other, and that patented to me as aforesaid, for the purpose as herein set forth, shown, and described.

100,275.—SCHOOL-DESK.—William P. Erwin and Thomas A. Dugdale, Richmond, Ind.

Claim.—Constructing a school-desk and seat by means of the folding top A, hinges H, receptacle C, end pieces E, slot L in the front legs S, and the vibrating brace I, flexible pieces T''', and seat F, the whole being arranged and operated as above described.

100,276.—SCHOOL-DESK AND SEAT.—William P. Erwin and Thomas A. Dugdale, Richmond, Ind.

Claim.—1. Constructing a swinging desk with the piece Y in connection with the piece 2, pin I, lid B, pins L, and notches P, as described.

2. The combination of brace G, hook H, pin I, pin N, and desk A, for the purpose of securing the lid of the desk when the desk is swung down, and also for holding the desk up.

3. The construction of the braces or supports E E'' with the hooks 3 and arms 4, in combination with the pieces R, pins 8, and 6, seat D, and gum-elastic pieces T, as described.

4. Securing the desk when swung down, by means of the hooks or catches 3, and notches F, in combination with seat D, constructed and arranged as above described.

100,277.—CORN-CULTIVATOR.—John C. Erwood, Vernon, Ind.

Claim.—The combination of an adjustable mold-board, A, with a triple-toothed cultivator, for the purpose and in the manner substantially as shown.

100,278.—CORSET.—D. H. Fanning, Worcester, Mass.

Claim.—A corset, made or composed of separate vertical bone and steel pocket-supporting pieces C, D, E, in combination with gore-shaped central supporting and connecting-pieces F F, as shown in the drawing and as above described.

100,279.—OIL-CAN.—Joseph L. Folsom, East Boston, Mass.

Claim.—Combining the lamp reservoir E with the oil-can A, in the manner and for the purpose hereinbefore shown and set forth.

Also, combining an oil-can, lamp, and reflector in the manner and for the purpose substantially as hereinbefore set forth.

100,280. — VEGETABLE-CUTTER. — Michael Gerhard, Newark, N. J.

Claim.—The combination of the plate A, center pin *f*, posts C, and cross-bar *a*, with the sliding revolving shaft E, openings *e*, and cutters F, all arranged to operate as set forth.

100,281. — HOT-AIR FURNACE. — Bartholomew Gommenginger, Rochester, N. Y.

Claim.—1. The inclosed flue E and vertical jack-

et G, when combined together and arranged as herein described, for the purpose specified.

2. Specially, the flue E, located between the feed-trough and ash-pit, and surrounding a portion of the fire-pot, and opening through the top of the ash-pit, and so arranged as to have the free passage-space *c d f*, in the manner and for the purpose specified.

3. Forming the concentric jacket G with the narrow center *g* and projecting ends *b b*, in the manner and for the purpose specified.

4. The supplementary registers I I, located in the hot-air space of the furnace, when combined with the flue E, as herein set forth.

100,282. — COMPRESSED-AIR CYLINDER.—George Wilson Warfield Goodwin, New Orleans, La.

Claim.—A tank for holding compressed air, formed of parts A B B, each composed of thin sheet copper, covered with successive layers of tin-plate, lapped and soldered together in the manner described.

100,283.—BREASTPLATE FOR THE BREAST-COLLARS OF DOUBLE HARNESS.—Christopher Graham, New York, N. Y.

Claim.—A breastplate for the breast-collars of double harnesses, composed of the plate A, curved arms *a a*, and the curved bar *b*, provided with a loop or eye, *c*, at each end, and the martingale-loop *d* at the lower edge of the plate A, all being combined, constructed and applied, substantially in the manner as herein shown and described.

100,284.—VIOLIN.—Joseph Grandjon, Paris, France.

Claim.—The oblong form of the violin, the mode of rendering the finger-board and the body of the instrument capable of separation and readjustment, by aid of the projection B, bracket A, and aperture B''.

Also, the division of the bow by means of the peg K and socket M, such improvements being intended to facilitate package in traveling or transport.

100,285, antedated February 21, 1870.—WICK-TUBE FOR LAMPS.—James H. Gray, Boston, Mass.

Claim.—A separate spring, A, for each wheel *c* of a lamp-wick tube, in the manner and for the purpose specified.

100,286.—CONSTRUCTION OF BARRELS AND PACKAGES.—Charles Green, Wilmington, Del.

Claim.—1. The additional heads, connected by rods or equivalent devices, as and for the purpose described.

2. The side strips let into or otherwise connected with the additional heads, as and for the purpose described.

100,287. — PARLOR HOT-HOUSE. — Patrick Griffith, Brooklyn, N. Y.

Claim.—1. A hot-house formed of the pan A, water-chamber B, heating-chamber C, the metal-lined bottom G with aperture F therein, deflectors I, and pipes J O L, all constructed and arranged as and for the purpose specified.

2. A plant-receptacle A for a hot-house, having the vertical tube L with the removable cap *m* thereon, as and for the purpose specified.

3. The water-heating device consisting of the deflectors I, chamber C, and aperture F, the flame of a lamp being applied to the latter, in the manner set forth.

4. A water-chamber B for hot-houses, provided with an adjustable pipe, O, which serves both for an inlet and outlet for the water, as set forth.

100,288.—ADDING-MACHINE.—John Groesbeck, Philadelphia, Pa.

Claim.—The tappet E, when constructed with the segmental curve *f*, and combined with the multiplier-wheel D, spring F, and segmental projection *g* of the center-pin *h*, and arranged to operate in relation to the wheel C', substantially as specified.

100,289.—LANTERN.—Charles Hart, Wakefield, Mass.

Claim.—The guard-frame C, as composed of the series of wires *l l l*, the entire ring *k*, the split ring *i*, (formed with a clasping-groove, *k'*, as set forth,) and the contracting ring *m'*, the said frame being surmounted by the partitioned cap D, and for application to the lamp in manner as set forth.

Also, the chimney-cap D, as so applied to the guard-frame C as to be adjustable vertically or capable of being raised and disposed relatively to such frame and the chimney, as explained.

Also, the guard-frame C, as made with its lower annulus *i*, open at one side, and formed with the channel *k* to fit on the lip *h* of the oil-reservoir *g*, and provided with a closing ring, *m'*, as specified.

Also, the arrangement of the lower annulus *i* of the guard-frame C, with an open space, *u'*, between it and the chimney or its rest, the same being so that the air for supply of the burner may pass into and through such space, and thence underneath and through the chimney-rest, as described.

Also, the combination and arrangement of the foraminous partition *v* with the chimney-rest and passage *w'*, as described, for the conveyance of air to the said chimney-rest.

100,290.—TOY.—H. J. Heald, Birmingham, Conn., assignor to himself and Henry Somers, same place.

Claim.—A toy formed of the bar A, having ears *a a* and spring E thereon, the wheel B, with pins *c* on its side face, belt *c*, pulley *b*, and rotating shaft C for the reception of some toy, all combined, arranged, adjusted, and operated as and for the purpose specified.

100,291.—FERROTYPE PLATE.—Horace M. Hedden, Worcester, Mass.

Claim.—A ferrotype covered by a coating composed of linseed-oil and India red, substantially as and for the purposes set forth.

100,292.—CHURN.—Chas. Paterson Holmes, Governeur, and Albert L. Howell, Mohawk, N. Y.

Claim.—1. The combination with the dasher and the churn-case of the fan-blower, when arranged and applied at the side of the case, substantially in the manner herein described.

2. The combination of the air-injecting spout H with the guard-block N, substantially as specified.

3. The arms or beaters M, constructed and arranged with the angles on the front and the grooves at the rear sides, for action upon the cream, substantially in the manner specified.

4. The combination of the improved dasher herein shown and described with a churn case, the sides and bottom of which represent five sides of an octagonal figure, substantially as specified.

100,293. — MANUFACTURE OF ARTIFICIAL FLOWERS.—Catherine E. Howard, San Gabriel, Cal.

Claim.—Artificial flowers, when made, as described, from crude cocoon of the silk-worm.

100,294.—STEAM BLOWER AND EXHAUSTER.—John Howarth, Salem, Mass.

Claim.—1. The tubes 1 2 3, &c., in combination with frame B, constructed substantially as set forth.

2. The tubes 1 2 3, &c., and frame B, in combination with pipe A, constructed as shown, substantially as described.

3. The combination of tubes 1 2 3, &c., frame B, pipe A, and induction-pipe C, all arranged and operating substantially as herein set forth.

100,295.—CARRIAGE-TOP.—Moses T. Jackson, Montrose, Pa.

Claim.—The spring D, arranged on the fixed outwardly-projecting arm B of the rail A, and having its ends secured in the holes in the brace and lug, respectively, so as to be adjustable, as and for the purpose specified.

100,296.—CIGAR-BOX.—Chauncey Jerome, New Haven, Conn., assignor, by mesne assignments, to Samuel B. Jerome, administrator of estate of Chauncey Jerome, deceased, and Samuel B. Jerome, assignor to Richard A. Douglass, Philadelphia, Pa.

Claim.—A cigar-box composed of slabs, consisting of an exterior and interior veneered surface *a a* of Spanish cedar, with an ordinary common filling or central part *b* of light wood between, to which the veneers are attached, as herein set forth.

100,297.—PORTABLE BATH.—E. J. Knowlton, Ann Arbor, Mich.

Claim.—1. A bath constructed of pliable material, pendent from a frame formed or sprung into shape as a hoop.

2. A pendent bath of pliable material, as described, partitioned into sectional baths for varying uses, whether for parts of the person, for the position of the person, or for adaptation for children, substantially as shown and described.

3. The arrangement of cords and means for their adjustable attachment, by which the described partitions may be formed, substantially as shown.

4. The combination of a pendent bath, having rounded parts, with a chair, in such a manner as to afford a seat within the chair, for uses as a sponge-bath or foot-bath.

5. The combination of a pendent bath with the seat of one chair and the rounds or horizontal braces to the legs of another chair, in such a manner as to form a hip or sits-bath, by means of a single contraction of the pliable material, as described.

6. A transverse bracing-support at each end of the described frame, by means of which a rest is obtained upon chair-supports, and attachment to the chairs may be secured.

100,298, antedated February 26, 1870.—DOUBLE-SHOVEL PLOW.—G. W. Lawbaugh, Geneseo, Ill.

Claim.—The within-described plow-stock, consisting of the side-beams A and A′, feet C and C, handles H and H, and braces I, K, and L, all constructed and arranged substantially as and for the purpose shown.

Also, the devices employed for rendering the shovels adjustable, consisting of the block E, bolts *e e′* and F, and the wedge G, substantially as shown and specified.

Also, the combination of the beam A and braces I and L, substantially as and for the purpose shown.

Also, the fender N, when connected to the plow by means of the flat adjustable spring support M, as shown, and for the purpose specified.

100,299.—FOLDING-CRATE.—Landy A. Lindsey, Jackson, Miss.

Claim.—The combination of front A, cover B, rear side C, bottom D, and ends E, each of said parts being constructed and arranged, with respect to the others, in the manner specified, for the purpose of forming a fruit-crate.

100,300.—FLOWER-POT.—Mathias Ludlum, Williston, Vt.

Claim.—A flower-pot provided with a removable bottom, having the recesses D and stop E, and the shouldered legs B, as shown and described.

100,301.—FLOOR FOR DRYING PEAT.—Jas. B. Lyons, Milton, Conn.

Claim.—An improved structure to be employed in the drying of peat, consisting of the inclined floors C upon supports *b b*, and provided with tramways D E, turn-tables F, and sub-drains A, all constructed and arranged as herein shown and described.

100,302.—PEAT-MACHINE.—James B. Lyons, Milton, Conn.

Claim.—1. The staves *d d*, provided with right and left angular blades *e e e*, arranged in series to form a cylinder, for operating substantially in the manner and for the purposes herein specified.

2. The combination of the cylinder C, of the concave formed of alternate smooth staves and staves provided with a series of lugs, *f f f*, so inclined backward as to prevent the fibers in the peat from clogging, when said parts are constructed and arranged as herein set forth.

100,303.—SHAFT-COUPLING.—Henry F. Mann, Pittsburg, Pa.

Claim.—The combination of the split or sectional hub, with its exterior double cone or tapering surfaces, the cylinders with their interior correspondingly conical or tapering surfaces, the bolt-seats and tightening-bolts, or their substitutes, substantially as and for the purpose described and represented.

100,304.—MANUFACTURE OF POTTERY, &c. Philip Marquardt, Buffalo, N. Y.

Claim.—The within clearly-described composition, the parts combined in the manner and proportion and for the uses and purposes herein set forth.

100,305, antedated February 14, 1870.—ICE-CREAM FREEZER.—Benjamin Green Martin, Williamsburg, N. Y.

Claim.—1. The up-and-down adjustable rotating shaft D, combined with the pivoted arms *e e* to support the rotating vessel E, substantially as herein shown and described.

2. The stirrer F, consisting of the pivoted arms A and vertical bars *i*, and made self-adjusting, substantially as herein shown and described.

100,306.—FRUIT-JAR.—John L. Mason, New York, N. Y.

Claim.—1. A cover or cap, B, having parallel annular-stepped surfaces or ribs, *g g*, formed upon inner surfaces of its rim, adapted for a preserve-jar, constructed substantially as described.

2. The combination of the cover, having parallel annular-stepped surfaces *g g*, with the screw-ring C, gasket, and jar, substantially as and for the purpose described.

100,307.—LIQUID MEASURE.—Martin McDevitt, Hampton, Va.

Claim.—1. In combination with the several measuring-chambers *a*, provided with the valve-seats *h* and vents *a′ a′*, the tubes E, rods *e*, with valves *f f*, and springs *i*, the same being connected with and operated by the indicating-levers *d*, substantially as described.

2. In combination with the measuring-chambers *a*, the screw-headed regulator *c* fitting into the seat or nut *c′ c′*, substantially as and for the purpose described.

100,308.—PUDDLING-FURNACE.—Samuel McLaughlin, Philadelphia, Pa., assignor to himself and Benjamin R. Caskey, same place.

Claim.—1. The casing-plates D′ D′, also the door frame H, swelled or carved outward, so as to conform to the shape of the hearth, in the manner herein shown and described.

2. The door-frame H, rabbeted or flanged as shown, so as to bring the inside flush on a line with the inside of the casing-plates D′, substantially as described.

100,309.—PURIFICATION OF COAL GAS.—Emerson McMillin, Ironton, Ohio.

Claim.—1. The mode herein substantially described of purifying coal gas for illuminating, by passing it through grindstone dust alone, or after or before the gas has passed through dry lime.

2. The mode herein substantially described of restoring the purifying properties of grindstone dust after it has been used, so that it may be repeatedly used as often as may be desired.

3. The employment of any combination of iron and silicic acid, similar in its mechanical properties to grindstone dust, for the purpose of purifying coal gas for illuminating.

100,310.—FENCE.—George S. Mills, Johnson, Vt.

Claim.—The blocks A, in combination with the hooks *b*, substantially as and for the purpose specified.

100,311.—MANURE-HOOK.—Simon B. Minnich, Landisville, Pa.

Claim.—1. The lever L, when connected in its action with the curved prolongation *t* of the hook A by means of a hinge or pivot-bolt, in the manner and for the purpose specified.

2. The clip C, in combination with the prolongation *t* of the hook A, either hinged by a bolt or in combination with the brace-pieces or link B, in the manner and for the purpose set forth.

3. In combination with the bow-handles H, side pieces or combined tongue H′, and bearings *h*, the prolongation *t* of the hook, when the same is hinged substantially in the manner and for the purpose described.

100,312.—SAW-GUMMER.—Gilbert Munday, Montezuma, Ohio.

Claim.—1. The tapering cutter or bur D, having its cutting-edges arranged spirally or nearly so, when operated substantially as set forth.

2. A cutter or bur, constructed and arranged as described, upon a frame of a saw-gummer, whereby said cutter may have both a rotary and a reciprocating motion while operating upon the saw-tooth.

3. The frame B, having ways *b b*, in combination with the box or inner frame C C carrying the cutter D, and operated by the feed-screw E, arranged substantially as described.

4. In combination with the inner box or frame C C the removable or detachable blocks I I, substantially as described.

5. The inner frame or box C C, arranged to slide back and forth in the frame D, said frame having removable blocks I I, box or bearing K, and carrying the cutter or bur D, substantially as described.

6. The frame B, having the slot or opening G, wedge F, arms *h h*, set or clamp-screws *b b c c*, in combination with frame C C and cutter D, arranged substantially as described.

7. Frame B, having the opening G, wedge F, arms *h h*, set or clamp-screws *c c b b*, inner frame or box C C with grooves *e e* working on the tongues or ways *d d*, removable blocks I I, box or bearing K, shaft J, and feed-screw E, all arranged substantially as described.

100,313.—REVERSIBLE LATCH.—W. T. Munger, New Britain, Conn., assignor to P. & F. Corbin, same place.

Claim.—The swinging shackle *h*, carrying the hub *g* and its cams *i*, in combination with the reversible latch *c*, yoke *f*, and stop *h*, substantially as and for the purposes set forth.

100,314.—ROSE FOR DOOR-KNOBS.—W. T. Munger, New Britain, Conn., assignor to P. & F. Corbin, same place.

Claim.—The rose, formed of the parts *d* and *f*, upon which are the sections *i* and *r* of the cylindrical flange that surrounds the end of the shank, and retains the screw *e*, should it become loose, as specified.

100,315.—RATCHET AND PAWL MECHANISM.—M. D. Myers, Frankfort, N. Y.

Claim.—1. The pawl E, with its projecting arm M and spring F, in combination with the ratchets J J, as shown and described.

2. The loose collar G or its equivalent, in combination with the shield D and lever H, as and for the purpose herein described.

3. The combination of the pawl E with its projecting arm M, spring F, the loose collar or its equivalent, and lever H, all made, arranged, and operating substantially as herein shown and described.

100,316, antedated February 11, 1870.—CHILDREN'S HORSE AND SELF-PROPELLER.—John H. Nolan, Waterville, N. Y.

Claim.—In combination with the frame, consisting of its several parts, as described, the bar F, with the right-and-left coiled springs D D, the collars R R, the bar *f* with the spring *n*, the elbow *g*, lever *m*, and rod *o*, all arranged as herein set forth.

100,317.—SHUTTLE FOR LOOMS.—Elias A. Paine, Grafton, Mass.

Claim.—1. The peculiarly-constructed catch-piece D, arranged for operation substantially as and for the purposes set forth.

2. The combination with the spindle-head G, provided with the cylindrical projection *b*, of the leveling-piece *c*, and shank part *d* of the catch-piece D, when all are constructed substantially as and for the purposes set forth.

3. The combination with the spindle-head G and leveling-piece *c* of the leveling-screw F, said parts being constructed and arranged substantially as and for the purpose set forth.

4. The combination with the shanks *d c* of the catch and leveling-pieces, D *c*, of the oval spring E, substantially as and for the purposes set forth.

100,318, antedated February 16, 1870.—APPARATUS FOR MAKING SOLID CORES.—S. J. Peet, New York, N. Y.

Claim.—The rising and falling standard D D, in combination with the templet-plate F, table B, core-plate C, hopper-plate I, and stamps J, all constructed substantially in the manner herein shown and described.

100,319 antedated February 16, 1870.—MACHINE FOR PRODUCING MOLDS.—S. J. Peet, New York, N. Y.

Claim.—1. The movable pattern-table C, in combination with pedestals F, templet-plate G, and flask H, substantially as described.

2. The adjustable stops *i* of the slotted standard *h*, in combination with cross-heads *g*, screw D, and pattern-table C, substantially as described.

100,320, antedated February 16, 1870.—MACHINE FOR PRODUCING CORES.—S. J. Peet, New York, N. Y.

Claim.—1. The slides C C, receiving a reciprocating motion in opposite directions, and carrying the semi-core plates E E, substantially as shown and described.

2. The combination of slides C C, core-plates E E, hopper-plates L L, plate J, and rams M M, substantially as described.

3. The arrangement with the above of the automatic hammers H, substantially as described.

100,321.—BOTTLE-COCK.—L. A. Perrault, Natchez, Miss.

Claim.—The combination with the cock-tube A and plug F of the tube or rod E and clamping or friction-plates D, substantially as specified.

100,322.—BASE-BURNING STOVE.—John S. Perry and Andrew Dickey, Albany, N. Y.

Claim.—1. The flue-passage *r′* and *t*, arranged at the back of a suspended fire-pot, J, and communicating with the back of a hollow flue base, A, directly beneath the ash-pit, substantially as described.

2. The arrangement of flue-outlets *r* and *n′*, in

combination with flues r', flue-base A, flue t, and flue P, substantially as described.

3. The direct-draught damper n' and its pipe N', in communication with escape-pipe P, and in combination with the indirect-draught descending flue r', flue-base A, and ascending flue t, substantially as described.

4. The descending and ascending flues and hollow base, constructed as described, in combination with the register-ring on fire-pot J, substantially as described.

5. The combination of the following elements, to wit: A suspended fire-pot, a flue-base, A, and flues leading into and out of this base, substantially as described.

100,323.—FILTER FOR CISTERNS.—Benjamin B. Redfeld, Lapeer, Mich.

Claim.—The arrangement upon the floor of the cistern A of the rows of bricks B B, composed of the bricks a and b, as described, covered by the interior floor C, through which pass the perforated tube D and pipe E, and said cistern being provided with the pipes G and H, all substantially as set forth.

100,324.—ADJUSTABLE BEDSTEAD.—William O. Reid, Vienna, N. C.

Claim.—1. The combination with the bed-bottom, made in three parts, and hinged together as described, of the shaft H, arm I, brace P, and operating-cord c, and pulleys, substantially as specified.

2. The combination with the parts F G, hinged to the part E of the rock-shaft W, wipers X, arm u, the brace P, and the operating-cord D, and pulleys, all substantially as specified.

3. The combination with the cords C D, arranged for suspension over the top of the bed, as described, of the weighted pawls w' and lifting-cords x', all substantially as specified.

4. The combination with a bed, arranged to fold up and support the patient in a sitting position, of the table D^1, detachably connected to the foot-posts, and suspended by rods D^2, arranged for swinging the table up to the top of the frame, all substantially as specified.

100,325.—PLOW.—Mark Rigell, Newton, Ala., assignor to himself, Robert D., William D., and Robert F. Joy, Milford, Ga.

Claim.—The solid plate E, provided with pivoted arm e, and sliding arm e', constructed and arranged to operate in connection with the share C and plow-beam A, in the manner and for the purpose specified.

100,326.—PLOW.—Mark Rigell, Newton, Ala., assignor to himself, Robert D., William D., and Robert F. Joy, Milford, Ga.

Claim.—1. The pivoted colter B, provided with the curved arm b, in combination with the spring C, plow-beam A, and plow-standard F, all constructed and arranged in the manner and for the purpose specified.

2. The method of varying the position of the plow-point by means of washers c, of different thicknesses, substantially as described.

3. The adjustable plow-standard F and adjustable landside D, the latter being formed in one piece with the plowshare, in combination with the brace E, having its upper end curved and screw-threaded and fitted with a nut, A, all in the manner and for the purpose specified.

100,327.—DISINFECTING COMPOUND.—Louis S Robbins, New York, N. Y.

Claim.—A combined disinfectant and insect destroyer, being a powder of clay, lime, or chalk, impregnated by the process herein described.

100,328.—HORSESHOE.—David Roberge, Mooers Forks, N. Y.

Claim.—The shoe, having a concave or bent upper surface, and made thicker at the heel portion than at the toe, so as to give a central transverse bearing, and allow the shoe to rock forward with the movement of the animal's foot, substantially as specified.

100,329.—HORSESHOE.—David Roberge, Mooers Forks, N. Y.

Claim.—1. The double-concave horseshoe, formed with a bent upper surface and with the ring c, as and for the purposes set forth.

2. The movable clamp and calk, formed substantially as set forth.

100,330.—GRAPPLE.—Seymour Rogers, Pittsburg, Pa.

Claim.—In the construction of a grapple, the inclined crossing or intersecting slots c', arranged inside the hooks and between the hinging point and the biting point of the hooks, substantially as and for the purposes described.

100,331.—COAL-SIFTER.—Brown Sears, Cold Spring, N. Y.

Claim.—The construction of the movable box D, with its partition M and openings K K, rollers H H and guides I I, in combination with the closed box A and drawer C, as shown and described.

100,332.—REVERSIBLE HINGE.—Albert P. Seymour, Hecla Works, N. Y.

Claim.—1. The construction of but-hinges with the hollow conical pintles C C' on the right and left side, respectively, of the pairs of plates, and fitted for operation together for right and left action, and for closing the blinds or doors by pressure in any direction thereon, substantially as specified.

2. The arrangement on each plate of the two notches E E' and two shoulders D D', substantially as specified.

100,333.—RAILROAD-CAR HEATER.—Frederick Shaller, Hudson, N. Y.

Claim.—The combination of the adjustable valve G, the screw-rod E, the bearing-block D, and the spring F, with the pipe C, substantially as and for the purpose herein set forth.

100,334.—SCHOOL-DESK.—James Smith, Richmond, Ind.

Claim.—Constructing school-desks and seats by means of the legs D, supports M, stops E E'', circles N, in connection with pivots G, seat C, elastic pieces H, and inclined book-shelf K, the whole being combined and arranged substantially as above set forth.

100,335.—BASE-BURNING STOVE.—James Spear, Philadelphia, Pa.

Claim.—1. Suspending a grate below the lower mouth of the fire-pot, at a distance sufficient to permit the removal of slate and clinkers, substantially as herein described.

2. A grate-surface for the coal to rest on larger than the opening of the cylinder, in combination with the opening R, for the purpose herein described and specified.

100,336.—BROOM.—W. C. Spellman, Hartford, Conn.

Claim.—The improved broom, constructed as described, of the head A with the brush B attached, and encircled with the wire or band D connected to the head A by the short straight wire supports E, as herein shown and described.

100,337.—MACHINE FOR FEEDING ORES INTO SHAFT ROASTING-FURNACES.—Charles Stotefeldt, Austin, Nevada.

Claim.—1. The combination of the punched screen, the wire screen moving close to it, and the bars.

2. The combination of the bars, wire screen, and punched screen with the water-box, all operating as described.

3. The combination of the bars and wire screen, operating as described.

100,338.—CALENDAR.—Joshua T. Tannatt, Springfield, Mass.

Claim.—The case for receiving calendar-slips, formed by cutting and striking up the parts D E F of the card H, substantially as shown and described.

100,339.—WOODEN PAVEMENT.—James K. Thompson, Chicago, Ill.

Claim.—A pavement consisting of thick and thin blocks of wood, placed together, as shown on drawings, one sustaining and bracing the other, and resting upon a board foundation, substantially in the manner herein described.

100,340.—PEN.—E. Palmer Tiffany, Hartford, Conn.

Claim.—The metallic strip B, when formed in such manner as to furnish bearings for the pivots of flap C, and also to furnish the spring b^2, when combined with the flap C and pen A, in the manner and for the purpose described.

100,341.—CURTAIN-FIXTURE.—James Turnbull and William Turnbull, Vancouver, Washington Territory.

Claim.—The slotted pipe C, the spiral spring D, stem F, tangs G, pulley A, lugs K, and holes H; also piece L, and manner of making cap I, when used in combination as described, and for the purpose set forth.

100,342.—DEVICE FOR OILING CARRIAGE AXLES.—James Vanderpool, Hackensack, N. J.

Claim.—The bar with its spring catch, in combination with a slot or recess in an axle when used as a receptacle of any kind of grease, for the purpose as herein set forth.

100,343.—BROOM.—Thomas Walter, Philadelphia, Pa.

Claim.—1. The combination of the reeds, or their equivalents, the bearing-strips B B', the clamping-strips C, and the bolts and nuts, as and for the purpose set forth.

2. The combination of the adjustable broom-head, the socketed plate F, and the clamping-plate F', substantially as and for the purpose set forth.

100,344.—FEED-WATER FILTER.—G. Waters, Cincinnati, Ohio.

Claim.—The concentric cylinders B C D E, when constructed and arranged substantially as described and for purposes set forth.

100,345.—CLOTHES-PIN.—William Wellington, Rockford, Ill.

Claim.—1. In a clothes-pin, the chamfering the two parts below the hole B at b b, in the manner and for the purpose substantially as described.

2. As a new article of manufacture, the clothes-pin hereinabove described, and having hole B, slit C, band a, or rivet a', and chamfers b b therein, as set forth.

100,346.—APPARATUS FOR TRANSMITTING MOTION TO SEWING-MACHINES.—William Wellington, Rockford, Ill.

Claim.—1. The combination of the hand-rod e, guide e', oscillating bar D, pitman D', with the wheels E h j, and band h', when arranged to operate in the manner and for the purpose substantially as described.

2. The combination of the rock-shaft C, treadle C', having arm c, with the bar D, hand-rod e, guide e', pitman D', and wheel E, when arranged to operate in the manner and for the purpose described.

3. The brake b, when constructed and arranged to operate in the manner and for the purpose described.

100,347.—FERTILIZER FROM EXCREMENTS.—Friedrich Wicke, Bockenheim, Julius Brönner, Theodor Petersen, and Johann Georg Zehfuss, Frankfort-on-the-Main, Prussia.

Claim.—The concentration of the excrements in vacuo and the passing of hot gases from fire-places through the excrements, with or without addition of disinfecting substances.

100,348.—MACHINE FOR PARING FRUIT.—W. H. Williams, Canton, Ohio, assignor to himself and C. H. Williams, same place.

Claim.—1. The core F, in combination with the roughened grating center piece E', substantially as and for the purpose set forth.

2. The combination in a fruit-parer of the outer shell A, sliding door A^2, center piece E', core F, and flange E, constructed and operating substantially as set forth.

100,349.—PARLOR FOUNTAIN FOR DIFFUSING LIQUIDS.—William Altic, Dayton, Ohio.

Claim.—The cylinder D, provided with the guide E and connected to the basin F, in combination with the rod A and piston C, substantially as and for the purpose specified.

Also, the combination of the cylinder D, the basin F, the openings x, and the valves k, substantially as shown and for the purpose described.

Also, the pipe G, covered at its lower end with the diaphragm i and provided with the stop-cock g, in combination with the basin H and the nozzle I, substantially as herein specified, and for the purpose described.

Also, in combination with the rod A, piston C, and cylinder D, the drip-cup L, substantially as and for the purpose specified.

Also, the means employed for elevating the cylinder for the purpose of charging the same, consisting of the arm M, the pulleys m and N, the crank n, and the cord O, substantially as herein set forth.

Also, the combination of the rod A, the piston C, the cylinder D, the basin F, provided with the openings x and valves k, the pipe G, provided with the diaphragm i and stop-cock g, the basin H, and the nozzle I, substantially as and for the purpose specified.

Also, the general construction and arrangement of the various parts of the hereinbefore-described device, substantially as shown, and for the purpose set forth.

100,350.—HORSE-POWER.—John E. Atwood, Willimantic, Conn.

Claim.—1. The wheel N, with its slotted face-ribs or extensions g g and collar-like socket f, flattened on its sides, in combination with the draft-bar R, having a slot, k, in its end, substantially as specified.

2. The dead spindle C C', formed of upper and lower sections, as described, in combination with the coupling a, stationary arm E, and metal base B, essentially as herein set forth.

3. The combination of the ladder G, the base rods H H, and the dead spindle or upper section C' thereof, substantially as described.

4. The combination of the pin d, the ladder G, and the pulleys J P, with their connecting-stud e, essentially as specified.

5. The combination of the pivoted arm S, and pivoted dog T, with the draft-bar or pole R, as described.

6. The combination of the guy-cap M with the dead spindle C C', the brace-rods H H, and the ladder G, substantially as specified.

7. The combination of the gear-wheels and pinions N, O, P, and Q, with the stationary shafts or sections C C' of the dead spindle, and sleeve L, substantially as shown and described.

100,351.—BARN-DOOR HANGER.—William R. Axe, Rockton, Ill.

Claim.—A barn-door hanger, with slots *a* and *a'*, in combination with the roller A, having two bearings, constructed substantially as described, and operating as and for the purposes set forth.

100,352. — METHOD OF PRESERVING THE AROMATIC PRINCIPLE OF HOPS.—Henry Bartholomay, Rochester, N. Y., assignor to Bartholomay & Frauenberger, same place.

Claim.—1. The improved mode of preserving the aromatic principle of hops, as herein described.

2. The use of tar and sulphur combined, in a hermetically-sealed barrel or its equivalent, for preserving the aromatic principle and color of hops from one season to another, as described.

100,353. — MANUFACTURE OF DRY WHITE LEAD.—Eayre O. Bartlett, Birmingham, Pa.

Claim.—1. The manufacture of the basis of a pigment by treating galena (native sulphuret of lead,) by roasting, and afterward mixing the roasted mass with carbon, and subjecting it to the action of heat in a compound reducing and oxidizing furnace, and collecting the fumes, as above described.

2. The employment of lime in the form of caustic lime, or the carbonate of lime, in combination with roasted galena and carbon in a compound reducing and oxidising furnace, substantially as described.

3. Roasting galena, (native sulphuret of lead,) and then subliming the same, and oxidizing the vapors, and collecting them as formed in a separate chamber, for the purpose of forming a basis of pigment and for other purposes, substantially as set forth.

4. As a new manufacture, a white oxide of lead, produced by roasting the galena, then subliming and oxidising the same, and collecting it in a separate chamber.

100,354.—COVERING FOR STEAM-BOILERS.—Christopher August Baumann, New York, N. Y.

Claim.—1. An improved felting or composition for coating the exterior of steam-boilers, pipes or other heated surfaces, formed of asbestos, coal-dust, lime-putty, ashes, and calcined plaster, or their equivalents, combined with each other in the proportions and in the manner hereinbefore specified and described.

2. An improved felting or composition for coating the exterior of steam-boilers, pipes, or other heated surfaces, to be used as an outer coating or finish, formed of paper-pulp, lime-putty, ashes, soap-stone, coal-dust, and calcined plaster, or their equivalents, combined with each other in the proportions and in the manner hereinbefore specified and described.

100,355.—FASTENING FOR CARRIAGE CURTAINS.—Frederick Baumgartner, Brooklyn, N. Y.

Claim.—The combination of the metallic or rigid elongated button-hole, B, with the knob A, constructed as described, whereby a carriage-curtain fastening is produced, substantially as herein specified.

100,356, antedated February 26, 1870.—VELOCIPEDE.—Joseph Beck, Morrisania, N. Y.

Claim.—1. In a water velocipede, the combination with the suspended body G and wheels A of the adjustable wheels E E, as arranged with wheels D D and pinions F and frame C H, substantially as and for the purpose described.

2. In a velocipede such as described, the flexible vanes or paddles constructed and operated as set forth and adapted to be folded on the spokes when not in use, substantially as and for the purpose specified.

100,357.—BRAKE FOR CARRIAGES AND WAGONS.—Joseph G. Bicknell, Cambridge, assignor to himself, Cassander S. Wilkins, Boston, Mass., and George F. Jennings, New York city.

Claim.—The bars 1 and 1', sliding upon the transverse beam 7, and operated by the bar 10 and the toggle-jointed levers, in the manner and for the purpose substantially as described.

100,358.—COMPOUND FOR PREVENTING INCRUSTATION IN STEAM-BOILERS.—George Birks, Marine, Ill.

Claim.—A chemical compound for removing incrustations or scales on steam-boilers, &c., which compound is composed of the ingredients mentioned in the foregoing specification, united or mixed together in the proportions specified or their equivalents.

100,359, antedated February 18, 1870.—COMBINED ENGINE-BOILER AND SUPERHEATER.—F. B. Blanchard, Spuyten Duyvil, N. Y.

Claim.—The combination of the high and low-pressure steam-cylinders B D, with a steam-generator and superheater, as herein described, whereby steam at a high pressure may be exhausted from the one cylinder into the superheater, prior to its introduction into and operation in an expanded condition in the second or low-pressure cylinder, substantially as set forth.

100,360.—SIFTING-APPARATUS.—Sanford O. Blanding, Vineland, N. J.

Claim.—In combination with the handled sieve A, the pivoted legs B, provided with suitable lugs or the connecting-bar C, substantially as shown and described.

100,361.—CULINARY BOILER.—George W. Bliss, Brooklyn, N. Y.

Claim.—The baskets or perforated boxes B B, provided with trunnions and suspended within the boiler A, substantially as and for the purpose herein described.

100,362.—WATER-WHEEL CASE.—John W. Bookwalter, Springfield, Ohio.

Claim.—A water-wheel case, the surfaces of which coming in contact with the ends of the gates or chutes, are faced with brass, copper, or other non-corrosive material, substantially as and for the purpose set forth.

100,363.—WOOD PAVEMENT.—L. H. Boole, New York, N. Y.

Claim.—1. A pavement composed of the blocks A, formed as described and shown, and the rope F pressed into the groove D, with proper filling, as and for the purposes set forth.

2. In combination with such a pavement, the key-blocks C, as and for the purpose set forth.

3. In combination with a pavement thus rendered water-proof and wedged, the foundation, made of diagonally-laid double thicknesses of plank, as and for the purpose set forth.

100,364.—SNAP-HOOK AND BUCKLE.—John C. Brady and James H. Brady, Corsica Borough, Pa.

Claim.—As a new article of manufacture, a snap-hook, A, with its locking device B, arranged to slide in guides and be operated by a spring, L, and also with the stationary loops C and D and tongue or catch F, arranged to form a buckle, the whole being constructed as herein shown and described.

100,365.—MANUFACTURE OF MADDER DYES.—Thomas Bristow, Cranston, R. I., assignor to Amasa Sprague, same place.

Claim.—The method herein described of preparing garancine to be used in the manufacture of "oleisarine," so called, substantially as and for the purposes set forth.

100,366.—TYPE-DISTRIBUTING MACHINE.—Orren Leo Brown, Boston, Mass.

Claim.—1. In a type-distributing machine, a distributing ring or type-receiver having a system of indicating tumblers carried by the type-receivers, the members of each set of which, coming in direct contact with the nicks in the edge of the type, indicate by such relative position the point at which the type is to be removed from the ring.

2. In a type-distributing machine, the arrangement of tumblers and sets of tumblers carried by the type-receivers, by which each type is directly seized in succession by one of the sets, and held while being conveyed to its proper place of ejectment.

3. In combination with the type-seizing and indicating tumblers t^3, type-slides or ejectors l^3, and keys q^4, by which each type is thrown from the machine.

4. The combination of the lever *k*, pawl *j*, and spring i^3, or their equivalents, for operating the page-follower, substantially as described.

5. In combination with such page-follower, actuating mechanism, mechanism for automatically throwing the pawl out of action with the follower-rack, when the line of types is being fed into the channel.

6. The combination of the swing-bar *m*, crank-pin *p*, and incline *n*, operating to raise the lifter, substantially as described.

7. In combination with the devices named in the last preceding clause, the latch *r*, bent lever *k*, and its spring, for automatically effecting the release and fall of the lifter, substantially as described.

8. In combination with lifter *l*, for bringing each line of types into the follower-channel, the rack *t* and follower *s*, for feeding the types toward the distributing ring and tongue a^3, for taking them type by type up into the edge of the distributing ring, substantially as described.

9. The rack *t*, by which the line-follower *s* is automatically moved forward, (carrying before it the types,) and latch *r*, combined with the lifter *l* and lever f^3, by which the follower is automatically moved back after the line of types is exhausted, substantially as described.

10. The combination of the reciprocating shaft c^3 and arm b^3, for imparting the vertical reciprocating movements to the tongue a^3, (which carries each type up into the ring,) substantially as described.

11. An intermittently-moving type-distributer, having a series of slots, each containing one set of the selecting tumblers and an ejector-slide, substantially as shown and described.

12. Giving to the ejector such an extent of inward movement, by means of key q^4, as to form a vertical groove in front of it, between the tumblers and the side of the slot in the ring for reception of the type, substantially as described.

13. The finger b^3, by which the type is held until the tumblers move against it, substantially as described.

14. For effecting the movements of the slide-keys, the key-actuator or cone t^4, substantially as described.

15. In combination with the keys and key-actuator, the springs u^4, substantially as described.

16. In combination with the lifter *l* the spring catches b^4, for removing the leads, substantially as described.

17. In combination with mechanism for raising each type into the distributer, the brush p^3, operating substantially as described.

18. A type-distributing ring having an intermittent rotating movement, substantially as and for the purpose set forth.

19. The combination with a revolving type-distributing ring of a pin working in radial grooves in the ring, to impart to the ring an intermittent motion.

100,367, antedated February 23, 1870.—ROTARY PAPER-CUTTING MACHINE.—Richard Vose, Philadelphia, Pa., administrator of William Bullock, deceased.

Claim.—The finger or presser N herein described, in combination with revolving paper-cutting machines, constructed and operating substantially as herein set forth.

100,368, antedated February 28, 1870.—MACHINE FOR PLANING AND SQUARING THE ENDS OF SEGMENTAL STEREOTYPE PLATES. — Richard Vose, Philadelphia, Pa., administrator of William Bullock, deceased.

Claim.—The movable circular bed, in combination with the revolving knives or cutters, all constructed and arranged as and for the purposes described.

100,369.—STOVE-PIPE DAMPER AND VENTILATOR.—A. R. Burdick, Racine, Wis.

Claim.—The pivoted adjustable valve B, constructed and applied to a stove-pipe, so as to operate as herein described.

100,370. — SPRING WAGON-SEAT. — Peter Burress, Braidwood, Ill.

Claim.—The combination of the seat with the slotted bar *a*, levers B pivoted to the standards C, and secured by the springs F to the bar D, all constructed and arranged to operate as described.

100,371.—FLUTING-MACHINE.—S. G. Cabell, Washington, D. C.

Claim.—1. The boss E, provided with the serrated inclines, in combination with the adjustable roll H and its support D, substantially as described.

2. The combination with the boss E, with its serrated inclines, with the bar F and its locking-pin *e*, or its equivalent, substantially as set forth.

3. The combination of the boss E with its serrated inclines, the bar F, and the support D with the spring *s* interposed, substantially as herein described.

100,372.—CHIMNEY-COWL.—Elisha P. H. Capron, Springfield, Ohio.

Claim.—1. A spiral wheel or propeller, the wings of which are provided with lips C C, when constructed and arranged substantially as and for the purpose set forth.

2. The rib or conductor D across the wing, substantially as and for the purpose set forth.

3. The lips C C and rib D, in connection with the flange E and cap A, substantially as and for the purpose set forth.

100,373.—SLIDING DOOR.—Jacob Capron, New York, N. Y.

Claim.—1. A device for supporting sliding doors, shutters, and sashes, consisting of brackets attached to the top of the door, provided with a double system of sheaves, one set of which runs on a fixed rail and the other rolls in contact with a rail or way pressed upon them by springs from above, substantially as set forth.

2. In combination with such a system of ways, the spring-rollers and spring-catch, either or both, operating as described, in connection with the flange *i*, all constructed as set forth and shown.

3. The rail or way shown at A, with suitable brackets and springs, when the rail operates in connection with sheaves fixed in or upon the door above, and with similar sheaves rolling upon a rail below, all as set forth.

4. The peculiar construction of the bracket, with its arms H and I, spring J, and shoulder spindle K, and rail, all made and operating with the door, as shown and described.

100,374. — SHIELD FOR PITCHERS, &c. — Franklin B. Carleton, Cambridge, Vt.

Claim.—The base-shield or protector C, of rubber or analogous elastic material, when the same is constructed with projecting edges or beads *d d*, all as herein represented and described, so that the flaring flange at the base of the bowl or pitcher will be grasped within the shield, and the latter will cling thereto without the use of cement.

100,375. — CONFECTIONERY. — Lewson E. Chase, Watertown, assignor to Chase & Co., Boston, Mass.

Claim.—1. In the manufacture of boiled confectionery, the use or employment of the substance herein mentioned, in combination with the other ingredients usually employed, as and for the purpose set forth.

2. A confection so made as an improved article of manufacture.

100,376.—MILK-CAN.—John Cochran, Purdy's Station, N. Y.

Claim.—1. The bottom B, with rim E, in combination with shoulder C and the confining flange F, on which the can rests, substantially as set forth.

2. The cover, consisting of the head K, with shoulder O and lip L, constructed substantially as described.

100,377.—CARPET. — John Cochrane, Jr., Malden, Mass.

Claim.—A jute carpet woven with a reverse twill, and printed on both sides, the fabric, previous to being printed, being immersed or run through hot liquid sizing.

100,378.—MACHINE FOR SAWING MARBLE. R. S. Craig and A. H. Woodward, Dover, N. Y.

Claim.—The rollers *J J*, recessed in their lower ends so as to inclose and protect from sand and water the heads H H of the spindles I I, substantially as and for the purpose herein specified.

100,379 —GRAIN-SEPARATOR.—Evan Davis, Almond, N. Y.

Claim.—1. The grain-sieve B, having greater inclination at its upper than at its lower end, and arranged to receive a succession of shocks at its forward end by means of the spring *a* and adjustable levers *b b*, when constructed substantially as and for the purposes set forth.

2. The screen-sieve G, made single or double, and pivoted centrally upon the spring bearings *l l*, having a horizontal movement, in combination with the reciprocating hammers H H and stops *m m*, producing double vertical vibration, when constructed and arranged to operate as and for the purposes herein substantially set forth.

3. The long-mesh sieve D, provided with the rapping cords *g g*, when constructed and arranged to operate in the manner substantially as and for the purposes herein described and shown.

4. The arrangement, herein described, of alternate round and long-mesh sieves in a grain-separator, the meshes gradually decreasing in size from the top downward, in the manner and for the purpose substantially set forth.

100,380. — SEASONING AND PRESERVING WOOD.—J. C. Day, Hackettstown, N. J.

Claim.—1. In a kiln for seasoning wood, the combination of the chamber A, boiler E, condenser H, and fan F, when operated together, as described, and for the purposes set forth.

2. The combination of the chamber A, condenser H, and fan F, when their pressures are controlled by the trap or valve, as at *N*, substantially as described.

3. The combination of the chamber A, boiler E, and fan F, constructed and operated substantially as described.

4. In combination with the chamber A, the distributing-pan K, when constructed and operated substantially as described.

5. In combination with the chamber A and pan K, a circulating-pump, I, and branch pipe Y, so arranged that the liquids dripping to the floor may be returned to the distributer whenever desired.

6. In combination with the condenser H, the cooling-pan W, substantially as described and for the purposes set forth.

7. In combination with the chamber A and pan K, the funnel M and pipe L, when combined and operated as described.

100,381.—HORSE-COLLAR.—Arsène Ducastel, New York, N. Y.

Claim.—The block *f*, rising from the hinge-joint *a*, which unites the metal strips B, and serving to steady and retain the cap *k* of the collar, substantially as set forth.

100,382.—BARLEY-FORK.—Fredrick Dunn, Pulaski, N. Y.

Claim.—1. The combination of the bars B B, with the tines A, when united as specified.

2. The bar D, brace F, and handle G, as specified.

100,383.—GANG-PLOW.—George R. Duval, Salem, Oregon.

Claim.—The hinged and adjustable axle C and the lever G, with the parts connected therewith, that is to say, the chain J, bars n and o, tongue E, and brake *m*, in combination with a gang-plow, arranged and operating substantially as described.

100,384.—HARNESS-RING.—Horace N. Eames, Newport, N. Y.

Claim.—A harness-ring having one or more radial projections, said projections constructed on a plane with the body of the ring, and having straight slots cut therein, substantially as shown and described.

100,385.—SPRING-BED BOTTOM.—Benjamin F. Ells, Dayton, Ohio.

Claim.—The combination of the bed-slats *a*, bearing-rods G, and stay-rails *c*, as described as and for the purposes specified.

100,386.—CAMP BEDSTEAD.—Charles Joseph Evericks, Paris, France.

Claim.—1. The two frames c and *g*, supported respectively by their legs *f* and *h*, and combined with the folding side pieces *l* and the canvas *k*, all constructed so as to fold into compact form, substantially as set forth.

2. In combination with the above, the handles *s s*, arranged upon the folding side pieces *l*, substantially as set forth.

100,387.—MACHINE FOR DRESSING LEATHER. Edward Fitzhenry, Boston, Mass.

Claim.—The combination of the crank A, the two toothed sectors D E, and the bar *F*, with the pendulous bar P, applied to or to be used with the tool-carriage, as described.

Also, the combination of the balance lever X with the post R, the spindle S, and the table-supporter.

Also, the table as made of the series of rebated joists or timbers and their intermediate and edge boards and holding-rods or bolts, arranged as specified.

100,388.—DOOR-SPRING.—Benjamin G. Fitzhugh, Frederick, Md., assignor to Jacob Byerly, same place.

Claim.—1. The plate C for holding the square end of rod D, when provided with two square openings, *c*, which are placed in such position to each other that when the rod D is shifted from one to the other an eighth revolution is given to the rod, substantially as and for the purposes described.

2. The combination of bent rod D, plate C, with its openings *c*, hook *a*, and loop *b*, arranged so that the rod D can be shifted or entirely released at both ends without the necessity of removing screws, nails, &c., substantially as and for the purposes described.

100,389.—HYDRANT.—Alexander S. Fort, Cincinnati, Ohio.

Claim.—The arrangement of water-reception chamber A, cylinder C D *d* E *e*, vacuum chamber F H, perforated discharge-pipe G L, pistons I *i i'*, and K *k k'*, valve E, and annular valve-seat J, the whole being combined and operating substantially as set forth.

100,390.—JACK FOR MOVING THE CROSS-HEADS OF LOCOMOTIVES.—John S. Funk, Marysville, Pa.

Claim.—The combination of the ratchet-bar A, clamping-sockets *a*, hook B, lever C, and pawl D, either with or without the spring *d*, in the manner and for the purpose described.

100,391.—PAPER-CUTTING MACHINE.—Henry A. Gage, Manchester, N. H.

Claim.—Working the knife G and plate F by an inclined screw arranged parallel to the inclined ribs E and scores D in a protuberance on the clamping-plate of the machine.

100,392.—SICKLE-BAR.—Charles O. Gardiner, Springfield, Ohio.

Claim.—A sickle-bar head, constructed with an open joint, in the manner described, so that the joint may be tightened up, to compensate for wear, and prevent rattling, substantially as set forth.

100,393.—OIL-CAN.—John D. Gray, Cincinnati, Ohio.

Claim.—1. An open-mouthed oil-can or reservoir, A, closed by the removable pan B, in combination with the screw-threaded stand-pipe J, pump K, and lever L, for the purposes designated.

2. The arrangement of the guide-pin H, and the socket I, in the removable pan or cover D, as and for the object specified.

100,394. — CLAMPED MOLD FOR MAKING LEAD JOINTS IN PIPE-CONNECTIONS.—Edward Gwyn, Tiffin, Ohio.

Claim.—The combination of the elastic ring A and the jointed collar B, substantially as and for the purpose herein described.

100,395.—DEVICE FOR REVERSING MOTION. Charles F. Hadley, Chicopee, Mass., assignor to Ames Manufacturing Company.

Claim.—1. The spring cylinder C, the piston D, in combination with the crank-lever F and the stirrup G, in the manner and for the purpose set forth.

2. The employment of the spiral spring E, or its equivalent, in combination with the parts above described, operating substantially as described and for the purpose herein set forth.

100,396.—FRUIT-JAR.—Joel Haines, West Middleburg, Ohio.

Claim.—The combination of the creased or corrugated surface *b*, the yielding packing *d*, and the single edge of sheet metal projecting downward from the cover to meet the packing, substantially as described.

100,397.—COMBINED SPIDER, SKILLET, AND GRIDIRON.—Thomas Foster Hamilton, Geneseo, Ill.

Claim.—The hereinbefore-described device, consisting of the pan A provided with the opening E and flange *e*, in combination with the detachable bottoms F H or I, all constructed and arranged substantially as and for the purpose specified.

Also, a spider provided with a detachable bottom, substantially as and for the purpose set forth.

100,398.—CAST-METAL LAMP.—T. F. Hammer, Branford, Conn.

Claim.—1. A cast-metal lamp, consisting of the body A, tube B, and projections *a*, all in one and the same piece, and produced at the same operation of casting.

2. In cast-metal lamps, the projections *a a* cast and formed upon the body during the process of casting, substantially in the manner and for the purpose specified.

100,399.—PLATE-PRINTING REGISTER.—Joseph L. Harley, Washington, D. C.

Claim.—1. The registering device, consisting of the sliding bar G, with its pawls *d d'* and *e e'*, star-wheel H and ratchet-wheels I and I', all constructed and arranged to operate substantially as herein described.

2. In combination with the ratchet-wheel I, the stud-pin *f* for operating the drop J and wheel K, in the manner substantially as herein described.

3. In combination with the star-wheel H and sliding bar G, with its notches *g*, the stop L, or its equivalent, constructed and arranged as described, for the purpose of limiting the movement of the bar G, as set forth.

4. The star-wheel H, the sliding bar G, with its pawls and springs, the ratchet-wheels I and I', with their studs *f* and *f'*, the drops J and J', with their studs *k*, and the wheels K and K', when constructed and arranged to operate as herein described, for the purpose of registering on suitable dial-plates each movement of the bar G, as set forth.

5. In combination with a registering device as herein described, a printing-press having its roller B provided with a cog-wheel, F, and its bed-piece D with a ratchet-plate, E, for the purpose of securing a register of the movements of the bed-piece, as set forth.

6. In combination with the printing-press having cog-wheel F and ratchet-plate E, the stop *a*, for the purpose of limiting the movement of the roller B and its connections, as set forth.

100,400. — MACHINE FOR MAKING CAR-SPRINGS.—Albert Hebbard, Springfield, Mass.

Claim.—The tapered roll C', having the projection-stop *c'* thereon, or its equivalent, in combination with the spiral groove F, the guide-bar D', and the presser-roll C, all constructed and operating substantially as described.

100,401.—COMBINATION OF BILLIARD AND DINING-TABLE. — Frederic E. Held, Chicago, Ill.

Claim.—A billiard-table having its rail and cushion adjustable, as herein described, so that it may be converted into a table suitable for dining or other purposes, as set forth.

100,402. — PADLOCK. — Louis Hillebrand, Philadelphia, Pa.

Claim.—1. The shackle *e*, pivoted centrally at the bottom of the lock-casing, and moving between the plates of the casing independently thereof, so as to leave said casing entire, in connection with the solid arm *g*, projecting into the casing, substantially as and for the purpose described.

2. A padlock, the tumblers of which are hinged on the same axis with the shackle, substantially as and for the purpose set forth.

100,403. — PADLOCK. — Louis Hillebrand, Philadelphia, Pa.

Claim.—The cam formed on the bolt, and operated by the inner face of the key-bit, and arranged relatively with the fulcrum of the key, so that when the lock is open the key will ride freely over the cam without disturbing the bolt or tumbler, substantially as set forth.

100,404.—STOVE FOR RAILROAD CARS.—M. T. Hitchcock, Springfield, Mass., assignor to himself and J. W. Labaree, same place.

Claim.—The siphon-shaped pipe, so applied to the hot-air chamber of a car-heater that its short arm B shall extend upward within the drum A, so as to create a downward current within the long arm B, and deliver the air to said drum in a partially heated condition, substantially as described and represented.

100,405.—FLUTING-MACHINE.—Charles E. L. Holmes, New York, N. Y., assignor to George Hovey & Son, same place.

Claim.—1. The standard *b*, and pipe-shaped bear-

ing *e* at its upper end, for the shaft *d* of the roller *e*, in combination with the sliding-sleeve *f*, arm A, and roller *k*, as and for the purposes specified.

2. The pin *r*, passing through the sliding sleeve *f*, and a slot in the column *b*, and forming a guide, in combination with the rollers *e k*, and chain, or its equivalent, for drawing the roller *k* down when the pin *r* is turned, as set forth.

3. The arrangement of the rigid arm A, made hollow for receiving the heater, with the rotating sleeve or roller *k*, of a pair of fluting-rollers, substantially as specified.

100,406.—COAL-STOVE.—Marcus L. Horton, Windsor, Vt.

Claim.—The combination as well as the arrangement of the lantern a^1, one or more gas-burners *w* and the air-supplying passages thereof, substantially as described, with the furnace or fuel-chamber.

Also, the arrangement and combination of the channeled linings *a b*, the stove-case *c*, the air-receiving and conveying chambers *g i n*, and the central air-pipe *f*, connected as described.

Also, the combination and arrangement of the series of gas-burners *w* with air-conducting space or chamber *x*, provided with openings *y*, arranged with such burners in manner as described.

100,407.—MACHINE FOR SEWING BOOKS.—Frederic Webster Howe, Providence, R. I., assignor to Henry G. Thompson, New York city, and Reune Martin, Orange, N. J.

Claim.—The supporting-brackets *l*, connected adjustably to the receiving-table *e*, in combination with the needles *m*, substantially as specified.

100,408. — SPRING-BED BOTTOM. — Tyler Howe, Cambridgeport, Mass., assignor to himself and Otis Howe, same place.

Claim.—My improved spring-bed bottom as composed of the frame or rails A A, the two cross-bars B B', the two series of springs C C, formed as described, and the series of slats C', arranged and applied together substantially as hereinbefore specified.

100,409. — WASH-BOILER. — Thomas G. Hughes, Elysian, Minn.

Claim.—The combination of the sectional boiler A B, lid C, sectional drum D, gearing J M, strengthening piece N, and squared shafts E S, as and for the purpose described.

100,410.—BROILER.—Abraham C. Hull, St. Louis, Mo., assignor to himself and J. C. Cameron, same place.

Claim.—1. The casing A, its raised trough B, and lip a^1, when arranged substantially as and for the purpose set forth.

2. The combination of the casing A, handle *a*, and slot a^1, with the gratings C C' and handles *d*, substantially as set forth.

100,411.—STEAM-GENERATOR.—William H. Ivens, Trenton, N. J.

Claim.—1. The combination and arrangement of the chambers A B and water and flue-tubes *c* and *c'*, and circulating-tubes *c'*, and *n*, substantially as set forth.

2. The extension of the smoke-stack C downward through the boiler to near the lower flue sheet *d*, and surrounded by an annular water-chamber, *s*, having lateral openings or flues *e* through the latter, in combination with the annular water-tubes *c*, substantially as specified.

3. The arrangement and combination of the jacket D, provided with an annular water-heater, *g*, with the flues *e*, smoke-stack C, annular water-pipes *c c'*, and water-chambers A B, as shown and described.

4. A steam-generator, the waist portion of which is made up of a series of tubes, forming flues, surrounded by annular columns of water, as shown and described.

5. The combination of the perforated disk A, with the jacket D, and reticulated spark-arrester *l*, arranged for operation essentially as shown and described.

100,412.—CHURN.—J. N. Jacobs, Crittenden, Ky.

Claim.—1. The churn-body A, when constructed without a dash or other interior device, with the lower part nearly in the form of a half cylinder, and from the shoulders *c c* on either side, extending up to the top on each side in lines nearly straight, substantially as and for the purpose described.

2. The top or cover, when constructed substantially in the form and for the purposes described, in combination with the elements of the first claim.

3. The several parts of the churn, arranged and operated as described, as a whole, substantially as set forth.

100,413. — TIN-WORKERS' TONGS. — John Dawson James, Jr., Washington, D. C., assignor to himself, Adolf Bode, and Jacob D. C. Outwater, Newark, N. J.

Claim.—The levers A A, jaws B B', and guide or check-plate C, when the same are constructed, combined, and arranged as described.

100,414.—MACHINE FOR SEAMING METAL ROOFS.—John Dawson James, Jr., Washington, D. C., assignor to himself, Adolf Bode, and Jacob D. C. Outwater, Newark, N. J.

Claim.—The base-block A, having slotted guide-plates B B, swage C, and handle C', when the same are connected with a system of leverage, as shown, the whole being combined and arranged to operate substantially as described.

100,415.—AERIAL CAR.—A. P. Keith, Easton, Mass.

Claim.—1. A ship for aerial navigation, consisting of a central body, with side, top, and under extension-chambers, with the latter or under chamber terminating in a keel, substantially as and for the purpose described.

2. The rudder N, made in sections O, connected by flexible material, and the several sections fastened to stock P and shaft R, constructed and arranged and provided with devices suitable for operating the rudder, substantially as and for the purposes described.

100,416.—SCHOOL-DESK AND SEAT.—William H. Kline, Eaton, Ohio.

Claim.—The combination of the adjustable sockets E E, cleats D D, and frames A A, constructed and arranged substantially as and for the purpose set forth.

100,417. — CURRY-COMB.—Lucien Knapp, Woodhaven, N. Y.

Claim.—1. In a curry-comb made up of bent overlapping strips, as described, the crook or shoulder *c* formed in the back portions of the bent strips, substantially as specified.

2. The combination of the bent strips A A, having crooks or shoulders *c c* formed in their back overlapping portions, with the main frame B of the handle united to said plates by rivet projections *d*, essentially as described.

100,418.—CISTERN-FILTER.—Patrick Laughlin, Danville, Ky.

Claim.—The body H, with the pipes A, G, and C, bottom *e e*, when constructed, arranged, and proportioned substantially as described, in combination with the strainers *J f g*, beds D and E, and the layer of sponge F, as set forth, for the purposes described.

100,419, antedated February 19, 1870.—RUDDER-COLLAR.—Sewall Leach, Penobscot, Me., assignor to himself, J. D. Leach, and Sabin Hutchings, same place.

Claim.—A rudder-collar, adjustable substantially as described and shown.

100,420.—FUNNEL.—William E. Ledmun, Bridgeville, Del.

Claim.—1. A funnel constructed in two parts, A and E, substantially as and for the purposes set forth.

2. In a movable funnel, the lever D, when arranged between the funnel A and spout E, substantially as and for the purposes described.

100,421.—ASH-SIFTER.—Francis X. Lipp, Baltimore, Md.

Claim.—1. The rim F, with its flange A formed in two pieces, secured on the end board D, and rotating around the disk *g* of the feed-tube E, substantially as and for the purposes described.

2. The feed-pipe E, when provided with a disk, *g*, which forms the pivot for one end of the drum of a sifter, substantially as and for the purposes described.

3. A sifter in which the feed-pipe forms one of the pivots of the revolving drum, for the purpose of continual feeding, substantially as herein described.

4. In a sifter, in combination with the above parts, a reversible discharge-trough, J, operating and arranged substantially as and for the purpose herein set forth.

100,422. — CHIMNEY-COWL. — Miles Lockhart, Douglas, Isle of Man.

Claim.—The combination of a cowl or other cup-shaped head, being kept with its open part or mouth facing the wind, and having connected with it a pipe which leads down the chimney (ventilator in other cases) having an elbow with a mouth facing upward at its end, and this cowl or cup-shaped head revolving round the casing or chimney-top, (or ventilating pipe) and the action of the several parts being for the purposes hereinbefore described and set forth.

100,423.—SMOOTHING-IRON.—George W. C. Lovell, Clarksville, Tenn.

Claim.—1. The arrangement of recessed iron body A B *b b'*, separable handle E K, dovetail C, and gravitating dog F, substantially as set forth.

2. The combination of the guard D, handle E K, gravitating dog F, staple G, and lifter H I, as and for the purposes set forth.

100,424.—KILN FOR ANNEALING GLASS.—Thomas Lowry, Pittsburg, Pa.

Claim.—The hollow tablets, with the inlet and outlet-pipes, through which water, &c., could be introduced into the hollow plates of a furnace for annealing glass, &c.

100,425.—CLOTH-MEASURING APPARATUS.—Samuel B. Luckett, Corydon, Ind.

Claim.—1. The numbered and toothed slide *h''* when operated in connection with the wheel *k*, wheel *i*, and band *l'*, as described, for the purpose set forth.

2. The teeth *h h*, wheel *i* with index *j*, wheel *k*, and slide *h''*, when arranged as described, for the purpose set forth.

3. The cover F, with parts *f f'*, when combined and arranged as described, for the purpose set forth.

4. The cover F, with parts *f f'* and projecting pieces G G', when combined and arranged as described.

5. The apparatus described, consisting of the frame-work, measuring-cylinder, winding-shaft, and regulating devices, when combined and arranged as described, for the purpose set forth.

100,426. — DRIVEN-WELL STRAINER. — Charles E. Macomber and Corydon E. Whelploy, Minneapolis, Minn.

Claim.—A strainer-tube for wells, consisting of the perforated tube A, with the wire-gauze *b* and the guard-wires *c* applied thereto, in the manner herein described.

100,427.—BASE-BURNING STOVE.—William Magill, Port Deposit, Md.

Claim.—1. A base-burning stove, whose draught is introduced at one side near the top, passes laterally over the fuel in the magazine, and flows thence down the side to a position whence it may enter the fire from beneath, substantially as described.

2. The combination of the magazine A, flues B B', and hinged plates *c d*, in the manner described, and for the purpose of causing the draught to flow into the chimney direct from the magazine.

3. The combination of the magazine A, flues B B', chambers D F, and pipes E, in the manner and for the purpose specified.

100,428.—COLLECTING WASTE SPIRITS FROM BREWERIES AND BARS.—Arthur Maginnis and William McCormick, Philadelphia, Pa.

Claim.—Utilising the waste spirituous fluids of breweries and drinking-bars, substantially as described herein.

100,429. — VENTILATOR FOR WINDOWS.—Sebeus C. Maine, Boston, Mass.

Claim.—1. The extension boards A *a*, constructed and operated substantially as described, and for the purpose set forth.

2. The tube C *c* with cups to receive disinfectants and constructed substantially as set forth.

3. The dampers, cups, pans, and tubes, or their equivalents, in combination with the extension boards, all constructed and operating relatively to each other, substantially as and for the purpose set forth.

100,430.—FOLDING IRONING-TABLE.—James H. Mallory, La Porte, Ind.

Claim.—The combination of the top A, supports B and C, spring E, catches D, and pivoted braces G, as and for the purposes specified.

100,431.—FENCE.—John McConnell, Tyro, Ohio.

Claim.—The combination of the fence sections, composed of the panels C and posts D, with the base A, braces B B, notched at their lower ends, and the blocks *a a*, all constructed substantially as shown and described.

100,432.—MANUFACTURE OF ILLUMINATING-GAS FROM COAL AND OTHER MATERIALS.—George McKenzie, Glasgow, Scotland.

Claim.—The process of treating coal, whereby its illuminating-gas-producing qualities are improved by mixing with it, either previous to or while submitting it to the action of heat for the evolution of gas, the compound of pulverized coal and oil referred to, substantially as and for the purposes specified.

100,433.—COMPOUND FOR THE MANUFACTURE OF ILLUMINATING-GAS. — George McKenzie, Glasgow, Scotland.

Claim.—The compound, composed of pulverized coal and a non-mineral oleaginous substance, substantially as and for the purposes specified.

100,434. — GRAIN-FAN. — James McPhail, Charles City, Iowa.

Claim.—1. The perforated trough K, attached to the rear end of the shoe, and provided with the slide *d*, substantially in the manner and for the purpose set forth.

2. The adjustable cover O, provided with the rod *i*, for securing it at any desired point, in combination with the trough M, substantially as specified.

3. The adjustable screen K, provided with the pivots L, so that the flow of the grain may be changed from the front end to the side, substantially as specified.

4. In combination with the screen K, provided with pivots L, the screen I and trough M, substantially as set forth.

5. In combination with the screen K and pivots L, the circular slot *a*, screw-rod *b*, and nut or thumb-screw *c*, when so arranged as to support the screen at any desired point, substantially as described.

6. The standards *a*, shaft E, revolving buckets D, and pulley F, when arranged to operate substantially in the manner and for the purpose specified.

100,435.—MANUFACTURE OF HARD RUBBER. John B. Newbrough, New York, N. Y.

Claim.—1. The within-described material or substance, consisting of sulphuric or other acid in combination with benzole or turpentine, or other resinous spirit or oil.

2. The manufacture of articles of utility or ornament by subjecting to the action of heat a mixture of the said material and caoutchouc, or other substance on which a like effect can be produced.

3. Articles of utility and ornament, consisting in whole or in part of the product resulting from the combination of the said material and caoutchouc, linseed-oil, or other substance, substantially as described.

100,436. — MANUFACTURE OF COMBINED CLOTH AND PAPER FABRIC.—James H. Newton, Holyoke, Mass.

Claim.—1. The process herein described of manufacturing combined paper and cloth, consisting in the use of sized cloth, united in the paper machine with pulp, the whole being passed over driers of different temperatures and through calenders, substantially as set forth.

2. The use of potato starch, with or without glue, in combined paper and cloth fabric, for the purpose of uniting firmly the two materials and giving the desired finish, in the manner described.

100,437. — LUBRICATOR.—Thomas J. Nottingham, Cincinnati, Ohio.

Claim.—1. In the described connection with the cup A, steam-pipe or port E and port F, the hollow plug B, when provided with V-shaped port D, and ports G H, the whole being constructed, combined, and arranged substantially in the manner and for the purpose specified.

2. The cap C, when provided with the swiveling disk-valve J, for the purpose set forth.

100,438, antedated February 25, 1870.—CLOTHES-LINE FASTENER.—Harrison Ogborn, Richmond, Ind.

Claim.—The construction of lever B with pulley C, in combination with plate L and projections F F, when used for the purposes and in the manner described.

100,439.—MEDICAL COMPOUND FROM GLOBE FLOWER.—John S. Pemberton, Atlanta, Ga.

Claim.—A medical compound composed of the ingredients above mentioned, in about the proportions and substantially in the manner described.

100,440. — AUGER FOR BORING SQUARE HOLES.—Alfred T. Perrine, Louisville, Ky., assignor to himself and William C. Chase, Providence, R. I.

Claim.—The combination of an auger, A, with the rectangular cutting-case C, longitudinally divided, and connected by means of the yoke or head *B* and band H, substantially as shown and described.

100,441, antedated February 26, 1870.—GRAIN-CLEANER. — Chauncey Perry and James E. Wheat, Rochester, N. Y.

Claim.—1. The arrangement of the division ribs *i* longitudinally upon the screens of grain-cleaners, substantially as and for the purposes set forth.

2. Suspending the rear end of the screen-shoe C by means of the eccentric clamping-hooks *b* and straps *c*, as shown and for the purposes set forth.

100,442.—CIRCUIT-CLOSER FOR ELECTRO-MAGNETIC RAILROAD SIGNALS.—A. Warner Platt, New York, N. Y.

Claim.—The pin B, vertically, or nearly so, through the rail C, and projected above the tread thereof by a spring, D, within the box A, in combination with the circuit-closer *d d'*, all arranged substantially as shown and described.

100,443.—STEAM-GENERATOR.—Henry A. V. Post, Cincinnati, Ohio, assignor to himself, James H. Sheldon, and James T. Sterling.

Claim.—1. Arranging the heating-pipes in a furnace or flue, which is separated from the generator by means of an arch or a partition, substantially as and for the purpose specified.

2. The combination and arrangement of the generator A, heating-pipes D D, and dividing-arch or partition C', substantially as and for the purpose specified.

100,444.—SPRING SEAT FOR WAGONS.—William Pruet, Duquoin, Ill.

Claim.—1. The wooden spring B, composed of the pieces 1 and 2, braces E, and hinge D, pieces 1 and 2 attached respectively to the seat A and the braces E, substantially as and for the purposes set forth.

2. The braces E attached to pieces 1 and spring B, in the manner described, and operating as and for the purposes set forth.

100,445.—COFFIN-HANDLE.—James S. Ray, East Haddam, Conn.

Claim.—The combination of the tubular casting A, its attached arms B B, the permanent wooden core D, and the pivot wires C' C', substantially as herein described.

100,446. — EXTENSION-TABLE. — William Reichenbach and Fretrich Roschdiantzky, Chicago, Ill.

Claim.—A table having the central part A, with the extension-leaves E and the extension-frames C D constructed and arranged to operate substantially as described.

100,447.—NAIL-CUTTING MACHINE.—Philemon Richards, Philadelphia, Pa.

Claim.—The griping-dies *g g'* and pointing-dies *h h'* for griping the blank at its ends only, in combination with the spring nipper *j* and lip *i*, or equivalent devices for turning over and holding the nail-blank, as described.

100,448.—COVERING THE ENDS OF RUBBER HOSE.—John P. Rider and James R. Bird, Brooklyn, N. Y., assignors to "The New York Rubber Company."

Claim.—1. The combination, with the ends of vulcanized India-rubber hose, of an elastic and water-proof tube applied to the same, so as to cover the end and extend inside the hose the full length of the coupling-shank, substantially as shown and set forth.

2. As a new manufacture, vulcanized India rubber hose, provided at the end with a vulcanized rubber tube, arranged so as to cover the end and extend upon the inside of those far enough to remove the hose-lining from contact with the coupling-shank, substantially as shown and set forth.

3. Hose composed of canvas or equivalent material and rubber, provided with a tube making part of the same, and vulcanized in such form and shape as to cover but not be attached to the end of the hose, substantially as shown and set forth.

100,449.—DEVICE FOR SECURING UNIFORM MOTION IN PUMPING-ENGINES.—William H. Roberts, Mauch Chunk, Pa.

Claim.—The combination of the cylinders *a a* with the plungers *b b*, connecting-rod *b'*, and connecting-pipe *a'*, in the manner and for the purpose described.

100,450, antedated February 23, 1870.—LAMP-SHADE.—William Robinson, Spring Valley, N. Y.

Claim.—1. A lamp-shade cut or formed in the shape of the frustum of a cone or pyramid, with a dividing opening, *b*, at its one side, and made up of a series of sections, A, pivoted the one to the other in succession, to fold as described, and the end sections of the opening and closing shade made to clasp or fasten, essentially as herein set forth.

2. The pivoted shade sections A provided with locking-lips or stops *c*, constructed and arranged for operation in relation to the pivots *a*, to establish connection to the several sections in a series, substantially as described.

100,451.—STAY-BRACE FOR TRUNKS.—Jules Roch, Rochester, N. Y.

Claim.—The pawl *a*, frame *d* with slot *e*, the movable ratched-plate *c*, pins *k k*, and lever *f*, when the same are constructed and operated in the manner and for the purpose specified and described.

100,452.—ASH-BOX AND SIFTER.—Hiram D. Rogers, Cincinnati, Ohio.

Claim.—1. The ash-pan A B C D E, constructed in the manner and for the purpose specified.

2. In combination with the ash-pan A B C D E, the sieve G, constructed and applied substantially as and for the purpose set forth.

100,453.—BLIND-HINGE.—D. C. Sage, Middletown, Conn.

Claim.—The combination and arrangement of the leaf A, perforated web C, screw-stem B, perforated bearing *b*, spring latch *g g'*, cam D, and thumb-shaft E, all constructed and operating in the manner set forth.

100,454, antedated February 28, 1870.—MILK-CAN. — Hugh Sangster, Buffalo, N. Y.

Claim.—1. The cover, consisting of the parts A, with flange R and A', constructed as described.

2. The breast, consisting of the parts B and B', D and D', and ring C, constructed substantially as described.

100,455.—BREECH-LOADING FIRE-ARMS.—Edward Levi Sargent, Watertown, N. Y.

Claim.—1. The combination with the cam and locking-piece for the barrel or barrels, of a cocking device actuated by said cam, substantially as described, whereby, when the cam is turned so as to unlock the barrel or barrels, the said cocking device may be caused to lift the hammer or hammers from the nipples or firing-pin, substantially as shown and set forth.

2. The combination with the cam and locking-piece of the fingers for lifting the hammers, the shaft upon which said fingers are mounted, and the arm, sliding rod and spring by means of which said shaft is actuated, under the arrangement and for operation as set forth.

3. The combination with the recessed hammer for the shot and rifle barrels, of the movable head, its supporting spindle and spring, and devices for retaining it in position opposite either barrel, said parts being constructed and arranged substantially as set forth.

4. The clutch or locking-piece for the barrels, constructed with a cam or incline to tilt and start the barrels, and a cam to operate the device whereby the hammers are raised, substantially as and for the purposes set forth.

100,456.—GAS AND WATER-PIPE PLUG.—Everett P. Schutt, Cortland, N. Y.

Claim.—The gas and water-pipe plug, as a new article of manufacture, substantially as described.

100,457. — PREPARING AMMONIATED SULPHURIC ACID FOR THE MANUFACTURE OF FERTILIZERS.—Charles U. Shepard, Jr., Charleston, S. C., assignor to George S. Scott, New York, N. Y.

Claim.—1. The production of ammoniated sulphuric acid, by treating ammoniacal water with lime or other liberating material, or by the liberation of ammonia from bone-black or other ammoniacal matter, and the absorption of such ammoniacal gas or vapor by sulphuric acid, in such proportions as to leave a part of the sulphuric acid uncombined, substantially as set forth.

2. The treatment of phosphatic material with such ammoniated sulphuric acid for the production of an ammoniated super-phosphate, substantially as set forth.

100,458.—BIT-BRACE. — H. S. Shepardson, Shelburne Falls, Mass.

Claim.—1. The curved or segmental sliding jaws C, constructed and arranged to operate in a bit-stock, or similar tool-holding device, substantially as described.

2. A bit-stock having the curved jaws C, ring D, and head B, constructed and arranged to operate substantially as set forth.

100,459. — PAPER-BOX MACHINE. — Daniel Simmons, New York, N. Y.

Claim.—1. The combination of the sliding frame L with the paste-brush A, and the revolving block or former E, substantially as specified.

2. The combination, with the former E of the rollers S S, with their disks T T, and the rollers *f f*, essentially as herein set forth.

3. The combination, with the former E, of the rollers R R, the revolving disk U, the beveled wheel or disk V, and the rollers W, substantially as described.

4. The combination of the stripper P with the revolving and sliding former E, essentially as specified.

100,460.—MACHINE FOR CLEANING AND POLISHING TUBES.—Horace S. Smith and William Hughes, Bloomington, Ill.

Claim.—1. The conical rollers S, when provided with rubber seats T on their internal peripheries and ends, for the purpose of feeding crooked and uneven flues into the cylinder, as described.

2. The combination of the rollers S, constructed as described, with the cylinder *b* and rollers S', as and for the purpose set forth.

3. The cylinder *b*, provided with staves *c*, in combination with the peculiar-shaped springs *f*, reversible knives *g*, and rubber seats *l*, as described and shown.

100,461. — THRESHOLD. — William D. St. Clair, Chicago, Ill.

Claim.—The described threshold, when the parts B C are formed with the dovetail grooves, and the strip A with corresponding edges, the parts being so adapted to each other that the rubber may slide into the wood and be held without tacking, all as set forth.

100,462.—ELECTRO-MAGNETIC REGULATOR FOR DAMPERS OR VALVES.—George Miller Sternberg, Fort Riley, Kansas.

Claim.—The combination, with the armature of an electric apparatus, of the levers *a'''* and *b*, the latter being provided with spur-gears *b' b''*, cog-wheels *c' c''*, double system of train-work B B', operated by weights, and loose cog-wheels *d*, substantially in the manner described, and for the purpose of communicating motion alternately in opposite directions to the valve.

100,463.—SPIRIT-LEVEL.—Edwin A. Stratton and Charles M. Stratton, Greenfield, Mass.

Claim.—As a new article of manufacture, an improved spirit-level, having the corners of the wooden stock A protected by the metallic rods *c*, attached and secured in place, substantially as and for the purposes specified.

100,464.—SOFA-BEDSTEAD.—M. Sulzbacher, New York, N. Y.

Claim.—The auxiliary back D, hinged to the end pieces *a* of the open frame A, in combination with the extension-frame B, sliding on lugs *b*, and disconnected from said end pieces, the parts operating together as and for the purpose described.

100,465.—PAPER-CUTTING MACHINE.—Frederick B. Sweetland, New Haven, Conn., assignor to George H. Sanborn and Joseph S. Sanborn, New York city.

Claim.—The use of the removable and adjustable attachments *e* and G, in combination with a cutting-machine, said attachments being constructed and operating substantially in the manner described.

100,466. — TOY. — Edward Louis Taylor, Hartford, Conn., assignor, by mesne assignments, to William C. Goodwin.

Claim.—In the construction of paper wind-wheels for toys, shortening the rim C by overlapping or bending the same, as at *a*, so as to curve and support the wheel, substantially in the manner and for the purpose described.

100,467.—LABEL FOR COTTON-BALES.—Patrick Henry Taylor, New Orleans, La.

Claim.—The plate A, in combination with a rivet C, when these two parts are constructed and united as herein described, for the purpose set forth.

100,468.—FRICTION-ROLL FOR YARD-ARMS. Frank Thoits, Yarmouth, Me.

Claim.—The conical roller *b*, tapering towards the mast, when constructed and arranged as herein set forth.

100,469, antedated February 26, 1870.—THREE-HORSE EQUALIZER. — John T. Thornton, Kewanee, Ill.

Claim.—In combination with a pole, A, the offset B, double-tree C, single-tree D, pulleys E, and chains F, constructed, arranged, and operating substantially as and for the purposes set forth and shown.

100,470. — KNIFE-SHARPENER. — Thomas Vickery, Providence, R. I.

Claim.—The combination of the blocks A and A′, the bolt-screw B, operated by the nut C, the pins D D, and the rubber strip E, substantially as set forth, and for the purposes hereinbefore described.

100,471.—SAWING-MACHINE.—John Walling, Plymouth, Ind.

Claim.—The combination, herein shown and described, upon a suitable frame, with the dished saws, of the pivoted carriage A, metal strip B, movable handle D, with dogs C C, handle E, and stop F, as set forth.

100,472.—BOSOM-PAD.—Julius Waterman, New York, N. Y., assignor to Waterman & Mayer, same place.

Claim.—The breast-pad formed with bunches or cords of bristles introduced in the pockets between the two thicknesses of woven material, as and for the purposes specified.

100,473.—LATHE.—James Watson, Philadelphia, Pa.

Claim.—The latho-bed, with its recess *a*, and guides *e* and G, arranged in respect to the face-plate, as described, in combination with a sliding plate, E, having bearings adapted to both guides, substantially as specified.

100,474.—CISTERN CUT-OFF.—J. P. Watson, Rochester, Minn.

Claim.—1. A water-conductor, having a chamber B, with one of its sides, C, hinged and provided with a spout, D, all constructed and arranged as herein described, and for the purpose set forth.

2. The combination of hinged side C, spout D, cross-bar provided with ear *a*, and curved rod E, when constructed and arranged as described.

100,475.—LIQUID-MEASURING AND REGISTERING DEVICE. — A. Werrkmeister, Charlottenburg, near Berlin, Prussia, assignor to himself and Henry Lowenburg, New York city.

Claim.—1. The combination of the siphon *a* with the measuring-vessel D, attached to the rising and falling rod E, substantially in the manner herein shown and described.

2. The inclined top plate *c*, on the measuring-vessel D, in combination with a stop, *d*, slide G, pawl *g*, and ratchet-wheel A, all constructed and operating substantially in the manner set forth.

3. The case A, inclosing the measuring-vessel D, attached to the rising and falling rod E, and provided with a discharge-spout, constructed so as to receive the liquid discharged from the measuring-vessel, and to carry the same out of said case, substantially in the manner set forth.

100,476, antedated February 26, 1870.—HORSE HAY-FORK. — George F. Weymouth, Dresden, Me.

Claim.—A horse hay-fork, having shaft A, slide B, and movable arm C, constructed and arranged as specified, for the purpose of working the tines D and E, by the aid of pawl F, pulley G, and ring H, arranged as specified.

100,477. — PISTON-PACKING. — William D. Whitmore, Bloomington, Ill.

Claim.—1. The shoe B, wedge *c*, and channels *z*, when constructed and arranged to operate as and for the purposes specified.

2. The break-joint block D and spring *h* when constructed, combined, and arranged as and for the purposes set forth.

100,478.—THRASHING-MACHINE.—Albert S. Whittemore, Willimantic, and John E. Atwood, Mansfield, Conn.

Claim.—The combination of the beaters C C, arranged tangentially to a circle around and in advance of the axis, with the grain-support or bearing D outside of the reach of the beaters, essentially as herein shown and described.

100,479.—SAFETY-ATTACHMENT FOR STEAM-BOILERS.—Norman Wiard, New York, N. Y., assignor to himself and Henri L. Stuart, same place.

Claim.—1. Modifying and controlling the temperature of steam under pressure, by admitting regulated quantities of water into the steam-space of the boiler, substantially in the manner set forth and shown.

2. Regulating, adjusting, and maintaining the degree of superheating steam above the temperature due to its saturation, by means of and in connection with the devices herein shown and specified, or their equivalents, when used for this purpose, in the manner described.

3. The peculiar form of the valve-casing containing two or more valves, and made substantially as shown, and connected with the boiler in the manner set forth.

4. The combination of a water-chamber and float, actuating an exhaust-valve, with an induction and eduction water-pipe, constructed, connected, and operated for the purpose of regulating and maintaining a uniform temperature of steam in boilers.

5. Resisting and regulating the escape of the water from the chambers or pipes within the steam-room containing it, by regulating the weight or pressure on or of the eduction-valve, for the purpose of obtaining the required degree of superheating of the steam.

100,480. — BRIDGE-GATE. — Julius Wilcke and M. Ellenbogen, Chicago, Ill., assignors to Maximilian Ellenbogen.

Claim.—The drums P, ropes or chains K and L, and gates D, when so constructed and arranged that the bridge, when it is opened and closed, will alternately rotate the drums in opposite directions, and wind the cords thereon, and open and close the gates, substantially as described.

100,481. — VALVE-COCK. — James Wilson, Philadelphia, Pa., assignor to William Simon, same place.

Claim.—1. A faucet or cock in which the valve is hinged at one edge within the casing, substantially as described, and is connected to a rotating spindle so as to be raised and depressed by the latter as specified.

2. The combination with the casing, of a detachable disk, F, and a valve, G, hung to a projection on the disk, substantially as specified.

3. The combination of the disk F, casing to which the disk is fitted, cover E, and packing, as set forth.

4. The ring *s* interposed between the projection *g* and packing *p* as described.

5. The valve G, hung at one side within the casing, having bent fingers *n n*, and operating in combination with the recessed screw spindle as specified.

100,482.—GUN-CARRIAGE.—John Wall Wilson, New York, N. Y.

Claim.—1. The combination of compresser-cams G G, with the compressors E E, for operation in relation to the carriage and with the compresser-bars F F, substantially as specified.

2. The combination of the concentrically-hung rollers H H and springs J J, operating to force them down or outward, with compressers arranged so that their lift causes the carriage to be borne down on the slides or in reverse direction to the thrust of the springs, essentially as herein set forth.

3. The elastic inclined cushions or slide portions K K, substantially as specified.

4. In the construction of said elastic cushions K K, the combination of the sliding or removable quoins *g g* with the rubber wedges *f f*, and the upper slides or slide-continuations *e e*, essentially as described.

5. The combination of the brakes *l l*, racks *k k*, and pinion *i*, with the gun-carriage, for operation upon or against the slides D D, substantially as specified.

100,483. — REVERSING-GEAR FOR STEAM-ENGINES.—D. A. Woodbury, Rochester, N. Y.

Claim.—1. The fixed hub F, provided with the stop *g*, and carrying the pinion H, in combination with the reversible eccentric A, when the latter is operated by suitable segmental gears, substantially as and for the purposes set forth.

2. The ratchet A and pawls *f f*′, operating as described, in combination with the reversible eccentric A, for the purposes set forth.

3. The studs *x x*′ in combination with the pawls *f f*′, arranged to operate conjointly, as and for the purposes set forth.

4. The studs *x x*′ on the disk J in combination with and operating upon the segment I, for the purposes set forth.

100,484. — FARM-GATE. — William H. Wright, Rochester, N. Y.

Claim.—1. In combination with a folding gate, the self-adjusting diagonal brace B, arranged to operate substantially in the manner shown, and for the purposes described.

2. The cord or chain *a*, pulleys *c* and *c*′, arranged substantially as shown, and weight *e*, in combination with a folding gate, having a self-adjusting brace, B, for the purposes set forth.

100,485. — CATTLE-PUMP. — William H. Wright, Rochester, N. Y.

Claim.—1. The platform D, hinged at the outer or approach end, and suspended at the opposite end by the chains *f*, which pass over pulleys *p*, and are connected to said platform and balance table C, as herein shown and described.

2. The arrangement of the suction-pipe *b* with its foot valve, and the bent delivery-pipe *c*, and valve *i*, in combination with the pump B, platform D, and the table C, for the purposes set forth.

100,486.—SASH-HOLDER.—Robert B. Hugunin, Cleveland, Ohio.

Claim.—1. Roller-plate A, when constructed as described, in combination with a rudder or elastic roller, so fitting the same as to be admitted by compression.

2. The combined metal and elastic-surfaced roller herein described, the metal extending so as to catch upon the casing, and combined with groove for the metal to run in, and a friction-surface in plate A.

3. Combined with the above metal and elastic-surfaced rollers, the curved friction-surface D in plate A.

REISSUES.

3,853.—STEAM-GENERATOR.—W. P. Abendroth, John Griffith, G. W. Wundram, and T. H. Müller, New York, N. Y., assignees of T. H. Müller. — Patent No. 83,528, dated October 27, 1868.

Claim.—1. The arrangement of openings *a* in the heads E, so as to produce a side circulation in the horizontal or inclined pipes D, substantially in the manner set forth.

2. The heads E, provided with openings *a* in their sides, and with openings *b* in their tops, placed eccentrically toward the center lines of the pipes D, substantially as shown and described.

3. The perforated tubular brackets *n*, through which bolts *m* pass, arranged with relation to the water-jacket F and heads E, substantially as set forth.

4. The water-chambers *d e* on the sides of the pipes D, and communicating with the heads E, substantially as described.

5. The water-jacket F, composed of chambers *c d e f*, communicating with the heads E and inclosing the pipes D, substantially as set forth.

3,854.—HAY-RAKER AND LOADER.—Horace Baker, Cortland, assignor to Richard K. Sanford, Volney, N. Y. — Patent No. 55,979, dated July 3, 1866; reissue 2,911, dated April 7, 1868.

Claim.—The combination, in a hay-loading machine, of two positively-actuated endless aprons without teeth or projections on their adjacent surfaces, arranged together and co-operating, so that both aprons take up the hay or grain from the ground, and elevate or convey it to the cart or wagon, substantially as herein specified.

Also, the elastic standards T T, for producing the self-adjustment movement of the endless aprons toward and from each other, substantially as and for the purpose herein specified.

Also, in combination with two endless aprons thus positively acting together and self-adjustable, one toward and from the other, an extensible gear, for transmitting motion from the driving-wheels to the self-adjustable apron, substantially as specified.

Also, in combination with the two endless aprons thus positively acting together, the delivery-boards or guides, arranged as described, for directing the hay or grain to the cart or wagon, substantially as herein specified.

3,855.—HAT.—John P. Beatty, Norwalk, Conn.—Patent No. 88,116, dated March 23, 1869; antedated February 2, 1869.

Claim.—1. A ventilator for hats, consisting of the corrugated or crimped wire, substantially as described.

2. The ventilator or corrugated wire F, when attached to the leather or sweat E, as a new article of manufacture.

3,856.—CRIMPING-MACHINE.—Flora B. Cabell, Quincy, Ill., assignee of Samuel G. Cabell.—Patent No. 56,365, dated July 17, 1866.

Claim.—1. Suspending the upper roll of a fluting-machine in adjustable bearings at each end, so arranged as to leave an unobstructed passage-way for the fabric at right angles to the plane of the axes of the rolls, substantially as described.

2. Mounting the upper roll in adjustable bearings at each end, one of which shall move in bearings in the frame in such a manner as to guide and direct the vertical movements of the roll, as set forth.

3. The rigid arm or support D, located above the rolls in such a manner as to leave an unobstructed passage for the fabric, in combination with a roll arranged to be raised and lowered, substantially as described.

4. The yoke, consisting of the bar B and the collars *a a*, one of which is made detachable, for the purpose of rendering the roll detachable, as described.

5. The combination of the upper fluted roll A and the yoke B, having one of its bearings detachable, constructed and arranged to operate substantially as described.

6. A lid, or cap, G, arranged to close the end of the hollow rolls, substantially as set forth.

7. In combination with the fluted rolls A A, supported in bearings at each end, and so arranged as to leave an unobstructed opening between their outer ends for the introduction of the fabric, the spring B, or its equivalent, substantially as and for the purpose set forth.

3,857.—USE AND APPLICATION OF FUEL IN METALLURGIC AND OTHER FURNACES.—Thomas William Clarke and William S. Dexter, trustees, Boston, Mass., assignees of James D. Whelpley and Jacob J. Storer. Patent No. 53,208, dated March 13, 1866.

Claim.—1. The use of finely-comminuted fuel or dust of fuel, mingled with the air used in supporting the combustion of the gases of furnaces or fire-boxes, substantially as and for the purposes described.

2. The use of the excessively fine floated powder or dust of fuel, prepared in the manner described by us, and projected by the air-jet or blast of a pulverizing-mill, in combination with the fire-box of a reverberatory or other air or flame-furnace, substantially as and for the purpose described.

3. The application of the pulverized fuel, as described, to be used as a prime agent of combustion in the heating of furnaces as a substitute for solid and massive fuel used upon grate-bars substantially as and for the purpose described.

4. The utilization of waste or broken coals and other fuels, substantially as and for the purpose described.

5. The heating of reverberatory furnaces or fire-chambers used in the preparation of metals or in the generation of steam, by finely-divided solid fuel, suspended or floated in the air above the hearth or sole, and beneath the cover or cope of the furnace itself, the same to be used as the prime agent or sole agent in heating, substantially as and for the purposes above described.

3,858.—DEVICE FOR SWAGING CHAIN-LINKS.—Oscar M. Draper, North Attleborough, Mass., assignee of Virgil Draper.—Patent No. 50,300, dated September 26, 1865.

Claim.—A mechanism for swaging chain-links and other like articles, which consists of a bed-die, A, a punch, F, and compressing-dies *c c*, in combination with an interior forming die-block, *d*, substantially as described.

3,859.—ELECTRO-MAGNETIC ALARM FOR RAILROAD SWITCHES.—Hall's Patent Electric Railway-Switch and Drawbridge-Signal Company, New Haven, Conn., assignees of Thomas S. Hall.—Patent No. 62,414, dated February 26, 1867.

Claim.—1. The method, above described, of creating a continuous alarm at a railroad station, until a switch, out of its place, has been readjusted.

2. The combination, with the switch or movable rail, of the slotted lever F, swivel-head C, plate *g*, and the metallic connections *h h'*, for operating an electric signal or alarm apparatus.

3,860.—BREECH-LOADING FIRE-ARM.—William Cleveland Hicks, Summit, N. J.—Patent No. 16,797, dated March 10, 1857; reissue 1,952, dated May 9, 1865; reissue 3,798, dated January 18, 1870.

Claim.—The combination, substantially as set forth, of the breech-closing piece, moving longitudinally with the barrel, the cartridge-chamber at the butt of the barrel, and the reciprocating extracting-hook arranged in such manner that its bill enters within the periphery of the said chamber, so that it may engage with the flange of the cartridge therein when the breech is closed by the forward movement of the closing-piece, even though the cartridge be not expanded.

Also, the combination, substantially as set forth, of the breech-closing piece, moving longitudinally with the barrel, the cartridge-chamber at the butt of the barrel, and the reciprocating extracting-hook, arranged in such manner that when the barrel is closed by the forward movement of the closing-piece, and when the bill of said hook is in its most forward position the said bill is both within the periphery of said chamber and in advance of the rear of the space in which the cartridge is received, so that said bill may engage with the unexpanded front side of the flange of the cartridge when the latter is within the said space.

Also, the combination, substantially as set forth, of the breech-closing piece, moving longitudinally with the barrel, the cartridge-chamber at the butt of the barrel, and the extracting-hook described, arranged in such manner that but one side only of the flange of the cartridge is engaged with the bill of a hook inside of the cartridge-chamber, thereby enabling the cartridge remnant to be readily disengaged from the extracting-hook.

Also, the combination and arrangement, substantially as set forth, of the hook, with the breech-closing piece, moving in the line of the barrel in such manner that the said hook performs the two functions of transmitting a blow to the primer and of extracting the cartridge remnant from the breech of the fire-arm.

3,861.—FLUTING-MACHINE.—Susan R. Knox, New York, N. Y., for herself, and assignee of W. D. Corrister.—Patent No. 53,633, dated April 3, 1866.

Claim.—1. A fluting-machine, in which the rolls can be readily disengaged from each other, by mechanical means, to permit the extrication of the material at pleasure, as hereinbefore set forth.

2. In combination with a stationary frame, carrying one of the rolls, and a movable frame, carrying the other roll, a variable spring-pressure device, acting upon the movable frame, substantially as and for the purpose set forth.

3,862.—REVERSIBLE LATCH.—Burton Mallory, New Haven, Conn.—Patent No. 38,400, dated May 5, 1863.

Claim.—The arrangement of the latch-bolt and its operative mechanism, in a case or frame independent of the main case, and inclosed in the main case, so that the latch-bolt may be reversed without disconnection from its operative mechanism.

3,863.—PENCIL.—Joseph Reckendorfer, New York, N. Y.—Patent No. 36,854, dated November 4, 1862.

Claim.—1. A pencil composed of a wooden sheath and lead core, having one end of the sheath enlarged and recessed, to constitute a receptacle for an eraser or other similar article, as shown and set forth.

2. A pencil, the wooden case of which gradually tapers from its enlarged and recessed head toward its opposite end, for the whole or a portion of its length, substantially as shown and described.

3,864.—COMPOUND FOR TREATING HIDES AND SKINS.—Louis F. Robertson, Morrisania, N. Y.—Patent No. 77,099, dated April 21, 1868; reissue 2,947, dated May 26, 1868.

Claim.—A compound for treating hides and skins, composed of lime, carbonate of soda, and oil, or their equivalents, substantially as described.

Also, the combination of the said ingredients with molasses, or other saccharine substances, substantially as and for the purpose described.

Also, depilating hides and skins by first applying molasses or saccharine substances, and afterwards treating them with alkaline substances, substantially as described.

3,865.—MACHINE FOR MILLING THE KNIFE-EDGES OF SCALE-BEAMS.—Thomas J. Rockwood, St. Johnsbury, Vt.—Patent No. 81,207, dated August 11, 1868.

Claim.—1. The employment of two or more milling-tools revolved, as represented, in independent housings, and adapted to act on opposite sides of the same knife-edge or edges, in combination with suitable adjusting means for changing their distances apart, and also their inclinations, and with a carriage or table, and suitable holding means for confining scale-levers of different sizes thereon, all adapted for presenting the knife-edges of scale-levers of different sizes, and for accurately milling the same, substantially as and for the purposes herein set forth.

2. The combination of the table and holding device with the four milling-tools P P^1 P P^2, when all are adjustable, as herein set forth.

3. The laterally-adjustable cross-piece F, the knife-edge supports *f*, adjustable to a greater or lesser distance apart by means of the screw *f'* and the table D, in combination with the milling-tools P P^2, all arranged substantially as and for the purposes herein specified.

4. The adjustable vertical stop X and screw-shaft *x*, in combination with the levers C C', carriage B, table D, and the milling-tools P P^2, as and for the purposes herein set forth.

5. The gauges N, their holders L, and fixed knife-edges V, on the carriage B, and the table D, in combination with the milling-tools or their equivalents, as and for the purposes herein set forth.

6. The arrangement of the four milling-tools P P^2 P P^1, the vertically-traversing carriage B, the transversely-traversing table D, and the several devices connected therewith, so as to allow the confining of levers of different sizes and of different proportions and widths, and the ready changing of the levers and of all the several parts, substantially in the manner herein described.

3,866.—TURBINE WATER-WHEEL.—Bradford Stetson, Uxbridge, and Elmer Townsend, Boston, Mass., assignees of Bradford Stetson.—Patent No. 29,654, dated August 14, 1860.

Claim.—The slotted plate E and its shaft C, arranged with the wheel A and its shaft B, joining the two shafts B and C by the disks *m m* and screw *o*, connected as described, and having the plate E applied to the buckets, and the latter to the wheel-heads, as specified.

Also, the arrangement of the annular or tubular gate around and concentric with the wheel, and within and concentric with the flume or curb, as set forth.

Also, the arrangement of the annular or tubular gate and its operative mechanism within the curb, and with respect to the wheel arranged within and concentric with such curb, in manner as shown and explained.

Also, the combination and arrangement of the gate F with the flume or curb of the wheel, the shaft C and the plate E applied to such wheel and its shaft B, the whole being substantially as explained and represented.

Also, the combination and the arrangement of the shaft D and the gate F with the flume or curb, the wheel, the shaft C, and the plate E applied to such wheel and its shaft B, the whole being substantially as described and represented.

3,867.—PROCESS OF TREATING PETROLEUM.—Joseph A. Tatro, Hartford, Conn.—Patent No. 99,728, dated February 8, 1870.

Claim.—The process described of applying the said ingredients, in about the proportions specified, to the whole product arising from the distillation of crude petroleum oil, for the purpose set forth.

3,868.—BUCKLE.—The West Haven Buckle Company, West Haven, Conn., assignees of Sheldon S. Hartshorn.—Patent No. 29,270, dated July 24, 1860.

Claim.—A buckle, in which the frame and tongues are constructed substantially as herein described, so that the tongues will cross and be supported by the frame, between the hinge and points of the tongue.

DESIGNS.

3,869.—PAPER-COLLAR BOX.—Franklin Field, Troy, N. Y.

Claim.—The design for a packing-box for collars and cuffs, as shown and specified.

3,870.—COLLAR AND CUFF BOX.—Franklin Field, Troy, N. Y.

Claim.—The design for a packing-box for collars and cuffs, as shown and specified.

3,871.—INK-BOTTLE.—Alonzo French, Philadelphia, Pa.

Claim.—An improvement in the barrel-shaped bottle patented by I. N. Peirce, October 17, 1865, (now owned by myself, "Liber 2, page 406, July 22, 1869,") consisting in making the under surface flat opposite the bung or neck, with projections extending out at the side from the center portion of the barrel, substantially as shown and set forth.

3,872.—TEA-SERVICE.—George Gill, Taunton, Mass., assignor to Reed & Barton, same place.

Claim.—The said described and represented design for a tea-service.

3,873.—OUTSIDE-DOOR LATCH.—William Gorman, New Britain, Conn., assignor to Russell & Erwin Manufacturing Company, same place.

Claim.—The ornamental design for a door-latch, substantially as herein shown and described.

3,874.—INKSTAND.—Joseph W. June, Wheeling, West Va.

Claim.—The design for an inkstand, substantially as represented and described.

3,875.—FLOOR-CLOTH PATTERN.—Charles T. Meyer, Newark, N. J., assignor to Edward C. Sampson, New York city.

Claim.—The design or pattern for floor oil-cloths, carpets, or other fabrics, shown and described.

3,876.—FLOOR OIL-CLOTH OR CARPET-PATTERN.—Charles T. Meyer, Newark, N. J., assignor to Edward C. Sampson, New York city.

Claim.—The design or pattern for floor oil-cloths, carpets, or other fabrics, shown and described.

3,877. — CAKE-BASKET OR FRUIT-TRAY.—William Parkin, Taunton, Mass., assignor to Reed & Barton, same place.

Claim.—The said described and represented design for a cake-basket or fruit-tray.

3,878, antedated October 1, 1869.—SHADE FOR GAS OR LAMP-BURNERS.—Benjamin Thackara, Philadelphia, Pa., assignor to Miskey, Merrill & Thackara, same place.

Claim.—The design for the body of a shade for a gas or lamp-burner, substantially as described, and as illustrated in and by the accompanying drawing.

3,879.—CARPET-PATTERN.—John T. Webster, New York, N. Y., assignor to Page, Wilder & Co., Hallowell, Me.

Claim.—The design or pattern for floor oil-cloth or other fabrics, herein set forth.

3,880.—CARPET-PATTERN.—John T. Webster, New York, N. Y., assignor to Page, Wilder & Co., Hallowell, Me.

Claim.—The design or pattern for floor oil-cloth or other fabrics, herein set forth.

EXTENSIONS.

CHARLES BURLEIGH, of Fitchburg, Mass.—Letters Patent No. 14,272, dated February 12, 1856.

"Improved Gearing for Feed-Rollers of Planing-Machine."

Claim.—The toothed links H and G, constructed and operating in the manner substantially as herein set forth.

JOHN THOMPSON, of New York, N. Y., executor of THOMAS THOMPSON, deceased. Letters Patent No. 14,280, dated February 12, 1856.

"Improved Machine for Folding Paper, &c."

Claim.—The forming-block in combination with the rollers K and K', so constructed and arranged as to draw the material to be folded over said block, and fold it, substantially as described.

JANE QUANTIN and HENY A. PINTARD, of Philadelphia, Pa., executors of the estate of Alphonse Quantin, deceased.—Letters Patent No. 14,368, dated March 4, 1856; reissue No. 3,175, dated October 27, 1868; reissue 3,272, dated January 19, 1869.

"Improved Method of Bottling Fluids Under Gaseous Pressure."

Claim.—1. The above-described device for filling bottles or other vessels with aerated water and sirup, consisting of conduits or passages A and B, a sirup-measuring chamber, and a discharging-nozzle or their known mechanical equivalents, so arranged that the water and sirup may be discharged from said nozzle common to both, substantially as shown and described.

2. The combination and arrangement in one draught apparatus of the sirup-measuring chamber and a cock or valve for drawing aerated water, substantially as shown and described.

3. The arrangement of the sirup-conduit and the water conduit, as a consequence of which the sirup is expelled from its conduit, and such sirup is mingled with the water at some distance from their common outlet, substantially as shown and described.

4. The combination, substantially as described, of a valve or cock for drawing the water, and a device for receiving and dispensing the sirup, as a consequence of which the reception and dispensing of the sirup are accomplished by the manipulation of the valve or cock for drawing the water.

5. The construction and arrangement of the vent-opening and closing device and the water-drawing valve or cock, as a consequence of which they are both operated simultaneously by the movement of water-drawing valve, substantially as shown and described.

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PATENTS.

100,487.—BARBER'S CHAIR.—Anthony Abel, New York, N. Y., assignor to himself and Adam Schwab, same place.

Claim.—A barber's chair having the arms B pivoted to prolongations of the front legs and swinging thereon as a fulcrum, while the back A is raised or lowered by means of rack C and gear H, all arranged as specified.

100,488.—TIRE-UPSETTING MACHINE.—Parley J. Ayres, Lydon, N. Y.

Claim.—The combination of the permanent bed A B', moving bed B, jaws F, bent handles I, pillars C D', bolt G, links K, projections L, and operating eccentric lever M, all substantially as specified.

100,489.—FAUCET.—Francis M. Bachman and Samuel Ricker, Fredericksburg, Pa.

Claim.—The combination of the stop-faucet A B and tapping-faucet F G H with each other, said parts being constructed and operating substantially as herein shown and described and for the purpose set forth.

100,490.—BOOT-LASTER.—Lewis Barnett, Leechburg, Pa., assignor to himself and James D. Boal, same place.

Claim.—The curved bar A, with the links A^2 and B, rods B', in combination with the cross-bar C and screwed stock D, when constructed, arranged, and operating substantially as and for the purpose described and set forth.

100,491, antedated March 1, 1870.—BED-BOTTOM.—William Bowen, Dayton, Mich.

Claim.—The stirrup composed of the wire D and plates E, substantially in the manner described, in combination with the spring F and slats A, for the purpose set forth.

100,492. — COFFEE-CLEANING MACHINE.—James W. Brady, Catonsville, Md., assignor to M. W. Brady, same place.

Claim.—The spiral wings or stirrers F, in combination with the cylinder A, composed of alternate sections of imperforate metal or wood and sections of wire-cloth or perforated metal, the cylinder and stirrers revolving in opposite directions, substantially as described for the purpose specified.

100,493. — COFFEE-CLEANING MACHINE—James W. Brady, Baltimore, Md., assignor to M. W. Brady, same place.

Claim.—The cleaning-cylinder, formed of alternate sections of imperforate metal, B, and removable wire-cloth or perforated-metal sections C, and

provided with radial shelves E E^1 E^2, and spaces e, between the outer edges of said shelves and the inner circumference of the cylinder, all constructed, arranged, and operating as herein set forth.

100,494. — PRINTING-PRESS. — James M. Brownson, Brooklyn, N. Y.

Claim.—Automatically holding and releasing the sheets, so as to insure their proper delivery to the nippers as they are fed to the press, substantially as described and specified.

100,495. — CORN-PLANTER. — S. B. Buck, Elyria, Ohio.

Claim.—1. The frame B, hinged to the adjustable frames H E, roller I, and levers F, when combined and arranged to operate in the manner substantially as described and for the purpose set forth.

2. The seed-boxes J, conductors K, and furrow-shares or blades L, in combination with the hinged adjustable frame E, and arranged in relation to the axial line of the wheels A, substantially in the manner as described and for the purpose set forth.

3. The disks C, shafts O, pinions P, segmental gear Q, levers R, and conductors K, all combined and arranged to operate in the manner as described and for the purpose specified.

100,496.—FRUIT-JAR.—Ira Buckman, Jr., Williamsburg, N. Y.

Claim.—1. The vertical projections e e in combination with the flange a a upon the neck d of the jar, as described, for the purposes set forth.

2. The wrench or key F, provided with projecting studs, and so shaped as to fit on the clamp and its arms, and to engage with the latter, to attach and detach the same to and from fruit-jars.

100,497.—DESULPHURIZING ORES.—Elizabeth A. Burns, Meadow Lake, Cal.

Claim.—1. The use of a jet of steam passing across the draught-openings a, for the purpose of preventing waste of the metals by evaporation, or by being drawn off by a draught, substantially as herein set forth.

2. A bath, for the purpose specified, compounded of the ingredients named in the foregoing specification, in about the proportions specified.

100,498. — CRIMPING-MACHINE. — William Butterfield, Boston, Mass., assignor to himself and Thomas Elwood Roberts, same place.

Claim.—My improved rotary crimping-machine, constructed, with the jaws D of each series formed and arranged relatively to each other in manner and to operate with the slotted crimping-wheel and the side plates or disks, (provided with springs,) as set forth, the several jaws, under such arrangement, serving to sustain one another, and being so insulated from each other as to be capable of moving or being moved toward or away from the wheel, as circumstances may require, during the process of crimping a piece of leather between such jaw and wheel.

100,499. — CULTIVATOR. — Horace Carr, Wooster, Ohio.

Claim.—1. So constructing and arranging the two middle beams and shovels of a cross row, or series of beams and shovels of a wheel cultivator, in combination with a suitable operating handle or lever, that the points of said middle shovels may be turned outward from or inward toward each other simultaneously, as described, by a single direct movement of said operating handle or lever, for the purpose set forth.

2. The combination of the oscillating beams F'' F''' toggles H^1 H^1, arm H^2, either single or jointed, and operating handle K, substantially as specified.

3. The combination and arrangement of the oscillating beams F'' F''', toggles H^1 H^1, arm H^2, either single or jointed, links H^3 H^4, handle K, and arms G' G', with and without the braces G, substantially as and for the purpose specified.

4. In combination with a turning beam-holder, B, forming the arm H^2, in two jointed parts, as and for the purpose set forth.

5. In combination with the turning-axle or beam-holder B, frame H, and lever M, the foot plate C, rod A', and arm A, substantially as described.

6. The plates R R and pins R' R', as and for the purpose set forth.

7. Connecting the middle beams F''' F''', when arranged to swing simultaneously in contrary directions on horizontal axes or bearings, by toggles H^1, as and for the purpose set forth.

100,500. — CULTIVATOR. — Horace Carr, Wooster, Ohio.

Claim.—1. The combination in a wheel cultivator of the shovel-beam F''' F''' arranged to work on perpendicular axes, toggles H' H', lever I, and connecting-link or links H'' H'', when so arranged that the said beams may be turned simultaneously in contrary directions without raising the shovels from the ground, substantially as specified.

2. Connecting the shovel-beams F''' F''' oscillating on perpendicular axes or pivots by toggles H' H', so as to give said beams simultaneous movement in contrary directions without raising the attached shovels from the ground.

3. The combination in a wheel cultivator of a turning axle, B, rigid shovel-beams F', movable shovel-beams F''', arranged to turn simultaneously on vertical axes in contrary directions, frame H, and lever M, substantially as and for the purpose set forth.

4. The hollow clips L, or their equivalents, in combination with the loops f'' and movable beams F''', as and for the purpose set forth.

5. The employment of the loops f'' as pivots for the beams F''', in the manner set forth.

6. The spring K' in combination with the lever I and beams F''', as and for the purpose set forth.

100,501. — CULTIVATOR. — Horace Carr, Wooster, Ohio.

Claim.—1. In a wheel cultivator having an axle or equivalent cross-bar or bars sustaining the shovel-beams with their shovels, and which axle or cross-bar may be so turned on its bearings as to raise or lower the shovels from the ground, as set forth, so arranging or articulating the shovel-beams on separate bearings that they may be raised or lowered either singly or in sets of two or more, independently of the movement of said axle or cross-bar.

2. The combination and arrangement of the bars I, levers F' F'', bars F''', and shovel-beams E''', substantially as and for the purpose set forth.

3. The combination and arrangement of the device G', lever F'', connecting-rod G, and link F, with a single beam, E''', so that said beam may with its shovel be raised or lowered independently of the rest, substantially as set forth.

4. In combination with the articulated beams E''', the hangers E, constructed and arranged substantially as and for the purpose set forth.

5. In combination with the independently-articulated beams E''' and axle B, the lever D, link L^1, and arm L^2, substantially as and for the purpose specified.

6. The lock-bars K, in combination with the arms I and beams E''', for the purpose set forth.

7. The springs H, when arranged as and for the purpose described, in combination with the rocking device G', and beams E'''.

100,502.—MORTISING-MACHINE.—Frank G. Chapman, Chicago, Ill.

Claim.—1. The chisel-carrying plungers O O, and levers K K, attached to an adjustable bed-plate z, in combination with an operative treadle, S, for the purpose set forth.

2. The levers K K, attached to the moving table N, and provided with the stirrup G, in combination with the laterally-adjustable draw rod R and treadle S, for the purpose set forth.

3. In combination with the dovetailing-machine, as described, the adjustable franking-chisels P P and their operating mechanism, substantially as herein shown and described.

100,503.—MACHINE FOR POLISHING WOOD. Frank G. Chapman, Chicago, Ill., assignor to Dennis Beach, same place.

Claim.—In combination with the sand-paper wheel C, constructed as described, the adjustable perforated table E, as set forth.

100,504.—BRACELET.—D. D. Codding, North Attleborough, Mass.

Claim.—Forming the body of a bracelet of two pieces of wood, as seen at A B, substantially as described.

100,505.—SASH-BOLT.—James C. Cooke, Bridgeport, assignor to De Witt C. Sage, Middletown, Conn.

Claim.—1. The tubular screw-stem A, slotted at *a a*, and provided with a head, A, in combination with the bolt B B', pin *c*, and a guard-plate, C, substantially as and for the purposes described.

2. The guard-plate C, perforated at *d d d'*, and having lugs *g g* and stops *e e* formed on it, adapted for use in combination with a spring bolt and a pin, *c*, substantially as described.

100,506.—PAPER-CUTTING-MACHINE.—Arthur W. Currier, Grand Rapids, Mich.

Claim.—The arrangement and combination of the slotted knife-plate *b b* so hung upon pulleys as to pass obliquely upward or downward when moved, and the toothed edge or segment *a'*, pinion *k*, gearing O, *r*, *n*, and *m*, and hand-wheel *l*, all constructed and operating as and for the purposes above set forth.

100,507.—SLATE-FRAME.—Charles B. Dickinson, New York, N. Y.

Claim.—The protectors *c*, formed with the fenders *d*, contiguous to the heads of the tacks by which said protectors are attached upon the slate-frame, in the manner specified.

100,508.—SCHOOL-DESK AND SEAT.—J. D. Diffenderfer, Lewisburg, Pa.

Claim.—The combination of the seat-irons E *e*, conical hubs *c*, cone bearings *g g*, projections *a*, and the cushion projections A, all constructed and arranged as and for the purpose set forth.

100,509.—STOP FOR BILLIARD-WIRES.—Edwin O. Dow, Chicago, Ill.

Claim.—A billiard wire, A, provided with a slotted, tapered, and hollow screw, I, which is clamped to said wire by means of one or more nuts C, in combination with the whirl B, as and for the purpose set forth.

100,510, antedated February 26, 1870.—RATCHET AND PAWL.—John H. Durran, Aurora, Ill., assignor to himself and William Lombard, Brooklyn, N. Y.

Claim.—The combination with a ratchet-wheel and pawl of the single or double-spring clamp shown and described.

100,511.—WATCH-REGULATOR.—Julius Elson, Boston, Mass.

Claim.—The disk or roller I, connected with an index or pointer, E, pointing to a graduated arc, B, on the regulating arm A, in combination with the grooved or projecting arc H, constituting a fine adjustment regulator for watches, substantially as shown and described.

100,512, antedated February 18, 1870.—STEAM AND WATER-SEPARATOR FOR STEAM-ENGINES.—Charles E. Emery, Brooklyn, N. Y.

Claim.—1. The steam-chest D, arranged as a separator and combined with steam-pipe *a*, substantially as herein specified.

2. The separating-chamber C, combined with steam-pipe *a*, steam-chest D, and pipe *t*, all constructed and arranged substantially as described.

3. The partitions *c c*, combined and arranged substantially as described.

4. The perforated plate *f*, combined and arranged substantially as described.

5. The arrangement of the perforated plates *b b* in the vessels or pipes C, substantially in the manner specified.

6. The pipe *t*, combined with a steam-chest and jacket, substantially as described.

7. The partition *f*, combined and arranged substantially as described.

8. The combination, with a double-cylinder engine, of a separating-chamber C, constructed, arranged, and operating substantially as described.

100,513.—WASHING-MACHINE.—Francis M. English, Evansville, Ind.

Claim.—1. The combination of the semi-cylindrical box or tub A, and the vertical winged wheels F *f'* and O *o'* with each other, said wheels being so arranged as to be revolved in opposite directions at the same time and by the same operation, substantially as herein shown and described, and for the purpose set forth.

2. The combination of the curved or semi-annular boiler or water-heating chamber B, with the semi-cylindrical box or tub A, and winged wheels F *f'* O *o'*, substantially as herein shown and described, and for the purpose set forth.

3. The combination of the furnace C, curved flue D, and smoke-pipe or flue E, with the curved boiler or water-heating chamber B, semi-circular box or tub A, and winged wheels F *f'* O *o'*, substantially as herein shown and described, and for the purpose set forth.

4. The combination of the crank N, gearing H I J K & L, and shafts G J M, with the winged wheels F *f'* O *o'* and semi-cylindrical box or tub A, substantially as herein shown and described, and for the purpose set forth.

100,514.—GUN-CARRIAGE.—John Ericsson, New York, N. Y.

Claim.—1. The arrangement and combination herein shown and described of the driving-wheels K K of the carriage, the gear-wheels *m m*, and the adjustable pinion *n*, whereby the gun may be run into battery and the driving-pinion ungeared, as and for the purpose specified.

2. The slotted plate *d e* of a rotary gun-carriage, sliding on bolt B, in combination with the downward-projecting lip *f* arranged on plate G of cross-bar *b*, all as and for the purpose specified.

3. A friction-plate, L, constructed and located as shown, in combination with the clutch M, having its two parts *n o*, arranged on alternate sides of the said plate, as and for the purpose specified.

4. The construction and arrangement of the perforated plate *g*, vertical check-bolt h and pin *i* to lock the slide to the deck, in the manner described.

5. The combination of the cam-shaft N, straps *x x*, and box *y*, all constructed and arranged as set forth to counteract the recoil force and lessen the shock upon the hurters, in the manner described.

6. The combination with the friction-clutch, operated by cam-shaft N, of the lever Z, and the notched and graduated arc-plate *a'*, to regulate the amount of friction in proportion to the charge in the gun, all as set forth.

7. The arrangement of the shaft N in bearings upon the front ends of metal bars *b'* that have a slight vertical play, for the purpose of relieving the friction-clutch upon the strap L, in the manner described.

8. The combination, with hurters H H, of the friction-clutch M, applied at the time and in the manner specified.

9. The combination, with a gun-carriage having a slight longitudinal play upon its pivot-bolt, of clutch N, hurters H H, and lip *f*, each of said instrumentalities operating at the time and in the manner specified.

100,515.—RAILWAY-CAR COUPLING.—William J. Evans, Homer, Iowa, assignor to himself and Charles Warner, same place.

Claim.—1. The combination with the draw-heads and the pins B of the guides A and tripping-arms E, when arranged substantially as specified.

2. The combination with the draw-heads, pins, guides, and tripping-arms, of the weighted tongues L, when arranged substantially as specified.

100,516.—MEDICAL COMPOUND OR OINTMENT.—George D. Field, New Orleans, La.

Claim.—The compound herein described, when the same is composed of the ingredients given in the proportions stated and is compounded substantially in the manner herein set forth.

100,517.—WINE AND CIDER MILLS.—W. K. Foltz and W. A. McCool, Ashland, Ohio.

Claim.—1. The arrangement, with rollers F G H and slotted apron P R, of the revolving brush K', right-and-left screw S, and cylinder C, all constructed and operating substantially as and for the purpose herein shown.

2. The slatted endless apron P and textile apron R, in combination with the rollers F G H and J K L and screw S, in the manner as described, and for the purpose specified.

100,518, antedated December 31, 1869.—HORSE HAY-FORK.—Roland S. Frame, Washington, Ohio.

Claim.—1. The blades D D', when constructed with outer converging edges *d d'* and point edges *e e'*, and the short inner curves *f'*, the edges *e e'* of blade D', projecting slightly beyond those of blade D, and forming a V-shaped cutting-point, all arranged as shown, to operate as described.

2. The arrangement on rod G of the tripping device, consisting of loops *j* and *m*, bolt *k*, spring *n*, in combination with notch *o* in block C, all arranged to operate substantially as and for the purpose set forth.

100,519.—HIDE-MILL.—John P. Friend, Peabody, and Benjamin R. Annable, Salem, Mass.

Claim.—1. Connecting the pitman and vibrating arm of a hide-mill by means of a strap secured by a key, which is adjusted on the upper side of the beater, in the manner substantially as set forth and shown.

2. The combination of the bearing E E with the movable strap D, which is moved by a wedge-shaped key at the other end of the strap, adjusted from the upper side of the beater, substantially as described.

3. The tube G, passing down from the upper side of the beater to the bearing E E, for the purpose set forth.

100,520.—TANNING.—Alfred D. Fullmer, Buffalo, N. Y.

Claim.—The process of tanning, as a whole, substantially as hereinbefore described.

100,521.—DIE FOR FORMING SHOVELS.—Henry O. Ganyard, Rochester, N. Y., assignor to Ami Hills, same place.

Claim.—1. As an improvement in machines for pressing shovels, the die A, having a spring or yielding bottom C, in combination with the follower B, all operating substantially as and for the purposes set forth.

2. The combination of the dies A, B, and C, mandrel d, and bending-rollers D and D', constructed and arranged substantially as described.

100,522.—HANDLE OF FOLDING UMBRELLA. Louis Gehlen, New York, N. Y.

Claim.—An umbrella stem having handle A, tubes B C, rods D *b*, links *a e*, pin *d*, and notch *c*, all combined, constructed, and arranged as specified.

100,523, antedated February 26, 1870.—PROCESS OF PULPING AND BLEACHING PAPER STOCK.—John W. Goodwyn, Petersburg, Va.

Claim.—An improved process for pulping and bleaching paper stock, which consists in first submitting the substance to the action of hot dilute nitric acid; second, boiling it in an alkali in an open vessel, and third, submitting it to a bath of chloride of lime and sulphuric acid.

100,524.—BEE-HIVE.—Henry Grems, Westmoreland, N. Y.

Claim.—The arrangement of the vertical triple walls forming two connecting air-spaces for the air to pass through them from bottom to top, the inner one of which communicates with the horizontal air-spaces between the comb-frames and the upper honey-boxes, while the outer space admits air from the outside through adjustable perforated openings upon the front and rear ends of the hive, substantially as herein described and set forth.

100,525.—SAD-IRON HEATER.—Gordon O. Hanks, Addison, Vt.

Claim.—In combination with the flat-iron heater A, the shutters C, and covers D, constructed and arranged so as to be operated simultaneously by the rods E, substantially as shown and described, for the purpose set forth.

100,526.—COTTON-SEED PLANTER AND FERTILIZER-DISTRIBUTER.—Henry C. Harris, Fort Valley, Ga.

Claim.—1. The combination of the sliding plate J and swiveled screw K, with the slotted and concaved bottom I of the hopper H, substantially as herein shown and described, and for the purpose set forth.

2. The combination of the spring coverer S T, with the frame A, and dropping device of a planter, substantially as herein shown and described, and for the purpose set forth.

3. The adjustable agitator P^1 Q P^2, in combination with the shaft O, hopper H, and slotted bottom I, substantially as herein shown and described, and for the purpose set forth.

4. Securing the furrowing-plow standard D adjustably to the draw-bar B of the frame A, by the notches or teeth *d'*, plates E, and wedge-key F, substantially as herein shown and described, and for the purpose set forth.

100,527.—ICE-CHAMBER FOR REFRIGERATOR. James W. Hazlett, New York, N. Y.

Claim.—An ice-box or chamber for refrigerators, cast with corrugations *c c* and divided into separate surfaces by the channels *a a*, as shown, and provided with the guards *e e*, when constructed as herein described for the purpose specified.

100,528.—EVAPORATING SALT-BRINES AND OTHER LIQUIDS.—Jacob Heim, New York, N. Y.

Claim.—1. The general arrangement of the above-described apparatus.

2. The mode of manufacturing any salt or salty substance by the above-described apparatus.

3. The mode of rectifying any liquid by the above-described apparatus.

100,529.—STUMP-EXTRACTOR.—Johnson Higgins, Friendship, N. Y.

Claim.—1. The combination of the triangular lever A B C D, constructed substantially as herein shown and described, and for the purpose set forth.

2. The combination of the lever E, hook F, and eye-bolt G, with the triangular lever A B C D, substantially as herein shown and described, and for the purpose set forth.

3. The combination of the rope or chain I, pulley H, and clevis J, with the lever E, and triangular lever A B C D, substantially as herein shown and described, and for the purpose set forth.

4. The combination of the wheels K and M with the lever E and triangular lever A B C D, substantially as herein shown and described, and for the purpose set forth.

100,530, antedated March 2, 1870.—Flue for Dry-House.—Wiley B. Hix, Rome, Ga.

Claim.—1. The arrangement in the furnace of a fruit-drier of sliding and detachable coal-grates D D, as and for the purpose specified.

2. The arrangement of the flues E^1 E^2 E^3 E^4 E^5, as shown and described, for distributing the heat in the manner described.

3. The combination of the base F, having valve G^3 therein, with the rotary pipe H, all as shown and described, to form a suitable chimney.

100,531.—Steam-Generator.—George P. Hunt, United States Navy.

Claim.—In connection with a properly-prepared and properly-stayed tube-sheet B^1, the plain cylindrical tube A, and close-fitting thimble D, having a tapering threaded exterior, and plain cylindrical interior, all combined and arranged as represented.

Also, the sets of coinciding notches *d*, formed in both the tube end A, and tight-fitting thimble D, as specified.

100,532.—Grain and Straw-Carrying Attachment for Separators.—Byron Jackson and Benjamin F. Jackson, Woodland, Cal.

Claim.—1. The slotted standards *a* and *b*, supporting the shafts C and turning about vertical axes, to allow the spouts to be adjusted, substantially as herein described.

2. In combination with the device above claimed, the arrangement of the pulleys J and K, for driving the pulleys H and F, to give motion to the carrying-belt, substantially as described.

100,533.—Lamp-Shade.—William H. Johnson, Springfield, Mass.

Claim.—1. A lamp-shade, made in a polygonal form, from an entire sheet of paper or other suitable material, by cutting the same to a sectional and radiate form, and then bringing the contiguous edges of the sections together and securing them substantially as described.

2. In combination with a lamp-shade so cut and formed, the strips B for uniting the several sections, substantially as described.

3. In combination with a lamp-shade, made of a sectional and polygonal form, the metallic frame with its arms resting in the angles of the sections, in the manner and for the purpose described.

4. The lamp-shade, constructed substantially as described, as a new manufacture.

100,534.—Carbureting Air.—Charles Lawrence, Cincinnati, Ohio.

Claim.—The process of carbureting air by passing the same through intermittent baths of hydrocarbon liquid, and drying it between each bath, as and for the purpose specified.

100,535, antedated February 26, 1870.—Corrugations of Boot and Shoe Uppers.—William Lee, New Haven, Conn.

Claim.—A wrinkled boot or shoe-upper formed in the manner described, in which the wrinkle is held in place without filling by means of a smooth lining, substantially as described.

100,536.—Stove-Grate.—Erastus C. Loud, Springfield, Mass.

Claim.—A grate, B, having journals *a a*, resting in bearings about the middle of a concave, *b*, and vibrated therein, as and for the purpose specified.

100,537.—Mill-Stone Dress.—G. W. Loy, Nacogdoches, Texas.

Claim.—A stationary stone, having the elbow-dress to force the grain out to the points of greater speed, and the straight dress to retain the grain at the point of greatest speed until ground, as shown in fig. 1 of drawing, in combination with a runner having a curved dress, all as shown and described.

100,538.—Wind-Wheel.—Charles Mahler, San Francisco, Cal.

Claim.—1. Regulating the speed of the wheel by means of the two inclined blocks I and J, whose inclosed surfaces are corrugated, as described, and the lug or projection *b* on the shaft F, in combination with the governor L, substantially as herein specified.

2. The slots *a* in the vanes G, whereby the relative widths of the parts on opposite sides of the arms are made variable, substantially as and for the purpose set forth.

100,539.—Base-Burning Fire-Place Heater.—John Martino, Philadelphia, Pa.

Claim.—1. Laterally-sliding doors *d d*, applied to the front wall of the ash-drawer chamber of a fire-place stove, substantially as and for the purposes described.

2. The arrangement of horizontal division-plates a^3 a^3, in the flue-space *b*, of the base-section of a fire-place stove, having a back flue extension or smoke-chamber, L, and the ascending and descending flues b', arranged substantially as described.

3. The application of valves or register-slides C′ to the cold-air openings of the case or back inclosing wall of a fire-place stove, substantially as described.

4. The construction of the plate F, which caps the combustion-chamber, with an annular elevation, which will afford a raised support for the magazine section E, and form in conjunction with this section an annular combustion-space, *f*, substantially as described.

5. A fuel-magazine, composed of two sections E E′, connected together by a flange, and the latter held in place by lugs, and sustained substantially as described.

6. The air-heating chamber g^1, formed above the combustion-chamber B, by means of the parts G, F and E′, substantially as described.

7. The water evaporators N N, mounted upon hollow perforated bases g^3, and arranged on opposite sides of the upper section of the stove, substantially as described.

8. The smoke-chamber L, constructed at the back of the air-chamber g^1, and between the two plates F H, and in communication with the combustion-chamber B and the flue *b*, in base A, substantially as described.

9. The air-inlet flues *r r*, in combination with smoke-chamber L, and air-heating-chamber g^1, substantially as described.

10. The gas-passage *m*, constructed in the top plate H, and forming a communication between the top of the fuel-magazine and the smoke-chamber L, substantially as described.

11. The arrangement of two valves or dampers *l l* in the smoke-chamber L, so as to operate substantially as described.

12. Providing for the removal of the magazine section E, through an opening made through the top plate H of the stove, in combination with a cover, K, having a feed-opening through it, substantially as described.

13. A removable perforated cover, J, having a feed-chute applied to it, in combination with a feed-opening through the top plate of the magazine, substantially as described.

14. Adapting the flues, dampers, and pipe-holes of a fire-place stove, for application to either a right or left-hand chimney-flue, substantially as described.

15. A continuous guard-rail fender, having the front portion a^1 of its rail depressed, substantially as and for the purpose described.

16. The pot-cover T^1, and its movable cap T^2, adapted to close the feed-chute T, substantially as described.

17. The perforated guard-ring section *g*, in combination with the perforations at the base of the air-chamber case G, substantially as described.

18. The elevated annular combustion-space *f*, in combination with the exit-passage B′, leading directly from the combustion-chamber B into the smoke-chamber L, and arranged below the base of said combustion-space, substantially as described.

19. Flue-pipes b^2 b^2, flue base A, smoke-chamber L, and dampers *l l*, combined and operating substantially as described.

20. The double cover slide *d*, in combination with the pipe-holes *r* and case D, substantially as described.

100,540.—Compound for the Manufacture of Wax-Flowers.—Mary Jane McColl, Chicago, Ill.

Claim.—The manufacture or preparation of the compound herein described of the ingredients and in the proportions substantially as and for the purposes set forth.

100,541.—Bevel-Jawed Vise.—Austin Z. Mason, Adrian, Mich., assignor to R. B. Robbins, same place.

Claim.—The omission of the plate C, described in said patent, and the construction herein described of the plates B and D, and the arrangement of the same on the vise-jaw, substantially as and for the purpose set forth.

100,542.—Instrument for Coupling Railway Cars.—Abner McOmber and Mina Ward, Schenectady, N. Y.

Claim.—1. A rod or staff, provided with hooks or lugs *g g′* and *d*, and adapted for supporting and guiding coupling-links during the act of coupling cars, substantially as described.

2. Constructing such a rod or staff of sections A, B, and C, connected together by rule-joints, substantially as described.

100,543.—Railroad-Car Heater.—William Meller, McKeesport, Pa., assignor to himself and Joseph Sutton, same place.

Claim.—The combination and arrangement of the water-chamber *i*, pipes *g*, *h*, and *h′*, valves 5 and 6, openings 2, and stove B, the whole being constructed, arranged, combined, and operating substantially as herein described, and for the purpose set forth.

100,544.—Coffee-Pot.—Santo Mento, Alliance, Ohio.

Claim.—1. The cylinder B and coffee-holder D, in combination with the pot A, substantially as and for the purpose set forth.

2. The pipe H, deflector I, in combination with the condenser G, in the manner as and for the purpose specified.

3. The condenser G, in combination with the cylinder B and pot A, in the manner substantially as and for the purpose set forth.

4. The cylinder B, coffee-holder D, perforated condenser G, pipe H, and deflector I, all constructed and arranged to operate in combination with the pot A, as and for the purpose specified.

100,545.—Meat-Pounder Block and Chopping-Bowl.—George B. Mill, Buffalo, N. Y.

Claim.—As a new article of manufacture, the combined wooden meat-pounding block A and chopping-bowl B, constructed as hereinbefore set forth.

100,546.—Press for Hay, Cotton, &c.—Samuel Miller, Mount Union, Pa.

Claim.—1. The rocking block or plate H, in combination with a double-ratchet hoisting-bar, where the same is made to operate pawls by means of a lever, substantially as and for the purposes described.

2. The plate N, connected with the lever, by means of which the pawls are operated so as to lower the hoisting-bar, substantially as described.

100,547.—Revolving Harrow.—Halsey H. Monroe, Thomaston, Me.

Claim.—The improved regulator for revolving harrows, consisting of the weight M, sliding upon the arm A, or its equivalent, substantially as and for the purpose set forth.

100,548.—Preparing Button-Hole Twist.—Robert Morrison, Yonkers, N. Y.

Claim.—As a new article of manufacture, button-hole twist, prepared for winding in balls or upon spools by binding the threads together by one or more binding-threads coiled lightly around the twist, substantially in the manner and for the purpose described.

100,549.—Lightning-Rod.—David Munson, Indianapolis, Ind.

Claim.—The double tubular sheet-metal lightning-conductor with spiral flanges, constructed in sections and joined together in the manner substantially as and for the purpose set forth.

100,550.—Damper-Action for Upright Piano-Fortes.—George W. Neill, Boston, Mass., assignor to Chickering & Sons, same place.

Claim.—In the upright piano-action, provided with the inclined connecting-piece D pivoted at its upper end to the damper-lever, the combination of the weighted arm E pivoted to such piece D, with the said piece D and the key A, the whole being so as to enable the connection-piece to be actuated by the arm E, when in movement with or when moved by the key.

Also, the arrangement of the lifter G, the weighted arm E, the pivoted connection-piece D, and the damper-lever C.

100,551.—Scroll-Saw.—Governeur M. Nickason, Ellenville, N. Y.

Claim.—1. The stop *d*, pivoted to the slide C, and arranged to regulate the movement of the saw or slide D, in combination with the spring F, plate D, and strap E, all constructed and arranged to operate as shown and described.

2. The slotted slide C, adjustable in guides *a*, by means of the screw-bolt *b* and nut, and provided with the presser-foot *h*, the upper slide D, stop *d*, adjustable strap E, and spring F, all constructed, arranged, and operating in the manner set forth.

100,552.—Fanning-Mill and Grain-Separator.—Harrison Ogborn, Richmond, Ind.

Claim.—1. The trough I^3 and screen J, in combination with the tenoned piece d^3 and spout I^4, when used together for the purposes and in the manner described.

2. The open or slotted shafts A^4, when used for the purposes and in the manner set forth.

3. The double eye *r* and rod P^1, in combination with the hook c^1 and plate c^2, when used together for the purposes and in the manner set forth.

4. The rods W and X, in combination with rod *m* and P, when attached and used together, for the purposes and in the manner set forth.

5. The hook c^1 and adjustable slotted plate c^2, or their equivalents, when used for the purposes set forth.

6. Providing a pinion, V^2, or its equivalent, with an adjustable journal-box or bearing, when used for the purpose of varying and regulating the speed of motion of the "shoe" in a grain or seed-cleaner substantially in the manner and for the purposes herein set forth.

100,553.—Purifying Acetic Acid.—Thomas L. Olden, Brooklyn, N. Y.

Claim.—1. The process of purifying acetic or pyroligneous acid, while in the state of vapor, by the action of nascent chlorine and of binoxide of manganese, substantially as herein described.

2. The use of binoxide of manganese in purifying acetic acid vapor, in the manner set forth.

100,554.—Wood Pavement.—A. Warner Platt, New York, N. Y.

Claim.—The blocks A A, made with oblique incisions *a a* in and across their upper surfaces, substantially as and for the purposes herein set forth.

100,555. — GRAIN-DRILL. — Hiram Pulse, Waldron, Ind.

Claim.—1. The described arrangement of beams A A′, handles B B′ with the braces C *c* C′ *c*′, in which the sliding axle D of the ground-wheel E is journaled, when combined with the cog-gearing, or equivalent connection with the dropping-wheels J J′ J″, for the purpose explained.

2. The arrangement of dropping-wheels J J′ J″, pits K K′ K″, adjustable cut-off X, and adjustable gate Y *y* Z, adapted to discharge above or below, and in greater or lesser quantities, at option of the husbandman, in the manner designated.

3. In combination with the elements of the preceding claim, the expanded and visible mouths *n n′ n″* of the grain-spouts.

100,556.—LOCK.—Daniel B. Read and James H. Clapp, Providence, R. I., assignors, by mesne assignments, to C. C. Dickerman, Boston, Mass.

Claim.—The combination and arrangement of the lever G and the counter or double spring F with the pair of tumblers, substantially as hereinbefore explained.

100,557.—STOVE-PIPE DRUM.—Edmund D. Roberts, Hartford, Conn.

Claim.—The smoke and heat-chamber *a*, with its tubes *d* arranged within a cold and hot-air chamber A and *i*, with the tubes *f* and *g*, substantially as set forth.

Also, in combination with the above, a hot-air chamber or oven *i*, substantially as set forth.

100,558.—WINDOW-SHADE HOLDER.—Edward J. Robinson, Syracuse, N. Y.

Claim. — The shade-holder consisting of the weighted lever D, in combination with the open ring A and its arms or extensions B and C, operating substantially as herein shown and described, and for the purpose set forth.

100,559.—GASOMETER.—Thomas F. Rowland, Green Point, N. Y.

Claim.—The means, substantially as herein described, for controlling the pressure of gas discharged from a gas-holder by supplying and discharging water, as herein specified.

100,560.—SLED-BRAKE.—George W. Sanborn, Gilmanton, N. H., assignor to Jeremiah W. Sanborn, same place.

Claim.—The combination of the dog C and arms *b b*, the hinge-lever or brakes *d d*, attached by the ropes K *k k* to the yoke, substantially as and for the purpose hereinbefore set forth.

100,561, antedated February 21, 1870.—SELF-CLOSING FAUCET.—Carl Schultz and Thomas Warker, New York, N. Y.

Claim.—A self-closing faucet, containing a valve *a*, seat *c*, expansion-chamber *f*, spring-chamber *g*, and hand-screw C, all as shown and described.

100,562.—CALKERS' MALLET.—Samuel C. Searles, Wilmington, Del.

Claim.—The calkers' mallet herein described, consisting of the metal socket-head A *a*, screws or pins *b b*, stocks B B, and handle D, constructed and applied as and for the purpose set forth.

100,563.—FELTED FABRIC.—Simon P. Siver, Danbury, Conn.

Claim.—1. The process of forming felted fabrics having plain grounds and ornamental spots, by intermixing bits of felt with the bat while the same is being formed in the carding-machine, and then felting the product in the ordinary manner.

2. As a new article of manufacture, a felted fabric, whereof different colors or figures have been imparted to its face by thoroughly incorporating therein small detached pieces of previously felted fabric.

100,564. — TOY MONEY-BOX.—Friend W. Smith, Jr., Bridgeport, Conn.

Claim.—1. The combination of the money-box and the dial in such manner that the entrance of the coin presents a picture, image, symbol, or sentence to view, these parts being constructed to operate substantially as hereinbefore set forth.

2. The construction of the money-box with one opening for the insertion of the coin, and another for the exhibition of an image, symbol, sentence, or picture, as hereinbefore set forth.

3. The combination of the rotating dial, its flanges, and the pawl, in such manner that the backward movement of the dial is prevented, and it is held with its sign in proper relation to the opening in the case, all these parts being constructed to operate substantially as hereinbefore set forth.

4. The combination of the rotating dial with the swinging stop in such manner that the movement of the dial is arrested by the descent of the coin, these parts being constructed to operate substantially as hereinbefore set forth.

5. The combination of the dial, the pawl, and the swinging stop, in such manner that the forward movement of the dial is arrested by the stop, and its backward movement by the pawl, all these parts being constructed to operate substantially as hereinbefore set forth.

6. The combination of the dial, notched on its periphery, with the pawl, in such manner that the pawl both temporarily arrests the forward movement of the dial and prevents its backward movement, these parts being constructed to operate substantially as shown in fig. 5 of the drawings hereto annexed.

7. The combination of the money-box and the vibrating dial, constructed to operate substantially as shown in figs. 6 and 7 of the accompanying drawings.

100,565.—RIDING-SADDLE.—Eugene Spedden, Astoria, Oregon.

Claim.—The pulley-block A, fastened fixedly to a saddle, as shown and described, in combination with movable block E, having one or more sheaves thereon, hook F, spring G, cord I, and spring clamp L, all constructed and arranged as and for the purpose specified.

100,566, patented in England, July 18, 1868 FURNACE FOR SMELTING, AND FOR OTHER PURPOSES. — John Thomas, Middlesbrough, England, assignor to himself, William Bacon, Harrison Groves, and Hugh Chaytor, same place.

Claim.—1. The construction and arrangement of water-boshes having spikes cast or otherwise formed on their inner side, in the manner and for the purpose substantially as herein set forth.

2. In combination with the said spiked water-boshes, the water-entablature J, pipes K, pipes N, and pipes O, arranged and acting substantially as herein set forth and shown in the annexed drawings.

100,567.—BALANCED WATER-ELEVATOR.—William L. Thomas, Wadsworth, Ohio.

Claim.—The combination and arrangement of the barrels A B, pistons E, pipes F and D, crossheads S, connecting-rods R, working beam M, and the frame C, operating substantially as and for the purposes herein shown and described.

100,568. — SEAL-LOCK. — Gustave Ulmann, Ivry-sur-Seine, near Paris, France, assignor to Charles Rhodes Goodwin, same place.

Claim.—The combination with the case *b b′*, arranged substantially as described, of the spring bolt *a*, seal-holding plate J, disk *i*, and perforating stud *s*, all substantially as specified.

100,569.—BED-BOTTOM.—William W. Wait, Richmond, Ind.

Claim.—1. The rod G journaled in the rails A A′, the lever N, and pawls K K, in combination with the slats E and hinges or pivots P P, as described.

2. The semicircular guide-pins I, the notches U and the springs R, arranged and operated as described, for the purposes and in the manner set forth.

100,570.—MACHINE FOR MAKING HORSE-SHOES.—Edwin Wassell, Wood's Run, Pa.

Claim.—1. The arrangement of the disks P and R, the several series of dies 1 and 2, the two pairs of levers *n*, the several rollers connected with said levers, and the several cams on the several wheels *f*, all arranged and operating with relation to each other, substantially as herein described and for the purpose set forth.

2. The combination and arrangement of the clamps *a*, adjustable rollers S, with the dies *m′* and 1, constructed, arranged, and operating with relation to each other substantially as herein described and for the purpose set forth.

100,571, antedated March 1, 1870.—STOVE-SHELF AND DRIER.—John J. Watson, Contesville, Pa., assignor to himself and Hiram Watson, same place.

Claim.—The arrangement of the flanged shelf B with its brace C, revolving jointly around the vertical support A, in combination with a revolving holder, D, for rods E, said support A being provided with a foot-piece, F, clamp-piece G, and a slotted adjusting-brace, H, for attaching the same to a stove, in the manner and for the purpose specified.

100,572.—VAPOR-BURNER.—Henry Wellington, Chicago, Ill., assignor to himself and Truman P. Doane, same place.

Claim.—1. The adjustable heater F, carrying the mixing-chamber G and the burner, in combination with the generator A and lateral tube D, substantially as described for the purpose specified.

2. In combination with the generator A, the lateral tube D having the flattened upper surface around the orifice *a*, substantially as described for the purpose specified.

3. The heater F, constructed as described with the perforated shield I, and the offset containing the mixing-chamber, substantially as described for the purpose specified.

100,573.—FERTILIZER-SOWER.—Thomas J. West, Alfred Centre, assignor to himself, John L. Russell, and Abram C. Frisby, same place, and Joel Morekess, Andover, N. Y.

Claim. — The combination of the distributing-trough mounted on wheels, and having a variable discharge-opening along the bottom of the reciprocating agitators G, arranged as described, and either provided with the flanges H or not, all substantially as specified.

100,574.—MACHINE FOR MAKING HORSE-SHOES.—Charles W. Wettengel, Pittsburg, Pa.

Claim.—1. The combination and arrangement of the disk D, plates 10 and 11, guides or cams *g h i J k*, head pieces P and R, provided with grooved rollers 6, cams 3, 12, and *m*, cutter *n*, and die *s*, the several parts being constructed, combined, arranged, and operating with relation to each other substantially as herein described, and for the purpose set forth.

2. The revolving clamping-die B′ provided with inclined grooving-tools 16, in combination with the revolving die *s* and projection *t*, arranged to operate conjointly, substantially as herein described, and for the purpose set forth.

100,575.—LOOM-CAM.—George O. Wickers, Lawrence, and Thomas J. McClary, North Andover, Mass.

Claim.—The combination of a series of cams, A, with the quill B and the fingers E and F, for connecting the series with the quill, substantially as described.

100,576, antedated December 30, 1869.—STEAM-PUMP DEVICE.—Martin Wilcox, Sacramento, Cal.

Claim.—1. The arrangement of the supply-pipe of a steam-pump whereby to produce a draught on its exhaust steam by means of an opening or draught-passage between the two, substantially as set forth.

2. The pipe D and condenser E, in combination with the receiver C and discharge I, constructed in the manner and operating substantially as represented.

3. The weight N, in combination with rod M, gate L, and float O O, constructed and operating in the manner and for the purposes as explained.

100,577.— SASH-HOLDER.— James Wilkinson, Albany, N. Y.

Claim.—1. The pawl E, in combination with the lever D, bolt B, and case A, having the notch *e*, as and for the purpose set forth.

2. The arrangement and combination of the bolt B, lever D, spring *d*, and pawl E, with notched case A, as and for the purpose set forth.

100,578.—LANTERN.—Arnold Withmar, St. Louis, Mo.

Claim.—1. The chimney D, combined with the cap G G^1 G^2 and the openings g^1 and g^2, arranged in relation to each other and the chimney substantially as and for the purpose set forth.

2. The lantern described, consisting essentially of the base A with rests *a′*, removable chimney D, draught-holes *a*, oil vessel E and cap G G^1 with openings g^1 g^2, when constructed and arranged as described, for the purpose set forth.

100,579. — METHOD OF LAYING OFF PATTERNS FOR STITCHING ON LEATHER.—William P. Wolfington, Louisville, Ky.

Claim.—As an article of manufacture, a metal plate, with sharp protuberances in design, for impressing such design upon leather, &c., for stitching "seam-lines," "note-marks," &c., substantially as set forth.

100,580. — INLAYING METALLIC SURFACES. Eldridge G. Wright, Boston, Mass.

Claim.—The said method as my invention.

100,581, antedated March 1, 1870.—BOLT-MACHINE.—John R. Abbe, Providence, R. I.

Claim.—1. The combination of the longitudinal and transverse anvil or die-carriers *b d i i′*, arranged and operated substantially as shown and described.

2. The upset *n*, in combination with the anvils *e e h h′*, when arranged and operated in the manner set forth.

3. The arrangement of the levers *l l′*, links *m m*, die-carrier *b*, and transverse carriers *i i*, substantially as described.

100,582. — UMBRELLA. — Durward Adams, Boston, Mass.

Claim.—The India-rubber springs I J, in combination with the braces B B, ribs C C, and the runner E, when constructed and arranged substantially as and for the purpose set forth.

100,583.—VEGETABLE AND FRUIT-PEELER.—Ellicott D. Averell and Joseph Malan, Brooklyn, N. Y.

Claim.—1. The combination of the hinged or pivoted vanes D D′, arranged spirally on or around the revolving shaft C, in combination with the grater-like cylinder A, made to revolve in a reverse direction to said shaft, substantially as specified.

2. The hinged or pivoted vanes D D', constructed to form graters, in combination with the grater-like cylinder A, essentially as described.

3. The arrangement of the hopper or inlet-opening E and outlet-opening F in the ends of the case B with the inlets and outlets G and H in the ends of the cylinder A, for operation in connection with the hinged or pivoted vanes D D' and said cylinder A, substantially as specified.

100,584. — CARRIAGE-WHEEL. — James R. Baird, Vincennes, Ind.

Claim.—1. In a staggered-spoke wheel, a wire dowel-ring, inserted between the front and back spokes, forming a circuit around the hub, substantially as herein set forth.

2. The arrangement of two series of spokes in a wheel, when one series is provided with tenons inserted in mortises in the hub, and the other series have no tenons, but rest on the surface of the hub, substantially as herein set forth.

3. The combination of the hub A, front spokes B B, back spokes C C, with their tenons D D, wire dowel-ring a, wedge-blocks E E, dowel-pins or wires *b b*, flanged bands G G, and bolts or rivets *d d*, all constructed and arranged substantially as shown and described.

100,585.—EXPANSIBLE CORES FOR CASTING IRON, GLASS, &c.—Anson Balding, Wheeling, West Va.

Claim.—1. The combination of the sections A, blocks B, bar D, and plates *d*, in the manner and for the object specified.

2. The combination of the block B with the rollers *b'*, in the manner and to the end set forth.

3. The combination of the core with the foot-plate C, in the manner and for the purpose explained.

100,586. — MUSTACHE-GUARD FOR DRINKING-VESSELS.—E. W. H. Bass, Quincy, Mass.

Claim.—A mustache-guard made of two jointed arms, with or without jointed end pieces, when provided with parts *c* and *d*, substantially as and for the purpose described.

100,587.—COMPOUND TO BE USED AS AN ARTICLE OF DIET.—C. G. Baylor, Quincy, assignor to Edward S. Tobey, Richard Soule, Charles Soule, Boston, and Louisa D. Baylor, Quincy, Mass.

Claim.—1. The within-described compound of hop, and ground, roasted, or dried sweet-potato, as and for the purpose set forth.

2. A compound of hop, ground, roasted, or dried sweet-potato and coffee, cocoa, or chocolate, to be used as a confection, or to be made into a beverage, substantially as set forth.

100,588.—PAINT COMPOUND.—Ezra Blakeley, Neponset, Ill., assignor for one-half to Peter Pierson, same place.

Claim.—A paint compound, composed of the ingredients specified, in the proportions herein set forth.

100,589. — RAILROAD-CAR VENTILATOR.—Isaac Bonnell, Jr., Chicago, Ill., assignor to himself and H. G. Lumbard, same place.

Claim.—Providing car-windows, having sliding sashes therein, with projecting box frames, which surround said windows and serve to keep dust, cinders, &c., out of the car when it is in motion, and the sashes are raised up, and to keep such dust, cinders, &c., from coming in contact with the glass when the sashes are shut, as specified.

100,590.—BRICK-MACHINE.—George C. Bovey, Cincinnati, Ohio.

Claim.—1. The provision in a brick-machine of the removable tire C D to the mold-wheel, substantially as and for the purpose designated.

2. The provision in a brick-machine of the chamber H around the plungers, for the objects set forth.

3. The provision, within the chambers H, of the yielding scrapers I, hugging the plunger-body, for the purpose set forth.

4. The adjustable concave pressure-plate or gauge K, in combination with mold-wheel A C block L, bolts M and N, and stripe O, as and for the purpose set forth.

100,591, antedated February 26, 1870.—WATER-PROOF FABRIC.—Thomas Bracher, Rahway, N. J.

Claim.—The fabric herein described as a new article of manufacture, it being made of spring wire and fibrous material, either in warp or weft, the wire before being woven being coated with resin oil or elastic gums, colored to correspond with the color of the fibrous yarns, and the fabric when woven being subjected to the action of heated pressure-rollers, to cause the fibrous threads to adhere to the wire, and thus form a light, elastic water-proof cloth.

100,592.—REDUCING-GEAR FOR STEAM-ENGINE INDICATORS.—Henry L. Brevoort, Brooklyn, N. Y.

Claim.—A reducing-gear for steam-engine indicators, consisting of a gear, E, and pinion F, spindles C and D, and pulleys J and K, the whole arranged and applied in a suitable framing or case, to operate substantially as herein described.

100,593.—BLIND.—William E. Brock, New York, N. Y.

Claim.—1. The metal slats C, formed with longitudinal grooves *b*, as described, and having the tenons D fitted therein, substantially as specified.

2. The blind frame, made up of rectangular metal tubes A A and elbows E B, substantially as shown and described.

100,594.—ADJUSTABLE WINDLASS.—John S. Brown, Schenectady, N. Y.

Claim.—1. A windlass adjustable by means of a single fastening, as seen at E, substantially as described.

2. A windlass-frame made in two parts jointed together so as to be adapted for heavy work, with the ratchet-wheel and lever, or for light work, with the shaft and its cranks, substantially as described.

3. The shaft J, made capable of being withdrawn from the drum, and attached thereto, as and for the purpose specified.

100,595.—PUMP.—James Bryan, New York, N. Y.

Claim.—The combination of the glass cylinder with the incorrodible fittings and iron clamps, supported on brackets by adjustable bolts, and constructed and arranged substantially in the manner and for the purpose described.

100,596, antedated February 26, 1870.—LET-OFF AND TENSION DEVICE FOR SPOOLS OF BRAIDING-MACHINES.—James D. Butler, Lancaster, Mass.

Claim.—The combination of the check-weight with the tension-weight and speed-catch, substantially as and for the purposes described.

100,597.—DITCHING-MACHINE.—James Calliham, Baton Rouge, La., assignor to David M. Calliham, same place.

Claim.—1. The combination of the ditching and lowering apparatus herein described with the truck A, when the latter carries the boiler that supplies steam both for drawing and operating the whole apparatus, substantially as described.

2. The shaft C, provided with the shovels A and knives A'' in combination with the shaft D, provided with the face S, and with the inclined spoon *i*, all arranged and operating substantially as described.

3. The combination of the subject of the second claim with the endless aprons *l n*, arranged as and for the purpose specified.

100,598.—PRINTING-PRESS.—Adam Campbell, Brooklyn, N. Y.

Claim.—1. The combination, with the T-head upon the finger-shaft, of a fixed stop, K, upon the cylinder, and a pressure-spring, *i*, so arranged as to exert its force in a direction out of line with both finger-shaft and stop, as and for the purposes hereinbefore set forth.

2. Securing the blanket to the impression-segment by means of a number of straps, *e*, drawing from both ends of the blanket, and at regular intervals in its length, as and for the purposes hereinbefore set forth.

3. A printing-press cylinder, strengthened by a series of radial rectangular frames, S, and as a whole cast in one piece, as and for the purposes hereinbefore set forth.

100,599.—ANIMAL-TRAP.—Henry C. Case, Pekin, Ill.

Claim.—The trap-box A, the pit E, the platform D, the drops F and F', in combination with the wires *e* and *b*, and *g*, and trap-door *d*, and movable bottom G, all constructed, operated, and arranged as described; and for the uses and purposes set forth.

100,600.—SCHOOL-DESK AND SEAT.—Wesley Chase, Buffalo, N. Y.

Claim.—1. A school-desk constructed with bent legs converging and connected together at or near their mid-height, and having a longer tie or connection at top, so that said connections will act in combination to brace and strengthen the legs, all substantially as set forth.

2. The seat G, supporting-arms H, and sockets I I, combined and arranged substantially as represented.

100,601. — LAUNDRY-INDICATOR. — Robert Clarke, Macon, Ga.

Claim.—As a new article of manufacture, a laundry-register, composed of a series of leaves secured together, their sides being turned up to receive a removable card or slip of paper, and provided with the two adjustable perforated disks *c*, all arranged substantially as and for the purpose described.

100,602.—WRENCH.—Aury G. Coes, Worcester, Mass.

Claim.—The combination, with the handle G and shank of the wrench, of the ferrule E, composed of the two independent portions *c* and *c*, substantially as and for the purposes set forth.

100,603. — HAND-RUBBER FOR WASHING CLOTHES.—G. F. J. Colburn, Newark, N. J.

Claim.—A hand-rubber composed of one or more rollers B and a soap-dish, C, likewise forming a rubber, as set forth.

100,604.—MACHINE FOR PICKING CURLED HAIR.—Noah L. Cole, Norwich, Conn., assignor to himself and Albert N. Upham, same place.

Claim.—1. The combination and arrangement of the revolving brushes G, the toothed feed-roller B, and lip C, for operation essentially as set forth.

2. The adjusting-screws D to the bearings of the toothed feed-roller B, in combination with the levers and their weights *c*, substantially as and for the purpose set forth.

100,605. — BEAD-SETTER. — Mack D. Converse, London, Ohio.

Claim.—The tool herein described, consisting of the semicircular chamber A, feed-spring C, bar A'', rod or stem B, sliding handle D', spring I, slide O', and beveled under-plate P', all constructed and operating in the manner and for the purpose specified.

100,606, antedated February 26, 1870.—FLOATING SHIPS.—G. W. Corey and Thomas Lodie, New York, N. Y.

Claim.—1. The series of air-tight tubes passing entirely from the one side of the vessel to the other between the timbers, and between the planking and flooring, and between the flooring and ceiling of the decks, as and for the purposes herein recited.

2. The combination of the air-tight deck and tubes used as and for the purposes herein set forth.

100,607, antedated February 26, 1870.—PRESS.—Dexter Curtis, Madison, Wis.

Claim.—The arrangement herein described of the press-frame, the levers M N O Q R, follower H, sliding racks D, and pinion J, when said parts are constructed, combined together, and operated in the manner and for the purpose herein set forth.

100,608.—COMPOSITION FOR PRESERVING TIMBER AND WOOD.—Edward Joseph De Smedt, New York, N. Y., assignor to New York Improved Anthracite-Coal Company, same place.

Claim.—The composition composed of the ingredients specified, or their chemical equivalents, and about in the proportions set forth, for the purpose of saturating timber and wood generally, to preserve the same, or enable it to resist decay, substantially as described.

100,609.—WELL-BORER.—Samuel H. Dickerson, Hudson, Mich.

Claim.—1. The auger B, constructed as described, so as to allow the dirt to be drawn up with it, substantially as herein set forth.

2. The combination of the well-tube A, having screens *d e*, caps *b b*, and auger B, all constructed and operating substantially as and for the purposes herein set forth.

100,610.—MACHINE FOR MAKING SASH.—Seth C. Ellis, Jersey City, N. J.

Claim.—1. The arrangement, substantially as shown and described, of the saws D D^1 or D^2 D^3 and their respective lower bed-pieces F F^1 or F^2 F^3, provided with suitable guides and stops, for operation essentially as specified.

2. The arrangement, herein described, relatively to the saws D D^1 or D^2 D^3 of the inclined bed-pieces H H^1 or H^2 H^3, provided with guides I, and operating in the manner essentially as herein set forth.

3. The arrangement, relatively to each other, of the lower bed-pieces F F^1 F^2 F^3, with their guides and stops, the upper bed-pieces H H^1 H^2 H^3, with their guides and stops, and the saws D D^1 D^2 D^3, substantially as shown and described, and for the purpose or purposes herein set forth.

100,611.—COMBINED HAY-KNIFE AND PRUNING-HOOK. — Daniel Fasig, Rowsbury, Ohio.

Claim.—The combined hay and pruning-knife herein described, having knife A, ring E, pin *a*, screw *c*, and removable handle H, when constructed and arranged as specified.

100,612.—BALANCE SLIDE-VALVE.—James Fitzgerald, Brooklyn, N. Y.

Claim.—In combination with a slide-valve, the pinion C, rail D, rollers F F, with the rack E, pinions G, and plate I, arranged to operate substantially as and for the purposes herein shown and described.

100,613. — POLE-ASCENDING APPARATUS.—George Fleming, New York, N. Y.

Claim.—1. The combination with a pole or mast, C, either made in sections and provided with ascension-rigging or not, of the arm G, pulley H, hoisting-cord E, and pulley F, all arranged for operation substantially as specified.

2. The combination with a cap, P, adapted for application to the top of a pole by dropping thereon from above of the pulley-block L, cord M, tripping-cord E, and tripping-pedge S, all substantially as specified.

C P O——1270

3. The combination with a mast having an arm, G, and pulley H arranged as described, of the weighted cord I, the cap P, and its binding and tripping apparatus, substantially as specified.

100,614. — Cord-Holder for Windows, &c.—George S. Gladding, Chester, Conn.

Claim.—The cord-holder herein described, having gimlet-screw *b*, bent shank, and tubular head *a*, perforated in a direction parallel to the axis of the screw, and provided with a notch, *a*, when constructed and arranged to operate substantially as and for the purposes herein set forth.

100,615. — Harvester-Rake.—William P. Goulding, Providence, R. I.

Claim.—1. In combination with the sliding bar A and carriage B, the swinging lever F, provided with cam-grooves, engaging with pintles in the butt of the rake-head, and operated by contact with the stop-blocks H, substantially as described, for the purposes specified.

2. In combination with the rake-head C, the balance spring I, arranged to compensate or balance the weight of the rake-arm, substantially as shown and described.

3. In combination with the carriage B, the lever F and stop-blocks H, for operating the rake-head, the spindle D, and balance spring I, substantially as shown and described.

100,616. — Door-Retainer. — Charles T. Gravatt, Philadelphia, Pa.

Claim.—1. The jaws F F', constructed as described, of rigid material, hung to a plate, C, and connected by a spring, *j*, inclosed within the jaws, in combination with the pin *b* having a double inclined head, *b'*, which the jaws are caused to grasp by the action of the spring, as specified.

2. The shoulders *e e* of the disk and projections and recesses *l l*, arranged to prevent the lateral displacement of the jaws, substantially as set forth.

100,617.—Machine for Refitting Conical Valves.—Charles F. Hall, Brooklyn, N. Y.

Claim.—1. The combination of hollow screw-shaft B, threaded sleeve G, arm *f*, collared spindle *a*, and jam-nut *a'*, all arranged and operating together in the manner described.

2. The combination of head-stock A', having male thread *a* on its shaft extension, and recess E, as shown, with threaded nut C, stationary sleeve G, and cutters D, all constructed and arranged as and for the purpose specified.

3. The construction and arrangement of the two devices above claimed, with respect to each other, in the manner shown and described, for the purpose of giving a feed in either direction at the will of the operator.

100,618.—Elastic Protector for Horses' Feet.—William H. Hall, Boston, assignor to himself and Joseph W. Haskins, Charlestown, Mass.

Claim.—The within-described protector for horses' feet, consisting of an elastic tube or cushion, A, provided with a wire, *b*, extending through it longitudinally and projecting out, so as to form catches or fastenings, substantially as set forth.

100,619.—Variable Cut-Off Valve-Gear. William Hareen, Green Point, N. Y.

Claim.—The arrangement of the spirally-channeled sleeve E of the eccentric D and its follower F, within the longitudinally-grooved hollow shaft A of the eccentric C and crank B, as shown and described.

100,620.—Farm-Gate.—Calvin Hart, Farmington, Ill.

Claim.—1. The roller-case *J*, with back plate *i*, provided with slot *d*, depressions *e e*, and clasps *a b*, constructed and applied in combination with friction-rollers M N, for the purposes of a farm-gate, substantially as described.

2. The combination of the flanged rollers M N, having shouldered axles *g* with the case J, as constructed, and the rails K' and B of the fence and gate, substantially as described.

100,621. — Paper-Box Machine.—Charles B. Hatfield, Philadelphia, Pa., assignor to himself, Horace B. Heilman, Joseph Willcox, and Henry B. Willcox.

Claim.—1. An expanding head, D, for paper-box machines, consisting of three main elements, namely, of a disk, *c*, which forms the permanent portion of the head, of segments *f*, arranged for radial adjustment upon the said disk, and of a movable disk, *d*, the whole being arranged in respect to each other and for joint operation, substantially as herein described.

2. The said head D arranged to be expanded and contracted by means of a sleeve, J, on the driving-shaft, and links *i'*, connecting the same with the segments *f*, the said sleeve being operated by the devices herein described, or by any equivalents to the same.

3. The said expanding head acted on by springs *k* and *k'*, substantially in the manner described.

4. The combination, substantially as herein described, of the said expanding head with the double-flanged roller U.

5. The combination, substantially as herein described, of the sliding disk *d* of the said expanding head with a sliding disk, *l*, attached to a spring rod, K.

6. The combination, substantially as herein described, of the said expanding head with the vibrating fingers *s s*.

7. The roller U, having at each end a movable flange *t* or *t'*, acted on by springs *t'*, substantially as and for the purpose specified.

8. The levers F and H, connected by a rod, *g'*, and acted on by a suitable spring, or any device equivalent to these levers whereby the disk *d* and *l* may be operated, substantially in the manner described.

9. The combination of the rock-shaft V, its arms *u* and *u'*, the connecting-rods T' and *w'*, and the treadle *e*, or any mechanism equivalent to the same, by means of which the throwing back of the lever R and withdrawing of the spring latch may be effected simultaneously.

10. The spring latch T, arranged to operate the spring rod K' and its disk *l*, substantially in the manner described.

11. The combination of the reservoir M, shoulder *c'*, rod K, and pusher-bar S with its shoulder *r*, all arranged and operating as specified.

12. The disks *l* and *d*, each furnished with a circular groove and with pointed projections or teeth, arranged to enter said grooves, substantially as herein set forth.

13. The vibrating curved fingers *s s*, operating substantially in the manner described, for the purpose of turning in the covering of thin paper, in finishing the edge of a box.

100,622. — Self-Waiting Table. — W. W. Hawley, Mount Morris, N. Y.

Claim.—1. The folding leaf B *f d*, in combination with the receptacle beneath it, the two parts having rotary motions independently of each other but with a common axis, as set forth.

2. The cylinder C, suspended within the frame A, in combination with the circumferential stationary ledge *a*, for the purpose described.

100,623.—Water-Gate.—Marshal Hays, Fostoria, Ohio.

Claim.—The herein-described flexible water-gate, formed of the boards C C and weighted board D, when they are connected together by the flat-metal plates D', having perforations at each end, through which pass the rings X, whereby the gate may operate in either direction, as herein set forth.

100,624.—Plow.—Daniel Heiges, Cashtown, Pa.

Claim.—1. The part C of the mold-board, hinged to the part A, for the purpose specified, and provided with the pivoted notched arm *a*, which is kept in engagement with the hook *d* by means of a spring, *e*, substantially as herein described.

2. The reversible share E, plate *j*, main part A, hinged part C, and part B, combined together, and forming the share-side, substantially as described.

3. The land-side, cast or formed with the part *l*, a recess for the colter, and with the portion B of the mold-board, substantially as herein described.

100,625.—Slide-Valve.—Abraham Hemingway, New York, N. Y.

Claim.—1. The combination with the loose or piston-like back B to the valve, of the loose rocker C, of arched or curved form, where it bears upon the valve-seat or other plain supporting-surface D', and arranged in relation to and in free connection with said back, for operation on or over its seat in or during the reciprocating movement of the valve, substantially as specified.

2. The combination with the indented bearing-surface D' of a toothed, freely-hung rocker C, and loose or piston-like back B to the valve, all arranged for operation in relation to each other and the valve-seat, essentially as described.

100,626.—Carriage-Spring.—Benjamin T. Henry, New Haven, Conn.

Claim.—Carriage-springs formed from a single piece or thickness of metal, diminishing in thickness from the center toward each end in proportion, and substantially in the manner set forth.

100,627.—Bobbin for Sewing-Machine.—James B. Herreshoff, Bristol, assignor to Gustavus A. Williamson and Samuel T. Shattuck, Providence, R. I.

Claim.—In a shuttle having a bobbin, the spring B and the tension-post C, the arrangement between the bobbin and the tension-post of the projection D, having its edge parallel with the axis of the bobbin and located as shown.

100,628. — Aspirator for Preventing Overheating of Grain, &c.—Theodore A. Hoffmann, Beardstown, Ill.

Claim.—The process of disengaging warm and moist air from spontaneously-heated grain, without the aid of artificial heated or cooled air, when in bulk, either in warehouses, bins, or vessels on transport, by means of perforated pipes and exhaustion, substantially as herein shown and described and for the purpose set forth.

100,629.—Treating Blood for the Preparation of Fertilizers, and for other Purposes.—Hascal A. Hogel, New York, N. Y., assignor to himself and Cosmore G. Bruce.

Claim.—1. The process, substantially as herein described, for coagulating blood to be used as a fertilizing-agent or for other purposes.

2. As a new article of manufacture, coagulated blood, prepared substantially as set forth, for fertilizing or other purposes.

100,630. — Machine for Punching the Leaves of Elliptic Springs.—George Hopson, Bridgeport, Conn.

Claim.—1. The herein-described arrangement of the two punches I I in separate carriers, G G, inoperative except at will, and capable of operating in rapid succession, or simultaneously when desired, and adapted, the one for forming the blind slot, and the other for raising the bead, whereby each leaf or plate may be completely punched at a single heating, as set forth.

2. The parts *g g g'* carried on the slide G, and the slide H or its equivalent, combined and arranged for operation relatively to each other and to the screw E, jam-nut E', and collars *e* and *e'*, on the connection D, all substantially as and for the purpose herein set forth.

3. In connection with the above, the punch-carrier G and guiding-surfaces, formed by the binder B' and the frame, of the proportions relative to one another substantially as described and shown, for the purpose of distributing the friction necessary to hold the carrier G in its place, over a greater extent of surface, as specified.

4. The within-described combination and arrangement of the jaw G', key J, punch I, and slide G, for the purposes herein set forth.

5. The blocks L L', carrying the die, and connected by means of the right-and-left hand screw K, adapted to be turned substantially as described, when arranged as specified with relation to the heated metal and the punch, for the purposes herein set forth.

6. The combination of the lever R, clamp R' and bolt *r*, the flange P, screw K, and blocks L L', as specified, so that the blocks L L' can be adjusted to admit different widths of steel, holding the plate, of whatever width it may be, exactly central under the punch, and opening and closing a little by the action of the screw, as herein set forth.

100,631. — Hollow Grate for Steam-Boiler.—Charles E. Hutson, Commerce, Mo.

Claim.—The combination of the feed-pipe B, jet-pipe C, side pipe F and drum E, grate A, and influent D, and arranged with valves and stop-cocks, substantially as set forth.

100,632.—Heat-Resisting Materials for Safes, Bank-Vaults, &c. — Theodore Hyatt, New York, N. Y.

Claim.—1. The use of asbestos, when combined with any steam or gas-producing materials as a filling for fire-proof safes and other structures.

2. The use of asbestos, when combined with any earth or earths as a filling for fire-proof safes and other structures, in the manner and for the purposes substantially as described.

3. The use of asbestos, when combined with any earth or earths and any chemical salt or salts, containing water of crystalization, as a filling for fire-proof safes and other structures in the manner and for the purposes substantially as set forth.

4. The use of asbestos as described, in either of the foregoing claims, when combined with cans or vessels containing steam or gas-producing materials, as a filling for fire-proof safes and other structures, in the manner and for the purposes substantially as described.

5. The use of asbestos for lining to any desirable thickness, the wall or walls of the safe or other structures on their interior surfaces, looking into the fire-proof chambers, for the purpose of insulating from said walls the principal or main body of filling, composed of any suitable material or materials that may be used for that purpose, in the manner substantially as set forth.

100,633.—Device for Packing and Transporting Eggs.—Benjamin Illingworth, Freeport, Ill.

Claim.—The strips A A, made of paper or other flexible material, connected together at suitable intervals, substantially as and for the purposes herein set forth.

100,634.—Check for Gas-Burners.—John H. Jennings, New Bedford, Mass.

Claim.—The gas-check herein described, consisting of the conical tube *a* and slit screw *b*, as specified.

100,635.—Spring-Bed Bottom. — Thomas W. Johnston, Richmond, Me.

Claim.—A bed-bottom composed of a series of lifter-springs, formed substantially as explained, applied to a range of transverse rods or bars, and united by wires woven through the yokes of said springs, the whole being arranged and operating as described.

100,636.—Furnace for Drying Sand.—Insley D. Johnson and Abraham V. Hartwell, Chicago, Ill.

Claim.—1. A stove or furnace, provided with the hopper D, constructed and arranged to operate substantially as described.

2. In combination with the hopper D, the register I, substantially as set forth.

3. The inclined plate E, arranged to receive the sand as it falls from the hopper and convey it away, substantially as described.

100,637.—Lamp-Chimney.—Edward Jones, South Boston, Mass.

Claim.—An Argand-burner chimney, constructed at its upper part in manner as to reduce its mouth of discharge, substantially as described.

100,638.—Tablet, Token, or Check, to be used in Life Insurance.—Henry A. Jones, Brooklyn, N. Y.

Claim.—1. A tablet, token, or check, made of hard rubber, or any suitable material, and provided with a suitable inscription, so as to be used for the purposes herein set forth.

2. The use of the herein-described tablet, token, or check, in the manner herein set forth, by which the business of life insurance is simplified and made available to the industrial classes.

100,639.—Peanut-Cleaning and Polishing-Machine.—John M. Keating, Norfolk, Va.

Claim.—1. The revolving cylinder E, constructed of wire-gauze or its equivalent, with solid heads, and having radial plates upon its axis, the plates having brushes thereon, and alternating with each other, substantially as and for the purpose described.

2. The combination of the cylinder E and its hinged frame, composed of lever-bars *m m'* and cross-bar *d*, when these parts are constructed as and for the purpose herein set forth.

3. The revolving wire-gauze cylinder E, constructed as described, having heads provided with brushes over their entire faces, and operating in the manner and for the purpose set forth.

100,640.—Mucilage-Holder. — James M. Keep, New York, N. Y.

Claim.—The case or holder A, provided with the caps B and E, the screw C, and the rib *a*, or their equivalents, in combination with the stick of adhesive composition D, substantially as and for the purpose specified.

100,641.—Stove-Pipe Damper.—William J. Keep, Troy, N. Y.

Claim.—The means employed for securing the damper in a horizontal position, consisting of the pivot F provided with the shoulder G and the screw-thread *f*, and the nut H, or its equivalent, substantially as and for the purpose specified.

Also, securing the collar B in position upon the pipe by means of the pivot F provided with the shoulder G and screw-thread *f*, and the nut H, or its equivalent, substantially as shown, and for the purpose described.

Also, causing the spring of the pipe to hold the damper in position, when adjusted by means of the hereinbefore-described devices, substantially as and for the purpose shown.

Also, causing the spring of the pipe to hold the collar B firmly in place by means of the pivot F, shoulder G, screw-thread *f*, and nut H, or its equivalent, substantially as shown, and for the purpose set forth.

Also, causing the register C to bear firmly but not rigidly against the collar B by means of the spring of the pipe operating through the pivot F, shoulder G, screw *f*, and nut H, or its equivalent, substantially as and for the purpose specified.

Also, the combination of the pipe A, the collar B, the register C, the damper E, the pivot F, the shoulder G, the screw-thread *f*, and the nut H, or its equivalent, substantially as shown and described.

100,642.—Clamp.—George D. Lambert, New Haven, Conn.

Claim.—The movable arm C, when provided with graduating teeth, as shown and described, for the purpose set forth.

100,643.—Motive Power for Carriages.—Sylvester L. Langdon, New Orleans, La.

Claim.—1. The series of rotating arms B B, operated by suitable mechanism and power, and applied to a vehicle to operate, substantially as set forth.

2. The rubber D, applied to the armed wheel A' B, so as to come in contact with the ground or road substantially as and for the purposes described.

3. The rotating arms B, carrying elastic feet C, substantially as and for the purposes described.

100,644. — Padlock. — Tolbert Lanston, Washington, D. C.

Claim.—1. The sectional case herein described, hinged at or near its center, arranged to operate by the spring *c*, and having the jaws *b b* and hook B, forming a part thereof, substantially as and for the purposes specified.

2. In combination with the casing K, having wards *v v*, the single-acting tumblers H, provided with teeth *r*, arranged at different heights, and similar to the teeth *v* of the wards, as specified.

100,645. — Fluting-Machine. — Thomas Leavitt and E. L. Howard, Malden, Mass.

Claim.—The described means for adjusting the upper frame and its roll in position relatively to the lower roll, the same consisting in the combination with the rod passing loosely through the boss and with the spring *y*, of the nut b^3, working upon a screw-thread at the top of the rod, substantially as shown and described.

Also, in combination with either fluting-cylinder, a cylindrical heating-iron, the main surface of which is kept from contact with the roll by a flange or flanges, substantially as described.

Also, in combination with the lower roll, a hinged handle or crank, which, when swung into position for driving the machine, serves also as a cap or door for the roll, substantially as shown and described.

100,646. — Carriage-Axle. — William A. Lewis, Joliet, Ill.

Claim.—The combination of the hollow axle *a*, skein B, and thimble core *c*, constructed, operating, and arranged as and for the purposes set forth.

100,647.—Treating Liquor Containing Gelatine or Glue.—Orazio Lugo, Baltimore, Md.

Claim.—The process herein described for concentrating solutions containing gelatine or glue, the same consisting in passing currents of air through said solutions or liquors, substantially as set forth.

100,648.—Water-Wheel. — Samuel Martin, York, assignor to himself and B. F. Manifold, Lower Chanceford, Pa.

Claim.—1. The combination of the vertical buckets *b'* with the curved buckets *a*, in the manner described and for the purpose of enabling the water both to act directly and to react upon the wheel.

2. In combination with the curved buckets *a*, the sliding adjustable plates *c'*, in the manner and for purpose described.

3. The detached gates *d* when so combined with the revolving frame *d' d''* as to be all in equilibrio, in the manner and for the purpose set forth.

4. The gates *d* combined with the curved plates *c*, for the purpose of forming a perfect guide-way, substantially as specified.

100,649.—Flat-Iron Polisher and Holder.—William B. Mason, Boston, Mass.

Claim.—A flat-iron holder, scraper *f*, and polisher *g*, constructed of wood and iron, and arranged substantially as and for the purpose specified.

100,650.—Horse Hay-Fork.—J. M. McDonald, McCoysville, Pa.

Claim.—The combination and arrangement of the heads A A', prongs B B', pivoted points C, standard D, and spring catch F *d'*, all constructed and adapted to operate substantially as and for the purposes herein set forth.

100,651.—Safety-Mechanism for Hoisting-Apparatus.—William Henry Merrick, Philadelphia, Pa.

Claim.—In hoisting-apparatus, the combination, substantially as described, of an idler-pulley, bearing on a driving-belt, with mechanism for applying a brake to the pulley or shaft driven by the belt, should the latter break, and for controlling the stopping, starting, and reversing-gear of the driving-engine, all substantially as set forth.

100,652.—Compound for Stuffing Leather.—Joshua Merrill, Boston, Mass.

Claim.—The paraffine stuffing compound for stuffing leather, composed of solid paraffine mixed with rosin-oil, tallow, or fish-oil, and resin or tar of commerce, substantially as specified.

100,653.—Lamp-Burner.—Rufus Spaulding Merrill, Cambridge, assignor to himself, William B. Merrill, and Joshua Merrill, Boston, Mass.

Claim.—1. The divided chimney-support, formed in two parts, the upper screwing into the lower, so as to be adjustable in relation thereto, and both parts being adapted to be removed from or applied to the lamp bodily and together, substantially as shown and set forth.

2. The construction of the lower portion of the divided chimney-support, with a cylindrical screw-threaded piece to fit the adjustable chimney-rest, and a perforated base for the passage of the air to the flame, substantially as and for the purposes set forth.

100,654.—Machine for Turning Balls or Mandrels.—William Newsham, Philadelphia, Pa., assignor to Morris, Tasker & Co., same place.

Claim.—The combination of the cutter-head H and the adjustable radial cutters J with the shaft B, squared at the end as shown at *a*, the lever K, for moving said shaft toward and from said cutter-head, and mechanism to rotate said shaft, substantially as described.

100,655.—Cultivator.—Walter Notman, Deerfield, Ohio.

Claim.—1. The arrangement and construction of the beams A A, clevis E, brace D, double cross-bar D', and handles B B, substantially as described.

2. The peculiar construction and combination of the mold-boards E E, share F, and braces G H I, substantially as and for the purpose set forth.

100,656.—Card-Rack.—Leverett H. Olmsted, Brooklyn, N. Y.

Claim.—A card-rack, consisting of a closely-coiled spring or springs of wire, supported in such a manner as to be capable of extension, substantially as described, for the purpose specified.

100,657.—Dish-Washer.—Merrill S. Orton and Peter B. Stiles, Galesburg, Ill.

Claim.—In dish-washers, the arrangement of the pump B, with its valves *b f*, plunger D, discharge-pipe L, cap *c*, and handle E, in combination with the box A and grate F, all arranged as shown and described.

100,658.—Paper Box.—Bennet Osborn, New York, N. Y.

Claim.—The paper box herein described, cut from a rectangle of paper without waste, having its narrow sides double, and provided with stiffening-flaps D and cover B, bent over at its front edge, as shown at C, when constructed and arranged to operate substantially as and for the purposes herein set forth.

100,659.—Emery-Wheel.—John L. Otis, Leeds, Mass.

Claim.—An emery-wheel, for polishing, grinding, or sharpening, composed of emery, "baking Japan," boiled linseed-oil, and with or without litharge, molded into the desired shape and form, and baked in an oven, as herein described and represented.

100,660.—Sawing-Machine.—Andrew G. Park, Leon, N. Y.

Claim.—The combination of the truck A A A' A', ratchets E F, and the lever G, and their adjuncts, with the shaft C and chain H, or its equivalent, substantially as and for the purpose set forth.

100,661.—Combined Latch and Lock.—Frank P. Pfleghar, New Haven, Conn., assignor to himself and McLagon & Stevens, same place.

Claim.—The combination of the lock-bolt D, with its tumblers, and the latch-bolt C, with its tumblers, and the arm 4, constructed and arranged within the same case, so that the lock-bolt may be operated by one key inserted upon either side, and the latch-bolt by another key inserted through the same hole, the said keys operating only their respective bolts, substantially in the manner described.

100,662.—Clothes-Drier.—Russell Phillips, Boston, Mass.

Claim.—The hub B, with its stationary socket D, and pivoted sockets E, E, and F, lugs *f f*, arms H, cords I, and set-screw *i*, substantially as described.

100,663.—Mode of Suspending Mirrors to Furniture.—Levi Pierce, Charlestown, Mass.

Claim.—Suspending or hanging doors or mirrors, for wardrobe-bedsteads or analogous articles of furniture, by means of the double pivoted bracket or hinge, or its equivalent, substantially in the manner and for the purposes described.

100,664. — Ditching-Machine. — Willard Pierce, Truxton, N. Y.

Claim.—1. The arrangement of the beam A, beveled bar C, with plow-point D, sides F F, and bottom G, all substantially as shown and described.

2. The arrangement on the front end of the beam A, of the clevis B, and adjustable curved bar J with roller K, substantially as and for the purposes herein set forth.

3. The adjustable side wings H H, pivoted to the sides F F and made adjustable by means of the bolt *a*, passing through curved slots in the sides, substantially as shown and described.

4. The combination and arrangement of the beam A, clevis B, bar C, point D, cutter E, sides F F, bottom G, wings H H, handles I I, curved bar J, and roller K, all substantially as shown and described.

100,665.—Union-Coupling for Pipes.—Robert M. Potter, Jersey City, N. J.

Claim.—The screw-collar C of a coupling, divided as at *c*, and constructed with lugs *d* and adjusting-screw D, whereby it is rendered capable of expansion and contraction, as and for the purposes set forth.

100,666.—Telegraph-Pole.—E. Freeman Prentiss, Philadelphia, Pa.

Claim.—A telegraph-pole which consists of the cast-iron base *a*, with its socket *b*, in combination with the tubular sections *c d e*, castings *f*, and the insulator-arms, substantially as set forth.

100,667.—Potato-Digger.—William Russel Prince, Parkersburg, West Va.

Claim.—In a potato-digger, the construction of the plow-beam D, having the arm E either cast or bolted to the heel of the shank in the same plane, for the support of the agitator-wheel and riddle A, when a direct and continuously-intermittent motion is imparted to the latter by means of pins upon the face of the wheel, which strikes a projection, F, upon the rear and under side of the riddle, the whole being constructed and operated as hereinbefore set forth.

100,668.—Manufacture of Illuminating Gas.—Alonzo C. Rand, New York, N. Y., assignor to William J. Nichols, Alden B. Rand, and Richard H. Brown, same place.

Claim.—1. The combination of the vaporizer B and retort or retorts G, and the superheater E, encased within masonry, with suitable apertures between the superheater and casing which communicate with the furnace, whereby the waste heat from the furnace is utilized, all constructed and arranged substantially as set forth.

2. The test-pipe I, arranged and operated in combination with the above, substantially as and for the purposes described.

100,669.—Reversible Shirt.—Charles O. Richter, New York, N. Y.

Claim.—Forming the bosom of a shirt of any suitable material double-plated, and with a double center-piece on one side, and single center-piece on the other side, all as herein described for the purposes set forth.

100,670.—Dye-Vat.—Thomas E. Rogers, Dexter, Me.

Claim.—1. The counterbalanced vat-cover B, provided with sliding escape-pipe C and damper *z*, as specified.

2. The conical vat-cover herein described, counterbalanced by the weight or weights G, arranged with its lower edge to descend inside the vat, and provided with an external receiving-flanch, bent tube, and escape-pipe C, with damper *z* arranged to slide within a fixed pipe, E, as specified.

100,671.—Lubricating the Traversing-Guide in Machines for Feeding Carding-Engines.—Bozil S. Roy, Olneyville, R. I.

Claim.—The combination of the oiling device, constructed as herein described, with the hubs *b* of the traverse-guide, and with the rod F, in the manner and for the purpose specified.

100,672.—Mortising-Machine.—Anton Schmaekers, Cincinnati, Ohio, assignor to Lane & Bodley.

Claim.—1. In connection with the cheek B, the swinging link E, set-screw H, and clamping-screw D, combined and operating in the manner and for the purpose set forth.

2. The combination and arrangement of the cheeks B B', bottom A, detachable gib C, and swinging link E, with set-screw H and clamping-screw D, substantially as set forth.

100,673.—Water-Current Motor.—John Q. A. Schoonover, Lebanon, Ohio, assignor for one-half to James S. Totten, same place.

Claim.—1. The platform B, pivoted in a sustaining frame-work, and caused to vibrate by the alternate action of a weight and a current of water, substantially in the manner described.

2. The platform B, vibrating gates *c c'*, swinging lever *b''*, and shifting apparatus *d d' e*, combined and arranged substantially as described.

100,674.—Stump-Extractor.—Henry Schwartz, Fayetteville, Ohio.

Claim.—The arrangement of frame A, ground-wheels B, windlass D E E', ratchets L M', and chocks N N', with their described or equivalent accessories for the purpose stated.

100,675.—Stop-Motion for Spooling-Machines.—Samuel Semple, Jr., Mount Holly, N. J.

Claim.—The arrangement within the standards B B and frame E, of bar C, with wires *a a*, spindle G, with pulley H and arms J J, frame K, drop-wires *b b*, guide-plate L, lever M N, stop O, and guide *d*, all constructed and operating as and for the purposes herein set forth.

100,676.—Fruit-Transportation Box.—Walter Shaw, Newfane, N. Y., assignor to himself, Jonathan Vincent, and Seldon R. Redman, same place.

Claim.—A box for fruit transportation, provided with a fixed lining, so attached to the sides as to provide a recess for the reception of the cover and bottom, as described.

100,677.—Heel of Rubber Boots and Shoes.—Frederick M. Shepard, New York, N. Y.

Claim.—The combination of the India-rubber heels of boots and shoes with a metallic heel-plate formed with stems projecting from the inner surface, which are bent before the India rubber is applied and vulcanized, substantially as specified.

100,678.—Sole of Rubber Boots and Shoes.—Frederick M. Shepard, New York, N. Y.

Claim.—A vulcanized India-rubber sole for boots or shoes, strengthened by a perforated metallic plate interposed between the inner and outer layers before vulcanizing, and secured substantially in the manner set forth.

100,679.—Wood-Splitting Machine.—Robert D. Silverwood, Baltimore, Md., assignor to William Silverwood, same place.

Claim.—1. The feed-wheel L, constructed and arranged to operate substantially as described.

2. The sectional bed or support K, having the recess T, or its equivalent, substantially as set forth.

3. The combination of the feed-wheel L with the shaft F, having the wheel P, ratchet-wheel I, and elbow-lever with its pawl *b* mounted thereon, and connected by the adjustable rod *d* to the eccentric E, when said parts are arranged to operate as and for the purpose herein described.

100,680.—Spoon-Holder and Bell.—Samuel Simpson, Wallingford, Conn.

Claim.—In combination with a dish-shaped spoon-holder, provided with the support E, a gong-bell, arranged in the manner substantially as set forth.

100,681.—Apparatus for Refrigerating and Preserving.—Daniel E. Somes, Washington, D. C.

Claim.—1. The combination of the preserving-box or refrigerating-chamber, ice-receptacle, and ice-cream freezer, operating substantially as described.

2. The combination of the refrigerating-chamber, ice-cream freezer, water-cooler, and ventilating-tubes, with an ice-box, substantially as set forth.

3. An ice-cream freezer, with an ice-box forming the cover thereto, substantially as shown and described.

100,682.—Cooling and Preserving-Tank.—Daniel E. Somes, Washington, D. C.

Claim.—The combination of the tank A, built with non-conducting chambers, and the cooling-chamber B, substantially as and for the purpose specified.

100,683.—Apparatus for Cooling and Preserving.—Daniel E. Somes, Washington, D. C.

Claim.—1. In combination with a refrigerator, one or more evaporating-pipes and blower, or equivalent, substantially as and for the purpose set forth.

2. An ice-receptacle, having a series of removable perforated diaphragms or grates, at intervals one above the other, for the purpose of separating the ice from the liquid, thereby securing a lower temperature and economy in the use of ice.

3. A refrigerator with preserving or refrigerating chambers, surrounded by or partially submerged in brine or other liquid, which is cooled by ice, ice and salt, or other cold substance placed in an ice-receptacle, also partially submerged in the same body of liquid, and extending above the top of said chambers, said extension being covered with fibrous material, as and for the purpose set forth.

100,684.—Gas-Machine.—Theodor G. Springer, St. Louis, Mo.

Claim.—1. Forcing the gas-fluid into the generating-chamber by means of pressure produced upon the same in the reservoir by ammoniacal gas, substantially as and for the purposes herein set forth.

2. Operating the valves in the vapor and air-pipes of a gas-machine instantaneously at the same time, by the gravitation of one or more weights, substantially as and for the purposes herein set forth.

3. In a gas-machine where atmospheric air is used to produce the gas by mixture with vapor from gasoline or other suitable fluid, heating said air to the same or nearly the same temperature as the gas-fluid, substantially as and for the purposes herein set forth.

4. The arrangement within the gasometer A of the frame T, with arm *c*, arm R, with weight S, and pitman P, all constructed as described, to operate the valves in the vapor and air-pipes by the gravitation of the weight S, the frame T being moved by the rising and falling of the holder O, substantially as herein set forth.

5. The arrangement over the generating-chamber E, of the cap V, for the purpose of heating the air before it is mixed with the gas vapors, substantially as herein set forth.

6. The hollow screw M, provided with vent *b* and tap *i*, substantially as and for the purposes herein set forth.

100,685.—Machine for Bending Felloes.—David A. Sprinkle, Leoti, Ind.

Claim.—1. In combination with the main lever, the auxiliary lever E hinged and connected to the main lever as described, and both provided with rollers *d d*, substantially as and for the purposes herein set forth.

2. The reversible box *b* pivoted to the stationary former B and constructed substantially in the manner and for the purposes herein set forth.

3. The arrangement of the frame A, stationary former B, movable former C, groove *c*, levers D E, rollers *d d*, box *b*, upright *f*, and strap *h*, all constructed as described and operating substantially as and for the purposes herein set forth.

100,686.—Tool for Lacing Belts.—John Mitchell Stamp, Grass Valley, Cal., assignor to himself and Peter Johnston, same place.

Claim.—The punch, united with the awl and belt-hook in one instrument, in the manner and for the purpose set forth.

100,687.—Hay and Cotton-Press.—George, W. Swift, Memphis, Tenn., assignor to himself and E. G. Graham, De Soto county, Miss.

Claim.—The box B, formed of the four tenoned pieces set into the foot-block A, the clamps C C, ring E, and screw D, with its follower S, and square block Z, all constructed to operate in the manner and for the purpose set forth.

100,688.—Roofing Compound.—Frank C. Tegetthoff, Cleveland, Ohio.

Claim.—The preparation of the roofing compound herein described, of the ingredients in the proportions and for the purpose set forth.

100,689.—Manufacture of Ice, and Cooling Air, Liquids, &c.—Charles Tellier, Paris, France, assignor to Leopold Bouvier, New York, N. Y.

Claim.—1. The use or application for the purpose of generating artificial cold, of pure ammoniacal gas, liquefied by means of mechanical compression, substantially as described.

2. The use or application, for the purpose of liquefying ammoniacal gas, of the pump and condenser forming part of the machines or apparatus fully described in Letters Patent No. 85,719, issued to me January 5, 1869, substantially in the manner and for the purpose set forth.

100,690, antedated February 28, 1870.—Grooving-Chisel.—H. G. Terwilliger, Scranton, Pa.

Claim.—In combination with a chisel, A, the movable blade B, held at any desired distance from the chisel A by the plates *b b*, and held in position by the screws *d*, substantially as and for the purposes herein set forth.

100,691.—Sun-Dial.—L. Ignatius Trueg, St. Vincents, Pa.

Claim.—1. The equatorial gnomon E, in combination with oliscologet D and revolving plate C, all constructed and arranged substantially as and for the purposes herein set forth.

2. The end pieces B B, provided with graduated arcs L L, and used in combination with the equatorial gnomon E, oliscologet D, and revolving plate C, substantially as and for the purposes herein set forth.

3. The meridianal gnomon I, in combination with the horologet H, revolving or moving around its own center within the grooved bearer G, substantially as and for the purposes herein set forth.

4. The combination of the bed A, end pieces B B, plate C, pins *a a*, fingers *b b*, arcs L L, oliscologet D, gnomon E, bearer G, horologet H, and gnomon I, all constructed and arranged as described, substantially as and for the purposes herein set forth.

100,692.—Damper.—Joseph P. Tuttle, Warren, Ohio.

Claim.—The plates B B, straps C, spindle G, and plate F, all constructed and arranged to operate in the manner and for the purpose described.

100,693.—Railway-Rail Splice.—Jacob Valentine, Bound Brook, Francis Harris, Jr., Elizabethtown, N. J., and Chauncy Barnes, New York, N. Y., assignors to Daniel R. Pratt, New York city.

Claim.—The tongue or projection, rolled on the outside of the bar of railroad iron, extending the whole length of the rails, with a groove rolled into the jacket to correspond with and fit over the tongue on the rail, forming a complete tongue and groove, the jacket being about two feet or more long, sufficient to produce the desired result, the top or upper edge of the jacket to extend even with the upper edge or surface of the bars of railroad iron, and bolted fast to the same by means of screw-bolts, as substantially described.

100,694.—Sash-Holder.—A. Van Patten and J. F. Kelsey, Weyauwega, Wis.

Claim.—The combination of the hooking-levers D, straps *b*, and sash B C, with the pulleys *a*, all constructed and arranged to operate substantially as described.

100,695.—Planing-Machine.—Loudus B. Walker, Chicago, Ill.

Claim.—The combination of the table D, rollers a a, inclines b b, screw G, rollers I I, journal-boxes d d, and set-screws e e, all constructed and arranged as described, to operate substantially in the manner and for the purposes herein set forth.

100,696.—PLOW.—Lewis T. Webster, Northfield, Mass.

Claim.—1. The compound bifurcated tongue and beams A A' A'', when constructed as herein set forth.

2. The draft-rod O, in combination with the shaft C and adjustable collar N, as specified.

3. The guide L, constructed and arranged as described.

4. The arms D and D', in combination with the wheels B and B', and their respective axles, and lifting device C' F G I, when arranged as specified.

100,697, antedated February 25, 1870.—SELF-CLOSING AUGUR STOP-COCKS.—Alfred Wood, Boston, Mass.

Claim.—As a new article of manufacture, a faucet having an entering bit at its induction end, handles at its eduction end for turning in the faucet, and a self-closing frusto-conical valve at the top of, and forming the cap of, the eduction tube, the construction and arrangement of the parts being substantially as shown and described.

100,698.—SPRING-BED BOTTOM.—William Wells, Salem, Mass.

Claim.—1. In combination with the reversible slats D of the springs G, which are coiled at H, extended transversely at e, and continued at right angles to the point of junction with the slats, in connection with the bearings d, whereby the axes of the springs are on the transverse portions e, and the coils act spirally and tortionally, as set forth.

2. The combination with the hinged frame M of the sliding slat P and spring catches i, as set forth, for the purpose described.

100,699.—CONSTRUCTION OF STOVE-PLATES.—August Wornet and John Kershaw, Canton, Ohio.

Claim.—1. A stove-plate consisting of two parts, abutting against each other at their upper edges, and united by a hinge connection having its pivot below the upper plane of the plate, substantially as and for the purpose specified.

2. The stove-plate A A, consisting of the halves A A, provided with the lugs B B, and united by the plates F F riveted or cast with one lug B, and connected by a hinge-rivet to the other lug B, substantially as and for the purpose specified.

100,700.—FLOOR-CLAMP.—George Wood, Philadelphia, Pa.

Claim.—1. The combination of the catch F, spring J, arm f, cam D, forcing-clamp B, and bed-plate A, constructed and operating as described, and for the purpose specified.

2. The clamp herein described, consisting of the bed-plate A, forcing-clamp B, cam D, catch F, and their operating mechanism, constructed and arranged to operate as set forth.

100,701.—COLLAR AND HAMES.—John L. Wooden, Greensburg, Ind.

Claim.—In combination with the padded collar A, the metal hames B B, fastened together at bottom by means of a stop-joint, c, and secured to the buckle-straps at top, as shown and described.

100,702.—PUMP.—William Wright, New York, N. Y.

Claim.—1. The pump-barrel P, in open communication, at or near its top, with the air-chamber J above the discharge-valve P, and in communication below, by a channel or passage, with the under side of said valve, in combination with the plunger or bucket-plunger S S' and induction-valve O, to the inlet-passage of the pump, substantially as specified.

2. The removable valve-plate N, with its induction and eduction-valves O and P, inlet-passage L', and outlet Q, in combination with the induction-channel or passage L and eduction-nozzle or nozzles M, arranged above in a fixed portion of the main frame, essentially as described.

3. The combination and arrangement of the main frame, of the steam-cylinder A with its attachments, the pump-barrel P with its stuffing-box G, the valve-chamber I, the air-chamber J with its connecting-chamber K and induction-passage L, and the bearings a b to the crank-shaft D, substantially as specified.

4. The combination of the yoke U with the piston-rod B' and trunk S of the pump-plunger, the gland H, and the pitman T, together with the crank D', substantially as shown and described.

100,703.—MUFF AND COLLAR BOX.—Henry Fowler, Detroit, Mich., assignor to Jason Crane, Bloomfield, N. Y.

Claim.—1. A fur-set box, A, composed of the cylinder B and partition or shelf C, arranged as described.

2. The padding E, in combination with the cover D and box A, arranged so as to preserve a set of furs against the entrance of dust, as described.

100,704.—DOVETAILING-MACHINE.—Henry H. Bashore, Philadelphia, Pa.

Claim.—1. In a dovetailing-machine having two vertical mandrels with cutters above the table, so arranging one, C, within the frame, that it may be turned with its saws beneath the table T, and out of the way, for the purpose of adapting a mash-tenoning machine to be used with its fixed mandrel B as a turning and shaping-machine without removing either of the mandrels from their bearings, as herein shown and described.

2. The inner way d of the carriage D, hinged for the purpose of allowing it to be turned up, to admit the mandrel C and its cutter to be turned thereunder out of the way in changing the machine, as herein described.

100,705.—CONSTRUCTION OF CHIMNEYS AND FLUES.—Joseph Kleckner, Mottville, Mich.

Claim.—1. A flue compartment, constructed with foundation supports E, and holding and bracing-nails a b, substantially as herein described.

2. A cement flue, D, supported and locked securely in position by means of an open skeleton frame, substantially as herein described.

3. In molding cement flues, the use of a collapsible core, made of canvas or other suitable material, and filled with dry sand, or its equivalent.

100,706.—CEMENT TO BE USED IN SEWERS AND DRAINS, AND FOR CONSTRUCTING FLUES AND OTHER PARTS OF BUILDINGS.—Joseph Kleckner, Mottville, Mich.

Claim.—The cement composed of the materials in the specified quantities herein stated, prepared, compounded, and used substantially as described.

100,707.—RAILWAY-SWITCH.—Joseph J. Shaeffer, of Middletown, and Curtis C Steinmetz, of Pittsburg, Pa.

Claim.—1. The switch constructed with a rebate, c, and shoulder d, at its interlocking heel, and a curved projection, b, on its side adjacent to the rail, for the purpose of bracing it both vertically and laterally between and against the rails, substantially as herein described.

2. A removable switch, H, having its heel K inclined downward, and its upper side grooved, for the purpose herein shown and described.

REISSUES.

3,869.—WATCHMEN'S TIME-DETECTER.—Jacob E. Buerk, Boston, Mass., assignee of John Bürk.—Patent No. 31,052, dated January 1, 1861; patented in France, October 29, 1856; reissue 2,054, dated August 22, 1865.

Claim.—1. The drum A, carrying a removable piece of paper or other suitable material, marked or divided off in a convenient number of parts, in combination with a chronometer-movement or time-piece, and with one or more marking devices, substantially as and for the purpose set forth.

2. The combination of the marking devices B, fastened internally to a time-piece, with a watch-movement and with a series of keys, C, and a surface for receiving marks, substantially as described.

3,870.—TUMBLER-WASHER.—Gustavus D. Dows and Calvin Dows, Boston, and George S. Cushing, Lowell, Mass., assignees, by mesne assignments, of Albert Hallowell.—Patent No. 52,565, dated February 13, 1866.

Claim.—1. The method, substantially as described, of washing both the interior and exterior surfaces of one or more tumblers simultaneously by jets or streams of water directed and forced against their inner and outer surfaces by means of perforated discharge-tubes or water-conducting and delivering devices, so arranged and provided with water-directing orifices, substantially as specified, that said directing-orifices shall direct streams or jets of water, which shall act together, and wash or cleanse both the inside and outside of the tumbler or tumblers at the same time, as set forth.

2. The method, substantially as described, of washing the outer surface of one or more tumblers by streams or jets of water directed or forced against such outer surface by means of one or more water-conducting and delivering devices, so arranged and provided with water-directing orifices, as specified, that said directing-orifices shall direct streams or jets of water which shall wash the outer surface of the tumbler or tumblers, as set forth.

3. The method, substantially as described, of washing the inner surface of one or more tumblers by jets or streams of water directed and forced laterally, or laterally and obliquely against such inner surface, by means of water-conducting and delivering devices so arranged within the tumbler or within the tumbler-space, and provided with water-directing orifices, as specified, that said directing orifices shall direct jets or streams of water which shall wash the inner surface of the tumbler or tumblers, as set forth.

4. The method, substantially as described, of washing the inner and the outer surfaces of one or more tumblers simultaneously, and of disposing of the water after it has performed the washing process, by the combination of a bowl or basin, D, a discharge-pipe, B, and a conduit, A, with inner and outer water-conducting and perforated delivering and water-directing devices, arranged and operating substantially as set forth.

5. The method, substantially as described, of washing the outer surface of one or more tumblers, and of disposing of the waste water by the combination of a basin, D, a discharge-pipe, B, and a conduit, A, with one or more exterior conducting, and a perforated delivering and water-directing devices, arranged and operating substantially as set forth.

6. The method, substantially as described, of washing the inner surface of one or more tumblers, and of disposing of the waste water by the combination of a basin, D, a discharge-pipe, B, and a conduit, A, with one or more inner conducting and perforated delivering and water-directing devices arranged within the tumbler or within the tumbler-space, and operating substantially as set forth.

7. The receiving-cup E in combination with the basin D, and with the discharge-pipe B, substantially as described.

3,871.—PACKING-CASE FOR TOBACCO.—Solomon F. Hess, Rochester, N. Y.—Patent No. 99,188, dated January 25, 1870.

Claim.—As an improved article of manufacture, a cylindrical wooden tobacco package, made substantially as set forth, and provided with a suitable detachable head, held in position by the spring of the staves, for the purpose set forth.

3,872.—APPARATUS FOR THE MANUFACTURE OF GAS.—William J. Nichols and Alonzo C. Rand, New York, N. Y., assignees, by mesne assignments, of L. D. Gale, assignors to William J. Nichols, Alden B. Rand, and Richard H. Brown, same place.—Patent No. 26,028, dated November 8, 1859.

Claim.—1. The vapor-generator A, filled with hydrocarbon liquids by any suitable means, and provided with a vapor-pipe, i, leading into a decomposing-chamber E, substantially as set forth.

2. The combination in a hydrocarbon-gas generator of an inner retort, closed at both ends, with a space between it and the inner wall of the outer retort, whereby the hydrocarbon (solid or liquid) is first vaporized in the inner retort, and passes from thence into the space between the retorts to form a fixed gas, substantially as set forth.

3. The combination in a hydrocarbon-gas generator of two or more retorts A^4 A^5 A^6, arranged together with a gas-back or decomposing-retort K and exhauster L, wherein the retort A^4 A^5 A^6 vaporize, retort K decomposes, and the exhauster L withdraws the gas, substantially as herein described.

3,873.—MANUFACTURE OF GAS.—William J. Nichols and Alonzo C. Rand, New York, N. Y., assignees, by mesne assignments, of L. D. Gale, assignors to William J. Nichols, Alden B. Rand, and Richard H. Brown, same place.—Patent No. 26,030, dated November 8, 1859.

Claim.—The treatment of all solid and liquid hydrocarbons, by first converting the volatile portions to vapor at a temperature below a cherry-red heat, and forcing the vapor so generated into contact with a red-hot surface, and instantaneously removing the gas thus generated to prevent destructive decomposition, and thus form a permanent or fixed gas.

3,874.—CORN-STALK CUTTER.—Gideon W. Cole, Farmington, Ill. — Patent No. 39,214, dated July 14, 1863.

Claim.—1. The combination of the frames A and E, and the cutter H, when operating as and for the purpose shown and described.

2. The combination of the swinging frames E and F with the frame A, when constructed substantially as and for the purpose shown and described.

3. The combination of the frame E, curved rod or bar J, and adjustable weight bar K, substantially as shown and described.

4. The combination of the gathering hooks N with the springs O, substantially as and for the purpose shown and described.

5. The windlass L, secured to the axle on the frame A, in combination with the frames E and F, substantially as and for the purpose specified.

3,875.—WATER-WHEEL.—William Foos, John W. Bookwalter, and Mary A. Leffel, Springfield, Ohio, and Lamar Foos, New Haven, Conn., assignees, by mesne assignments, of David K. Kraatz.—Patent No. 20,921, dated July 13, 1858.

Claim.—1. In combination with the air-chamber over the wheel, and the issues formed between the buckets of the wheel, air-passages communicating between the air chamber and said issues, substantially as and for the purposes described.

2. A water-wheel, combining in its construction a central hub *a*, buckets *d*, the faces of which are vertical at top to receive the direct action of the water, and inclined at the bottom to receive the gravitating force, and a flange, *a'*, extending outwardly from the central hub to form the top of the buckets, and to receive the upward pressure of the water, substantially as set forth.

3. A water-wheel having a hub, buckets, and flange, substantially as described, in combination with a case covering the wheel, and chutes directing the water horizontally upon the wheel, substantially as described.

4. In combination with a water-wheel having a hub, flange, and buckets, substantially as described, a series of chutes or scrolls *b*, and gates *g*, framed together so as to be simultaneously operated, whereby the wheel is adapted to operate with good effect with any proportionate quantity of water.

3,876.—HORSE HAY-FORK.—John K. O'Neil, Kingston, N. Y.—Patent No. 55,528, dated June 12, 1866.

Claim.—1. An intermediate lever, C, forming the suspending connection between the hoisting-rope and a grapple horse hay-fork, and arranged in connection with the rope and the tines of the fork, substantially as described, so that by its movement and action in drawing up the rope the tines of the fork are closed, or made to grapple the hay or other similar substance to be raised, and by its action during the suspension the tines are held closed or grappled to the hay, and, finally, by the reversal of its movement, the hay is disengaged from the fork.

Also, the combination and arrangement of the arms or bars B B, connecting the lever C with the tines of the fork at points *b b*, away from, and the rod or bar D, connecting the said lever with the fork at the pivot joint *a* of the tines, as herein specified.

3,877.—LIME-KILN.—Clark D. Page, Rochester, N. Y.—Patent No. 22,239, dated December 7, 1858.

Claim.—1. The flues F arranged tangentially, and the flues E arranged radially, in combination with the furnace B and the calcining-chamber A, substantially as and for the purpose described.

2. The convex swells *c* and *d*, on the inner sides of the kiln, at right angles to the flues, substantially as and for the purpose described.

DESIGNS.

3,881.—"BEDOUIN" OR "ARAB."—Thomas Dolan, Philadelphia, Pa.

Claim.—The design consisting of a hood-piece, B, in combination with the gathered folds *c c* of an "Arab" or "Bedouin," the whole being formed substantially as described.

3,882.—"BEDOUIN" OR "ARAB."—Thomas Dolan, Philadelphia, Pa.

Claim.—A "Bedouin" or "Arab" having a hood, B, and gap or opening *b*, formed and arranged substantially as described.

3,883. — TACK-HEAD. — George A. Field, Taunton, Mass., assignor to the Albert Field Tack Company, same place.

Claim.—The design for tack-heads, as herein shown.

3,884. — TACK-HEAD. — George A. Field, Taunton, Mass., assignor to the Albert Field Tack Company, same place.

Claim. — The design for tack-heads, as herein shown.

3,885.—TOP-PLATE, BARREL-BRIDGE, AND COCK FOR WATCHES.—Fayette S. Giles, New York, N. Y., assignor to Giles, Wales & Co., same place.

Claim.—The design and configuration of the top plate, cock, and barrel-bridge of a watch, as herein described and represented in the accompanying drawings.

3,886. — BARREL-BRIDGE, RATCHET-CAP BASE, AND ARBOR-CUP OF WATCHES.—Fayette S. Giles, New York, N. Y., assignor to Giles, Wales & Co., same place.

Claim.—The design herein described and represented in the accompanying drawings of the barrel-bridge, ratchet-cap, base, and arbor-cup of a watch.

3,887.—TRADE-MARK.—Obadiah C. Maxwell, Thomas L. Neal, and Charles L. Long, Dayton, Ohio.

Claim.—The design for a trade-mark herein set forth.

3,888.—CLOCK-FRONT. — Nicholas Müller, New York, N. Y.

Claim.—The design for a clock-front, as herein shown and described.

3,889.—TRADE-MARK.—George C. Thilenius, Cape Girardeau, Mo.

Claim.—The design for a trade-mark herein set forth.

3,890.—TEA-SET.—Hermann Vasseur, Wallingford, Conn., assignor to Simpson, Hall, Miller & Co., same place.

Claim.—The design for tea-set, as shown by the accompanying illustration.

3,891.—ICE-PITCHER.—Hermann Vasseur, Wallingford, Conn., assignor to Simpson, Hall, Miller & Co., same place.

Claim.—The design for ice-pitcher, as described and shown.

3,892.—CARPET-PATTERN.—Hugh Christie, Morrisania, N. Y.

Claim.—The configuration of the design hereunto annexed, when made by being wrought upon jute carpeting or other fabrics, in the form similar to the drawings accompanying this specification.

3,893. — SPICE-MILL. — William Haslam, Philadelphia, Pa., assignor to Henry Troemner, same place.

Claim.—The design for a spice-mill, herein set forth.

3,894.—COLLAR-BOX.—John R. Jerauld and Henry L. Holmes, Providence, R. I.

Claim.—The band, either as the bottom or center of box, as being ornamented, and also as a novelty in the manufacture of paper-collar boxes, herein set forth.

EXTENSION.

WILLIAM L. CARTER, of Marietta, Pa.—Letters Patent No. 14,388, dated March 11, 1856.

"Improved Ore-Washer."

Claim.—A conical vessel provided with shovels, and pins or projections whose shaft is horizontal, and lower side inclined, so that water introduced at one end shall have a natural flow to the other end, and meet the ores as they pass in an opposite direction, to wash them, substantially in the manner and for the purpose set forth.

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PATENTS.

100,708.—COMBINED LOCK AND LATCH.—George B. Allen, Norwalk, Conn.

Claim.—1. In combination with the lugs L' on the latch-bolt, the series of tumblers K, with the vertical and horizontal slots W, one of the series having a slot of the shape shown, so that when this tumbler is moved by the key, it carries along with it the stop J, all as and for the purpose set forth.

2. The revolving disks B, outside of the lock proper, containing a coil-spring in the groove upon their periphery, and furnished with slots for the key-bits, all as and for the purpose set forth.

3. The spring stop C, which holds the hub from turning when it is pushed up or down, and is released when the night-key adjusts the tumblers D, all as described.

100,709.—SHIP'S BLOCK.—Charles F. Annan, Boston, Mass.

Claim.—The sheave B, in combination with the disk C, with its ratchet-wheel D, or its equivalent, and the pawl *d*, the whole constructed and applied to a block, substantially in the manner and for the purpose set forth.

100,710.—HAY-LOADER.—John Bachelder, Norwich, Conn.

Claim.—1. The combination with the series of transferring-rolls of the raking and collecting devices, substantially as and for the purposes set forth.

2. The combination with the transferring-rolls of a central supporting-column, substantially as and for the purposes set forth.

3. The combination and relative arrangement with the frame which supports the transferring-rolls of the driving and supporting-wheels, substantially as described.

4. The combination with the main part of the transferring roll-way of an adjustable collecting section, substantially as described.

5. The combination with the main part of the transferring roll-way of an adjustable delivering section, substantially as described.

100,711. — CHURN. — Timothy Baker, St. Johns, Mich.

Claim.—The churn-dasher above described, consisting of a hollow-standard, A, provided with a conical base, B, and a flange, C, attached to said base, and spirally arranged about the standard A, and provided with openings *a*, when constructed as described, and arranged to operate as and for the purpose set forth.

100,712.—SLATE-FRAME.—William N. Bartholomew, Newton Centre, Mass.

Claim.—1. An elastic corner for slate-frames, consisting of vulcanized rubber of globular or other suitable shape, in combination with a screw imbedded in said rubber before its vulcanization, and adapted to be applied to the slate-frame, substantially as shown and set forth.

2. The combination of the screw and the vulcanized rubber ball, or its equivalent, formed with a recess around the shank of the screw with the tenon and recess in the slate-frame, substantially as shown and set forth.

100,713. — CULTIVATOR-TEETH. — Sanford Beckwith, Oshkosh, Wis.

Claim.—1. The cultivator-tooth B, with a bracing dual head *i i*, arranged relatively to the washer *d*, bolt *c*, and cultivator-bar A, for the purposes set forth.

2. The washers *d*, provided with groove *d'*, when used in combination with tooth B, bar A, and bolt *c*.

100,714. — COMBINATION LOCK. — Spencer Bentley and Charles Mee, Detroit, Mich.

Claim.—1. The arrangement of the latch-bolt C, provided with the transverse groove *a*, the lever D actuated by the spring *b* and the knob-shaft E, when constructed to operate as and for the purpose set forth.

2. The construction of a combination lock, wherein the latch-tube B, latch-bolt C, lever D, knob-shaft E, knobs F F', lock-case G, tumbler H, washer I, key J, change-wheel K, combination wheel L, spring M, washer N, and spring-sleeve O, with their various appurtenances, as hereinbefore described, are constructed, arranged, and operated substantially as and for the purposes specified.

100,715, antedated February 28, 1870.—FARE REGISTER.—Frederick Blackburn and George W. Woodside, Philadelphia, Pa.

Claim.—1. The combination in a fare box of two registering mechanisms for whole and half fares, and an alarm (or alarms) which, on being sounded, distinguishes the character of the fare received and recorded, all substantially as described.

2. The combination with the whole-fare register and bell E, of the disk G, (for registering half fares,) pins *j*, or their equivalents, and two levers or hammers, so arranged as to both strike the bell on the movement of the disk, substantially as specified.

3. The combination of the arm *m*, connecting-rod or wire *m'*, and spring striker P, with a spring striking-lever R and lever L, operated by pins *j* of the disk G, substantially in the manner described.

100,716. — STRAW-STACKING MACHINE.—William Boggs, Covington, Ohio.

Claim.—1. The arrangement at the rear end of the chute A of the shaft G, with pulleys H L and hinged apron M, all substantially as shown and described.

2. The combination and arrangement of the chute A with guides *b b*, shafts C G, pulleys E H L, carrier I J K, and apron M, all constructed as described, to operate substantially in the manner and for the purposes herein set forth.

100,717.—DETACHABLE HANDLE FOR KNIVES AND FORKS.—Leroy Boynton and William, F. Sweet, Jackson township, Pa.

Claim.—A knife or fork, A or B, with a shank, C, having an open slot and notch, *c*, and a detachable handle with a spring catch and rivets *c c*, all substantially as herein described.

100,718.—RAG-WHIPPER AND DUSTER FOR TREATING PAPER STOCK, &c.—Leverett Brainard, Hartford, Conn.

Claim.—1. The drum *a*, provided with the jointed swinging arms *c* and *d*, either whole or linked, constructed, arranged, and operated substantially as described, for the purpose set forth.

2. The corrugated-metal apron *e*, either perforated or not, constructed, arranged, and operated substantially as described, for the purpose set forth.

3. The combination of the armed drum *a* and apron *e*, constructed, arranged, and operated as described, for the purpose set forth.

4. The combination of the armed drum *a*, the metal apron *e*, smooth or corrugated, and the hollow revolving perforated cylinder *g*, the whole constructed, arranged, and operated substantially as described, for the purpose set forth.

100,719, antedated February 26, 1870.—FAN AND PARASOL COMBINED.—Joshua Brooks, Boston, Mass.

Claim.—The combination and arrangement of the hollow parasol or umbrella-handle with the fan, all being constructed and capable of being used substantially as described.

100,720.—CULTIVATOR.—Martin Bruner, Jr., Fremont, Ohio.

Claim.—The rod Q, bent as shown, and pivoted at its ends to the hounds E, and the bars P pivoted thereto and to the beams H, whereby the forward movement of said rod will elevate, and the reverse movement lower the plows, as set forth.

100,721. — FAUCET. — James Bulger, Port Sherman, Mich.

Claim.—1. An improved faucet, provided with free ends which slide in fixed bearings, to relieve

wear on the valve and valve-seat, in the manner described.

2. The combination of a valve-rod, c^4, having prolongation c^5 thereon, with the central perforations in the inner end A, and in the adjustable bearing F, as and for the purpose specified.

100,722, antedated March 1, 1870.—MACHINE FOR SAWING LATH.—James H. Butler, Hampden, Me.

Claim.—In a machine for sawing laths, the herein-described arrangement of the saws and their driving-mechanism, when all the parts are constructed, combined, and operated substantially as and for the purpose specified.

100,723.—METHOD OF SECURING SOLES TO BOOTS AND SHOES.—Charles S. Chaffee and Alexander Wahlig, Birmingham, Conn., assignors to themselves and J. M. Goulding, same place.

Claim.—The herein-described method of securing soles of boots and shoes to the in-soles, by means of screws passing through eyelets formed on or attached to a wire which is laid in a channel extending around the sole, near the edges, the said eyelets fitting in the screw-holes which intersect the channel, and being forced in by the screws to tighten up the wire, all substantially as specified.

100,724.—BOOT AND SHOE-SHAVE.—A. B. Clark, North Oxford, Mass.

Claim.—1. In combination with the mouth-piece L, with its screw M, and thumb-nut N, the sliding cap O, substantially as and for the purpose described.

2. In combination with mouth-piece L, the thumb-nut by which it is vertically adjusted, substantially as specified.

3. In combination with the blade A, the swing-block B, with its screw C, substantially as and for the purpose set forth.

4. The sliding cap D, in combination with the mouth-piece H, with its screw F, substantially as and for the purpose described.

5. The arrangement of the gauge K, the eccentric screw F by which it is operated, and the sliding cap D, all constructed and operated substantially as set forth.

100,725.—ENAMEL FOR CLAY GAS-RETORTS, BURNERS, TILES, &c.—Decius W. Clark, Chicago, Ill.

Claim.—1. The combination of the ingredients herein named for making the frits, when they are compounded as set forth.

2. The combination of the frits with the ingredients described in No. 1, compounded as set forth.

3. The combination of the frits with the ingredients described in No. 2, compounded substantially as described.

100,726.—PIPE-JOINT.—Robert B. Coar, Jersey City, N. J.

Claim.—1. The wedge-shaped soft metal packing E E, arranged as specified, so that any attempt to separate the joint will only make the packing bind more closely.

2. The combination of a spherical spigot, D, and bell C c^3, when the greatest diameter of the former is almost exactly equal to that of the opening in the latter, the difference being barely sufficient to allow the first to pass into the second, as set forth.

3. The combination of soft metal wedge E with a bell, C c^3, having notches cut in its concave side to retain the metal firmly in place, as set forth.

100,727.—CONCRETE AND WOODEN PAVEMENT.—William Baily Coates, Philadelphia, Pa., assignor for one-half of his right to Joseph Leeds, same place.

Claim.—1. The preparation of the blocks, by first expelling all moisture, then boiling or soaking in common whale-oil, and afterwards boiling in virgin coal-oil or pitch for thirty minutes, more or less, and then drying the blocks.

2. The construction of the foundation, with due proportions of slaked lime and unsifted coal ashes, to the proper consistence, laid down and rolled smooth, then a layer of small stones rolled into the first layer until the surface is smooth and hard, the whole being set forth and described in this specification.

100,728.—SAFETY-ATTACHMENT FOR POCKETS.—Henry R. S. Colton, Houghton, Mich.

Claim.—1. The combination of the plate A, the spring hook B, and its re-entering tongue *b*, bearing on the plate, all these parts being constructed as set forth, for the purposes specified.

2. The combination of the plate A, the spring hook B, and its re-entering tongue *b*, with the loop C on the pocket-book, all these parts being constructed as set forth, for joint operation.

100,729.—FERTILIZER.—John Commina, Charleston, S. C.

Claim.—A fertilizer, composed of the several ingredients mixed together, substantially as described.

100,730.—COMPOUND FOR MAKING CONCRETE PAVEMENTS.—Hiram M. Conklin, Carlstadt, N. J.

Claim.—1. The herein-described improved compound for the construction of concrete pavements and roadways, consisting of the ingredients specified, compounded and mixed in the manner described.

2. The combination with the same of sand or fine gravel, when heated and mixed with the same, and applied upon the road-bed as described.

100,731.—MACHINE FOR DRILLING AND TAPPING GAS-FITTINGS.—Richard T. Crane, Chicago, Ill.

Claim.—The combination of two or more drilling or tapping-tools with two chucks or vises, and guide-ways for the same, converging in such manner that the chucks may be alternately guided by them to one and the same position in relation to the tools, substantially as described.

100,732, antedated March 2, 1870.—TURBINE WATER-WHEEL.—Eleazer F. Crocker, Niles, Mich.

Claim.—The turbine water-wheel, with the parts E, F, I, *e*, *f*, *g*, and A, arranged relatively to each other, and to the parts A, *a*, B, *b*, C, *c*, D, and *d*, all substantially as and for the purposes herein set forth.

100,733, antedated February 25, 1870.—FOLDING-CHAIR.—John C. Crummy and Albert A. Parsons, Pittsburg, Pa.

Claim.—1. The folding back C, having the hinges or joints E, head-rest L, arms H H, operating as described, in combination with the chair-seat A.

2. The folding legs P P, hinged and braced as described, in combination with the chair-seat, as specified.

100,734.—COMBINED LATCH AND LOCK.—Charles L. Dean, Newark, N. J.

Claim.—The swinging bolt F, tumblers *g g g*, springs A A A, slot *j*, lever *b*, acting on sliding bolt *d*, spiral spring *f*, and hub *k*, when arranged, combined, and operated as herein described.

100,735.—AUTOMATIC CRADLE.—S. G. Delano, Argentine, Mich.

Claim.—The construction and arrangement of the connecting-plate E and fan-lever F, in connection with the cradle A and pendulum-rod D, operated by any suitable clock-work, in the manner and for the purpose set forth.

100,736.—APPARATUS FOR THE PRODUCTION OF OZONE.—Cleaveland F. Dunderdale, New York, N. Y.

Claim.—1. The combination of a series of tubes or plates of metal or other suitable material, or glass rendered a conductor of electricity, or its equivalent, by being coated with metal or other substance, with a series of passages or interstices between or among them for the circulation of a current of air or oxygen caused to be passed therein and through, after being suitably prepared therefor by proper means, in connection with a galvanic or electric current, substantially as and for the purpose hereinbefore set forth.

2. The combination of the plates C, spaces D', casing A, inlet and outlet B, battery terminals E, binding-screws F, and supporting-insulators D for plates, substantially as and for the purpose hereinbefore set forth.

100,737.—APPARATUS FOR FORCING AIR INTO CARBURETERS ON RAILROAD CARS.—Cleaveland F. Dunderdale, New York, N. Y.

Claim.—1. Using the motion of railroad trains, while moving, for forcing the atmospheric air, by atmospheric resistance, into a receiver for holding the air, and giving a steady pressure thereto for the purpose of carbureting the same for illuminating, heating, &c., substantially as and for the purpose hereinbefore set forth.

2. The blower A or its equivalent, the valve C or its equivalent, pipe B, trap D, sieve E or its equivalent, pipe F, receiver G with cord and valve H and I or their equivalents, and outlet-pipe J, when arranged substantially as and for the purpose hereinbefore set forth.

3. The above, in combination with any air-carbureting device for carbureting atmospheric air for illuminating, heating, and other purposes.

100,738.—RAILWAY RAIL-JOINT.—Edmund P. Dwight, Philadelphia, Pa.

Claim.—1. The clamps, constructed each with a flange, the end of one of which flanges is formed into a beveled shoulder for the bearing of the beveled end of the opposite flange.

2. The combination of the clamps, bolt, metal block, stop-washer, and nut, when these parts are constructed and arranged to operate as described.

100,739.—GATE.—Thomas Ellison, Abingdon, Ill.

Claim.—1. The latch H, connected and in combination with endless cord, and operated substantially as and for the purpose specified.

2. The arrangement and combination of gate A, elevated way B, rollers C, posts D and E, pulleys or rollers F F' and G G', endless cord K, latch H, and cross-bar J, the whole constructed to operate substantially as and for the purpose specified.

100,740.—CORN-HUSKER.—N. Evinger, Sandford, Ind.

Claim.—A corn-husker, formed by combining with the curvilinear wire A, B, and *c*, the strap or girder D, when constructed and arranged as and for the purpose herein shown and described.

100,741.—BURGLAR-PROOF SAFE.—Joseph M. Ewing, Hastings, Mich.

Claim.—In the construction of burglar-proof safes and vaults, the employment of chain armor, as and for the purpose set forth.

100,742.—LAWN-MOWER.—Joseph C. Field, Chicago, Ill.

Claim.—The combination of the following elements in a lawn-mower, namely: The branched bar A B, driving band and pulleys operated by hand-crank, revolving and stationary cutters, and independent carriage, all co-operating in the manner specified.

100,743.—PLOW.—Miranda Fort, Talbatton, Ga.

Claim.—The stock B provided with the branches *b*, and combined with the braces *b'*, stock C provided with the branches *c*, the latter serving as braces to the branches *b*, and the beam A, all constructed and arranged for the purpose described.

100,744.—CIGAR PIERCER.—Horace N. Foster, East Greenwich, R. I.

Claim.—The combination and arrangement of the spring A, lance *c*, and the cigar-holder and guide, substantially as herein set forth and for the purpose specified.

100,745.—GRAVEL-PAN.—Henry Franke, Brooklyn, N. Y.

Claim.—The gravel-pan, containing the heat-channels *b* and C, and composed of the platform *a* and side ptates *f*, the latter not reaching down upon the platform, as specified, to operate as set forth.

100,746.—COMBINATION WATER-WHEEL.—John Fuller and Herbert Fuller, Lockington, Ohio.

Claim.—A pair of water-wheels, formed of hubs, E, curved buckets, F, and curved chutes, G, extending rearward and downward in the manner described.

100,747.—MECHANICAL MOVEMENT.—William Garrison, Clarkstown, N. Y.

Claim.—1. The combination of the lever D and pawls E F with the drums B C, toothed wheels *a b*, and ratchet-wheels *f g*, all parts being arranged so that the oscillation of the lever will produce continuous rotation of both drums in opposite directions, as set forth.

2. The lever D, which carries the pawls for rotating the drums B C, when so pivoted that it can be inclined to carry both pawls out of gear, as specified.

100,748.—CORN-PLANTER.—William Gilman, Ottawa, Ill.

Claim.—1. The combination and arrangement of the short axles G G and caps G' G', in combination with the adjustable slide-bar E, when made in two pieces, as shown, the seed-box bottoms E E', and the slotted hangers C C, substantially as described in the foregoing specification.

2. The ratchet and pawl H and lever H', fig. 4, in combination with the seat I, the rock-shaft J, and the seed-box frame J', substantially as and for the purposes described.

3. The two rests K K, with oblique slots, when adapted to a corn-planter, substantially as and for the purpose described.

4. The caps L L, in combination with the slide-bar E, substantially as and for the purpose described in the foregoing specification.

100,749.—MACHINE FOR STAMPING LACE-PAPER.—Ambrose Girnudat, New York, N. Y.

Claim.—1. The combination of the stationary or movable dies with the paper-holders L or L' and hammers *e* or *e'*, the hammers being operated to stamp the paper on the dies, substantially in the manner herein shown and described.

2. The springs D connected with the levers B or B' that operate the hammers, the said springs being connected with a lever to have their tension regulated, as set forth.

3. The spring J, suspended from the frame A and provided with the loops *g* to serve as guides for the hammer shanks or rods C, as set forth.

4. The hammers *e* suspended from the pivoted levers B in such manner that they can be swung above the fixed dies, as set forth.

5. The die I' made adjustable with its supporting-bed H' to guide the paper under the hammer, as set forth.

100,750.—STEERING-APPARATUS.—Ebenezer G. Green, East Gloucester, Mass.

Claim.—1. The arrangement of the movable boxes *f f'*, and the movable cap *e*, having adjusting screws *m m m*, the wheel *g*, and the shaft *h*, having pinions *i*, with the supports *l l*, and the rudder-head *b*, having gearing *d*, whereby the rudder may be thrown upward without injury to the parts above named, the whole being combined and operating substantially as and for the purpose described.

2. The arrangement of the groove *j*, the rollers *k k'*, in combination with the segment of the rudder-head, having gearing *d*, and operated by the wheel *g* and shaft *h*, with its pinions *i*, the several parts above named being constructed, combined, arranged, and operating substantially as and for the purpose described.

100,751.—COPING FOR WALLS.—John Grindrod, Albany, N. Y.

Claim.—A coping made of short sections A, having flanges B, transverse caps C, vertical flanges E, and short flanges F, all combined, constructed, arranged, and adjusted as and for the purpose specified.

100,752, antedated March 5, 1870.—APPARATUS FOR COOLING BEER AND OTHER LIQUIDS.—Theodore Gründmann, Cleveland, Ohio.

Claim.—1. The arrangement in a cooling-chamber, B, of a serpentine vessel A, raised above the bottom of said chamber, and surrounded by the cooling-fluid on every side, as shown and described.

2. The improved serpentine vessel A, having an inlet-pipe, *a*, at the top of chamber B, and an outlet-pipe, *b*, at the bottom thereof, to allow the warm liquid to flow through the cooling-fluid, and be deprived of its caloric, in the manner described.

3. The combination of a surrounding chamber, B, having induction-pipe C in the center, and the eduction-pipe *f* on the rim thereof, to admit of a constant flow and change of the cooling-fluid, with a vessel, A, through which the liquid to be cooled flows, in the manner set forth, each of said vessels being constructed and arranged in respect to the other, as and for the purpose specified.

100,753.—DEVICE FOR OPERATING CHURNS.—Edgar R. Hall and William H. Town, Syracuse, N. Y., said Hall assigns his right to said Town.

Claim.—The combination and arrangement of the crank-shaft and pulley N, the pitman L, the rock-shaft C, arms D, balance-wheel O, grooved churn-dash P, swivel E, and the elastic band R, when the dash is made adjustable, and the double action is communicated to it, substantially as set forth.

100,754.—METHOD OF STRENGTHENING BOBBINS OR SPOOLS.—Albert Hallowell, Lowell, Mass., assignor to himself, Abel T. Atherton, and Horace T. Durgin, same place.

Claim.—The method, substantially as described, of strengthening, protecting, and preserving one or both heads or ends of a bobbin or spool, by means of a metal band or hoop, or a band or hoop and a plate combined, by casting the metal into an annular groove around the head or end of the bobbin, or in said groove and over and upon the end portion, substantially in the manner and for the purpose set forth.

100,755. — PAPER-MAKING MACHINERY.—William W. Harding, Philadelphia, Pa.

Claim.—1. The rollers on which the wire-cloth moves, when made of soft vulcanized rubber, or covered therewith.

2. The upper surface of the suction-box, when constructed of a perforated plate of soft vulcanized rubber, or of strips of the same material.

3. Constructing the surfaces on which the wire-cloth moves either wholly or in part of soft vulcanized rubber.

100,756. — ROCK-DRILLING MACHINE.—Jacob Hart, Savannah, Mo.

Claim.—The combination of the frame A, sash B, rods *a'* and springs *a*, in the manner and for the purpose explained.

100,757. — SCREW-DRIVER. — Lewis Hart, Unionville, Conn.

Claim.—The combination of the handle *a* and blade *b*, constructed substantially as described, for the purpose set forth.

100,758.—FARE-BOX FOR RAILROAD CARS.—George C. Hathorn, New York, N. Y.

Claim.—1. The rotating helical chute, attached to a vertical shaft or spindle, in combination with the opening H, admitting the fare into the locked receptacle J, substantially as described.

2. The detecting-ball, lodged in a suitable chamber in the lower part of the helical chute, and indicating by its escape any tampering with the box, substantially as and for the purpose set forth.

100,759.—GATE. — James Hays, Fostoria, Ohio.

Claim.—The curved rod G, provided with roller H, in combination with the gate and cam-shaped block D, when the rod G is attached to and receives its motion from the gate, substantially as set forth.

100,760.—MEDICAL COMPOUND FROM CHLORAL. — Thomas H. Hazard, Richmond, Va.

Claim.—The elixir of the hydrate of chloral, compounded and prepared as herein described, or in a manner substantially the same.

100,761.—FLOATING-MILL POWER.—August G. Heitmann, Brooklyn, N. Y., assignor to himself and James Kelly, same place.

Claim.—1. The combination of the boat A, which carries the paddle-wheels D and the superstructure B, with the flanged gate H, which extends below the paddles, to regulate the amount of water admitted to operate the same, as set forth.

2. The pivoted gate H, carrying the flanges *d* and the racks *e*, in combination with the pinions *f* on the shaft I, all arranged to operate as set forth.

3. The paddle-shaft C, bevel-gears *b c*, driving-shaft J and bevel-gears *l* K, with the shaft E, journaled at one end in a collar on said driving-shaft, and at the other in the upper part of the boat on frame B, all arranged as set forth.

4. The arrangement of ribs *i* on the flanges *j* of the wheels, to hold the swinging paddles firm against the impinging tide.

100,762.—MANURE-SPREADER.—Daniel Hill, New Vienna, Ohio, assignor to himself and Isaac I. Evans, Richmond, Ind.

Claim.—1. The hopper E, consisting of four leaves, *a*, *b*, *c*, and *d*, of which three are pivoted and adjustable, as set forth.

2. The windlass F and the straps *e e*, arranged on the wagon with respect to the hopper, as and for the purpose specified.

100,763. — WINDOW-CORNICE. — Robert N. Hoffman, Chicago, Ill.

Claim.—The glass cornice D D E, in combination with the knobs C C, head-casing B, rod I, and roller G, as and for the purpose set forth.

100,764.—FEEDING-MECHANISM FOR SEWING-MACHINES.—James A. House, Bridgeport, Conn.

Claim.—The combination, as set forth, of the cloth-plate, the regulating-cam, and the friction-spring index-plate turning with the cam to indicate its position and to measure the stitches, all these parts being constructed and arranged for joint operation, as set forth.

Also, the friction-spring index-plate, constructed, arranged, and operating as set forth.

100,765. — KNITTING-MACHINE. — John M. Howe, Rochester, N. Y.

Claim.—1. The skeleton bed A, constructed as shown and described, provided with the central supporting-ribs *c* and ways *d* at its lower edges, substantially as and for the purposes set forth.

2. The hinged division-ribs *f*, arranged either separately or in sets, and their upper ends acting as loop-jacks, substantially as herein set forth.

3. The backing-plates *b*, entire or in two or more sections, in combination with the hinged division-ribs *f*, for the purposes set forth.

4. The removable rods *h*, in combination with the hinged division-ribs of a knitting-machine, for the purposes set forth.

5. The combination with the two parallel rows of needles of the single hollow arch C, the lock-plates B and B', and the curved adjusting-bar C', substantially as set forth.

6. The reciprocating cam D, when actuated directly or indirectly by the crank *k*, in combination with the adjusting-bar C', substantially as and for the purposes set forth.

7. The curved adjusting-bar C', suspended within or upon the arch, in combination with the V-cams *e* and *i*, operating substantially as shown and described.

8. The reciprocating cam D, in combination with the adjusting-bar C', operating substantially as set forth.

9. The reciprocating cam D, when provided with a suitable locking-stop, *c'*, substantially as and for the purposes set forth.

10. The automatic take-up fingers *p*, actuated by the fixed pin *s* in the swinging arm F, and the diagonal slots at the base of the said fingers, in combination with the crank *k* and inclined planes J, substantially as and for the purposes set forth.

11. In combination with the sliding index N, constructed as described, the numbered pattern P, made in adjustable sections, as and for the purposes set forth.

12. The V-cam *e*, provided with the fulcrum *e'*, and arranged and operating substantially as set forth.

13. The pivoted adjustable bell-crank *l*, in combination with the curved adjusting-bar C', for the purposes set forth.

14. The hinged yarn take-up F, provided with automatic fingers *p*, in combination with the sliding frame B B', the whole operating substantially as and for the purposes set forth.

15. In combination with the fixed inclines J, the actuating-slide H and take-up apparatus, all operating substantially as described.

16. The crank-arm *a* and actuating-slide H, in combination with the sliding plate *s*, the fingers *p p*, and the hinged take-up F, arranged and operating substantially as set forth.

100,766.—CONDENSER AND LIME-EXTRACTING HEATER.—John Huntington, Cleveland, Ohio.

Claim.—A condenser and lime-extractor, provided with conical diaphragms, constructed with alternate peripheral and unobstructed central openings, substantially as and for the purpose set forth.

100,767.—HORSE HAY-FORK.—T. D. Ingersoll, Monroe, Mich.

Claim.—1. In a horse hay-fork, the automatic locking-lever I, its lock-pivot J, and lock-stop *i*, in combination with the sliding bar F and sleeve-bar G, with its attachments H, *l*, *m*, and *k*, substantially as and for the purpose hereinbefore set forth.

2. The arrangement and combination of the lifting-tines A A, arms B B, supplemental tines C C, arms D D, sleeve-bar G, and sliding bar F of the locking device, substantially as set forth.

100,768.—HORSESHOE.—Hiram Ingraham, Armada, Mich.

Claim.—As a new article of manufacture, a horse-shoe constructed of half-round iron, as and for the purposes set forth.

100,769. — HOISTING-MACHINE. — Joseph Jewsbury, Brook Fields, England, assignor to Henry A. Clarke, Boston, Mass.

Claim.—1. The wheels *i* and *c* and eccentric *b*, combined and operating together substantially as and for the purposes set forth.

2. Preventing the rotation of the wheel or pinion *c*, by means of the oscillating arms *e* or other suitable device, substantially as set forth.

3. The application to crabs and other hoisting or lifting-machinery of the said wheels and eccentric, substantially as and for the purposes set forth.

4. The application of the said wheels and eccentric to turning-lathes, substantially as and for the purposes set forth.

100,770.—STUMP-EXTRACTOR.—W. O. Johnson, Alma, Mich.

Claim.—The construction of an apparatus for extracting stumps and lifting heavy bodies, wherein the frame A, links B, clevises C, levers D, connecting-rods E and I, yokes F and J, dogs G and K, and rack-bar H, are arranged and operate substantially as herein described.

100,771.—SKIVING-MACHINE.—John Kavanagh, Providence, R. I., and Moses S. Moulton, Boston, Mass.

Claim.—1. The combination of hollow stand B, spindle L, arm K, and slotted tool-stock I, with the set-screws, all arranged as and for the purpose specified.

2. A skiving-machine provided with wheel D and spring clamp F, to hold the leather in position, combined with a knife, H, adjusted and arranged to incise the leather with a drawing cut, and of any width or shape, as set forth.

100,772. — CENTERING-ATTACHMENT FOR LATHE.—Daniel Kelly, Philadelphia, Pa., assignor to himself and Walter K. Ludwig, same place.

Claim.—The improved self-centering drill attachment, above described, consisting of the socketed spindle A and sleeve C, having the perforated funnel *a* at one end and tubular enlargement and spring at the other, all constructed and arranged as and for the purpose specified.

100,773.—APPARATUS FOR LIGHTING GAS BY ELECTRICITY. — William H. Kelly, New York, N. Y.

Claim.—1. The nut B, of non-conducting material, provided with a dovetailed slot to receive the part D, and the cylindrical chamber to receive the axle C, substantially as and for the uses and purposes herein shown and described.

2. The axle C provided with the wire F, substantially as and for the uses and purposes herein shown and described.

3. The part D fitting in the dovetailed slot in the nut B, and so arranged as that its apex is flush with the exterior circumference of B, and coming in contact with the band E, while the vertical surface of the rear of its base will, at certain points in the revolution of the nut B, come in contact with the wire F, substantially as and for the uses and purposes herein shown and described.

4. The parts B C D in combination with each other, as shown at fig. 5, for the uses and purposes herein shown and described.

5. The parts B C D in combination with the band E and igniter, for the uses and purposes substantially as herein shown and described.

6. The band G provided with an aperture to receive the angular top or cap of the axle C, whereby the same is retained in a stationary position when the nut B is moved.

100,774. — VAPOR-BURNER. — Isaac Kling, Seymour, Ind.

Claim.—The burner I, constructed as described, with passage *i*, escape-chamber *e*, screw *b*, outlet *m*,

100,750.—STEERING-APPARATUS.—Ebenezer G. Green, East Gloucester, Mass.

Claim.—1. The arrangement of the movable boxes *f f'*, and the movable cap *e*, having adjusting screws *m m m*, the wheel *g*, and the shaft *h*, having pinions *i*, with the supports *l l*, and the rudder-head *b*, having gearing *d*, whereby the rudder may be thrown upward without injury to the parts above named, the whole being combined and operating substantially as and for the purpose described.

2. The arrangement of the groove *j*, the rollers *k k'*, in combination with the segment of the rudder-head, having gearing *d*, and operated by the wheel *g* and shaft *h*, with its pinions *i*, the several parts above named being constructed, combined, arranged, and operating substantially as and for the purpose described.

100,751.—COPING FOR WALLS.—John Grindrod, Albany, N. Y.

Claim.—A coping made of short sections A, having flanges B, transverse caps C, vertical flanges E, and short flanges F, all combined, constructed, arranged, and adjusted as and for the purpose specified.

100,752, antedated March 5, 1870.—APPARATUS FOR COOLING BEER AND OTHER LIQUIDS.—Theodore Grundmann, Cleveland, Ohio.

Claim.—1. The arrangement in a cooling-chamber, B, of a serpentine vessel A, raised above the bottom of said chamber, and surrounded by the cooling-fluid on every side, as shown and described.

2. The improved serpentine vessel A, having an inlet-pipe, *a*, at the top of chamber B, and an outlet-pipe, *b*, at the bottom thereof, to allow the warm liquid to flow through the cooling-fluid, and be deprived of its caloric, in the manner described.

3. The combination of a surrounding chamber, B, having induction-pipe C in the center, and the eduction-pipe *f* on the rim thereof, to admit of a constant flow and change of the cooling-fluid, with a vessel, A, through which the liquid to be cooled flows, in the manner set forth, each of said vessels being constructed and arranged in respect to the other, as and for the purpose specified.

100,753.—DEVICE FOR OPERATING CHURNS.—Edgar R. Hall and William H. Town, Syracuse, N. Y., said Hall assigns his right to said Town.

Claim.—The combination and arrangement of the crank-shaft and pulley N, the pitman L, the rock-shaft C, arms D, balance-wheel O, grooved churn-dash P, swivel E, and the elastic band R, when the dash is made adjustable, and the double action is communicated to it, substantially as set forth.

100,754.—METHOD OF STRENGTHENING BOBBINS OR SPOOLS.—Albert Hallowell, Lowell, Mass., assignor to himself, Abel T. Atherton, and Horace T. Durgin, same place.

Claim.—The method, substantially as described, of strengthening, protecting, and preserving one or both heads or ends of a bobbin or spool, by means of a metal band or hoop, or a band or hoop and a plate combined, by casting the metal into an annular groove around the head or end of the bobbin, or in said groove and over and upon the end portion, substantially in the manner and for the purpose set forth.

100,755.—PAPER-MAKING MACHINERY.—William W. Harding, Philadelphia, Pa.

Claim.—1. The rollers on which the wire-cloth moves, when made of soft vulcanized rubber, or covered therewith.

2. The upper surface of the suction-box, when constructed of a perforated plate of soft vulcanized rubber, or of strips of the same material.

3. Constructing the surfaces on which the wire-cloth moves either wholly or in part of soft vulcanized rubber.

100,756.—ROCK-DRILLING MACHINE.—Jacob Hart, Savannah, Mo.

Claim.—The combination of the frame A, sash B, rods *a'* and springs *a*, in the manner and for the purpose explained.

100,757.—SCREW-DRIVER.—Lewis Hart, Unionville, Conn.

Claim.—The combination of the handle *a* and blade *b*, constructed substantially as described, for the purpose set forth.

100,758.—FARE-BOX FOR RAILROAD CARS.—George C. Hathorn, New York, N. Y.

Claim.—1. The rotating helical chute, attached to a vertical shaft or spindle, in combination with the opening H, admitting the fare into the locked receptacle J, substantially as described.

2. The detecting-ball, lodged in a suitable chamber in the lower part of the helical chute, and indicating by its escape any tampering with the box, substantially as and for the purpose set forth.

100,759.—GATE.—James Hays, Fostoria, Ohio.

Claim.—The curved rod G, provided with roller H, in combination with the gate and cam-shaped block D, when the rod G is attached to and receives its motion from the gate, substantially as set forth.

100,760.—MEDICAL COMPOUND FROM CHLORAL.—Thomas H. Hazard, Richmond, Va.

Claim.—The elixir of the hydrate of chloral, compounded and prepared as herein described, or in a manner substantially the same.

100,761.—FLOATING-MILL POWER.—August G. Heitmann, Brooklyn, N. Y., assignor to himself and James Kelly, same place.

Claim.—1. The combination of the boat A, which carries the paddle-wheels D and the superstructure B, with the flanged gate H, which extends below the paddles, to regulate the amount of water admitted to operate the same, as set forth.

2. The pivoted gate H, carrying the flanges *d* and the racks *e*, in combination with the pinions *f* on the shaft I, all arranged to operate as set forth.

3. The paddle-shaft C, bevel-gears *b c*, driving-shaft J and bevel-gears *i* K, with the shaft E, journaled at one end in a collar on said driving-shaft, and at the other in the upper part of the boat or frame B, all arranged as set forth.

4. The arrangement of ribs *i* on the flanges *j* of the wheels, to hold the swinging paddles firm against the impinging tide.

100,762.—MANURE-SPREADER.—Daniel Hill, New Vienna, Ohio, assignor to himself and Isaac I. Evans, Richmond, Ind.

Claim.—1. The hopper E, consisting of four leaves, *a*, *b*, *c*, and *d*, of which three are pivoted and adjustable, as set forth.

2. The windlass F and the straps *e e*, arranged on the wagon with respect to the hopper, as and for the purpose specified.

100,763.—WINDOW-CORNICE.—Robert N. Hoffman, Chicago, Ill.

Claim.—The glass cornice D D E, in combination with the knobs C C, head-casing B, rod I, and roller G, as and for the purpose set forth.

100,764.—FEEDING-MECHANISM FOR SEWING-MACHINES.—James A. House, Bridgeport, Conn.

Claim.—The combination, as set forth, of the cloth-plate, the regulating-cam, and the friction-spring index-plate turning with the cam to indicate its position and to measure the stitches, all these parts being constructed and arranged for joint operation, as set forth.

Also, the friction-spring index-plate, constructed, arranged, and operating as set forth.

100,765.—KNITTING-MACHINE.—John M. Howe, Rochester, N. Y.

Claim.—1. The skeleton bed A, constructed as shown and described, provided with the central supporting-ribs *c* and ways *d* at its lower edges, substantially as and for the purposes set forth.

2. The hinged division-ribs *f*, arranged either separately or in sets, and their upper ends acting as loop-jacks, substantially as herein set forth.

3. The backing-plates *b*, entire or in two or more sections, in combination with the hinged division-ribs *f*, for the purposes set forth.

4. The removable rods *h*, in combination with the hinged division-ribs of a knitting-machine, for the purposes set forth.

5. The combination with the two parallel rows of needles of the single hollow arch C, the lock-plates B and *B'*, and the curved adjusting-bar *C'*, substantially as set forth.

6. The reciprocating cam D, when actuated directly or indirectly by the crank *k*, in combination with the adjusting-bar *C'*, substantially as and for the purposes set forth.

7. The curved adjusting-bar *C'*, suspended within or upon the arch, in combination with the V-cams *e* and *i*, operating substantially as shown and described.

8. The reciprocating cam D, in combination with the adjusting-bar *C'*, operating substantially as set forth.

9. The reciprocating cam D, when provided with a suitable locking-stop, *c'*, substantially as and for the purposes set forth.

10. The automatic take-up fingers *p*, actuated by the fixed pin *z* in the swinging arm F, and the diagonal slots at the base of the said fingers, in combination with the crank *k* and inclined planes J, substantially as and for the purposes set forth.

11. In combination with the sliding index N, constructed as described, the numbered pattern P, made in adjustable sections, as and for the purposes set forth.

12. The V-cam *e*, provided with the fulcrum *e'*, and arranged and operating substantially as set forth.

13. The pivoted adjustable bell-crank *l*, in combination with the curved adjusting-bar *C'*, for the purposes set forth.

14. The hinged yarn take-up F, provided with automatic fingers *p*, in combination with the sliding frame B *B'*, the whole operating substantially as and for the purposes set forth.

15. In combination with the fixed inclines J, the actuating-slide H and take-up apparatus, all operating substantially as described.

16. The crank-arm *a* and actuating-slide H, in combination with the sliding plate *e*, the fingers *p p*, and the hinged take-up F, arranged and operating substantially as set forth.

100,766.—CONDENSER AND LIME-EXTRACTING HEATER.—John Huntington, Cleveland, Ohio.

Claim.—A condenser and lime-extractor, provided with conical diaphragms, constructed with alternate peripheral and unobstructed central openings, substantially as and for the purpose set forth.

100,767.—HORSE HAY-FORK.—T. D. Ingersoll, Monroe, Mich.

Claim.—1. In a horse hay-fork, the automatic locking-lever I, its lock-pivot J, and lock-stop *i*, in combination with the sliding bar F and sleeve-bar G, with its attachments H, *l l*, *m*, and *h*, substantially as and for the purpose hereinbefore set forth.

2. The arrangement and combination of the lifting-tines A A, arms B B, supplemental tines C C, arms D D, sleeve-bar G, and sliding bar F of the locking device, substantially as set forth.

100,768.—HORSESHOE.—Hiram Ingraham, Armada, Mich.

Claim.—As a new article of manufacture, a horseshoe constructed of half-round iron, as and for the purposes set forth.

100,769.—HOISTING-MACHINE.—Joseph Jewsbury, Brook Fields, England, assignor to Henry A. Clarke, Boston, Mass.

Claim.—1. The wheels *i* and *c* and eccentric *b*, combined and operating together substantially as and for the purposes set forth.

2. Preventing the rotation of the wheel or pinion *c*, by means of the oscillating arms *e* or other suitable device, substantially as set forth.

3. The application to crabs and other hoisting or lifting-machinery of the said wheels and eccentric, substantially as and for the purposes set forth.

4. The application of the said wheels and eccentric to turning-lathes, substantially as and for the purposes set forth.

100,770.—STUMP-EXTRACTOR.—W. O. Johnson, Alma, Mich.

Claim.—The construction of an apparatus for extracting stumps and lifting heavy bodies, wherein the frame A, links B, clevises C, levers D, connecting-rods E and I, yokes F and J, dogs G and K, and rack-bar H, are arranged and operate substantially as herein described.

100,771.—SKIVING-MACHINE.—John Kavanagh, Providence, R. I., and Moses S. Moulton, Boston, Mass.

Claim.—1. The combination of hollow stand B, spindle L, arm K, and slotted tool-stock I, with the set-screws, all arranged as and for the purpose specified.

2. A skiving-machine provided with wheel D and spring clamp F, to hold the leather in position, combined with a knife, H, adjusted and arranged to incise the leather with a drawing cut, and of any width or shape, as set forth.

100,772.—CENTERING-ATTACHMENT FOR LATHE.—Daniel Kelly, Philadelphia, Pa., assignor to himself and Walter K. Ludwig, same place.

Claim.—The improved self-centering drill attachment, above described, consisting of the socketed spindle A and sleeve C, having the perforated funnel *a* at one end and tubular enlargement and spring at the other, all constructed and arranged as and for the purpose specified.

100,773.—APPARATUS FOR LIGHTING GAS BY ELECTRICITY.—William H. Kelly, New York, N. Y.

Claim.—1. The nut B, of non-conducting material, provided with a dovetailed slot to receive the part D, and the cylindrical chamber to receive the axle C, substantially as and for the uses and purposes herein shown and described.

2. The axle C provided with the wire F, substantially as and for the uses and purposes herein shown and described.

3. The part D fitting in the dovetailed slot in the nut B, and so arranged as that its apex is flush with the exterior circumference of B, and coming in contact with the band E, while the vertical surface of the rear of its base will, at certain points in the revolution of the nut B, come in contact with the wire F, substantially as and for the uses and purposes herein shown and described.

4. The parts B C D in combination with each other, as shown at fig. 5, for the uses and purposes herein shown and described.

5. The parts B C D in combination with the band E and igniter, for the uses and purposes substantially as herein shown and described.

6. The band G provided with an aperture to receive the angular top or cap of the axle C, whereby the same is retained in a stationary position when the nut B is moved.

100,774.—VAPOR-BURNER.—Isaac Kling, Seymour, Ind.

Claim.—The burner I, constructed as described, with passage *i*, escape-chamber *c*, screw *b*, outlet *m*,

pockets *f f*, and grooved heating-plate *h*, all substantially as and for the purposes herein set forth.

100,775.—MACHINE FOR MAKING FRUIT-CANS.—Isaac Kling, Seymour, Ind.

Claim.—1. The mandrel, consisting of the sections A A, elastic band B, and plunger C, substantially as described.

2. The arrangement of the metallic spring D D, in combination with the mandrel above described.

3. The construction, substantially as described, of plunger C, sections A A, and springs D D, for the purposes set forth.

100,776. — EXTENSION TABLE. — Charles Philip Lenz, Poughkeepsie, N. Y.

Claim.—The combination of an extension table with a bureau or case, supporting the central pair of extension rails, as set forth.

100,777.—FIRE-ESCAPE.—Michel Lewis and John C. Swenson, Williamsburg, N. Y.

Claim.—1. The platform F, in combination with the arms B, and so arranged that it may be drawn from and toward the building upon said arms, and raised and lowered with and by them, substantially as herein shown and described, and for the purposes set forth.

2. The combination of the in-draw chain L and out-draw chain K, with the platform F, arms B, and frame A, substantially as herein shown and described and for the purposes set forth.

3. The combination of the balance-weight M, chain N, hoist and lowering-chain P, pulley R, and shaft S, with the frame A, arms B, and platform F, substantially as herein shown and described and for the purposes set forth.

4. An improved fire-escape, formed by the combination of the iron frame A, arms B, platform F, out-draw and in-draw chains K L, chain N, balance-weight M, chain P, pulley R, and shaft S with each other, substantially as herein shown and described and for the purpose set forth.

100,778.—MACHINE FOR CLEANING STABLES.—Thomas F. Longaker, Philadelphia, Pa.

Claim.—A stable-cleaner, composed of a revolving head or cross-bar, *a a*, carrying the teeth *f f*, the socket *e*, the spring *c c*, with nose or lug *c* fitting into aperture or orifice A, said spring fastened to top or bottom of tongue *b*, the diagonal supports *j j*, the tongue *b*, the teeth *f f*, all combined and arranged as herein set forth and described.

100,779.—ANIMAL-TRAP.—Myron W. Lyman, Chicago, Ill.

Claim.—The combination, with a case, A, and a bait-support, E, of one or more tilting cylinders, F, arranged in slots in the top of the case under a cap, D, and either in grooves or depressions in the top, or not, all substantially as specified.

100,780.—PLOW.—Thomas T. Mattox, Griffin, Ga.

Claim.—The combination of the stationary arm C and adjustable subsoil-plow standard D with the plow-standard B and plow-beam A, substantially as herein shown and described, and for the purpose set forth.

100,781.—BURGLAR-PROOF SAFE.—William McFarland, Williamsburg, N. Y.

Claim.—1. The open spring-ring C inserted in a groove or channel in the door or body, either or both, of the safe, and pressing against the other of said parts, substantially as herein shown and described and for the purpose set forth.

2. The hinged curved corner-bars or pieces C, constructed and operating in connection with the straight bars of said ring C and with the rounded corners of the body and door of the safe, substantially as herein shown and described and for the purpose set forth.

100,782.—BASIN WITH WASTE-PIPE ATTACHMENTS.—George C. Miller, Goshen, and Joseph H. Coates, New York, N. Y.

Claim.—1. The basin A, with the projections or lugs *b* upon its lower portion, as set forth.

2. The combination with the basin A, as set forth, of the sleeve C, substantially as described.

100,783.—DIE FOR FORMING PERCH-PLATES.—Robert R. Miller, Plantsville, Conn.

Claim.—The hereinbefore-described die D, provided with the grooves A′ B′ and B′, and with the recess C′, substantially as and for the purpose shown.

100,784, antedated February 28, 1870.—CIRCULAR-SAW MILL.—Jonathan Mills and Albert G. Waldo, Milwaukee, Wis.

Claim.—Saw C, stand D, sleeve E, frame F, screws G, H, and I, and mandrel L, in combination with saw B, substantially as described.

100,785.—GOVERNOR FOR STEAM-ENGINES.—Thomas Moore, Brooklyn, N. Y.

Claim.—1. The independent springs K K and balls I I, the latter sliding upon the rods J J of the fly-wheel, in combination with slotted cars *m m*, bell-crank levers D D, and straps R R, all arranged and operated as set forth.

2. The spherical ball formed in two parts, one with a threaded shank, and the other with a correspondingly threaded recess, in combination with a spring, K, clamped between the said parts in the manner described.

100,786.—SIPHON.—Solomon S. Moyer, Allentown Pa.

Claim.—The combination of the vertical tube D and faucet E with the pipe A, the said parts being constructed and arranged in relation to each other substantially in the manner and for the purpose set forth.

100,787.—FARM-GATE.—Joseph H. Murphy and Patrick J. Murphy, Abingdon, Ill.

Claim.—The plate S, constructed, as shown and described, with cylindrical projections T and V, in combination with rail B, eye-bolt C, and post A, the whole arranged to operate substantially as and for the purpose specified.

100,788.—MODE OF PREVENTING THE STEALING OF BONDS, &c.—James Myers, Jr., Brooklyn, E. D., N. Y.

Claim.—The preventing of the illegitimate sale, and consequently the stealing of government bonds, by printing duplicate numbers thereon at any desirable place, and having said numbers cut at a suitable distance all around, in such a manner that they may be readily detached by the original purchaser, and the matching of the cut and uncut portions of the bond serve as a test of legitimacy for effecting a sale of the same, substantially as set forth.

100,789.—SOFA BED.—John Needham, Morrisania, N. Y.

Claim.—The combination and arrangement of the seat G and bed bottom C D with the frame and back A B, substantially as described.

100,790, antedated March 3, 1870.—BUCKWHEAT-HULLING MACHINE. — Thomas Nelson, Troy, N. Y., assignor to Newton Reynolds and Horace G. Nelson, same place.

Claim.—1. Securing and holding together the several parts composing the respective hulling-stones *a* and *b*, by the combined means of the metallic plates *e* and *g*, the flanges *h* and *h*¹, and the set-plates *i* and *i*¹, either with or without the use of cement, substantially as hereinbefore described.

2. The projecting flanges *m* on the set-plates *i*

of stone *b*, substantially as and for the purpose described.

3. The arrangement and combination of the hulling-stones *a* and *b*, and the stationary discharging-spout *s* therefrom, with the spout *s*¹ *t*, constructed and provided with the vibrating standard or shaft *s*¹, its operating-rod *u*², and operating-wheel *s*², receiving motion from the shaft *n*, or their equivalent operating parts, so as to oscillate the receiving end of said spout *s*¹ *t*, substantially as hereinbefore described.

4. The combination and arrangement with each other of the hulling-stones *a* and *b*, the stationary discharging-spout *s*, the spout *s*¹ *t*, oscillating at its end next the spout *s*, as described, its sleeve *u*, the vertical spout *d*², and the air-exhausting fan-wheel *f*², all substantially as and for the purpose described.

5. The combination and arrangement of the concave end, stationary discharge-spout *s*, and the oscillating convex end receiving-spout *s*¹ *t*, with each other, when applied to buckwheat-hulling stones, substantially as and for the purpose described.

100,791.—SCREEN COAL-HOD.—M. S. Nichols and Reuben Weaver, Central Village, Conn.

Claim.—The combination of coal-chamber B and screen E with a removable ash-pan A, made easily and quickly detachable by means of the pin C and spring catch D, as herein described, for the purpose specified.

100,792.—HOTEL AND BURGLAR-ALARM.—Charles S. Noe, Bergen Point, N. J.

Claim.—1. The combination of the electro-magnets B B¹, &c., the armature-levers L L¹, &c., with the pins *d*, crank-axles N N¹, &c., springs *h*, and shields or indicators *f*, all arranged substantially as herein shown and described.

2. The swinging bars O, having the jaws *i*, and connected with each other by the rods *j*, in combination with the crank-axles N N¹, &c., all arranged as set forth.

100,793. — SPOOLING-GAUGE. — Richard H. Norris, Paterson, N. J.

Claim.—1. An instrument for automatically recording and announcing a given length of thread when wound upon the spool, consisting essentially of a dial-plate with yard notations thereon, the grooved thread-wheel D, the frame E, having thread-loops *a a*, weight F, the worm *c*, the movable frame G holding main train of wheels, spring handle I, shaft *h* having pawl and ratchet connected therewith, cam-wheel H and cut *s*, the gong J, and clapper L, all arranged, connected, and operated as set forth.

2. The combination of wheel *k*, having pin *y* thereon, wire M, spring *m*, and pin *x* on frame G, with the driving spur-wheel H having pin *s* thereon, connected and disconnected with the worm-shaft, as set forth, to alternately wind up and unwind the registering mechanism in the manner described.

100,794, antedated March 4, 1870.—TAPPET-CHAIN FOR LOOM.—James Nuttall, Walmersley, England, assignor to Thomas Isherwood and Charles Maxson, Westerly, R. I.

Claim.—The links *b*, cut away at their sides, to permit them to overlap each other when the figure of the goods requires, in combination with rods *a*, links *c*, and fluted rollers *g*, as described.

100,795.—COAL-CAR AND TRUCK-WHEELS.—John Patterson, Pittsburg, Pa.

Claim.—1. The oil-box, constructed and placed as shown.

2. Coal-car and truck-wheels, having the ends of the hubs chilled or hardened in the process of casting, for the purpose described.

3. The combination of the rings I and N with the case O, for the purpose described.

100,796.—PRESSER-FOOT FOR SEWING-MACHINE.—William W. Pettee, Foxborough, Mass.

Claim.—A presser-foot, having formed with and projecting from its forward end a tube, the bore of which is substantially in line with the needle-hole, and having a groove on its under side, as shown, whereby a covered wire may be delivered, so that the needle in its descent shall pass through the covering, all as described.

100,797.—VENTILATOR.—W. E. Phelps, Elmwood, Ill.

Claim.—1. The arrangement of ice or other air-cooling chamber, E, with or without air-pipe *e*, and draining into air-chamber D, air-chamber D having air-passages *d d′ d″*; pipes S, and registers V, of an ordinary heating-furnace, the whole combined to operate substantially as and for the purpose specified.

2. The arrangement of fire-place *m* and flue or duct O, in combination with air-chamber D, cooling-chamber E, as described, pipes S, and registers V, substantially as and for the purpose specified.

100,798.—KNITTING-MACHINE.—Frank Philip, Stockport, N. Y., assignor to Hamilton E. Towle and George Ed. Harding, New York city.

Claim.—1. The feed-wheel of a knitting-machine having its periphery provided with a secondary switch, as described, operated by the ordinary indicators of the machine or by other mechanical devices, for the purpose of forming the last row of stitches, or any portion thereof, into a selvage.

2. The combination of a secondary switch in the periphery of a feed-wheel of a knitting-machine with a movable lever, or its mechanical equivalent, for operating the same.

3. The combination of the indicators of the machine of a pivoted arm or pawl, as described, which may be thrown into or out of use, at pleasure, for the purpose set forth.

4. The combination with the feed-wheel of a knitting-machine of a secondary switch, F², the movable switch-lever H, and the pivoted pawls *g*¹, attached to the indicators of the machine for operating the switches of said wheel, for the purpose herein set forth.

100,799.—WRITING-SLATE.—George Edwin Poor, Charlestown, Mass.

Claim.—My improvment consists in the slate-frame as made with dovetailed recesses arranged in it as described, and provided with dovetailed masses or cylinders of rubber arranged in such recesses, in manner as explained, the dovetails of the recesses serving with those of the masses of rubber to securely hold the latter in place while projecting beyond the sides and edges of the frame.

100,800.—RIDING-ATTACHMENT FOR PLOWS.—A. E. Porter and A. L. Porter, Lamoille, Ill.

Claim.—1. The riding attachment for plows hereinbefore described, composed of the standard A, with pin or bolt *b*, axletree B with seat G, and arc of holes *d*, wheel D, and braces C and E, the said several parts being constructed, arranged, combined, and operated substantially as and for the purposes hereinbefore described.

2. The lever F with its roller I, in combination with the plow proper J M, provided with the described riding attachment A B G D E C, substantially as and for the purposes described.

100,801.—LIFE-PRESERVING STOOL.—Henry T. Pratt, New York, N. Y.

Claim.—1. A stool, adapted for use as a seat and life-preserver, consisting of a hollow cylinder, A, made of paper, the heads B and the handles D, the latter curved outward, substantially as and for the purpose specified.

2. The arrangement, with the heads B, of the pa-

per strengthening-bands F, in grooves, substantially as specified.

3. The arrangement, with the heads E, of the handles D, to prevent rolling, substantially as specified.

100,802. — THILL-COUPLING. — George W. Price, Adrian, Mich.

Claim.—The bracket or hook B, in combination with the cap A, hinged directly over the eye, and fastened with the screw-bolt *m* and nut *n*, that the draft shall come on said hook, for the purposes and in the manner set forth and described.

100,803. — CLOTHES-LINE HOLDER. — John Calvin Rankin, Mount Vernon, N. Y.

Claim. — The construction of the clothes-line holder with its three prongs, *a a* and *b*, and center portion *c* provided with the means to attach, as shown.

100,804, antedated February 26, 1870.—HAY-RAKE AND LOADER.—George H. Reister, Washington, Iowa.

Claim.—The arrangement of the arms *p* and *s*, bar *n*, with the teeth, in relation to each other and to the plates *a*, whereby the gathering and guiding-teeth may both be adjusted, substantially as and for the purposes herein recited.

100,805.—SAFETY-ATTACHMENT FOR POCKETS.—Frederick L. Roell, Northampton, Mass.

Claim.—1. The combination of rods C D, attached respectively to the opposite sides of the pocket and turning on a pivot or link at the lower end, with the sliding ring H the said parts being constructed and operated together, as set forth.

2. The combination of rods C D, plates F E, rings I H, and link J, all constructed, arranged, and applied to the pocket and the button K, in the manner described.

100,806. — PAPER BOX. — John Root, New Haven, Conn., assignor to himself and Andrew Martin, same place.

Claim.—A paper-box, whose sides and edges are fastened together by a headless, tapering sheet-metal rivet, as shown and applied in the manner specified.

100,807.—VAPOR-BURNER FOR COOKING OR HEATING. — Herrman S. Saroni, Baltimore, Md.

Claim.—1. The perforated disk of the generator C *f*, substantially as set forth.

2. The combination of a foraminous diaphragm, on the surface of which the combustion is effected, with a mixing-chamber of either solid or partly foraminous walls, surrounded by a series of conductors, and a generator with perforated disk to which these conductors are attached, substantially as set forth.

3. The combination of a foraminous diaphragm with a mixing-chamber, having an air-tube in the center, and a generator with a distributing-chamber, through which the vapor passes, either in minute jets or through an annular opening into the mixing-chamber, substantially as set forth.

100,808, antedated March 11, 1870.—WASHING-MACHINE. — E. B. Scattergood, St. John's, Mich.

Claim.—The wire basket D, supported by the spring B, in combination with the tub A, and pounder E, when constructed and arranged to operate as herein described.

100,809.—GRATER.—Leonard Schmidt, Lancaster, Pa.

Claim.—The arrangement and combination of the box B, drawer D, when surmounted by a cylindrical chamber, *c*, and provided with a horizontal spring rod, N, and plunger O, together with the rubber-box H and rubber I, and cogged gear G F, in the manner shown and for the purpose described.

100,810. — KNITTING-MACHINE. — Henry Batchford Scudder, Needham, Mass.

Claim.—1. The ratchet-wheel *o*, and its lifting-grades *u u*, and the endless chain *o'*, or its equivalent, provided with the spurs or wipers *s' s'*, the said ratchet and chain being combined with mechanism, substantially as described, for imparting their action to the fashioning devices of the machine for the purposes set forth.

2. The ratchet-wheel *o* and its lifting-grades *u u*, the lever *v*, and lever *y s*, in combination with pawl *f*, and its detaining-spring *b'*, for throwing the fashioning-mechanism out of action.

3. The combination and arrangement of the ratchet-wheel *o*, with its lifting-grades *u u*, and actuating devices, the depressing-lever *v*, connected with the lever *s*, as explained, the chain or suspensory *o'*, with its studs *s' s'*, &c., carried by the sprocket-wheel or its equivalent, suitably driven, and the sliding bolt *t'*, such parts being combined with the clawker or clawkers *f*, cam-block *d*, ratchet *e*, and shafts I and H, with their appurtenances, and the whole operating to produce results herein before explained.

100,811. — INCLINE-PLANE ELEVATOR. — Thomas B. Simonton, Williamsburg, N. Y.

Claim.—1. The series or rows of rollers D, in combination with the ways B and sliding bars C with which the movable parts of the elevator are connected, substantially as herein shown and described, and for the purpose set forth.

2. The combination of the hooked flanges of the sliding bars C with the grooved sides of the ways B, substantially as herein shown and described, and for the purpose set forth.

3. The combination of the flanged wheels and tracks H J with the scroll-wheels E, sliding bars C, and ways B, substantially as herein shown and described, and for the purpose set forth.

4. The combination of the toothed flanges of the wheels H J, or either of them, with the toothed racks of the rails I, when used in connection with the operating-mechanism of the elevator herein described, substantially as and for the purpose set forth.

5. In combination with the rails I, gear-wheels F, rollers D, and ways B, the wheels E H J and brakes T U, as and for the purpose set forth.

100,812.—CULTIVATOR.—James B. Skinner, Rockford, Ill.

Claim.—1. The combination of the main frame, the laterally-reciprocating shovel-frame, always moving parallel to itself, the traversing roller beneath the tongue, and the supporting-rollers upon the axle, all these parts being constructed to operate as set forth.

2. The combination of the tongue, the guide-bracket, and the traversing-roller on the shovel-frame, all these parts being constructed to operate as set forth.

3. The combination of the shovel-frame, the guide-bracket, the guide-rails on the axle, the supporting-rollers, and the lifting-levers, all these parts being constructed to operate as set forth.

100,813. — MORTISING-MACHINE. — James Skipp, Newark, N. J.

Claim.—1. The combination of a constantly-revolving pulley, F, with friction-disks J J and sleeve I, to give a semi-rotation to the tool-stock, and reverse the chisel at the times and in the manner specified.

2. The combination of a slotted bell-crank lever, N, having inclined surface *q* thereon, with notched and pivoted spring bar S *u v* and pin *y*, to operate the spring slide L M in the manner described.

3. The combination of the adjustable connection T, pivoted to the bar S with the treadle W, to adjust the throw of bar S, as set forth.

100,814, antedated March 5, 1870.—STEAM-ENGINE SLIDE-VALVE.—Andrew J. Stevens, San Francisco, Cal.

Claim.—1. The improved anti compression valves D D', being simply long flat pieces of iron or other metal, in combination with their valve-seats and the stems F F', for the purposes as set forth, and constructed in the manner substantially as described.

2. The relief-valves I I', in combination with their respective cages and steam-passages K K', for the purposes as set forth, and constructed and arranged in the manner substantially as described.

3. The wedge-shaped metal ring R, placed in the cavity around the top of the rim N, for the purposes as set forth, and constructed and arranged in the manner substantially as described.

100,815.—COMBINED CORN-MARKER, PLANTER, AND CULTIVATOR.—William Stirk, Fort Wayne, Ind.

Claim.—The marking apparatus *k*, having bearings working in vertical slots for the purpose of spacing off the ground for hills, the same being constructed in the manner and combined with the seeding apparatus, as specified.

100,816.—MACHINE FOR BENDING THE LIPS OF AUGER-BITS.—James Swan, Seymour, Conn.

Claim.—1. The combination with the bit-holder *a* and horns *a a* of the pair of lip-swaging rolls, arranged and operating as shown and described.

2. The combination of the pair of swaging-rolls with the mechanism herein described for imparting to said pair of rolls an oscillating motion, substantially as set forth.

3. The arrangement of the rolls and their operative mechanism upon a sliding plate, S, so that their relative position will remain unchanged, and all will move together to and from the blank.

4. The combination of upright rotating shaft N, plate S, and bed-plate A, slotted at *u*, with cam T and friction-roller V, the former attached to said shaft and the latter to said bed-plate, all arranged and operated in the manner and for the purpose specified.

5. The combination of the guide-yoke R and oscillating pair of rolls, arranged and operating in conjunction one with the other, substantially as described.

100,817.—HARVESTER.—Preston A. Tobey, Caton, N. Y., assignor for one-half to Stephen Tobey, same place.

Claim.—The arrangement of the slide C, toggle C', spring *b*, and the connections with the cutter-bar and the driving-wheel, in the manner and for the purpose described.

100,818.—HORSE-POWER.—Preston A. Tobey, Caton, N. Y., assignor for one-half his right to Stephen Tobey.

Claim.—The construction and arrangement of the wheel with the removable rim-sections D D and spokes C C, and having combined therewith the hook-rods E G, in the manner and for the purpose specified.

Also, in combination with the above, the swiveled bearing-roller K, employed in connection with the friction-gear H, in the manner and for the purpose specified.

100,819.—CHECK-PIECE AND SHROUD-YOKE FOR SHIPS' RIGGING.—Henry Townsend, Philadelphia, Pa.

Claim.—1. The combination of the metallic ventilating check-piece and bolster, as described, for the purpose set forth.

2. The shroud-yoke *b*, in combination with the check-piece and bolster, for the purpose herein described.

3. The elastic packing, in combination with a metallic check-piece or trestle-tree, for the purpose set forth.

100,820.—PADDLE-WHEEL. — Benjamin W. Tucker, Brooklyn, N. Y.

Claim.—1. The wheel consisting of the disk B, with the projections *d* and buckets Z attached thereto, operating in the circular hollow water-tight compartment D, substantially as and for the uses and purposes herein described and shown.

2. The hollow water-tight compartment D, in combination with the wheel, consisting of the disk B, with the projections *d* and buckets Z, substantially as and for the uses and purposes herein described and specified.

3. The arrangement and combination of the parts herein shown, in relation to each other and to the bottom of the vessel, substantially as herein shown and described.

100,821.—HAND INDICATOR FOR SHOWING THE COURSE OF VESSELS.—Horace P. Tuttle, Brooklyn, N. Y.

Claim.—A course-indicator, consisting of a dial-plate having the several points of the compass marked thereon, projecting pin *a*, pointers B C, and screw *b*, all adjusted and operated as set forth, and for the purpose specified.

100,822.—VEGETABLE-SCOOP.—John F. Unglish, Webster, N. Y.

Claim.—The construction of the scoop of wrought iron, consisting of the rim A provided with the stem or shank *a*, cross-bars *b b*, guards *d d*, and handle D, and arranged substantially as and for the purpose set forth.

100,823.—DIE FOR MAKING CLINCH-RINGS. Samuel Vanstone, Providence, R. I.

Claim.—The series of connected dies herein described, for forming clinch-rings by rolling or pressing upon it strips or sheets of heated metal, substantially in the manner described.

100,824.—GRINDING-MILL.—Elijah H. Vining, Covington, Ga.

Claim.—The combination with the hopper and running stone of the strap G, cord I, slide G, bell-hammer P, spring and bell, substantially as specified.

100,825.—DIE OR FORMER FOR MAKING DOUBLE-SHINNED MOLD-BOARD BLANK FOR PLOWS.—W. M. Watson, Tonica, Ill.

Claim.—The herein-described die or former, in which to upset and thicken the edge or shin of a mold-board blank, substantially as and for the purposes set forth.

100,826.—LADLE FOR POURING METALS.—Albert S. Wells, New Britain, Conn.

Claim.—The combination of the reflector C and its adjustable mechanism with a molders' ladle, all arranged in relation to each other substantially as described.

100,827.—HORSE-POKE.—George Whitbeck, Phelps, N. Y.

Claim.—The construction and arrangement of the device, consisting of the spear D, resting in the socket or mortise *b*, and provided with the slot *a* and spiral spring *g*, in combination with the yoke A, stale B, and the spring F, provided with the inclined or obliquely-projecting portion *d*, operating substantially as and for the purpose herein set forth.

100,828.—LIFTING-JACK.—F. C. White, Euclid, Ohio.

Claim.—The roller C, ratchet-wheels H E, pawls I and G, lever F, rope K, and hook L, with or without the auxiliary standard M, in combination with the standard A, and arranged to operate in the manner substantially as described, and for the purpose set forth.

100,829, antedated March 5, 1870.—Sluice-Box for Gold-Mining.—John H. Whitney, Helena, Montana Territory.

Claim.—An adjustable spring riffle-fastener, made and used substantially in the manner described, and for the purposes herein set forth.

100,830.—Reversible Knob-Latch.—Joseph Whittingham, Pittsburg, Pa.

Claim.—1. In combination with a mortise-lock case, a face-plate, *d*, with connections, such that it may be attached and entirely detached without the necessary removal of any separate fastening devices, substantially as described.

2. The devices of preceding claim, in combination with lugs *a a* on the lock-case, substantially as described.

3. One or more hooks, *c*, projecting from the inside of the face-plate, entering the open end of the lock-case and engaging catches *e*, substantially as described.

100,831.—Apparatus for Washing and Elevating Lumber.—Stanley E. Worrell, Quincy, Ill.

Claim.—1. The frame B C, B′ C′, jointed at B, substantially as and for the purposes described.

2. In combination with a machine for elevating and washing lumber, the self-adjusting receiving, carrying, and delivery-rollers, arranged to operate substantially as described.

3. The brushes or scraping-rollers G G for cleaning the lumber, arranged and operating substantially as described.

4. The perforated water-tubes O O, substantially as and for the purposes described.

100,832.—Elevator.—Martin L. Wyman, Melrose, assignor to Otis Tufts, Boston, Mass.

Claim.—The combination with an elevator worked by an engine so that the car or platform is started, moved, stopped, or reversed, by starting, moving, stopping, or reversing the engine, of instrumentalities which are manipulated from said car or platform to start, move, stop, or reverse both the car or platform and the engine, when said instrumentalities automatically operate to change the distance or distances which the steam follows the engine-piston or pistons.

100,833.—Lock for Ships' Pumps.—August G. Ziesing, Weehawken, N. J.

Claim.—The perforated plate B and rod C, arranged as a lock for ships' pumps, substantially as herein shown and described.

100,834.—Track-Laying Machine.—John R. Adams, San Francisco, Cal.

Claim.—1. The recessed wheels C, in combination with a guard, D, or equivalent device, substantially as and for the purpose herein described.

2. In combination with the wheels C and guard D, the movable guide E, or equivalent device, substantially as and for the purpose herein described.

3. The tender-frame F, mounted upon a number of small wheels suitably arranged to move upon the ties, and provided with the side rails *e*, substantially as described, for the purpose set forth.

100,835.—Apparatus for Drying and Evaporating.—Charles Alden, Newburg, N. Y.

Claim.—1. The arrangement of a series of platforms, attached to endless chains, and receiving a rising or falling motion in a trunk or chamber, supplied with a current or currents of hot or cold air, substantially in the manner shown and described.

2. The arrangement of an air-chamber on one or more sides of the trunk, said air-chambers being provided with nozzles to throw currents of air over or between the platforms, substantially as set forth.

3. The arrangement of fingers projecting from the endless chains, and capable of supporting the platforms during their rise or fall, and of depositing the same automatically at the bottom of the trunk, substantially as described.

4. The arrangement of a conveyer, substantially as described, in combination with the platform and with the endless chains and their fingers, so as to remove said platforms from the bottom of the trunk.

100,836.—Spoke-Lathe.—George F. Almy, Toledo, Ohio.

Claim.—1. The rest I and lever J, in combination with the pivoted angular lever K, slotted, as shown, adjustable pin *f* and the arm L, with set-screw *g*, all constructed, arranged, and operating substantially as herein described.

2. The arrangement of the stationary table A, vibrating table B, with centers C D, mandrel E, and cam F, the arm G, spring H, rest I, levers J K, and arm L, with set-screw *g*, all constructed to operate as herein described.

100,837.—Railway-Car Coupling.—Samuel Jones Anderson, Cazenovia, N. Y.

Claim.—1. The combination of the slide G with the sliding plate D E F, coupling-pin B, and bumper-head A, substantially as herein shown and described, and for the purpose set forth.

2. The spring I, catches J, levers K K′, connecting-bars L, and equal-armed lever M, in combination with the bumper-head A and coupling-pin B, substantially as herein shown and described and for the purpose set forth.

100,838.—Centrifugal Pump.—William Draper Andrews, New York, N. Y.

Claim.—1. The combination with the propelling-wheel, having the vanes arranged on the face of it, of a vacuum passage or passages, arranged to establish communication between the induction side of the pump and the back of said wheel or vane-carrier, substantially as and for the purpose or purposes herein set forth.

2. The vanes, arranged to extend to the center of the propelling-wheel, in combination with a vacuum passage or passages between the induction side of the pump and back of said wheel, essentially as described.

3. The arrangement, relatively to the propelling-wheel, of the spiral eduction passages to the pump, substantially as shown and described.

100,839.—Friction-Wheels for Gearing.—William D. Andrews, New York, N. Y.

Claim.—1. A friction-wheel, for transmitting motion by means of annular teeth, with intervening grooves arranged around its periphery, having its teeth, in their transverse section, made in the form of truncated cones standing upon bases whose sides are perpendicular to the face of the wheel, and separated from each other by spaces equal in width to the thickness of the ends of the teeth, in gear with said wheel, substantially as specified.

2. In combination with an annular toothed and grooved friction-wheel, the hub or bore thereof, constructed substantially as herein described, by making the same of a slightly-enlarged diameter at each end, tapering to the center, where it is made to fit snugly its axle or shaft, essentially as and for the purpose herein set forth.

100,840.—Lawn-Mower.—Joseph Arbeiter, East Hartford, assignor to Samuel Coit, Hartford, Conn.

Claim.—1. The combination of the roller H, flanged collar fast on shaft G, and having spring pawl provided with the engaging and disengaging mechanism described, arranged therein, with the ratchet-teeth on gear-wheel C, which freely revolves upon shaft G, and give motion to the revolving cutter through intermediate gear-wheels, when all the parts are constructed and arranged to operate in the manner and for the purpose described.

2. The roller H on shaft G, having the flange-collar and spring pawl provided with the engaging and disengaging mechanism described, the ratchet-teeth

on wheel C, inclosed gear-wheels C D E F, and intermediate shaft, revolving adjustable cutter M, transverse cutter Q, adjustable wheels R, and adjustable arms S, all constructed and arranged with relation to each other and to the frame of the machine as herein described.

100,841.—Steam-Engine.—John S. Barden, Providence, R. I.

Claim.—1. The combination of hollow piston *b* with piston *d*, in the manner and for the purpose substantially as described.

2. The pistons *b* and *d*, in combination with vibrating lever and crank *k*, in the manner and for the purpose specified.

3. The cylinder *a* and piston *b*, in combination with piston *d*, valves *i* and *k*, steam-inlets *o r*, and exhaust-ports *u t*, in the manner and for the purpose set forth.

4. The steam-cylinder *a*, in combination with pump-barrel *a*, stratum of non-conducting material *y*, constructed in the manner and for the purpose as above described.

100,842.—Belt-Shipping Mechanism for Spinning-Jacks.—Joseph Baron, Millbury, Mass.

Claim.—The combination of the levers F, H, J, and M, catch K, guard O, rods L L, and piece N on the carriage, when constructed, arranged, and operating in the manner and for the purposes above set forth.

100,843.—Hedge Fence.—A. Belt, Newton, Iowa.

Claim.—A hedge fence, formed by planting the sprouts into a bed formed therefor, and after the same has attained a suitable height, bending the tops over in an oblique manner and inserting the same into the earth into a bed formed about one foot from the first row, substantially as herein set forth.

100,844.—Detergent Compound.—William Berry, Boston, Mass., assignor to himself, George W. Belcher, and William G. McLeod.

Claim.—The manufacture or preparation of a compound, which I denominate "improved electric washing-crystal and wool-detergent," of the ingredients, in the proportions, and for the purpose set forth.

100,845.—Lantern.—William J. Berry, Brooklyn, N. Y.

Claim.—1. The wire guard-frame surrounding the glass of the lantern, in combination with the clamping-hooks *i* that swing upon the edge wires 2, as and for the purposes set forth.

2. The wire guard-frame made with ribs *r*, having eyes at their ends receiving the hoops *k*, in combination with hooks to connect the frame to the top and bottom portions of the lantern, substantially as specified.

100,846.—Lifting-Jack.—L. J. Blades, Harrington, and John Mahoney, Wilmington, Del.

Claim.—1. The eccentric lever and reciprocating wheel, when set in the body or immovable portion of a jack or lifting-machine, constructed and arranged substantially as herein shown and set forth.

2. The wheel *c* and lever *d*, in combination with the notched lifting slide *e* and the spring catch *b*, constructed and arranged substantially as herein-before described, and for the purposes specified.

100,847.—Steam-Engine Governor.—Horace Boardman, Port Richmond, N. Y.

Claim.—The revolving cylinder A and its combinations, constructed and arranged substantially in the manner and for the purposes herein specified.

100,848.—Carving Wood.—Myron T. Boult, Battle Creek, Mich.

Claim.—The method herein described for ornamenting and carving wood, substantially as set forth.

100,849.—Apparatus for Making Extracts and Decoctions from Coffee, Tea, and other Substances.—Louis Brauer, Washington, D. C.

Claim.—1. The apparatus herein described, composed of a lower and an upper vessel, separated by a partition and connected by a pipe, as described.

2. A valve-stopper such as herein described, applied as and for the purpose set forth.

3. The strainer C, as described, in combination with the vessel B.

4. The cover D, with movable packing, as described.

5. The combination of one or more gauges G with vessels A and B, as shown and described.

6. The combination of steam-pipes or coils with the vessel A, as described.

7. The vent-cock *i*, in combination with the cover D, so as to relieve the pressure in vessel B, as described.

100,850.—Cigar-Shield.—George E. Brinkerhoff, New York, N. Y.

Claim.—As a new article of manufacture, a cigar-shield made of pure sheet-rubber united together at the edge or edges *b b*, and having the reinforced portions *c c*, whereby the shield is strengthened and prevented from slipping from between the lips and teeth, as herein shown and described.

100,851.—Funnel Can-Filler.—N. L. Brundage and B. Downing, Pittston, Pa.

Claim.—1. The straight concentric collars or flanges D and E, the inner E extending below the outer D, in combination with the funnel-shaped body A of the can-filler, as and for the purpose herein set forth.

2. The combination of the funnel-shaped body A, orifice C, concentric flanges or collars D and E, and the handle B, arranged substantially as described, and for the purposes set forth.

100,852.—Portable Beer-Cooler.—E. C. Bundy, Oneonta, N. Y.

Claim.—1. A portable beer-cooling case, A B, fan-blower, and an ice-chamber, arranged for operation substantially as specified.

2. The combination with the case A B and driving-wheel K, of the detachable case G, comprising the ice-chamber and fan-case, and provided with the fan and driving-pinion, all substantially as specified.

3. The combination with the cases and casks, of the plug S and adjustable faucet P, substantially as specified.

100,853.—Culinary Boiler.—Ferdinand M. Carnes, Rochester, N. Y., assignor to Giles Carter and Smith Carpenter, same place.

Claim.—The boiler herein described, provided with a supporting-flanch, *b*, around its base, external descending pipe G, and cover C, having bent pipe *d*, connecting with the pipe G, and forming therewith a steam-tight pivot-joint, when constructed and arranged to operate substantially as specified.

100,854.—Potato-Digger.—Henry C. Catt, Bordentown, N. J.

Claim.—The rock-shaft F, arms F^1, friction-rollers F^2, and the operating-lever F^3, in combination with the adjustable arm C of the potato-digger, substantially as herein described and set forth.

100,855.—Wood-Turning Lathe.—James Chase, Rochester, N. Y.

Claim.—1. The finishing-knife G, having both a vertical and a rolling movement produced by patterns, when used in connection with the rotary pattern-knife F, for the purposes set forth.

2. In combination with the pivoted arms H' of the yielding rack H, the vertical guides L, for the purposes specified.

3. The box r'' of the rotating pattern-knife shaft, when attached to the hinged supporting-plate p' by means of the pivot s' and clamping-screw w, for the purposes specified.

4. The hinge-plate r', when made horizontally adjustable upon the beam J, in combination with the stock M of the tenon-knife, substantially as and for the purposes set forth.

5. The adjustable spring-locking stop t', in combination with the hinged center-rest K, operating substantially as described.

6. The adjustable live tail-center b', when provided with a tubular sliding box, d', so constructed as to admit of tapering babbitted bearings at each end, for the purposes set forth.

7. The clamping-yoke P, fitted between suitable lugs, c', upon the tail-block B, in combination with the ratcheted rack T, substantially as set forth.

100,856.—HAY-TEDDER.—Thomas J. Clark and George M. Clark, Higganum, Conn.

Claim.—1. The series of arms I I, to which the forks or tedders e e are attached in the manner described, when said arms are pivoted to one of the crank-shafts H H, and pass through hollow sleeves pivoted on the other crank-shaft, and the two shafts revolving at the same time in opposite directions, substantially as and for the purposes herein set forth.

2. The oscillating or rocking frame B C D E G, constructed as described, in combination with the crank-shafts H H, gearing for revolving the same, arms I I, sleeves J J, chain k, wheel S, lever T, and pawl or dog m, all arranged and operating substantially as and for the purposes herein set forth.

100,857.—EGG-CARRIER.—William J. Clark, Lena, Ill.

Claim.—An egg-carrier consisting of a single strip of proper material, having its end slit in such manner as to be capable of being united to form an independent box, and again disconnected when desired for shipping purposes, substantially as described, for the purpose set forth.

100,858.—STAIR-ROD.—Webster M. Clayton, New York, N. Y.

Claim.—The slides D D, rod A, screws C C, and expansive serrated dogs E E, combined, arranged, and operating substantially as and for the purposes described and set forth.

100,859.—CAPSTAN.—D. N. B. Coffin, Jr., Newton Center, Mass.

Claim.—1. The arrangement of a ratchet or toothed rim directly in connection with the central or first actuating gear of a capstan above the main barrel-bearings, and in combination with a non-traversing or local jointed pawl or pawls connected to the lever-head, substantially as described.

2. Constructing the ratchet-plate and central or first actuating gear of a capstan in one piece, substantially as shown.

3. Seating the hub of those rotating parts of a capstan which have a vertical or approximately vertical axis directly within an oil or other lubricator receptacle, or rim, substantially as shown at 10, fig. 1.

4. In combination with a set of pawls jointed to the lever-head for actuating the barrel of a capstan directly, the employment of another set also jointed to the head, for actuating the barrel indirectly through purchase-gaining or speed-reducing gears, substantially as and for the purpose set forth.

5. Forming the center or first moving gear of a capstan in one piece with its ratchet-plate, substantially as shown.

6. In combination with the bottom hub of those parts of a capstan which turn upon a vertical or approximately vertical axis, the forming of a relatively stationary oil-receptacle within which such hub has its seat or bearing, substantially as shown at 10, fig. 1.

100,860. — RAILWAY-CAR AXLE. — Charles Cole, Troy, N. Y., assignor to himself and Harvey Cole, Hartford, Conn.

Claim.—The oscillating boxes d, arranged in the coupling-case g, in combination with the shaft a and clasp-case i, substantially as set forth.

100,861.—HAY AND COTTON-PRESS.—Rowland H. Cole and George F. Cole, Greenport, N. Y.

Claim.—1. The combination of the slotted slide-bar k, with the vertical ways or guide-pieces m m, lever o, pitmen h h', cranks t t', and wheel s, for operating the door P, all constructed to operate substantially as herein set forth.

2. The combination of the cross-bar I, pitmen h h', wheels d d' and e, cranks t t', cog-wheels c c', and bevel gear-wheels a a', for operating the head-block or stamper, substantially as herein set forth.

3. The combination and arrangement of the lifting-bars A A, pulleys y y' and z z', with ropes or chains as shown, shafts w w', drums x x', wheels d d' and e, and bevel gear-wheels a a', all constructed to operate substantially in the manner herein set forth.

100,862. — ORANGE-KNIFE. — Edward L. Cooke, Hartford, Conn.

Claim.—The curved blunt-edge blade a, with a handle appropriate thereto, as a new article of manufacture, substantially as set forth.

100,863.—CULINARY VESSEL.—Cooper E. Corbett, Binghamton, N. Y.

Claim.—The outer boiler A, having the perforated steam-rim B, provided with the slots s s, as described, in combination with the inner kettle B, having the ears or catches P P and the flange d, all arranged to operate substantially in the manner and for the purposes herein set forth.

100,864.—BODY-LOOP FOR CARRIAGES.—Fredrick A. Cowles, Plantsville, assignor to himself and J. B. Savage, Southington, Conn.

Claim.—As a new article of manufacture, the body-loop A, constructed in one piece, so as to embrace or surround the spring-bar B, substantially as and for the purpose specified.

100,865.—PAPER BOX.—Chauncy O. Crosby, New Haven, Conn.

Claim.—A box constructed from a single piece of material, cut, folded, and secured by indentation of the material, in the manner substantially as set forth.

100,866.—PHOTOGRAPHIC-PLATE DIPPER.—Daniel H. Cross, Bennington, Vt.

Claim.—A plate-holder for photographic baths, fitted with the spring or springs c, when applied with the ledge 2 and flange 3 for the purposes specified.

100,867.—DEPURATOR.—William Curran, St. Louis, Mo.

Claim.—1. So arranging the water or fluid-pipe or pipes as to be controlled by the patient within the apparatus, substantially as set forth.

2. The vertical pipe L, arranged with perforations so placed as to give jets of fluid against the spine region of the patient, substantially as set forth.

100,868.—VISE.—Royal J. Cushing, Bowdoinham, Me.

Claim.—The combination of the sectional socket f f with conical, sectional, and screw-threaded shank i i', nut w, plate β, and socket-ball e, substantially as described and for the purpose set forth.

100,869.—PLOW.—M. K. Dahl, Waupun, Wis.

Claim.—1. A plow having its beam B connected to two standards a b and to a handle C by bolts c, e, and g, in such a manner that it may be turned on the standard a, and be adjusted and locked to the standard b and handle C, as herein described and for the purpose set forth.

2. The plate i provided with the slot l and the serrations at its rear end, in combination with the serrated plate f, and bolt g with its nut h, when the same are arranged as herein described.

3. The combination of the standard b, having slot i, with its rear side toothed, with the bolt e, beam B, and nut f, when constructed and arranged as herein described, and for the purpose set forth.

100,870. — RAILROAD-CAR VENTILATOR. — Samuel Darling, Providence, R. I.

Claim.—1. A car-window, composed of two sashes or doors A and A', arranged at an angle with the side of the car, and swinging horizontally, the whole constructed and operating substantially as described.

2. The device for admitting the air, consisting of the tube D, in combination with the compartment C, the whole constructed and operating substantially as described.

3. A window, constructed as described, in combination with the device for admitting the air, and operating in connection with each other, in the manner and for the purposes substantially as described.

100,871.—MANUFACTURE OF FERTILIZERS. Juan Ysidro Diaz, Havana, Island of Cuba.

Claim.—1. The process, substantially as herein described, which consists in treating with sea-water, or equivalent solution, all kinds of refuse matter containing fertilizing properties, and in the fermentation, disintegration, and concentration of the same, for the purposes specified.

2. As a new article of manufacture, the improved Universal Fertilizer, resulting from the process herein described.

100,872.—LATCH.—Simeon W. Drowne, Norwich, Conn.

Claim.—The arrangement of the "stop-slide" M and the false tumblers H with the latch-bolt B, and the main or key-tumblers, and separate key-holes constructed and arranged in the lock-case, substantially in manner as specified.

100,873.—CARRIAGE-WHEEL HUB.—Jacob Dump, Kingston, Ohio.

Claim.—The combination of the inner section A, constructed with indentations D, and grooves G, and the outer section B, constructed with a counter-bore b and tongue F, the two members being connected by screw-bolts H A and nuts I, so as to constitute a compound hub, all substantially as represented and described.

100,874. — STILL FOR DISTILLING HYDROCARBONS.—Joseph B. Edwards, North Greenbush, N. Y.

Claim.—The use of steam in the distillation of liquid hydrocarbons, in stills heated by external fire, when the steam is introduced into the still in such a manner that the lowest stratum of liquid therein will be continually removed from contact with the bottom of the still by the action of the steam, and its place supplied with fresh liquid from above, substantially as and for the purpose above described.

100,875. — MODE OF LUBRICATING THE WHEELS IN TREAD-POWERS.—Stephen D. Ely, Millstone, N. J.

Claim.—A conical bore, shaped in such a manner as to carry and supply grease in a hard or liquid state, inserted in the outer center of wheels in tread-power machines, as herein described.

100,876.—PROCESS OF TREATING ACID RESIDUUM FROM OIL-REFINERIES.—Alonzo Farrar, Brookline, Mass.

Claim. — The new process, hereinbefore described, for treating the oily residuum obtained in the purification of the spent acid above mentioned.

100,877.—COMPOSITION, TO BE USED FOR PRINTING OR PAINTING ON SURFACES.—Alonzo Farrar, Brookline, Mass.

Claim. — The composition, as hereinbefore set forth, in which the new oily product, as mentioned, constitutes an important and valuable constituent.

Also, the combination of such product with one or more pigments, or with such and a saccharine sirup, as described.

100,878.—MACHINE FOR MANUFACTURING HARVESTER-GUARD FINGERS.—Jerome Fassler, Springfield, Ohio.

Claim.—1. The combination of the revolving dies Q, tongs U having the stops W, and the stationary guides S.

2. The holding tongs U, constructed with the stop W and eccentric block T, substantially as described.

3. The combination of the roller F, having a die-seat, as set forth, the die Q, and set-screws k k, substantially as described.

4. The bed-plates B, with lugs c c, or their equivalents, in combination with the main frame E, to secure an easy and perfect adjustment, as described.

100,879.—NEEDLE-CASE.—Woren B. Field, Rockville, and Burroughs Beach, Meriden, Conn.

Claim.—A needle-case composed of several compartments, a b c d, &c., and provided with a cover, B, pivoted to the case, the said cover having an opening, i, and provided with a spring, f, and on the under side with a projection, s, so as to set into a recess or compartment, substantially as described.

100,880, antedated March 11, 1870.—COFFEE-POT.—James F. Fitch, B. G. Devoe, and R. W. B. McLellan, Vandalia, Ill., said McLellan assigns his right to said Fitch and Devoe.

Claim.—1. So arranging the vessel or vessels holding the infusion that the air above the infusion shall be confined by surrounding fluid, and act to prevent bubbling or agitation in boiling in the said vessel or vessels, substantially as set forth.

2. The vessel B arranged with perforated sides b and base b^2 and solid bottom b^1, when combined with the movable cap C and the pot A, substantially as set forth.

3. The cap C, its springs c, and the vessel B, when combined as set forth.

100,881.—PROCESS OF MAKING GLASS SIGNS, SHOW-CARDS, &c.—Christian Flammer, Chicago, Ill.

Claim.—The process, substantially as herein described, of making figures on glass, for signs, show-cards, and similar purposes, as set forth.

100,882. — COMBINED CARRIAGE, CRADLE, SWING, AND BABY-WALKER.—William H. Flanigan, Philadelphia, Pa.

Claim.—1. The suspension of the carriage-body N to upright projections, O O, of the truck-frame A, whereby it is adapted for the purpose of a swing or cradle at pleasure, the several parts being constructed and arranged, in relation to each other, substantially in the manner and for the purpose set forth.

2. The frame R, in combination with the truck-frame A, substantially in the manner and for the purpose specified.

3. The combination and arrangement of the pieces G, H, I, J, and K, with the truck A and swivel shaft F, substantially in the manner and for the purpose described.

100,883. — AUTOMATIC BOILER-FEEDER.—Elisha H. Goldman, Clayton, Ind.

Claim.—1. The hinge-valve L with perforated ledge l, operated by the piston d, as specified.

2. In combination with the pivoted arms H' of the yielding rack H, the vertical guides L, for the purposes specified.

3. The box r'' of the rotating pattern-knife shaft, when attached to the hinged supporting-plate p' by means of the pivot s' and clamping-screw w, for the purposes specified.

4. The hinge-plate r', when made horizontally adjustable upon the beam J, in combination with the stock M of the tenon-knife, substantially as and for the purposes set forth.

5. The adjustable spring-locking stop t', in combination with the hinged center-rest K, operating substantially as described.

6. The adjustable live tail-center b', when provided with a tubular sliding box, d', so constructed as to admit of tapering babbitted bearings at each end, for the purposes set forth.

7. The clamping-yoke P, fitted between suitable lugs, c', upon the tail-block B, in combination with the ratcheted rack T, substantially as set forth.

100,856.—HAY-TEDDER.—Thomas J. Clark and George M. Clark, Higganum, Conn.

Claim.—1. The series of arms I I, to which the forks or tedders e e are attached in the manner described, when said arms are pivoted to one of the crank-shafts H H, and pass through hollow sleeves pivoted on the other crank-shaft, and the two shafts revolving at the same time in opposite directions, substantially as and for the purposes herein set forth.

2. The oscillating or rocking frame B C D E G, constructed as described, in combination with the crank-shafts H H, gearing for revolving the same, arms I I, sleeves J J, chain k, wheel S, lever T, and pawl or dog m, all arranged and operating substantially as and for the purposes herein set forth.

100,857.—EGG-CARRIER.—William J. Clark, Lena, Ill.

Claim.—An egg-carrier consisting of a single strip of proper material, having its end slit in such manner as to be capable of being united to form an independent box, and again disconnected when desired for shipping purposes, substantially as described, for the purpose set forth.

100,858.—STAIR-ROD.—Webster M. Clayton, New York, N. Y.

Claim.—The slides D D, rod A, screws C C, and expansive serrated dogs E E, combined, arranged, and operating substantially as and for the purposes described and set forth.

100,859.—CAPSTAN.—D. N. B. Coffin, Jr., Newton Center, Mass.

Claim.—1. The arrangement of a ratchet or toothed rim directly in connection with the central or first actuating gear of a capstan above the main barrel-bearings, and in combination with a non-traversing or local jointed pawl or pawls connected to the lever-head, substantially as described.

2. Constructing the ratchet-plate and central or first actuating gear of a capstan in one piece, substantially as shown.

3. Seating the hub of those rotating parts of a capstan which have a vertical or approximately vertical axis directly within an oil or other lubricator receptacle, or rim, substantially as shown at 10, fig. 1.

4. In combination with a set of pawls jointed to the lever-head for actuating the barrel of a capstan directly, the employment of another set also jointed to the head, for actuating the barrel indirectly through purchase-gaining or speed-reducing gears, substantially as and for the purpose set forth.

5. Forming the center or first moving gear of a capstan in one piece with its ratchet-plate, substantially as shown.

6. In combination with the bottom hub of those parts of a capstan which turn upon a vertical or approximately vertical axis, the forming of a relatively stationary oil-receptacle within which such hub has its seat or bearing, substantially as shown at 10, fig. 1.

100,860. — RAILWAY-CAR AXLE. — Charles Cole, Troy, N. Y., assignor to himself and Harvey Cole, Hartford, Conn.

Claim.—The oscillating boxes d, arranged in the coupling-case g, in combination with the shaft a and clasp-case i, substantially as set forth.

100,861.—HAY AND COTTON-PRESS.—Rowland H. Cole and George F. Cole, Greenport, N. Y.

Claim.—1. The combination of the slotted slide-bar h, with the vertical ways or guide-pieces m m, lever o, pitmen h h', cranks t t', and wheel s, for operating the door P, all constructed to operate substantially as herein set forth.

2. The combination of the cross-bar I, pitmen h h', wheels d d' and s, cranks t t', cog-wheels c c', and bevel gear-wheels a a', for operating the head-block or stamper, substantially as herein set forth.

3. The combination and arrangement of the lifting-bars A A, pulleys y y' and z z', with ropes or chains as shown, shafts w w', drums x x', wheels d d' and s, and bevel gear-wheels a a', all constructed to operate substantially in the manner herein set forth.

100,862. — ORANGE-KNIFE. — Edward L. Cooke, Hartford, Conn.

Claim.—The curved blunt-edge blade a, with a handle appropriate thereto, as a new article of manufacture, substantially as set forth.

100,863.—CULINARY VESSEL.—Cooper E. Corbett, Binghamton, N. Y.

Claim.—The outer boiler A, having the perforated steam-rim R, provided with the slots e e, as described, in combination with the inner kettle B, having the ears or catches P P and the flange d, all arranged to operate substantially in the manner and for the purposes herein set forth.

100,864.—BODY-LOOP FOR CARRIAGES.—Fredrick A. Cowles, Plantsville, assignor to himself and J. B. Savage, Southington, Conn.

Claim.—As a new article of manufacture, the body-loop A, constructed in one piece, so as to embrace or surround the spring-bar B, substantially as and for the purpose specified.

100,865.—PAPER BOX.—Chauncy O. Crosby, New Haven, Conn.

Claim.—A box constructed from a single piece of material, cut, folded, and secured by indentation of the material, in the manner substantially as set forth.

100,866.—PHOTOGRAPHIC-PLATE DIPPER.—Daniel H. Cross, Bennington, Vt.

Claim.—A plate-holder for photographic baths, fitted with the spring or springs c, when applied with the ledge 2 and flange 3 for the purposes specified.

100,867.—DEPURATOR.—William Curran, St. Louis, Mo.

Claim.—1. So arranging the water or fluid-pipe or pipes as to be controlled by the patient within the apparatus, substantially as set forth.

2. The vertical pipe L, arranged with perforations so placed as to give jets of fluid against the spine region of the patient, substantially as set forth.

100,868.—VISE.—Royal J. Cushing, Bowdoinham, Me.

Claim.—The combination of the sectional socket f f with conical, sectional, and screw-threaded shank i i', nut m, plate g, and socket-ball e, substantially as described and for the purpose set forth.

100,869.—PLOW.—M. K. Dahl, Waupun, Wis.

Claim.—1. A plow having its beam B connected to two standards a b and to a handle C by bolts c, e, and g, in such a manner that it may be turned on the standard a, and be adjusted and locked to the standard b and handle C, as herein described and for the purpose set forth.

2. The plate i provided with the slot l and the serrations at its rear end, in combination with the serrated plate j, and bolt g with its nut h, when the same are arranged as herein described.

3. The combination of the standard b, having slot l, with its rear side toothed, with the bolt e, beam B, and nut f, when constructed and arranged as herein described, and for the purpose set forth.

100,870. — RAILROAD-CAR VENTILATOR. — Samuel Darling, Providence, R. I.

Claim.—1. A car-window, composed of two sashes or doors A and A', arranged at an angle with the side of the car, and swinging horizontally, the whole constructed and operating substantially as described.

2. The device for admitting the air, consisting of the tube D, in combination with the compartment C, the whole constructed and operating substantially as described.

3. A window, constructed as described, in combination with the device for admitting the air, and operating in connection with each other, in the manner and for the purposes substantially as described.

100,871.—MANUFACTURE OF FERTILIZERS. Juan Ysidro Diaz, Havana, Island of Cuba.

Claim.—1. The process, substantially as herein described, which consists in treating with sea-water, or equivalent solution, all kinds of refuse matter containing fertilizing properties, and in the fermentation, disintegration, and concentration of the same, for the purposes specified.

2. As a new article of manufacture, the improved Universal Fertilizer, resulting from the process herein described.

100,872.—LATCH.—Simeon W. Drowne, Norwich, Conn.

Claim.—The arrangement of the "stop-slide" M and the false tumblers H with the latch-bolt B, and the main or key-tumblers, and separate key-holes constructed and arranged in the lock-case, substantially in manner as specified.

100,873.—CARRIAGE-WHEEL HUB.— Jacob Dump, Kingston, Ohio.

Claim.—The combination of the inner section A, constructed with indentations D, and grooves G, and the outer section B, constructed with a counterbore b and tongue F, the two members being connected by screw-bolts H A and nuts I, so as to constitute a compound hub, all substantially as represented and described.

100,874. — STILL FOR DISTILLING HYDROCARBONS.—Joseph B. Edwards, North Greenbush, N. Y.

Claim.—The use of steam in the distillation of liquid hydrocarbons, in stills heated by external fire, when the steam is introduced into the still in such a manner that the lowest stratum of liquid therein will be continually removed from contact with the bottom of the still by the action of the steam, and its place supplied with fresh liquid from above, substantially as and for the purpose above described.

100,875. — MODE OF LUBRICATING THE WHEELS IN TREAD-POWERS.—Stephen D. Ely, Millstone, N. J.

Claim.—A conical bore, shaped in such a manner as to carry and supply grease in a hard or liquid state, inserted in the outer center of wheels in tread-power machines, as herein described.

100,876.—PROCESS OF TREATING ACID RESIDUUM FROM OIL-REFINERIES. —Alonzo Farrar, Brookline, Mass.

Claim.— The new process, hereinbefore described, for treating the oily residuum obtained in the purification of the spent acid above mentioned.

100,877.—COMPOSITION, TO BE USED FOR PRINTING OR PAINTING ON SURFACES.—Alonzo Farrar, Brookline, Mass.

Claim.— The composition, as hereinbefore set forth, in which the new oily product, as mentioned, constitutes an important and valuable constituent.

Also, the combination of such product with one or more pigments, or with such and a saccharine sirup, as described.

100,878.—MACHINE FOR MANUFACTURING HARVESTER-GUARD FINGERS.—Jerome Fassler, Springfield, Ohio.

Claim.—1. The combination of the revolving dies Q, tongs U having the stops W, and the stationary guides S.

2. The holding tongs U, constructed with the stop W and eccentric block T, substantially as described.

3. The combination of the roller F, having a die-seat, as set forth, the die Q, and set-screws k k, substantially as described.

4. The bed-plates B, with lugs c c, or their equivalents, in combination with the main frame E, to secure an easy and perfect adjustment, as described.

100,879.—NEEDLE-CASE.—Woren B. Field, Rockville, and Burroughs Beach, Meriden, Conn.

Claim.—A needle-case composed of several compartments, a b c d, &c., and provided with a cover, B, pivoted to the case, the said cover having an opening, i, and provided with a spring, f, and on the under side with a projection, s, so as to set into a recess or compartment, substantially as described.

100,880, antedated March 11, 1870.—COFFEE-POT.—James F. Fitch, B. G. Devoe, and R. W. B. McLellan, Vandalia, Ill., said McLellan assigns his right to said Fitch and Devoe.

Claim.—1. So arranging the vessel or vessels holding the infusion that the air above the infusion shall be confined by surrounding fluid, and act to prevent bubbling or agitation in boiling in the said vessel or vessels, substantially as set forth.

2. The vessel B arranged with perforated sides b and base b^2 and solid bottom b^1, when combined with the movable cap C and the pot A, substantially as set forth.

3. The cap C, its springs c, and the vessel B, when combined as set forth.

100,881.—PROCESS OF MAKING GLASS SIGNS, SHOW-CARDS, &c.—Christian Flammer, Chicago, Ill.

Claim.—The process, substantially as herein described, of making figures on glass, for signs, show-cards, and similar purposes, as set forth.

100,882. — COMBINED CARRIAGE, CRADLE, SWING, AND BABY-WALKER.—William H. Flanigan, Philadelphia, Pa.

Claim.—1. The suspension of the carriage-body N to upright projections, O O, of the truck-frame A, whereby it is adapted for the purpose of a swing or cradle at pleasure, the several parts being constructed and arranged, in relation to each other, substantially in the manner and for the purpose set forth.

2. The frame R, in combination with the truck-frame A, substantially in the manner and for the purpose specified.

3. The combination and arrangement of the pieces G, H, I, J, and K, with the truck A and swivel shaft F, substantially in the manner and for the purpose described.

100,883. — AUTOMATIC BOILER-FEEDER.—Elisha H. Goldman, Clayton, Ind.

Claim.—1. The hinge-valve L with perforated ledge l, operated by the piston d, as specified.

2. In combination with the vacuum-chamber A, the hinge-valve L with perforated ledge *l*, the piston *d* and cylinder *b*, as specified.

3. The automatic boiler-feeder herein described, having vacuum-chamber A, float K, slide-valve I, partition *f*, hinge-valve L with perforated shelf *l*, piston *d*, cylinder *b*, and priming-pump G, as specified.

100,884.—TORPEDO AND CARTRIDGE.—Edwin Gomes, New York, N. Y.

Claim.—A cartridge or torpedo formed with a quick-firing fuse coiled around within the powder-case, for the purposes and as set forth.

100,885.—PUMP.—Daniel J. Gorton, West Eau Claire, Wis., assignor to himself and W. E. Gorton, same place.

Claim.—The combination and arrangement of the three cylinders A J K with valves *a a* and *b b*, air-chamber L, plunger-rod C, plunger B, constructed as described, packing-box D, rack E, segment H, and roller I, all the parts being constructed to operate substantially as set forth.

100,886.—SUSPENDER.—Benjamin J. Greely, Boston, Mass., assignor to Thomas O. Potter and Joseph W. Smith, same place.

Claim.—The device herein described, consisting of the pieces *a a'* and *b*, when connected together and each piece held at each end by an interior brace, in the manner described.

100,887.—APPARATUS FOR ELEVATING AND BAGGING GRAIN.—John S. Hasbrouck, Tyre, N. Y.

Claim.—The combination of the endless traveling-apron D, of inclosed cells I, the hinged adjusting-legs M, the discharging-chute K, having grooved ribs *d*, and locking-buttons *e*, the whole constructed and arranged as herein shown and described, for adaptation to fanning-mills of various construction.

100,888, antedated March 5, 1870.—DAMPER FOR PIANO-FORTE.—A. H. Hastings, New York, N. Y.

Claim.—1. The damper-lever C of an upright piano-forte action when combined with the pivoted arm E, and with the notched key A, to operate substantially as herein shown and described.

2. The spring F, flexible strap *b* and damper lever C, all combined to operate substantially as herein shown and described.

100,889.—PACKING APPARATUS.—Cornelius E. Haynes, Boston, Mass.

Claim.—1. The combination of one or more tablets for supporting the receptacle which contains the sugar or other article to be packed, with the cams for tilting said tablet or tablets from side to side, as and for the purposes shown and described.

2. The combination of the series of the barrel-supporting tablets, with the cams for tilting the same, under the arrangement described, so that but one tablet of the series shall be acted upon at a time, as and for the purposes specified.

3. The construction of the inclosing rim of the tablet, or the same, and that of the orifices below, as herein described, that is to say, with openings for permitting the removal of the barrel therefrom without lifting the same, for the purpose before set forth.

4. The combination of the tablets *b* and their rims *d* with the ribs *g* formed around the apertures over which the tablets are placed, as and for the purposes shown and specified.

100,890.—LEATHER-SCARFING MACHINE.—Charles H. Helms, Poughkeepsie, N. Y.

Claim.—1. In a machine for scarfing leather, the hereinbefore-described manner of regulating the thickness of the scarf by means of the wedge-pointed screw or equivalent device, acting upon the sliding-box H, carrying the roller F, substantially as hereinbefore set forth.

2. The adjustable knife-holder P, when made as hereinbefore described, in combination with the adjusting-screws S, and adjustable sliding plate R, all arranged and operating substantially as described.

3. In combination, the spiral spring K, sliding-box H, and wedge-pointed screw J, for the purpose of regulating the pressure of the roller F on the piece of leather while being scarfed.

100,891.—LATHE FOR SETTING JEWELS IN TIME-PIECES.—H. H. Haskett, McLean county, Ill.

Claim.—The combination of the arbor C, index-plate D, and lever E with bit-stock A and holder B, placed eccentrically relatively toward each other and to the said arbor, as described, and operating substantially in the manner and for the purpose set forth.

100,892. — MANUFACTURE OF BRICKS.—George S. Hewitt, Boston, Mass.

Claim.—As a new manufacture, a brick having one or both of its ends formed with faces *b c*, as shown in the accompanying drawing, and as herein described.

100,893.—ELEVATED RAILWAY.—Benjamin L. Hood, Henry O. Hood, and Ezra W. Clark, Jr., Washington, D. C.

Claim.—1. An elevated railway, constructed with side bars which extend below the track and form braces, and which are secured at the top to a central upper guide-rail, forming a frame-work inclosure.

2. In an elevated railway, a car adapted to run on and above a single central rail, when provided with flanged trucks running against a central guide-rail and side guide-rails, either or both, as and for the purpose set forth.

3. In an elevated railway, having a central rail and guide-rails, springs applied to the rear or forward trucks, either or both, and above or below either or both, to prevent lateral jarring, as set forth.

100,894.—SADDLE.—George Horter, New Orleans, La., assignor to himself, Thomas K. Peterson, and Edward C. Fenner, same place.

Claim.—A saddle-skirt made of a trunk-board, pasteboard, or felt foundation, and a covering of muslin, drill, duck, hog-skin, or other equivalent material, substantially as described.

100,895.—JOINT FOR FISHING-RODS.—Wilson J. Hubbard, Ansonia, Conn.

Claim.—The combination of the two parts A and B of the cylinder or socket with the pole, when the two parts are constructed and fitted to be united by the male and female screws *a* and *b*, as herein described and set forth.

100,896.—PIPE-COUPLING FOR HEATING AND VENTILATING RAILROAD CARS.—Frederic R. Hunt, Leavenworth, Kansas.

Claim.—1. The coupling-pipe A, for connecting the cars of a railway train, and at the same time serving as a conduit for currents of air from car to car, as specified.

2. In combination with the coupling-pipe A, the air-tight tubular draw-head K, when arranged to operate substantially as and for the purposes specified.

100,897.—PACKAGE BAND AND FASTENER.—F. R. Hunt, Leavenworth, Kansas.

Claim.—A band for encircling packages, consisting of the parts A and B, the part A being provided with the slots 1 2 3 4, &c., and bars *a b c*, &c., as shown and described, and for the purpose set forth.

100,898.—SEED AND GUANO-DRILL.—Alfred Iverson, Jr., Macon, Ga.

Claim.—The combination of slotted cylinder, fixed stirring-finger, adjustable distributer, and elastic coverer, all constructed and arranged substantially as and for the purpose described.

100,899.—HASP AND STAPLE FASTENING.—Edward P. Jones, Shell Mound, Miss.

Claim.—Securing the staple C by means of a nut or plate, C', when the post to which it is to be attached has openings *b b'* cut, bored, or mortised in the same, substantially as described.

100,900.—RAILWAY-CAR BRAKE.—Edward P. Jones, Shell Mound, Miss.

Claim.—1. The friction-clutch C C', brake-bars H H, chains *h' h'*, and wheels B B, when the same are so combined and arranged as to operate substantially as described.

2. The friction-clutch C C', brake-bars H H, toggles D D, bar E, and lever F, when the same are so combined and arranged as to operate substantially as described.

100,901.—WAGON-BRAKE.—Edward P. Jones, Shell Mound, Miss.

Claim.—The conical hubs *b b*, clutches C C, chains *c c*, brake-bar D, toggle-arms E E, rod F, and spring F', when the same are united and arranged as shown, and are used in combination with rod or chain G, or other equivalent device for relieving the pressure of the brake, substantially as described.

100,902.—MANUFACTURE OF STAVE BASKET.—Horace C. Jones, Dowagiac, Mich.

Claim.—1. The spurred ring E, in combination with a central plate, E', and a follower, F, substantially as and for the purposes described.

2. The ring follower G, in combination with the spurred ring E and the plate E', substantially as and for the purposes described.

3. The construction of the plate E' with a hoop seat, *e*, and a convex surface, substantially as and for the purposes described.

4. The follower F, constructed with a convex bottom, in combination with the plate E', said parts being arranged and made adjustable substantially as described.

5. A basket-making machine which is constructed substantially as herein described.

100,903.—MACHINE FOR BENDING FIFTH WHEELS.—William J. Jordan, New Lisbon, Ohio.

Claim.—1. The combination of the bending-die D, provided with lugs E F and angular center hole I, retaining-block H secured on rod J, and angular center pin G provided with clamp-screw K, the several parts being constructed and arranged substantially as and for the purpose specified.

2. The rotating arm L and slotted slide M provided with the bending-wheel R, when used in combination with the center pin G and bending-die D, substantially as and for the purpose specified.

3. The combination of the slotted slide M, swinging block *e* provided with press-wheel Q, rod N and bent lever-handle P, the several parts being arranged substantially as and for the purpose specified.

4. The combination of the bending-die D, center pin G, table C, rotating arm L, slide M provided with bending-wheel R, swinging block *e* provided with press-wheel Q, rod N and bent lever-handle P, the several parts being arranged substantially as and for the purpose specified.

100,904.—BINDING-ATTACHMENT FOR SEWING-MACHINES.—Amasa C. Kasson, Milwaukee, Wis.

Claim.—1. The binder B, constructed substantially as herein described, for attachment to the foot-presser of a sewing-machine in the manner herein set forth.

2. The combination of the binder B, with a foot-presser of a sewing-machine, so constructed that the former may be connected to and detached from the latter, by simply sliding off or on the end of the latter, as set forth.

100,905, antedated March 4, 1870.—REVOLVING, ROCKING, AND RECLINING-CHAIR.—George Knell, Moorestown, N. J.

Claim.—1. The base A with its elongated projection *b*, in combination with the revolving adjustable seat B and its lugs *c c*, substantially as described.

2. The combination, with the said seat, base, rib, and lugs, of a swivel-bolt, D, as specified.

3. The adjustable back H and foot-board F, connected by rods I-J, when arranged on an adjustable seat, B, as set forth.

4. The base A having a recess in its upper face, in combination with the revolving adjustable seat B and its lugs *c c c'*, as described.

100,906.—LIFE-PRESERVER.—Camille Krejci, Scranton, Pa.

Claim.—A life-preserver, having its ends provided with tubes F and G, the valve D, and bayonet-clasp, all constructed and arranged as herein described, so that it may be readily filled and clasped about the neck, as set forth.

100,907.—APPARATUS FOR WORKING HIDES.—Henry Lampert, Rochester, N. Y.

Claim.—1. The worker *g* and supporting-bar *h*, either yielding or rigid, in combination with the vertically-yielding suspenders *b*, for the purposes set forth.

2. The adjustable link *i*, in combination with the pivoted bar *h*, either yielding or rigid, worker *g*, and pitman G, arranged to operate substantially as herein set forth.

3. The reversible worker *g*, so attached to the bar *h* that the angle of inclination of the tool *e* with the work may be such that the tool shall act either as a scraper or a knife, as desired.

100,908.—FANNING AND SMUT-MILL.—Horace Littlefield, Lewis, Iowa.

Claim.—1. The combined smut and winnow-mill herein described, having shoe H pivoted on the central rod *t*, and removable and adjustable rubbers G G, provided with brushes *n n*, set-screws *s*, and rubber springs *s*, when constructed and arranged to operate in the manner as and for the purposes herein specified.

2. The shoe H, pivoted on a central horizontal supporting-rod, *t*, and operated by a pitman from the crank-shaft, as specified.

3. The removable and adjustable vertically-operating rubbers G G, separated by the rubber springs *e* on the set-screws *s*, and provided with the scouring brushes *n*, as specified.

100,909.—NEEDLE-ADJUSTING BLOCK FOR SEWING-MACHINES.—T. A. Macaulay, Northampton, Mass.

Claim.—The needle-bar having the hole, slot, steadying-pin, and clamping-screw, in combination with the block provided with the stem and groove, as and for the purpose set forth.

100,910.—DRAW-BRIDGE.—Neil Macneale, Cincinnati, Ohio.

Claim.—1. A draw-bridge, consisting of a rigid and elevatable section, guided and operated substantially as set forth.

2. A bridge, having one or more sections capable of temporary elevation, as and for the purpose set forth.

100,911.—FEATHER-WASHER AND DRIER.—John Mallory, Penn Yan, N. Y.

Claim.—The receptacle A, when provided with the diaphragm B, agitator C, and cover D, when made and used substantially as and for the purpose set forth.

100,912.—MACHINE FOR SPINNING SHEET METAL.—John J. Marcy, Meriden, Conn., assignor to himself and E. Miller & Co., same place.

Claim.—1. In combination with the tool-carrying slide E, the plate G, made adjustable to vary the angle of and carry the slide I, substantially as herein set forth.

2. The plate G, when constructed in two parts, G and G', and arranged with a spring, T, between the two, so as to afford a yielding pressure to the tool, substantially as set forth.

3. In combination with the subject-matter of the second clause of claim, the cam W and stud W', constructed and operating as described.

4. In combination with the slide E, the arrangement of the arm I' and plate G, so as to be adjusted transversely on the machine to adjust the position of the tool, as set forth.

5. In combination with the tool-carrying slide E, the adjustable crank N, so as to impart a transverse movement to the slide E.

6. In combination with the tool-carrying slide E and adjustable plate G, with its slide I, the adjustable crank N, operating together as specified.

100,913.—SMUT-MILL.—Daniel W. Marmon, Richmond, Ind., assignor to Nordyke, Marmon & Co., same place.

Claim.—1. The conical guards or fenders J, two or more, for the purpose herein designated, when combined with the vertical beaters.

2. The series of upright beaters, with upturned ribs, when the blast is admitted up through them and outwardly, in the manner shown and for the purpose set forth.

3. The perforated case F having reversely oblique or zigzag or oblique scouring-ribs O on the concave surface, as and for the purpose stated.

100,914.—FRUIT-DRIER.—James B. May, Magnolia, Ohio.

Claim.—1. The described heat-reservoir composed of its walls *m*, the mass of loose stones, and the plate G, in combination with the furnace H, flue or chimney K, and the walls A A and roof B of the house, constructed, combined, and arranged substantially as set forth, for the purpose described.

2. The heating-plate G, with its openings *h h*, with its standards *o o*, in combination with the adjustable deflecting plates P P, the walls A A and roof B, and the reservoir I, constructed and arranged substantially as and for the purpose described.

3. The walls A A and roof B, with their various apertures and ventilators, in combination with the adjustable deflectors P P, heating-plate G, with its standards *o o*, holes *h h*, the heat-reservoir I, furnace H, and fruit-racks L M N, when constructed and arranged substantially as and for the purpose set forth.

100,915.—PRODUCTION OF LIGHT FROM HEAVY HYDROCARBONS.—Rufus S. Merrill, Cambridge, assignor to William B. Merrill and Josuah Merrill, Boston, Mass.

Claim.—The burning for illuminating purposes, and in the manner herein shown and set forth, of the latter products of distillation of coal, shale, and petroleum, having a density of not more than 38° Baumé, and being known as heavy oil, that is to say, heating said oil, and drawing it up around the hollow or equivalently-formed wick, and subjecting it, at the burning-point, to an artificial draught of atmospheric air, both within and without the wick.

100,916.—PUDDLING PROCESS FOR MAKING WROUGHT IRON.—Philemon Merryman and Robert McCombs, West Fairview, Pa.

Claim.—The process of making wrought iron by drawing off the cinder from the puddling-furnace at any time before the iron comes to a boil or ferment, and at any point below the fore plate, substantially as herein described.

100,917.—RAILWAY RAIL.—James Millholland, Reading, Pa.

Claim.—1. A continuous compound rail, consisting of a central bar, A, having a web, *b*, and a tread, *a*, which rests upon clamps B B, bearing at two points only upon the central bar, when the whole are secured together by bolts passing between said bearing points, and when the lower edge of the web *b* is free from contact with and is above the lower edges of the clamps, substantially as described.

2. The central bar or rail A, having inclined shoulders *f f*, a thin web, *b*, and inclined shoulders *e e*, in combination with the outer bars or rails B and B', with their inclined upper edges, inclined ribs *f*, and flanges *m* and *n*.

100,918.—ICE-CREAM FREEZER.—Thomas Mills and George M. Mills, Philadelphia, Pa.

Claim.—1. The vertically-sliding coupling-sleeve *h* and clutching-shaft *f*, when arranged relatively to and operating in combination with the slotted hub *g* of bevel-wheel *e*, can D, and dasher F, substantially in the manner and for the purpose set forth.

2. In combination with bevel-wheel *e* and sleeve-coupling *h*, the swivel bearing *m n*, operating substantially as and for the purpose described.

3. In combination with the driving-shaft K, intermediate shaft *b*², bevel-gears *b e e'*, upright shaft *f'*, can D, and dasher F, and the described change-gears L I and M J, when operating in the manner shown and described.

4. In combination with the sliding change-gears L and M, the shifter-arm *o*, and locking-handle *p*, arranged as and for the purpose set forth.

100,919.—FENCE.—David Mitchel, New Berlin, Pa.

Claim.—A fence-panel, constructed as described, of the horizontal boards A A and C, posts B B, and bar D, connected together by the angular clips I, all arranged substantially as and for the purposes herein set forth.

100,920.—WATER-WHEEL.—Alexander F. Murray and Henry Green, Moline, Ill.

Claim.—The herein-described water-wheel, having a series of vertical buckets, *g*, of V-shape, and acute angled transversely, said buckets being so arranged that the apex of each bucket shall stand on the same radial line as the diverging rear edge of the bucket immediately in front thereof, substantially as described.

100,921.—HANDLE FOR TABLE-CUTLERY.—Josiah H. Nichols and William Bower, Beaver Falls, Pa.

Claim.—The knife or fork A, constructed as described, with bolster E, tang B, handle C, and end piece D, all substantially as set forth.

100,922.—HARVESTER-RAKE.—Aaron Palmer and Charles W. Palmer, Brockport, N. Y.

Claim.—1. The combination of the axis Z, the hollow arm C, the arm X, and the lever *a*, for the purposes hereinbefore set forth.

2. The sleeve Y upon the arm C, for driving the reel, as hereinbefore set forth.

3. The sleeve Y upon arm C, in combination with the sleeves H and D, toothed gear K and W, for imparting motion to the rake, as hereinbefore set forth.

4. The sleeve Y, in combination with the sleeve H, arms L L, lifting-arm M, projection *t*, and wheel O, upon bracket *b*, for the purposes set forth.

5. The slotted arm X, for sliding the reel bearings to and from the rake center, when such arm is mounted upon the axis Z, for the purposes set forth.

100,923.—WASHING-MACHINE.—George W. Putnam, South Glens Falls, N. Y., assignor to himself and L. B. Edmonds, same place.

Claim.—The clamps or presses B C D and B' D',

constructed substantially as described, and connected at their upper ends by means of the bars H H, and operated by suitable devices, substantially as and for the purposes herein set forth.

100,924.—MODE OF PRODUCING PHOTO-LITHOGRAPHIC TRANSFERS.—Isaac Rehn, Washington, D. C., assignor to himself and Norris Peters, same place.

Claim.—1. The successive application to the paper in a darkened room of a gelatinous oxidizing compound and a transparent or translucent oxidizable transfer compound, substantially as described.

2. The employment of a paper for the production of photo-lithographic transfers, containing the materials for oxidation and transfer prior to the same being exposed to the action of light through a negative, as described.

100,925.—FOLDING CRIB AND CRADLE.—Daniel M. Reynolds, Chicago, Ill.

Claim.—1. In combination with a folding crib or cradle, the rockers D D, so connected to the feet of the crib that they can be folded under and parallel with the sides of the crib, substantially as set forth.

2. The combination of the crib A, with its end pieces, centrally hinged, and hinged to the side pieces, legs B B with rockers D D pivoted to one of the legs, and secured in a groove in the other by the hook and staple *a*, all as and for the purposes set forth.

100,926.—SPIRAL SPRING FOR RAILWAY CARS.—Frederick W. Rhinelander, New York, N. Y.

Claim.—A spiral spring, formed of a bar or rod of metal of cylindrical section, with conically-tapered ends, substantially as and for the purposes set forth.

100,927.—MACHINE FOR PREPARING WOOD FOR INLAYING.—Charles F. Ritchel, Newark, N. J.

Claim.—In a machine for preparing wood for inlaying, the combination and arrangement, substantially in the manner described, of the sliding table E, revolving table F, with one or more cutters O, fig. 4, constructed and operating in the manner and for the purpose specified.

Also, the cutting-tool represented in fig. 4, having the knives 3, trimmers 11, and gouges 4, and fitted for attachment to the adjustable spindles, as described.

100,928.—MACHINE FOR HEADING BOLTS.—John Root, New Haven, Conn., assignor to himself and McLagon & Stevens, same place.

Claim.—1. The combination of the upsetting-die F, carriage C, crank-pin D, toggle G G, and lever G', arranged as described, and operating in the manner and for the purpose set forth.

2. The combination and arrangement of the holding-dies *a a*, slide I, and eccentric P, as and for the purpose described.

100,929.—MACHINE FOR CORRUGATING SHEET METAL.—Franklin Roys, East Berlin, Conn.

Claim.—The arrangement herein described of the housings A, corrugated rollers C C, girts or beams B B, corrugated rolls P P, and adjusting-screws *a a*, for the purpose set forth.

100,930.—VAPOR-BURNER.—Henry Schminke, Baltimore, Md.

Claim.—The combination of the casing B with a series of inclosed casings, pipes, or tubes, as and to the end set forth.

100,931.—CATARRH REMEDY OR SNUFF.—Thomas C. Scruton, Farmington, N. H.

Claim.—The composition of ingredients for a catarrh-snuff, substantially as herein specified.

100,932.—SCRUBBING-BRUSH.—John See, Philadelphia, Pa.

Claim.—The combination of the brush C, wooden strip F, rubber strips D E and G, handle and strip A H, and metal strip H, all constructed and arranged to operate as herein described and shown.

100,933.—BURGLAR-ALARM.—Reuben Shaler, Madison, Conn.

Claim.—The alarm-safe herein described, having in the lid thereof the weighted pawl *s* and sliding bar L, arranged to set off the alarm when operated by any one of the keys or knobs *k k*, made similar to the catch-knob *s*, and arranged in any number on either side thereof.

100,934.—MECHANISM FOR OPERATING SEWING-MACHINES.—Elisha Shiver, Washington, D. C.

Claim.—1. The construction of the wheel or disk C', substantially as and for the purpose specified.

2. The combination of the wheel or disk C', cam C, shaft B', and spring with which the motor is driven, substantially as and for the purpose specified.

3. The arrangement of the fly or fan F F and the rod or shaft on which it is placed with reference to the shaft F', substantially as and for the purpose set forth.

4. The arrangement of the rod K and its nut with reference to the shaft around which it passes, substantially as and for the purpose set forth.

100,935.—MECHANISM FOR DRIVING SEWING-MACHINES.—Elisha Shiver, Washington, D. C., assignor to J. H. McBlair, same place.

Claim.—1. The arrangement of the two springs upon the same shaft, one being attachable and detachable at pleasure, and the other permanently attached thereto, substantially as and for the purpose set forth.

2. The arrangement of the spring-brake I, having the friction-pad attached to its end, and its handle I with reference to the wheel G, operated substantially as and for the purpose set forth.

3. The combination of the shaft C², the collar B', and the spring D', substantially as and for the purpose set forth.

4. The combination of the collar I², rod or strap I³, and foot-rod I⁴, with the shaft upon which the balance-wheel G is placed, substantially as and for the purpose set forth.

100,936.—EXTRACTING TURPENTINE FROM PINE-TREES.—James C. Shuler, Cain Hoy, S. C.

Claim.—The incision A, formed by the means and in the manner herein described, in combination with the spout C, gash B, bucket D, and nails *n*, when arranged substantially as and for the purposes specified.

100,937.—METALLIC ALLOY TO IMITATE THE PRECIOUS METALS.—Lorenzo Sibert, Staunton, Va.

Claim.—An alloy, consisting of steel or iron, copper, zinc, and manganese, substantially as and for the purposes specified.

100,938.—SPOON-HOLDER.—Samuel Simpson, Wallingford, Conn.

Claim.—The combination of a gong-bell with a spoon-holder, constructed substantially as herein described, as an article of manufacture.

100,939.—MAN-HOLE PLATE FOR TANNERY STUFFING-WHEEL.—Henry Smith, Jr., Milwaukee, Wis.

Claim.—1. A man-hole plate, with the rim B, covering-plate C, and lugs D and E, substantially as described.

2. A man-hole plate, when constructed with rim B, covering-plate C with the lugs D and E, raised projections F with holes in them, and packing H, substantially as described.

100,940.—Railroad Conductors' Ticket-Case.—Joseph T. Smith, Louisville, Ky.

Claim.—1. The hinged ticket-box herein described, having ticket compartments N, receptacles M, canceling-rods c, chains e, staples n and s, and locks p, constructed and arranged to operate as specified.

2. The locked canceling-rods c, arranged to hold and cancel tickets in a ticket-box, as described.

3. In combination with the locked canceling-rods c, the perforated tickets G, when constructed as and for the purposes specified.

100,941.—Corn-Husker.—Thomas S. Smith, Cincinnati, assignor to himself and O. H. P. Anderson, Salem, Ohio.

Claim.—The combination and arrangement of the revolving cutters G G, rollers B B', table F, spiral brushes E E', endless apron A, and elevator D, when all these parts are constructed and arranged to operate in the manner and for the purpose herein set forth.

100,942, antedated March 11, 1870.—Water-Wheel Regulator. — Hervey D. Snow, Bennington, Vt.

Claim.—1. The stops 27 and 28, attached adjustably to the disk or arms h, in combination with the ratchet-wheel f and pawls r s, as and for the purpose set forth.

2. The wheel w, actuated by the gearing x y z, in combination with the stops g g' and pawls r s, substantially as and for the purposes set forth.

3. The lever v, in combination with the disk h and pawls r s and wheel f, as and for the purposes set forth.

4. The sleeve n connected to the wheel f and receiving-shaft a, as and for the purposes specified.

100,943.—Railway Gate.—Samuel M. Snyder, Brady, Pa.

Claim.—The bars B, moving in the boxes d', and provided with springs d, in combination with the racks b, pinions a', and gate A, in the manner and for the purpose described.

100,944.—Manufacture of Cement for Artificial Stone. — Stanislas Sorel, Paris, France, assignor to John F. Wood, Boston, Mass.

Claim.—1. The manufacture of cement by the use of magnesite, substantially as described.

2. The process of procuring the oxide of magnesium from magnesite, for the purpose of manufacturing cement, substantially as described.

100,945. — Manufacture of Artificial Stone.—Stanislas Sorel, Paris, France, assignor to John F. Wood, Boston, Mass.

Claim.—As a new product, the magnesia cement or cement having a magnesia base, composed substantially as herein described, for the purpose of forming various substances by agglomeration or molding, as herein set forth.

100,946.—Combined Current-Wheel and Condensing-Engine.—Hatherly Spear, Cape Elizabeth, Me.

Claim.—The combination and arrangement of the case A, water-wheel B, cog-wheel C, walking-beam E, condensing-engine G, and receiver H, all substantially as and for the purposes herein set forth.

100,947. — Heating - Attachment for Steam-Boilers.—Elihu Spencer, Elizabeth, N. J.

Claim.—1. The arrangement, in a steam-generator furnace, of pipes or tubes p, adapted for the introduction and discharge of air, and to absorb and impart to the air in passing through them the waste heat of the furnace, substantially as represented and described.

2. The combination of the pipes or tubes p, arranged and employed substantially as described, and a hollow or air-heating grate g g' g², substantially as set forth.

100,948.—Iron Frame for Upright Pianos.—George Steck, New York, N. Y.

Claim.—1. The arrangement, in combination, of the iron frame A B C D, the wrest-plank G, and the rear clamp-braces H H, so that the wrest-plank forms the intermediate connection between the frame and the upper ends of the braces, and the sounding-board is admitted between the said frame and braces, substantially as herein specified.

2. The lugs s s on the sides of the frame, for the purpose specified.

100,949.—Wrapping Scythes for Transportation.—Lovitt Stimson, New Hartford, Conn., assignor to the Greenwoods Scythe Company, same place.

Claim.—The skewer b, in combination with the cord c, and wrapper d, substantially as and for the purpose set forth.

100,950.—Horse-Rake.—J. C. Stoddard, Worcester, Mass.

Claim.—1. The head B, provided with a cylindrical portion, b, and a projecting portion, f, having a right-angular slot or opening, g g', through which the tooth and spring pass, substantially as shown and described.

2. The combination of the tooth D and spring E, with the cylindrical portion b and slot g g', all constructed and arranged substantially as herein set forth.

100,951, antedated March 3, 1870.—Thill-Coupling.—Chauncey Thomas, Boston, Mass.

Claim.—In combination with clasping jaws, the interlocking teeth or projections, substantially as described.

Also, in combination with the clasping jaws g h, having teeth or projections to interlock with those upon the joint-pin, the means, substantially as described, for regulating the pressure of the jaw upon the joint-pin.

100,952. — Ash-Shovel. — Robert Jacob Schaffer Thompson, Washington, Pa.

Claim.—The ash-sifting shovel consisting of the open blade A, rods B, and fastening-plates C, all arranged substantially as herein shown and described.

100,953.—Manufacture of Rosin-Oil.—Joseph Treat, New York, N. Y.

Claim.—The method or process, substantially as hereinbefore described, for refining and bleaching rosin-oil.

100,954. — Composition for Concrete Pavements, Walks, &c.—A. Van Camp, Washington, D, C., and M. M. Hodgman, St. Louis, Mo.

Claim.—A composition for pavement, walk, pipe, sewer, or culvert, of brick and asphaltum, when the brick has been so crushed that the entire surface of each particle used is rendered rough and uneven, substantially as described, as and for the purpose specified.

100,955.—Combined Hedge-Trimmer and Mower.—George Waddington, Le Roy, Ill.

Claim.—The arrangement of the curved bar E, hinged to the side of the frame A', in rear of the

the wheel, in combination with the vertical and inclined cutter-bars O and U respectively, the pitmen P and V, the cranks A and W, and the driving-gear, substantially as and for the purpose specified.

100,956.—Landau Carriage-Door. — Edward Wells, New Haven, Conn.

Claim.—In Landau carriage-doors, the parts E and F extending the full height of the door, hinged one on each side, as at e and f, arranged so as to fold one on the top of the other as shown and described.

100,957.—Plow.—Robert J. Wheatley, Duquoin, Ill.

Claim.—The combination of the bar and standard A' A, the adjustable double-wedge shaped and slotted point E, the triangular adjustable cutter D, the mold-board B, and share C with tenon c, the parts constructed as described, and arranged as and for the purposes set forth.

100,958.—Automatic Car-Brake.—Marmaduke Wilkin and John Clark, London, England.

Claim.—1. The lever f, subjected to the action of a weight or spring, in combination with an expanding-clutch, a ratchet-wheel, a shaft and chain, and the brakes of a railroad car, all constructed and operating substantially as shown and described.

2. The rope or chain e, extending throughout a series of cars, in combination with the lever f, the expanding clutch, ratchet-wheel, shaft-chain, and the brakes of the cars, substantially as set forth.

100,959.—Gauge for Tobacco-Cutter.—W. N. C. Willson, Summit Point, West Va.

Claim.—The combination, with a tobacco-cutter, of the block B, spring B'', guide-way B', and a scale indicating prices, substantially in the manner described.

100,960.—Car-Brake and Starter.—Edward P. Jones, Shell Mound, Miss.

Claim.—The drum F, spring H, clutch C C', and chain H', when the same are so combined and arranged that when the clutch is thrown in such position as to aid in arresting the momentum of the car, it shall, through the chain H', so act on the drum as to wind up the spring, and thus accumulate power to start the car when desired, substantially as described.

REISSUES.

3,878.—Saw-Mill.—Ashbell P. Barlow, C. H. Eastman, W. W. King, Z. B. Small, and James H. Johnson, Claremont, N. H., assignees of Ashbell P. Barlow.—Patent No. 72,155, dated December 17, 1867.

Claim.—1. The ways or guides a a, constructed on their faces with the two different inclinations, or double inclines and parallel sides, substantially as shown and described.

2. The cross-head c, provided with the projecting convex faces r r and spring clamp-jaws e, constructed to operate substantially as described.

3. The saw-buckle f perforated and slotted as described, in combination with the gib-bolts o, as set forth.

4. The hollow or bifurcated pitman k, slotted at m, and provided with adjusting keys for varying the distance of the saw pivot-pin from the pitman, fulcrum, or guide-pins on the pitman, in the manner and for the purpose set forth.

5. The combination of the upper guides s a, having the two different inclinations, as described, and the cross-heads c, with the saw and the pitman k, when the saw is pivoted to the pitman in the manner and for the purpose substantially as described.

3,879.—Auger.—Ira T. Payne, Chester, Conn.—Patent No. 75,454, dated March 10, 1868; antedated February 28, 1868.

Claim.—A double-twist bit or auger, having a head made solid on one side, substantially in the manner as herein shown and described, and for the purpose specified.

3,880.—Padlock.—F. W. Smith, Jr., Bridgeport, Conn., George W. Bassett, New York, N. Y., and S. R. Wilmot, Bridgeport, Conn., assignees of Frederick Egge. Patent No. 86,377, dated February 2, 1869.

Claim.—The herein-described padlock, having the bolt C attached to one arm of the lever D, and provided with the spring b, the said lever D being pivoted, so that the key will strike the other arm of the lever and move the bolt in the opposite direction to the turning of the key, the said spring operating to return the bolt into its locked position, combined with one or more tumblers E, the whole constructed and arranged so as to operate as herein set forth.

Also, the combination of the circular case having rounded edges and a notch for the staple, the curved oscillating spring bolt, traversing in the edge of the case and across the notch, the oscillating bolt-lever, the oscillating spring tumblers, and the key, all these parts being constructed to operate substantially as hereinbefore set forth.

Also, the combination of the round oscillating bolt and its spring with the circular case having rounded edges, in such manner that the curved edge of the case serves as a guide and a support for the bolt, all these parts being constructed to operate as set forth.

DESIGNS.

3,895.—Artificial Flower.—Charles S. Baldwin, New York, N. Y.

Claim.—The design or pattern for an artificial flower, herein set forth.

3,896. — Floor-Cloth Pattern. — Hugh Christie, Morrisania, assignor to W. M. Brasher & Co., Brooklyn, N. Y.

Claim.—The configuration of the design hereunto annexed, when made by being wrought upon floor oil-cloth or other carpeting, in the form similar to the drawings accompanying this specification.

3,897. — Floor-Cloth Pattern. — Hugh Christie, Morrisania, assignor to W. M. Brasher & Co., Brooklyn, N. Y.

Claim.—The configuration of the design hereunto annexed, when made by being wrought upon floor oil-cloth or other carpeting, in the form similar to the drawings accompanying this specification.

3,898.—Pattern or Chart for Applying Measurments and Laying out Dress-Waists.—Willett Cornwell and Elmira Cornwell, Rochester, Minn.

Claim.—The herein-described design for a pattern or chart, for applying measurements and laying out dress-waists.

3,899.—Children's Carriage.—George H. Mellen, New York, N. Y.

Claim.—The design for a combined child's carriage and umbrella-top, as shown.

3,900.—Clock-Front. — Nicholas Miller, New York, N. Y.

Claim.—The design for a clock-front, in whole or in part, as herein shown and described.

3,901.—Type.—William H. Page, Norwich, Conn., assignor to William H. Page & Co.

Claim.—The design of an alphabet of letters, as shown and described.

3,902.—TYPE.—William H. Page, Norwich, Conn., assignor to William H. Page & Co.

Claim.—The design for an alphabet of letters, as shown and described.

3,903.—TYPE.—William H. Page, Norwich, Conn., assignor to William H. Page & Co.

Claim.—The design for an alphabet of letters, as shown and described.

3,904.—TYPE.—William H. Page, Norwich, Conn., assignor to William H. Page & Co.

Claim.—The design for an alphabet of letters, as shown and described.

3,905.—TYPE.—William H. Page, Norwich, Conn., assignor to William H. Page & Co.

Claim.—The design for the two alphabets of letters, as shown and described.

3,906. — TRADE-MARK.—William Pearson and Peter Hogoboom, Ripon, Wis.

Claim.—The design for a trade-mark, as described and shown.

3,907.—STAIR-ROD.—August Pohl, Brooklyn, N. Y.

Claim.—The design for a stair-rod, as herein shown and described.

3,908.—HANDLE-CAP FOR SATCHELS.—John M. Riley, Newark, N. J.

Claim.—The form, shape, or configuration of the handle-cap, as shown and described.

3,909.—THERMOMETER.—Charles R. Sherman and Wendell Macy, New Bedford, Mass.

Claim.—The design or pattern for thermometers herein set forth.

3,910.—BAGGAGE-RACK.—Robert M. Snodgrass, Pittsburg, Pa.

Claim.—A baggage-rack, having on the front of its basket a card or advertising-frame, and a looking-glass frame below, substantially as shown and described.

3,911, antedated March 1, 1870.—COOKING-STOVE.—David Stuart and Lewis Bridge, Philadelphia, Pa., assignors to David Stuart and Richard Peterson, same place.

Claim.—The design for a cook-stove, as represented in and by the accompanying drawing.

3,912.—SHUTTER-BAR.—John Tiebout, New York, N. Y.

Claim. The design above described for shutter bar.

EXTENSIONS.

OWEN DORSEY, of Newark, Ohio.—Letters Patent No. 14,350, dated March 4, 1856; reissue No. 1,067, dated October 23, 1860; reissue No. 2,992, dated June 9, 1868.

"Improvement in Harvester-Rakes."

Claim.—1. A continuously-revolving rake, attached by a pivotal connection to the shaft on which it revolves, so as to allow it to describe the proper path to gather or discharge the grain and to clear the frame.

2. The combination of a platform, a vibrating cutter, and a continuously-revolving gathering and discharging-rake, so arranged as to enter the uncut grain in front of the cutter, and to discharge the cut grain in the arc of a circle.

3. A continuously-revolving gathering and discharging-rake, which enters the uncut grain in front of the cutters and discharges the cut grain in the arc of a circle, in combination with one or more intermediate revolving gathering-heads or beaters.

4. The combination of a continuously-revolving gathering and discharging-rake, which discharges the grain in the arc of a circle, and a cam-way or guide for regulating the course of the rake.

5. The combination of a continuously-revolving rake, which discharges the grain in the arc of a circle, with a platform, having a fender conformed substantially to the path described by the outer end of the revolving rake in passing over the same, substantially as described.

6. The combination of a continuously-revolving gathering and discharging-rake, which discharges the grain in the arc of a circle with a vibrating cutter.

7. The combination of a continuously-revolving gathering and discharging-rake, a cam-way or guide, and friction-rollers, attached to the arms of said revolving rake.

JOHN C. MORRIS, of Cincinnati, Ohio.—Letters Patent No. 14,405, dated March 11, 1856; reissue No. 1,312, dated May 27, 1862.

"Improvement in Wood-Bending Machines."

Claim.—1. A wood-bending form, to which timbers are made to conform by bending them from the center or inner end of the desired curve outward, when used in combination with abutments or clamps to prevent or regulate end expansion, and levers or handles or their equivalents to guide the bending, substantially as described.

2. A stationary or poised wood-bending form, in combination with the cords, levers, and drum, or their equivalents, and the eccentric clamp, or its equivalent, in the manner and for the purposes set forth.

3. In combination with the stationary form, levers, and abutments, the employment of hooks, or hooks and pins, or their equivalents, that shall embrace the ends of the wood to restrain the wood in shape and permit the removal of the abutments, after the completion of each operation.

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PATENTS.

100,961.—ELECTRO DEPOSITION OF METALS. Isaac Adams, Jr., Boston, Mass.

Claim.—1. The electro deposition of nickel by means of a solution of the double sulphate of nickel and alumina, prepared and used in such a manner as to be free from the presence of ammonia, potash, soda, lime, or nitric acid, or from any acid or alkaline reaction.

2. The electro deposition of nickel by means of a solution of the double sulphate of nickel and potash, prepared and used in such manner as to be free from the presence of ammonia, soda, alumina, lime, or nitric acid, or from any acid or alkaline reaction.

3. The electro deposition of nickel by means of a solution of the double sulphate of nickel and magnesia, prepared and used in such a manner as to be free from the presence of potash, soda, alumina, lime, or nitric acid, or from any acid or alkaline reaction.

100,962.—PHOTOGRAPHIC SHOW-CASE.—Joseph F. Adams, Buffalo, N. Y.

Claim.—The back piece C with the bevel *a*, and the cross-piece D with the bevel *b*, when used in connection with the plane sides A A of the cells, the whole being specially arranged to throw the cards outward at the top when opened, as herein described.

100,963.—BUCKLE.—Moses Adams, Chilmark, Mass.

Claim.—The combination of the lever B, crossbar F, and frame A, with the pawl E, all constructed and operating substantially as described.

100,964.—WATER-METER.—A. W. Almqvist and F. W. Ofeldt, New York, N. Y.

Claim.—1. The combination of a metallic diaphragm a trifle less in diameter than the interior diameter of the body or shell A, flexible throughout its whole extent, and covered with rubber or equivalent water-proof material, with the rock-shaft D and body or shell A, substantially as herein shown and described and for the purposes set forth.

2. The combination of the device A with the cylindrical valve H, both revolving upon the same axis, but working against different surfaces in the same valve-chest I, substantially as shown and described, for the purposes of dispensing with a stuffing-box, preventing leakage and reducing friction.

3. The combination of the continuous wire *q'* with the projections *q* on the plate Q, and with the indices *p'*, for the double purpose of preventing said indices from turning, and, at the same time, by its tension, produce the necessary friction between the registering-wheels and their hubs on the plate Q, as described.

4. The device for adjusting the measurement, viz, the combination of the arms *j* and j^1 with the screw j^4, as described.

5. The peculiar manner described and shown of attaching the plate Q, for the purpose of avoiding any lateral strain on the rock-shaft bearings in working the register.

100,965.—TABLE-LEAF SUPPORT.—Aron Anderson, South Bend, Ind.

Claim.—An improved table-leaf support formed by the combination of the pivoted brace-bar E, and the slotted and recessed support F, said brace-bar and support being constructed, arranged, and operating in connection with the leaf and frame of a table as herein shown and described, and for the purpose set forth.

100,966.—RUBBER CONNECTION FOR MOSQUITO-NET FRAMES.—Uel W. Armstrong and Ira Keeney, Evansville, Ind., assignors to U. W. Armstrong.

Claim.—1. The three-tube rubber connections A, for connecting the upright and horizontal bars of a mosquito-net frame to each other, constructed substantially as herein shown and described.

2. The ring tubes *F b'*, whether used for connecting the horizontal bars or the upright and horizontal bars, substantially as herein shown and described.

3. The open tube or ferrule G, when used in combination with the rubber tubular connections A and *F b'*, either or both, and with the bars of the mosquito-net frame, substantially as herein shown and described, and for the purpose set forth.

100,967.—INSTRUMENT FOR DOSING ANIMALS.—Osborne Barker, Brooklyn, N. Y.

Claim.—A bottle with a neck bent as shown, and furnished with a valve, substantially as and for the purpose set forth.

100,968.—BOOT AND SHOE-HEELS.—Ferdinand Bliesenick, New York, N. Y.

Claim.—The herein-described heel for boots and shoes, consisting of a solid leather casing, A, filled in with leather strips B, alternating with layers of glue, rosin, gutta-percha, or similar substances, *a*, substantially as and for the purpose hereinbefore set forth.

100,969.—CHURN-DASHER CRANK-FIXTURE. C. Blust, Lucas, Ohio, and Matthau Harbster, Reading, Pa., assignors to C. Blust.

Claim.—A removable crank-shaft, *b'*, perforated at two points, and provided with wedges C C' to hold it in position, and to admit of its entire or partial removal, as shown and described.

2. The combination in the barrel of a churn of the flanged and recessed hub a^1, rubber packing E, and metal washer F, to form a firm milk-tight bearing for the actuating-shaft, in the manner set forth.

100,970.—FASTENING FOR CORSETS.—M. P. Bray, Ansonia, Conn.

Claim.—The auxiliary spring A, arranged upon and secured at one end to the spring B by a single rivet, C, the two springs being held together by clasps D shouldered at *c*, all said parts being constructed, arranged, and adjusted together as set forth.

100,971.—FOOTSTOOL FOR CHURCHES, &c. William G. Brown, Monmouth, Me.

Claim.—The footstool, supported upon two or more parallel bars B B, which are pivoted to fixed supports so that they can be extended or contracted, as set forth.

100,972.—HAY-TEDDER.—James M. Burdick, Ilion, N. Y.

Claim.—1. The combination of the cranks D, pivoted upon the disk A, and ring E, with the guides F, substantially as and for the purpose set forth.

2. In combination with the cylinder *a* the loop-bolt *b* and clamp *d*, when arranged substantially as herein described.

100,973.—CARRIAGE-WHEEL HUB.—Bradley Burr, Batavia, Ill.

Claim.—1. The two-part shell hub B B', provided with rings D D', held together by inclined bolts G, and strengthened by braces H, as set forth.

2. The two-part hub B B', provided with rings D D', bolts G, braces H, flanges C C', overlapping thimbles F F', as described.

100,974. — CORN-PLANTING ATTACHMENT FOR PLOWS.—John F. Byland, Walton, Ky.

Claim.—1. The gravitating or "floating" corn-planter, constructed as described, and hinged to a common plow in the manner described, so as to allow the former to rise and fall with any inequalities in the ground.

2. The combination and arrangement of the sheath A of a common plow, hinge-bolt B, beam C of a corn-planter, ground-wheel D, covering-shares E, cam F, slide G, spring H, cut-off I, gauge-plate J, screw K, staple L, and hook M, substantially as shown and set forth.

100,975, antedated March 11, 1870.—FORGE. George Campbell, North Buffalo, N. Y.

Claim.—1. The combination of the frame A having the slots C', the axles B and wheels thereon, and the dogs E, when all arranged substantially as specified.

2. The arrangement with the passages O from two fans, of the receiver H and valves N, substantially as specified.

3. The combination with the perforated fire-box and the tweers I, of the sliding valves K, substantially as specified.

4. The combination with the tweers I, of the valves L, when shaped substantially as specified.

100,976.—DEAD-EYES FOR WIRE RIGGING. Dexter H. Chamberlain, West Roxbury, Mass.

Claim.—1. A dead-eye constructed in section or parts, the one for the reception of the cable, and the other for fastening the cable to said receiving-part by a clamping action thereon, in a plane outside or beyond, and in a direction across or transverse to the entering plane and direction of the cable in the dead-eye, substantially as described, and for the purpose specified.

2. A dead-eye, provided in combination with the above, with a groove or grooves, either continuous or broken, substantially as and for the purposes described.

100,977.—FRICTIONAL GEARING.—Dexter H. Chamberlain, West Roxbury, Mass.

Claim.—1. The combination of wheels or surfaces arranged for frictional action, when in such combination a frictional wheel or surface is arranged for action with regard to the driving and driven wheels or surfaces, substantially as described, for the purpose specified.

2. In combination with the above, the said frictional surfaces, when made of India rubber or other elastic material, substantially as described, for the purpose specified.

100,978.—WRENCH.—Luke Chapman, Collinsville, Conn.

Claim.—The movable wrench-jaw *c*, constructed substantially as described.

Also, the combination of the movable wrench-jaw *c*, constructed as described, with a wrench-bar, having the bar proper *a*, step *b*, and head *c* all in one piece.

100,979.—HOT-AIR FURNACE.—Thomas W Chatfield, Utica, N. Y.

Claim.—1. The construction of the upper and lower parts of the radiators complete in two parts to match together, forming connecting-tubes without any additional connecting-pipe, as described.

2. The construction of the upper portion *f* of the radiator *e f* with two opposite outlets, *o* and *p*, into one common conductor, substantially as described.

3. The construction of the complex conductor *r*, to receive the issues from opposite sides of the radiator, and also from the central radiator, as described, with the funnel *u* for connection with the smoke-pipe, all in one piece, as described.

4. The construction of the conductor *r*, with its appendages and connections with the upper half of the radiator, so as to be adjustable in the manner described, and capable of presenting the outlet toward the chimney or other point of exit from any desired position of the furnace, as described.

100,980.—TOILET-MIRROR.—George H. Chinnock, New York, N. Y.

Claim.—In an adjustable toilet-mirror, the combination of the arm D, either fixed or having a swivel motion, and springs C, with the adjustable extension standard B and set-screw *a* of stand A, substantially as described.

100,981.—GAUGE-COCK.—John B. Christoffel, Williamsburg, N. Y.

Claim.—The combination of the barrel A, perforated and chambered conical plug B, screw-stem C, and piston D *d'* with each other, substantially as herein shown and described, and for the purpose set forth.

100,982.—BASE-BURNING STOVE, FOR SHAVINGS AND OTHER LIGHT FUEL.—Orlando Clarke, Rockford, Ill.

Claim.—1. The sections A and B, magazine C, and flues D, arranged, combined, and operating substantially as and for the purposes herein shown and described.

2. The arrangement of the partition I, by which the flow of the products of combustion is directed, substantially as shown and described.

3. The combination of the section or base B, (containing the partition I,) with the pipes or flues D, and the flue L in the section A, arranged substantially as described.

4. The vertical radiating flues D, (more or less in number) in combination with the magazine of a base-burning stove arranged to operate without a grate, substantially as described.

100,983.—STEAM-GENERATOR.—Orlando Clarke, Rockford, Ill.

Claim.—1. The steam and water-sections, constructed with the central branching-flue, water-spaces, and intercommunicating orifices, substantially as shown.

2. The water-sections, constructed with the flues *m m*, the intercommunicating orifices, and the central magazine-space I.

3. The combination of the sections above named with a fire-chamber, supplied with fuel from a base-burning magazine, substantially as shown.

100,984.—DIRT-GAUGE FOR PLOWS.—Joseph Cluckner, Arcadia, Ind.

Claim.—The gauge D F, guard-loop or keeper E, and adjusting-ring G, in combination with each other and with the plow-beam or frame, said parts being constructed and operating substantially as herein shown and described, and for the purpose set forth.

100,985.—CUFF-SUPPORTER.—Thomas Cogswell, Boston, Mass.

Claim.—The arrangement upon frame B, slotted as described, of clip A, formed as described, when further arranged with adjustable elastic band C, all substantially as described, and for the purpose stated.

100,986.—LOCKING-DEVICE FOR TRAPS.—Jasper E. Corning, Rye, N. Y.

Claim.—The combination with the rods C, attached to the doors, of the fixed rods E and the rings D, arranged for operation substantially as specified.

100,987.—MOP-HEAD.—William S. Crinklaw, Lanark, Ill.

Claim.—A mop-head composed of the frame A and the lever-jaw D, constructed and arranged to operate substantially as and for the purposes herein shown and described.

100,988.—FASTENING FOR STUDS OR BUTTONS.—Edward Morton Deey, New York, N. Y.

Claim.—A shirt-stud or button provided with a shank, B, to which is hinged a bar, D, within whose socket a bar, F, slides, and is extended at right angles to the shank or parallel with the button-head, it being held to duty by a spring, G, all in combination, substantially as and for the purposes hereinbefore set forth.

100,989.—FLUTING-MACHINE.—Edward Mortimer Deey, New York, N. Y.

Claim.—The perforated gas-pipes I I, hollow corrugated fluting-rollers F F', diaphragms M M, presser P, gears T U, pulleys W Y, fly-wheel starter *a*, and treadle *e*, combined, arranged, and operating substantially as and for the purposes described and set forth.

100,990.—COMBINED CORN AND COTTON-SEED PLANTER AND GUANO-DISTRIBUTER.—Samuel L. Donnell, Humboldt, Tenn.

Claim.—1. The combination with a hopper of a furrow-opener B, bevel-edged wheel C, and rake Q R S, all arranged and operated as set forth to open the furrows, press apart and form a well-defined bed, drop the seed and cover the same, in the manner described.

2. The combination with hopper I having slotted bottom H, of two spiked stirrers K K, spike-wheel G, and spout J, all constructed, arranged, and operated as set forth.

3. The rake Q R S, and roller T, in combination with each other and with the frame A, toothed wheel G, toothed rollers K, and toothed wheel C, substantially as herein shown and described and for the purpose set forth.

100,991.—WASHING-MACHINE.—James T. Dorton and Stephen G. Eubank, Wellington, Mo.

Claim.—The combination of the movable arms B', rock-shaft I, vertical arm H, connecting-rod G, and hand-lever F, all constructed and arranged substantially as and for the purpose herein set forth.

100,992.—BASE-BURNING PARLOR COOKING-STOVE.—William Doyle, Albany, N. Y.

Claim.—1. The mode of constructing flue V between the back plate *p* of reservoir G and the back plate or outer casing of a stove, and having its top and bottom closed and its sides open, substantially as herein shown and described.

2. In a reservoir stove constructed with an oven, P, below the ash-pit, the arrangement and combination, with said oven P, of flues H H K K and extension flue C, substantially as herein shown and described.

3. In a base-burning stove constructed in three sections, Q, R, and S, the combination and arrangement of its top plate M, constructed with a feed-aperture, Y^2, for reservoir G, and one or more boiler-holes O, substantially as herein shown, and for the purpose set forth.

100,993.—BEDSTEAD-FASTENING.—C. H. Fessenden, Candor, N. Y.

Claim.—In combination with the bed-posts and rails, the semicircular brace A and cleat D, when constructed to operate as described.

100,994.—LEDGER-INDEX.—Charles A. Fitch, San Francisco, and William O. St. John, Oakland, Cal.

Claim.—1. An index-book having the sheets B pivoted as shown, and provided with the alphabetical tags, substantially as described.

2. The arrangement of the pivot *b* at the lower corner of the book, whereby the sheet raised stands upon and is kept in position by the surface of the desk or table, and the whole length of the sheet presented to view, substantially as described.

100,995.—SPOOL-CASE.—William F. Foster, Chicago, Ill.

Claim.—A thread spool-case, provided with a series of sliding drawers constructed with low fronts, and with stops to hold the sample spools at the front of their respective divisions, for the purposes specified.

100,996.—RAILWAY RAIL-JOINT.—John Freeland and Daniel Ward, New York, N. Y.

Claim.—1. A flat base-plate, A, slotted at C, cut in the line B, and having the fish-plate D formed therefrom by bending and shaping, in the manner described.

2. The combination of the base A and fish-plate D, formed in one piece, with the fish-plate H having curved projection I thereon, and fitting through the slot C, as set forth.

100,997.—REMOVING COLORS FROM LEATHER.—Edward S. Frye, Salem, Mass.

Claim.—The within-described process of "clearing" or decolorising leather, by subjecting it first to an alkaline and afterward to an acid solution, substantially as set forth.

100,998.—GRAIN-DRILL.—Jesse P. Fulghum, Dublin, Ind., assignor to himself and Davis Lawrence & Co.

Claim.—1. In the described combination with a customary or any suitable lifting-bar for unearthing the drill-teeth, the arrangement of shipper-rod U, and vibrating plate P, which carries one of the intermediate wheels of the dropper-gearing, for the purpose set forth.

2. In the described combination with the elements of the preceding clause, the nut T and bolt S, adjustable in the slot *p* of the plate P.

3. The described construction of the separable feed-cup D, with its concave floor H and passage I, substantially as represented and described.

4. In the described combination with the grooved neck K K' of the passage I, the reversible and detachable spout J, provided with the lugs L L'.

5. The feed-wheel E *e e'*, formed and adapted to operate as set forth.

100,999.—RAILWAY CAR-COUPLING.—Adolph Geiss, Buffalo, N. Y.

Claim.—The hinged plates C C, in combination with the springs or plates B B, the link D, the bolt E, angle-plate G, spring H, and bracket F, all constructed and arranged as described, and to operate substantially as set forth.

101,000.—BASE-BURNING STOVE.—Henry G. Giles, Troy, N. Y.

Claim.—1. The pipes or flues G, in combination with the ash-pit or base A, magazine F, and the chamber K, said chamber K covering top of magazine F, and connecting with exit-pipe H'.

2. In a stove of the general construction herein described, the chamber C, constructed as described, in combination with the hollow grate-bars B and the pipes D, for the purposes herein set forth.

3. The combination and arrangement of the base A, pipes G, top K, exit-pipe H', magazine F, fire-pot E with holes *m*, the chamber C, grate-bars B, and pipes D, the whole constructed and operating in the manner and for the purpose as specified.

101,001.—BASE-BURNING STOVE.—Henry G. Giles, Troy, N. Y.

Claim.—1. In combination with the fire-pot L, the magazine S and flue-pipe I, the continuous flue M and N, as and for the purposes herein set forth.

2. In the same combination, the flue-strip H, as herein set forth.

3. In combination with fire-pot L and magazine S, the chamber Q, as herein set forth.

4. In combination with the chamber Q and the pipes *f*, or their equivalent, the chamber R, as and for the purposes herein set forth.

5. The flue T, constructed substantially as described, and divided by plate A, as shown and described and for the purpose specified.

6. The flue T, divided by the plate A, in combination with the pipe *i*, or its equivalent, substantially in the manner and for the purpose herein set forth.

7. The flue-strip A or equivalent, in combination with the upper and lower portions of the flue or flues T.

8. The form and construction of the ash-pit plate E, as and for the purposes herein set forth.

101,002.—STOP-VALVE.—L. D. Gilman, Lansingburg, N. Y.

Claim.—1. Circularly and laterally-movable segments G G, applied within a circular valve-case, so as to operate substantially as described.

2. The screw-stem G, constructed with a wedge or expander, *g*, on its lower end, in combination with expansible segments G, and a circular case, A, substantially as described.

3. The expansible segments G G, having beveled and recessed bosses *h h* formed on their interior sides, and adapted for receiving a wedge, *g*, on a screw-stem, C, substantially as and for the purposes described.

101,003.—RESTORING WASTE ALKALI USED IN OIL-REFINERIES.—William Goodaire and George Stead, Cleveland, Ohio, assignors to Ovander J. Benham, same place.

Claim.—1. The process of treating spent alkali by first reducing the waste mentioned to a pasty state or alkaline paste by heat and evaporation, then subjecting the same to the action of heat, in a suitable oven or furnace, for the purpose of consuming the oleaginous portions of said alkaline paste and converting it into black ash, as set forth.

2. The employment of heat, in a suitable oven or furnace, for the purpose of converting the alkaline paste into black ash by consuming and separating the oleaginous portions of the alkaline paste from the alkaline elements, as set forth.

3. Treating the filtrated liquid, when in a hot boiling state, with the hydrated lime, substantially in the manner specified, for the purpose of separating the sulphate of soda from the solution of black

ash by rendering the other forms of soda present less susceptible of crystallization, as set forth.

101,004.—Propelling Canal-Boats.—William F. Goodwin, Metuchen, N. J.

Claim.—The combination of sections A A' B, coupling-rods D D, extending lengthwise through the sections, and the lever C', or its equivalent, for tightening the coupling or releasing the same, as set forth.

101,005.—Washing-Machine.—William F. Goodwin, Metuchen, N. J.

Claim.—1. The rotating tub, or its equivalent, in combination with the yielding or elastic pounding-rollers, operating substantially as described.

2. The combination of the rotating tub H, with pounders E, so constructed as to rotate in the forked plungers D, substantially as set forth.

3. In a washing-machine, the cogged turn-table G, and connecting mechanism for rotating it, in combination with the removable tub H.

101,006.—Loom for Weaving Irregular Fabrics.—Alphonse Goullioud, Barcelona, Spain.

Claim.—1. The combination of a series of keys, A B, constructed, arranged, and operated as and for the purpose specified.

2. The construction and arrangement in the shuttle-body *a'* of the roll *d'*, operated as and for the purpose specified.

3. The combination of the vibrating lever 1-2, cord 4, beam 6-7, cord 8, crooked and weighted lever 10-11, and cord 13, all arranged as described, so that the Jacquard may raise and lower the weights at the times and in the manner specified.

4. The combination of carrying-keys and sectional let-off mechanism, arranged and operated respectively as and for the purpose set forth.

101,007.—Sash-Balance.—Mellvin R. Green, Warwick, N. Y., assignor to himself, Benjamin T. Clemence, and Grinnell Burt, same place.

Claim.—The cylindrical casing cast in a single piece, and provided with one or more rollers and a screw-thread for inserting the case in the window-frame.

101,008.—Bed-Plate for Rag or Paper-Engines.—Anthony Hankey, Leicester, Mass., assignor to himself and George A. Corser, same place.

Claim.—1. The combination of the series of bent plates *a* with the series of bent plates *b*, arranged in relation to each other as shown and described, and for the purposes stated.

2. The combination, with the series of plates *a* and *b*, of the central plate B, substantially as and for the purposes set forth.

3. A bed-plate for rag or paper-engines, constructed substantially as shown and described.

101,009.—Extracting Copper from its Ores.—Nathaniel Haskell, San Francisco, Cal., assignor to himself and Joseph F. Steen, same place.

Claim.—1. Extracting metals from crude ores without roasting, by passing water at intervals through the ore-pile, substantially as above described.

2. Introducing the poles of a galvanic battery into the solution resulting from the passage of water through the ore-pile, for the purpose of electroplating and manufacturing, substantially as herein described.

101,010.—Horse-Hoe.—Hermann W. Hasslock, Nashville, Tenn.

Claim.—The combination of the cross-bar E, standards F, hoes or knives G, nuts H I, braces J, wheel D, and adjustable standard C, with each other and with the plow-beam A and handles B substantially as herein shown and described, and for the purpose set forth.

101,011.—Apparatus for Producing Sulphurous Acid.—Moritz Hatschek, Pesth, Hungary.

Claim.—1. Producing a solution of sulphurous acid by injecting upon the ascending fumes of sulphur a descending stream of watery spray, to combine with and condense the same in the manner described.

2. The arrangement of the retarding-box D, combining-column C, water-spreader K, and inlet-pipe *j*, as and for the purpose specified.

3. The method of making dilute sulphurous acid by passing a current of air across the pan *f*, carrying the product thus formed through the detaining-box D, then up through a column, C, and against the descending water spray, in the manner set forth.

101,012. — Process and Apparatus for Treating Wood.—Ira Hayford, Boston, Mass.

Claim.—1. The process herein described, for treating wood for various useful or ornamental purposes.

2. An apparatus for treating wood by impregnating its pores and cellular structure with various agents, so constructed or provided and operating as to be enabled to vary and determine the amount of impregnating materials injected into the wood, for the purpose hereinbefore stated.

101,013, antedated March 1, 1870.—Bolster and Axle-Bed Plate for Vehicles.—John Henry, Suisun, Cal.

Claim.—In combination with the plates A and B, provided with the flanges D and D', and partially connected by the standard E, the slot F, in the flange D', together with the bolts *d d* passing through it and through the flange D, whereby the king-bolt commonly employed is dispensed with, substantially as described.

101,014, antedated March 1, 1870.—Wagon-Standard.—John Henry, Suisun, Cal.

Claim.—1. A wagon-standard constructed of sheet or plate metal, substantially as and for the purpose herein described.

2. The cap or bent plate D with the metallic standard B and metal braces C, said metal braces being provided with the lugs H and plates G, the whole constructed in one piece, and secured and bolted to the bolster, substantially as above specified.

101,015, antedated March 5, 1870.—Metallic Beam.—Laurence Holms, Paterson, N. J.

Claim.—A buttressed wrought-iron beam formed by corrugating or deflecting the web between the flanches in a vertical direction, thus constituting perpendicular supports, and at the same time strengthening the beam against lateral deflection.

101,016, antedated March 17, 1870.—Method of Producing Selvages on Machine-Knit Stockings, &c.—Henry A. House, Bridgeport, Conn., assignor to himself and Frank Armstrong, Hamburg, Germany.

Claim.—The mode, substantially as described, of forming a selvage on knit fabrics by machinery.

101,017.—Heating and other Furnace.—Thomas Hydes and Joseph Bennet, Sheffield, England.

Claim.—1. The application of the within-described system of hollow guides, ducts, or channels to boilers and other surfaces, to direct hot gases or fluids to the surface of their containers, such as flues, tubes, or other channels, for the purpose of more fully developing and absorbing the caloric from the gases or fluids.

2. In applying on each or only on one side of a partition, situated between hot and cold, guides or channels, through which air, fluids, or gases are guided in parallel lines, or nearly so, or in cross-lines, and in constantly circulating streams which pass nearly instantaneously within the most effective distance over and entirely cover the whole surface of the said partition intended to be acted upon, for the purpose of transferring their heat or caloric from one fluid to any other fluid.

101,018.—Car-Coupling.—William Miller Ingstrum, Hornellsville, N. Y.

Claim.—The combination of the crank-shaft D, vertical rod E and latch *a*, as constructed and arranged to operate either self-coupling or not, as herein set forth.

101,019. — Apparatus for Cooling and Saving Charcoal.—Gustavus A. Jasper, Charlestown, Mass.

Claim.—1. Cooling the current of air which is to be drawn through the cylinder or cooling-chamber, by first drawing it through an ice-chest, substantially as described, for the purpose specified.

2. Cooling the revolving cylinder by water, substantially as described, for the purpose specified

3. Turning the stream of water from the pipe P into the flue to carry off dust, substantially as described.

4. Directing the jet of steam against the current of air in the flue, substantially as described, for the purpose specified.

5. The combination of the water-pipe P and the steam-pipe Q with the flue E, substantially as described, for the purpose specified.

6. Supporting both journals of the fan outside the flue, substantially as described, for the purpose specified.

101,020.—Manufacture of Revenue and other Stamps.—George T. Jones, Cincinnati, Ohio.

Claim.—1. A stamp for internal revenue, postal, or other purposes, printed with two or more inks of different kinds, one of which is sensitive to or soluble under alkaline agents, and another of which is sensitive to or soluble under the action of acids, substantially as and for the purposes set forth.

2. The printing of stamps for internal revenue, postal, or other purposes, with two or more inks of different colors, and one or more of them sensitive to or soluble in acids or alkalies, for the object stated.

3. The combination of one or more fugitive, sensitive, or readily soluble inks, with a more permanent or insoluble ink, substantially as set forth, in the printing of internal revenue, postage, or other stamps.

4. The combination of any suitable ink or coloring-matter employed in printing internal revenue, postage, or other stamps, with a surface for printing upon delicately sensitive to the action of chemical agents.

5. The stamp, made substantially as hereinbefore described, for internal revenue, postal, or other purposes.

101,021.—Machine for Cutting Basket Stuff. — Charles Jordan, Wrentham, Mass.

Claim.—1. The sliding cam E *e* and projection F, in combination with the carriage B and shoe C, substantially as described.

2. In combination with the carriage B, the pivoted shoe C and blades D *d*, substantially as described.

101,022. — Toilet-Mirror. — W. Haskell King, Newark, N. J.

Claim.—The combination of concave or disk springs *a*, pivot and set-screws *d b*, with either a fixed or movable arm, C, and cam or projections *c*, substantially as and for the purpose set forth.

101,023.—Grater. — Warren Kinyon and John Maxson, Scott, N. Y.

Claim.—An improved vegetable-grater formed by the combination of the bed-plate A, grater-cylinder B, shaft C, small gear-wheel D, crank gear-wheel E, removable hopper F, and adjustable rest H, with each other, said parts being constructed and arranged substantially as herein shown and described, and for the purpose set forth.

101,024.—Fruit-Can.—Isaac Kling, Seymour, Ind.

Claim.—A fruit-can having a collar, B, extending at right angles from its mouth, and provided with groove *a*, as and for the purpose described.

101,025.—Sign.—Peter A. La France and J. D. Densmore, Elmira, N. Y.

Claim.—A sign composed of a series of vertical threads or cords, *d d*, *b b*, and horizontal bars or slats *a a* and lettering A A, all constructed as set forth.

101,026.—Woven Trimming. — Catholina Lambert, Paterson, N. J., assignor to Dexter, Lambert & Co., same place.

Claim.—The arrangement of cords A and B in the warp, and combined with the weft at intervals as described, and so that the fabric, when moved on such cords, will be formed into box plaits.

101,027.—Medicinal Beverage. — Luigi F. Lastreto, San Francisco, Cal.

Claim.—A beverage composed of the ingredients herein mentioned, and compounded in the proportions described.

101,028.—Cotton-Plant Protector.—Auguste Le Blanc, Louisiana, La.

Claim.—A cotton-plant protector, consisting of the roof D and posts for supporting the same, the fluid-reservoir E and the burners which it supplies, the same being combined and arranged and mounted upon a carriage, substantially as shown and set forth.

101,029. — Spring-Bed Bottom. — George W. Loomis, Hartford, Conn.

Claim.—The combination and arrangement described of the canvas *a*, bars *b b'*, springs *d*, movable bar *e* and cord *i*, when constructed as described, for the purpose set forth.

101,030. — Dumping-Wagon. — Virgil H. Lyon, Plainfield, assignor to himself and Jesse L. Snipes, Indianapolis, Ind.

Claim.—Constructing and hanging the bottoms of wagons, cars, &c., composed of two leaves, C, furnished with the stops F, to the rods E, the space between, which is covered by the roof-shaped strip M, substantially as and for the purpose set forth, and in combination therewith the hooked levers G G', connected by the bar H, all arranged and operating substantially as set forth.

101,031. — Harvester. — John B. McCormick, Dayton, Ohio.

Claim.—1. The board O, in combination with the rake-head I and reel E, when arranged to operate as and for the purpose specified.

2. The rake-head I, board O, rope or chain P, catch Q, arm J, connecting-rod K, lever L, and cam N, in combination with the reel E and platform D, when arranged to operate as specified.

3. The combination of the cam R, pitman S, lever T, segmental gear-wheel U, gear-wheel V, shaft W, drum X, ropes or chains Y, roller Z, sliding cross-bar A', and board or rack C', with each other and with the raised platform B and reel E, substantially as herein shown and described, and for the purpose set forth.

101,032.—Machine for Pressing and Graining Powder.—Paul A. Oliver, New York, N. Y.

Claim.—1. The use of cylinders or rollers for pressing gun or blasting-powder, substantially as described.

2. The combination of the rollers or cylinders B C and D E in a machine, substantially as and for the purposes herein shown and described.

101,033.—Machine for Forming Molds.—Samuel Joseph Peet and Daniel Sawyer, Boston, Mass., assignors to Samuel Joseph Peet.

Claim.—1. The combination of the semi-flask or box D and the hopper E with the pattern *c* and its plate F, the latter being provided with the mechanism described for elevating and depressing the same and the model, as and for the purpose set forth.

2. In combination with the mechanism for imparting to the model or its plate F, vertical movements, as described, mechanism or means substantially as specified, for giving to it or them horizontal movements, as and for the purpose set forth.

3. The above-described mode of attaching the pattern or model-plate with the follower or part G, whereby the former may have both longitudinal and lateral movements, as and for the purpose set forth.

4. The above-described molding-machine, having its several parts constructed, arranged, and applied together, and so as to operate substantially as above set forth.

101,034.—Saw-Mill.—A. Perin, Paris, France.

Claim.—1. The arrangement of the standard C, carriage G, screw-shaft E, spur-gearing *c d*, shaft *f*, bevel-gears *a b*, and crank-shaft *e*, when constructed and operating substantially as described.

2. The automatic feeding-apparatus by which the carriage carrying the lumber is moved, consisting of the combination of the shaft K, bevel-gear *g*, bevel-gear *v*, shaft *y*, spur-gearing *r s t*, pinion *u*, and rack attached to the bottom of the carriage, when constructed and operating substantially as described.

3. The arrangement of the shaft *l* carrying the pulleys P P P P', the pulley *p* on the shaft *h*, the bevel-gearing *g*, and the lever operating the coupling by which the said bevel-gearing *g* and the pulley P' are thrown in and out of gear, when constructed and operating substantially as described.

4. The arrangement of the foundation A, pedestal B, shafts *h* and K, cross-beam O, track *f'*, standard C, levers 2 and 5, and slides 1 and 4, when constructed and operating substantially as shown and described.

5. The arrangement of the track *f*, rails R' and cross-bars Z with the screw-shafts B, operating the runners upon which the beam W is secured, and traveling hooks *s*, when constructed and operating substantially as described.

101,035.—Apparatus for Purifying Water for the Manufacture of Ice.—Thomas F. Peterson, New Orleans, La.

Claim.—The break in the process of distillation at or near the boiling temperature, say from 180° to 210°, and blowing the product of distillation into a small receiving-tank, allowing all the air and other incondensable gases to escape up a vapor-pipe with a small margin of steam, and thence through the condenser to the discharge-pipe, where it is ready for use for the manufacturing of clear and transparent ice.

101,036.—Water-Wheel.—Thomas H. Powers, Milwaukee, Wis., assignor to himself, George E. Burnham, and Daniel G. Rogers, same place.

Claim.—1. A water-wheel, consisting of central piece L, shaft D, buckets C, and shell B, substantially as described.

2. Gate-case F, gate G, arm H, pinion I, and shaft K, substantially as described.

101,037.—Ticket-Holder.—Onsville Evans Pray, Portsmouth, N. H.

Claim.—The above-described arrangement of the jaws *b c*, the socket or socket-piece *e*, the slider *f*, the head *d* thereof, and the spring *g*, constituting my improved ticket-holder.

101,038.—Gang-Plow.—Jacob Price, San Leandro, Cal.

Claim.—1. The levers F, constructed as described, and having the foot-board G attached to their forward ends, in combination with the axle D^1 D^2, and plow-beams B, substantially as herein shown and described, and for the purpose set forth.

2. The combination of the rack-bar J, brace-bar K, and spring lever-catch L M, with the foot-board G, levers F, beams B, and tongue C, substantially as herein shown and described, and for the purposes set forth.

101,039.—Bee-Hive.—John M. Price, Buffalo Grove, Iowa.

Claim.—1. The combination of the hive composed of the casket and internal sections, as described, and the V-shaped base adapted for turning the hive and supporting it in the angular position, all substantially as specified.

2. The internal sections composed of the wide bars A tapered at the top, the narrow bars B, and the projecting comb-bars C, all substantially as specified.

101,040.—Machine for Picking Cranberries.—Joshua P. Prickett, Medford, N. J., assignor to himself and Joseph C. Hinchman, same place.

Claim.—1. The pickers L L', operated substantially as and for the purposes set forth.

2. In combination with a machine for picking cranberries, the upright frame H, with grooved sides for governing the vertical motion of the pickers.

3. The channels *m m*, with grated bottoms for screening the berries, in combination with the flexible wing *l* for moving the berries, substantially as shown and described.

101,041.—Knife for Splitting Wood.—Saxon J. Raymond, Brooklyn, N. Y.

Claim.—A knife for splitting wood, consisting of a straight blade, A, and diagonal blades *a*, when constructed and operated as specified.

101,042.—Stomach Bitters.—David Rinkle, Indianapolis, Ind., assignor to himself and Charles C. Hunt.

Claim.—The manufacture or preparation of a compound, which I denominate stomach bitters, of the ingredients, in the proportions, and for the purpose set forth.

101,043.—Tail-Holder for Horses.—Francis A. Roberts, North Vassalborough, Me.

Claim.—The tail-holder herein described, consisting of a curved plate, A, provided with the prongs *a* and straps *b c*, substantially as shown and described.

101,044.—Steam Protection for Safes, Vaults, &c.—John A. Robertson, Boston, Mass.

Claim.—1. The combination of jacket B, water-outlet E, steam-supply pipe C, pipe D, and hinge-joint, as set forth, whereby, when the steam-chamber is entered, the decrease of steam pressure will cause the whistle to blow and an alarm to be given.

2. The arrangement of the hinge-joints of the doors for admitting the steam to the cavities thereof, and for allowing the escape of the same when the door is opened or partially opened, substantially as specified.

101,045.—Horse-Power.—Francis W. Robinson, Richmond, Ind.

Claim.—Combining the loose revolving shaft K, with the adjustable plate D when provided with the projection F, for the purposes above described.

101,046.—Casting Metal.—Robert Ross, Middlebury, assignor to himself, Wyatt W. Pierce, and George Ross, Vergennes, Vt.

Claim.—The arrangement in a mold of a chamber, *b*, under the sprue-hole, and having an upwardly-inclined channel, *c*, through which the molten metal passes into the shaping-mold *d*, all as shown and described.

101,047.—Shaft-Coupling.—Theodore Rowell, Beaver Dam, Wis.

Claim.—1. The oscillating sleeve D, provided with sockets, in combination with the double ball braces and lugs B, provided with sockets, as and for the purpose set forth.

2. The combination of the cap H A, sleeve D, double braces E F F', sockets C, lugs B, provided with sockets, and shafts G K, as described.

3. The combination of rubber cap I, cap H A, sleeve D, double braces E F F', socket C, lugs B, provided with sockets, and shafts G K, as described and shown.

101,048, patented in England, July 22, 1859.—Treating Coal Products to Obtain Benzole, &c.—John Rowley, No. 77 Wells Street, Camberwell, assignor to "The India Dye Company" (limited,) London, England.

Claim.—The manufacture of benzole or other homologous products from creosote or naphthaline, in the manner substantially set forth herein.

101,049.—Skate.—Jacob Friedrich Schneider, Brooklyn, N. Y.

Claim.—A skate-runner consisting of three pieces, B and C, the rear pieces being pivoted at their front ends, while their rear ends are adjustable any suitable distance apart, substantially as herein shown and described.

101,050.—Water-Wheel.—W. L. Selleck, Milwaukee, Wis.

Claim.—1. Wheel I, with S-buckets, in combination with stationary center O and L, receiving and discharging the water in the line of motion, substantially as described.

2. Gates N, arms C and Q, pin E, ring P, arms R and S, and shaft D, all in combination substantially as described.

101,051.—Bolt for Safes.—William Sharts, Athens, N. Y.

Claim.—1. The combination of the vertical connecting-bar C with its lever-bars *f f*, spindle *h*, and system of cords or wires and pulleys, as set forth.

2. In combination with the elements of the above claim, the check-bolt *d*, when employed as and for the purposes herein described.

3. Extending the operating-spindle *h* through one of the walled or inclosed sides, instead of through the door or exposed side of the safe, substantially as and for the purposes set forth.

101,052.—Adjustable Garment-Pattern.—Samuel Shawcross, Freeport, Ill.

Claim.—1. The adjustable coat-patterns, so constructed as to be capable of adjustment to all forms and sizes, regular or irregular, and adapted to determine not only the fit but the hang and balance of the garment, as herein set forth and shown.

2. The series of hooks and loops *f f* and A A, in combination with the several patterns, substantially as described, for the purpose specified.

3. The adjustable slides L L, in combination with the main device, substantially as described and set forth.

101,053.—Hand-Screw and Clip for Splicing Broken Carriage-Tires.—Alfred B. Sheaffer, Ephrata, Pa., assignor to himself and and John Walter, same place.

Claim.—The combination of the clip A, pad B screw *c*, hooked nut D, arranged substantially in the manner and for the purpose specified.

101,054.—Milk-Rack and Cooler.—Lawson Shipman, Barker, N. Y.

Claim.—The combination and arrangement of the water-shelves B B, with the conducting-tubes G G, cams E E, and crank-key F, all being constructed substantially as herein described and for the purpose set forth.

101,055.—Latch for Gates.—Warren Shumard, Richmond, Ind.

Claim.—1. The vertical and reversible latch-bar B, bed-plate A, and spring C, when operated in combination, substantially as set forth and described.

2. In combination with the above the metal stop D, constructed and applied in the manner set forth.

101,056.—Plow.—D. T. Singleton, Eatonton, Ga.

Claim.—The detachable guide-bar H, constructed substantially as herein shown and described, and secured to the standard B by means of the shouldered end of the brace-bar D and the plow, either or both, as and for the purpose set forth.

101,057.—Dumping-Car.—Olney L. Smith, Providence, R. I.

Claim.—The combination of the rockers B and spring latches F, applied to the truck and body of a dumping-car, substantially as shown and described.

101,058.—Emery-Wheel Clamp.—Edward A. Stiwerkrop, Washington, D. C.

Claim.—The improved emery-wheel clamp herein described, consisting of a right and left-hand collar, each of which is provided with the inwardly-projecting ring A, and suitable arbor-eyes, substantially as shown and described.

101,059.—Water-Meter.—Thomas Sweeney, Boston, Mass.

Claim.—1. The piston H, having four spaces or depressions on its surface, two of which communicate with the induction-passage, and the other two with the eduction-passage, substantially as shown and described.

2. The arrangement of ports K K K K, as shown and described, so that the spaces in communication with the induction-passage shall be upon directly opposite sides of the piston H.

3. The arrangement of the ports K K K K, as shown and described, so that they shall communicate with and supply a space, R, between the heads of the inner piston.

4. The arrangement of the passages surrounding the shell or wall of the inner cylinder, and passing beneath the valves, for the purpose of forming an exhaust-passage, and to connect the chambers or spaces that communicate with the eduction-port D, as shown and described.

5. The special construction, shown and described, of the main piston H, the same being cast in skeleton form, and having projections and divisions on its inner surface, and adapted to receive the tube, provided with suitable openings, so that the two united shall constitute a cylinder for the inner piston, and having also upon its inner surface suitable ports or passages through which to supply both pistons, and to form eduction-ports for the same.

6. The convex slide-valve P, arranged between the heads of the inner piston, and operated by the same, for the purpose of controlling the action of the main piston.

7. The arrangement of the concave slide-valve J, in one of the compartments or depressions of the

main piston, communicating with the induction-passage, for the purpose of governing the action of the inner piston.

8. In combination with the concave valve J, a valve-rod, j, passing through the heads of the piston, for the purpose of giving motion to said valve while the piston is approaching the end of its stroke by coming in contact with the head of the outer cylinder or shell.

9. The rocking-shaft F, having a collar or piston-head, G, arranged within the chamber, so that the pressure of the water will keep it in contact with the face of such chamber, the rock serving, to impart motion to the indicator, as shown and described.

101,060, antedated March 16, 1870.—Combined Mower and Hedge-Trimmer.—J. Oscar Taber, Salem, Ohio.

Claim.—1. In a two-wheeled combined mowing-machine and hedge-trimmer, a hinged cutting apparatus, which is adapted to conform to the surface of the ground in mowing, and to be set at any desired angle from the ground without changing either the cutting apparatus or the mechanism for operating the same, in combination with devices substantially as set forth, or the mechanical equivalents thereof, for supporting said cutting apparatus at the desired angle.

2. The rest S, constructed and operating as set forth.

3. The hook R, in combination with the chain P, drag-plate H, main frame C, and the rest S, or its equivalent, whereby the machine is changed from a mower to a hedge-trimmer, as set forth.

4. The guide or carrier W, in combination with the drag-plate H.

5. The track-clearer, constructed and applied substantially as set forth.

101,061.—Sharpening Harvester-Knife.—A. P. Taylor, Darien, assignor to himself and George R. Clark, Buffalo, N. Y.

Claim.—The spring G *f* and handle H, arranged in connection with the bar D, support F, and step E, as herein described.

101,062, antedated March 7, 1870.—Clamp for Holding Brooms, Brushes, &c.—A. B. Thompson, Owego, N. Y., assignor to himself and Albert Cleveland, same place.

Claim.—A self-adjusting clamp, constructed of a plate, A, and jaws B B, which roll up and down inclines *d d'*, to open and close in the manner and for the purpose herein specified.

101,063.—Stair-Rod.—H. Uhry, New York, N. Y., assignor to the American Stair-Rod Company, same place.

Claim.—The combination of the solid stair-rod A, the muff B, slotted piece C, and screw-eye *e*, substantially in the manner and for the purpose set forth.

101,064.—Stair-Rod.—H. Uhry, New York, N. Y., assignor to William B. Gould, same place.

Claim.—The combination of the end-piece D, having the ridge O, and being pivoted from the bottom upon the screw E, with the stair-rod A, slotted longitudinally at each end, substantially in the manner and for the purpose set forth.

101,065.—Sheet-Metal Seaming-Machine.—John M. Veasey, Denver, Colorado Territory.

Claim.—1. The clamp h, provided with the stem *i* moving in a recess in the mold *d*, in combination with the spring *m*, detent *n*, and levers *p e*, substantially in the manner and for the purpose described.

2. The combination of the shaper *c* with the mold *d* and clamp h, as and for the purpose set forth.

3. The mold *d*, provided with the ribs *u u*, flange *v*, and seamer *s*, in combination with the shaper *c*, provided with the seamer *w* and flange *x*, constructed in the manner and for the object specified.

101,066.—Attachment for Lamp-Burners.—William Westlake, Chicago, Ill.

Claim.—As a new article of manufacture, the device for holding lamp-wicks against the collar, constructed and operating substantially as specified.

101,067. — Manufacture of Iron and Apparatus Therefor. — James Davenport Whelpley and Jacob Jones Storer, Boston, Mass.

Claim.—1. A furnace with hollow or continuously-curved interior lines, (without re-entering angles beyond the fire-bridge, except at the working-door,) in combination with our process for burning pulverized fuel, and the apparatus especially adapted by us therefor, as and for the purposes substantially as described.

2. The form of furnace described in the above specification and drawings, in combination with the method of using pulverized fuel, as described in our patents of March 31, 1868, claim four, and for the better economy thereof, substantially as and for the purposes described.

3. The use of the products of combustion or heated air drawn from the flue or air-chambers or stack beyond the furnace and returned with air through the fire, in combination with the process of using pulverized fuel, and the apparatus and furnace, substantially as and for the purposes described.

4. The ash-pit and combustion-chamber beyond the furnace, covered or not covered by a steam-boiler, in combination with the use of pulverized fuel in a furnace with hollow interior lines, substantially as and for the purposes described.

5. The use and application of pulverized fuel in a furnace of the kind above described as the prime agent in heating the furnace and in working the iron, &c., as and for the purpose substantially as described.

6. The comparatively small fire-box and contracted neck of the furnace as the best designs for a furnace in which lump or massive fuel is to be used simply for the ignition of the pulverized fuel, the principal part of the heating being done and the character of the flame being determined by the latter, as and for the purpose substantially as described.

7. Burning the fuel wholly or principally in the body of the furnace, not in the fire-place, suspended in air and gases over the work or the hearth, and in this way obtaining better results than are possible by the burning of gases alone in the body of the furnace, or by burning lump or massive fuel in the fire-box.

101,068.—Tinners' and Sheet-Iron Workers' Roll.—Aaron W. Whitney, Pardon A. Whitney, and Foster A. Whitney, Woodstock, Vt.

Claim.—As a new and improved article of manufacture, rolls for machines for working tin and sheet-iron, made of a single piece of cast-steel, cast for the purpose from a pattern, substantially as described.

101,069, antedated September 22, 1869.—Apparatus for Measuring Liquids.—Eli F. Wilder, Lowell, Mass.

Claim.—The filter-cups *m* and *c'* and gatherer *e* in combination with the pump *g*, when arranged substantially as and for the purposes herein described.

101,070.—Oil-Cabinet.—Moses H. Wiley, East Boston, Mass., assignor to himself, Thomas Miller, and John H. B. Lang, same place.

Claim.—The above-described portable oil cabinet consisting of the tank C, apartments E E', pump G J K, and pipes O F, constructed, arranged and combined together in manner and for the purpose set forth.

101,071.—Compound to be Applied to Roofing.—Thomas E. Wood, Wasecn, Minn.

Claim.—1. The improved roofing compound formed of the ingredients in about the proportions and in the manner substantially as herein described and for the purpose set forth.

2. The combination of the above-described roofing compound, with my elastic roofing compound described in Letters Patent No. 82,507, granted September 29, 1868, substantially as and for the purpose herein described and set forth.

101,072. — Planing-Machine. — George E. Woodbury, Cambridge, Mass.

Claim.—The yoke-frame E, arranged in relation to the cutter-shaft G and bed or table C, substantially as described, for the purpose specified.

101,073.—Lamp-Burner.—David Pitcairn Wright and Cephas Butler, Birmingham, England.

Claim.—The row or series of perforations *e e* formed in the bell-shaped base part G, between the upper and lower perforated plates *f* and *k*, in combination with said plates, and with the burner-dome E, above the upper plate *f*, substantially as and for the purpose herein set forth.

101,074.—Cap for Fruit-Jars. — Homer Wright, Pittsburg, Pa., assignor to himself, Henry H. and Benjamin F. Collins, same place.

Claim.—A metal cap having inclines A and indentations B formed upon its outer upper edge, substantially as described.

101,075.—Electroplating Apparatus.—Howell W. Wright, Taunton, Mass.

Claim.—1. A non-conducting revolving receiver for receiving the solution and articles to be plated, substantially as herein shown and described, and for the purpose set forth.

2. The combination of the stirrers E, plate or ingot H, and conducting-wires or poles F G, with the non-conducting revolving cylinder A, substantially as herein shown and described, and for the purpose set forth.

3. Electroplating by means of a revolving receiver, in which the metal, solution, and articles to be plated are placed, and which, by its revolution, continuously opens and closes the circuit, substantially as herein shown and described, and for the purpose set forth.

101,076.—Toy Rolling Cage.—Arthur M. Allen, New York, N. Y.

Claim.—1. A toy, consisting of a rolling cylinder, one end of which is larger than the other, as shown, and driven by a propeller action upon its interior surface, all as and for the purpose described.

2. The adjustable flange, capable of enlarging and diminishing the diameter of one side of the rolling cylinder.

3. The hooked-shaped slots L in the arms K, in combination with the toy-propeller and cylinder, substantially as and for the purpose described.

101,077.—Cotton-Cultivator. — William J. Andrews, Columbia, Tenn.

Claim.—1. The combination of screw-rod G with rocking box E and shaft D, all operating substantially as and for the purpose set forth.

2. The auxiliary frame M attached to main frame A, and arranged to operate substantially as and for the purpose described.

3. The auxiliary frame M, provided with scrapers N N and teeth O O, arranged to operate as and for the purpose specified.

4. The combination of shaft A, screw-rod G, boxes C E, wheel J with its adjustable hoes, frame A, and auxiliary frame M, all arranged substantially as set forth.

101,078.—Bung.—Joseph F. Applegate and Casper Feiock, New Albany, Ind.

Claim.—1. The hull or body D, constructed as described, and provided with catches *k k* and levers E E, substantially as and for the purposes herein set forth.

2. The combination of the cap or top B with screw-stem C, offset *a*, hull or body D, and levers E E, all constructed and arranged to operate substantially in the manner and for the purposes herein set forth.

101,079. — Vapor-Burner. — William Aurich, Chicago, Ill.

Claim.—A vapor-burner, A, having a crown, B, partition E, screw F, and radial jets or openings *b*, all constructed and arranged substantially as herein described.

101,080.—Spring for Railroad Cars.—James F. Babcock, Boston, Mass.

Claim.—The combination of cork, when chemically treated with glycerine, or its equivalent, with rubber, for the purpose specified.

101,081.—Machine for Scraping Leather.—James T. Barnstead, Peabody, Mass.

Claim.—1. In a machine for scraping leather, the combination of the knife I and brush H, in the manner and for the purpose substantially as set forth.

2. The brush K, for the purpose of cleaning the knife, arranged and operated in the manner described and shown.

101,082.—Heating-Furnace.—William D. Bartlett, Amesbury, Mass.

Claim.—The furnace as made with a tortuous ascending flue leading from the base-flue *d* to the smoke-outlet *k*, and with vertical cold and hot air-spaces *s* and *t* united by horizontal air-flues, all arranged and operating as described.

Also, the elevated fire-pot *b*, the down-draft flue *c*, base-flue *d*, movable partition *g*, and ash-pit *f*, combined and arranged as and for the purpose specified.

Also, the arrangement of the air-flues *a'*, as described, when made with contracted entrances for the cold air, and full openings for the escape of the hot air, as described.

Also, the arrangement of a damper or dampers *c'*, in the vertical cold-air space *s*, so as to cause the cold air to pass more or less through the upper or lower air-flues on its way to the hot-air space *t*, as may be desired.

101,083.—Adjustable Bearings for Water-Wheel Shafts.—William Bayley, Baltimore, Md.

Claim.—The combination of the water-wheel shaft A, the collar A', the sleeve B, and the counterbalanced lever C, in such manner as to sustain the weight of the wheel, compensate for the wear of the step, and afford convenient access for lubrication, all these parts being constructed to operate as set forth.

101,084.—Turbine Water-Wheel.—William Bayley and A. B. Crowell, Baltimore, Md.

Claim.—1. The combination of the movable ring G and its grooves *g*, with the pivoted gates K and their pins *k'*, all these parts being constructed to operate substantially as set forth.

2. The combination with a turbine wheel of buckets constructed as set forth, with an area increasing from the impinging point *s* of the wheel to the point of discharge.

101,085. —Vegetable-Roaster. — Charles G. Baylor, Quincy, Mass.

Claim. — The cylinders A and B, provided respectively with the apertures *s h t* and wire-gauze ends K K', when arranged with relation to each other substantially as shown and described, and for the purpose specified.

101,086.—Cream-Heater.—James C. Boddoe and John S. Coon, Branchport, N. Y.

Claim.—A cream-heater or cooler in which an enlarged bottom, B, is combined with a tubular body, A, in the manner and for the purpose specified.

101,087.—Washing-Machine.—Alva Belcher, Delhi, N. Y.

Claim.—The construction and arrangement of the elastic wedges F F and roller E, in combination with the guide-pins D D, rubbing-head B, and washboard A, substantially as and for the purposes hereinbefore set forth.

101,088.—Loom.—Erastus Brigham Bigelow, Boston, Mass.

Claim.—1. The within-described construction and arrangement of a series of leaves of heddles, and a corresponding series of horizontal heddle-levers by which they are actuated, said horizontal heddle-levers being placed below said leaves of heddles, and having centrally-pivoted latch-levers, by which they may be either elevated or depressed, jointed to their outer ends, as herein described.

2. In combination with the above, a continuously-rotating pattern-surface and balance-levers, which transmit the governing action of said pattern-surface to the latch-levers, substantially as described.

101,089.—Machine for Crushing Ramie and other Fibrous Stalks.—Erastus Brigham Bigelow, Boston, Mass.

Claim.—The feeding mechanism herein described for receiving and delivering in succession the stalks to the crushing-rollers sidewise, substantially as specified.

Also, in combination with the first pair of the series of pairs of rollers for crushing Ramie and other fibrous stalks, herein described, guide-stands for receiving and guiding the stalks to the bite of said rollers, substantially as specified.

Also, two or more pairs of rollers for crushing Ramie and other fibrous stalks, when the succeeding pairs of the series are placed nearer together, as specified, and are speeded up to compensate for the flattening of the stalks by the preceding pair, by means of the gearing of different diameters or speed, as specified.

Also, in combination with two or more pairs of crushing-rollers, arranged as herein described, guide-bars for clearing the stalks from the rollers and guiding them from one of the series to the next succeeding series, substantially as specified.

101,090.—Chair-Seat.—Osmore A. Bingham, Cavendish, Vt., assignor to George C. Winchester, Ashburnham, Mass.

Claim.—In combination with the groove, a strip or stripe extending around the corners of the seat-frame from rail to rail thereof, substantially as described.

101,091.—Churn.—G. C. Brown, Atlanta, Ga.

Claim.—1. The combination and arrangement of the shaft B, perforated plate D, vertical bars *d d*, horizontal bars E E, and fly G, all substantially as and for the purposes herein set forth.

2. The arrangement of the frames H K, wheels L J, crank M, and pinion I, all substantially as shown and described.

3. The combination and arrangement of the churn A, dasher B D *d* E, fly G, cover C, tube N, journal *e*, cap *f*, pinion I, wheels J L, and crank M, all constructed as described, to operate substantiallly in the manner and for the purpose herein set forth.

101,092.—Egg-Carrier.—Abner H. Bryant, Chicago, Ill.

Claim.—The circular and quadrangular cells herein described, constructed respectively of double stripe, molded and bent into form as described, and provided with the lugs *a*, as and for the purpose specified.

101,093.—Egg-Carrier.—Abner H. Bryant, Chicago, Ill.

Claim.—The cells for carrying eggs herein described, constructed in conical or pyramidal forms, substantially as specified.

101,094.—Medical Compound.—Edgar D. Burrill, Providence, R. I.

Claim.—The combination of allspice, cinnamon, rhubarb, and brandy, as and for the purpose specified.

101,095.—Drill-Guide.—G. F. Case, Windsor, Vt., assignor to Windsor Manufacturing Company, same place.

Claim.—1. A guide for a rotary rock-drill, operating in a hole already drilled to guide the drill while it bores another hole, forming with those already bored, a continuous channel, substantially as herein set forth.

2. In combination with the collar or guide, the pawl or "catch" for removing the core, when constructed substantially as specified.

101,096.—Medicine or Cough-Sirup.—George W. Chatfield, New Haven, Conn.

Claim.—The herein-described cough-sirup, consisting of the ingredients and in the proportions combined, substantially as set forth.

101,097.—Carriage-Axle.—William A. Clark, Woodbridge, Conn.

Claim.—The nut C, formed with a sand-band, *e*, and groove *f*, in combination with the box B and cap D, substantially as and for the purpose specified.

101,098.—Earth-Closet.—William Robert Colton Clark, New Orleans, La.

Claim.—The combination of the shaft A, the dumping-box E, the toothed wheel D, the lever B, and the spring C, when these several parts are constructed, relatively arranged with respect to each other, and operate substantially in the manner herein described, and for the purpose herein set forth.

101,099.—Saw-Swage.—William Clemson, Middletown, N. Y.

Claim.—1. The spring lip-guides *a' a'*, when attached to and forming a part of swage A, constructed and arranged to operate in the manner as described.

2. The saw-swage herein described, composed of the body A, spring *a* having elastic lips *a' a'*, and adjustable upset-dies *b b*, constructed to operate in the manner and for the purpose set forth.

101,100.—Street Pavement.—D. C. Colby, Washington, D. C.

Claim.—The two stripe C and D, when used in combination with the blocks A, and formed to operate substantially as described and set forth.

101,101.—Composition for the Manufacture of Tobacco-Pipes, Stems, and Cigar-Holders.—James R. Cole, Demopolis, Ala.

Claim.—1. The improved composition herein described, for making tobacco-pipes and cigar-holders, composed of paper pulp and saline substances, such as those above named.

2. The new manufacture of a tobacco-pipe, made of the materials and substances as described.

3. The new manufacture of pipe-stems and cigar-holders made of paper pulp, as described.

101,102.—End Gate for Grain-Wagon.—Charles H. Comstock, Chebanse, Ill.

Claim.—1. The end gate, consisting of two gates, D E, each made of two unequal parts, *d d'* and *e e'*, hinged together and made folding, the smaller parts *d' e'* of the said gates provided with levers or tails *f f* secured to the other parts by any suitable fastenings, the whole arranged and operating substantially as herein set forth and specified.

2. In combination with the above the staples H H *h*, secured together by a pin or bolt, substantially as set forth, and for the purpose specified.

101,103.—Washing-Machine.—Henry W. Connor, Richmond, Ind.

Claim.—The stationary perforated press-board C, perforated plunger B, rods *a a'*, links *d d'*, and lever D, when all the parts are constructed and arranged on the box A, and with reference to one another, as herein shown and described.

101,104.—Treadle.—William S. Coon, Rochester, N. Y.

Claim.—1. Arranging the operating mechanism in combination with the turn-table and treadle, in such a manner that the whole may be turned simultaneously to any desired angle by one movement, in the manner described and for the purpose specified.

2. The branched bearing D, combined with the turn-table B and spindle E in such a manner as to allow a vertical adjustment, as herein described.

3. The guide-scroll G, having a concentric portion, *g*, combined with the hanger I and band-wheel L, in the manner and for the purpose specified.

4. The elbow-hanger I, attached at one end to the turn-table and at the other to the central spindle, and supporting the band-wheel, in the manner and for the purpose described.

5. The arrangement of the bent spring K, screw *k* and clamping-nut *i*, combined with the hanger I and band-wheel L, as herein described.

6. The metallic rim or ring C and supporting-rollers *c c*, arranged in connection with the turn-table B, in the manner and for the purpose specified.

7. The combination of the rock-plate O and bent rod Q with the double joints N R, operating in the manner and for the purpose specified.

8. The combination with the treadle and the pitman of the double joints N R, which allows a free action of said parts at whatever angle the operating mechanism is turned, as herein described.

9. The combination of clasp-lip *m* of rock-plate O with the concentric edge *n* of the treadle, as described and for the purpose specified.

10. The combination of the swiveled ways V V and retaining-collars W W with the treadle, for accomplishing the proper adjustment of the same, as herein described.

11. The arrangement as a whole, consisting of the turn-table B, bearing D, spindle E, hanger I, scroll G, joints N R, rock-plate O, and bent rod Q, operating as described and for the purpose specified.

101,105, antedated March 15, 1870.—Stopping and Starting Mill-Burs.—William Crawford und Samuel Clarke, Attica, Ind., assignors to themselves and J. D. McDonald, Telford & Co.

Claim.—The combination and arrangement of the tapering and grooved collar P, shaft M, miter-wheels C D, clutch-lever S, operated through a slot in the screw-lever W, bar N, box L, and wheels H K, the various parts constructed and operated substantially as set forth.

101,106.—Knitting-Machine.—Anthony G. Davis and Charles W. Blakeslee, Watertown, and Alpheus N. Allen, Westville, assignors to "The Chapin Knitting-Machine Company," New Hartford, Conn.

Claim.—The combination with the traversing needle-moving cam of self-closing slides, operated during the traverse of the cam by a projection on a traveler, to divert from the rising groove of the cam a portion of the needles, substantially as shown and described.

101,107.—Machine for Wiring Window-Blind.—Biram C. Davis, Binghamton, N. Y.

Claim.—The combination and arrangement of the driver A, slide B, bent arm C, feeder-slide D, staple-bar E, gauge-rod F, spring G, form H and I, the whole being constructed and arranged substantially as shown, operating as described, for the purpose specified.

101,108.—Skate.—Charles T. Day, Newark, N. J.

Claim.—The skate-clamps E E, provided with the eccentrical nuts *m m*, and arranged to move to and from each other, in parallel directions, oblique to the runner of the skate, and operated by the oblique screw F, in the manner and for the purposes herein shown and described.

101,109.—Step-Spindle.—Eliphalet Dougherty, North Lewisburg, Ohio, assignor to himself and J. M. Flood, same place.

Claim.—1. The hollow spindle-foot D, provided with a steel ring shrunk around its lower end, substantially as and for the purposes herein set forth.

2. The driver G, ratchet *i*, and spring *m*, working inside of the hollow step D, substantially as and for the purposes herein set forth.

3. The combination of the hollow step D and rings *d* and *e*, substantially as and for the purposes herein set forth.

4. The plate and tube B, provided with rims *a* and *b* and ears or pivots *g g*, all substantially as and for the purposes herein set forth.

5. The combination of the plates and tubes A B, lever C, hollow step D, rings *d e*, shaft E, driver G, ratchet *i*, and spring *m*, all constructed as described, and arranged to operate substantially in the manner and for the purposes herein set forth.

101,110.—Drop-Wire Supporting-Bar or Plate of Warping-Machines.—Isaac C. Downes and Horace Douk, Lewiston, Me., assignors to themselves and Stephen J. Abbott, same place.

Claim.—The arrangement, in a warping-machine, of the bars *d d d*, the center of which is provided with recesses d^3, whereby the drop-wires may be introduced between the bars, or removed therefrom, without displacing the supporting-bars or plates, substantially as shown and described.

101,111.—Holder for Diamonds.—German D. Dunham, Chicago, Ill.

Claim.—The herein-described diamond-holder, consisting of the handle B, with socket A, and the reversible parts E D C, the latter piece having a circumferential shoulder, all constructed and used substantially as set forth.

101,112.—Steam Ditching-Machine.—A. J. Dye, New Orleans, La.

Claim.—The combination of any suitable frame with the tilting frame G, when the latter is sustained on a shaft, F, and is provided with shafts H, on which spur-wheels J are secured to carry the chain of scoops K, and these scoops are provided with the cutting-blades *m*, and connected together by links L, from which project the cutting-blades *b*, all the parts being constructed, arranged, and operating as herein described, for the purpose set forth.

101,113.—Lunch-Box.—John Erpelding, Chicago, Ill.

Claim.—A lunch-box consisting of the sides A and B, the former having the bottom D and top E hinged to it, and both connected by the hinged folding ends C, bolt F, arranged to slide on the edge of side B and lock into eyes on the edge of top E and handle G, all constructed and arranged as herein described.

101,114.—Wrench.—John Faessler, Bloomington, Ill.

Claim.—The wrench composed of the shank, nut, and jaw A, the movable jaw B, and spring H, in combination with the saddle D, substantially as described.

101,115.—CAR, TRACK, AND OPERATING-APPARATUS FOR MINES.—William B. Frue, Houghton, Mich.

Claim.—The combination of a short track, A, having a stop, *a*, and vertical sheave D at each end, with a driving-pulley, E, and endless belt C, the two relatively arranged and co operating, as set forth, to move the car B and dump the same, at the time and in the manner described.

101,116.—COOKING-STOVE AND RANGE.—William Gardner and George Gardner, Glen Gardner Station, N. J., assignors to themselves, Oliver L. Gardner, and R. Westbrook Myers, same place.

Claim.—1. The arrangement of the openings *b* and *c* in the sides of the oven, with relation to the air-flue *d*, its heater F, and chamber G, as shown and described, for the purpose specified.

2. The arrangement of the heater F over the oven B, and surrounded by a flue above and beneath it, as and for the purpose set forth.

3. The damper I, arranged between the upper plate of the oven B and bottom of the cross-passage F, substantially as described.

101,117.—SAWING-MACHINE.—Hoffman D. Gillespie, Huntington, Ind.

Claim.—The sawing-machine herein described, having saw K, pinions H, G, and F, shafts, as described, together with the crank-wheels C, levers B, frame L, and strap *a*, constructed and arranged to operate substantially as specified.

101,118.—FOLDING DESK.—Ernst W. Gilles and Jules Wendell, Oswego, N. Y., assignors for one-third their right to Abraham P. Grant, same place.

Claim.—1. The slotted standard B, in combination with the arms A and braces C, when constructed and arranged substantially as herein described.

2. In combination with the arms A, and braces C, the series of notches *a* in the slot of the standards, for the purpose of adjusting the top of the table and desk at different angles, as herein described.

101,119.—COMPOSITION HANDLE OR PULL.—William B. Gleason, Boston, Mass.

Claim.—As a new article of manufacture, a plastic-composition handle, formed as described.

101,120.—HARVESTER.—William F. Goodwin, Metuchen, N. J.

Claim.—1. The arrangement of the stationary internally-toothed rim and planetary gear about a secondary shaft or pinion-shaft lying parallel with the main axle of a harvesting-machine, as set forth.

2. The combination in a harvester of the shaft E, arm F, planetary gear D^1 D^2 D^4, bevel-wheel D^5, bevel-pinion *d*, and adjustable pivotal bearings E^1, substantially as set forth.

3. The arrangement upon the secondary shaft E of the straight pinion or spur-gear D^3, traveling arm F carrying the transmitting-wheel D^2, pinion D^4, and bevel-wheel D^5, these parts being operated from the main axle through the stationary rim D^6, substantially as set forth.

4. The crank-shaft, constructed substantially as described, in combination with the adjustable pivotal bearing A, bevel-pinion *d*, and bevel-wheel D^5.

5. The annular hub or coupling-piece I, having arms provided with half boxes I^1, as set forth, in combination with yoke C^3, sleeve C^2, and standard J.

101,121.—, HOLDER FOR METALLIC CARTRIDGE-CASES.—Samuel C. Greene, Vicksburg, Miss.

Claim.—A holder for shells for breech-loading shot-guns, said holder consisting of the hollow cylinder A and stool-like part B, or its equivalent, all constructed and arranged substantially as described.

101,122.—HORSE HAY-FORK.—Charles T. Grimes, Lancaster, Ky.

Claim.—The blade B, with its series of holes *a*, and the hook H, in combination with the rope R and pin P, when constructed and arranged substantially as and for the purpose described.

101,123.—CHIMNEY-COWL.—David Hahn, Reserve, Ind.

Claim.—1. A semi-conical deflector, D, in combination with a semicircular screen, F, arranged so as to leave an opening, G, between the lower edge of said screen and the deflector, for the passage of the blast into and upon the latter, by which it is deflected upward over the flue, in the manner and for the purpose substantially as hereinbefore described.

2. In combination with the semi-conical deflector D and the semicircular screen F, the wind-vane K, arranged and operating substantially as herein described.

3. In combination with the semi-conical deflector D and the semicircular screen F, arranged as described, the semi-elliptical cap-plate I, secured upon the vertical pivotal stem E, so as to leave an opening, J, between it and the said semicircular screen, for the passage of a horizontal blast, so that a junction may be effected with the blast directed upward by the semi-conical deflector D, for the purpose of increasing the draught of the chimney, in the manner herein shown and described.

4. The combination, in a chimney-cowl, of the semi-conical deflector D, the semicircular screen F, the semi-elliptical cap I, the wind-vane K, with their supporting pivotal stem E and arched netting C, the whole constructed, arranged, and operating as herein shown and described.

101,124.—BRICK-KILN.—Silas M. Hamilton, Baltimore, Md.

Claim.—In combination with a kiln for burning brick, tile, or pottery, a portable perforated chimney, extending from the bottom to a point above the top of the kiln, whether constructed in one piece or in sections, substantially as set forth.

101,125, antedated March 15, 1870.—LIQUID-METER.—Thomas C. Hargrave, Boston, Mass.

Claim.—The oscillating pan B, divided into compartments or measuring-chambers, *h i*, so formed as to allow of their being emptied without the employment of valves, in combination with a casing provided with inlet and outlet-pipes, all substantially as described.

Also, the points or center of oscillation of the pan B, made adjustable toward or from its center of gravity, substantially as and for the purpose set forth.

101,126.—CLAMP.—E. B. Hays, Vergennes, Vt.

Claim.—1. The combination of the reversible screws E E, clamps C C, and swivel-nuts A A, all substantially as and for the purpose set forth.

2. The arrangement of the frame A, bars B B, arms *a*, with rollers *b*, clamps C C, screws E E, nuts A, recessed bar G, and clamp H, all the parts being constructed and operated substantially as set forth.

101,127.—COOKING-STOVE.—Philip W. Hertick, Louisville, Ky.

Claim.—1. The combination of the fire-pot A, the oven B, and the dampers for regulating the temperature of the oven, substantially as shown and described.

2. The arrangement of the ovens B and B', constructed as described, with the fire-pot A, substantially as set forth.

101,128.—LEMON-SQUEEZER.—Vitalis Himmer, New York, N. Y.

Claim.—The series of blades A, terminating in

shoulders D, so as to cut the fruit and to press it apart laterally and vertically, and arranged radially around a central axis or stock B, and joined to an operating-handle, when constructed substantially as herein represented and described.

101,129.—DISH-WASHER.—Mary Hobson, Williamsburg, Mo.

Claim.—The suspended reciprocating receptacle D, for the purpose of a dish-washer, substantially as described.

101,130.—PAPER-FILE.—Amos Hockett, Wilmington, Ohio.

Claim.—The reference case herein described, consisting of the sliding compartments A and B, subdivided by the partitions *b b*, and provided with the clamping-springs K K, apron *c*, and cover C, all constructed and arranged to operate substantially as and for the purposes herein shown and described.

101,131.—FERTILIZER.—Hascal A. Hogel, Brooklyn, N. Y., assignor to himself and Cosmore G. Bruce, New York city.

Claim.—The improved fertilizer herein described, prepared from dead animals, by extracting the fat and treating the residuum substantially as set forth.

101,132.—ORE-SEPARATOR.—William Hooper, Ticonderoga, N. Y.

Claim.—1. The flexible diaphragm F, constructed of an India-rubber plate or other suitable flexible material for forcing air through dry substances of different specific gravities, substantially as described.

2. The central discharge in the flexible diaphragm F, substantially as and for the purpose described.

3. The arrangement of one or more partitions, *p*, on the perforated bed, substantially as described.

4. The forked levers *t*, provided with adjustable shoes *s*, bearing on eccentrics *q* on the driving-shaft, in combination with the tension-springs *w*, connecting-rods *v*, and flexible diaphragm F, substantially as shown and described.

5. The roof-shaped partitions *x* in the passage h^n, substantially as shown and described.

6. The arrangement of side deliveries *e*, each provided with two passages, *h i*, in combination with the bottom delivery *b* and with the bed, substantially as described.

101,133.—GAME-REGISTER.—E. H. Keith, Peoria, Ill., assignor for one-half to Chambers S. Doty, same place.

Claim.—The combination and arrangement of boxes A and D, pawl *h*, spring *i*, and key-hole J, primary index-wheel B, axle *b* with knobs *n n*, crown-pinion *a*, pinion *d*, spiral screw-threaded rod *e*, final index *g*, and rod *l*, substantially as shown and described.

101,134.—HARVESTER-CRANK AND PIN.—Jacob Kline, Mechanicsburg, assignor to himself and George Winters, Harrisburg, Pa.

Claim.—1. Forming a crank-pin or spindle with conical part Q, cylindrical part or shaft F, and rectangular muzzle *b*, solidly massed into one body, and bored to receive a through bolt, in the manner hereinbefore set forth.

2. The conical compensating-follower when constructed with a perforation outwardly rectangular and inwardly cylindrical, and applied to the crank-pin or spindle without contact with the through bolt, in the manner as and for the purpose herein set forth.

101,135.—TREE-PROTECTOR.—Henry Knapp, Walworth, N. Y.

Claim.—The application of the protector B, made as herein described, to the body of the tree, so as not to touch the ground, the upper edge fitting closely around the tree, and the lower part flaring out from the same, as specified and represented.

101,136.—BROADCAST SEEDER.—J. C. Kurtz, Wooster, Ohio.

Claim.—1. The disk J, when supplied with the flanged strips L, arranged for the purposes specified.

2. The chamber A, when provided with arms G, slide I, and opening H, arranged in combination with the shaft C and disk J, as described and set forth.

101,137.—SEWING-MACHINE.—Thomas Lamb, Philadelphia, Pa.

Claim.—1. The combination of the needle-arm disk *e*, oscillating on the arm, and secured by the headed bolt *e'*, yoke *d*, driving-shaft and eccentric *c*, all arranged and operating as described.

2. The yoke *d*, attached to or forming part of the disk *e*, and having a pin, *e'*, fitted to and arranged to turn in the needle-arm, and confined thereto by the key *f* and set-screw *f'*, all substantially as set forth.

3. The rotating reciprocating loop-catcher arranged on and revolving with the driving-shaft, but in a path inclined in respect to the center of that shaft, in combination with a plate, X or X', placed opposite the end of said shaft, whether that plate is arranged for carrying the spool of under thread for making the lock-stich, or whether the plate is arranged for aiding in making the common chain-stitch.

4. The plate X', carrying the spool of under thread, and having on one edge a notch or shoulder, *n'*, all substantially as set forth.

5. The combination of the plate X, shoulder or notch *n'*, and tongue *n*.

6. In combination with the said arms *j j*, the retaining-arm I, constructed substantially as described.

7. The said retaining-arm I, in combination with the spring sliding bar H.

8. The combination, substantially as herein described, of the bell-crank lever M with an arm, P, hung to the fixed arm B and operated by the needle-bar.

9. The two forked levers *r* M, one pivoted to the bar L and the other to a stationary part of the machine, and constructed and operating in connection with the bar K and the needle-arm, as specified.

101,138.—PUMP.—Edson Lamphear, Stepney, Conn.

Claim.—1. The within-described arrangement of the fixed valves E^1 E^2, held in position by means of the sleeves H surrounding the piston-rod, and secured by the pins *h*, and adapted to serve relatively to the cylinders A^1 A^2, pistons B^1 B^2, and piston-rods C^1 C^1, as herein set forth.

2. In combination with the above-named elements, the air chambers formed in the top of the cylinders A^1 A^2 by the aid of the reinforces G, for the purposes specified.

3. The foot M and adjustable stems *m* and shield N, arranged to serve relatively to open-bottomed cylinder or cylinders of a submerged pump, as specified.

101,139.—TABLE-CUTLERY.—Ebenezer G. Lamson, Windsor, Vt.

Claim.—As a new article of manufacture, a knife, fork, or other table-cutlery, having a socket at its rear end, within which is inserted a handle having a tenon on its end, substantially as set forth.

101,140.—SEWING-MACHINE.—Ralph Lawyer and John C. Gasten, Pittsburg, Pa.

Claim.—1. The combination of the cams A^1 and A^2, the feed-bar A^4, vibrating bar A^{10}, slotted connecting-bar A^{11}, connecting-screw A^{12}, adjusting-screw A^{13}, and springs A^{14}, all substantially as specified.

2. The combination, with the shuttle and shuttle-carrier, of the hinged plate B^2 and spring, substantially as specified.

3. The combination, with a take-up arm, operating as described, of the thread-guide H^2, arranged for operation, substantially as specified.

4. The combination, with the needle-arm, of the pivoted take-up arm H, arm H^1, stud-pin H^2, and slotted plate H^3, when said parts are constructed and arranged as set forth.

101,141.—HARNESS-FASTENING.—Sherrod S. Little and Henry P. Westcott, Macon, Ga., assignors to Smith, Westcott & Co., same place.

Claim.—1. The combination of the main longitudinal slot B with the branch openings C, and secondary longitudinal slots or springs D, in the plate A, for use in connection with a hook, adjustable in a locked manner or without being removed from said plate to different positions therein or along, substantially as specified.

2. The plate A, slotted as described, in combination with the adjustable hook E, when said hook is so constructed as not to be detachable therefrom, as set forth.

101,142.—DIES FOR THE MANUFACTURE OF IMITATION-STRAW GOODS.—Henry Loewenberg, New York, N. Y., assignor to Modena Hat Company.

Claim.—The compound metal-faced straw-surface die, composed of a body united to a metal skin which is a direct counterpart of an article of natural straw, substantially as before described.

Also, the combination of the said compound metal-faced straw-surface die with a counter-die, substantially as before described.

101,143.—TWEER.—Albert G. Mann, Worcester, Mass.

Claim.—1. The combination with the wind-box of the rotating fire-support E and the notched slides or air-valves D D, substantially as and for the purposes set forth.

2. The improved tweer-iron herein described, having the parts of which it is composed constructed and combined together in the manner set forth.

101,144.—MONEY-BOX, &c.—George W. McDaniel, Georgetown, assignor to himself, Charles G. Fisher, and Nisbet Turnbull, Washington, D. C.

Claim.—1. The arrangement of the vertically and horizontally-sliding outer cylinder A with its notch H and pin L, and the inner cylinder B with its hole E and slot M, and the bottom C, as herein shown and described.

2. The combination of the cylinders A and B with top D, having aperture F, throat I, and guiding-plate G, all constructed and arranged as herein described, and for the purpose set forth.

101,145.—MEDICAL COMPOUND FOR THE CURE OF COLIC.—John A. McKinnon, Selma, Ala.

Claim.—The compound herein described and used as a colic cure.

101,146.—MEAT-SAFE.—George L. Michael, Farmersville, Ohio.

Claim.—The adjustable side-safe H, provided with its bars I, hinged table J, and receptacle L, in combination with the safe A, provided with its cranes C, constructed, arranged, and ventilated in the manner and for the purpose described.

101,147.—HEMMER FOR SEWING-MACHINE.—Clark Morehouse, Wayland, assignor to Seth A. Tozer and Oscar N. Crane, Canandaigua, N. Y.

Claim.—The attached stationary plates A B, the plate B being slotted and graduated, as shown, and provided with the hemming-scroll C and projecting pin *e*, and the sliding gauge-plate E B having the pointer *d*, all being constructed and arranged, as shown, to form hems of different widths.

101,148.—SAND-SCREEN FOR IRON TUBE-WELLS.—Robert M. Morrill, Plymouth, Ind.

Claim.—The well-tube herein described, composed of an inner perforated tube covered by a series of perpendicular concavo-convex metal strips whose edges are just far enough apart to allow the water to pass between and into the main tube, substantially as set forth.

101,149, antedated February 22, 1870.—DIES FOR FORMING T-BOLTS FOR WHIFFLETREES.—F. B. Morse, Plantsville, Conn., assignor to himself and H. D. Smith & Co., same place.

Claim.—The dies, constructed as herein described, for forging whiffletree-bolts.

101,150, antedated February 22, 1870.—CARRIAGE-STEP.—F. B. Morse, Plantsville, Conn., assignor to himself and H. D. Smith & Co., same place.

Claim.—As a new article of manufacture, carriage-steps embossed as described, and provided with a rod, B, for the purpose of welding, as herein set forth and described.

101,151.—LASTING-MACHINE.—Henri Nicolas Moyon and Jacques Eugene Lemercier, Paris, France.

Claim.—1. The combination of the swinging lower crane or bent arm B with the crane C C and last-supports E, F, and H, substantially as specified.

2. The combination of the pincers D D, constructed and arranged for operation as described, with the swinging cranes C C, from which they are suspended, and made capable of adjustment relatively to the last, essentially as and for the purpose herein set forth.

3. The pincers D′, constructed and arranged for operation in relation to the last G, substantially as shown and described.

101,152.—TREADLE.—Orwell H. Needham, New York, N. Y.

Claim.—1. The arrangement of the shoe F or F′ over the rock-shaft A of the treadle, and so that it is capable of oscillating upon said rock-shaft, in combination with the pawl G, operated by said shoe and ratchet-wheel J on the crank-shaft C, through connecting-rod I, substantially as specified.

2. The arrangement of the shoe F or F′ over or relatively to the treadle B and its rock-shaft A, essentially as specified, and for the purpose herein set forth.

101,153.—CLOTHES-DRIER.—Frederick S. Nettleton and Erwin J. Fuller, Leominster, Mass.

Claim.—The improved clothes drier, as composed of the two frames C D and the two brackets A A, made, arranged, and combined substantially as specified and represented.

101,154.—PUG-MILL.—George E. Noyes, Washington, D. C.

Claim.—1. The employment of an endless chain with connections, substantially as herein shown, for the purpose of driving the pug-mill, substantially as set forth.

2. In a pug-mill for tempering clay and other materials, the combination of the endless chain F, the pulleys or sheaves G, sprocket-wheel H, the connecting-link E, the shaft C, and tempering-wheel D, substantially as and for the purpose set forth.

101,155.—SHIRT-YOKE.—Moses Palmer, Jr., Lynn, Mass.

Claim.—The scapulars A A, herein described, attached to the collar-band of a shirt as a substitute for a yoke, when constructed and arranged to operate as and for the purposes herein set forth.

101,156.—HARVESTER-RAKE.—Marie A. Partridge, Philadelphia, Pa., administratrix of the estate of William Partridge, deceased, assignor to "Walter A. Wood Mowing and Reaping-Machine Company."

Claim.—In combination with a self-rake for clearing the platform of a harvesting-machine, and a wing hinged thereto for compressing the gavel and throwing it farther from the platform and more in rear of the main frame, the ledge E on the platform and the stud *m* and spring *g* on the wing, for operating said wing, substantially as described.

101,157.—DREDGING AND EXCAVATING-MACHINE.—Walter A. Pearson, Philadelphia, Pa.

Claim.—1. The reversible bucket C, connected to a swiveling adjustable arm J, mounted in a carriage, E, pivoted and supported upon a segmental way, F, substantially as herein described.

2. The swiveling supporting-arm J of the bucket, adjusted and locked within and to its carriage by means of the parallel grooves *c*, adjusting lever *e* and locking-plate *d*, or their equivalents, substantially as described.

3. A dredging-bucket, mounted and carried upon its supporting-arm, so as to be swiveled and reversed, to excavate in exactly opposite directions along the entire face of the machine, substantially as described.

4. The beam K of the dredging-bucket, having a cylindrical portion, *p*, for the purpose of allowing it to be swiveled within the socket *f* of the adjustable arm J, in combination with the supporting-pin *j*, and supporting-link *m*, for maintaining the bucket in position to be reversed, substantially as described.

5. The cat-head or arm M of the bucket-chain, made adjustable and operated by means of the rack, hinged lever Q, and reversible dog *r*, substantially as described.

6. The weighted catches *l*, constructed and arranged in such manner as to lock the cranes D automatically to their respective supporting-posts O, when the bucket is operated from either crane, substantially as described.

7. In combination with the crane D and the weighted catch *l* of the supporting-post O, the arm G of the carriage E, for automatically releasing by its movement the said crane, to allow it to swing round with the bucket at the proper time, as herein described.

8. The combination and arrangement of the single driving-shaft P, drums N, cranes D, carriage E, and reversible bucket C, the whole constructed, arranged, and operating substantially as described.

9. The swiveling supporting-arm J, constructed with a handle, U, or its equivalent, for controlling the movement of the bucket, substantially as herein described.

101,158.—MODE OF ATTACHING CORNICE TO WINDOWS.—Anthony Peple, East Billerica, Mass.

Claim.—1. Applying a cornice to windows in such manner that it shall of itself serve to conceal the curtain-roller, and be susceptible of removal and application without withdrawing screws or nails, for the purpose stated.

2. The combination with the cornice of the bracket or support of such cornice, of the clasps or wires *d d*.

3. The construction of the brackets, whereby the same serve as supports to the roller and to the cornice, substantially in manner and to operate as explained.

101,159, antedated February 14, 1870.—COOKING-STOVE.—George H. Phillips, Troy, N. Y.

Claim.—1. The rear end vertical plate of a cooking-stove, having its upper part constructed of sheet or wrought iron, or other suitable sheet metal, and the lower part thereof constructed of cast-iron, or other suitable cast metal, and the two parts or divisions thus constructed suitably united together, and combined in the manner and for the purposes substantially as herein described and set forth.

2. The employment and arrangement of a vertical plate upon the rear end of a cooking-stove, constructed in part of wrought iron, or other suitable sheet metal, and the residue or remaining part thereof constructed of cast-iron or other suitable cast metal, and the combination of such rear end plate so constructed with the rear ascending and descending flues of such cooking-stove, in the manner substantially as herein described and set forth.

3. The arrangement and combination of the boiler or reservoir A upon and with the rear vertical end plate of a cooking-stove constructed in part of sheet metal and in part of cast metal, substantially as specified in the first and second claims hereof, and in the manner substantially as herein described and set forth.

4. The combination of the boiler or reservoir A with the cast-metal plate B, and with the sheet-metal plate D, forming the rear end vertical plate of a cooking-stove with water-reservoir attached, and combined in the manner substantially as herein described and set forth.

101,160.—EARTH-AUGER.—Sampson Pope, Covington county, Miss.

Claim.—The detachable curved cutters *g*, when arranged at an incline on the inside of the cylinder, in combination with the plates or braces *e e*, substantially in the manner and for the purpose herein shown and described.

101,161.—SPRING FOR BED-BOTTOMS.—Joseph H. Potts, Ottumwa, Iowa, assignor to Mary F. Potts, same place.

Claim.—The springs C, with a flat surface, coiled to the center from the outer ring, and arranged to form a bed-bottom, with their upper edges touching, and connected by the loops *a*, all substantially as set forth.

101,162.—VARIABLE CUT-OFF.—Joseph Randles, Jersey City, N. J.

Claim.—The cut-off valve D, provided with lips *f*, and attached to a link, E, which is connected at one end to a concentric disk, *k*, and at its opposite end to an eccentric, *n*, and suspended from a slide, *o*, in combination with the main valve B, constructed and operating substantially in the manner herein shown and described.

101,163.—INDIA-RUBBER BILLIARD-CUSHION.—Charles Lloyd Richards, New York, N. Y.

Claim.—A cushion for billiard-tables, composed of vulcanized rubber, in combination with a loosely-woven or reticulated fabric, substantially such as herein described, applied to the face and extended over upon the top and bottom of the rubber, and united with the same by vulcanization, or otherwise, as and for the purposes set forth.

101,164.—HUB-REAMER.—John G. Robinson, Springfield, Ill., assignor to August Kessberger, same place.

Claim.—The heading-bit, composed of the cylinder and disk D and *d*, respectively, the cutter E and the screws *e* and *e′*, constructed as described, and for the purpose specified.

Also, the within-described reamer, consisting of the shaft A, provided with the enlarged or flattened portion *a*, the curved-edged knives B, the round-lipped cutters C and C′, the cylinder and disk D and *d*, respectively, the cutter E and the screws *e* and *e′*, all constructed and arranged as and for the purpose specified.

101,165.—CANOPY FOR BEDSTEADS.—Augusta M. Rodgers, Brooklyn, N. Y.

Claim.—1. The disk A, provided with the series of guides *b*, so arranged as to unite the lifting-cord centrally at one point, substantially as described.

2. In combination therewith, the permanently fixed disk F, applied and operating as described.

3. The disk A, having peripheral openings *a*, the guides *b*, arms B, buttons *f*, screw G, lifting-cord *e*, and skirt C, combined and operating together substantially as and for the purpose described.

101,166.—APPARATUS FOR PITCHING BARRELS.—Richard Rosochacki, Cleveland, Ohio.

Claim.—1. The combination with the furnace and casing of the holders, nozzle *b* and channel, in the manner described, and for the purpose of removing the pitch linings of beer barrels.

2. The combination of the casing F, pipe *b*, channel E, and spout *c*, in the manner described, and for the purpose set forth.

3. The combination of the tank B with the casing F and furnace A, substantially as described.

101,167.—MACHINE FOR BURNISHING BOOT AND SHOE-HEELS.—J. H. Sawyer, Boston, and Charles Keniston, Somerville, Mass.

Claim.—In a machine for burnishing the heels of boots and shoes, a rotary burnishing-wheel having a reciprocating lateral movement, substantially as described.

Also, in combination with a rotary burnishing-wheel, a yielding journal-box, substantially as described.

101,168.—SYSTEM OF HEATING AND VENTILATING.—G. F. Schulze, Janesville, Wis.

Claim.—The application of a hollow vertical air-shaft to a heater within the room to be heated, for the purpose of causing a constant circulation of heated air from the furnace through the space to be heated, and, after being partially deprived of its caloric, back to the heater to be reheated, continuing indefinitely, in combination with a ventilating process by which the vitiated air is expelled from the room or rooms, and cold air introduced, during the operation of warming, as herein shown and described.

101,169.—TABLE-CASTER.—Daniel Sherwood, Lowell, Mass., assignor to Woods, Sherwood & Co., same place.

Claim.—As an improvement in table-casters, the construction and means of connecting the parts together by straps *b*, with the legs or supports A passing through it, as shown and described.

101,170.—INK FOR PRINTING STAMPS, DRAFTS, AND CHECKS.—John P. Simonds, New York, N. Y.

Claim.—The combination of orchil with a printing-ink, substantially as and for the purpose herein described.

101,171.—ELECTRO-HYDROCARBON GAS-MACHINE.—H. Julius Smith, Boston, Mass.

Claim.—1. The combination of electrical action and the combustion of gas in the production of light and heat, when both the gas and the electricity employed are generated by the same battery or source of electricity, as described.

2. In an apparatus for the production of carbureted-hydrogen gas, the application of a battery, or other generator of electricity, to the liberation of the hydrogen which enters into the composition of the illuminating-gas, substantially in the manner specified.

3. The arrangement of the reservoir A, battery E, and reservoir D, substantially in the manner described, for the purpose of making the gas-generating portion of the apparatus self-regulating, as set forth.

4. The arrangement for conjoint operation with the generating-reservoir D of the carbureting-reservoir B and the purifying-reservoir C, substantially in the manner stated.

5. The combination with an electrical gas-generating apparatus, constructed and operating substantially as described, of wires arranged to conduct the electrical current through a platinum ribbon placed near the orifice of the gas-burner, substantially in the manner and for the purpose specified.

101,172.—METALLIC CORNER-SUPPORT FOR CARRIAGE-BOXES AND SEATS.—Orson H. Smith and Willet Fisher, Marathon, N. Y.

Claim.—The combination of the metallic band *b* with the turned corners *c*, and the miter or diagonal aperture *d*, with the corners aforesaid, substantially as and for the purposes hereinbefore set forth.

101,173.—LIME-KILN.—R. A. Smith, Atchison, Kansas.

Claim.—1. The combination of the bottom cover or rim E, and top cover G, constructed and arranged to operate substantially in the manner and for the purposes herein set forth.

2. The arrangement of the lime-kiln A, with arch C, ash-pit B, draw-doors D D, and cover E G, all constructed as described, and operating substantially as and for the purposes herein set forth.

101,174.—SUBMARINE TUNNEL.—Charles Spear, New York, N. Y.

Claim.—The floating water-proof tunnel or other marine work herein described, having frame A, concrete covering and filling *z*, and fastening-screws or anchors *e e*, when built above water in one entire structure, and arranged to be floated to its destination and sunk into place, as specified.

101,175.—MANUFACTURE OF XYLOIDINE AND ITS COMPOUND.—Daniel Spill, Paradise Terrace, Hackney, England.

Claim.—1. The method herein described of treating cotton, or other vegetable fibers or lignine, with nitric acid, or with nitric and sulphuric acids, for the purpose of converting the same into xyloidine, and rendering the same soluble in suitable solvents.

2. The process of bleaching xyloidine in the manner herein specified.

3. The herein-described process of dyeing xyloidine, either before or after the solution of the same in suitable solvents, as set forth.

4. The herein-described mode of preparing xyloidine for spreading upon surfaces or fabrics in a semi-fluid condition.

5. The herein-described process of treating xyloidine, so as to bring it to a nearly dry condition, for the production of solid articles, or for other purposes, as set forth.

101,176.—CORN-PLANTER.—Philip S. Starnes, Majority Point, Ill.

Claim.—1. The combined colter and plow G, constructed and arranged to operate substantially as and for the purpose specified.

2. The means employed for connecting the plows to the main frame and rendering them vertically adjustable therewith, consisting of the rods I, the bar K, the rails M, the cross-bar N, the ratchet-bar O, and the detent-plate P, substantially as shown, and for the purpose set forth.

3. The valves V, constructed and arranged as described, in combination with the valve-seat T and cover X, substantially as specified and set forth.

4. The devices employed for operating the seed-valves, V, consisting of the bar Y, the connecting-rod Z, the crank A′, the shaft B′, the pinion D′, and the gear-wheel E′, all constructed and arranged substantially as shown, and for the purpose specified.

5. The lever H′, in combination with the bar Y, and seed-valves Z, substantially as and for the purpose set forth.

101,177, antedated January 5, 1870.—COOKING-STOVE.—Walter S. Stevenson, Philadelphia, Pa.

Claim.—The combination, with a stove, of a depressed hearth-plate, having an opening and a flange, F, a rotating sifter adapted to the said opening, and a detachable vessel, G′, having slots *e*, adapted to pins on the flange F, as described.

101,178.—SEEDER AND CULTIVATOR COMBINED.—William D. Stroud, Oshkosh, Wis.

Claim.—1. The revolving seed-distributer E, having the paddles *e* and beveled wheel *c*, cut-off plate *f*, and seed-cup *b*, arranged relatively to one another and to the sliding gauge *i*, connecting-bar *k*, discharge-tube *g*, and driving-shaft C, substantially as and for the purposes hereinbefore specified.

2. The spring lag *m*, supplemental lag *n*, cultivator-tooth *p*, and collars *q* and *t*, arranged relatively one to the other, substantially as and for the purposes hereinbefore specified.

3. The combination of the seed-box A, supporting and driving-wheels B and B′, driving-shaft C with beveled wheels *a*, coupling D, lever *j* revolving seed-distributers E, having paddles *e* and beveled wheels *c*, cut-off plates *f*, seed-cups *b*, sliding gauges *i*, bar *k*, discharge-tubes *g*, scatterers *i*, spring lags *m*, supplemental lags *n*, cultivator-teeth *p*, collars *q* and *t*, connecting-bar *o*, bar *s*, and sheave *r*, with cord and crank, substantially as and for the purposes hereinbefore specified.

101,179.—MODE OF CONNECTING ARCHITECTURAL TOY-BLOCKS.—Albert Brigham Swift, Brooklyn, N. Y.

Claim.—Toy-blocks, slit on different sides with fine saw-cuts, to be used in connection with strips of tin, or other material, fitting tightly into the slits, so that the blocks may be affixed or joined to each other, as specified.

101,180.—COFFEE-CLEANER.—Samuel G. Taylor, Baltimore, Md.

Claim.—The revolving cylinder herein shown, and composed of slats C, roughed on their inner surfaces, separated by spaces *e*, in combination with the ridges D, when constructed and operated as and for the purpose set forth.

101,181.—COFFIN.—Thomas M. Taylor, New York, N. Y.

Claim.—A coffin, whose sides, formed of solid wood having no kerf or cross-cuts therein to give curvature, are, by steaming, or otherwise, so bent that when their ends are secured to the bottom piece and to the edges of the head and foot pieces, their curvature or swell shall be greater at the top than at the bottom line, substantially as shown and described.

101,182, antedated March 16, 1870.—MACHINE FOR MAKING PUMP-BUCKETS.—John F. Temple, Chicago, Ill.

Claim.—1. The rest M, constructed and arranged as described, whereby it is adapted to fit upon the plate I, and to be used for holding the block *f* while the hole is being bored in its upper end to receive the rod *y*, as set forth.

2. The combination of the cutter-heads D D, provided with the knives *j* and *i*, and the vertically-adjustable table *a* and sliding-block holder *e*, all constructed and arranged to operate substantially as described.

3. The plate *a* mounted on the adjustable frame *a′*, and carrying the sliding clamp *e*, when arranged to operate in combination with the cutter-heads *g g*, substantially as shown and described.

4. The part B, consisting of table H, standard J with device K, and cutters L or augers, all arranged and operating substantially as and in the manner herein described and specified.

5. The part C, consisting of table N, arm P, cutter-head Q, carriage R with standard S, and hand-screw *r*, all arranged and operating substantially as herein set forth and specified.

6. The machine, constructed substantially as described, consisting of the parts A, B, and C, arranged to operate as and for the purposes herein set forth.

101,183.—HAY-GATHERER AND SHOCKER.—Clark M. Terrill, Oskaloosa, Iowa.

Claim.—1. The arrangement of the grooved cylinder-heads G, the pivoted rake-teeth F′, and retracting-rods F², substantially as and for the purpose set forth.

2. The arrangement of the rake-cylinder E, connecting-rods H′, nuts H², and cranked rock-shaft H, as a consequence of which the position of such cylinder vertically can be determined, and it be allowed to rise above such determined point in case it meets with any obstruction which makes such movement necessary.

3. The combination of the platform K and flap K′ with the vertically-adjustable rake-cylinder E, substantially as and for the purpose set forth.

101,184.—ADJUSTABLE CHEESE-HOOP.—William P. Thomson, Watertown, N. Y.

Claim.—A metallic or other hoop for boxing cheese and other purposes, provided with two or more sets or series of holes, substantially in the manner herein described, so as to make said hoop adjustable in size, for the purpose set forth.

101,185.—FOLDING CARD GLOBE.—Dennis Townsend, Felchville, Vt.

Claim.—In combination with a flexible, expanding, and collapsing globe, a device arranged within it, which will hold the globe in an expanded condition, and which will also by manipulation applied outside of the globe allow it to collapse, substantially as described.

101,186.—FOLDING CHAIR.—Joseph H. Travis, Charlestown, Mass.

Claim.—A folding chair having the seat supported at the front upon links, and arranged to tip up with its top to the front by sliding in grooves or loops in the back of the chair, substantially as described.

101,187.—RAILROAD CAR-AXLE.—Lucius E. Truesdell, Chicago, Ill.

Claim.—So arranging and combining a sleeve of rubber, gutta-percha, or other elastic non-conducting material with a car-wheel and axle, so constructed that, while the former may be securely and firmly attached to the latter, there shall be no contact between them except through the sleeve, substantially as herein described and for the purpose set forth.

101,188.—AUTOMATIC FAN.—Sylvester J. Tucker and John H. Rose, Richmond, Va.

Claim.—The fan *k k e*, axis *d*, arms *b c*, weighted adjusting-bar *g*, bar *f*, rods *h h*, support *a*, and the driving mechanism, combined and arranged together, as and for the purpose described.

101,189.—HORSE HAY-RAKE.—Cyrus Tyler, Dryden, N. Y.

Claim.—1. The arrangement of the rods O, so attached to the tips P of the teeth and to the rake-head A′ as to act as a support for the teeth, substantially as described.

2. The combined whole, made by the wheeled head A A′, the rod-supported teeth B O, operator's platform, wheel, and seat K J L′, lever and dumping-apparatus N D C F, and thills, with connecting rods H G, arranged substantially as set forth.

101,190.—WASHING-MACHINE.—John D. Van Dusen, Auburn, N. Y., assignor to himself and Jacob Brinkerhoff, same place.

Claim.—1. In combination with the oscillating beater D, a rotating cylinder, substantially as and for the purposes herein set forth.

2. The combination of the box A, cylinder C, beater D, pitman E, and curved or inclined plane G, all constructed and arranged as described, to op-

erate substantially as and for the purposes herein set forth.

101,191.—FIRE-PROOF BUILDINGS.—Anthony Wanner, New York, N. Y.

Claim.—1. The fire-proof floor, substantially as herein described, when it is constructed by castings of plaster of Paris or other suitable material upon temporary molds or boards between the beams and around the cores to form hollow spaces in such fire-proof floors.

2. A portable fire-proof partition, constructed of hollow castings, the ends and sides of which are provided with angular grooves A''', lapping over and entirely covering the partition-girders, substantially as herein described.

101,192. — FLUID-LAMP. — Thomas Ward, Columbus, Ohio.

Claim.—The lamp A, in combination with the adjustable arm E, constructed and operating in the manner as and for the purpose set forth.

101,193.—MANUFACTURE OF SOAP.—Alexander Warfield, Alexandria, Va.

Claim.—1. In combination with a compound for soap, an absorbent, substantially for the purposes herein set forth.

2. The compound for soap above described, when made substantially of the ingredients and in the manner herein set forth.

101,194.—SLIDING DOOR.—William R. Waterhouse, Liverpool, N. Y.

Claim.—The levers F and J, perpendicular slides C, and grooved rollers D, arranged and operating in connection with sliding doors, substantially in the manner and for the purpose set forth.

101,195.—HOOP-SKIRT.—Julius Waterman, New York, N. Y., assignor to Waterman & Mayer, same place.

Claim.—The bustle-springs e e, curved at their upper ends and diverging as they pass down the fabric of the skirt, in combination with the adjustable supporter f, skirt, and spring a, as and for the purposes specified.

101,196, antedated December 14, 1869.—HORSE HAY-RAKE.—Godfried Wieland, Dayton, Ohio.

Claim.—The ball-and-socket joints H H and intermediate hinge I, when arranged with the axle B and the rake-head, substantially as and for the purpose set forth.

101,197.—LEATHER-ROLLING MACHINE.—Henry J. Weston, Buffalo, N. Y.

Claim.—In a leather-rolling machine, the employment of revolving double cranks, substantially as described, by which two or more rollers are operated in opposite directions, in the manner and for the purpose set forth.

101,198.—ICE-MACHINE.—Franz Windhausen, Brunswick, Germany.

Claim.—1. The process herein described for increasing the intensity of cold produced, the same consisting in returning a part of the compressed air after expansion, so as to cool the air still under compression, as set forth.

2. The combination of the cooler and the temperature-regulator, to operate substantially as herein described.

3. The double-acting cylinder, jacketed, and having its covers or heads divided into compartments fitted with valves, organized and operating as herein specified.

4. The serrated dividing-plates between the cells of the refrigerator, whereby the current of air is impeded and caused to impinge on the sides of said cells, as shown.

5. The elastic balloon Z for maintaining one constant pressure in the refrigerator and cooler, as herein described.

6. The valve R opening inward, and acted upon by the atmosphere for supplying any deficiency of air, in the manner described.

7. The employment of a current of air for cooling the pipes in the cooler, substantially as herein specified.

101,199. — WATER-WHEEL. — A. N. Wolf, Sheridan, and Joel Haug, Bernville, Pa.

Claim.—1. The wheel A, with buckets B B, constructed as described and provided with aprons a a, whereby the wheel may be changed from a double discharge to a single, substantially as set forth.

2. The combination of the sectional valves or gates G G, cars b b, levers d d, straps e e, springs f f, nuts i i, and ring H, all constructed as described, and substantially as and for the purposes herein set forth.

101,200.—COMBINED PLOW AND CULTIVATOR.—John Wolpert, Louisville, Ky.

Claim.—The combination of the swiveling bars C C, clips D, side beams B B', and brace E, all arranged to operate substantially as and for the purpose set forth.

101,201.—KNIFE-HANDLE.—W. D. Woods, Bennington, N. H.

Claim.—The combination of the blade and double shank A B with the perforated handle C, when the parts are connected together by means of molten solder, which is passed into and fills the spaces in the shank and in the handle, all as specified.

101,202.—VAPOR-BURNER.—Albert F. Ziegler, Columbus, Ohio.

Claim.—A vapor-burner in which the gas-chamber E and the grooved arms C C are made from a single piece of tubing, cut or split longitudinally far enough to form the arms C C already grooved, and having a nib, H, inserted at the junction of the arms, substantially as and for the purpose set forth.

101,203. — DRESS-PROTECTOR. — Frederick Wittram, San Francisco, Cal.

Claim.—1. The dress-protector, constructed of duplicate pieces A of water-proof or repellant material, united by the seam B and fastening C D, as herein described.

2. A dress-protector made from water-proof material, having its component parts united by or its seams covered with rubber to form a water-tight garment.

REISSUES.

3,881.—FIRE AND WATER-PROOF PAINT AND CEMENT.—Theodore Brinkmann, Greeneville, Tenn.—Patent No. 98,022, dated December 21, 1869.

Claim.—A compound for painting roofs and houses when said compound is made in the manner substantially as set forth.

3,882.—SETTER.—Wesley Chase, Buffalo, N. Y.—Patent No. 90,078, dated May 18, 1869.

Claim.—The combination of the bent legs and arms C C D, seat A, and girts or ties E, when constructed and arranged substantially as herein set forth.

3,883.—VISE.—Edwin Crawley and Thomas L. Bayliss, Richmond, Ind.—Patent No. 89,469, dated April 27, 1869.

Claim.—1. In combination with the jaw A a movable jaw, B, lever E, nut D, and screw C, so arranged that the movable jaw and lever shall form a compound lever, operated by the screw for the compression of an article placed between the jaws, substantially in the manner set forth.

2. In combination with said parts set forth in the first clause of claim, the bar F and pawl I, arranged

to form an adjustable fulcrum for the jaw B, substantially as set forth.

3. The combination of the jaws A and B, screw C, lever E, and nut D, with an adjustable fulcrum and spring H, so arranged that the movable jaw shall be actuated by the screw in closing upon an article placed between the jaws, until the increased resistance, causing the spring to yield, brings into action the united compressing force of the screw and compound lever, substantially in the manner set forth.

4. The combination and arrangement of the jaws A and B, lever E, nut D, screw C, bar F, pawl I, and tripping-toe K, substantially as set forth.

5. The combination of the screw, the jaws, bar, pawl, and tripper, the pawl engaging the bar so as to convert the latter into a fulcrum on which the movable jaw may oscillate, substantially as set forth.

3,884.—MANUFACTURE OF GLUE.—George Guenther, Chicago, Ill., and E. H. Neymann, New York, N. Y., assignees of George Guenther.—Patent No. 97,771, dated December 14, 1869.

Claim.—As a new article of manufacture, the within-described canned glue, preserving the glue in a gelatinous state and a condition fit for immediate use for any period, by the exclusion of atmospheric air, prepared substantially in the manner and so as to combine the advantages herein set forth.

3,885.—OPERATING SLIDE-VALVES IN DIRECT-ACTING ENGINES. — William H. Guild and William F. Garrison, Brooklyn, E. D., N. Y., assignees of George W. Hubbard and William E. Conant.—Patent No. 12,203, dated January 9, 1855; reissue 2,359, dated September 18, 1866; extended seven years.

Claim.—1. In combination with a double-acting main engine and its valves, and a supplemental piston acting to move this main valve so as to admit steam alternately upon opposite sides of the main piston, a supplemental valve, whose office is to admit steam alternately upon opposite sides of the supplemental piston, the combination being substantially such as hereinbefore described.

2. In combination with the elements specified in the first clause of this claim, a tappet-connection from the main piston to a supplemental valve, whereby the supplemental valve is moved to admit steam alternately upon opposite sides of the supplemental piston, substantially as described.

3. The combination of the main valve of a double-acting engine, both a supplemental piston and the main piston, so that the main valve derives a part of its motion from each piston, the combination being substantially such as herein set forth.

4. The combination of a double-acting main engine, a supplemental piston and valve, and the main valve, in such manner, substantially as described, by means of a tappet-connection, that the main valve is started by its own piston, and its stroke completed by a force dependent upon the movement of the supplemental valve by the main piston, the combination being substantially as described.

5. The arrangement of a supplemental piston within the valve-chest of the main engine, substantially as described, when said piston is connected with the main valve, substantially as described.

6. The arrangement of the supplemental valve and the main valve within the same chest, substantially as described.

3,886.—PROJECTILE.—John D. Richards, Muscatine, Iowa.—Patent No. 97,047, dated September 7, 1869.

Claim.—The projectile herein described, having cylinder A, hollow cap B, cap E, and hollow perforated bolt C, when constructed and arranged to operate substantially as specified.

3,887.—SAFE.—Timothy J. Sullivan, Albany, N. Y.—Patent No. 97,829, dated December 14, 1869.

Claim.—1. In safes and vaults, forming the corners of the same with two or more bent iron plates a a, with the intervening plates of steel c, substantially as and for the purpose set forth.

2. In safes or vaults, the bars b, when placed around the corners or over the joints of the several plates which comprise the body A, substantially as and for the purpose set forth.

3. The heavy plate e, in combination with the plates a and c forming the vestibule, substantially as and for the purpose set forth.

4. In vaults or safes, strengthening the junctures of the vestibule with the body of the same by securing the plate e to the angle-iron d, substantially as and for the purpose set forth.

5. In the vestibule of a safe or vault, securing the several sides of the same together, and strengthening their junctures by means of the solid corner rabbet-bars f, substantially in the manner set forth.

6. In doors of safes and vaults, the combination of the heavy plate g with the usual plate forming the said door, substantially as and for the purpose set forth.

7. The lock-bolt holes h, when made into the rabbet-bars f, and continued through the plate c in a line of direction at right angles with the said plate c, substantially in the manner shown and described for the purpose set forth.

3,888.—PUMP.—The Forrester Manufacturing Company, Bridgeport, Conn., assignee, by mesne assignments, of I. N. Forrester and James H. Luddington.—Patent No. 85,577, dated January 5, 1869.

Claim.—1. The arrangement of a pump-cylinder, so as to be moved vertically upon a fixed tube, the said tube extending through the cylinder and secured at the bottom of the well, so as to serve both as a support or guide for the cylinder, and as a discharge-tube, and the said tube having fitted thereon a fixed piston within the cylinder, so that the movement of the cylinder up and down causes a flow of water up through the central supporting-tube, substantially as described.

2. In combination with the subject-matter of the first clause of claim, the arrangement of the valves b and d in the cylinder, combined with the double-acting valve c in the piston, all constructed and operating substantially as shown and described.

3,889.—SHEEP-SHEARS.—Robert M. Wilder, Coldwater, Mich., for himself and Hiram B. Robinson, assignee of Robert M. Wilder.—Patent No. 14,840, dated May 6, 1856.

Claim.—1. The rotary cutter G, when constructed and arranged to operate in a shearing apparatus substantially as described.

2. The combination of the rotary cutter G and the stationary blades, both being arranged in a suitable frame to be held or guided by the hand, to form a portable shearing apparatus, substantially as set forth.

3. A shearing apparatus, consisting of a series of stationary blades with a rotary cutter, and the operating mechanism herein described.

4. The combination of the double-acting pawl and ratchet with the rotary cutter G, substantially as described.

3,890.—CHAIR-SEAT.—George C. Winchester, Ashburnham, Mass., assignee of Osmore A. Bingham.—Patent No. 94,553, dated September 7, 1869.

Claim.—A chair-seat, in which the flexible seating or web is secured to the seat-frame by means of a groove and a web-retaining strip, the groove being made in the top of the seat-frame, and the web extending over and covering the strip.

3,891.—TEACHERS' TOY.—E. F. Anderson, Mansfield, Conn. — Patent No. 92,244, dated July 6, 1869.

Claim.—1. The arrangement, upon a revolving plate or table, B, of several blocks upon spindles, so as to turn each block independent of the other and of the table, substantially as described.

2. The arrangement, upon a revolving table or plate, B, of two or more series of blocks, F and G, each series revolving independent of the other series, and each block independent of the other block of the same series, substantially as described.

3,892.—APPARATUS FOR CARBURETING AIR AND GAS.—Arthur Barbarin, New Orleans, La.—Patent No. 95,412, dated October 5, 1869.

Claim.—1. The rod R, when constructed, arranged, and operating substantially as described for the purpose set forth.

2. The pipe H, with or without pipe T, in combination with a recipient, A, a tank, B, and a carburetor, K, with or without an enveloping vessel, S, when these several parts are constructed, arranged, and operate substantially as herein described, for the purpose set forth.

3. The above combination, in combination with the rod R and its indicating appliances, substantially as and for the purpose set forth.

4. Carbureting atmospheric air by forcing a continuous current or currents of air through the carburetor, when said current or currents are so regulated that the precise quantity of air only that is needed, and at the time it is needed for use, is carbureted, and the means employed to accomplish this end are substantially as herein described.

3,893.—PRINTING-PRESS.—R. Hoe & Company, New York, N. Y., assignees of Richard M. Hoe.—Patent No. 15,501, dated August 5, 1856.

Claim.—1. The arrangement of the rules *a'*, provided with feet *a* fitted to grooves in the bed, and having plates or keys *b* fitted over the ledges *b'*, for holding columns of type in place upon the bed of the press, substantially as described.

2. In combination with the rules *a'*, constructed substantially as described, the wedge-stripe B C D E, whether operated by screws, quoins, or equivalent devices, substantially as described and specified.

3. Constructing each series of wedges or inclines B C D E in a single piece, substantially as described and specified.

4. The combination with a type-revolving bed of the above-described method of securing type thereon, substantially as described and specified.

3,894.—PORTABLE FORGING-APPARATUS.—A. Thomas, Franklin, Tenn., assignee of John M. Cayce.—Patent No. 67,845, dated August 20, 1867.

Claim.—1. The combination of fire-pot D, table C, fans F F, pipes K K, shafts E S, pulleys *g e*, brace S D', crank-wheel E, and treadle M, all arranged and brought together to form a portable forge, as described.

2. The pot D, constructed and located as set forth, in combination with pipes K K and rotary fans F F, arranged as specified, to force two opposite currents of air into conflict over the center of the fire, and thereby promote a more complete combustion.

3,895.—STEP-LADDER.—Calvin G. Udell, Chicago, Ill.—Patent No. 90,973, dated June 8, 1869.

Claim.—1. The stiles U, formed of single pieces of material slotted out at their central parts, and so sprung outward as to form segments T T, as set forth.

2. The bracket E, firmly connecting the stile T or its equivalent and platform D, and jointed to the leg A by the pivot-bolt K, constructed substantially as described.

3,896.—INKING-APPARATUS FOR PRINTING-PRESSES.—Valentine Wood, Richmond, Ind., and J. E. Snitterlin, Chicago, Ill., for themselves, and Valentine Wood, administrator of the estate of George W. Wood, deceased, all assignees of John K. Lowe.—Patent No. 63,540, dated April 2, 1867.

Claim.—1. The combination of the roller F with distinct sets of ink-transferring surfaces revolving upon different shafts, and conveying the different colors, after distribution has been independently effected, in bands, to the common roller F, substantially as set forth.

2. The combination of the group of rollers D C E and the group of rollers G H I with the roller F, as and for the purpose specified.

DESIGNS.

3,913.—BURIAL CASKET.—Charles Dahlinger, Allegheny, Pa.

Claim.—The pentagonal form for the ends, the faces constituting such pentagonal form being exclusive of and included between the extremities of the tapering sides, as described and shown.

3,914.—ORNAMENTING GLASSWARE.—William T. Gillinder, Philadelphia, Pa.

Claim.—The design for the ornamentation of glassware, as shown.

3,915.—DRAWER-PULL.—William Gorman, New Britain, Conn., assignor to Russell & Erwin Manufacturing Company, same place.

Claim.—The design for a drawer-pull, substantially as shown and described,

3,916.—ESCUTCHEON FOR DOORS.—William Gorman, New Britain, Conn., assignor to Russell & Erwin Manufacturing Company, same place.

Claim.—The design for a flush escutcheon for sliding doors, of the character substantially as herein shown and described.

3,917.—HANDLE FOR SPOONS.—Edward C. Moore, Yonkers, N. Y., assignor to Tiffany & Company.

Claim.—The design of the shape, configuration, and ornament of the handle, substantially as described and represented.

3,918.—KEY FOR LOCKS.—Wallace T. Munger, New Britain, Conn., assignor to P. and F. Corbin, same place.

Claim.—The design of the wedge-shaped key-shank, extending from the bow to the stock or barrel, substantially as set forth,

3,919.—PAPER BOX.—George K. Snow, Watertown, Mass.

Claim.—A paper box made to present the appearance of a trunk.

3,920.—SET OF TURRET AND RINGS FOR HARNESS-SADDLE.—Henry Whitehouse, Newark, N. J.

Claim.—The design for a set of turret-rings and hook for harness, as herein shown and described.

3,921.—COOKING-STOVE.—Joseph B. Wiggenhorn, St. Louis, Mo.

Claim.—The design substantially as set forth.

3,922.—SPOON AND FORK.—George Wilkinson, Providence, R. I., assignor to Gorham Manufacturing Company, same place.

Claim.—The design for spoons and forks, substantially as herein set forth.

3,923.—FANCY SPOON AND FORK WORK.—George Wilkinson, Providence, R. I., assignor to Gorham Manufacturing Company, same place.

Claim.—The design for fancy spoon and fork work, substantially as herein set forth.

3,924.—SPOON AND FORK.—George Wilkinson, Providence, R. I., assignor to Gorham Manufacturing Company, same place.

Claim.—The design for spoons and forks, substantially as herein set forth.

3,925. — UMBRELLA-STAND. — Christopher Blake, Boston, Mass.

Claim.—The design for an umbrella-stand, substantially as shown and described.

3,926.—BOTTLE.—John H. Gamhart, St. Louis, Mo.

Claim.—The design for a bottle, as shown.

3,927.—CARPET-PATTERN.—Levi G. Malkin, New York, N. Y., assignor to the Hartford Carpet Company, Hartford, Conn.

Claim.—The configuration of the design hereunto annexed, when made by being inwrought into three-ply ingrain or other carpeting, in the form similar to the drawings accompanying this specification.

3,928.—CARPET-PATTERN.—Levi G. Malkin, New York, N. Y., assignor to Hartford Carpet Company, Hartford, Conn.

Claim.—The configuration of the design hereunto annexed, when made by being inwrought into three-ply ingrain or other carpeting, in the form similar to the drawings accompanying this specification.

3,929.—MACHINERY FOR MAKING ICE.—Theodore Scheffler, Paterson, N. J.

Claim.—The design and arrangement of the different parts of machinery for making ice, as described and shown.

3,930. — CARPET-PATTERN. — John Smith, Enfield, assignor to Hartford Carpet Company, Hartford, Conn.

Claim.—The configuration of the design hereunto annexed, when made by being inwrought into two-ply ingrain or other carpeting, in the form similar to the drawings accompanying this specification.

3,931. — CARPET-PATTERN. — John Smith, Enfield, assignor to Hartford Carpet Company, Hartford, Conn.

Claim.—The configuration of the design hereunto annexed, when made by being inwrought into three-ply ingrain or other carpeting, in the form similar to the drawings accompanying this specification.

3,932. — CARPET-PATTERN. — Henry G. Thompson, New York, N. Y., assignor to Hartford Carpet Company, Hartford, Conn.

Claim.—The configuration of the design hereunto annexed, when made by being inwrought into two-ply ingrain or other carpeting, in the form similar to the drawings accompanying this specification.

3,933. — CARPET-PATTERN. — Henry G. Thompson, New York, N. Y., assignor to Hartford Carpet Company, Hartford, Conn.

Claim.—The configuration of the design hereunto annexed, when made by being inwrought into two-ply ingrain or other carpeting, in the form similar to the drawings accompanying this specification.

3,934. — CARPET-PATTERN. — Henry G. Thompson, New York, N. Y., assignor to Hartford Carpet Company, Hartford, Conn.

Claim.—The configuration of the design hereunto annexed, when made by being inwrought into two-ply ingrain or other carpeting, in the form similar to the drawings accompanying this specification.

3,935. — CARPET-PATTERN. — Henry G. Thompson, New York, N. Y., assignor to Hartford Carpet Company, Hartford, Conn.

Claim.—The configuration of the design hereunto annexed, when made by being inwrought into two-ply ingrain or other carpeting, in the form similar to the drawings accompanying this specification.

3,936. — CARPET-PATTERN. — Henry G. Thompson, New York, N. Y., assignor to Hartford Carpet Company, Hartford, Conn.

Claim.—The configuration of the design hereunto annexed, when made by being inwrought into three-ply ingrain or other carpeting, in the form similar to the drawings accompanying this specification.

3,937. — CARPET-PATTERN. — Henry G. Thompson, New York, N. Y., assignor to Hartford Carpet Company, Hartford, Conn.

Claim.—The configuration of the design hereunto annexed, when made by being inwrought into three-ply ingrain or other carpeting, in the form similar to the drawings accompanying this specification.

3,938. — CARPET-PATTERN. — Henry G. Thompson, New York, N. Y., assignor to Hartford Carpet Company, Hartford, Conn.

Claim.—The configuration of the design hereunto annexed, when made by being inwrought into two-ply ingrain or other carpeting, in the form similar to the drawings accompanying this specification.

3,939. — CARPET-PATTERN. — Henry G. Thompson, New York, N. Y., assignor to Hartford Carpet Company, Hartford, Conn.

Claim.—The configuration of the design hereunto annexed, when made by being inwrought into three-ply ingrain or other carpeting, in the form similar to the drawings accompanying this specification.

3,940. — CARPET-PATTERN. — Henry G. Thompson, New York, N. Y., assignor to Hartford Carpet Company, Hartford, Conn.

Claim.—The configuration of the design hereunto annexed, when made by being inwrought into two-ply ingrain or other carpeting, in the form similar to the drawings accompanying this specification.

EXTENSIONS.

WILLIAM BAXTER, of Newark, N. J.—Letters Patent No. 14,221, dated February 12, 1856.

"Improved Wrench."

Claim.—Adjusting and securing the jaws *e e'* and *e e'*, of a diagonal wrench, by means of the screw *d* and joints *f g*, as described.

CYRUS ROBERTS, of Three Rivers, Mich., and JOHN COX, of New Hope, Pa.—Letters Patent No. 14,517, dated March 25, 1856; reissue 3,502, dated June 15, 1869.

"Improvement in Grain-Separator."

Claim.—1. The combination, with a separator which is made to widen as it recedes from the cylinder, of lifting or shaking-rods, or fingers, for the purpose of carrying forward, agitating, and attenuating the straw.

2. The method to facilitate the separation of the grain from the straw, by means of diverging-bars and lifting-rods, or fingers, substantially as herein described.

3. Constructing the rear portion of the conveyer with a solid ridged bottom, in such manner as to form a series of diverging channels, to spread the grain preparatory to delivering it to the winnower, as herein set forth.

4. The combination, with a separating-platform, of lifting-rods or fingers, adapted to be raised above and withdrawn below the surface of the said platform on which the straw rests.

5. The combination with the separator of two or more rock-shafts provided with lifting-fingers, operating as set forth.

6. Two or more sets of lifting-fingers or their equivalent, for raising the straw up from and dropping it again upon the separator-bottom, for the purpose described.

7. The lifting-rod, or fingers, in combination with means for adjusting their throw, substantially as and for the purpose set forth.

8. The employment of lifting-rods or fingers arranged and operating in such manner that they will rise on the forward movement of the conveyer, and thus lift and shake the straw as it is thrown forward, in combination with the carrying-bars, whereby certain advantages are attained, as herein set forth.

9. The arrangement of lifting-rods or fingers in a recess, M, in the bottom of the conveyer, in such manner that they can be alternately protruded above and retracted below the carrying-bars, to shake the straw thoroughly, and at the same time not interfere with its conveyance, as herein described.

10. The adjustable turning tail-spout P, arranged substantially in the manner and for the purpose herein set forth.

ISSUE OF MARCH 29.

PATENTS.

101,204.—ELEVATED RAILWAY.—John M. Abbott, Hillsdale, Mich.

Claim.—1. The double inclined sectional tracks B, transfer-trucks F, rope H, pulleys I I', J J', cars G, and tracks D and E, substantially as and for the purpose set forth.

2. The spring-bolt *c*, lever *d*, and curved latch-plate *b*, arranged with relation to each other and the cars G and transfer-trucks F, in the manner and for the purpose set forth.

3. The latch-bale K and lever-hook L, arranged with relation to each other and the inclined tracks B and transfer-trucks F, substantially as described, and for the purpose specified.

101,205.—ANTI-FRICTION CARRIAGE-AXLE. Alonzo Allcott, Haverhill, Mass.

Claim.—1. The axle A and journal B, with flange C, having the groove *h'* and beveled portion *d d*, in combination with nut D, having groove A, and rollers H I, substantially as described.

2. The nut D, with its beveled groove A, and beveled sleeve E, as and for the purpose set forth.

101,206.—COTTON-SEED PLANTER.—John P. Allen, Dawson, Ga.

Claim.—1. The combination of the hopper G *g'*, adjustable bottom boards I, wheel L, axle K, pins M, and crank-arms N with each other and with the beam A, spout D, and standard B, substantially as herein shown and described and for the purpose set forth.

2. The combination and arrangement of the coverer P Q R, with the standard B, beam A, hopper G I, and dropping device K L M N, substantially as herein shown and described, and for the purpose set forth.

3. The combination of the long belt H with the beam A, notched lower end of the forward end board of the hopper G, handles O, and coverer P Q R, substantially as herein shown and described and for the purpose set forth.

101,207.—SCREW AND SCREW-DRIVER.—Allen S. Apgar, New York, N. Y., assignor to himself and Isaac Arnold, Jr., Haddam, Mass.

Claim.—1. A nick-slitted screw, *c d a*, substantially as set forth.

2. The driver *e*, as described, for the purpose of holding, inserting, and screwing it to its place, substantially as set forth.

101,208.—CARRIAGE-WHEEL HUB.—William J. Arrington, Jefferson county, Ga.

Claim.—1. The combination of the disk A, provided with the tenons *b*, with the disk B, provided with the tenons *c*, when the tenons *c* are included between the tenons *b* in the completed hub, in the manner and for the purpose described.

2. The detachable shouldered box C combined with the disks A B, substantially as described.

101,209.—KNIFE.—Noyes E. Babcock and George D. Goodsell, Rockford, Ill.

Claim.—The implement described, consisting of the handle A and blade B, of shape shown, provided with serrated and smooth edges as described, for the purpose set forth.

101,210. — HINGE-MACHINE. — Joseph H. Baird, Oakville, Conn.

Claim.—1. The combination, with the feeder S of the countersinks U, plate Y, and cam M, constructed substantially as described and specified.

2. The combination, with the feeders S, of the countersinks U, cutters K, and jaw W, constructed substantially as described and specified.

3. The combination of the stop *b*, jaw W, and cutters K, substantially as described and specified.

4. The arrangement of mechanism for operating the feeders, consisting of the cam M, lever P, and rod F, substantially as described and specified.

101,211.—SUSPENDER. — Thomas W. Bartholomew, New York, N. Y.

Claim.—The pivoted slides or bands B and B', in combination with the straps A and A', substantially as and for the purpose specified.

101,212, antedated March 21, 1870.—HASP FOR TRUNKS, &c.—S. Thompson Barton and John W. Affron, New Orleans, La.

Claim.—The combination with the plate A of the button B and bracket C of the plate A, and the bolt D, substantially as and for the purpose described.

101,213.—APPARATUS FOR TANNING LEATHER.—Otis W. Bean and W. B. Rowland, Tecumseh, Mich.

Claim.—1. In apparatus for tanning purposes, the guard-arms C, when employed in connection with the transverse arms B, for the purposes herein described.

2. In apparatus for tanning purposes, the semicircular plates D, provided with ratchet-teeth *e*, in connection with the bar A, for the purposes herein set forth.

3. The arrangement of the frame composed of the bar A and transverse arms B, with the guard-arms C and semicircular plates D, when constructed, combined, and operating substantially as and for the purposes herein specified.

101,214. — PICK-HANDLE. — Franklin Bellinger, Lockport, N. Y.

Claim.—A tubular pick-handle bifurcated at its lower end, and fastened to the tool by means of a wedge, in the manner shown and described.

101,215.—VAPOR-BURNER.—David Berkey, Huntington, Ind.

Claim.—1. The combustion-plate E, provided with the deflecting lips *b*, as and for the purpose set forth.

2. The construction and arrangement of a portable vapor-stove, wherein the bed-plate A, standards B, fount C, combustion-chamber D, combustion-plate E, ring F, supply-pipe G, cock H, and burner are arranged and operated in the manner described and for the purpose specified.

101,216.—CULTIVATOR.—Charles Bird, Ackley, Iowa.

Claim.—1. The combination of the plows D, bars E, and screw-spindles E^1, cross-head G^1, all arranged to operate substantially as and for the purpose set forth.

2. The combination of the plows F, swinging beams G, cross-head G^1, nuts G^2, and screw-spindles E^1, all arranged to operate substantially as and for the purpose set forth.

101,217. — MODE OF CUSHIONING STEAM-PISTONS.—George F. Blake, Boston, Mass.

Claim.—1. The hollow piston B, constructed as described, and working inside a steam-cylinder, as set forth.

2. The combination and arrangement of the piston B and piston C in the manner specified.

3. The ports E J, valves D K, and ports L M, arranged for conjoint operation with the pistons B and C, in the manner set forth.

4. A steam-drill, hammer, or percussive engine, in which shock or jar is relieved or prevented by cushioning the impelling piston, first, on steam gradually compressed while escaping, and then on steam entirely confined, all in the manner described.

101,218.—MACHINE FOR PICKING AND DUSTING WOOL.—Milton Bliss, Ionia, Mich.

Claim.—The combination, in a picking-machine, of a picking-cylinder, feeding-rollers and a removable and replaceable sieve-rack or concave, such feeding-mechanism being provided with a stopping-mechanism, and the screen being arranged in circular ways or grooves, such as described, so that it may be removed or replaced while the cylinder is in motion, as and for the purposes set forth.

101,219.—BRACKET-HANGER. — Charles E. Bliven, Toledo, Ohio.

Claim.—The bracket-hanger, constructed with horizontal and vertical slots B C, substantially as and for the purpose set forth.

101,220.—SHEARS.—James Booth, Worcester, Mass.

Claim.—1. The combination with the hub of the movable knife of the adjusting centering-block E, and the set-screw H, substantially as specified.

2. The combination with the hub D, and the adjusting-block E, of the set-screw I, substantially as specified.

101,221.—TURBINE WATER-WHEEL.—Clark Boyd, Andover, N. Y.

Claim.—The turbine herein described, having tapering conduits *e e* and hollow buckets D D, leaf-shaped in their horizontal section, and secured in position by being cast in the metal of the crowns, as specified.

101,222.—APPARATUS FOR PHOTOGRAPHIC PRINTS.—Warren S. Burgess and George A. Lenzi, Norristown, Pa.

Claim.—1. The combination and arrangement of the pad F, shaft G, revolving disk B, and treadle K, with the stand A, substantially in the manner and for the purpose hereinbefore described.

2. The combination of the bearing H, spring N, and supporting-plate H'' with the bracket I, and arranged in relation to the foot-pad shaft G, substantially in the manner described for the purpose specified.

101,223.—HOT-BLAST FURNACE.—A. Burtenshaw, Hope Furnace, Ohio.

Claim.—1. A furnace-stack formed in sections with the intermediate parts independently supported, so that any one may be separately removed.

2. A furnace-pipe to transmit hot air, composed of horizontal and curved sections, as shown and described.

3. The combination in a hot-blast furnace of a heating-throat, reflecting-domes, and successive stacks, all co-operating to intensify the heat of the blast in the manner described.

4. Sustaining the hot-air pipe firmly but detachably by means of trunnions F and posts D, having open inclined recesses E therein, as shown and described.

5. Supporting the sections of a furnace-stack by means of annular plates C C^1 C^2, brackets I, and posts D, arranged and adjusted in the manner described.

6. Attaching the "return-bends" B^4 B^5, by means of yokes M, plates N, and set-screws O, to the horizontal sections, so as to form a detachable joint in the manner described.

101,224.—COUPLING FOR CONNECTING THE INLET-PIPE TO THE RETORT OF A GAS-MACHINE. — John Butler, New York, N. Y.

Claim.—The coupling C D, for connecting the inlet-pipe with the retort-cover of a gas-machine, constructed and operating substantially as herein shown and described, and for the purpose set forth.

101,225.—STEAM-BOILER FEEDER. — John M. Case, Worthington, Ohio.

Claim.—The feed-pipe G, stopped up at each end, and provided with two or more large holes in the center for receiving and discharging water, when used in connection with the feed-cylinder H, substantially as herein shown and described.

101,226.—WASHING-MACHINE. — George R. Chandler, Detroit, Mich.

Claim.—The construction and arrangement of the standards A, cross-bar B, clamps J, screws K, rods F, nuts I, washers H, springs G, rolls D D', and crank E, in the manner and for the purpose set forth.

101,227.—KING-BOLT FOR CARRIAGE.—William Clark, Johnsonville, N. Y.

Claim.—The king-bolt, consisting of pins that project from a disk pivoted to the face of an axle, as set forth.

101,228.—MACHINE FOR NICKING SCREWS. Nathan S. Clement, Northampton, Mass.

Claim.—1. The combination of a series of stationary cutters G, carriage F, and an automatic griping mechanism, substantially as and for the purpose described.

2. The combination of the carriage F, jaws *i i*, wedge *j*, screw *k*, dog *l l'*, spring *u*, and tripe *n* and *o*, all arranged to clamp and release the screw, substantially as described.

3. The inclined apron *p*, in combination with the carriage F, and arranged so as to raise the screws from out of the jaws *i i*, as described.

4. The combination of the fingers *a a*, rims *d d'* or their equivalents, and the curve *s*, in upper end of the track B, all arranged so that the fingers revolve in a direct line with the upper end of the track B, and meet the same at a point between the outer ends of said fingers and the axis on which they revolve.

5. The combination and arrangement of the fingers *a a*, rims *d d'*, and collar *q*, for adjusting the fingers to different-sized screws, substantially as described.

101,229.—Saw-Gauge.—William Clemson, Middletown, N. Y.

Claim.—As a new article of manufacture the saw gauge A, constructed in the manner above described.

101,230.—Machine for Bending Rake-Teeth.—Columbus Coleman, Allegheny City, Pa.

Claim.—1. The combination of the lever J, constructed as herein described, with the table A, form C, and bending-lever D, as and for the purpose set forth.

2. The gauge *l*, in combination with the subject-matter of the first clause of claim, as and for the purpose set forth.

3. The combination of the hinged and sectional form C, table A, and bolts *y* with a bending device for operating in conjunction with said form, substantially as described.

101,231. — Cotton-Picker. — Robert F. Cooke, Brooklyn, N. Y.

Claim.—1. The arrangement of the bent arms or levers B B', hinged and turning on their centers *a*, supporting on their lower ends plates D D, and connected by a suitable flexible material C, forming a long close tunnel, X, in the manner and for the purpose substantially as described.

2. The arm E attached to or forming a part of the lever B, operated by a weighted lever or hammer, in the manner and for the purpose specified.

3. The weighted lever or hammer F, operated by projections or arms H, or their equivalent, and operating the arms which support the tube or tunnel X, in the manner and for the purpose essentially as set forth.

4. In a machine for picking cotton, the arrangement of a close tube or tunnel X, capable of separating or opening at the bottom to allow the cotton-plant to enter and pass through said tunnel, constructed in the manner and for the purpose substantially as hereinbefore described.

5. The bottom-plates D attached to the lower ends of the levers B and B', substantially in the manner and for the purpose described and set forth.

6. The arrangement of a tunnel X, arranged and constructed in the manner and for the purpose as above described, one or more air-pipes T, provided with an elongated opening V on the inner side, and situated on one side behind the end of the said tunnel, essentially in the manner and for the purpose described.

7. In combination with the tunnel X and air-pipe T, the perforated plate W or its equivalent, forming a continuation of said tunnel X at the opposite side of the air-pipe T, substantially in the manner and for the purpose set forth.

101,232.—Cotton-seed Planter, &c.—William W. Croom, Gainesville, Ala.

Claim.—1. The dropping-cylinder E e^1 e^2 e^3, in combination with the box B and opener C, substantially as herein shown and described and for the purpose set forth.

2. The concaved, corrugated, and flanged covering-roller F, in combination with the box B and dropping device, substantially as herein shown and described, and for the purpose set forth.

101,233. — Steam-Generator. — Hugh E. Curry, Louisville, Ky.

Claim.—The combination of the generator A, the feed-pipe L, and the gauge-cock B, the steam-pipes E E E E with their swinging joints F F F, and the thumb-screw nut J, and the valve-cock I, of a fire-engine, when arranged, constructed, and operating in the manner and for the purpose set forth.

101,234.—Rolling-Machine for Leather. John G. Curtis, Emporium, Pa.

Claim.—1. The combination of the treadle, rock-shaft, slotted arm M, reciprocating rod H, eccentric cogged arms G, and corresponding rack-plates O, all arranged as set forth.

2. The eccentric knees G, having their sharp ends located in the notches *k* of movable bearing-blocks on the rod H, whereby they are allowed free and easy play, while they are entirely prevented from slipping.

101,23[illegible].—Knife-Guard.—Gilbert K. Dearborn, Pawtucket, assignor to Timothy Earle, Smithfield, R. I.

Claim.—In combination with the knife A B, the clasp F, provided with the corrugated flange D, the plate E, and hinged knife-guard C, all constructed as herein described, for the purpose specified.

101,236.—Broiler.—Daniel W. Denman and William K. Tillotson, Detroit, Mich.

Claim.—1. The cover B, provided with trunnions *b b'*, and revolving within the case A, as and for the purpose set forth.

2. The meat-holder C, made in two parts hinged together, and provided with stud *e* and handles *f*, said holder revolving with the cover B in the case A, in the manner described, and for the purpose specified.

101,237.—Trunk. — Heinrich Doerr, Milwaukee, Wis.

Claim.—A water-proof trunk, when made with body A and cover B, bolts C, hinges D, spring E, oblong opening in the hinges D, which gives play to the hinge-pintle, rubber joints H, stop I on bolt C, to prevent loss, and clasps K, substantially as described.

101,238.—Fastening for Cutter-Heads, Pulleys, &c.—John Du Bois and Edwin F. Beugler, Williamsport, Pa.

Claim.—The taper bushing, substantially as set forth, for the purposes within named.

101,239.—Cotton and Hay-Press.—J. S. Duffy, Battle Ground, Ind.

Claim.—An improved arrangement of parts, dispensing with such pressure-lever, and consisting of the press-box A, provided with its hinged door and spring catch at top and bottom, follower B, guides C C, angle-lever D, lifting-traps G, cord H, pulley L, and drum I, when these parts are constructed and arranged together as herein shown and described.

101,240. — Wheeled Cultivator. — Solomon H. Dwight and William B. Chambers, Decatur, Ill.

Claim.—In combination with an elevated truck-frame constructed and arranged as described, and supported and carried upon a pair of wheels as herein stated, the pivoted beams B B, and the cultivator-teeth or plows, and independently-pivoted and suspended guards E connected therewith, and arranged to be drawn by or carried on said elevated frame, as described.

101,241.—Material for Chair-Seats.—Asahel N. Elliott, Barre, Mass.

Claim.—A woven fabric composed of wooden and metallic strips, as herein described.

101,242.—Apparatus for Setting up Barrels.—William B. Elliott, Corning, N. Y.

Claim.—The combination and arrangement of the disk C, outer and inner rings D E, the headed arms G G, and springs *a a*, the whole operating as described.

101,243.—Tanning.—Elihu England, Mossy Creek, Tenn.

Claim.—The application of the stuffing to the hides before they are placed in the vats, by which the absorption of the tannin is effected with greater rapidity, and the process of tanning materially shortened.

101,244.—Culinary Vessel.—Charles Estabrooks, Calais, Me.

Claim.—The combination of sections A B, flexible metallic supports *a* and interior vessel C, when constructed, arranged, and used substantially in the manner and for the purpose herein specified.

101,245.—Safe.—John Farrel and Jacob Weimar, New York, N. Y.

Claim.—1. The combination with the flanged tongued and grooved door, substantially as described, of the elastic gasket *f*, when applied and used in the manner specified.

2. The combination with a flanged door having a tongue and groove, of the vertical rod and its levers connected with the hinges of the door, substantially as specified.

3. The head S to the side of the flange, in combination with the recess *r* to receive it in the side of the jamb, substantially as described.

101,246.—Harvester-Rake.—Joel Farrington, Corry, Pa.

Claim.—1. The inclined pivoted rake-latch or track, arranged between the rake-pivot and the inner platform-guard or fender, and attached to said fender, substantially as and for the purpose specified.

2. The curved (or angular) pivoted rake-arm G, roller *g'*, and inclined rake-latch H, arranged relatively to the inner grain-guard or fender, as described.

3. The rake-arm, pivoted to a sliding adjustable box on the rake-shaft or pivot, as set forth.

4. The combination of shaft or pivot E, segments I J, slotted arm K, and crank L, with the vibrating sweep-rake for operating the same, as described.

5. The combination of crank L, slotted arm or lever K, segments I J, shaft or pivot E, pivoted rake-arm G, and inclined track H, arranged and operating substantially as described.

101,247.—Whip-Socket and Rein-Holder. Joseph R. Finney, Youngstown, Ohio.

Claim.—The combined rein and whip-holder, formed by the combination of the socket A, wired disk H K, extension B, and its arms D and L, and the clamp E, said parts being constructed and arranged substantially as herein shown and described.

101,248.—Preventing the Incrustation of Steam-Boilers.—John T. Fisher, Pittsburg, Pa., assignor to James B. Clow, same place.

Claim.—Connecting a steam-boiler by a copper wire or rod, or by any other article or material which is a conductor of electricity, with a belt or other part of the machinery, which, when in motion, is a generator of electricity, substantially as and for the purposes above set forth.

101,249.—Lathe for Squaring Nuts, &c. James Flower, Detroit, Mich.

Claim.—1. The construction and arrangement of the index-plate K, provided with pin *b* and strut *c*, and chuck L, rotating in the bracket H, as and for the purpose set forth.

2. The construction and arrangement of the bed-plate A, rest C, standard E, brackets G H, center *a*, index-plate K, chuck L, adjusting and feed-screws D, F, I, J, and M, substantially as described and for the purpose specified.

101,250.—Converting Articles made of Iron into Steel.—Hiram C. Folsom, Bangor, Me.

Claim.—1. The process herein described for converting iron wholly or partially into steel, the same consisting in first raising the iron to a red heat and then introducing a chemical compound, such as herein set forth.

2. The compound herein described for treating iron, composed of charcoal or other carbon and the prussiates of potash and iron.

3. The apparatus herein described, composed of the crucible or heating vessel A, in combination with the perforated tube C, as and for the purposes set forth.

101,251.—Bit-Stock.—Dan P. Foster, Waltham, Mass.

Claim.—1. The adjustable washer N in combination with the holder N, working substantially as described, and for the purpose set forth.

2. The arrangement of the bolt I, the cup-shaped washer L, the screw-plug K and head A, constructed as shown and described, and for the purpose set forth.

101,252.—Horse-collar-Pad Press.—John Fraser, Dowagiac, Mich.

Claim.—In a collar-pad press, the blocks A, A', B, and D, in combination with the frame C and wedges E, when constructed and operating as and for the purposes herein set forth.

101,253. — Manufacture of Artificial Stone.—Aaron H. Frear, Chicago, Ill.

Claim.—1. The employment of an aqueous saccharine solution of litharge in the manufacture of artificial stone, cement, stucco, paint, &c., for the purpose specified.

2. The processes herein described of forming artificial stone, cement, stucco, paint, &c., by the application to a suitable base or body of an aqueous saccharine solution of litharge.

3. An aqueous saccharine solution of litharge as a new article of manufacture.

101,254.—Printing-Press.—Merritt Gally, Rochester, N. Y., assignor to Allen Carpenter, same place.

Claim.—1. The carriage or slide C, in combination with a vibrating, rocking, or oscillating plate, substantially as herein set forth.

2. The bearing-piece or bearing-pieces G, in combination with the draw-bars or connection-rods H, when used in connection with the platen or the type-bed of a printing-press, substantially as herein set forth.

3. The draw-bar or connection-rod H, in combination with roller-lever I *i* and connecting-lever G *g*, substantially as herein set forth.

4. The construction and use of a conoidal roller, or a conoidal cylinder, either or both, substantially as herein set forth, and for the purpose specified.

101,255.—Water-Wheel.—James E. Gillespie and Horatio B. Weaver, Hartford, Conn.

Claim.—1. A water-wheel having an annular gate, such as is hereinbefore described, applied in such a manner as to turn with the wheel, and at the same time be free to move upon the shaft of the wheel in the direction of its length.

2. The combination of the water-wheel, the annular gate E, and the projections marked 1, 2, 3, &c., the whole constructed substantially as described for the purpose set forth.

101,256.—Plow.—Joseph S. Godfrey, Leslie, Mich., assignor to himself and Sears M. Loveridge, Pittsburg, Pa.

Claim.—1. In a plow or cultivator, a horizontal flange, *n'*, to which to attach the box-plate of a revolving mold-board, substantially as described.

2. Making in the flange or box-plate two or more slots, such that, forming a point at or near the forward edge of the revolving mold-board as a center, such mold-board can be adjusted to any desired angle or pitch, substantially as described.

3. In combination with such mold-board and box-plate, a sand-tight box, as a bearing for the mold-board shaft, substantially as described.

4. In combination with a revolving mold-board, *h* scraper *g* attached to the box-plate, so as to be adjustable with it, substantially as described.

101,257.—Cotton-seed and Corn-Planter.—Joshua B. Godwin, Williamston, N. C.

Claim.—1. The combination of the toothed wheel or pulley *g'*, guide-pulleys K and L, and toothed belt J, with the axle G, frame A, hopper I, notched conductor-spout N, furrowing-plow P Q, and coverer R S, substantially as herein shown and described, and for the purpose set forth.

2. The combination of the pivoted cross-beam O, plow-standard P, conductor-spout N, coverer R S, and lever T, with each other and with the frame A, hopper I, and a seed-dropping device, substantially as herein shown and described, and for the purpose set forth.

3. The combination of the slides X and Y, springs K', detachable cams A' B', and wheel C', with the hopper I, frame A, and axle G, substantially as herein shown and described, and for the purpose set forth.

4. The combination of the bent lever D' and pitman E' with the slide X and pivoted beam O, to which the furrowing-plow, conductor-spout, and coverer are attached, substantially as herein shown and described and for the purpose set forth.

5. The combination of the stirrer F', pivoted lever G', pins H', and springs I', with the hopper I, frame A, and axle G, substantially as herein shown and described, and for the purpose set forth.

101,258.—Saw.—George B. Goodnow, Detroit, Mich.

Claim.—In combination with the tooth A, the oblong slot *c d*, with its longer diameter vertically arranged, one-half of said slot being in the end of the tooth A and the other half in the saw-plate, and provided with a suitable rivet, when constructed as described and arranged as and for the purpose set forth.

101,259.—Wheel for Railway Car.—Jeremiah D. Green, Troy, N. Y.

Claim.—1. Uniting two or more of the radial corrugations D and E, extending from the rim B, so as to join the hub A as one, substantially as and for the purpose described.

2. The combination of said united corrugations D and E, extending from the rim B, with the single corrugations H, extending from the hub A to rim B, substantially as and for the purpose described.

3. The combination of the said single and united corrugations H and D E with the curves *b*, *c*, and *d*, of the plate C, substantially as and for the purpose described.

4. In a car-wheel, constructed as described, having the corrugations D E and H, making that part of the corrugated plate joining the hub A, near its ends, of greater thickness than its other parts, and gradually decreasing or tapering it into the thickness of the other parts of the plate, substantially as shown and for the purpose described.

101,260.—Bait Mill for Fishermen.—Silvanus Hamblin, Taunton, Mass.

Claim.—The heads C and D provided with the knives 1, 2, 3, and operated by the gear-wheels E, H, and I, in combination with the bars K, and serrated separating piece M, all constructed and arranged to operate as herein described for the purpose specified.

101,261.—Pump.—Everett C. Hammond, Oswego, N. Y.

Claim.—The bent bilge-pipes C *c* and pipe B, in combination with the pump A, valve *e*, and set-screw A, all arranged, constructed and operated in the manner and for the purpose set forth.

101,262.—Copying-Press.—William H. Hawkins, Cleveland, Ohio.

Claim.—The herein-described box A, drawer I, movable plate B, and wheel and screw G, made in the manner as and for the purpose substantially set forth.

101,263.—Manufacture of Iron and Steel.—James Henderson, New York, N. Y.

Claim.—The combined use of fluor-spar and titaniferous iron ores in the manufacture of wrought iron and steel, as set forth.

101,264.—Tinning and Galvanizing Wire.—Edwin H. Hill, Worcester, Mass.

Claim.—1. The apparatus herein described for tinning or galvanizing wire, consisting of the tube A, with reels *e*, metal bath B, with submerging-roller C, and shedding-roller D, running-water bath G, die H, and drawing-cylinder K, when combined, constructed, and arranged to operate substantially as and for the purposes set forth.

2. In wire-tinning or galvanizing apparatus, the metal bath B, having submerging-roller C, and shedding-roller D, as specified.

3. The running-water bath G, having submerging-roller E and pipes *b* and *d*, constructed and arranged to operate in combination with a metal bath for tinning or galvanizing wire, as specified.

4. In wire-tinning apparatus, the acid-box A, with reel *e*, when constructed and arranged to operate as specified.

101,265.—Sewing-Machine.—Joseph Ignatz Hirschbühl, Louisville, Ky.

Claim.—1. The combination, with the feed-bar A and shaft C of the rocker-arm E, slotted or notched bar D, and pin F, all constructed and arranged substantially as described, for the purpose of reversing the feed.

2. The arrangement with the arms B E and arm D of the adjustable plate I and pin F, substantially as described.

3. The arrangement with the rod L and the adjusting-screw O of the guide-pins M, the extended ears N, and the long pin P, all substantially as specified.

4. The arrangement with the sliding shaft C, and the table of the machine, of the bent, hooked, or crotched bar Q, lever U, slide-bar T, and stud-pin V, all substantially as specified.

101,266.—Combined Seeder and Hay-Tedder.—Jonas House, Howard, N. Y.

Claim.—The arrangement of the wheels B, crown-wheel *d*, pinion *e*, seeding-device A *u u v*, with connecting-rod *h*, crank-wheel *e*, and shaft *b*, in combination with the shaft *a* and hooks *t*, fitted to receive the tedder *s o r* and driving-band *z*, as and for the purpose specified.

101,267.—Spring-Bed.—Liverus Hull, Charlestown, assignor to Tucker Manufacturing Company, Boston, Mass.

Claim.—The combination and arrangement of the pivoted or pivotal saddle-block, *h*, with a spring, C, made as described.

Also, the combination and arrangement of the two grooved abutments *a a*, and the cap-plates D D thereof, with the bars A A and the springs C C, constructed and combined with pivotal saddle-blocks *h h*, and applied to each slat D, as set forth.

Also, the improved bed-foundation, as composed of the springs C, made and arranged as described, the separate pivotal saddle-blocks *h*, the slats D, and the frame-bars A A B B, provided with the grooved abutments and cap-plates to the transverse bars, as set forth.

101,268.—Combination Asbestos Filling for Fire-proof Safes and other Structures.—Theodore Hyatt, New York, N. Y.

Claim.—1. The use of abestos in any suitable form or condition, when combined with any liquid or semi-liquid vapor or steam-generating materials, such as water or solutions of glycerine, gelatine, or mucilage, and used as a filling for fire-proof safes constructed in either of the modes heretofore described, and also as a filling for the cans, tubes, or vessels used in said safes.

2. The use of abestos, when combined with any suitable earth or earths and liquids, semi-liquids, or solutions as above mentioned, and used as a filling for fire-proof safes, when constructed in either of the modes heretofore set forth, and also as a filling for the cans, tubes, or vessels used in said safes.

3. The use of either of the foregoing-described combinations of asbestos, or of asbestos alone, when used as a filling or lining for double-shelled closets or book-cases of fire-proof safes.

4. The use of asbestos as an absorbent of liquids and as an indestructible fibrous bond, ligament, or connecting medium for binding, supporting, and uniting together the earth or earths employed in a composition or filling for fire-proof safes and other structures.

101,269.—Washing-Machine.—Moses Ingalls, Muscatine, Iowa.

Claim.—An improved washing-machine, formed by the combination of the rocker B b^1 b^2 and dasher C c^1 c^2 with each other, said parts being constructed substantially as herein shown and described, to adapt them for use in connection with each other and in an ordinary wash-boiler, as set forth.

101,270.—Wood Pavement.—S. H. Ingersoll, New York, N. Y.

Claim.—The blocks A A A, when provided with the channels B, when said channels are of the form illustrated and the blocks arranged as described and specified.

101,271.—Hulling-Machine.—David Kahnweiler, New York, N. Y.

Claim.—1. The combination of a series of knives, arranged on a cylinder, divided into two or more contiguous longitudinal sections, as shown and described, with a series of knives, J, separately adjustable, and having their cutting edges in the same diametrical plane with the axis of the revolving cutter-stock, all as set forth.

2. The arrangement of set-screws I back of each knife in the recesses of the cutter-stock to adjust and form a back-rest for the tool, as shown and described.

101,272.—Tuck-creasing Attachment for Sewing-Machine.—James Franklin Kellogg, North Bridgewater, Mass.

Claim.—1. The combination with the arm F, having the creasing-edge, of the longitudinally-adjustable finger G.

2. The combination with a suitable standard of the arm F, having a creasing edge and made adjustable vertically in relation to the bed of the machine, substantially as described.

3. In combination with the standard A, the adjustable arm F, having the creasing edge and the longitudinally-adjustable finger G, substantially as described.

101,273.—Harvester-Dropper.—Nathaniel S. Ketchum, Marshalltown, Iowa.

Claim.—The combination of the pivoted frame or rack D, pivoted bars or shaft E F, teeth or fingers G H, rack K with its cross-bars I J, and board or apron B, with each other, and with the frame-work of a harvester, substantially as herein shown and described, and for the purpose set forth.

101,274.—Neck-Yoke.—Joseph King and Charles S. Gould, Janesville, Wis.

Claim.—1. The toothed crank-arms F F, so arranged as to project forward when the neck-yoke is in use, and thus be out of the way of the animals composing the team, together with the rods E E, as shown and described.

2. The ferrules C C, provided with pins working in the grooves *a* in the reduced ends B of the yoke, as shown and described.

3. The ferrules C C, in combination with the grooved ends B B of the yoke, and with the rods E E, and toothed arms F F, all constructed, arranged, and operating as set forth and shown.

101,275.—Wrapper for Seeds, &c.—Royal G. Kinner, Penn Yan, N. Y.

Claim.—The wrapper A, when made with a hole in one of its sides, and provided with a transparency, B, covering the hole, substantially as and for the purpose herein set forth.

101,276.—Machine for Felting Hat-Bodies.—James Kirk, Samuel Shelmerdine, and Cephas Froggatt, Stockport, Great Britain.

Claim.—1. The rollers *d e*, each having on its surface a series of short inclined ribs, arranged as shown in figs. 6 and 7 of the drawing, and operating as herein described.

2. Forming the working-surface of the rollers of elliptical rings of India rubber or other suitable material, placed at such an angle on the rollers and at such a distance apart that the upper edges of each shall overlap the lower edges of the next one, as shown in figs. 3 and 5 on the drawings.

3. The mode of and apparatus for driving and raising and lowering the rollers, substantially as hereinbefore described and illustrated in the drawings annexed.

101,277.—Washing-Machine.—John O. Kopas, Washington, D. C.

Claim.—The combination of the wash-board *a*, rubber *b*, weighted sash *c*, crank-shaft *h*, and pulley *k* with the belt *i*, wringers *m o*, and pulley *l*, all as and for the purpose set forth.

101,278.—Ratchet Drill.—Joseph Laubser, Milwaukee, Wis.

Claim.—The combination in a ratchet drill of the handles A and B, links C, frames D D, stock F, pins G and I, cog-wheels K K, ratchet-wheels L L, pawls M M, and springs N N, constructed substantially as described, and arranged to operate in the manner and for the purpose set forth.

101,279.—Medical Compound.—Philester Lee and Lemuel Matthews, Lebanon, Oregon.

Claim.—The improved medical compound, consisting of the ingredients herein specified, prepared in the proportions and manner substantially as specified.

101,280.—Railway Car-Brake.—Désire Parfait Lefevre and Louis Philippe Dorré, France.

Claim.—1. The combination of a centrifugal governor, substantially such as herein described, with a traction-rod and brake-operating apparatus, when arranged to prevent or permit the action of the brake-operating devices, substantially in the manner specified.

2. A set of levers, *f*, *g*, and *h*, the wings *l*, and a winged head, *k*, or their equivalents, arranged in combination with the centrifugal governor and the traction-rod, so as to constitute an apparatus whereby the force of the weights may be utilized to cause the action of the brake-blocks only when the speed exceeds the limit required, substantially as specified.

3. The combination of the spring O', the connecting-rods *t t*, and the levers *u u*, with the spring O, when arranged to relieve the brake, to offer resistance to the action of the spring O on the brakes, and to suppress the said resistance, when required, all substantially as specified.

101,281.—Stirrer and Egg-Beater.—Charles Lehmann, Hartford, Conn.

Claim.—The spirally-formed stirrer, composed of the shaft *e*, arms *f*, rim *g*, and beaters *h*, in combination with the vessel *a*, substantially as and for the purpose set forth.

101,282.—CURRENT WATER-WHEEL.—William Lightfoot, Hamilton county, Tenn., administrator of John S. Lightfoot, deceased.

Claim.—The buckets, opening and closing in pairs inwardly and outwardly, so that the action of the current upon them is obtained in causing the wheel to revolve when submerged horizontally in the water, all substantially as shown and described.

101,283. — BLEACHING DARK SOAPS AND "FOOTS."—Oscar Loew, New York, N. Y., assignor to John M. Pendleton, same place.

Claim.—The use of chloride of soda, applied to the bleaching of "foots" or dark soaps, in the manner substantially as specified.

101,284.—METHOD OF BLEACHING AND REFINING OILS.—Oscar Loew, New York, N. Y., assignor to John M. Pendleton, same place.

Claim.—1. A cold process for bleaching and refining animal, vegetable, and mineral oils, substantially as described.

2. The application of the agents named, or any two of them successively, to the bleaching or refining of oils without the use of heat other than that evolved by the chemical reaction.

101,285.—WINDOW-GUARD AGAINST FLIES AND MOSQUITOES.—Edgar L. Logee, Central Falls, R. I.

Claim.—The device herein described for closing the space between the upper and lower sashes of a window for the purposes specified, consisting in the combination and arrangement of the lips A and E, the springs C and C', the guides *x* and *x'*, and the curved rods H and H', in the manner substantially as set forth.

101,286. — PAPER COLLAR. — Ed. Elisha Mack, Albany, N. Y.

Claim.—The deep scallop or recess *b* in the turn-over portion B of the collar, as and for the purpose described.

101,287.—FEED-WATER HEATER FOR LOCOMOTIVES.—Israel Putnam Magoon, St. Johnsbury, Vt.

Claim.—The arrangement and combination of the internal frustum G with the steam chimney or pipe B, the deflector F, the heating-coil H, and the main or smoke-chimney E.

101,288, antedated March 15, 1870.—APPARATUS FOR DEFECATING CANE-JUICE.—C. K. Marshall, New Orleans, La.

Claim.—1. Introducing cane-juice or other liquid into a stationary column or upright cylinder charged with sulphurous-acid gas, by means of upward pressure, when the same is so arranged that the liquid shall descend through the gas in the form of fine spray, substantially as described.

2. Forcing the liquid into the stationary cylinder A, when the same is charged with sulphurous-acid gas, by means of a force-pump, B, or equivalent device, substantially as described.

3. The sieve G, when the latter is so arranged in a frame as to freely oscillate therein, whereby sugar or farinaceous substances can be so sifted as to be discharged in a pulverized powder in the stationary cylinder A charged with sulphurous-acid gas, the whole being so combined and arranged as to operate substantially as described.

101,289.—APPARATUS FOR SEPARATING THE SEED FROM FRUIT-PULP.—Robert H. Mayo, Paris, Texas.

Claim.—1. The hand-riddle L s^1 s^2 s^3, constructed and operating, in connection with the trough M, substantially as herein shown and described, and for the purpose set forth.

2. The power-riddle N n^1 n^2 n^3 n^4 n^5, constructed and operating, in connection with the trough M, substantially as herein shown and described, and for the purpose set forth.

3. The trough M m^1 m^2 m^3 m^4 m^5, constructed and operating substantially as herein shown and described, and for the purpose set forth.

101,290.—STONE-DRILL.—William D. McClure, Constitution, Ohio.

Claim.—A drill having its wings *b'* and point arranged as described for the purpose set forth.

101,291.—MANUFACTURE OF CAST-STEEL.—Hugh McDonald, Pittsburg, Pa.

Claim.—The within-described process of making cast-steel from pig metal by melting it, and exposing it to the surface action of the gas from the heating furnace, with or without working until the iron is just on the point of coming to nature and then, while it is yet short of a balling condition, removing it, and placing it, either in a melted condition, or broken into small pieces, into crucibles, and subjecting it therein to the ordinary treatment of a crucible furnace, substantially as and for the purposes hereinbefore set forth.

101,292, antedated March 17, 1870.—SEWING-MACHINE.—William S. Mead, New York, N. Y.

Claim.—1. The mechanism of the finger-hook for crossing the loop of the needle-thread, with the thumb-piece for opening and closing the said hook to control the loop, substantially as described.

2. The combination of the hook for opening the loop of the needle-thread, the stationary shuttle, the thumb-and-finger mechanism for crossing and controlling the loop of the needle-thread, and the needle, substantially as and for the purpose described.

3. The cam for reciprocating the finger-hook and thumb-piece, and the lever and roller so arranged that it can be disconnected from the cam, in combination with the finger-hook and thumb-piece, substantially as described, by means of which the machine can be readily changed to sew seams with the rotary, the chain, or the lock-stitch, as set forth.

101,293.—CORNICE-MOLD.—Michael Meany, John McGinnis, and William Cunningham, Brooklyn, N. Y.

Claim.—The construction and arrangement of independent cheek-plate C, adjustable pattern-plate D, and set-screws *d d*, as and for the purpose specified.

101,294.—PRESS AND STRAINER COMBINED.—W. D. Medbery, Bangor, Wis.

Claim.—1. The rack-bar C, constructed upon the frame *a* and on one side of the center of the curb A, substantially as described.

2. The gravitating dogs *b b'*, rack-bar C, standard D, lever G, and follower B, combined with the curb A and frame *a*, substantially as described.

101,295.—CHILDREN'S CARRIAGE.—George H. Mellen, New York, N. Y.

Claim.—1. The holder *b*, provided with the head *d* and branches *d'*, the lower of the branches being provided with a slot, and the upper one with a set-screw, substantially as and for the purpose described.

2. The combination of the holder, constructed as described with the knob *e* and its neck, in the manner and for the purpose set forth.

3. The adjustable umbrella, convertible into a fan, suspended above a child's carriage, or the equivalent thereof, substantially as described.

4. The semicircular spring, having one end tapering, said spring being adjustable, as and for the purpose set forth.

5. Securing said spring upon the reach within slide thereon.

6. The child's carriage, with adjustable springs in front only, substantially as described.

101,296.—FIRE-PLACE GRATE.—E. D. Merrick, New Brighton, Pa.

Claim.—The grate herein described, having the straight front bar C provided with the notches *m m*, the beveled U-shaped connecting-bars D, and the rear bar F, set out from the chimney back by the lugs, the whole being cast in one piece, the general form of the grate, and all the parts thereof tapering downward, to provide for its ready extraction from the mold.

101,297.—BAYONET.—Anson Mills, United States Army.

Claim.—1. One or more loops *f f* projecting from a muzzle-band F fitting upon and secured to the muzzle of a gun-barrel A, and so arranged and combined with a bayonet made to slide upon said barrel as to aid in supporting it when fixed, all substantially as herein set forth.

2. The pivoted catch-lever G, so formed, arranged, and combined with the barrel A, muzzle-band F, and spring I as to fasten the band upon the barrel, and also serve as a catch in fixing the bayonet of the gun, substantially as herein set forth.

3. A loose pin K, in combination with the middle-band C of a gun-barrel, and with a spring-catch J interposed between said band and barrel, substantially in the manner and for the purpose set forth.

4. A tompion, constructed substantially as herein described of a soft metal hollow cylinder M, fitted at its closed bottom end with an elastic washer O, and at the other end with a flanged head L, screwing into said cylinder and carrying one or more implements *l* Q R, all substantially as herein set forth.

5. A ring N, arranged in combination with the spherical head of a tompion, substantially as herein described.

101,298.—SLEIGH-BENCH.—Edward Milner, Marquette, Mich.

Claim.—As a new article of manufacture, a sleigh-bench C and knees B from one piece of timber, as herein described.

101,299.—MACHINE FOR FOLDING PAPER BAGS.—Gavin J. Moffatt, Brooklyn, N. Y.

Claim.—The combination of the bed-pieces A^1 A^2, platen B, spring G, with the end flap F, and creasing edges *e*, when constructed, combined, and arranged in the manner and for the purpose hereinabove set forth.

101,300.—SAW-MILL.—Charles D. Moore, Gilmanton, N. H.

Claim.—The combination and arrangement of the saw-carrier guide *m* with the table A, the saw-carrier C, the prismatic shaft *c*, and the pulleys, spindles, and endless belts applied to the carrier and the saw, as set forth.

101,301.—WASHING-MACHINE.—D. F. Neikirk and John J. Koch, Republic, Ohio.

Claim.—The arrangement of the inclined stationary slats *a a*, inclined board D, segmental plunger G, slats *b b* attached to the said plunger, inclined board F, corrugated rubbing-surface J, transverse handle-bar *h*, button *g*, arms *c* provided with longitudinal apertures *e*, and hook *d*.

101,302. — TIE-BAR FOR HOLDING BENT WOOD.—Joel G. Niccum, Indianapolis, Ind.

Claim.—The adjustable fastening herein described, for securing the ends of bent timber, consisting of the rack-bar *c* and bar *s* with its pivoted catch *v*, all constructed and arranged to operate as specified and shown.

101,303. — COLLAR AND HAMES.—William O'Brien and Harry Wentworth, Omaha, Nebraska.

Claim.—The combination, with the wood stocks A, shaped and arranged as described, of the crotched end mountings B B' and C C', when socket-jointed at the top and hinge-jointed at the bottom, all substantially as specified.

101,304.—PUMP.—M. S. Orton, Galesburg, Ill., assignor to Zimri Pond, same place.

Claim.—The air-chamber or piston C, attached to the lower end of, and in combination with, the hollow piston-rod or tube L, cylinder B, lever H, and valve Y, the whole constructed and operated substantially as and for the purpose specified.

101,305.—MEDICAL COMPOUND. — Heinrich Christian Sophran Otto, New York, N. Y.

Claim.—The liniment for lameness and rheumatism herein described, consisting of the ingredients heretofore mentioned, made in the manner and for the purpose substantially as described.

101,306, antedated February 23, 1870.—ROTARY HYDRO-PNEUMATIC PUMP.—Henry M. Paine, Newark, N. J.

Claim.—1. The diaphragms L L in the segmental chambers, as arranged in relation to the induction-opening and eduction-valves of a rotary hydro-pneumatic pump, substantially as described.

2. A revolving air-pump divided into segmental chambers containing diaphragms, one or more, as shown, the several chambers communicating at the axis of the cylinder, and the current of air entering through oblique openings in the cap forming one head of the cylinder, and being forced through valves in a position near the opposite end, as the divisions successively descend below the line of water in which the cylinder is immersed, all substantially as described.

101,307.—ATTACHMENT FOR BRUSH.—Samuel Pearson, Cincinnati, Ohio.

Claim.—1. The rest D E F G H, or its equivalent, for attachment to the backs of hostlers' brushes, substantially as set forth.

2. The rest D, in combination with a brush having a back-strap, substantially as set forth.

101,308.—WAGON-BRAKE.—Michael Powell, Umatilla, Oregon.

Claim.—1. The three-armed lever F fulcrumed upon the top of a vibrating post, C, to operate a sliding pawl, in the manner described.

2. The three-armed lever F, swinging post C, sliding detent-pawl E G H, rack D, and strip B, all constructed and arranged upon a wagon, as set forth and for the purpose specified.

101,309.—GAUGE-ROD.—Eli S. Prime, Baltimore, Md.

Claim.—The combination, with a gauge-rod, of an under or difference sliding scale, C, and an over or bung-slide, E, in the manner and for the purpose specified.

101,310, antedated March 16, 1870.—VELOCIPEDE.—Frederick L. Purroy, New York, N. Y.

Claim.—The combination of the frame-shaft A B, pedals D D, rods E E, chain-pulley and cranked axle, the whole arranged as and for the purpose set forth.

101,311.—RAILWAY GATE.—Robert Ramsey and Charles Stafford, Wilmington, Pa.

Claim.—1. The gate operated by worm-shafts C C, constructed, as described, with flanges *b b*, and operated by the pressure of the car-wheel, substantially as and for the purpose set forth.

2. The string-pieces H H, operated by the pressure of the car-wheels on top, and by springs *c c* underneath, substantially as and for the purpose herein set forth.

3. The wheel I, with the spiral springs *i i*, washers *k*, and arm K, for lifting the gate, substantially as herein set forth.

4. The arrangement of the worm-shafts C C, wheels F F and E, arm G, and pin d, all constructed as described, and for the purposes set forth.

5. The combination and arrangement of the gate A B, worm-shafts C C, string-pieces H H, arms G and K, and wheel I, all constructed and connected as described, and operating substantially in the manner and for the purposes herein set forth.

101,312.—Boat-Detaching Apparatus.—Nathaniel C. Reynolds, Ellsworth, Me.

Claim.—The lever-hooks C C, blocks A B, rods I J, and lever G, when the same are constructed, combined, and arranged to operate substantially as and for the purposes herein shown and described.

101,313.—Chimney-Top.—David S. Robinson, Pittsburg, Pa.

Claim.—1. A sheet-metal cap, A, for chimney-tops, having an aperture near the center surrounded by lips *f f*, and on the edges thereof the projecting flanges *a a*, to clasp firmly around the chimney and hold the cap or base-plate in a fixed position.

2. The base-plate A, constructed as above described, having triangular standards *b b* formed of the same piece of metal, and turned up in the manner and for the purpose described.

3. The hood C, formed of sheet metal, bent at an angle of about eighty degrees, to form two equal sides, and suspended from the points of standards *b b*, in the manner and for the purpose set forth.

4. The combination of plate A *b b* and hood C, constructed and shaped as set forth, with the braces *d* and bar *e*, arranged as specified, the former to support the standards and the latter to prevent the hood from being lifted off, all as shown and described.

101,314.—Composition Roofing.—Benjamin D. Sanders, Wellsburg, West Va.

Claim.—1. In composition tank-roofs, interposing a layer of composition between the main ledge C and a lining, *b*, substantially as described.

2. In the flooring of composition-roofs, making the flooring boards with a hook-joint as described.

101,315.—Machine for Compressing Wood Tenons.—Benjamin D. Sanders, Wellsburg, West Va.

Claim.—1. Two plain surfaces, longitudinally converging and transversely parallel, and arranged with reference to each other so as to be operative in compressing wooden tenons and rounds by the motion of either, as described.

2. The subject-matter of the previous claim, in combination with a gauge, fixed or adjustable, for determining the length of the tenon or the position of the round, as described.

3. The subject-matter of the first claim, in combination with a bead, *n'*, attached to either or both, for the purposes set forth.

101,316.—Stove-Drum.—Thomas Scantlin, Evansville, Ind.

Claim.—1. The combination of the drum B with the pipe C, plates *e f*, and pipes A, D, and *i*, all arranged substantially as herein shown and described.

2. The guarded slots provided in the smoke-passage of a heat-radiator, for the purpose of drawing air into the same, as specified.

101,317.—Pessary.—Caspar Schmitt, St. Louis, Mo.

Claim.—A uterine support consisting of the V-shaped spring A, and pivoted cushions B, arranged and operating substantially as herein described.

101,318.—Mold for Casting Solder, &c.—Abraham Schoenberg, New York, N. Y.

Claim.—1. The reversible mold provided with the hollow journals, and supported by the slotted standards when the same shall be constructed and operate substantially as and for the purpose specified.

2. In combination with the same the swiveled upright E, constructed and operating as described for the purpose set forth.

101,319.—Process of obtaining Acetic Acid from Wood.—Theodore Schwartz, New York, N. Y.

Claim.—1. The preparation of the wood for distillation by subdividing it and shortening the fiber by transverse incisions, as and for the purpose described.

2. Subjecting the wood from which the acid is to be obtained to a temperature just sufficient to drive off its moisture, but not so high as to develop the acid, as set forth.

3. Subjecting the wood to a temperature just sufficient to develop and expel the acid, without charring the wood or reducing it to charcoal, as specified.

4. The production of acetic acid by the use, separately or conjointly, of one or more or any part of the processes specified in the foregoing claims, and explained in my specification.

101,320.—Treating Wood to obtain Useful Products.—Theodore Schwartz, New York, N. Y.

Claim.—1. As a new article of manufacture, wood, browned or darkened throughout the grain for kindling or fuel, said article, which I call "tinder-wood," being produced by the treatment hereinbefore described.

2. Tinder-wood or kindling prepared as described, and protected from access of moisture, and having its inflammability enhanced by the application of rosin as a coating or otherwise, as set forth.

3. Small wood, prepared as described, to be used as an improvement in the manufacture of gunpowder charcoal, as stated.

4. Imitation woods, prepared and colored by the process hereinbefore specified, for use in the manufacture of cabinet-ware and for other constructive purposes.

5. The saving and utilising of acetic acid developed from wood during the process of treating it as described, for the purposes specified.

101,321.—Washing-Machine.—Anna M. Smith, Pittsburg, Pa.

Claim.—1. In combination with the movable board of a pair of wash-boards, the side bars *e*, each having a slot, *s*, and recess or bearing *e'*, substantially as described.

2. The side bars *e* engaging at their lower ends, by journals *b'* or otherwise, a fixed or stationary part of the machine, and having slots *s* extending to near the lower end of the bars *e* in which to operate the journals *c* of the movable board, substantially as described.

101,322.—Bolt for Safety-Stove for Cars.—Charles J. Smith, Norfolk, Va.

Claim.—The combination of the slotted plate or disk E with the sliding bolt and swinging weighted lever or handle D, as described.

101,323.—Water-Meter.—George W. Smith, Norwich, Conn.

Claim.—1. The combination and arrangement of the upright hollow cylinder and arms B C C revolving in water in the lower chamber of the case A, having the upper end of the cylinder opening into the upper chamber of the case, and provided with packing, which, while it permits the cylinder to revolve freely, causes all the water supplied to the upper chamber to pass through the revolving cylinder and arms into the water in the lower chamber, whence it is discharged, substantially as and for the purposes hereinbefore set forth.

2. The combination in a water-meter of the revolving cylinder B, arms C C, partition H, bearings F and G, packing P, and registering mechanism I, all arranged and operating in the water within the case A, substantially as and for the purposes herein described.

101,324.—Grain-Separator.—Myron H. Smith, Lawton, Mich.

Claim.—1. The arrangement, in the vibrating

shoe C, of the gains *b c d*, recesses *r*, bolt-holes *s*, conductors *h i j*, and distributing-aprons D D', substantially as and for the purpose set forth.

2. The deflector or spreader *a*, attached to the feed-apron of a separator, as and for the purpose set forth.

3. The reversible combined screen and apron J, provided with screens *l m*, apron *k*, and cleat *n*, as and for the purpose set forth.

4. The screen-frame K, with its screen *o* and plate *p*, in connection with the open apron *t*, when arranged and operating in the manner and for the purpose specified.

5. The arrangement within the shoe C of the reversible combined screen and apron J, the screens I and E, and the chess-board H, in connection with the spouts *h*, *i*, and *j*, when constructed as described, and operating as and for the purposes set forth.

101,325.—Lubricating Compound.—Jacob H. Smyser, Pittsburg, Pa.

Claim.—A lubricator or "grease" made of vulcanized rubber and petroleum, which is distilled and mixed with the products of its distillation and with tallow or other grease or oil, substantially as herein described.

101,326.—Bed-Bottom.—Joseph Sperry, Charleston, Ill.

Claim.—The combination of the series of slats B and C, each constructed and arranged in a bedstead substantially as shown and described.

101,327.—Bed-Frame.—Samuel Springer, Chicago, Ill.

Claim.—A bed-frame made in longitudinal sections, and so connected that the said frame may be used as a single bedstead or be separated into two or more, substantially as and for the purposes specified.

101,328.—Caster for Sewing-Machines.—John M. Veasey, Denver, Colorado Territory.

Claim.—1. The levers *h h*, pivoted upon the frame and provided with curved ends projecting into chambers *e e*, and pressing on the pintles *d d* of the casters whose pintles project into the chambers, as shown and described.

2. The combination of the subject-matter of the above claim of the hook *l*, all being arranged as and for the purpose specified.

101,329.—Oval-Turning Tool.—John L. Warren, Detroit, Mich., assignor to George Hargreaves and Samuel Hargreaves, same place.

Claim.—1. The metallic cap J, as described, and operating as and for the purpose set forth.

2. In combination with the metallic cap J, the knives I, arranged upon the cutter-head as described, and operating as and for the purpose set forth.

101,330.—Device for Tightening Carriage-Tires.—Jonathan Burns West, Geneseo, N. Y.

Claim.—1. The combination of two or more metallic bands or strips, one over-wrapping the other, attached to a fixed block or bearing at one end, and connected with a screw or other power at the other, and encircling the wheel for the purpose of setting of the tire without removal of the latter from the wheel, as herein described.

2. The combination of the nut *f* and loose block *g* with the bands or straps B B, bed-plate A, and the screw G, as herein described.

3. The arrangement of the bed-plate A, bands B B, fixed blocks *a d*, nut *f*, loose block *g*, and screw G, the whole operating in the manner and for the purpose specified.

101,331.—Apparatus for Tanning Hides.—Zebard Thompson White, Winchester, Mass., assignor to himself and Franklin Waldo Perry, same place.

Claim.—The combination of an overflow eduction-conduit, *x* or *y*, with one or more tan-vats D, a leaching-apparatus, C, a pair of weak and strong liquor-junks or cisterns, A A', a heating-reservoir, B', and a cooling-reservoir B, arranged together and provided with conduits of connection, the whole being substantially as described, in order that the liquor discharged from the last of the series of tan-vats may flow out of the upper part thereof, and thence into one of the junks A A', and a continuous circulation of the liquor be produced through the vats, as set forth.

101,332.—Brush.—John L. Whiting, Boston, Mass.

Claim.—A brush-handle provided with one or more tubular butt projections extended from it, and to operate with a ferrule in holding the bristles to a handle.

101,333, antedated January 14, 1870.—Hand-Setting Calendar.—Charles H. Wight, Baltimore, Md.

Claim.—1. The adjustable cylinder H, constructed as described, and operating in combination with the shaft *f*, spring *g*, and knob G, substantially as and for the purposes herein set forth.

2. In combination with the cylinder H, the bent bar I, rod *m*, knob *n*, and spring *i*, all substantially as and for the purposes herein set forth.

3. The arrangement within the box B of the revolving cylinder E, and adjustable revolving cylinder H, constructed as described, substantially as and for the purposes herein set forth.

101,334.—Steam Water-Elevator.—Joseph C. Wightman, Newton, assignor to Thomas P. Proctor, trustee, West Roxbury, Mass.

Claim.—1. An apparatus for raising and forcing water, when constructed and operating substantially as set forth.

2. The supply-chamber B, connected and operating for the purposes substantially as set forth.

3. The automatic perforated valve J, operating for the purposes substantially as set forth.

4. The condensing-chamber I, placed and operating substantially as described.

5. The condensing-valve K, operating for the purposes and placed substantially as described.

6. The steam-generator C when operating in connection and combination with the supply-chamber B, and placed in such position, in contact with heat, as to allow of water flowing into it on an inclined plane, when constructed and operating substantially for the purpose herein described.

101,335.—Washing-Machine.—Caleb Williams, Newark, N. J.

Claim.—The combination of the box, (fig. 1,) lever *e*, plunger-rod *d*, plunger *c*, wire guards *h*, ports *f*, and valves *g*, all constructed, combined, and arranged in the manner described, for the purpose specified.

101,336.—Coffee-Pot.—John P. Williams, Mobile, Ala.

Claim.—1. The combination with the exterior boiler A and interior coffee-holder B, of a steam-plug and tube G to boil the water and supply the same, as shown and described.

2. The combination of vessel B, strainers D E F, spout H, and steam-receiving tube G to generate coffee without agitation of the ground berry, or loss of aroma, as set forth.

101,337.—Device for Measuring, Laying out, and Forming Corsets.—Mollie Williams, Camden, Ohio.

Claim.—Measuring, laying out, and forming the several pieces of a corset, by means of patterns Nos. 1, 2, 3, substantially as herein shown and described.

101,338.—MOWING-MACHINE.—Thomas H. Witherby, Worcester, Mass.

Claim.—The shoe M pivoted to shaft C, upon opposite sides of gear E, grooved for the reception of the slide O, and supporting the bearing *i* for the pinion F and cam *b*, those parts being arranged to operate in the manner and for the purposes herein described.

101,339. — SHEARING AND PUNCHING-MACHINE.—Thomas H. Witherby, Worcester, Mass.

Claim.—1. As an improvement in machines for cutting metal, the perforations *a* in the lower shear-blade, by virtue of which the machine is adapted to shear sheet or plate metal, and also to cut rods or bars, in the manner and for the purpose herein described.

2. The arrangement, as herein described, of the frame B and anti-friction rolls, the eccentric D, shears E E and punch F and die G and *b*, for the purposes herein set forth.

101,340.—LINIMENT FOR BURNS, SCALDS, &c.—Louis Wolff, Chicago, Ill.

Claim.—The liniment for burns and scalds, made of the ingredients herein specified and prepared, substantially as and in the manner set forth.

101,341. — BASE-BURNING FIRE-PLACE STOVE.—William E. Wood, Baltimore, Md.

Claim.—1. The combination with the stove for a fire-place or hot-air furnace, of the series of downward and upward-draught flues A B C D E, and clean-out chambers F and G, substantially as and for the purpose hereinbefore set forth.

2. The combination with the magazine fuel-cylinder K, of the air-heating chamber L, the fresh-air-supplying tubes *e e*, and the hot-air receiving and distributing chamber P, substantially as and for the purpose hereinbefore set forth.

101,342.—SEEDER AND CULTIVATOR COMBINED.—Nelson E. Allen, Trenton, and Israel B. Record, James Rood, and Jasper Hayden, Beaver Dam, Wis.

Claim.—1. The series of plows diagonally set and acting independently of each other, the beams of which are pivoted in clasps, and having springs, all constructed and operating as described.

2. The combination of the clasp H, the beams *f*, the springs M, the plows or cultivator I, cross-piece K, arms *n*, the roll O, and lever Q, all constructed and operating as described.

101,343.—SAW-MILL.—Emanuel Andrews, Williamsport, Pa.

Claim.—1. The strap B in one piece, with equal inner edges tapering regularly alike from one and the same end to the other, provided with inwardly-sloping bevels *a* and with a rounded outer edge, as shown and described and for the purpose set forth.

2. The key D, grooved on its upper edge to fit closely to the outer rounded edge of the strap B, and provided with a longitudinal depression, *b*, to receive the inner end of the set-screw E, as shown and described and for the purpose set forth.

101,344.—PENCIL-CASE.—William N. Bartholomew, Newton Centre, Mass., assignor to Joseph Reckendorfer, New York City.

Claim.—1. A combined point-protector, extension piece, and lead pencil consisting of an extension and point-protecting tube in a combination with a lead-pencil furnished at or near one end with a double tapered or inclined head adapted to be wedged and held in the tube whether the point of the pencil be turned out from or inserted in said tube, substantially as shown and set forth.

2. A lead-pencil, the wooden sheath of which is formed with a double taper, so as to admit of the same being wedged and held in the extension and protecting-tube, in which either end of the pencil may be inserted, substantially as described.

101,345.—BEARING FOR THE TABLE-ROLLS OF FOURDRINIER PAPER-MACHINES.—George S. Barton, Worcester, Mass., assignor to Rice, Barton & Fales Machine and Iron Co.

Claim.—1. The combination with the table-rolls in a Fourdrinier paper machine of separate adjustable bearings for supporting said rolls, substantially as and for the purposes set forth.

2. The combination with the side supporting-rails A, provided with grooves *a* and flanges *d d*, and roll-journals *b*, of the rectangular bearing-blocks C, adjusting-screws D, and check-nuts E, substantially as and for the purposes set forth.

101,346.—WOOD PAVEMENT.—Albert Betteley, Boston, Mass.

Claim.—A pavement made up of cylindrical blocks, interlocked substantially as described.

101,347, antedated March 24, 1870.—WATER AND GAS-METER.—Nathaniel L. Blanchard, Spuyten Duyvil, N. Y.

Claim.—1. The combination with a tilting or rocking measuring-chamber of a diaphragm, arranged and operating by its weight to rock the meter irrespective of the weight of the fluid passing therethrough, and serving to establish receiving and delivery-spaces alternately on opposite sides of the tilting axis, substantially as specified.

2. The combination with the tilting measuring-chamber and shifting diaphragm, operating by its weight to rock the meter, of valves arranged to act by their own gravity to control the several inlets and outlets as the meter is rocked, essentially as herein set forth.

3. The combination and arrangement of the rocking measuring-chamber A, the shifting diaphragm E, the rocking inlets and outlets B C, the valve-boxes or cylinders F I, with valves therein, and the several inlet-pipes or branches G H J K K′ and L M, substantially as specified.

101,348. — EXHAUSTING APPARATUS FOR GAS-WORKS.—Samuel Reeve Brick, Philadelphia, Pa.

Claim.—1. The combination, substantially as described, of a double-acting pump, with the pipe communicating between the hydraulic main and the purifiers of gas-works.

2. The within-described arrangement of the pipe G G′, its self-closing valve L, pipes I and J and double-acting pump.

3. The combination of the hollow piston B with the cylinder A having a portion of its interior contracted to receive the said piston.

4. The valves *m* hung in the manner described to the frames *n*.

5. The arrangement described of the outlet-branch *f* of the cylinder A in respect to the latter, and to the inlet-branches.

101,349.—CORN-PLANTER.—Truman Brockway, Chatsworth, Ill.

Claim.—1. A corn-planter constructed with a rigid frame supported loosely on an axle, so that the frame may be tilted or adjusted on the axle, substantially as described.

2. In combination with a frame mounted on an axle as above described, the lever K and connecting rod L, when arranged to operate as and for the purpose set forth.

3. The arrangement of the seats E and F on opposite sides of the axle, said seats being supported upon the axle in contradistinction to being supported on the frame, substantially as set forth.

101,350.—HARROW.—Jackson G. Burcham, Noblesville, Ind.

Claim.—The combination and arrangement of the beams A A, bars B B, beams C C, hinges *a a*, teeth *b b*, handles D D, and supports E E, all substantially as and for the purposes herein set forth.

101,351.—FENCE.—Timothy Coffield, Natrona, Pa.

Claim.—The combination and arrangement of the strips B C D, the compound pivoted braces *e f*, with the rails 3, 4, 5, and 6, when said parts are secured together by and through the medium of screw-bolts, as herein described, and for the purpose set forth.

101,352.—RIVET.—Humphrey E. Copeley, Brooklyn, N. Y.

Claim.—1. The punch or set B, constructed with a central cavity, *c*, and countersink around it, for operation substantially as set forth.

2. A rivet finished with the punch or set B, essentially as specified.

101,353.—APPARATUS FOR KEEPING PURE THE AIR IN THE MANUFACTURE OF FERTILIZERS.—James E. Cox, Cincinnati, Ohio.

Claim.—1. The apparatus herein described for preventing the presence of effluvia in the air about fertilizer-manufactories, &c., consisting of the steam-tight vats A, with elevating covers C, and windlass D, pipes *a b*, leaden chamber E, chemical chamber F, receiving-tanks B, with covers, conical desiccating chamber L, with rotating helix Z, opening *i*, and drain-pipe *y*, also pipe H for conveying the effluvia to the bottom of a river or tank, when constructed and arranged to operate as and for the purposes set forth.

2. The horizontal conical desiccating chamber L, provided with rotating helical plate Z, when constructed and arranged to operate as and for the purposes specified.

3. In combination with the steam-tight vats A, with elevating covers C, the pipe H, arranged to convey the effluvia from the manufactory to the bottom of a river, sewer, or water-tank, as specified.

4. In combination with the steam-tight vats A, the pipes *a b* and leaden chamber E, for utilizing the effluvia, when constructed and arranged to operate as and for the purposes specified.

101,354.—MACHINERY FOR MAKING PAPER BOXES.—C. O. Crosby, New Haven, Conn.

Claim.—1. The slide D^1, provided with the creasing apparatus and dies 7, operating as and for the purpose set forth.

2. In combination with the slide D^1, arranged to operate as described, the cutters *d*, for slitting the blank, as and for the purpose specified.

3. In combination with the slide D^1 and cutters *d*, a feeding device arranged so as to carry the blank into the machine, substantially as set forth.

4. In combination with the slide D^1, operating as described, and the cutters *d*, the shear *c*, all operating together as and for the purpose specified.

5. The slide I, combined with the follower L and the two side dies J, operating together as and for the purpose specified.

6. In combination with the slide I, follower L, and dies J J, the folders P^1, operating as and for the purpose specified.

7. In combination with the slide I, follower L, and folders P^1, the dies N N, operating as and for the purpose specified.

8. In combination with the slide I, follower L, folders P^1, and dies N N, the auxiliary slide I^1 and the folders R R, all operating together as and for the purpose specified.

9. In combination with the slide I and follower L, the punches L′, operating as and for the purpose set forth.

10. In combination with the slide I, follower L, and folders P^1 and R, the slide S^2, arranged so as to throw the box from the machine, substantially as set forth.

101,355.—LOCK.—Charles C. Dickerman, Boston, Mass.

Claim.—The friction spring *i*, when secured on the bolt *f* by the adjusting-screw *k*, in combination with a lock having one or more double-barred tumblers, movable friction-stops, and double stationary-bitted keys, substantially as and for the purpose described.

Also, converting a rim or mortise-lock into a drawer or cabinet-lock, or *vice versa*, by changing the covers.

101,356.—MACHINE FOR SHEARING METAL.—Ellis Doty and H. Richardson, Janesville, Wis., assignors to Doty Manufacturing Company, same place.

Claim.—1. The insertion of the steel or wrought-iron plate N into the cast-iron frame, in the manner herein described, for the purpose of strengthening the same substantially as set forth.

2. In combination with the shearing-machine constructed substantially as described the adjustable dog or brace I, when constructed and arranged as set forth.

3. The pin *a*, arranged in relation to the blade R to operate as a guide, substantially as set forth.

101,357, antedated March 19, 1870.—OVEN.—McCann Dunn, Bloomington, Ill.

Claim.—1. The arrangement of a hot-air ventilated oven in such a manner that the air is circulated within the oven, and around and about the food placed therein, substantially as herein set forth.

2. The combination and arrangement of the oven A, hot-air furnace B, radiator C, flue D, ventilator F, and dampers E G, all constructed as described, and operating substantially in the manner and for the purposes herein set forth.

101,358.—PLUMBAGO PRESS.—John C. Ford, Cambridgeport, Mass., assignor to William A. Ives, New Haven, Conn.

Claim.—1. In a press for forming plumbago or other material into cakes or blocks, the combination of the two mandrels D and I, to one of which a vertical movement is imparted, and to the other a combined vertical and revolving movement, arranged and operating in a die, L, substantially as set forth.

2. In combination with the two mandrels, constructed and operating together as described, the rotating die L, having several openings, and each opening successively presented to the mandrels by means of the cam N′ and its connections, substantially as described.

101,359.—WATER-CLOSET VALVE.—Curtis T. Forrest, San Francisco, Cal.

Claim.—1. The combination of the faucet D E, provided with the regulating-screw F, with the straps *s* and weight *w*, when arranged and operated as described, for the purpose set forth.

2. In combination with the above, an air-tight reservoir, having the float-valves *s d g* and stop *f*, as described, for the purpose set forth.

101,360. — SHOE-FASTENING. — William H. Fortney and William E. Sheaffer, Middletown, Pa.

Claim.—As a new article of manufacture, the hook herein described, when constructed to be attached to shoes, wearing apparel, &c., in the manner shown and described.

101,361.—BROILER.—Ann L. H. Graham, Chester, Pa.

Claim.—The dripping-pan and basting-plate, in combination with the clamp and case, substantially as and for the purposes described.

101,362. — PERMUTATION LOCK. — Henry Gross, Tiffin, Ohio.

Claim.—1. The wheels E E, with slots *s s* cut

upon but one-half of the periphery of the wheels, and with eccentrics *b b*, in combination with the slide H, having pins *k* and lugs *m*, all substantially as set forth.

2. The cam-wheel G, with bent flange *f* and notch A, for receiving the slide, substantially as and for the purposes herein set forth.

3. The slide H, with pins *k k*, lugs *m m*, and double hinge *p*, substantially as and for the purposes herein set forth.

4. The combination and arrangement of the arbor B, dial C, wheels E E, cam-wheel G, with its bent flange *f*, slide H, bolt L, and arm M, all constructed as described, and operating substantially in the manner and for the purposes set forth.

101,363.—Cover for Sewing-Machines. Thomas Hall, Brooklyn, N. Y.

Claim.—The combination of the slotted or recessed dowels D D, the eye-plates F F, and the hooks or wedges E E with the hinged sections B and C of the case A, as herein set forth.

101,364, antedated January 18, 1870.—Still for Hydrocarbons.—Samuel A. Hill and Charles F. Thumm, Oil City, assignors to themselves and Oliver P. Scaife, Pittsburg, Pa.

Claim.—A series of stills connected together by pipes which connect with zig-zag ways or channels made in or on the bottom of each still, each still of the series being provided with a "goose-neck" and condenser, as herein described.

101,365, antedated January 18, 1870.—Still for Hydrocarbons.—Samuel A. Hill and Charles F. Thumm, Oil City, assignors to themselves and Oliver P. Scaife, Pittsburg, Pa.

Claim.—A still divided into a series of compartments, the bottom of each compartment being provided with zig-zag ways or channels, the compartments communicating with each other, and provided with a "goose-neck" and condenser, substantially as described.

101,366.—Machine for Threading Bolts. Merrit Hine, New Haven, Conn., assignor to C. Cowles & Co., same place.

Claim.—1. In combination with the mandrel C, screw-cutting dies *a*, and inclined sleeve, operating as described, the bolt-holding jaws F F and lever L, substantially as described.

2. In combination with the subject-matter of the first clause of claim, the rod N and slide P, with the collar T arranged on the mandrel, substantially in the manner and for the purpose described.

101,367. — Hoisting-Machine. — George Johnson, Cincinnati, Ohio.

Claim.—1. The revolving drum D, so constructed and connected to the driving-shaft A and rope or chain E that it will be stopped in its revolution by the pawl H I or friction rubber, in consequence of the slacking of the rope or chain E, as and for the purpose set forth.

2. In connection with the rope or chain E and drum D, constructed and operating substantially as described, the pawl H I, operated by the rope or chain in the manner and for the purpose specified.

101,368.—Base-Burning Stove.—William J. Keep, Troy, N. Y.

Claim.—The employment of an auxiliary grate above, and in combination with the fire-pot, substantially as and for the purpose specified.

Also, the employment of a fire-pot, so constructed as to permit the sides thereof to be moved or shaken, substantially as described, and for the purpose set forth.

Also, in so combining a fire-pot with an auxiliary grate as that motion given to one shall be communicated to the other, substantially as and for the purpose shown.

Also, the grate-bars N, loosely pivoted at their upper ends, and so held in position laterally at their lower ends as to have a free longitudinal movement, substantially as shown and set forth.

Also, the diving-flue L, situated immediately in rear of the fire-pot and forming a back for the auxiliary grate and beginning above the lower end of the magazine, substantially as shown and for the purpose specified.

Also, the handle T', pivoted with the end *r'* of the drawer R, and within the cross-bar S, extending transversely across said drawer, substantially as shown and for the purpose described.

Also, the employment of a sliding or swinging end to an ash-drawer, substantially as shown and for the purpose specified.

101,369.—Extension Gas-Fixture.—Henry Krüger, New York, N. Y.

Claim.—1. The series of curved links A A, united by swivel-joints B, and forming a single continuous coil, substantially as set forth.

2. The combination of a telescopic guide-tube, C, (one or more,) with the curved links A A A, substantially as set forth.

3. The rounding off of the surface of the plugs in the union-joint to ease the motion, substantially as described.

101,370. — Carriage-Axle. — George A. Lloyd, San Francisco, Cal., assignor to himself and Anthony Rosenfield.

Claim.—In combination with the outer box C and axle A, having an enlargement and shoulder *a*, the inner box B, having the enlarged or expanded parts *c c'*, bearing upon and lubricating the outer box C and axle A, and forming recesses *b b'*, substantially as described and specified.

101,371. — Double Pincers.—William L. Maund, Milan, Texas.

Claim. — The pincers, as described, with the parts A A B B D D, the screw E and tap F, and springs I I, all constructed and operating substantially as and for the purpose described.

101,372. — Electro-Magnetic Annunciators.—William N. McInnis, Northumberland, Pa.

Claim.—1. The combination and arrangement of the magnet D, lever or armature E, pin *a*, and spring *b*, all substantially as and for the purposes herein set forth.

2. The falling door C, constructed as described, and operating substantially in the manner and for the purposes herein set forth.

3. The arrangement of the sliding frame K, with cross-bars L L, springs M M, and lever N, substantially as and for the purposes herein set forth.

4. The arrangement of the magnet D, lever E, pin and spring *a b*, falling doors C, frame K, with bars L, springs M, lever N, and magnet G, lever H, with hammer I, and spring *d*, for operating the bell J by electricity, all substantially as set forth.

101,373.—Preserving Vegetables, Fruits, &c.—David M. Mefford, Norwalk, Ohio.

Claim.—The treating of vegetable and other edibles having no acid, sensible to the taste, with sulphurous-acid gas, until a slight acidity is imparted thereto, and neutralizing the same by means of soda or other alkaline substance, and then hermetically sealing them in air-tight vessels.

101,374.—Carpet-Tack.—Thomas A. Mitchell, Washington, D. C., assignor to himself and Daniel Breed, same place.

Claim.—1. A tack having two or more penetrating points, substantially as set forth.

2. The tack and binder, as a new article of manufacture, formed of the penetrating points and flattened bar or head, substantially in the manner and for the purposes set forth.

101,375.—Heating-Stove.—James Moore, Ergeneth, Ireland.

Claim.—1. A grate, composed or removable grate-bars D and a series of horizontal hot-air tubes, in connection with vertical pipes, *a*, communicating therewith, substantially as and for the purpose set forth.

2. The series of hot-air tubes *c c*, combined with tubes F F' and tube E, substantially as set forth.

3. The flue-plates I and K, with alternating end spaces, and arranged with the tubes *c c* and fire-place B, substantially as set forth.

4. The tubes *b*, elevated above the grate and arranged transversly and extending entirely from side to side, in combination with the vertical pipes, extending from the base-plate and communicating with the said pipes *b*, substantially as and for the purpose described.

101,376.—Bed-Bottom.—Moses Morehouse, Boscobel, Wis.

Claim.—The reversible slotted bars or slats E, the pegs F, the cross-bar D, in combination with the spring-band C and the suspending-hook B, as described, and for the purposes specified.

101,377. — Easel. — George Menger and James W. Schermerhorn, New York, N. Y.

Claim.—As an article of manufacture, the head A, provided with the ribs *b b'* and lugs *c*, in the manner and for the purpose specified.

101,378.—Turbine Water-Wheel.—Josiah B. Park, North Platte, Nebraska.

Claim. — 1. In combination with a wheel, the floats of which are shaped substantially as described, a scroll-chute, the induction orifice of which has a transverse diameter less than the length of the radial face of floats, substantially as and for the purpose set forth.

2. In combination with a wheel the floats of which are formed substantially as set forth, a scroll casing formed on a spiral curve from the mouth of the chute to a point, *a*, where it comes in close proximity to the points of the floats, and thence to the point at *a'*, formed on arc concentric with the wheel, substantially as set forth.

3. In combination with a wheel and scroll substantially such as described, upper and lower plates B and C, and an aperture of discharge, *a'*, arranged substantially as set forth.

101,379.—Screw-Piling.—Charles H. Parker, Boston, Mass.

Claim.—The hollow screw-pile P, constructed with an external screw, A, and an internal screw, B, which has a greater pitch than the external screw, in the manner and for the purpose described.

101,380.—Convertible Plow and Cultivator.—C. L. Reid, Louisville, Ky.

Claim.—1. The bedder E, constructed substantially as shown and described.

2. The combination of the frame C with the hanger C^1 and bedder E, substantially as set forth.

3. The arrangement of the hangers C^1 and C^2, bedder E, and cultivators F, when combined with the frame C, so that the machine may be converted from a cultivator into a bedder, or *vice versa*, as set forth.

101,381.—Cigar-Box.—Matthew Richardson, Brooklyn, N. Y.

Claim.—A box having its ends constructed of pervious wood, and its other parts of veneered paper, substantially as set forth, as a new article of manufacture.

101,382.—Projectile for Toy Pistol.—Charles Robinson, Boston, Mass.

Claim.—The combination of a solid ball, E, with elastic loop A and non-elastic loop B, as a toy projectile, to be used in the manner specified.

C P O——1870

101,383.—Traveling-Cap. — James F. Sargent, Tunbridge, Vt.

Claim.—The combination of the cap A, cape or air-reservoir B, and air-inducting pipe C, substantially as and for the purpose shown and described.

101,384.—Mode of Lubricating Axles.—Enoch Sawyer, Hollow Square, Ala.

Claim.—An improvement in the mode of lubricating axles, the removable attachment D, secured by means of a key inclosed within an oil-box, substantially as and for the purpose hereinbefore set forth.

101,385.—Base-Burning Fire-Place Stove. Samuel B. Sexton, Baltimore, Md.

Claim.—1. In a fire-place stove the radiating flues J J', one or more, formed between plates or sheets, parallel or approximately parallel, either with or without the base-flue chamber N.

2. The sheet-flues J J', one or more, of segmental or analogous form, in combination with a fire-chamber, A, and an air-space, P, between the said flues and fire-chamber.

3. The magazine D, tapering upward from about its mid-height, and provided with a valve or outlet for the discharge of gas therefrom, and a separate feed-opening.

4. The arrangement of the dampers F and *f* as herein represented and described, for the purposes set forth.

101,386.—Gag-Runner and Buckle.—Severin Siebold, Syracuse, N. Y., assignor to himself and P. Burns, same place.

Claim. —A gag-runner and buckle, united together by a hinged metallic joint at the lower cross-bar of the buckle and the top of the gag-runner, substantially as described.

101,387.—Terret Lining.—Severin Siebold, Syracuse, N. Y., assignor to himself and P. Burns, same place.

Claim.—A terret having the ends of its lining secured by means of a fissure or narrow opening in the terret ring, substantially as and for the purpose herein set forth.

101,388.—Distillation.—Henry B. Sinks, Cincinnati, Ohio.

Claim. — Reducing the proof of alcohol *in transitu* from the still to the condenser, by means of a spray or jet of water in the goose-neck or vapor-pipe, so as to mingle and pass out with the condensed vapor of the worm or flake-stand.

101,389.—Casting Ingots in Groups.—Frederick J. Slade, Trenton, N. J.

Claim.—1. The corner-pieces *d d*, constructed and arranged as described.

2. The compressible stopper or piston, consisting of plate *e*, the parts *t t* or *t' t'*, and envelope *u*, constructed and arranged substantially as described.

101,390.—Graduated Rule and Pattern for Tailors.—William E. Smith, Chicago, Ill.

Claim.—The within-described pattern, with its several graduated scales, slots, and curves, as shown, and for the purpose as set forth.

101,391.—Padlock. — Daniel Snell, Little Falls, N. Y.

Claim.—1. In combination with a lock, the spring piece *c*, when the same end of the spring that locks the hasp also throws it out, substantially as described.

2. In combination with a lock-case and the spring piece *c*, the recess *b* and shoulder *2*, in and against which the point of the spring piece acts, substantially as described.

3. In combination with the spring piece *c*, recess

b, and shoulder 2 in the lock-case, the notch 3 and shoulder 4 on the hasp, all operating as and for the purpose described and represented.

4. In combination with the face-plate and key-hole therein, the fuse or guard around said key-hole on the inside of said face-plate, when said fuse is notched and elongated at one side of the key-opening, as and for the purpose described.

101,392.—COOLING AIR AND LIQUIDS.—Daniel E. Somes, Washington, D. C.

Claim.—1. A roof covered with fibrous material, and cooled substantially in the manner set forth.

2. In combination with a roof covered with fibrous material, and cooled as set forth, an inner roof or ceiling, with an intervening air-space and dampers, substantially as set forth.

3. The tube B, with a fibrous jacket and means for moistening the same, in combination with the flue C and blower C^1, substantially as set forth.

4. The condensing-chamber or apparatus, the flue C, and the blower C^1, substantially as and for the purpose set forth.

5. The tube B, flue C, blower C^1, and condensing-chamber or apparatus, substantially as set forth.

6. The cooling-tube E, with valves E^1, and inner tube E^2, substantially as set forth.

7. A building or apartment, with the cooling-tubes B or E and ventilating-tubes G and G′, substantially as set forth.

8. The water-pipes F^1, inclosing shell or casing F, with a tank or chamber below such shell, substantially as set forth.

9. A building or apartment with pillars through which water is made to circulate, substantially as set forth.

10. Any one or more of the herein-described devices or processes for cooling or drying, in combination with a building or apartment constructed with double or multiple walls, substantially as set forth.

101,393. — FIRE-ESCAPE. — Joseph Steger, New York, N. Y.

Claim.—The combination, with a balcony, A, of the ladder B and trap-door b, the latter being connected together by means of links c and the sides of the ladder, which are extended beyond the point d, where the ladder is pivoted and suspended, substantially as and for the purpose described.

101,394.—PACKING JOURNALS, AND OTHER PARTS OF MACHINERY. — Chase A. Stevens, New York, N. Y.

Claim.—1. A rope packing made of loose fibers of abestos or other fibrous mineral combined with a central cord substantially as and for the purpose set forth.

2. The combination of abestos or other fibrous mineral with a central cord and with binding-threads, substantially as described.

101,395.—STEAM-PLOW.—Augustin L. Tavenu, Chaptico, Md.

Claim.—1. The construction and arrangement of the traction-wheels O, cleats P, and ribs Q, constructed and operating as and for the purpose as herein set forth and described.

2. The broad detachable tires Q^2, constructed and arranged as specified, in combination with the elements of the foregoing claim.

3. The arrangement of the pilot-wheel L with the chains, ropes, wires, or rods N, steering-tiller or pole M, and blocks or sheaves n, in combination with a steam plowing apparatus, operating as and for the purpose herein set forth.

4. The arrangement of the stanchion V, pulleys W and X, in combination with the wheel O and belt Y, operating as and for the purpose set forth.

5. The arrangement of the detachable shaft A^2, hand and band-pulley B^2, in combination with the frame H, pistes, and connecting-rods F, operating as and for the purpose herein set forth.

6. The arrangement of the crank-bars C, beams B, and standards D, in combination with the lever K, radial bar H, coster-wheel L, and frame A, operating as and for the purpose set forth.

7. The construction and arrangement of the standards D, curved bars F, and clamps X, in combination with the adjustable screws and nuts G, wooden pins and holes V, and beams B, operating as and for the purpose herein set forth.

101,396.—TROWEL.—Alpheus Walker, Worcester, Mass.

Claim.—A trowel, the neck and ferrule of which are constructed and combined together in the peculiar manner herein described, so that the end of the ferrule which fits against the shoulder on the neck shall be flush with the neck, for the purposes set forth.

101,397. — SAWING-MACHINE. — Charles G. Wells, Collinsville, Conn.

Claim.—The combination of the handle-piece a, spring-piece b, blade c, provided with the adjusting holes i, more or less in number, lever d, and catch e, the whole being constructed substantially as described, for the purpose set forth.

101,398.—WATCH.—Charles V. Woerd, Waltham, Mass.

Claim.—The combination of the pawl-spring with a device for changing the position and direction of stress of the spring, substantially as and for the purpose described.

101,399.—BOOT AND SHOE-HEEL.—Joseph Woodley, Quebec, Canada.

Claim.—1. The combination of the molds a, dies b b′ and c, the former, b, being provided with recesses e e e and projection d and the metal piece f, all working together substantially as and for the purpose described.

2. The heel herein described, formed of the leather strip g, provided with the ribs e, the bottom piece h, metal clamps i, or nails g′, and filling l, with or without the cover piece k, substantially as and for the purpose described.

3. The heel herein described, in combination with the shortened sole m, substantially as and for the purpose described.

101,400, antedated March 19, 1870.—BRUSH-HANDLE ATTACHMENT.—Robert Wyatt, Brooklyn, N. Y.

Claim.—1. The sector C, and the holding-pin c, or its equivalent, in combination with the brush-head attached to the staff by an ordinary hinge or butt, a, substantially as and for the purpose specified.

2. The elastic band f in combination with the holding-pin c, which retains the sector in position, substantially as and for the purpose specified.

101,401.—ANTI-FRICTION JOURNAL.—Pierce W. Yarrell, Littleton, N. C.

Claim.—1. The method of reducing and distributing friction between an axle or journal and its bearings, by means substantially as shown and described, and for the purpose set forth.

2. The series of double wheels D mounted on boxes for receiving and distributing the friction or "slip" of the axle F through the medium of the boxless wheels E, which are arranged together for joint operation substantially as set forth.

3. The boxless single wheels E, having their axles bearing against the peripheries of the double wheels D, and confined in place by the axle F, whose friction they receive, substantially as and for the purpose described.

4. The arrangement within the hangers B of the box or boxes C, for supporting frictional wheels, substantially as and for the purpose described.

5. The box or boxes C, located within the hangers, the double wheels D mounted thereon, the single wheels E having their axles bearing on the peripheries of the double wheels, and the axle F bearing against the single wheels, when adapted to operate together, substantially as described.

6. The combination of the anti-friction rollers with the shaft or axle, when used as reversed supporters of weight, substantially in the manner and for the purposes shown and described.

101,402.—WATER-WHEEL.—Pierce W. Yarrell, Littleton, N. C.

Claim.—1. The wheel D, having the buckets I arranged in pairs upon its periphery to produce an equilibrium of pressure, substantially as described.

2. The band-gate N, made to rise and fall by rotation through the medium of the rack e, pinion d, rod c, grooves b, and pins a, applied and operating substantially as described.

101,403. — HOSE-COUPLING. — Charles H. Cushman, Alexandria, Va.

Claim.—1. The hose-coupling formed to lock by side movement, when the parts are so constructed that any two may fit together, substantially as set forth.

2. Flaps arranged to cover the juncture of the two parts by the pressure of the current in either direction, as set forth.

3. The rings B B, with their beveled lips and seats and covering rings C C, one or both, as set forth.

4. The flexible rings or flaps set on the rebated ends of the rings, and operating as set forth.

5. The combination of the rubber flaps, one or both, the rings B B, C C, and hose, all constructed and operating as set forth.

101,404, antedated March 5, 1870.—AUTOMATIC FIRE-EXTINGUISHER FOR USE ON RAILROAD CARS, &c.—H. C. Stewart and R. T. Bradley, Cincinnati, Ohio.

Claim.—1. Carbonic-acid gas, discharged automatically into a stove or furnace by an unusual concussion, collision, or overturning of the car or vessel carrying the same, substantially as above described.

2. The gas-holder A, stop-cock B, arm C, springs D and D′, ball E, and tube F, or their several equivalents, when constructed and operating in the manner and for the purpose set forth.

101,405.—ICE-HOUSE.—William Velte and John Fagan, Pittsburg, Pa.

Claim.—The ice-house, constructed as herein described, when used in combination with frames for filling the house with ice, substantially in the manner set forth.

101,406.—PROCESS OF PREPARING PAPER FOR ROOFING AND SIMILAR PURPOSES.—C. Hart Smith, Baltimore, Md.

Claim.—The combination of coal-tar, wood-tar, and dead-oil, in the proportions herein described for preparing paper for roofing purposes, in the manner herein set forth.

101,407.—ELEVATOR.—Hiram C. Stouffer, Salem, Ohio.

Claim.—1. The latch J, constructed as shown, and provided with teeth or projections e e′ and i, substantially as and for the purposes herein set forth.

2. In combination with the latch J, constructed as shown and described, the weighted lever K, rod f, and loop h, all substantially as and for the purposes herein set forth.

3. The combination of the ball G, slotted carriage C, latch J, lever or pawl K, with rod f and loop h, all constructed and arranged to operate substantially in the manner and for the purposes herein set forth.

101,408.—WASHING-MACHINE.—William H. Roach, Harrisville, Ohio.

Claim.—As my improvement in washing-machines, the construction and arrangement of the friction-rolls D D, with their circumferential grooves or guides d d′, levers E E, in combination with the uprights e e, rubbers F and B, corrugated and h with slide e′, overhanging piece e, and with box A, all as described, and for the purpose set forth.

REISSUES.

3,897.—COAL-STOVE.—Henry G. Giles, Troy, N. Y., assignee, by mesne assignments, of Gilbert J. Kingsbury.—Patent No. 23,587, dated April 12, 1859; reissue 1,409, dated February 17, 1863.

Claim.—1. The introduction of air into the stove above the burning coal so that the same may intermix with the gases arising from the burning coal and aid in igniting the same, in combination with the feeding-cylinder H, substantially as described.

2. A "descending draught" for supplying air to the combustion-chamber is not claimed, but there is claimed the annular groove f at the base of the supply-cylinder connected with an outer passage or passages for the admission of air to the point f, arranged and operating substantially as described.

3. The combination of the said annular groove f with the radial grooves e e e connecting with the outside air-passages d d and having the lateral notches i i i therein, substantially as described.

4. The cap G, or its equivalent, forming a connection between the fire-pot and the feed-cylinder, where it conforms to the upper end of the fire-pot and external air is admitted underneath for the combustion of the gases, as described.

5. The door N, constructed and arranged substantially as described, to serve as a door when closed, and as a chute or slide for the coal to the feed-cylinder when open, in combination with the said supply-cylinder.

6. The door N, located as described, in combination with the flange F and reservoir H.

7. The flue or pipe I, connected with the base as well as the top (by flue K) of the stove, substantially as described, in combination with the supply-cylinder H and fire-pot C.

8. In combination with the elements of the foregoing claim, the damper r.

9. The flange F in combination with the supply-cylinder H.

10. The combination of the rim F, cover s, or their equivalents, and the casing A, and the top of the stove, forming the heating-chamber O, substantially as described.

3,898.—STRAW-CUTTER. — James Palmer, Brooklyn, N. Y., assignee, by mesne assignments, of D. J. Powers.—Patent No. 27,154, dated February 14, 1860.

Claim. — 1. The intermediate pinions Q^2 Q^3, placed on fixed studs or axes, in combination with the pinions Q^1 and Q^4, on the feed-roller shafts, arranged substantially as and for the purpose specified.

2. The combination of the independently-operating pinions K K K with the driving and crank-shaft, whereby the speed of the feeding-mechanism may be changed, substantially as described.

3. The combination of a double-cog sliding or shifting-gearing with the driving or crank-shaft, whereby the speed of the feeding-mechanism may be changed, substantially as described.

4. The combination of the shifting operating gears K K K or P with the spur-gear L, pinions Q^1 Q^2 Q^3 Q^4, and feeding-rollers M M, all to operate so as to vary the speed of the feeding-rollers according to the length of cut required, substantially as shown and described.

3,899. — PUMP-PISTON. — New England Pump-Manufacturing Company, Boston, Mass., Pacific Pump-Manufacturing Company, San Francisco, Cal., Charles F. Mudge, Bridgeport, and Bridgeport Manufacturing Company, Bridgeport, Conn., assignees, by mesne assignments, of Nathan Stedman.—Patent No. 41,543, dated February 9, 1864

Claim.—1. The hollow reciprocating piston E, constructed with an opening, G, in or through its side, and provided with a double-acting valve, arranged to open and close alternately apertures in or

through opposite faces of the piston, substantially as specified.

2. A hollow piston for pumps, provided with a side opening, G, and a discharge-pipe, D, substantially as herein described.

3. A hollow piston for pumps, provided with the ports F F' and a side opening, G, substantially as herein described.

4. The combination of the cap H with the piston E, so arranged as to close the opening G, substantially as herein described.

5. The combination of the hollow piston E, provided with the ports F F', passage G, discharge-pipe D, and reciprocating valve I, with the pump-barrel A B, provided with the valves *c c'*, constructed, arranged, and operating substantially as herein described.

3,900.—LAMP.—Carl A. Kleemann, Erfurt, Prussia.—Patent No. 37,867, dated March 10, 1863; reissue 3,068, dated August 4, 1868.

Claim.—1. An Argand wick-tube and spring chimney-holder, in combination with the cone *q*, and openings to admit air to pass between the cone and the glass chimney, substantially as set forth.

2. The Argand wick-raising mechanism, to regulate the height of flame, in combination with the cone, spring chimney-holder, and air-inlets between the chimney and cone, to direct air upon the flame, substantially as set forth.

3. The spring chimney holder, cone *q*, and openings to admit air between the cone and chimney, in combination with a chimney having a contracted neck, substantially as set forth.

3,901.—KNITTING-MACHINE.—The Pepper Knitting-Machine Company, Boston, Mass., assignee, by mesne assignments, of John Pepper.—Patent No. 13,289, dated July 17, 1855; reissue 1,538, dated September 15, 1863; extended seven years.

Claim.—A knitting-machine needle, substantially straight in form, and having a portion of its shank in the plane of its length bent off laterally at an angle thereto, when combined with a grooved needle-bed, having the grooved portion in which the bent part of the needle works elevated above or deeper than that portion in which the rest of the needle works, so as to form an efficient guide to the same, to prevent the needle from rolling, and to maintain the hook and latch in proper working position, and said bent portion of the needle also serving as the means to which power may be applied to move the needle back and forth without undue bending or springing, substantially as described.

Also, the bar *c*, with its grooves *c'*, having its rear elevated above its forward portion for the purpose of preventing the needle from rolling therein, substantially as described.

Also, in combination with the hooked sinkers and ribbing-needles made to operate substantially as described, the series of "cast-off" sinkers or those formed without hooks, the same being arranged in the sinker-bar, and not only so as to admit the ribbing-needles to work between the hooked sinkers, but so as to render the machine capable of performing either plain or ribbed work, as specified.

Also, the rib-needles, constructed substantially as described, to take the place of the front or hook of the sinker in forming the loop for the ribbed stitch.

DESIGNS.

3,941.—BUST.—Henry Berger, New York, N. Y.

Claim.—The design for bust of Franz Liszt, as above described.

3,942.—FOLDING DOOR-KEY.—Henry H. Elwell, South Norwalk, Conn.

Claim.—The design herein described for a handle for folding door-keys, consisting of two sides, terminating in a rounded end, D, to inclose and cover the bit.

3,943.—TRADE-MARK.—John H. Gamhart, St. Louis, Mo.

Claim.—The design for a trade-mark, as described and shown.

3,944.—TRADE-MARK.—James S. Kirk, Chicago, Ill.

Claim.—The trade-mark, consisting of the design as herein described, and of the words "savon imperial," all arranged substantially as and in the manner set forth.

3,945.—STOVE-ORNAMENT.—Isaac Applin Sheppard, Philadelphia, Pa.

Claim.—1. The central figure illustrated and described when cast on and forming part of a stove-plate.

2. The design, consisting of the said central figure and surrounding ornaments.

3,946.—MUFF.—Raphael Moritz Seldis, New York, N. Y.

Claim.—The design for a muff, as shown.

EXTENSIONS.

A. W. WASHBURN, of Yazoo City, Miss.—Letters Patent No. 14,529, dated March 25, 1856.

"Improvement in Cotton-seed Planters."

Claim.—The peculiar shape and arrangement of the ridge-former C, and the adjustable channel-former F, by which their forward movement enables them, when suitably loaded, to unerringly form a perfectly smooth channeled ridge, substantially as herein set forth.

Also, the combination of the inclined flanches *k k*, with the inner periphery of the rotating seed-dropper G, when they are placed in such positions with relation to the discharging apertures, and have such a degree of inclination that the said flanches prevent the seeds from being discharged out of the front (or descending) side of the said seed-dropper, and cause the seeds to be freely discharged through the apertures in the rear (or ascending) side of said seed-dropper, in view of the operator, substantially as herein set forth.

ADOLPH BROWN and FELIX BROWN, of New York, N. Y.—Letters Patent No. 14,490, dated March 25, 1856.

"Machine for Cutting Loaf-Sugar."

Claim.—1. The application and use of two or more rollers, having brushes around their circumferences, and acting upon both sides of slabs of sugar, for the purpose of cleaning off the dust adhering to the same by the process of sawing, thereby reproducing the appearance of the crystals, as described.

2. The application of drums or rollers, connected together by gearing, having steel knives inserted and attached around their circumferences, forming squares, and corresponding to each other and acting on both sides of sugar-slabs simultaneously, like pincers, for the purpose of cutting up said slabs into regular cubical morsels in the manner specified.

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PATENTS.

101,409.—LAMP-SHADE SUPPORTER.—Joseph Bell Alexander, Washington, D. C.

Claim.—A lamp-shade supporter, having as its elements a ring which shall rest upon the upper edge of a conical lamp-shade, being too large in diameter to pass through it, and from which ring three or more tongues or prongs shall pass downward into the shade, and be bent backward so as to form shoulders against the inner conical surface of the shade, while said prongs are recurved upward so that their points shall act as spring-clamps upon the glass chimney of a lamp, substantially as and for the purpose set forth.

101,410.—FAUCET.—John Ashcroft, New York, N. Y.

Claim.—1. A faucet in which are combined spring *g*, the stationary handle A, and pivoted handle B, arranged, constructed, and operating in the manner substantially as shown and described, and for the purpose set forth.

2. The combination of the pivoted handle B, with the adjustable screw packing-seat *d*.

3. The combination of pivoted handle B, packing-seat *d*, packing *e*, with the main stem and its lip *l*, constructed and arranged substantially as shown and described.

101,411.—ELASTIC GRADUATED SCALE.—Richard Meade Bache, Philadelphia, Pa.

Claim.—A graduated braid, webbing, or tape, composed of a number of strands of caoutchouc united substantially in the manner hereinbefore described.

101,412.—DIE FOR FORGING SHEAR-BOWS.—Albert R. Bailey, Plantsville, Conn.

Claim.—The series of dies B B and C C, constructed as shown and described, and for the purposes set forth.

101,413.—VAPOR BURNER.—Silas D. Baldwin, Chicago, Ill.

Claim.—1. The adjustable plate A, when provided with the groove *c* or ridge B, or with both, substantially as specified.

2. The plate A, in combination with the movable collar F, substantially as specified.

3. The plate or cover I, constructed and operating substantially as specified.

4. The tube G, when provided with the diagonal orifice E, in combination with the movable collar F, the adjustable plate A, and the plate I, substantially as specified.

101,414.—WASHING-MACHINE.—Joseph Balsley, Bedford, Ind.

Claim.—1. The box or tub, formed by the combination of the tongued end boards B, grooved narrow strips or staves C, bands D E D, and hand-nuts *d' e' d'*, with each other and with the frame A, substantially as herein shown and described, and for the purpose set forth.

2. The concave frame F with its alternate large and small rollers H G, in combination with the box or tub B C D F *d' e'* and frame A, substantially as herein shown and described, and for the purpose set forth.

3. The rubber I and rubbing board J, constructed as described, in combination with the concave roller frame F G H and box or tub B C D E *d' e'*, substantially as herein shown and described, and for the purpose set forth.

4. An improved washing-machine, formed by the combination of the frame A, box or tub B C D E *d' e'*, concave roller-frame F G H, rubber and rubbing-board I J, uprights K, rounds L M, handle or lever N, brace O, sliding rods P, springs R, adjustable stops S, cross-bar Q, cords T, pulleys U, and treadles V W, with each other, substantially as herein shown and described, and for the purpose set forth.

101,415.—APPARATUS FOR GENERATING CARBONIC ACID.—Benjamin Bates, Baltimore, Md.

Claim.—In combination with a carbonic-acid gas or other generator, a tumbler or hollow cap attached to the generator in any suitable manner, substantially for the purposes herein set forth.

101,416, antedated April 4, 1870.—BRICK-KILN.—Oliver Bennett, Boston, Mass.

Claim.—The arrangement as well as the combination, substantially as described, of the series of educts C and dampers D D thereof with the brick-kiln A, its furnace or furnaces E, and an air-blast or blower G, applied to the furnace or furnaces so as to operate therewith, as set forth.

Also, the arrangement and combination of the auxiliary air-chamber *f* and its openings, *g k*, and valve *l*, with the fire-place and ash-pit of a furnace as combined with a kiln, A, and a blower, G, to operate therewith, as described.

Also, the combination and arrangement of the opening *n* and its valve *o*, at the rear of the ash-chamber of each furnace, with such furnace and a kiln, to be operated with and by air-blast or blower applied to the furnace, as set forth.

Also, the combination and arrangement of the rotary deflector *d'* with the furnace E and the kiln A, and an air-blower applied to the furnace, as set forth, such deflector being to enable the heat, when passing out of the opening *d* and into the kiln, to be deflected either upward or downward therein, for the purpose set forth.

Also, the combination and arrangement of the chamber B and its series of inducts *b* with the brick-kiln and its series of escape-flues or educts C, provided with dampers D, as set forth, and with its furnace or furnaces and air-blower to operate therewith, as explained.

101,417.—TOBACCO-PIPE.—Zelotes R. Bennett, Williamsburg, N. Y., assignor to himself and L. F. Reed, New York city.

Claim.—1. A tobacco-pipe having the bowl A and saliva-receptacle A', connected with the separating-chamber B^1 by long and independent tubes B^2 and D, when the said separating-chamber is arranged relatively to the bowl and mouth-piece, substantially as shown and described.

2. In combination with an independent bowl, A, and branch pipe D, adapted to turn on the stem B B^2, as represented, the slender non-conducting projection *a*, mounted on one of the parts, and adapted to lock into the other, and be disengaged therefrom, to allow the opening and emptying of the parts, as and for the purposes herein set forth.

101,418, antedated March 21, 1870.—BREECH-LOADING FIRE-ARM.—Hiram Berdan, New York, N. Y., assignor to The Berdan Fire-Arms Manufacturing Company, same place.

Claim.—1. A shoulder provided on the jointed brace of the swinging or hinged breech-piece, and operating upon the upper part of the breech-piece to prevent the doubling of the joint, substantially as herein described.

2. The extension of the rear end of the jointed brace of a swinging breech-piece, or of the rear portion of a jointed breech-piece in a lateral direction, in such manner that the extension serves both as a guard to the firing-pin and a handle to operate the breech-piece.

3. Securing the strap-piece or plate which forms the attachment of the hinge connection of the breech-piece with the barrel by means of studs *r r'* on the barrel and a button, U, in the strap-piece, substantially as herein described.

101,419.—CHAMBER-VESSEL.—Charles H. Berry, East Somerville, Mass.

Claim.—A chamber-vessel provided with a beveled rim, in combination with the cover A, provided with a valve, C, and annular groove, in which is fitted a flexible ring, when constructed and operating as shown and specified.

101,420.—HEATING-STOVE.—H. Besse, Delaware, Ohio.

Claim.—The heating-chamber B, extending on three sides of a stove, combined with a combustion-chamber A, cold-air supply-pipe D, pipe F, and escape-passages E, all constructed and arranged as and for the purpose specified.

101,421.—Lock-Nut.—Amos G. Binns, Pittsburg, Pa.

Claim.—The nut B, provided with the dog F, spring H, and with or without pin J, in combination with the screw A, substantially as described.

101,422, antedated March 19, 1870.—Hot-Air Furnace.—Lansing Bonnell, Milwaukee, Wis.

Claim.—1. Doors C and F, with their draught-openings, substantially as described.

2. Covering A, air-pipes I, fire-chamber B, and doors C and F, with their draught-openings, substantially as described.

3. Covering A, air-chamber K, air-pipes I, and air-conductor L, fire-chamber B, door F, draught-opening G, and wire O, substantially as described.

4. Covering A, fire-chamber B, doors C and F, with draught-openings, pipes I, air-chamber K, and air-conductor L, substantially as described.

5. Covering A, fire-chamber B, chamber K, with air-pipe L, so arranged that the cold air shall be taken through air-pipe L and carried down to the bottom of chamber K, and, being heated, rising, and passing out of the top of chamber K, substantially as described.

101,423.—Flour-Sifter, Colander, and Strainer.—Alonzo T. Boon and Lucien Mills, Galesburg, Ill.

Claim.—1. A concave receptacle or frame, A, with stationary or removable wire legs *b*, constructed as described, in combination with removable hemispherical sieves, colanders, and strainers, substantially as and for the purposes set forth.

2. The removable wire frame, consisting of wire arms *h*, with coiled spring ends *i*, tube D, and angular braces E, for supporting the shaft of a rotary stirrer or scraper, in combination with a stationary or removable sieve and concave receptacle, substantially as set forth.

101,424, antedated March 23, 1870.—Ice-Pick.—Edward Brown, Green Point, N. Y.

Claim.—The ice-pick described, consisting of the stem A, handle B, and spring C, arranged substantially as hereinabove set forth.

101,425.—Stop-Valve.—Silas H. Brown, Troy, N. Y.

Claim.—1. The employment and arrangement of the double cam D, between the respective parts C and C′ of the stop-valve, substantially as and for the purpose described.

2. The combination with each other of the valve parts C and C′, the double cam D, the arms or projections *b b*, the pins *c c*, or their equivalent, the valve-chamber A, and the stem E, substantially as described.

3. The combination and arrangement, with and between the parts C and C′, of the valve, of the double cam D, its projections *b b*, and the actuating-pins or rods *c c*, all substantially as described.

4. The stop-valve, composed of the parts C and C′, when constructed substantially as set forth, so as to be closed on its seats by the action of the double cam D, pins *c c*, and stem E, and when opened to carry said cam and pins with it into its chamber A, thereby leaving a clear passage-way, as described.

101,426.—Flask-Guide.—Thomas S. Brown, Poughkeepsie, N. Y.

Claim.—A guide-plate, A, for flasks, provided with a spring bolt, D, whereby the guide-pin is operated upon, in the manner described.

101,427.—Lamp-Wick Feeder.—George Cade, Long Branch, N. J.

Claim.—The combination with the wick-tube of the toothed feed-plate C, and operating-lever G, substantially as specified.

101,428, antedated March 21, 1870.—Stove-Leg.—Edward Card, Providence, R. I.

Claim.—The lips C C, in combination with the upper part A, and sliding foot D, when constructed and arranged as and for the purpose specified.

101,429.—Wagon-Tongue.—E. P. Carter, Arcade, N. Y.

Claim.—The pole A, with its cross-bar B, provided with the sliding rod *b*, elongating bar D, fastening E, and brace C.

101,430.—Fastening for Pails, Cans, &c. John K. Chace, New York, assignor to himself and Silas A. Ilsley, Brooklyn, N. Y.

Claim.—1. The ears *f* and bail *g*, in combination with the sheet-metal screw-ring *d*, as and for the purposes set forth.

2. The combination of the sheet-metal screw-ring *d*, ears *f*, and bail *g*, with the rim *a*, inward off-set *b*, and cover *c*, as set forth.

101,431, antedated March 24, 1870.—Machine for Grinding Screws.—Edwin Chambers and Cyrus Chambers, Jr., Philadelphia, Pa.

Claim.—A machine for grinding and polishing large screws, constructed as set forth, in which the screw is rotated in a reservoir of gravel or other abrading material, supplied with a stream of water, as described.

101,432.—Brick-Machine.—Frederic L. Clarke, Oakland, Ill.

Claim.—1. The combination with the clamping-frame of the trip-levers T, lever S, spring catches N, and spring pressing-rod R, when arranged substantially as specified.

2. In combination with the devices of the above clause, the plunger or presser A and dividing-plates C, when arranged, constructed, and operating together, as herein shown and described.

101,433.—Steam-Generator.—Jonathan M. Clark, New York, N. Y.

Claim.—1. The ⊥-formed tubular connection C, in combination with the lock-nuts D and heads B, substantially as shown and described.

2. The arrangement of the lateral tubular connections near the bottom of the heads at the one end of the pipes A, and near their top at the other end of the said pipes, as set forth.

101,434.—Steam-Generator.—Jonathan M. Clark, New York, N. Y.

Claim.—1. The hexagonal hollow heads B, in combination with the pipes A, forming a zigzag arrangement, and having lateral and diagonal tubular connections, for the circulation of water and steam therethrough, substantially as specified.

2. The tubular screw-nipples C, constructed with a flange or collar on one end for uniting the heads B, in the manner set forth.

101,435.—Sulky-Plow.—John H. Cole, Vacaville, Cal.

Claim.—The plowing sulky above described, consisting of the wheels A upon a suitable axle, the tongue B, the quadrant C, the rock-shaft D, the rock-arms E, the clevis-plate F, the king-bolt G, the lever H, the frame I, the socket K, the swivel-brace L, in connection with one or more suitable plows, and provided with a driver's seat, when the several parts are constructed as described, and combined and arranged to operate as and for the purposes set forth.

101,436.—Machine for Cutting Locks in Hoops.—Theodore Conklin, Fond du Lac, Wis.

Claim.—1. The combination of the bed B, adjustable clamping-jaw A, movable jaw D, rods E, springs G, and yoke F, substantially as specified.

2. The combination of the clamping-jaws, movable knife H, and swinging knife U, substantially as specified.

3. The combination with the clamping-jaws of the spring W, substantially as specified.

101,437.—Railroad-Station Indicator.—Edward Conley, Cincinnati, Ohio.

Claim.—The combination of case A, having opening K, frame B C, roller D, guide-rollers E E′ E², tension-rollers F G, endless belt I, ratchet M, arm N, pawl O, and slide Q, all constructed and arranged as and for the purpose specified.

101,438.—Flour and Meal-Chest.—John M. Dashiell, Decatur, Ill.

Claim.—The compartments C and D, (with their discharge-apertures E E,) bread-tray I, sieve F, and drawer H, when the same are combined and arranged in the chest A, substantially as and for the purposes herein shown and described.

101,439.—Cotton-Harvester.—James Davis, Jr., and David Scott, Jr., Greensborough, N. C.

Claim.—1. The arrangement with relation to the receptacle A of the air-discharging pipes or nozzles M, substantially as and for the purpose specified.

2. The spiral vanes N, arranged in the blast-nozzles, substantially as and for the purpose specified

101,440.—Window-Shade Fixture.—David W. De Forest, Brooklyn, N. Y., assignor to Richard Oliver, same place.

Claim.—The head C of the cylinder, having concave recesses *e e*, provided with balls *h h*, in combination with the cam *d* of the shaft and spring, constructed substantially as and for the purpose set forth.

101,441.—Washing-Machine.—John K. Derby, Jamestown, N. Y.

Claim.—The rubber A and the bed B, or its equivalent, in combination with the levers E E, and connecting rods H H, and pivot rods G G with holder I, arranged and operating substantially as and for the purposes herein shown and described.

101,442.—Tape-Line Box.—Charles E. Donnellan, Indianapolis, Ind.

Claim.—The construction and arrangement of the side B and rim A of a tape-line box with the revolving disk or side C, having the attached drum or spindle D, for operation substantially in the manner herein shown and described.

101,443.—Chimney-Cowl.—Nathan Douglas, Goshen, Ind., assignor to himself and Frank Douglas, Norwich, Conn.

Claim.—1. The cap-plate of the chimney *a a*, when used in combination with the device for closing the chimney on the windward side by the action of a current of air, as herein specified.

2. The cap D, with pivot-stem H, pivot points *f f*, *f f*, and *g*, rod *e*, and fan *c*, when used in combination as herein specified and described.

101,444.—Butter-Worker.—O. L. Dow, Hancock, N. H.

Claim.—In combination with the guttered table A, rotating table D, and hand-lever F, the fulcrum-post G, adapted to be vertically adjusted by means of the screw-nut K, for the purpose specified.

101,445.—Hydraulic Engine.—William Eaton, Benn Ainsworth, and George W. Scott, Blackstone, Mass.

Claim.—The combination of oil-reservoir A, pipe B, pump C, pipe D D D, weighted valve *a* F, return-pipe E, and spray-nozzle G, all said parts being constructed and arranged as set forth and for the purpose specified.

101,446.—Ruffling-Attachment for Sewing-Machine.—J. L. Eck, Kutztown, Pa., assignor to himself and S. S. Schmehl, same place.

Claim.—The combination, with the presser-arm A, of presser-plate B, extension yoke C, flat spring D, and adjusting-screw E, all shaped, arranged, and fastened together as and for the purpose specified.

101,447.—Lathe for Turning Ovals.—Rudolf Eickemeyer, Yonkers, N. Y.

Claim.—1. In combination with the lathe-spindle, eccentric, and a slide having motion in a right line, the oscillating slide, or slide moving in a curved line transversely to the motion of the other slide, substantially as described.

2. The combination of the eccentric, slides, and plates of the oval or eccentric chuck, having inclined bearing-surfaces, with each other and the lathe-spindle, substantially as described, whereby all the bearing-surfaces are tightened or loosened by moving the spindle backward or forward in its bearings, substantially as described.

3. In combination with the lathe-spindle, eccentric, slides, and plate, having conical or inclined bearing-surfaces, arranged substantially as described, the adjustable collar or wheel-hub, and adjusting-nut placed upon the spindle, whereby the parts of the eccentric or oval chuck are held together, and their bearing-surfaces adjusted to compensate for wear, substantially as described.

4. The oil-chambers, or either of them, placed in the plate *p*, and the oil-holes leading from them, or either of them, in combination with the outer slide of an eccentric or oval chuck, substantially as described.

5. The oil passage *m* through the eccentric, in combination with the inner slide and oil-holes *n n′* through the same, substantially as described.

6. The adjustable chucking-screw *q*, with its collar, q^2, and binding-nut q^1, in combination with an eccentric chuck for turning ovals, substantially as described.

101,448.—Knife, Nut-Cracker and Picker.—George A. Fairfield, Hartford, Conn.

Claim.—The combination of a fruit or table-knife with a nut-cracker, substantially as set forth.

Also, the combination of a nut-cracker with a nut-picker, substantially as set forth.

Also, the combination with a fruit or table-knife of a nut-cracker and a nut-picker, substantially as set forth.

101,449.—Hot-Blast Oven or Furnace.—Edmund M. Ferguson, Brady's Bend, Pa.

Claim.—1. The use of the vertical standing pipes, in combination with the trunks *a a′* and transverse pipes *b b*, when such vertical standing pipes are removably attached to the transverse pipes, and arranged substantially as described.

2. Setting the diaphragms in the standing pipes with their edges turned toward the passages through which the heated gas enters the heating-chamber, so as to expose the strongest part of the pipe to the greatest heat.

3. The use of the removable caps *f*, in connection with the collars *c* on the transverse pipes *b b*, when the vertical standing pipes are removed, for the purpose described.

101,450.—Lifting-Jack.—Levi W. Fifield, Worcester, Mass., assignor to Enoch Earle and Luke K. Davis, same place.

Claim.—The combination and arrangement of the lever D having a stationary fulcrum, the connections G, pin H, and adjustable slide C, operating in the manner and for the purpose above set forth.

101,451.—DUMPING-PLATFORM.—R. M. Fish, Glenwood, Iowa.

Claim.—The double-action lever *m*, slides *q*, levers *s*, leaves A A, and frame C, the whole constructed, arranged, and operated in the manner and for the purposes herein set forth and described.

101,452.—MELODY-ATTACHMENT.—Carl Fogelberg, Boston, Mass.

Claim.—The combination of the auxiliary wind-passage E, its valves and air-ducts, as described, with the melody-attachment, composed of the passage A, its valves, air-ducts, and series of pipes, as set forth, the whole being to operate substantially as explained.

Also, the combination of the swell-valve *m'* and the series of openings *l*, with the pipes D, arranged to operate as set forth.

101,453.—CHURN.—Albion W. Foster, Millbridge, Me.

Claim.—The combination of the two levers *b b* and frame E E and crank *j*, substantially as and for the purpose hereinbefore set forth.

101,454.—LIFTING-JACK.—Leon Paul Garcin, San Francisco, Cal., assignor to himself and John D. Hooker, same place.

Claim.—The combination of the loose gear-wheel *e'*, (made to slip back and forth on the spindle E,) the spring M, and the shifting-shaft K and its lever L, or the equivalents of the same, operating in connection with the remaining parts, substantially as and for the purpose as hereinbefore set forth.

101,455.—MACHINERY FOR MAKING PAPER BOXES.—Frederick Gates, Vineland, N. J., assignor to William Gates, Frankfort, N. Y.

Claim.—1. The endless chain J, composed of the jointed box-receptacles *m m*, when arranged on a paper or straw-board box machine, to receive, retain, convey, and discharge the finished boxes, substantially as herein shown and described.

2. The combination with the endless chain, of folding plates d^2 d^2, box-receptacles *m*, and the inclines E' F', all arranged and operating together as set forth.

3. The application to a paper-box machine, and the combination with each other of the reciprocating plunger P, spring follower Q, sliding side and end pieces X Y, stationary spring-plates *l' m'*, and sliding lap-folders *r' r'*, all arranged and operating substantially as herein shown and described.

4. The combination of incisors R R, with a blank-cutter, S, operating subsequently and independently, and having an instantaneous spring movement, as shown and described.

5. The spring-supports a^1 a^1, when arranged in combination with the nicking-knives R R, substantially as herein shown and described, for the purpose specified.

6. The slide and end pieces X Y of the mold when arranged to slide on the platform T, and when pushed in by the springs *o' q'*, substantially as herein shown and described, for the purpose of holding the sides and ends of the box firmly and vertically against the plunger, substantially as herein shown and described.

7. The stationary side and end spring-plates *l' m'*, when arranged below the slide-plates X Y, for the purpose of forming the lower part of the mold, and for preventing the ascending plunger from elevating the finished box, as specified.

8. The horizontal folders *r' r'*, in combination with spring-plates *l' l'*, and plunger P, arranged on a paper-box machine, for the purpose of folding the ends of the sides of the box so that the parts thus folded will secure all the parts of the box in the desired position, as set forth.

9. The spring catch *w'*, when arranged to arrest the follower when pushed down, so that the chain will be free to move, as set forth, and the combination of the said spring-catch with the pin *w*, or its equivalent, for disengaging it, all arranged and operating substantially as herein shown and described.

10. The reciprocating plunger G', when arranged as described, for discharging the finished boxes from the endless chain J, substantially as herein shown and described.

11. The combination of a perforated plunger, P, with a reciprocating follower, Q, recessed upon its face, the latter supporting blank, and the former bending its sides, while both descend a certain distance together, all as set forth.

101,456.—LASTING-MACHINE.—Karl Grassau, Virginia City, Nevada.

Claim.—1. The combination of the clamp C, provided with the standard L, with the screw D, and bar A, arranged to operate substantially as described.

2. In combination with the clamps E, the bar A, so constructed as to form a point of support for the screw G, substantially as described.

101,457.—PENCIL-HOLDER.—Annie J. Hall, San Francisco, Cal.

Claim.—The elastic tube or ring A, in combination with the tube B, when the latter is provided with the fingers C and stops D, as described, for the purpose set forth.

101,458, antedated March 25, 1870.—DRIER. Thomas S. Harrison, Philadelphia, Pa.

Claim.—1. A drying apparatus, consisting of a hollow casing, which contains a series of partitions perforated substantially as set forth, and through which a current of heated or dry air is directed to meet the streams of material as they pass from partition to partition, all substantially as set forth.

2. The combination of the above with a cistern or reservoir of water through which the heated or dry air can be forced after passing through the partitioned casing.

3. The combination of the casing, partitioned substantially as described, with the shaft H and its arms I.

4. The cylinder or casing A, composed of a series of sections, having perforated bases, forming the above-mentioned partitions, and fitted together, all substantially as specified.

5. The spout F, adapted to the partitioned casing, and having an annular chamber, G, communicating through perforations with the interior of the said casing.

6. So arranging the perforations or openings in the several partitions that those of one partition shall not be directly above those of the other.

7. The hollow perforated partition, (shown in fig. 4,) communicating with the space between the inner and outer casings.

101,459.—ANIMAL-TRAP.—Eder E. Haughwout, New York, N. Y.

Claim.—1. The combination of the door D, made wholly or partly of glass, the levers E, the branched or forked connecting-rod F, jointed connection-rod H I, sliding door K, lever G, jointed connecting-rod M, and door or doors N, with each other and with the chambers A B and passage C, substantially as herein shown and described, and for the purpose set forth.

2. The combination of the catches O P, slide Q, lever T, connecting-rod U, and hinged platform V, with each other and with the lever G, jointed connection-rods M and H I, doors K K, levers E, and door D, made partly or wholly of glass, and with the chambers A B and passage C, substantially as herein shown and described, and for the purpose set forth.

101,460.—HARVESTER-CUTTER.—Ira A. Hebbard, Rochester, N. Y., assignor to E. F. Hebbard, same place.

Claim.—1. Front lips *c c'*, cut and turned up from the metal of an adjustable harvester-knife section, to clamp and hold upon the front edge of the knife-bar, substantially as and for the purpose herein set forth.

2. A rectangular flange turned up from the rear edge of an adjustable knife-section, and combined with front lips or clamps cut from the metal of the section, substantially in the manner and for the purpose herein set forth.

3. A retaining-screw, C, in combination with a threaded seat in the knife-bar, and with a suitable aperture in the knife-head, all substantially in the manner herein set forth.

4. The supporting-bar E, in combination with the inner end of the knife-bar A', the knife-head B', and retaining-screw C', all substantially in the manner herein set forth.

101,461.—WATER-PROOF COMPOSITION FOR HARNESS, LEATHER, &c.—John Herold, Omaha, Nebraska.

Claim.—The water-proof composition herein described, substantially as and for the purposes set forth.

101,462.—PLANING-MACHINE.—Alfred M. Hills, Lowell, Mass.

Claim.—1. The combination of the slotted shipper-rod R, dog C, pawl P, and sliding rod Q, substantially as described, and for the purpose set forth.

2. The combination of the slotted shipper-rod R, lever V, arm W, dog D, and its swinging pawl, as set forth and described.

3. The combination of the pawl *a*, ratchet *b*, friction-spring *c*, pulley J, shaft K, pulley U, and the series of band pulleys on screw-shaft L, substantially as described, and arranged to operate in the manner and for the purpose specified.

101,463.—RECLINING-CHAIR.—William C. Hornfager and Edmond A. Warren, Brooklyn, N. Y.

Claim.—1. The hinged back E and hinged front section F, locked in any position to which they may be adjusted by means of ratchet-pawls *f*, carried by the sliding arm-rests D, in combination with links I, arms H, rock-shaft G, arm K, and link L, when all the parts are constructed and arranged to operate as herein described, for the purpose specified.

2. The extension foot-rest plate M, provided with the ratchet-rack N, weighted ratchet-pawl O O, and spring P, in combination with the hinged front section F, as herein described, for the purpose specified.

101,464.—CANNON-PINION FOR WATCHES.—Elias H. Hull, Warren, Ohio.

Claim.—A cannon-pinion, constructed with an opening, C, elastic or spring slides A between the collars *a a*, formed by reducing the thickness of said sides, in the manner substantially as described, and for the purpose set forth.

101,465.—SAW-MILL.—Elias H. Hull, Warren, Ohio.

Claim.—1. The clamp or clamps H, cam M, and wheel A, constructed and arranged in the manner substantially as and for the purpose set forth.

2. The arrangement of the pivoted arms E upon the shaft, lever F, and stay-pin G, in combination with the wheel A and clamp H, substantially as and for the purpose set forth.

3. The stops O P, constructed as described, and segment N, in combination with the arms E and lever F, substantially as and for the purpose set forth.

101,466.—HAND DRILLING-MACHINE.—James E. Hunter, North Adams, Mass.

Claim.—The slotted arm D, provided with the disk G, in combination with the head F, screw H, feed-screw J, clamp-screws B and E, the handle M, ratchet L, and pawl N, substantially as and for the purpose specified.

101,467.—CARRIAGE-CLIP.—Leonard A. Johnson, Candor, N. Y.

Claim.—1. The combination of the shank C, provided with trunnions or journals, as described, the ears B, with receive-opening at the top to the bearings, the cap F, and spring H, all substantially as specified.

2. The combination, with the ears B and shank C, of the journal, provided with collars, and the cap F, and flanges G thereon, substantially as described.

3. The spring H, in combination with the cap F, provided with projections *f*, fitting the notches *e* in the ears B, and with the rib *i* and flange K, all constructed and operating as and for the purpose specified.

4. Securing the spring plate I on the screwed ends of the yoke by means of the perforated lugs L, bolt N, and the ears B, all arranged substantially as specified.

101,468.—FINISHING-CULTIVATOR.—Benjamin Johnston, New Iberia, La.

Claim.—An improved finishing-cultivator, constructed, arranged, and operating substantially as herein shown and described, and for the purpose set forth.

101,469.—WELL-POINT.—C. C. Jones, Portland, Me.

Claim.—The well-point, being formed in two half parts, and having the projections, apertures, and strainer, as herein described.

101,470.—REFLECTOR FOR STREETS.—Abraham Keefer Grim and Austin D. Moore, San Francisco, Cal.

Claim.—1. The reflectors A A' A'', constructed and applied in the manner substantially as described, and for the purposes as herein set forth.

2. The ventilator-top, with its so-called guard-plates and openings, constructed in the manner substantially as described, and for the purposes as herein set forth.

101,471.—STAPLE MACHINE.—Charles W. Kennedy, Williamsburg, N. Y.

Claim.—1. The combination of the movable knife H, stationary knife E, guide F, guard G, slide R, and flange or plate S, with each other, and with the bed-plate D, substantially as herein shown and described, and for the purpose set forth.

2. The combination of the sliding plate D', stationary jaw F', movable jaw E', and bent or elbow-lever C', with each other and with the guide F, rod B', stationary knife E, movable knife H, and guard G, substantially as herein shown and described, and for the purpose set forth.

3. The improved staple machine formed by the combination of the bed-plate A, side frames B, cross-bar or plate C, knife-bed or plate D, stationary inclined knife E, guide F, guard G, movable knife H, guide I, pitman J, eccentric K, shaft L, eccentric N, pitman O, lever P, slide R, flange S, gear-wheels T U, shaft V, gear-wheels W X, shaft V, crank or crank-wheel A', pitman B', elbow-lever C', pivoted jaw E', stationary jaw F', and sliding plate D', with each other, substantially as herein shown and described and for the purpose set forth.

101,472.—FOLDING CONVERTIBLE CHAIR.—William B. Kimball, Peterborough, N. H.

Claim.—1. The springs F and G and the key H, in combination with a chair, by means of which the rigid seat is made a rocking seat, substantially as described.

2. The ring N and lips O, by means of which the legs are held expanded, substantially as described.

101,473.—MACHINE FOR THE MANUFACTURE OF FELTED FABRICS FOR ROOFING, &c.—Samuel Kingan, New York, N. Y., administrator of the estate of James Anderson, deceased.

Claim.—1. The combination of the adjustable trough A, roller B, and hopper and chute, the feeding and condensing-rollers, and the tables, all substantially as specified.

2. The combination with the trough A of the steam heating-pipes, gate, and gate-operating devices, substantially as specified.

101,474. — Potato-Digger. — Melvin W. Knox, Sheridan, N. Y.

Claim.—1. The combined tongue and lever E E', pivoted to and arranged with the frame C, for raising and lowering the forward end thereof, substantially as hereinbefore set forth.

2. The arrangement of the plow and oscillating riddler D I, when secured to the front end of the frame C, and raised and lowered by the combined tongue and levers E E', substantially as hereinbefore set forth.

3. The protections *t f* of the frame *i*, arranged and operating with the plow D, as and for the purpose hereinbefore specified.

101,475, antedated January 6, 1870. — Counter Show-Case.—George D. Leonard, New York, N. Y.

Claim.—The combination with the counter or table provided with a suitable opening or openings in and through its top, under cover of lids or doors that, when closed, form part of said counter or table of an apparatus arranged beneath or within the counter or table as a case, and composed of an endless traveling belt, apron, or chain having swinging trays upon it, constructed or weighted to travel with their mouths uppermost, for the display of the articles contained in the trays, substantially as specified.

101,476.—Base-Burning Stove. — Dennis G. Littlefield, Albany, N. Y., and Grove H. Johnson, Erie, Pa.

Claim.—1. Constructing the illuminating case of stoves with doors or windows which swing vertically downward, substantially as and for the purposes set forth.

2. Holding the mica frames to the doors by means of the curved connecting bar *h*, lug *i*, and key *j*, or their equivalents, substantially as set forth.

3. In combining with a vertically-swinging illuminating door, the arrangement of the concealed hinges *k l*, substantially as and for the purpose set forth.

101,477.—Combined Square, Level, Protractor, &c. — J. A. Littlefield, Randolph, Mass.

Claim.—As an improved article of manufacture, a compound tool, consisting of the stock A, tongue B, tube C, screw D, and protractor E F, all connected, adjusted, and applied in the manner described.

101,478. — Peat-Machine. — Charles Luxton, Hudson City, N. J.

Claim.—In combination with the bed M, cutters K, and the casing G H, the conveyer wings P and R, arranged and operating substantially as and for the purposes set forth.

101,479. — Machine for Scouring and Burnishing Metals.—James B. Lyons, Milton, Conn.

Claim.—1 The revolving scraper-cylinder D, as constructed, for scraping and cleaning sheet-metals, substantially as herein described.

2. The burnishing-cylinder E, for planishing the surface of metals, as and for the purposes herein set forth.

3. The feed-rollers *a a* and *b b*, the scouring-brush C, scraping-cylinder D, and burnisher E, all combined and arranged to operate in the manner herein described, and for the purposes specified.

101,480.—Hand Seed-Planter.—J. T. Macomber, Grand Isle, Vt.

Claim.—An improved hand seed-planting machine, formed by the combination of the base-frame A, guide-board or flange B, hopper C, dropping-wheel D *d'*, conductor and drilling-spout E, coverer F, shaft G, and wheel H, with each other, said parts being constructed, arranged, and operating substantially as herein shown and described, and for the purpose set forth.

101,481. — Saw-Frame. — Charles Major, Williamsburg, N. Y.

Claim.—The V-shaped frames D E, pivoted together and fitted into the frame of a buck-saw, substantially as herein shown and described, and for the purpose specified.

101,482. — Self-Tightening Buckle. — Matthias Marvin, Salem, Oregon.

Claim.—1. A harness-buckle, provided with a shouldered and journaled vibrating ratchet with a hollow frame, having a strap-slot at each end, a top slot and journal-boxes or bearings, all as shown and described.

2. The arrangement of a ratchet with lever end, to vibrate in bearings formed on the inner sides of a buckle, in the manner set forth.

101,483.—Bail-Ear.—William D. Mason and Arthur T. Rice, Chicago, Ill.

Claim.—The ear *a*, with the eye *e* and holes *h h*, as constructed and applied.

101,484. — Water-Elevator. — Morton S. McAtee, Chester, Ill.

Claim.—The combination of the cylinder A, vessel B, pipes C G H J, vessel E *e'*, valves F I, piston K, piston-rod L, weighted lever O, connecting-rod N, and valve M with each other, substantially as herein shown and described, and for the purpose set forth.

101,485.—Plunger for Glass-Molds.—John McCord, East Birmingham, Pa., assignor to himself and John Bruce, same place.

Claim.—1. A hollow cast-metal glass-mold plunger, the cavity of which has a wrought-metal lining, substantially as described.

2. The manufacture of glass-mold plungers by first preparing a hollow water-chamber and then casting the body of the plunger onto and around the chamber, substantially as described.

101,486.—Sash-Fastener.—John S. McGlumphy, Wind Ridge, Pa.

Claim.—The spring F, so arranged on the face of the sash as to act as a friction-support when the sashes are partially raised or lowered, and absolute fastening for both sashes when closed.

101,487.—Governor for Steam-Engine.—Hugh Dunbar McMaster and Abraham Dale, Guilford, Ireland.

Claim.—In governors for steam-engines and analogous motive power machines, the steadily delivering pump M, driven by the machine to be regulated, in combination with the plunger D, subchambers A^3 and A^4, and passage G, arranged substantially as represented, the whole controlling and regulating the velocity of the machine, as herein specified.

101,488 antedated March 29, 1870.—Steam-Heating Pipe. — William Mendham, Philadelphia, Pa., assignor to Cyrus Chambers, Jr., and Edwin Chambers, same place.

Claim.—A steam-pipe with ribs or corrugations on the outer faces of its flanges, so arranged as to abut against each other when the flanges are in contact, as and for the purpose set forth.

101,489. — Extension Bed. — Frederick Menzer, San Francisco, Cal.

Claim.—In combination with the double side rails C D and E F, the adjustable slats H, arranged to be employed as herein described.

101,490.—Biscuit-Pan. — John C. Milligan, Brooklyn, N. Y.

Claim. — Biscuit-pans, connected together in clusters by means of the bars B, united to the bottoms, and by uniting the edges at the tops, as described.

101,491.—Apparatus for Lighting Gas by Electricity.—Walter J. Morris and William J. Reid, New York, N. Y.

Claim.—1. The arrangement of the three magnets A, B, and C, on a gas-lighting apparatus, so that all are operated by one battery, but separately, substantially as described, and for the purpose set forth.

2. The magnet A, arranged on the gas-lighting apparatus, to close the valve in the gas-pipe, as set forth.

3. The magnet B, arranged on a gas-lighting apparatus to open the valve in the gas-pipe, as set forth.

4. The magnet C, arranged to operate, by the combined action of its armature and of the spring U, the platina tips *e* R, which produce the sparks, as specified.

5. The apparatus, arranged substantially as described, to apply the full power of the battery, less resistance of the conductors upon each instrument, and upon only one until its duty is performed, the currents then passing to the next instrument, and not passing through more than one magnet at a time.

6. The wires and springs so arranged as to form the electric connections, and retain them until the armatures have completed their full strokes, and then breaking them suddenly and completely, substantially as described, and for the purpose set forth.

7. The spring catches *t u* and additional armatures *p q*, so arranged as to lock the main armature-lever, as set forth.

101,492.—Saw-Hanging.—Lawrence Morrison and Amos G. Harms, Allegheny City, Pa.

Claim.—In combination with the pitman-head of a muley-saw, the inner jaws C C, screw E, and nuts F F, by means of which the wrist-pins of the pitman-head are adjusted, substantially as and for the the purposes described.

101,493.—Walking-Beam and Sucker-Rod Connection for Deep Wells.—Marcellus A. Morse, Titusville, Pa.

Claim.—1. The solid head-piece *a*, having trunnions *a'* and mortise *c*, in combination with a concave-ended set-screw, *d*, and slotted walking-beam A, constructed and arranged substantially in the manner and for the purpose set forth.

2. In a walking-beam and sucker-rod connection, the pressure-block *e* with plane or corrugated face, in combination with an adjustable connecting-rod, mortised head-piece, and set-screw, constructed and arranged substantially as and for the purposes described.

101,494, antedated April 1, 1870. — Hop-Picker.—Myron Moses, Malone, N. Y.

Claim.—1. In combination with a self-graduating feed device, the revolving fingered cylinder F, the former revolving at a slow, while the latter revolves at an accelerated velocity, and the former thus holding, while the latter strips the hops from the vines, in the manner described.

2. The slotted or comb-plate I, in combination with the picker-cylinder F, substantially as herein shown and described, and for the purpose set forth.

3. The spout M, constructed substantially as described, in combination with the spouts K and L, to receive and collect the hops driven off by the blast, substantially as herein shown and described.

4. The combination of the feed-rollers C, picker-cylinder F, cap H, comb or cleaner-plate I, spout K, fan-blower N O, blast-spout L, and spout M, with each other, said parts being constructed and arranged substantially as herein shown and described, and for the purpose set forth.

101,495.—Marine Furniture.—Lorenzo D. Newell, New York, N. Y.

Claim.—1. A circular, curved, or other-formed hollow shell, C, provided with the cushioned seat G, back H, and central space I, and one or more doors P, and suspended for universal motion, all substantially as specified.

2. The combination, with a couch or sofa arranged and suspended as described, of a center-table, detachably connected, substantially as specified.

101,496.—Feeding Apparatus for Nail-Machines.—James Nolan, Oxford, N. J., assignor to himself and E. T. Henry, same place.

Claim.—1. A supporting arm, I J, for a nail-plate feeder, vibrating on a pin, F, and having a radial slot, K, to allow the barrel H to rise when anything becomes interposed between it and the table, all as set forth.

2. The combination of vibrating arm I J, slotted as shown, and a spring rod, M, formed in two parts, as set forth, with the barrel H, all constructed and arranged as and for the purpose specified.

101,497.—Miter Machine.—John Nonnenbacher, New York, N. Y.

Claim.—The plane F, ways D D, link I, eccentric J K, pinion L, pulley N, guides P P, and table C, constructed, arranged, and operating substantially as and for the purposes described and set forth.

101,498.—Horse-Power.—George Oerllein, Utica, Minn.

Claim. — 1. Master-wheel B in a horse-power, when operated by movable sweeps, substantially as described.

2. The pinion I and tumbling-rod K, and wheels H, in combination with the master-wheel B and wheels D, E, and F, substantially as described.

3. Tumbling-rod M, pinion L, and wheel H, in combination with a master-wheel, B, and wheels D, E, and F, substantially as described.

101,499.—Potato-Digger.—Oliver Patterson, South Dansville, N. Y.

Claim.—The arrangement with the share of the series of rollers G G, separated by the intervening spaces *g*, and operated by the rag-wheels *h* and endless chain I, or suitable gearing, substantially as hereinbefore set forth.

101,500.—Apparatus for Disintegrating Ores.—Almarin B. Paul, San Francisco, Cal.

Claim.—1. The drying, ventilating, and heating of ores during the process of pulverization, by the means of artificial heat.

2. The combination of furnace and discharge apartments, for the purposes specified.

3. The heating of ores for the facilitating pulverization and more perfect amalgamation by the dry amalgamating process.

101,501.—Sealing-Apparatus for Pipe-Joint Couplings.—Charles Perkes, Philadelphia, Pa.

Claim.—The combination of the seal with the collars or collar and segment of a collar applied to the necks of union-joints, as described and shown.

101,502.—Wood-Turning Lathe.—Oliver H. Perry, Golconda, Ill.

Claim.—The drum C, jam-nut B, and the collar-nut D, in connection with the spindle A and center E, when constructed and operating as and for the purposes hereinbefore set forth.

101,503.—Adjusting Slide for Chains.—Robert James Pond, Morrisania, N. Y., assignor to Jahne, Smith & Co., New York City.

Claim.—The combination with the chains, substantially such as herein described, of the adjusting slides A, provided with divided and hinged barrels having spring catching, or other locking devices, substantially as specified.

101,504.—Molding Sash-Weights.—William W. Pullis, St. Louis, Mo.

Claim.—The plugs H and K, constructed and arranged in relation to the nowel and cope, as set forth.

101,505.—Fruit-Jar.—Thomas C. Purdy, Janesville, Wis.

Claim.—The combination and arrangement of the wire yoke D, provided with loops *b*, the cover B, and screws C, with the neck of the fruit-can, substantially as set forth and shown.

101,506.—Glove.—John H. Putman, Gloversville, N. Y.

Claim.—1. The backs and inside pieces of gloves A B, formed in such manner as that the back part A shall have the back of the thumb A′ with the projecting gusset *a* and backs of the fingers *b* in one piece, and the inside part B shall have the inside of the thumb B′ and the projecting gusset *a*′ and the inside of the fingers *b*′ in another piece, substantially as described.

2. The glove above described, as a new article of manufacture, when made of the parts A, B, and *c*, in the manner substantially as described.

101,507.—Mode of Securing Horse-Powers to the Ground.—Francis W. Randall Burlington, assignor to Ira B. Buell, Union, Mich.

Claim.—The arrangement of the braces B and draw-rods or chains C, when arranged alternately in pairs, with a stake, D, driven into the ground at each apex or point of junction, in a manner to resist the torsional strain, and connected and combined with the frame A of a portable horse-power, (mounted or otherwise,) substantially as and for the purpose set forth.

101,508.—Machine for Scouring and Setting out Leather.—Archibald W. Reid, Schenectady, N. Y., assignor to himself and William H. Rugg, same place.

Claim.—1. The "scouring" and "setting" tools set into the edge or rim of a rotating disk or wheel, as set forth, to operate as specified.

2. The sliding support E, connected with the levers F and springs *d e*, to operate in conjunction with the rotary scourer, as set forth.

101,509.—Revolving Plow-Colter.—Merritt Richards, Princeton, Ill.

Claim.—The combination and arrangement of the arm B, having constructed within it a slot, into which the post *c* may be fastened and adjusted by means of a screw-bolt and nut, with the forked arm H, constructed in one piece, and the colter A, in the manner and for the purpose herein described.

101,510.—Compound Blower.—Alexander K. Rider, New York, N. Y., assignor to himself, C. H. De Lamater, and George H. Reynolds, same place.

Claim.—The compound blower herein described, having smooth-surfaced blowing-wheels M, and fixed wings A^5, arranged either in a double or single series, in the manner and for the purposes herein set forth.

101,511.—Washing-Machine.—William Riley, Madison county, Miss.

Claim.—The sash C, springs C′ C′, adjustable shaft D, lever F, and rubbers E E′, when the latter is worked as shown, the whole being so combined and arranged as to operate substantially as described.

101,512.—Glass Lamp.—D. C. Ripley, Jr., Birmingham, Pa., assignor to Ripley & Co., same place.

Claim.—1. Attaching a metallic handle to a glass lamp by passing the eye of the handle over the neck of the lamp and cementing the burner fastening to the extremity of the neck, substantially as described.

2. A metallic handle of a glass lamp, having an outer hook end, *d*, suitable for use with a clip or socket, as a device for hanging the lamp, substantially as described.

101,513.—Machine for Making Horse-shoes.—Lavan D. Roberts, Cleveland, Ohio.

Claim.—1. The arm C′, spring *m*, in combination with the arm E, wrist-pin F, cam D′, and operating-shaft conjointly, in the manner and for the purpose substantially as set forth.

2. In combination with the vibrating jaws *b a*, shaft U, the slide Z, and hub B′, provided with the lug A′ or its equivalent, substantially as and for the purpose set forth.

3. The spring-finger N′, in combination with the forming and facing-die N R′, and the cross-arm M, for the purpose and in the manner substantially as set forth.

4. The forming and facing-die N R′, in combination with the spring *b*′, and cross-arm M, substantially as and for the purpose set forth.

5. The combination with the cams S T, vibrating jaws of the arm Q, and adjustable stop W, the slide X, and cam Y, substantially as described and for the purpose set forth.

101,514.—Fanning-Mill.—Jacob L. Runk and Benjamin H. Tharp, Nashville, Ill.

Claim.—1. The rod G, slide C, and bar D, in combination with the shoe, so as to be simultaneously operated, as set forth.

2. The arrangement of the notched plates *s* on the sieve M, and the screw-bolts R, adjustable in slots in the case, as set forth and shown.

3. The arrangement of the valve N in connection with the long sieve L and short sieve M, so as to deliver both the coarse and fine grain outside the case, or one or both of them beneath the mill, as shown and described.

101,515.—Horse-Collar.—Henry Sanders, Utica, N. Y.

Claim.—As a new article of manufacture, a horse-collar, with the rim extending only about two-thirds up from the bottom, substantially for the purposes shown and described.

101,516.—Tin Pail.—Hugh Sangsters, Buffalo, N. Y.

Claim.—The bottom G, formed and attached to the body of the vessel, substantially as described.

101,517.—Coffee-Pot.—Silas T. Savage, Brooklyn, N. Y., assignor to himself and David S. Quimby, Jr., same place.

Claim.—The ebullition-director *f*, perforations or cap *i*, case *d*, and perforations *k*, in combination with the vessel *a*, as and for the purpose set forth.

101,518.—Carriage-Prop.—Leonard Sawyer, South Amesbury, Mass.

Claim.—1. The carriage-prop, swiveled in the supporting-plate B, so that it can freely turn in the same, as set forth.

2. The swiveled carriage-prop, provided with the polygonal portion *d*, to be turned by the stay or rod, as and for the purpose specified.

101,519.—Sad-Iron Heater.—William Scarlett, Aurora, Ill.

Claim.—The stove A, having swinging bails C arranged on the sides thereof, and adapted to receive and support flat-irons, in the manner and for the purposes herein set forth.

101,520.—Cabbage-Cutter.—John D. Schaub, Birmingham, Pa.

Claim.—1. In combination with the revolving knives *e*, a fixed knife or cutter, *n*, arranged in the box *m*, substantially as and for the purposes set forth.

2. A feeding lid, *o*, having a recess, *p*, in its lower face, when used in connection with a knife, *n*, in the chamber *m*, substantially as described.

101,521.—Carriage-Axle.—Francis Scherb, New York, N. Y.

Claim.—A metal carriage-axle, the middle part of which consists of a flattened plate stiffened and strengthened by a projecting angle-piece or rib, when the whole is made in one piece, substantially as described.

101,522.—Harrow and Earth-Cutter.—John Schroeffel and William Dell, Allegheny City, Pa.

Claim.—One or more series of cutting-wheels *d*, each series being mounted on a shaft in a frame, in combination with a rocking harrow, *h*, substantially as described.

101,523.—Skate.—George V. Scobey, Waterloo, assignor to himself and Reuben Wood, Syracuse, N. Y.

Claim.—1. The keys *f f*, provided with beveled wings *f*′ projecting in opposite directions, when constructed and arranged with the holes *e e* of the heel-plate, so as to operate as set forth.

2. The self-adjusting spring-guard H in combination with the guard H′ and toe-plate *m*, constructed, arranged, and operating as described.

101,524.—Horse Hay-Fork.—Elijah U. Scoville, Manlius, N. Y.

Claim.—The divided tine B *b*, constructed as described, the part *b* having a recess in which a spring detent is arranged, said detent being adapted to engage with a notch, *g*, in the part B, from which it is withdrawn by means of the tripping-rope, through the medium of the lever *d*, as set forth.

101,525.—Brick and Tile-Machine.—George Scott, Philadelphia, Pa., assignor to himself, Charles Melcher, John Melcher, Charles H. Melcher, George W. Melcher, and William H. Melcher.

Claim.—1. The wood-lined die X^1, in combination with the soap-stone die X^2, substantially as and for the purpose hereinbefore set forth.

2. The use of soap-stone or of hollow cylinders into which steam is injected, for rollers, to facilitate the passage of the web, though I expressly disclaim the employment of friction-rollers for the purpose of diminishing friction in the die or the contracting of the web.

3. The combination of the soap-stone-lined slotted platform *c*, the frame *f f*, side yokes G G, the blocks *m m*, with the lever *o* and adjusting-rod *q*, substantially as and for the purpose hereinbefore set forth.

101,526.—Spring-Bed Bottom.—D. N. Selig, Newburg, N. Y.

Claim.—The spring A, bent downward and inward at the ends B B, and provided with slots or a series of holes, F F, in its recurved ends C C, for adjusting its points of attachment to the strip D, all in combination with the said strip, for the purposes herein specified.

101,527.—Covering for Steam-Boilers, &c.—James E. Sharp, Eleazer Ainsworth, and Frederick A. Sabbaton, Troy, N. Y.

Claim.—1. Covering steam-boilers, steam-pipes, and other similar articles, substantially in the manner described, and for the purposes set forth.

2. The use of sawdust for the coating of boilers or pipes, when the same has been saturated with alum or other substance to render it non-combustible, and combined with any glutinous substance to render it adhesive, substantially as described.

101,528.—Pattern for Shoes.—Elias Shopbell, Ashland, Ohio.

Claim.—1. A pattern for cutting backs of shoes, constructed of plates A B, plates C D E F and G, with their several respective slots *b*, all arranged in relation to each other, and combined to operate in the manner substantially as described and for the purpose specified.

2. A pattern for cutting fronts of shoes, constructed with plates A B, plate C, and their respective slots *a*, when arranged in relation to each other, and combined to operate in the manner substantially as described and for the purpose set forth.

101,529.—Die for Making Chord-Bar Heads.—Frederick J. Smith, Chicago, Ill.

Claim.—For the manufacture of chord-bar heads, the dies A and A′, provided with the shapes B and B′, the faces *c* and *c*′ and *d* and *d*′, when constructed as described and shown, and arranged to operate as set forth.

101,530.—Separator.—Benjamin H. Snavely, Penn township, Pa.

Claim.—The slotted lever-arm F, with its sliding weight G, in combination with the swinging frame I K, with its connecting-rod H, for the purpose of acting upon the belt *c* which actuates the fan-pulley B, for the purpose of regulating the speed of the fan, substantially in the manner and for the purpose specified.

101,531.—Saw-Mill.—Henry F. Snyder and George S. Snyder, Williamsport, Pa.

Claim.—1. In combination with the saw D and cross-head J, as specified, the swiveling boxes I^1 I^2, fitting in corresponding bearings in the griping parts E E^1, and provided with the key E^2, or equivalent means for tightening and liberating their hold, in the manner and for the purposes herein set forth.

2. In combination, the within-described adjustable swiveling connection between the boxes I^1 I^2 and the griping parts E E^1 at the lower end, and the movable sides, which allow of correspondingly swiveling the saw at the upper end, when arranged for joint operation, substantially as and for the purposes herein set forth.

101,532.—Friction Calender Roll for Paper.—William H. Soley and George Stites, Philadelphia, Pa.

Claim.—1. The combination of a set of calendering-rolls, a set of driving-rolls in separate housings, and a universal joint connection between the upper rolls, substantially as and for the purpose set forth.

2. The combination of the driving-shaft, driving-rolls, paper-rolls, planishing-roll, driven roll, and jointed coupling-shaft, all these parts being constructed to operate substantially as hereinbefore set forth.

101,533.—Faucet.—Thomas Somerville, Washington, D. C., assignor to himself and Robert Leitch, same place.

Claim.—1. The spindle or stem D, having a shoul-

der *d*, and the cap C with its recess or seat *d'*, when said shoulder and seat are so attached that the shoulder shall work down into the seat, and so finished as to furnish a ground joint which is perfectly tight without the use of elastic or other packing, substantially as described.

2. The spindle or stem D, and valve or plug E, when the latter has a swivel base or head, F, and is constructed with a screw-thread, E', on its outer surface, which works in the female screw-thread cut in the valve-chamber B, substantially as described.

101,534.—SODA-FOUNTAIN.—S. B. Spring, Geneva, Ohio.

Claim.—The pump B, air-vessel or receiver D, sirup-cups G, draught-cocks H F, and case or box A, and pipe E, when combined and arranged in relation to each other, and operated in the manner substantially as described, and for the purpose set forth.

101,534, antedated March 18, 1870.—ORNAMENTAL-SCROLL TYPE.—Henry Stephenson, William Thompson, and William Greaves Blake, Sheffield, England, assignors to Frederick W. Griffith and George P. Byrne, New York city.

Claim.—The arrangement of the type 1 1^a to form the terminal *a*, 2 2^a to form the shadings *b*, 5 5^a to form long diagonals *d*, 3 3^a to form short diagonals *e*, and 4 4^a to form intermediate diagonals *f*, all located in a form, and combined with thick and thin metal rules *g g*, as and for the purpose specified.

101,536, antedated April 1, 1870.—CULTIVATOR.—Garland B. St. John, Kalamazoo, Mich.

Claim.—1. The combination of beams C C C^a C^a, together with beams A A and B B, arranged substantially in the manner and for the purposes set forth.

2. I do not claim a separate drag-bar with drag-teeth inserted to form a combination of harrow and cultivator; but what I do claim is the construction and arrangement of plows or shovels E E, substantially as hereinbefore specified.

3. The combination of beams B B, bolts *b b* and *c c*, together with plates G G, all arranged substantially in the manner and for the purposes set forth.

101,537. — ATTACHMENT TO SEEDING-MACHINE.—Garland B. St. John, Kalamazoo, Mich.

Claim.—1. The feeding-saws C' C', held to place in slots *c' c'*, and running with their inclined faces toward the grain, in the manner and for the purposes hereinbefore specified.

2. The spouts M' M', constructed and arranged in the manner and for the purpose specified.

101,538. — HORSESHOEING-TOOL. — Robert Stout, Matteawan, N. Y.

Claim.—An improved tool, formed by the combination of the hinged or jointed handle A, hammer-head B, and hook C, with each other, substantially as herein shown and described and for the purpose set forth.

101,539.—GANG-PLOW. — James W. Surna, San Leandro, Cal.

Claim.—In combination with the axle E, lever L, plows S, and frame of the plow, the colter *u*, all arranged substantially as and for the purpose specified.

101,540.—REVOLVING SULKY-HARROW AND SEEDER COMBINED. — Augustin L. Tavean, Chaptico, Md.

Claim.—1. The construction and arrangement of the ribs and open rims and traction-cleats and wheels A, constructed and operating as and for the purpose set forth.

2. The arrangement of the segment R, arms D, quadrants T, and rollers V, in combination with the rod Z, lever P, and radial bar O, operating as and for the purpose herein set forth.

3. The arrangement of the movable clutch and cam-wheel No. 2, chain No. 5, and chain-pinion No. 4, in combination with pinion No. 3, hub-ribs on wheel A, foot-lever U, spring trigger Q^3, hook-rod *a'*, and spring and grass-seeder rod, and spring No. 8, operating as and for the purpose set forth.

4. The construction and arrangement of the cylindrical harrow M, sockets k, teeth *g*, braces *r*, and socket-rings *w*, constructed and operating as and for the purpose herein set forth and described.

5. The arrangement of the slip clutch pinions C and clutch-pins *m*, in combination with the journals *e*, all to a revolving harrow and seeder combined, operating substantially as and for the purpose herein set forth and described.

101,541.—NUT-LOCK PLATE.—Esau D. Taylor, Hornellsville, N. Y., assignor to himself and David Cohn, same place.

Claim.—Securing the nut-lock plate D, by means of the slit *e* and button *f*, substantially as described.

101,542. — COUNTER-KNIFE. — John Teed, Reading, Pa.

Claim.—In combination with a yard-stick, the steel spring A, wheel B, and metallic lining C, arranged as described.

101,543.—CAR-COUPLING.—James Temple, Bellefonte, Pa., assignor to himself, William Temple and John Temple, same place.

Claim.—1. The combination and arrangement of the bent lever G, pin P, and drop-plate D, in the manner and for the purpose described.

2. The combination of the slide-rod E and tripping lever F, in the manner and for the purpose stated.

3. The open draw-head A B, in combination with the described automatic devices for tripping the link and inserting the pin, as set forth.

101,544, antedated March 25, 1870.—PROCESS AND APPARATUS FOR SUPPLYING PURE WATER TO BUILDINGS.—John A. Thompson, Auburn, assignor to American Water-Purifying Company, Buffalo, N. Y.

Claim.—1. The combination of the board cover with the straining apparatus, as described and for the purpose set forth.

2. The sedimentary separating cone or base B, with its deflecting planes, perforated bottom and inlet with the flanged pipe P, plain pipe J, in combination with downward filter O, upward filter X, ice-box *u*, basin *b* with its distributing-pipes, substantially as described and for the purposes set forth, in combination with non-conducting walls *m*.

3. The method herein described for introducing, purifying, filtering, and distributing water in buildings, the same consisting in the combination of the several processes of separating and disposing of the sediment, downward and upward filtration, purification by disinfection, and refrigeration, substantially as described and specified.

101,545.—EXTENSION TABLE.—Smilie Tilton, Alton, N. H.

Claim.—1. The arrangement for turning movement of the permanent boards D D of the table, with the leaves E E hinged upon the same, as and for the purposes herein specified.

2. The hinged fly-rails H H, in combination with the sliding rails B B, as and for the purpose herein set forth.

3. The curved guide-rods *h h*, in combination with the fly-rails H H, provided with the pins *i i*, for the purpose specified.

4. The cleats *m m* with their lips *n* and *o*, in combination with the central pivot *f* and grooves *p p* in the sliding rails B B, as specified.

5. In combination with the turning boards D D and their leaves E E, and with the sliding extension-rails B B, and fly-rails H H, the detachable end legs A A, for the purpose specified.

101,546.—PAPER BOX.—John W. Tuttle, Newton Corner, Mass.

Claim.—The new or improved manufacture or pasteboard packing-box, made with the shoulder pieces or lodges, arranged and combined with its cover and body, in manner and to operate therewith substantially as and for the purpose as hereinbefore explained.

101,547.—HARROW.—William Tuttle, Fayette, Miss.

Claim.—The combination and arrangement of the draft-ring D, having the propelling flange E, the toothed and beveled flange of the rim A, the friction-rollers F, pin, L, and toothed drum, all substantially as specified.

101,548.—WOOD-TURNING LATHE.—John J. Urmston, Rahway, N. J.

Claim.—1. The combination of a series of knives, arranged on a slowly-rotating tool-stock, as set forth, and the centers rotating the block against each knife, successively, with great velocity, each revolution of the tool-stock serving to finish a hub, in the manner described.

2. The combination of the slotted bars I of the drum, the clamp L, and the tools K, when arranged substantially as specified.

101,549.—SHELF FOR OVENS OF COOKING-STOVES.—Samuel S. Utter, New York, N. Y.

Claim.—1. The combination of the oven flanges, constructed as described with the hooked projections of the slide, substantially as and for the purpose described.

2. Providing the oven flange with openings, substantially as and for the purpose described.

3. The oven flange constructed with a stop, substantially as and for the purpose described.

101,550.—FEED FOR IRON-PLANER.—Hortio B. Weaver, Hartford, Conn., assignor to George S. Lincoln and Charles L. Lincoln, same place.

Claim.—1. The combination of the peculiar-shaped and recessed pieces or dog-holders *h* and *h'*, dogs *i* and *i'*, and dog-wheels *n* and *o*, with the pinions *j*, *k*, and *l*, and the shafts *m* and *g*, as and for the purpose set forth.

2. The combination of the arm F, cam H, rocker I, connection K, rack L, pinion-gear *a*, shaft *b*, stand *c*, flanch *d*, gear *e*, pinion *j*, together with the peculiar-shaped pieces *h* and *h'*, the dogs *i* and *i'*, and dog-wheels *n* and *o*, the whole operating together, as and for the purpose herein set forth.

101,551. — LUBRICATING JOURNAL AND BEARING.—Isaac P. Wendell, Philadelphia, Pa., assignor to himself and Stephen P. M. Tasker, same place.

Claim.—The combination of cords or bundles of wires C, with the tubes D arranged in relation to the oil-reservoir P and face *a* of the journal-bearing A, substantially in the manner and for the purpose hereinbefore specified.

101,552.—MANUFACTURE OF ARTICLES OF COMPRESSED WOOD.—Sylvester P. Wheeler, Bridgeport, Conn., assignor to himself and Samuel B. Henry, same place.

Claim.—As a new manufacture, embossed imitations of carved wood, deodorized, after being so treated as to fix the fibers, as herein set forth.

101,553.—PROCESS OF TREATING WOOD.—Sylvester P. Wheeler, Bridgeport, Conn., assignor to Samuel B. Henry, same place.

Claim.—1. The within-described process of treating wood; that is to say, coating or partially impregnating it with a solution of India rubber or its equivalent, and then subjecting it to the action of chloride of sulphur, as set forth.

2. Embossed imitations of wood-carvings, subjected to the above treatment.

101,554. — MOWING-MACHINE. — John D. Wilber, Poughkeepsie, N. Y.

Claim.—1. The lead-wheels H' H', applied in front of finger-bar G upon the outer sides of shoes G' G' and adjustably connected to these shoes, in combination with a rising and falling frame, A, two driving-wheels, B B, and a hinged central draft-tongue and platform, D E, substantially as described.

2. The two lead-wheels and two dividing-shoes, constructed alike, and each adapted for working next the standing grass, when these parts are arranged in front of a finger-bar beyond the cutting width of the machine, and beyond the tracks of transporting-wheels B B, substantially as described.

3. In a front-cutting central-draft mower, the deflecting rods *i i*, extending from the front ends of shoes G' G', which are arranged in front of the cutting apparatus to points which are within the space between the two wheels B B, substantially as described.

4. Scrapers or track-clearers b^2, applied to flaring bars F F, in lines with the transporting-wheels B B, substantially as described.

5. The flat-sided swivel-block *p*, fitted on a pin of the sickle-bar H, and in an oblong slot, *o*, of the bell-crank or elbow-lever of a harvester-pitman, substantially in the manner shown and described.

6. The arrangement of the flaring frame A A, F F, finger-beam G, sickle H, wheels H' H' and B B, axles C *c c*, tongue D, the driving-gearing, and the devices for raising and lowering the cutting apparatus, and stopping and starting the same, the said parts all being constructed and operating as herein described.

7. The guards *r r*, constructed in the form herein described, and applied to the machine and in the relation to the gears *j j* in the manner and for the purpose set forth.

101,555.—COMBINATION DISTILLING APPARATUS.—Ludwig Wolff, Chicago, Ill., assignor to himself, David G. Rush, H. J. Pahlman, and Charles Welsh, same place.

Claim.—The still S, pipe *s d*, doubler D, pipe *d w*, and the worm-pipe and tub W, in combination with pipe *u u*, low-wine tub L, pipes *l d* and *h h*, alcohol column C, the charger H, pipe *c v*, goose-tub V, pipes *v x* and *v' c'*, the worm-tub X, pipes *h s* and *l x* and *h a*, boiler A, and pipe *d c*, discharge-pipe and stop-cock *n*, for manufacturing alcohol from mash or wort, &c., in the still S by one continuous operation, substantially as and for the purpose set forth, with or without the separators *q w* and *q x*.

101,556.—MACHINE FOR MAKING CORNICE MOLDINGS.—Charles L. Wood and Cornelius A. Sheridan, Cleveland, Ohio.

Claim.—1. The adjustable vibrating bed B, when constructed substantially as described and for the purpose specified.

2. The adjustable brake D, as arranged in combination with the leaf F and bed B, substantially as and for the purpose set forth.

3. The brake-plates G, in combination with the leaf F, constructed and arranged as described, in relation to the edge of the brake D, substantially as and for the purpose set forth.

4. The leaf F, when constructed and arranged in its relation to the edge of the brake D and the edge of the bed B, so that its axial line or edge shall come in close relation therewith, forming with these three close parallel edges, substantially as and for the purpose set forth.

101,557.—APPARATUS FOR GENERATING AND CARBURETING HYDROGEN GAS.—Joseph S. Wood, Philadelphia, Pa., assignor to himself and John J. Carberry, same place.

Claim.—1. The rotary thimble and arms O O′ for carbureting gas or air, constructed in the manner herein described.

2. The telescopic tube H, in combination with the tank A, for generating hydrogen gas for illuminating purposes, substantially as herein described.

3. The telescopic tube H, in combination with a carbureting-box attached to the outlet-pipe R, substantially as herein described.

101,558. — GENERATING HYDROGEN AND HYDROCARBON GAS.—Joseph S. Wood, Philadelphia, Pa., assignor to himself and John J. Carberry, same place.

Claim.—1. The pipe M and stop-cock N, arranged so as to connect the upper reservoir B with the lower generating gas-chamber B′, that the dilute acid passes from the chamber B to the chamber B′, and back again from the lower to the upper according to the pressure of the gas, substantially as herein described.

2. The arrangement of the basket G passing through the guide-tube D within the chamber B, into the lower chamber B′, for the purpose herein described.

3. The arrangement of the guide-tube D, outlet-pipe for gas K′, and basket G, in combination with the chambers B B′, substantially as herein described.

101,559. — GRINDING-MACHINE. — Thomas H. Worrall, East Blackstone, Mass.

Claim.—1. The hollow or cast-iron stand or frame, consisting of the parts A a′ and slotted projections B, as shown and described.

2. The spindle D, having spiral groove d′, pulley E, adjustable collar F, and frame A a′, all combined and relatively constructed and arranged, as set forth.

101,560, antedated March 23, 1870.—THILL-COUPLING.—Edmund Yeiser, Newmanstown, Pa.

Claim.—The arrangement of plate d, cap e, and clip A, each part constructed and operating together in the manner described.

101,561.—CURLING-ROD FOR PAPER CIGAR-LIGHTERS.—William D. Young, South Pittsburg, Pa.

Claim.—The tapering rod A, in combination with the vertical slot C, as a new article of manufacture, viz. a "curling-rod," the whole being constructed and operating as herein described, and substantially as set forth.

101,562.—PREPARING TOMATOES AND OTHER FRUITS AND VEGETABLES TO BE USED AS FOOD.—Charles Alden, Newburg, N. Y.

Claim.—1. A junk or cake of tomatoes or other fruits, formed by exposing such fruits to an artificial current or currents of air, and then compressing them in the required form or shape, as set forth.

2. The herein-described process of treating tomatoes or other fruits by exposing them to an evaporating process, in an artificial current of air, and afterwards compressing the same into junks or cakes, substantially as specified.

101,563.—CAR-SPRING.—Timothy F. Allyn, Nyack, N. Y.

Claim.—1. The construction and arrangement of a car-spring, in such a manner that the bearing-surfaces of the upper frame E shall have only two points of contact upon the spring D, when said points of contact are yielding or movable, and allowing the full free action of the spring, in the manner and for the purpose herein described.

2. The cups B and F, having formed upon their bearing-surfaces the corrugations a a a a, in the manner and for the purposes herein described.

3. The combination of the frame E, cups F, and rubber G, with the springs D D, frame or bolster A, cups B, and rubber C, in the manner and for the purpose herein described.

4. As an article of manufacture, the frames A and E, having formed upon them the cups B and F, when each of said frames and cups is cast in one piece, in the manner and for the purpose herein described, or whether said frames be made of wood, and have secured to them the cups B and F.

101,564.—DOOR-LOCK. — William H. Andrews, New Haven, Conn., assignor to Burton Mallory, same place.

Claim.—The arrangement and construction of the tumblers and lock-bolt, so that one or more tumblers are provided with two different and independent slips, through one of which, by one key, the bolt may be locked or unlocked, and through the other by a different key, irrespective of which of the said two keys had previously operated the bolt, substantially in the manner herein set forth.

101,565.—DIE FOR FORMING SLEEVE-BUTTONS.—Henry Ansley, Washington, D. C.

Claim.—1. The combination of the punch A and die-plate B, constructed substantially as shown and described, and made to operate so as to punch a blank, in the manner and for the purpose specified.

2. The combination of the dies C and D, constructed substantially as shown and described, and made to operate as and for the purpose set forth.

101,566.—HAY-PRESS. — G. H. Aylworth, Brighton, Ill.

Claim.—The arrangement of a press with a vertical frame, A, vertical side slots B, door G, and follower-boards C, in combination with pressure-bars D, when these are arranged to be withdrawn from the press at the lower end of stroke, substantially as set forth.

101,567.—TABLET FOR TOMBS.—H. F. Bailey, Amsterdam, N. Y.

Claim.—The combination of the frame A with casing E, glass C, space G, and box D, into which the glass is inserted, with a cement bed on each side and on its top, all substantially as set forth.

101,568.—GUN-SIGHT.—Henry B. Barber, Scott, N. Y.

Claim.—1. The wheel a, constructed as described, with notch e, hole i, and knobs d d, and operating within a circular frame to form a combined open and peep-sight, substantially as herein set forth.

2. In combination with the adjustable and convertible sight a, constructed as described, the spring b, substantially as and for the purposes herein set forth.

3. The turn-table f, provided with pin m, lugs n n, guard p, and pin s, substantially as and for the purposes herein set forth.

4. In combination with the matter above claimed the spring k, substantially as and for the purposes herein set forth.

5. The combination of the two sights, A and B, constructed as described, so as to have the open sights and the peep and pin-sights combined, substantially as herein set forth.

101,569.—HARNESS.—Elzy L. Basnett, Morgantown, West Va.

Claim.—1. The pole-strap D passing through the breast-strap A, as and for the purposes set forth.

2. The combination of the strap A, straps I I, loop J, and crupper H, all substantially as set forth.

101,570.—GATE.—Aquila Becraft, Jacksonville, Ill.

Claim.—A gate, when the same is constructed as shown, that is, having a stile, B, brace C, stirrups c c, hinges D D, having flanges d d and eye shanks s s′, and guard-board or shield F, the whole being so combined and arranged as to operate substantially as described, as and for the purpose specified.

101,571.—PRUNING-SHEARS.—Georg Bergner, Washington, Mo.

Claim.—The saw m, in combination with the pruning-shears, and constructed, arranged, and operating conjointly therewith, substantially as shown and specified.

101,572.—CONSTRUCTION OF METALLIC CORNICE.—Joseph M. Blackburn, Charles L. Wood, Benjamin K. Price, and Cornelius A. Sheridan, Cleveland, Ohio.

Claim.—1. The strip B, in combination with the brace A and cornice, in the manner as described, and for the purpose specified.

2. The manner of attaching the cornice to the ceiling and wall by inserting the edge H thereof between the joist H, studding K, and lath F J, substantially as described.

3. The tube M and vents N, as arranged in combination with the cornice C and flues, substantially in the manner as described, and for the purpose set forth.

101,573.—IRONING-MACHINE.—George Boxley, Troy, N. Y.

Claim.—1. The combination of the adjustable swiveling iron-holder d k, provided with handles e e, with the slotted driving or ironing-bar V and smoothing-iron W, substantially as and for the purpose described.

2. The combination and arrangement with each other of the table C, the ironing-bar V, the vibrating arm E, and the adjustable connecting-rod G, substantially as set forth, and operated by the means and for the purposes hereinbefore described.

3. The combination of the adjusting bars F and J, treadle R, pulley s, and belt p, with the connecting-rod G, vibrating arm E, ironing-bar V, and smoothing-iron W, substantially as and operating for the purpose described.

101,574.—SULKY PLOW.—John G. Boyd, Decatur, Texas, assignor to himself and Allen Bailey, same place.

Claim.—The lever H, fulcrumed at d, the standards F and F′, beam E, and guides C, all arranged and operating substantially as and for the purposes set forth.

101,575.—SEWER-GRATE.—Zebina L. Bragdon, Bangor, Me.

Claim.—The grate for sewers herein described, constructed with curved bars of wrought iron welded to the frame, as specified.

101,576. — PORTABLE SWING. — Mary D. Brine, Chicago, Ill.

Claim.—1. The combination of the swing-frame e e, the folding-connection d d e, and the swing A, substantially as and for the purpose described.

2. The swing suspended from a traverse having its bearings in a frame composed of two pairs of uprights, which are united at their bottom ends by a hinged frame, operating as described, and forming together an improved portable folding swing, as set forth.

101,577. — TINMAN'S MACHINE. — Charles Brombacher, Tarrytown, N. Y.

Claim.—1. The case d, made in the manner specified, to receive the shafts a and h, and inclose the gearing and holes for oiling the journals, combined with a removable door or cover, as set forth.

2. The box n for the shaft h, fitted to move upon the center or pin 2, located about midway between the shafts a and h, for the purposes and as set forth.

3. The box o of the shaft h, fitted to slide in the case d, and made with an inclined upper edge, so as to be operated upon in substantially the manner specified, in relieving or pressing down the shaft h and roller k, as set forth.

4. The lever t and cam movement, combined with the box o, shaft h, and roller k, substantially as and for the purposes specified.

5. The plate p, connected with the box o, in combination with the spring r, shaft h, and case d, as and for the purposes set forth.

6. The standard u, cast upon the bottom part of the case d, with a bolt projecting down to receive a nut, for securing the tinman's machine to the bench, as and for the purposes set forth.

101,578.—THRASHING-MACHINE. — William H. Butterworth, Trenton, N. J.

Claim. — In combination with an undershot thrashing-machine, as described, the arrangement of the wind-box D, having a passage, E, and deflector G and top-casing, with a flue, H, opening above the table, whereby a vacuum is created at the mouth of the flue by the revolutions of the cylinder, and the dust is carried from the feeder up into and out through the flue, as set forth.

101,579. —WATER-WHEEL. — John Busby, Moorestown, N. J.

Claim.—The combination, in one water-wheel, of an outer series of vertical direct-acting buckets a with a next inner series of inclined reacting buckets c, in the manner described and for the purpose set forth.

101,580, antedated April 1, 1870.—DEVICE FOR RINGING STREET-CAR BELLS.—Charles Carr, Boston, Mass.

Claim.—1. The employment of the spring rod b, in combination with the bells, or equivalent signal, n, substantially as described.

2. The arrangement of the strap-pulls a, in combination with the spring rod b, and in relation to the car-seats, substantially as described.

3. The arrangement of the levers c d, in combination with the spring rod d, and the connections e, f, and p p, substantially as described.

4. So constructing and applying the signaling apparatus, in combination with a passenger-car, that, through pulls a or their equivalent, conveniently accessible to the passengers within, the signals can be given at one end only of the car, while, by the same combination of apparatus with the car, provision is also made for convenient and direct signals between the conductor at one end and the driver at the other end of the car, substantially as set forth.

101,581. — HORSESHOE. — Ebenezer Cate, Watertown, Mass.

Claim.—A horseshoe, made of angle-iron or steel, and grooved on its wearing-surface midway between the heel and toe of the shoe, substantially as described, to reduce the wearing-surface of the shoe between the heel and toe and make the shoe wear more uniformly level than if it were not grooved.

101,582. — REFRIGERATOR. — Andrew J. Chase, Boston, Mass.

Claim.—The arrangement of the ice-chamber directly over the air-receiving duct, or between such and the refrigerating-chamber, and combining with the latter the draught-flue and holes of induction and exit of the air, the whole being substantially as specified.

Also, the arrangement of the separate air-spaces c c′, the ice-chamber, the refrigerating-chamber, the air-duct below the ice-chamber, the draught-chimney and the damper and register, the said ice and refrigerating-chambers under such arrangement being provided with induction and eduction openings, as described, and arranged so that the ice-chamber shall be beneath the refrigerating-chamber, and over the air-duct extended underneath the bottom thereof.

101,583. — REGISTERING STEAM-GAUGE.—Elijah Clark, Louisville, Ky., assignor to United States Steam-Gauge Company, same place.

Claim.—1. The combination of the levers *a* and *c* with the registering-wheel *d* and with the lever *b*, or such other part of the pressure-gauge mechanism as receives the thrust of the spring B, substantially in the manner described, and for the purpose of recording the number of times that pressure has exceeded the prescribed limit.

2. The combination of the lever *a*, connecting-rod *e*, disk *h*, and index-finger *i*, with the lever *b* or such other part of the pressure-gauge mechanism as receives the thrust of the spring B, substantially in the manner described, and for the purpose of recording the excess of pressure above the prescribed limit.

101,584.—LAMP.—Hezekiah M. Clark, Meriden, Conn., assignor to himself, Elisha J. Barnard, and Charles Blanchard, same place.

Claim.—The arrangement of the glass tube B within the bowl A of the lamp, the said tube being provided with notches *a* at the bottom, and secured with the cap *c* and neck of the lamp by the application of cement, as specified, and the lamp vented substantially in the manner described.

101,585.—LAWN-MOWER.—Charles M. Clinton, Ithaca, N. Y., assignor to himself and A. H. Gregg, same place.

Claim.—The arrangement and combination of the triangular frame A A' E, the handle B, the handled driver H, shaft I and its pinion *i*, and crank-plate rod J, angled lever G, guide-roller D, wheels C C', cutter-bar and its knives in their finger-guards, substantially as and for the purposes set forth.

101,586.—WAGON-AXLE.—Thomas M. Cluxton, Rising Sun, Ind.

Claim.—The improved wagon-axle herein described, consisting of the axle-bar A, having the spindles B, of an angular section, formed at its ends, and provided with the axle-thimbles H and K, the latter formed with the collar P fitted on the spindles B, substantially as and for the purpose specified.

101,587.—MOLDING AND CLARIFYING HORN. Edward F. Coffin, Newburyport, Mass.

Claim.—The boxes B B, heated from their outsides by steam applied to the case A, in which said boxes slide, substantially as specified, and for the purposes herein set forth.

101,588.—REFRIGERATOR.—Edward S. Colton, Boston, Mass., assignor to The Colton Refrigerator Company, same place.

Claim.—The wooden casing A, B, and D, provided with non-conducting space C and water-space E, ice-holder G, hip-roof F, gutter F', and provision-chamber D', all constructed and arranged as herein described, for the purposes specified.

101,589, antedated March 24, 1870.—COW-MILKER.—Leighton O. Colvin, New York, N. Y.

Claim.—1. The arrangement of the handles of a portable hydraulic cow-milking apparatus, substantially as herein shown and described, whereby they are made to serve the two purposes of operating and of carrying and steadying it.

2. The arrangement of the reversely-cranked or cross-handles J J with the shafts K K, toothed segments M M, and operating double rack N to the piston B of the apparatus, essentially as described.

3. The elastic sacks E, constructed substantially as described, and secured on their one side only, at or through their outlets A to the cups D, within which they are arranged for operation, substantially as described.

4. The arrangement relatively to the elastic sacks and on the outside of the cups D, which carry the latter, of the valves *n*, essentially as specified.

5. The construction, substantially as described, of the universal joint by which the teat-cups D are connected with the chamber C, by spinning the sockets *e* around the ball *g* of the joint, and surrounding the whole by an elastic band, *f*.

6. The arrangement of the vent-escapes *n* at or near the tops of the teat-cups D, essentially as specified.

7. The combination of the elastic sacks E with the vent-escapes *n*, arranged substantially as described.

101,590.—WOOD PAVEMENT.—Turner Cowing, San Francisco, Cal., assignor to Tallmadge E. Brown, Memphis, Tenn.

Claim.—A wood pavement composed of blocks, each side having a single plane surface, and one or more of the sides being inclined, and the blocks being so laid on their larger ends as to form wedge-shaped grooves or spaces to receive concrete or other suitable filling, substantially as set forth.

101,591.—GARMENT-DUMMY.—A. M. Davis, Washington, D. C.

Claim.—As an article of manufacture, a gauze-wire bust, A, or bust and skirt B combined, constructed as and for the purpose of fitting, trimming, and displaying garments, as shown and described.

101,592.—WASHING-MACHINE.—Cyrus Dean, Buffalo, N. Y.

Claim.—The cylinders C C', loosely placed upon their axles, and each provided with a concentric series of rollers, *c'*, also loosely placed upon their axles, combined and arranged as and for the purpose described.

101,593. — SHOE-TRIMMING. — William P. Demarest, Brooklyn, N. Y.

Claim.—The bow or shoe-trimming, made and embossed in the manner specified, as a new article of manufacture.

101,594.—COMPOSITION ROOFING, PAVING, &c.—Edward Joseph De Smedt, New York, N. Y., assignor to New York Improved Anthracite Coal Company, same place.

Claim.—The use of Ritchie mineral and Albertite, either or both, for the purpose of hardening Trinidad and other asphalts of a softer or more fusible nature than the two first named.

101,595, antedated March 29, 1870.—LIFTING-CLAMP FOR PUMPS.—William H. Downing, Pioneer, Pa.

Claim.—A tube-clamp, formed of the parts A and B, arranged and operating substantially as and for the purposes described.

101,596.—REVOLVING CENTER-REST FOR WOOD-LATHES.—H. J. Durgin, Rochester, N. Y., assignor to James Chase, same place.

Claim.—The rest-stock C, having a revolving collar, B, secured in position by means of the Babbitted bearing and groove *f*, and provided with a suitable sizing-chisel and oil-chamber, all constructed and arranged substantially as and for the purposes set forth.

101,597.—FIRE-KINDLING.—George W. Eldridge, South Chatham, Mass.

Claim.—1. A fire-kindler made from dried leaves, grass, straw, or other equivalent materials.

2. The manner herein described of treating dried leaves, &c., for the purpose of making a fire-kindler, substantially as set forth.

3. The compound herein described, consisting of rosin and inflammable oil, when used substantially for the purposes herein set forth.

4. The combination of the dried leaves, grass, straw, or other equivalent materials, with a compound consisting of rosin and inflammable oil, substantially for the purposes herein set forth.

5. The manner herein described of preparing a fire-kindler from dried leaves, &c., rosin and inflammable oil, substantially as set forth.

6. The use of powdered rosin or other inflammable powder, substantially in the manner and for the purposes herein set forth.

101,598.—TICKET-PUNCH.—Robert Engels, Philadelphia, Pa.

Claim.—1. The spring *m*, attached to the jaw A of a ticket-punch, contained within a case, B, of the same, and arranged to bear against the jaw A' of the said punch, substantially in the manner described.

2. The case B secured to the jaw A so as to be readily detached therefrom, and in such a position that it shall serve as a stripper-plate for the punch, substantially as specified.

3. The case B adapted for application to a punch, substantially as herein set forth.

101,599.—CHURN.—Thomas R. Evans, Blacksburg, Va.

Claim.—The combination of churn A, sliding box B, perforated plates *b*, racks *c*, segments C, shaft D, cranks *d*, and cross-bar E, all constructed and arranged to operate as described.

101,600.—SPRING-BED BOTTOM.—Matthew Faloon, Bloomington, Ill.

Claim.—The combination of the bed-slats E E, leather pieces J J, springs I I and K K, connecting-rods M M, and lever L, all constructed and arranged as described, to operate substantially in the manner and for the purposes herein set forth.

101,601. — WIRE-TIGHTENER FOR WIRE FENCE.—F. Fanning, Atchison, Kansas.

Claim.—As an article of manufacture, a metallic wire-tightener made of one piece, and consisting of the body A, having a slot, *a*, in its bottom, ring *d* on its top, and the upward and downward-projecting wings B B, provided with hooks *b b* on their ends, all as herein shown and described.

101,602.—GALVANIC SHOE-SOLE. — Joseph Fanyon, Bridgeport, Conn.

Claim.—The combination with a boot or shoe-sole, of rivets or screws of copper and zinc, substantially in the manner and for the purpose specified.

101,603, antedated April 1, 1870.—ADJUSTABLE ELBOW-JOINT FOR WATER-PIPES.—J. D. Field, Wataga, Ill.

Claim.—The pipe F, combined and arranged with disks D and E, substantially as described, and for the purpose set forth.

101,604, antedated October 5, 1869.—ADHESIVE POSTAL AND REVENUE STAMP.—Addison C. Fletcher, New York, N. Y.

Claim.—An adhesive stamp, made up of a thick portion or body, A, having a perforation or perforations, *a*, through the face of it, and thinner portion, B, composed of tissue or any suitable bibulous paper, and applied as a covering to said perforation or perforations, both portions being securely connected or incorporated to make up the complete stamp, and the latter being suitably engraved or printed on its face and having adhesive material applied to its back, substantially as specified.

101,605.—MELODY ATTACHMENT FOR ORGANS, &c.—Carl Fogelberg, New York, N. Y.

Claim.—The bellows A, when provided with the adjustable weight B, and the air-drum F, when provided with the adjustable valve G, either combined or separate, for the purpose of raising or lowering the pitch of the sound in organ-pipes, substantially as described.

101,606.—FASTENING FOR FRUIT-JARS.—William Galloway, Philadelphia Pa.

Claim.—The cam G, having flat portions *x* on its periphery, and hung to a bail connected to a jar so as to swing or turn laterally over the cover of the latter, as specified.

101,607, antedated March 29, 1870.—PADLOCK.—Charles T. Gibson, Baltimore, Md., assignor to himself and Samuel E. Kirk, same place.

Claim.—The tail-extension *e*, formed on the hooked locking-dog C, arranged beneath a pawl, *g*, which is adapted for locking the bolt E in a forward position, substantially as described.

101,608.—BRICK-MOLD.—M. T. Glimsdal, Rockford, Ill.

Claim.—1. The rods D D, provided with arms G G and slotted wings H H, substantially as and for the purposes herein set forth.

2. The combination of the frame A, partitions B B, bottoms C C, rods D D, with or without the handles E E, the arms G G, and the wings H H, all constructed and arranged to operate substantially as and for the purposes herein set forth.

101,609. — REVOLVING SWING. — Almeron Graves, Roscoe, Ill.

Claim.—The vertical post A, in combination with the radial arms *a*, sails *b*, swing-rods *c*, pushing-levers *d*, and clothes-rods *e*, substantially in the manner and for the purpose described.

101,610.—COTTON-GIN.—Richard R. Gwathmey, Philadelphia, Pa., assignor to himself and Charles W. Matthews, same place.

Claim.—1. The application to cotton-cleaning, hulling, or ginning-machines of a flue running the whole length of the machine, and constructed and operating in the manner and for the purpose above set forth and described.

2. The mode of discharging the lint at the front of cotton-cleaning, hulling or ginning-machines, by means of a flue constructed and operating in the manner and for the purpose above set forth and described.

101,611.—RAILWAY RAIL.—John C. Hagan, Nashville, Tenn.

Claim.—The rail A, provided with the cap-seat B, tongue or beveled shoulder *a d*, and beveled channel *b*, as described, and the cap C, curved on its outer edge, and provided on its inner edge with the groove *c* or bevel *d*, and on its bottom with the beveled tongue *c'*, as described, when both are used in combination with each other, in the manner and for the purposes herein set forth and described.

101,612.—STEAM-HEATER.—Frederick Pontus Hallberg, Gottenburg, Sweden.

Claim.—1. A steam-boiler consisting of rectangular parts *a* and *e* in each end, in combination with the arched parts *b b b* and *d d*, together with the central circular part *c*, as set forth.

2. In combination with the above, the connections *h'* and *i'*, between the rectangular boiler-ends and the radiators, as fully set forth and described.

101,613.—ICE-CUTTING MACHINE.—Valentine H. Hallock, Queens, N. Y., assignor to himself, Curtis Stanton, and James R. Dixon, New York city.

Claim.—1. The driving-shaft C, shaft B, and wheels F, in combination with the frame C, shafts I I, and saws J, when arranged and operating as specified, to propel the machine at the same time that they actuate the saws.

f. The propelling mechanism employed for moving the machine along on the ice, composed of pivoted creepers or calks fitted in the grooved peripheries of wheels, and arranged to operate as shown and described.

3. The combination of guides, gauges, and elevating screws and runners, when the same are applied to a machine for cutting ice for storage, and all constructed and arranged to operate as set forth.

4. The cross-cut rotary cutter or saw L, when arranged as shown, and combined with a machine for cutting ice for storage, substantially as shown and described.

101,614.—SELF-FEEDING DRILL.—Joseph H. Hanes, Cape May, N. J.

Claim.—1. The combination of the beam H and collar f^2 with the link h and frame E, when the beam and frame are provided with corresponding series of holes, as described, for the purpose set forth.

2. The improved machine described, consisting of the standard B, frame E, drill-shaft F, weighted beam H, operating-lever I, catch K, stop L, table M, and gearing G f, when combined as described, for the purpose set forth.

101,615.—BREAD-MACHINE.—John E. Hawkins, Lansingburg, N. Y.

Claim.—1. A former, D, so constructed that it may be readily attached or detached from the mixer and others substituted, in order to adapt the machine to the manufacture of loaves, crackers, or cakes of various sizes and shapes, as herein described.

2. In combination with the detachable former, the knife, operated in the manner shown and herein described.

3. In combination with the mixer B and adjustable former D, a knife, M, so arranged in relation to the revolving screw-blade C that it may be adjusted to cut from the roll loaves of various lengths, as herein described.

101,616.—BRICK-MACHINE.—Collier V. Hemenway, New London, Ohio, assignor to himself and A. A. Powers, same place.

Claim.—1. The wheel I, provided with pivoted radial arms L M, more or less in number, substantially in the manner as described, and for the purpose set forth.

2. The levers F G, as arranged in combination with the standard E, when operated by the radial arms L M, in the manner as described, and for the purpose specified.

3. The adjusting sliding bar A′, as arranged in relation to and in combination with the radial arms L M, substantially as and for the purpose set forth.

4. The discharging-wheel N, provided with pivoted radial arms L′ M′, as arranged in relation to the wheel I and radial arms L M, and in combination with the arms P for operating the slide Q, in the manner substantially as described, and for the purpose specified.

101,617.—DIRECT-ACTING COMPOUND STEAM-ENGINE.—William M. Henderson, Philadelphia, Pa.

Claim.—In a compound engine as described, where the opposite faces of each piston present an unequal area, the arrangement of the cushion passages O O′ and eduction-ports J J′, or their equivalents, in combination with the piston-heads E E′, in such manner that each piston will be cushioned at the ends of its stroke by the same motive-power which drives them, passing directly from the lesser area of the piston to the greater, by special ports or passages, arranged substantially in the manner and for the purpose represented.

101,618.—CLOSET FOR CAKE.—George A. Higgins, New York, N. Y.

Claim.—The closet for cake or pastry, made of sheet metal, with a swinging door and sliding trays, constructed in the manner and for the purposes set forth.

101,619.—HORSE-COLLAR.—George Horter, New Orleans, La., assignor to himself, Thomas K. Peterson, and Edward C. Fenner, same place.

Claim.—A horse-collar cover or envelope, consisting of a seamless tube formed of a textile fabric, substantially as and for the purpose described.

101,620.—MOUSE-TRAP.—Asahel A. Hotchkiss, Sharon, Conn.

Claim.—1. The arrangement of the coiled portions c′ of the springs within a recess or groove, f, made in the upper surface of the block A, substantially as and for the purpose or purposes herein set forth.

2. In combination with the above, the bait-holder e or e′ made of wire twisted to form a series of coils at its bait-holding end, essentially as specified.

101,621.—PORTABLE FURNACE.—John Hulbert, Jr., Richmond, Ind.

Claim.—A metal basket for containing fuel, when constructed with a grated bottom and openings a a in the sides, substantially as and for the purpose herein set forth, as an article of manufacture.

101,622.—BOILER AND WASHING-MACHINE.—Daniel H. Hull, Plantsville, Conn., assignor to himself and J. B. Savage, same place.

Claim.—The hereinbefore-described boiler and washer, consisting of the reservoir A, the cover F, the pipe G, the braces H and K, and the shaft L provided with blades M, all constructed and arranged to operate substantially as and for the purpose specified.

Also, in combination with the above, the means employed for strengthening the end of the boiler, consisting of the extended sides a, the box or brace C, and the sloping shelf D, substantially as shown, and for the purpose set forth.

101,623.—HORSE-COLLAR.—Robert Humphrey, West Troy, N. Y.

Claim.—1. In draft-collars for horses or other animals, the elastic springs s s, when arranged to operate in the manner substantially as specified, for the purpose set forth.

2. The straw flanges c c, constructed on the upper casing b, substantially as and for the purpose set forth.

3. The spring-guard d, in combination with the springs s s, substantially as and for the purpose set forth.

4. Elastic springs s s, in combination with the flanges c c and guard d, substantially as and for the purpose set forth.

101,624.—MANUFACTURE OF STEEL.—Oliver E. Hunter, Keyport, N. J., assignor to Adeline M. Jenkins, administratrix, and Henry M. Jenkins and James W. Barrett, administrators of Thomas H. Jenkins, deceased, all of New York city.

Claim.—The process of purifying and granulating crude cast-iron by pouring it, while in the molten state, in a liquid bath, substantially as specified, and then melting it in admixture with wrought iron in pots or crucibles, substantially as and for the purpose described.

101,625.—COMPOSITION FOR THE MANUFACTURE OF FRICTION MATCHES.—John Jacob Karlen, Erlenbach, Switzerland.

Claim.—The match composition, constituted substantially as above set forth.

101,626.—FIELD-ROLLER.—A. S. Kenyon, Harristown, Ill.

Claim.—1. The field-roller herein described, consisting of the sectional rollers G G, arranged to move abreast of each other, but each having an independent upward or downward motion, as specified.

2. The field-roller herein described, having sectional rollers G G turning upon independent axles k k screwed into the independent frames H H connected to the horizontal rod E by the arms d d, and provided with the upright arms e e, arranged to support the trough or seat D, as specified.

101,627.—BLOTTING-PAD.—James M. Keep, New York, N. Y.

Claim.—The means employed, or their equivalents, for securing sheets of blotting-paper to or upon the pad, consisting of the spring plate B, fitting into and held in position by the sockets a upon the plate A, substantially as shown and described.

101,628.—FOLDING CHAIR.—Frederick Kilian, New York, N. Y.

Claim.—The combination and arrangement together in a folding chair of the parts A C G and pins I, the side bars or sides of the seat G being slotted, as shown, and provided with adjusting-notches J, and the upper part of the leg C being curved inward, substantially as and for the purpose described.

101,629.—PICTURE-CORD.—Tobias Kohn, Hartford, Conn.

Claim.—A cord constructed with a leather core, a, and textile covering b, for the purpose set forth.

101,630.—SCRUBBING-BRUSH.—Benjamin F. Koller, Shrewsbury, Pa.

Claim.—The hand scrubbing-brush herein described, provided with the continuous external rubber flanks B, when constructed and arranged to operate as and for the purposes specified, as a new article of manufacture.

101,631.—STORING POWER IN PNEUMATIC LOCOMOTIVES.—Henry F. C. Krumme, Ridgway, Pa.

Claim.—The method of storing power in locomotives driven by compressed air, as described.

101,632.—PERMUTATION LOCK.—John H. Larry, Weston, Mass.

Claim.—The removable disk c, combined with the key-bolt b, when the latter is provided with the many-sided shank b′, pins d, and a circumferential groove; the block a, having a pin entering such groove in the key-bolt; and the plate e, furnished with slots for the passage of the pin d, all arranged and constructed in the manner set forth.

101,633.—WEIGHING-FAUCET.—Daniel Lesh, Jr., Liverpool, Pa.

Claim.—1. An automatic weighing or measuring device, having a graduated sector, by which the area of the aperture through which the material to be measured flows may be controlled, substantially as and for the purpose set forth.

2. An automatic weighing or measuring device, having a weight C^2, arranged to fall, and thus release the graduated sector and permit the spring to close the discharge-aperture, substantially as and for the purpose set forth.

3. The combination and arrangement of the platform E, hook or pin E^2, chain or cord C^3, weight C^2, arm D^2, and sector C^1, substantially as and for the purpose specified.

4. The combination and arrangement of the faucet B, valve D, lever C, graduated sector C^1, spring D^1, and yoke D^2, substantially as and for the purpose specified.

101,634.—VARIABLE CUT-OFF-VALVE GEAR.—Nathaniel K. Lynch, New York, N. Y.

Claim.—The combination of the jaws or gripping-levers I I, arranged to receive a positive up-and-down motion from the engine, the drop-rod G connected with the valve designed to be controlled by the governor, and the bar L for operation by the governor, and constructed to have an opening action on the jaws, substantially as specified.

101,635.—ROOFING.—Thomas A. Makibbin, Annapolis, Md., assignor to himself, William M. Pusey, and Seelye Richmond, same place.

Claim.—1. The combination of the channels C and metal strips D, constructed substantially as and for the purposes set forth.

2. The side and end flashings, constructed substantially as described and shown in figs. 4 and 5, in combination with channels C, substantially as set forth.

101,636.—PRESSURE-GAUGE.—James W. Maloy, Boston, Mass., assignor to the Maloy Pressure-Gauge Company, same place.

Claim.—1. The disk a, provided with an annular groove next its rim for convenience in fastening, and not being corrugated in any respect, substantially as described.

2. The combination of the flexible plate a, button b, nut z, and spring c, with the perforated and recessed casting F, as and for the purpose described.

3. The combination of button b, having projection s, as shown, and nut z, substantially as described.

101,637.—CARTRIDGE-EJECTOR.—John M. Marlin, Hartford, Conn.

Claim.—The stock-plate B, provided with the combined concentric and radial cam-slot n, herein described, in combination with the ejector D, provided with the stud z on the lower side thereof, as specified.

101,638, antedated March 24, 1870.—FLOORING.—Charles J. McAlister, Chicago, Ill.

Claim.—The manufactured square A, consisting of small blocks of various colored woods glued in a pattern upon stout canvas C, substantially as and for the purpose hereinbefore set forth.

101,639.—BRAKE TO PREVENT REVERSE MOTION OF DRIVING-WHEEL IN SEWING-MACHINES.—Elmer D. McIntosh, Washington, D. C., assignor of one-third of his right to E. W. Anderson, same place.

Claim.—The block A, of rubber, or other suitable material, provided with an elastic flexible sustaining-arm or flap, B, substantially as herein described, when constructed as and for the purposes set forth.

101,640.—DITCHING-MACHINE.—S. P. McKelvey, Farmer City, assignor to himself and G. W. Snook, Saybrook, Ill.

Claim.—The plow, formed of the inclined plate S and side plates T, connected to and rendered adjustable upon the frame by means of the pivoted bars U′, the rack-bars X and Y, and the pinions A′ and B′, substantially as and for the purpose specified.

Also, in combination with the above-described plow, the shaft V, the chain-wheel G^4, the linked belt G^{11}, the frame I′, the pinions K′ and U′, the rollers L′, the chain O′, and the pulleys P′ and R′, all constructed and arranged to operate substantially as and for the purpose specified.

Also, the employment of the revolving colter F^2 and f^2 in front of the ditching-plow, substantially as shown and for the purpose set forth.

Also, the means employed for connecting the rear axle to the frame, and rendering it relatively adjustable therewith, consisting of the pivot-hinge E, the posts F, the cross-bar G, the reach H, the curved bar I, the post K′, the shaft L, the pinion M, and the toothed metal band i, substantially as shown, and for the purpose described.

101,641.–MANUFACTURE OF SAFETY-MATCH. L. Otto P. Meyer, Newtown, Conn.

Claim.—Certain modes of coating safety-matches, substantially as herein described and for the purpose herein set forth.

101,642, antedated April 1, 1870.—HAME-FASTENER.—Charles H. Miller, Buffalo, N. Y.

Claim.—1. The combination of the rods A E, and lever F, constructed and operating substantially as and for the purpose hereinbefore set forth.

2. The loops at the ends of the parts A E, formed by the cross-rods *e e'*, for the purpose of attaching the fastener directly to the hames, as hereinbefore set forth.

101,643.—WASHING-MACHINE.—John Miller, Youngstown, Ohio.

Claim.—The combination, substantially as described, of the carriage or rubber J and India-rubber straps or springs H H with a wash-board.

101,644.—SEWING-MACHINE FOR BOOTS AND SHOES.—Daniel Mills, New York, N. Y.

Claim.—1. The vibrating lever, carrying the feeding-dog and pivoted on a level with the work to be sewed, whereby the feed-dog is caused to come down squarely upon the work, substantially as herein shown and described.

2. The vibrating lever, in combination with the feeding-dog, formed substantially like an elbow-lever and pivoted at its elbow, and so shaped that the arm of the elbow-lever in contact with the operating cam-disk and the working face of the feed-dog lie on the same side of the pivotal point of the elbow-lever, so that, when the dog rests on the material, its pressure thereon tends to throw the opposite end of the elbow-lever against its actuating-cam.

3. The combination with the yielding pressure-gauge, of the locking mechanism, constructed as described, to render said gauge rigid at the proper intervals, as set forth.

4. The combination of the yielding pressure-gauge with the lever, actuated by the cam-disk and the set-screw passing through said lever, for operation substantially as herein shown and described, so that said gauge can at all times be locked with the required degree of tightness.

5. A combined edge-gauge and welt-guide, constructed and arranged substantially as herein shown and described, so that the inner edge of the welt may be turned outward from the upper or work at the point where the stitching takes place, and be presented at a right angle to the needle, or nearly so, in order that the needle may go squarely through it instead of going through it obliquely, as it would do if the welt were not so bent up.

101,645.—FIRE-PLACE.—James Moore, Ergineth, Ireland.

Claim.—1. The receiving-chamber, and one or more tubes therein, in connection with one or more tubes in the fire-chamber communicating with the receiving-chamber, so that the air from the several points may be united in a heated condition and discharged.

2. The vertical tube or tubes F, arranged within the air-chamber D, substantially as and for the purpose described.

101,646. — HORSE HAY-RAKE. — John H. Morris, Maquoketa, Iowa.

Claim.—The arrangement of frame A, wheels B, brackets *b*, seat *c*, arms *c c*, and handle E, with lever K, rod *l*, springs *i i*, lugs *i'*, dog *j*, lever *m*, and chain *n*, the whole combined to operate substantially as and for the purpose specified.

101,647.—BEE-HIVE.—Marcus Morton, Gallatin, Mo.

Claim.—The lower drawer with holes at the sides of the hive, for entrance of moth into it, which, with the form or construction in combining the comb on the wires under the inclined portion of roof of drawer, with the concave form with wire-screen at the bottom, the bee-entrance directly over this, bringing the bees down near to the chamber formed for the reception of the moth, and the discharge of the bee-chippings through the wire-screen to the floor of the drawer, all of which comprise the moth decoy.

101,648. — FURNITURE-PAD. — William B. Moses, Washington, D. C.

Claim.—A rubber furniture-pad having an acorn or conical shape, substantially as and for the purpose specified.

101,649.—HAND STAMP.—Albert L. Munson, New Haven, Conn.

Claim.—In a press in which the stamp is arranged so as to be struck through or below the base, the arrangement of the guides *a a* upon the base, and so as to govern the position of the stamp, substantially as set forth.

101,650.—MACHINE FOR CROZING BARRELS. Hiram Nelson, Lake Village, N. H., assignor to himself and Alpheus Dolloff.

Claim.—The device herein described for holding the barrels, consisting of the disks or plates G G, adjustable on the revolving shaft C, and provided with the projecting arms *a a*, which are moved out and in by means of sleeves *d d*, operated by racks *f f* and pinions *g g*, on a shaft, A, all constructed, arranged, and operating substantially as and for the purpose herein specified.

101,651.—FLOOD-GATE.—A. E. Noble, La Motte, Iowa.

Claim.—1. The gate A, in combination with the posts B and hooks *c*, arranged and operating substantially as described.

2. The gate A, in combination with the swinging foot-latch *d*, the latter having a sharp edge and sloping sides, and with the post C, in the manner and for the purpose set forth.

101,652.—GRIDIRON-CASE.—Milton V. Nobles, Elmira, N. Y.

Claim.—The case for gridirons herein described, having sections A and B, lugs *a* and *c*, bolt *c*, and openings *d*, constructed and arranged substantially as specified.

101,653. — LATH-MACHINE. — Josiah Oothoudt, Minneapolis, Minn.

Claim.—1. The arrangement of the frame A, saw B, carriage C, adjustable ways E G, dogs *a a*, screws *b*, pinions *c*, racks *d*, clamp *e*, spring *f*, pin *g*, lug or cam h, and spring catch *i*, all constructed and operating substantially as herein set forth.

2. The arrangement with the above of the gear H, shaft I, pulley J, pinions *m*, clutch *k*, levers *l p*, weights *n o*, notch and rod K, lever L, and endless racks M M, all substantially as and for the purposes herein set forth.

101,654.—DESULPHURIZING ORES. — John Felt Osgood, Boston, Mass.

Claim.—1. The application of nitrous and oxygen gases to sulphuret ores while in process of roasting in a suitable oven or furnace, in the manner and for the purposes described.

2. The mixing of pulverized albite, Labradorite, or or other feldspathic mineral, or its equivalent, with sulphuret ores while in the process of roasting, to aid in desulphurating them, in the manner and for the purposes described.

101,655.—BELT-AWL. — Frederic Ingersoll Palmer, Youngstown, Ohio.

Claim.—An awl, having cutting-edges as described, and a spear-shaped point, diminishing in thickness for a short distance above the base of said point, then increasing in thickness, as set forth.

101,656.—TRACE-FASTENING.—Oliver Palmer, Cincinnati, Ohio.

Claim.—1. The spring C, hinged arm D, and shouldered catch F, combined and adapted to operate as set forth.

2. In this connection, the indentation *f'* adapted to engage behind the shoulder *b* on the under side of the cock-eye, as and for the purpose designated.

3. In the described combination with the elements B, C, D, and F, the guard E.

4. In the described combination with the elements B, C, D, and F, the tongue G.

101,657.—HITCHING-POST.—Walter W. Powers, Belleville, N. Y.

Claim.—The oblong box A, closed at the top and bottom, and provided with front opening F and door H at the bottom, inclosing the two grooved pulleys B B, rope C, and weight E, all as shown and described.

101,658.—PUDDLING AND OTHER FURNACES. Thomas E. Purchase, Reading, Pa., assignor to himself and Samuel T. Hodgkins, same place.

Claim.—1. A series of hollow boxes, B, fitted together and arranged as described, in combination with communicating tubes or channels, so arranged that water introduced into one box will flow through the others successively, as specified.

2. The hollow detachable fire-box X, constructed and adapted to the fire-place, as set forth.

3. The metal bridge E, arched as described, and arranged to support the bed of the furnace.

4. The detachable strips *s*, adapted to the door *x*, as set forth.

101,659.—HARVESTER.—Eli B. Rice, Madison, Wis.

Claim.—1. The grain-gatherer *a* connected to the platform of the harvester by a universal joint, for the purpose specified.

2. The inclined adjustable rod *f*, in combination with the endless rake-apron of a harvester, for the purpose specified.

3. The rollers N, carrying the endless rake-apron of a harvester when their ends and journals revolve within recesses formed in the frame of the platform, for the purpose specified.

4. In combination with a harvester, a press composed of two concave parts pivoted together at one end, and operating to form the sheaves of grain, and to hold and compress the same while being bound, substantially as described.

5. The press *g g'* composed of two concave parts pivoted together and provided with an elastic lining, as and for the purpose specified.

6. In combination with the press *g g'*, the concave apron *n*, and hinged apron *p*, all constructed and operating as and for the purpose specified.

101,660.—SPRING FOR BED.—Charles Rich, Poughkeepsie, N. Y., assignor to himself and David S. Mallory, same place.

Claim.—1. The construction and arrangement of the collars or bearings B B B upon the upper and lower coils *a'* of the spiral springs, in the manner and for the purpose herein described.

2. The construction and arrangement of the rods D D, having formed upon their ends the sleeves C C, in combination with the coiled spring A A, when combined in the manner and for the purpose herein described.

101,661. — TANNING BY INFILTRATION.—Louis T. Robertson, New York, N. Y.

Claim.—The reservoir A, placed at an elevation above the tanning-vat B, and provided with flexible pipes, in combination with a movable platform resting on the tanning-vat, and with a tanning-vat divided in two compartments, substantially in the manner herein shown and described.

2. The combination of the tanning-vat B with its false and perforated bottom, reservoir A, and pump C, substantially as described.

3. The false perforated bottoms covered with hair-cloth or other straining material in the reservoir A and vat B, in combination with a pump, C, substantially as described.

4. The water-jacket *i* surrounding the tanning-vat B or the reservoir A, either or both, substantially as and for the purpose set forth.

5. The coil *j* in the reservoir containing the tanning liquor, substantially as and for the purpose described.

101,662.—HITCHING-POST.—John S. Rohrer, Lancaster, Pa.

Claim.—The arrangement of the flanged bed-plate B, firmly secured to a vertical plate, P, in combination with two swinging clamps, C D, grooved and notched, so as to adapt them for holding a rein or line, in the manner and for the purpose specified.

101,663.—VEHICLE. — Elias Rowe, Vandalia, Ill.

Claim.—The combination of the bisected axle A, with guides B B, brackets *b b*, friction-wheels *d d*, and central box *a* formed of a metal bracket, and slotted strap for securing the inner flanged ends of the axles, substantially as set forth.

101,664.—GRAIN-SEPARATOR.—Lewis Royer, Royerton, Ind.

Claim.—1. The combination of director F with cylinder C, substantially as and for the purpose set forth.

2. Rollers O P, shaker G, pitman R, straw-director F, and cylinder *g*, all combined substantially as and for the purpose described.

101,665. — BOAT-DETACHING APPARATUS.—William S. Ryerson and George Stancliff, New York, N. Y., assignors to themselves, Oliver T. McIntosh, Amos L. Tripp, and Charles Chambers, same place.

Claim.—1. The sheaves *g* and blocks *h*, around the shanks of the horns, in combination with the turning shaft that connects the said horns, substantially as and for the purposes specified.

2. The horns *a* of the boat-detaching apparatus, made with shanks introduced in a tubular shaft that connects the said hooks, substantially as and for the purposes set forth.

101,666. — CHURN. — John B. Schuette, Lockington, Ohio.

Claim.—The combination and arrangement of the stand A, with hinged lid C, churn E, with dashers K K, spring L, pitmen J J, treadle-shaft H, and treadle I, all constructed as described, and operating substantially as and for the purposes herein set forth

101,667.—CAR-BRAKE.—George H. Seymour, Newark, Ohio.

Claim.—1. The clogs or shoes I I provided with adjustable steel spring bars, *e e*, substantially as and for the purposes herein set forth.

2. The combination of the clogs I I and spring *i*, the clogs being hinged to the bar J, substantially as shown and described.

3. The combination of the levers E and G G, transverse bars H H, and cams *d d*, all constructed and arranged to operate substantially in the manner and for the purposes herein set forth.

101,668.—STEAM-RADIATOR.—Joseph Shackleton, Rahway, N. J.

Claim.—The steam-radiator herein described, having the top and bottom plates of the base without a central opening, and the connecting-pipes D formed in pieces and screwed together and to the top plate of the base, in the manner and for the purpose set forth.

101,669.—STEAM HEATER.—Joseph Shackleton, Rahway, N. J.

Claim.—The devices, substantially as herein de-

scribed, for heating by means of exhaust and live steam, consisting of the pipe F, in combination with pipe D, or boiler, and exhaust-pipe E.

101,670.—SCHOOL-DESK.—Calvin W. Sherwood, Chicago, Ill.

Claim.—The independent back, composed of the parts *a b* E, connected with a school desk and seat, substantially as specified.

101,671.—CHAIR-SEAT.—Calvin D. Smith, Templeton, Mass., assignor to himself and Peter C. Sawyer, same place.

Claim.—The combination with a chair-seat frame, provided with a circular or other shaped opening, and a concave groove, of an expanding seat-holding hoop or frame, constructed to fit said groove, and hold the cloth or other covering material in place, substantially as and for the purposes set forth.

101,672.—TEAPOT.—Thomas Smith, Jr., Boston, Mass.

Claim.—The aperture *b* in bottom plate F, substantially as and for the purpose described.

101,673.—REVERSIBLE LATCH.—William B. Smith, Branford, Conn.

Claim.—The lever E F pivoted within the case, combined with the lever D and the latch-bolt C, all pivoted together and operating to throw the latch-bolt away from the lug *f*, substantially as and for the purpose specified.

101,674.—NUT-LOCK—Christopher S. Southwick and David H. Barker, Newport, R. I.

Claim.—The lock-plate and nut, constructed substantially as described, with interlocking projections, whereby nuts are prevented from moving longitudinally after they are locked, substantially in the manner set forth.

101,675.—BROOM.—Greenleaf Stackpole, Elizabeth, N. J.

Claim.—A broom sewed with a machine or lock-stitch, in the manner herein described and substantially as set forth.

101,676.—SUMMER COOKING-FURNACE.—Rufus O. Stevenson, Baltimore, Md.

Claim.—In combination with a register-cover H, the fire-pot B, having side slots *l*, and removable grate D having central conical tube E open at both ends, and provided with the perforations *e*, as specified.

101,677.—CARPET-STRETCHER.—George W. Story, Kansas City, Mo.

Claim.—1. The bars A A′, arranged with hooks *a*, joined by wheels *c c′*, and supported in spring bearings B B′, substantially as and for the purposes set forth.

2. The shafts A, ratchet-wheel D, lever D′, and springs E E′ and *e*, substantially as and for the purposes set forth.

101,678.—SUSPENSION BATH-TENT.—Horatio N. Taft, Sag Harbor, N. Y.

Claim.—1. A bath or bathing-tent, having a basin or pan at its base, and constructed so as to collapse by either raising or lowering, when supported or suspended from above the heads of the occupants or inmates of an apartment, so that when so suspended it shall be out of the way, and supported in such a manner that it shall distend in the act of lowering, and be ready for use, substantially as and for the purposes described.

2. In combination with a bath or tent made collapsible by either raising or lowering, as above, the water-basin or reservoir D, substantially as and for the purposes herein shown and described.

101,679.—COMPOSITION FOR CLEANING PLATE AND GLASS.—Hermann Teats, Ann Arbor, Mich.

Claim.—The cleaning and polishing compound above described, composed of the ingredients specified.

101,680.—TAG-HOLDER.—Edgar C. Ten Eyck, West Meriden, Conn.

Claim.—As an article of manufacture, the herein-described tag-holder, formed from a single piece of wire, doubling the wire at *d*, with the point *a* and bend *f* on one part, and the bend *b* and horizontal loop *n* on the other, the end *m* extending back, so as to bear upon the other part and act as a spring, and the loop constructed so that the bend *f* and point *a* pass through, and so as to grasp the material between the point *a* and loop, in the manner specified.

101,681.—HOISTING AND LOWERING APPARATUS.—Hamilton E. Towle, New York, N. Y.

Claim.—1. The hydraulic cylinder and its piston, and the passages leading from the ends of said cylinder in combination with tubes or conduits extending from such passages and communicating with each other through cock C, substantially as described, said parts being arranged for use in connection with a hoisting-machine, as shown and set forth.

2. The combination and arrangement of the hydraulic cylinder and piston, passages *t t*, cock C, flexible pipes *f f*, and force-pump V, adapted to be used substantially as and for the purposes specified.

101,682.—ICE-MACHINE.—David K. Tuttle and Orazio Lugo, Baltimore, Md.

Claim.—1. The process herein described of producing ice, by the expansion of cooled compressed air in direct contact with a volatile liquid or liquids placed in the chamber C, as described.

2. The process described for cooling air while under pressure, the same consisting in surrounding the vessels or pipes containing the condensed air with a non-congealing volatile liquid, which is cooled as well as vaporized by the returning current of air from the refrigerator C, either alone or with the aid of a portion of the condensed air previously cooled, as described.

3. The combination of the expanding air after compression and cooling, with the volatile liquid, as described, and the vessels *c″*, containing water or other liquid to be frozen or cooled.

4. The combination of the vessels B and C, as described.

5. The combination of the vessels B′ and C, as described.

6. The combination of the vessels B, B′, and C, with their equivalents, as described.

101,683.—HOT-AIR FURNACE.—Jafew S. Van Buren, Green Island, N. Y.

Claim.—1. The feeding-throat B, provided with the base flues *c*, when constructed as and for the purposes specified.

2. The W-shaped hot-air chamber E, provided with distributing-plate G, and having rear cold-air entrance-flues *e e*, as specified.

101,684.—LOCK.—Edward Voigt and Philip P. Mathes, Philadelphia, Pa.

Claim.—1. The rotating thumb-stud G having a transverse slot, *g′*, in combination with a stationary pin, *j*, for the purpose specified.

2. The spring catch lever *h*, constructed substantially as described, hung to the latch-bolt, and operating in conjunction with the grooved and slotted stem of the thumb-stud and stationary pin *j*, substantially as specified.

101,685.—VEGETABLE-WASHER.—Hiram J. Wattles, Rockford, Ill.

Claim.—The machine described, consisting of the case A with conductor a^1, and cover a^2, cylinder B, constructed as described, and removable handle *c*, when combined and arranged as and for the purpose set forth.

101,686.—CAR-WHEEL.—James W. Weston, New York, N. Y.

Claim.—A wheel, in which the body of the wheel between the hub and the metallic rim or tire is formed of laminæ of wood, in the manner specified.

101,687.—COMPOUND FOR PAINT, CEMENT, &c.—Charles W. Westover, St. Joseph Mo., assignor to himself and E. J. Carter, same place.

Claim.—1. The solution, in water or similar fluid, of the ingredients first hereinbefore mentioned, substantially as set forth.

2. The combination of cement and paint pigments, or either thereof, with the solution aforesaid, substantially as set forth.

101,688.—BASE-BURNING STOVE.—Alexander White, Geneseo, Ill.

Claim.—1. The magazine of a base-burning stove, when made in sections, the lower section or base being movable, substantially as and for the purposes herein set forth.

2. The movable base or lower section D′ of the magazine D, constructed and arranged substantially as and for the purposes herein set forth.

3. In combination with the movable base D′, the rods I I and bail J, substantially as and for the purposes herein set forth.

4. The ring or plate H, constructed and arranged with reference to the lower end of the magazine, substantially as and for the purposes herein set forth.

101,689.—SLIDING CALIPER.—Andrew E. Whitmore, Somerville, Mass.

Claim.—The combination of the beam *b* with its scale *e* and grooves *f f*, the jaw *d* with its scale *k*, the plate *h* with its teeth *g g*, and the jaw *c*, the whole being organized and operating as herein referred to and described.

101,690.—BRICK-MACHINE.—Carmi Henderson Williams, Rhinebeck, N. Y.

Claim.—1. The cams D E on shaft B, in combination with one or more mold-wheels N, and the discharging device composed of the shaft *x* and plate *w*, all arranged to be operated from shaft B, substantially as shown and described.

2. The lever K, with its toothed segment *q*, in combination with the segment *p*, geared sectors *l m*, cams *k k*, and springs M M, all being arranged for operating the plungers J, substantially as set forth.

3. The curvatures at the inner portions of the outlets *b*, through which the clay is forced from the receptacle A into the press-boxes G, in combination with the curved arms or wipers *a a* on shaft B, and the inward projecting sides *c* of the outlet passages *b*, substantially as and for the purpose set forth.

101,691.—STREET-PAVEMENT.—William H. Williams, Little Falls, N. Y.

Claim.—The blocks A A, constructed with parallel vertical sides, and respectively chamfered, and formed with angular projections, said projections and chamfers being located at the bottom edges of the blocks, as shown at *a b a b*, in the manner and for the purpose described.

101,692.—BLOW-PIPE.—L. B. Wilson, Cambridge, Ohio.

Claim.—The cylinder or wick-tube E, constructed as described, so as to extend above the top of the wick, substantially as and for the purposes herein set forth.

2. The arrangement of the tube *b* of a blow-pipe within the center of the wick in the cylinder E, substantially as and for the purposes herein set forth.

3. The combination and arrangement of the reservoir A, rest B, with tube *a*, flexible pipe C, pipe D, with set-screw *d*, cylinder E, tube *b*, and blow-pipe G, all substantially as and for the purposes herein set forth.

101,693.—SNOW-PLOW FOR RAILWAYS.—Robert Wilson, Des Moines, Iowa.

Claim.—1. The arrangement upon the incline C of the central wedge-shaped sword G, with the two wings H H hinged to its rear, and connected by the rods and hooks *d d*, all substantially as set forth.

2. The combination of the trucks A D, car B, incline C, with cutter *a*, angular cutter E, sword G, and wings H H, all substantially as and for the purposes set forth.

101,694.—CAR-COUPLING.—William Wimer, Union City Ind.

Claim.—The hooks E F, link H, spring I, and studs D, in combination with the shaft G, arm N, and rod M, substantially as and for the purpose set forth.

101,695.—CULTIVATOR.—Reuben Wottring, Prospect, Ohio.

Claim.—1. The side pieces A A, in combination with cross-bars B and C and intersecting rods *g g*, when constructed and arranged as and for the purpose set forth.

2. The side pieces A A, cross-bars B and C, rods *g g*, hinged rods *m n*, link *f*, teeth *i i*, and shovels *e e*, all combined and arranged as and for the purpose described.

101,696.—BRICK-MACHINE.—Charles D. Wrightington, Boston, Mass.

Claim.—1. In a machine for making bricks and for other similar uses, the combination of a mold-wheel having an intermittent motion, and a screw for filling the molds having an irregular motion, or a motion which gives it a greater velocity when the molds are being filled than it has when the blank portions of the mold-wheel are passing under such screw, substantially as and for the purpose specified.

2. The combination of the off-bearer E^1, cylinder H, and rack-bar I, when arranged to operate substantially as and for the purpose set forth.

3. The construction of the striking-plate L, and its combination with the mold-wheel, substantially as and for the purpose specified.

4. The construction and arrangement of the cam-wheel C^3, levers D D^1, and table D^2, substantially as and for the purpose set forth.

5. The combination and arrangement of the platform C^4, toggle-jointed lever C^5, and plungers C^6, substantially as and for the purpose set forth.

6. The combination and arrangement of the cam-wheel C^3, cross-head C^7, connecting-rod C^8, toggle-joint C^9, and platform C^4, substantially as and for the purpose set forth.

101,697.—TIME-INDICATOR FOR LETTER-BOXES.—James T. Young, Washington, D. C.

Claim.—The wheels E K *m n*, plates C D, shaft *a*, arm *f*, and spiral spring *h*, all arranged in connection with a letter-box, substantially as and for the purposes set forth.

REISSUES.

3,902.—COAL-SCUTTLE.—James Edgar, Newark, N. J., assignee of William Miller.—Patent No. 37,871, dated March 10, 1863.

Claim.—1. A corrugated bottom, D, for coal-scuttles, as a new article of manufacture.

2. The combination of a corrugated bottom, D, with a coal-scuttle, A, substantially as and for the purpose described.

3,903.—MODE OF ORNAMENTING.—Henry Harrop, Hoboken, N. J.—Patent No. 46,354, dated February 14, 1865.

Claim.—The ornamenting of articles with metal-

lic leaf or bronze, by a transfer of a printed design from thin paper prepared as set forth.

3,904.—STEAM-BOILER.—Hugh Leslie, Jersey City, N. J.—Patent No. 43,417, dated July 5, 1864.

Claim.—A vertical tubular boiler, in which the products of combustion pass successively through descending and ascending fire-tubes, so arranged and constructed that the main flue is terminated by a water wall behind the space occupied in its bottom sheet by the descending tubes, and having the upper ends of the ascending tubes terminating at a level higher than the upper ends of the descending tubes, when the said boiler is constructed and arranged with the ascending tubes placed in a cluster behind the descending ones, substantially as described.

3,905.—TILE-MACHINE.—James W. Penfield, Cleveland, Ohio.—Patent No. 98,519, dated January 4, 1870.

Claim.—1. The covering-valve H, constructed substantially as shown and described, and for the purpose set forth.

2. In connection with the valve H, the depression or valve-seat G, provided with guards *a a'*, constructed as shown and described, and for the purpose set forth.

3. The horizontally-adjustable screen C, arranged as described and shown, so that one portion of it may be cleaned, while the other portion remains in use within the case A, as and for the purpose set forth.

4. The carriage I, provided with the rollers L, the endless belt M, and the bars N, when each of said parts is constructed as shown and described, and for the purposes set forth.

5. The tile-mold Q, provided upon its inside with the rim *f*, of regularly-increasing thickness upward, and with the outer edge of its opening *e* beveled inwardly at a regularly-increasing angle upward, in combination with the core R, provided upon its inside with the rim *g*, regularly increasing in thickness upward, and with its outer edge beveled inwardly at a regularly-increasing angle upward, which bevel is, however, at a greater angle at all points than that of the outer edge of the opening *e*, and secured in place by the double arch-brace S, when each of said parts is constructed as shown and described, and for the purposes set forth.

6. The adjustable brace *k* applied to the slide t, in connection with the cut-off valve T, when these parts are constructed and combined to operate as and for the purpose set forth.

7. The combination, with the parallel arms *i*, adjustable brace *k*, and friction-wheel *m*, in connection with the cut-off valve T and the parallel arms *l'*, adjustable brace *k*, and friction-wheels *m'* and *p*, in connection with the plunger V, with the cams upon the main shaft B, whereby an independent rapid motion is given to the cut-off valve in one direction, and a simultaneous gradual motion is given to both the cut-off valve and the plunger in the other direction, as hereinbefore explained and set forth.

3,906.—SKATE.—James L. Plimpton, New York, N. Y.—Patent No. 37,305, dated January 6, 1863.

Claim.—1. The hanger B, attached to a rocking foot-support, and vibrating upon inclined rods attached to said support, in the manner shown and described, and for the purpose specified.

2. So attaching the rollers or runners to the foot-support of a skate that they will be swung to run the skate in a curved line to the right or left by the rocking motion of the foot-support, as set forth.

3. The combination with the shaft on which the rollers are placed, of the rocking foot-support A, springs F, hanger B, and inclined rod C, all arranged substantially as set forth, to enable said rollers to take a curve by a slight twist of the foot.

4. The inclined rod C, held at one end by the rigid piece D, and adjustably attached at the other to the foot-support A, for the purpose of determining the degree of curvilinear motion, in the manner described.

5. The plates H H, provided with hooks *g* at their front ends and racks *f* at their front edges, in combination with the spring I and plate G, the latter being applied to the foot-support A, and provided with slots *e* at its ends, all arranged to form a fastening for the skate, as set forth.

3,907.—MANUFACTURE OF PAPER.—The Okra Paper Company, New York, N. Y., assignees of John B Read.—Patent No. 51,571, dated December 26, 1865.

Claim.—The preparation of pulp for the manufacture of paper or *papier-maché* from the okra plant, (*Hibiscus esculentus,*) substantially as described, which is claimed as my discovery, and as constituting a new manufacture from a combination of matter or materials never before used for this purpose.

3,908.—COFFEE-STRAINER.—Edward P. Woods, Daniel Sherwood, and Cyrus H. Latham, Lowell, Mass., assignees of Daniel Sherwood.—Patent No. 32,791, dated July 9, 1861.

Claim.—As a new article of manufacture, a strainer provided with a spring to hold it to the spout of a coffee or other pot or vessel, for the purpose of straining or filtering liquids, substantially as described and specified.

3,909.—REVERSIBLE KNOB-LATCH.—The Norwalk Lock Company, South Norwalk, Conn., assignees of Henry H. Elwell.—Patent No. 39,280, dated July 21, 1863.

Claim.—The arrangement of the bolt C, attached to the lever E by a fixed pin *f*, and combined with a movable bearing within the case, whereby the bolt may be secured to or detached from the lever, substantially as set forth.

DESIGNS.

3,947.—CENTER-PIECE.—Henry Berger, New York, N. Y.

Claim.—The design for center-piece, herein shown.

3,948.—ORNAMENTAL LETTER.—William H. Clendinen, Baltimore, Md.

Claim.—The design for the molded India rubber letters and numbers, or their equivalents, substantially as shown.

3,949.—SPOOL FOR THREAD.—Hezekiah Conant, Pawtucket, R. I.

Claim.—The design for ornamenting the ends of sewing-thread spools, which consists in a chain of loops, *a a*, within which loops is a number, expressive of the number of the thread wound on the spool, substantially as shown and described.

3,950.—PRUNING-SHEAR.—Charles Condon, Rochester, N. Y.

Claim.—The design for pruning-shears and hatchet herein described, substantially as represented and set forth.

3,951.—COOKING-STOVE.—William C. Davis, Cincinnati, Ohio.

Claim.—The design for a cooking-stove, substantially as specified.

3,952.—HARNESS-MOUNTING.—Charles Eisele, Newark, N. J.

Claim.—The design for a set of harness-mountings herein described and represented.

3,953.—BRACKET.—Melville D. Jones, Somerville, Mass.

Claim.—The design for a bracket, as shown.

3,954.—ORNAMENTATION OF GLASS WARE.—William M. Kirchner, Pittsburg, Pa., assignor to Bakewell, Pears & Co., same place.

Claim.—The design for ornamentation of glassware, consisting of cherry-twig, stems, leaves, and fruit or berries, arranged substantially as shown and described.

3,955.—BRAKE-WHEEL.—Anson Merriman, New York, N. Y.

Claim.—The design for a brake-wheel, as shown.

3,956.—FLOOR-CLOTH PATTERN.—Charles T. Meyer, Newark, N. J., assignor to Edward C. Sampson, New York city.

Claim.—The design or pattern for floor oil-cloths, carpets, or other fabrics, shown and described.

3,957.—FLOOR-CLOTH PATTERN.—Charles T. Meyer, Newark, N. J., assignor to Edward C. Sampson, New York city.

Claim.—The design or pattern for floor oil-cloths, carpets, or other fabrics, shown and described.

3,958.—FLOOR-CLOTH PATTERN.—Charles T. Meyer, Newark, N. J., assignor to Edward C. Sampson, New York city.

Claim.—The design or pattern for floor oil-cloths, carpets, or other fabrics, shown and described.

3,959.—SODA-WATER FOUNTAIN.—Andrew J. Morse, Boston, Mass.

Claim.—As a new design for a fountain for soda-water beverages, a marble case, surmounted by the peculiarly-formed roof, as shown and described.

3,960.—SPRIG OF ARTIFICIAL FLOWERS.—Lorenzo D. Newell, New York, N. Y.

Claim.—1. A design for artificial leaves and flowers, consisting of a stem, B, combined with leaves A, ribbed inwardly from the outline, and flowers C, having their petals scalloped and curved in the same manner, each being thus made to present a shell-like appearance, as shown and described.

2. A design C, for a flower, having the scalloped and curved petals combined with the relatively arranged pistil D and stamina E, as shown and described.

3,961.—TOBACCO-PIPE.—Goldsbury H. Pond, Rutland, Vt.

Claim.—The design for a tobacco-pipe, as described and shown.

3,962, antedated March 19, 1870.—FRAME FOR CONTAINING STATIONERY ARTICLES. Charles H. Wight, Baltimore, Md.

Claim.—The design for stationery-furniture, herein described and shown in the drawing.

ISSUE OF APRIL 12.

PATENTS.

101,698.—KNIFE-SCOURER.—John Quincy Adams and Samuel R. Goodsell, Brooklyn, N. Y.

Claim.—A sand-box A, having flanges *b* and perforated bottom *a*, combined with an ordinary cork B, through whose center the sand is fed automatically, as set forth.

101,699.—DOOR-BELL.—William Allport, New Britain, Conn.

Claim.—1. The combination of the hammer D, angular or V-shaped bend E in the hammer shaft *a*, oscillating trip *d*, the swinging arm or lever *e*, for operating said trip, and the bell C, all combined and operating together, substantially as described.

2. The combination of the arms *b b'* placed opposite each other, the spring *g*, hooks *h h* and *k k*, with a bell and striking mechanism, for the purpose of changing from right to left hand, substantially as described.

101,700.—STREET-SPRINKLER.—John A. Bancroft, Worcester, Mass., assignor to L. F. Bancroft and Andrew B. Yetter, New York City.

Claim.—1. The combination with the sprinkling-reservoir E, of the division-plates or partitions *d* and independent supply-pipes B, C, and D, substantially as and for the purposes stated.

2. The combination with the sprinkling-reservoir E, of the partitions *d* and stop-plugs or caps, as shown and described.

101,701.—CUTTER-HEAD FOR PLANING-MACHINE.—B. J. Barber, Ballston Spa, N. Y.

Claim.—A series of curved side knives B D and central knives C, of unequal reach, and having their shanks, *a*, arranged on the rotating cutter-stock A in grooves *b*, and clamped by the plates *c c*, all as shown and described.

101,702.—TRUCK FOR MOVING BUILDINGS. Jesse Barlow, Van Meter, Iowa.

Claim.—The combination of a bevel-gear, a ratchet and ratchet-wheel, a pinion, and a cammed rack, with a truck or carriage, substantially as described, for the purpose of moving buildings and other heavy objects.

101,703.—INKING-APPARATUS.—Henry Barth, Cincinnati, Ohio.

Claim.—1. The provision in a printing-press of an ink-trough or fountain having an automatic reciprocation transverse of the delivery, substantially as herein shown and described, for the purpose set forth.

2. The combination and arrangement of the dip-roller frame I, rollers J K, fountain R, and cylinder L, substantially as set forth.

101,704.—FIRE-KINDLER.—Charles Batcheller, Des Moines, Iowa.

Claim.—The construction of a fire-kindler, composed of the strap-iron handle A, the circular piece of metal B, and the open bowl C, substantially as described and for the purposes specified.

101,705.—HAY-LOADER.—John Marcus Boorman, Scarborough, N. Y.

Claim.—1. The transverse rod *e*, furnished with lever-arms *e' e''*, in combination with the supplemental lever e^2, pawl e^3, ratchet-plate d^2, and the frame-work, carrying the elevating mechanism, whereby such frame-work may be tilted to throw the elevating mechanism out of gear with the cogged rims A', substantially as and for the purpose herein set forth.

2. The bars or parts A^2, pivoted or hinged to the rigging, provided with bearings for the studs or axles of the frame-work, carrying the elevating mechanism, and having combined therewith the operating-lever b^2, and transverse rod *b* with the arms *b'*, whereby the elevating mechanism, when desired, may be lifted and adjusted at any desired height from the ground without throwing the driving-pinions out of gear with the rims A, substantially as herein set forth.

3. The elevating mechanism and its attachment, when suspended to the vehicle by the studs or axles *a*, fitting into notches or bearings in the hinged part A^2, suitably provided upon the rigging, as set forth.

4. The arrangement of the supplemental clearing-bars F, resting upon the endless fork, carrying

belts C, in combination with the clearing-bars E, forming the back of the chute, and operating to assist the disengagement of the hay from the forks, substantially as herein set forth.

5. The guides *m*, in the form of endless bands, in combination with hinged forks, having bent tines, so as to sustain them in position upon their endless belts while carrying the hay, and so permit its ready disengagement therefrom when lifted to the desired height, all arranged and operating substantially as herein set forth.

6. The combination and arrangement of the bar *s* with the bent forks A on the endless belts, and the guides *m*, governing the movement of said forks, substantially as and for the purpose herein set forth.

7. The rake-teeth *s*, constructed with the shoes m^a and loops s', arranged upon the supporting pieces *r* of the rake-head, and in suitable relation with the spring r'', substantially as herein set forth.

8. The chute G, closed at the sides, and provided with clearing-bars E'' and F, in combination with the elevating apparatus, all constructed and arranged substantially as and for the purpose herein set forth.

9. The triangular frame G^a, with its hooks r^a, rod n^a, bolt or bolts *n* carrying rake-head *r*, the whole arranged to provide for the attachment of the rake to the vehicle, substantially as herein set forth.

101,706.—Corn-Plow.—M. C. Buffington, La Harpe, Ill.

Claim.—1. The double-tree I, when pivoted at the ends to bars *q*, which slide in traps *v*, and which carry the single-trees on perforated pendants *t*, substantially as and for the purpose herein shown and described.

2. Making and arranging the universal-hinged joints on the ends of the plow-beams, with the several parts and functions as specified and described.

101,707.—Tin Can.—John Joseph Burkert, New York, N. Y.

Claim.—1. The sheet-metal can provided with a projecting rib, over which a flange, *b*, of the cover is fitted, so that by cutting the said flange above the rib the cover will be loosened but not destroyed, as set forth.

2. The sheet-metal can having its upper end doubled, as specified, and bent around a wire, *d*, to form a rib, *a*, as set forth.

101,708.—Apparatus for Sealing Pipe-Joints.—William Cassidy, New Bedford, Mass.

Claim.—The combination and arrangement of the mouth-piece, and its gate or valve, with the chambered collar, made substantially in manner and for application to pipes at their junction, as hereinbefore specified.

101,709. — Self-Feeding Cotton Gin.—Jules Alfred Chaufourier, Paris, France.

Claim.—1. The carrying-belt *d*, having inclined teeth, and receptacle *b*, combined with the vibrating beater, when all are operated as and for the purpose specified.

2. The shelling-rolls A, in combination with the lap drawing-rolls *i*, and cleaning-rolls *j*, when operated as and for the purpose described.

3. The rotary fan *g g*, when arranged on a cotton-gin, and operated as set forth, to inject cold air between the shelling-rolls, as and for the purpose set forth.

101,710.—Rotary Spader.—James Chenoweth, Shelbyville, Mo.

Claim.—1. The wheel E, spades G, ball and socket-joint G', and slide G'', when combined and arranged as specified.

2. In combination with the wheels E and spades G, the rotating colters C, as specified.

3. In combination with the elements of the first claim, the cam F, when operating as and for the purpose specified.

101,711. — Shovel-Handle. — George C. Choate, Wyoming Station, Wyoming Territory.

Claim.—A shovel-handle, covered at one end with a metal plate, in the manner shown and described.

101,712.—Clothes-Drier.—James V. Clark, Camden, N. J.

Claim.—In a clothes-drier, the combination with a pivoted or journaled hollow post, of a vertically-sliding rod, arranged to be elevated, and secured when elevated, so as to tighten and hold the two by the pressure of one against the floor, and of the other against the ceiling of a room, the construction being such that both post and rod may be turned or revolved upon their longitudinal axis, as and for the purpose set forth.

Also, the combination with the turning post B adapted to receive and support the cross-bars of the grooved and pivoted slide-rod G, the cord F, and pulley E, arranged and operating as described, and the thumb-screw H, or its equivalent.

101,713. — Fanning-Mill. — Barnard Cortrite, Norwalk, Ohio.

Claim.—1. The angle-iron and journal-box P, when combined and applied to the purposes in the manner substantially as specified.

2. The auxiliary screen H and conductors K, in combination with the shoe C, agitator G, and hopper, substantially as and for the purpose described.

3. The arrangement of the agitator G and shoe C, in combination with the hopper M, when said hopper is so constructed as to form a part of the frame-work of said mill, and provided with the slide O, and groove for the same in the sides of the frame, as and for the purpose substantially as set forth.

101,714.—Washing-Machine.—William H. Cox, Knox county, Ill.

Claim.—1. The adjustable rod B, in combination with adjusting-pin C, slotted plate P, pin *b*, and wash-board A, substantially as and for the purpose specified.

2. The wash-board A, constructed as shown and described, with handle O, slots M, and guard or end-board N, in combination with plug and scupper I, rod B, adjusting-pin C, plunger G, connecting-rods F, and gear-wheels E and D, substantially as and for the purpose specified.

3. The combination and arrangement of shaft *d d*, gear-wheels D E, crank J, sleeves *f*, connecting-rods F, plungers G with board A, as shown and described, rod B, pin C, and scupper I, the whole constructed and operated substantially as and for the purpose set forth.

101,715, antedated April 6, 1870.—Sash-Holder.—Thomas H. Davis, St. Joseph, Mo.

Claim.—The application of two pawls, connected together at one end, and turning on a pivot near the middle of the lower pawl, as herein described.

101,716, antedated April 4, 1870.—Mop-Head.—Hezekiah Dodge, Albany, N. Y.

Claim.—The construction of the head B, in combination with the handle A, as shown and described.

101,717.—Earth-Closet.—James A. Drake and William R. C. Clark, New Orleans, La.

Claim.—The inclined divisional partitions A A' A'' A''' in the hopper of an earth-closet or commode, in combination with the sliding box B, resting on the fixed roller B', and a movable shaft B'' on wheels *a a*, that run in rebates in the frames C C', and moving between the guiding sides F when the said box B is provided with a vibrating end E at its front, which moves between wings E', and is sustained thereby by pivots *b*, and is operated by a hinged lid, G, levers G G', and a cord or chain, H, as and for the purpose herein set forth.

101,718. — Base-Burning Stove for a Steam Heating Boiler. — William B. Dunning, Geneva, N. Y.

Claim.—1. The smoke-chamber D and annular water-chamber A, with or without the vertical fines *a*, in combination with the centrally-located fuel-reservoir B, for the purposes set forth.

2. The arrangement of the steam-drum E, with reference to the fuel-reservoir B and annular water-chamber A, and connected to the latter by pipes *b*, as and for the purposes set forth.

101,719.—Harvester.—Rudolf Eickemeyer, Yonkers, N. Y.

Claim.—1. In combination with the main driving-wheel or wheels and the cutter-bar of a mowing or reaping machine, the gear-wheels, one of them rotating upon its axis, and the other oscillating upon a gimbal joint, substantially as described.

2. In combination with the rotating and oscillating gear-wheels and cutter-bar, the vibrating lever, substantially as described.

3. The vibrating lever connected to the cutter-bar, in combination with the crank and fly-wheel, substantially as described, whereby the action of the fly-wheel controls and equalizes the operation of the vibrating arm and cutter-bar, as set forth.

4. The bent lever and link-connection with the pole and rock-shaft in the shoe-hanger, in combination with the shoe and finger-bar, whereby the cutting apparatus is lifted at the outer end, and raised at the inner end and folded, substantially as described.

5. The small bevel segment on the inner shoe, in combination with the larger bevel segment and rock-shaft, of the lifting-lever for the purpose of lifting the finger and cutter-bar from a horizontal to a vertical position at one motion of the lever, substantially as described.

6. The arrangement of the lever beneath the driver's seat upon the pole-iron rod, in combination with the sleeve and drooping frame, whereby the inner shoe is lifted when desired.

101,720. — Sulky Cultivator. — Frank Farnsworth, Frankfort, Ill.

Claim.—1. The combination of the shovel-posts *a*, axle *d*, boxes *e*, chains *n*, pivoted cross-bar *i*, and lever *m*, arranged, operating, and constructed as and for the purposes set forth.

2. The main frame C, in combination with the roller *b*, segment *u*, lever *z*, and chains *v*, arranged, operating, and constructed as and for the purposes set forth.

101,721.—Corn-Harvester.—Henry Flesher, Springfield, Ill.

Claim.—The hereinbefore-described corn-harvester, consisting of the platform A, provided with the gathering-notch C and the opening D, the traction-wheels B, the dropping-tables E and E', the pivoted levers F and G, the standards H, the guard K, the gates or doors L, the rack M, the revolving cutter N, the shaft O, the reels P and P', the shaft or axle Q, and the operating-gears, when the several parts are constructed and arranged to operate substantially as and for the purpose specified.

Also, the arrangement of the dropping-tables E and E', provided with the rollers *a* and pivoted levers F and G, and working in the grooves *b*, substantially as and for the purpose set forth.

101,722. — Hair Medicine. — Andrew J. Fletcher, Red Bluff, Cal.

Claim.—The medical compound as described, for the uses and purposes set forth.

101,723. — Lamp. — Samuel W. Fowler, Brooklyn, N. Y.

Claim.—The ring B, constructed of a strip of sheet metal, the ends of which are attached together in the manner herein described, in combination with the handle C, when applied to a lamp as described and shown.

101,724. — Car-Spring. — Carlos French, Seymour, Conn.

Claim.—A coiled or spiral spring wound from a strip, and having elliptical spaces formed in the line of its coil, substantially as and for the purpose described.

101,725.—Water-Wheel.—John L. Frisbie, Hilladale, Mich.

Claim.—The wheels A B, provided with buckets in a tangential line, and operating in relation to each other, in combination with the double case or curb D, having an induction-opening, E, and eduction-openings H H, with the center G between the openings H H, operating conjointly, substantially as and for the purpose set forth.

101,726.—Swivel for Temper-Screws.—Thomas Graham, Shamburg, Pa.

Claim.—1. The described arrangement and combination of the hook or loop *a*, box *b*, spindle *c*, cap *d*, and balls *f f*, the whole forming a swivel, operating substantially as set forth.

2. The combination of the within-described swivel with the bars A A and screw B, the whole forming a temper-screw complete, operating substantially as and for the purposes set forth.

101,727. — Washing-Machine. — John A. Hall, Newburg, Canada.

Claim.—The improved washing-machine consisting of the press-block C, having the handle D and an oval or rounded face, *a*, provided with concentric grooves, and the tub A, with its bottom B provided with similar grooves, as shown and described.

101,728.—Photographic Printing Apparatus.—James H. Hamilton, Sioux City, Iowa.

Claim.—A photographic printing-case A, provided with the tubes B and pockets I, and mounted on a stand, so as to oscillate vertically and horizontally, as herein shown and described.

101,729. — Ditching-Plow and Hedge-Grader.—Daniel Harmon, Coles county, Ill.

Claim.—The devices employed for connecting together and rendering relatively adjustable the plow-beam and truck, consisting of the bars D and E, the lever F, the divided or double standard G, and the stay-rods *h*, substantially as shown and described.

Also, the hereinbefore-described spreader, consisting of the land-side L and mold-board M, connected together and made relatively adjustable by means of the rod N and bars O and P, substantially as set forth.

Also, the means employed for regulating the draft of the spreader, consisting of the bar S, the wheel T, the bar U, the brace V, and the lever W, all constructed and arranged to operate substantially as shown, and for the purpose described.

Also, the general construction and arrangement of the various parts of the hereinbefore described device, substantially as and for the purpose specified.

101,730.—Cork-Cutting Machine. — Edward F. Harrington, Boston, assignor to himself and John I. Munroe, Woburn, Mass.

Claim.—1. The arrangement of blades *b c* upon revolving disk C, to move in different horizontal lines, substantially in manner as and for the purposes specified.

2. The combination of the rocking frame *d d*, the adjustable frame *h h*, links *p p*, and gears *m n o*, substantially in manner and for the purposes specified.

3. The arrangement of the face-sharpening wheel *f'*, and the grinding-wheel *w'* provided with automatic vertical adjustment and the gauge *g'*, substantially as and for the purposes specified.

4. The combination of cam *s*, with its three equidistant stops *s*, let-off cam *s''*, arms *t*, lever *w*, spring *u*, and pin *v*, or their equivalents, substantially as and for the purposes specified.

5. The pivoted frame *d d*, in combination with the rotary knives *b c*, when constructed, arranged, and operating in the manner and for the purposes specified.

101,731. — POTATO-SEPARATOR. — Richard Haviland, North Branch, Md., assignor to himself and Charles Ware, same place.

Claim.—1. Two cylindrical screens, one being within the other, and both rotated upon an inclined axis, substantially as set forth.

2. The above in combination with the inclined screen H, substantially as described.

101,732.—MACHINE FOR COLORING PAPER-HANGINGS. — John Heist, New York, N. Y., assignor to himself, C. Zink, and H. Spoelurer, same place.

Claim.—1. The adjustable presser-cloth *d* and rollers or supports *e e*, in combination with the color-box *f* and mechanism for drawing the paper along, as specified.

2. The arms *m* and adjusting screws *n*, in combination with the color-box *f* and clamps *o* for the trunnions of said box, as and for the purposes specified.

3. The color-box *f*, with the slots *i* through the bottom thereof, and arranged in the manner specified, in combination with the divisions passing across from side to side of said box, as specified.

101,733. — HEATING-STOVE. — Maurice C. Hull, New York, N. Y.

Claim.—1. A descending-flue, *p*, for the products of combustion, placed above the hub of the escape-flue *m*, and within the combustion-chamber *h* above the fire, substantially as set forth.

2. The ram's-horn-shaped flues *p*, rising above the escape-flue and within the combustion-chamber *h*, in combination with the direct-draught damper *n* and cylinder *k*, substantially as specified.

3. The ring *d*, forming the top flange of the fire-pot *c*, in combination with the ring *r* and intervening air-space, which is provided with inlet air-openings at *s* and outlet-openings at *3* into the fire, as set forth.

4. The frames *t w*, with air-passage ways between them, into which the external atmosphere is admitted, in combination with the mica *v*, perforated septum 10, and openings from said passage-ways into the space between the mica and perforated septum, so that heated air passes into such space, substantially as set forth.

101,734. — PICKER FOR LOOMS. — Joshua Hunt and Albert Stockwell, Providence, R. I.

Claim.—The picker, constructed from one piece of leather, with the collar D and thimble B, with the cork filling C and its covering E, as described, and for the purposes set forth.

101,735. — APPARATUS FOR EXTRACTING MADDER.—James Hunter, Philadelphia, Pa.

Claim.—1. The combination of the digester and the outside filter.

2. The combination of the inside and outside filters.

3. The inside and outside filters, so connected that the outside filter may be subjected to the full pressure of the steam on the inside filter, or to a less pressure, as may be desired.

4. The combination of the digester with the detachable outside filter.

5. The steam-pipe, so arranged as to clean the filter by blowing through or upon it.

6. The combination of the scraper with the filter.

7. The combination of the scraper and filter within the digester, operated by a shaft worked from outside.

101,736, antedated February 22, 1870.—MACHINE FOR SEPARATING FLOUR FROM BRAN.—William W. Huntley and Alpheus Babcock, Silver Creek, N. Y., assignors to W. W. Huntley and Frank Swift, same place.

Claim.—1. The combination of the arms *p p*, conically-arranged bolts p^4, sleeve p^3, and sleeve-bearing p^2, screwing into the fixed threaded thimble p^1, when arranged to adjust the brush-stocks, substantially as hereinbefore set forth.

2. The arrangement of a spiral spring, *q*, disk p^1, and collar p^1, to counterbalance the lifting action of the brushes, substantially as hereinbefore set forth.

3. The combination of the groove o^1 in the edge of the cover with the hooked-headed tie-rods O, substantially as and for the purpose hereinbefore set forth.

4. A horizontally-divided outer case, A A', in combination with a removable head, B, and binding-bolts O, by which the three parts are held together so that the upper portion A and head B may be removed from the lower portion of the machine, as and for the purposes hereinbefore set forth.

101,737.—MANUFACTURE OF GLASS.—Charles H. Jenkins, Boston.

Claim.—The employment of marble, as described, with other materials hereinbefore enumerated, or their equivalent or equivalents, in the formation of a composition for the making of glass.

101,738.—TUG-FASTENING FOR WHIFFLE-TREE. — Leonard A. Johnson, Candor, N. Y.

Claim.—The combination, with the attachments A for whiffletrees, provided with the hook C, of the slides D E, arranged to slide back and forth on the part A, and engaged with the hook C, as described, and provided with a spring stop-fastening, G, engaging in notches in the part A, all substantially as specified.

101,739, antedated April 1, 1870.—VIBRATING COLTER FOR PLOWS.—John S. Johnston, Rockford, Ill.

Claim.—1. The combination and arrangement of the slotted plates B B', bolts *a a'*, vibrating plate C, and spring *m*, the whole constructed and operating substantially as and for the purpose set forth.

2. The combination of the vibrating plate C, regulating screws *f g*, and colter E, the whole arranged to operate substantially as specified.

101,740.—FAN ROCKING-CHAIR.—George R. G. Jones, Memphis, Tenn.

Claim.—In the construction of the adjustable bow *b*, with its staple and thumb-screw *g* and *f*, in combination with fan *d*, connecting hinge *e*, and chair *a*, as shown and described.

101,741.—STRAW-CUTTER.—John S. Jones, Covington, Ind.

Claim.—1. The slide K, bar J, and rake-head I, in combination with the feed-box A and lever H, said parts K J I being constructed and operating in connection with the knife E, substantially as herein shown and described and for the purpose set forth.

2. The fly-wheel D, crank-shaft C, rod N, and spring M, in combination with the frame-work F and the devices of the above claim, all arranged to operate as shown and described.

101,742.—TREMOLO ATTACHMENT FOR REED OR PIPE-ORGANS.—Micheal James Kerigan, Boston, Mass.

Claim.—The combination and arrangement of the ball B, the box-conduit A, and the ball-lifter, substantially as described, the whole constituting a tremolo attachment for reed-organs or other musical instruments.

101,743.—SPLINT FOR FRACTURED LIMBS.—George S. King, Washington, D. C.

Claim.—1. The use of spring-tempered hard rubber in the construction of splints and bivalvular cases, and knee-cap splints, for the gradual straightening of crooked limbs and the setting of fractured limbs, as hereinabove described.

2. In combination with the hard rubber bivalvular case above described, the adjustable graduated fastening, for the purposes described.

101,744.—SINK APPARATUS FOR DRAINING CELLARS.—Adam Knacker, Meadville, Pa.

Claim.—The elbow F, in combination with the sink C C and the tube D D, constructed as described, for the purposes set forth.

101,745. — BELT-SHIFTER. — William E. Leighton, Pembroke, Me.

Claim.—A belt-shifting apparatus, consisting of a pair of pulleys arranged to clamp the belt between them, and to be shifted for working obliquely on the belt either side of the perpendicular line thereof, substantially as specified.

101,746. — ROCK-DRILL. — Samuel Lewis, Williamsburg, N. Y.

Claim.—1. The arrangement of the parts E F H, with reference to each other, to the cams C, and drill G, substantially as herein shown and described, and for the purpose set forth.

2. The ring bearing L and friction rollers M, either or both, in combination with the parts E F H, substantially as herein shown and described, and for the purpose set forth.

3. The device N, constructed and operating substantially as herein shown and described, and for the purpose set forth.

4. The device O P Q, in combination with the parts E F H, substantially as herein shown and described, and for the purpose set forth.

5. The adjustable stop-blocks S T, either or both, in combination with the parts E F H, substantially as herein shown and described, and for the purpose set forth.

6. An arrangement of mechanism by means of which the drop of the part E F H, and the consequent length of the stroke of the drill G, may be regulated at will, substantially as herein shown and described, and for the purpose set forth.

7. The adjustable jaws A', attached to the eccentrics H, substantially as herein shown and described, and for the purpose set forth.

101,747.—STEAM-ENGINE.—G. E. Long, Harrisburg, Pa.

Claim.—1. Introducing steam direct into the steam-cylinder through the cylinder-heads by means of pipes or their equivalents, substantially as and for the purpose herein set forth.

2. The connected arrangement of cylinder-heads, pipes D D, and valve-box A H R S S', in the manner as and for the purpose specified.

101,748.—LAMP.—C. E. Lyon, Worcester, Mass.

Claim.—1. The air-chamber or tube formed by the union of parts E and D just above the holes *b*, and below the base of the chimney-support, substantially as shown in fig. 3 of the drawings.

2. The oil-guard L, combined with and arranged upon the wick-tube B, substantially as and for the purposes set forth.

3. The combination of the wick-carrier and chimney-support, the oil-receptacle, and air-chamber, substantially as and for the purposes set forth.

4. The combination of the guiding and holding-screw *f* with the air-chamber and wick-carrier, substantially as and for the purposes set forth.

101,749.—CLOTHES-WRINGER.—Allen Magowan, Trenton, N. J.

Claim.—1. The combination with the sliding roller C, of the blocks A, cross-bars F G, links H, rods I, springs E, and adjusting-nuts K, all arranged substantially as specified.

2. The attachment of the support of the clamping screw-brackets L to the frame, to swing down against the side when not in use, and to be supported when in use by the brackets Q, substantially as specified.

101,750. — MACHINE FOR CORRUGATING SHEET METAL.—William Mann, Newcastle, Pa.

Claim.—The combination of the plate B and the rolls H H with the gearing described, when the parts are constructed as and for the purpose set forth.

101,751.—RAILWAY.—Edward G. Markley, Sunbury, Pa.

Claim.—The hollow conical block A, provided with the elongated tapering slot D for the reception of the key E, and constructed with shoulder *a* for the reception of the elastic pad, when combined with the rails I, as and for the purpose described.

101,752, antedated April 4, 1870.—HORSE HAY-RAKE. — Robert W. McClelland, Springfield, Ill.

Claim.—The within-described device, consisting of the axle A, the wheels B, the shafts C, provided with the cross-bar D, the seat E, adjustable upon the standard F, the rake-head and teeth G and *g*, the arms H, the guide-blocks I, and lever K, pivoted to the standard F, all constructed and arranged substantially as and for the purpose specified.

101,753.—RAILROAD-CAR STOVE.—Samuel Meredith, West Philadelphia, Pa., assignor to himself, John Wood, and C. B. Dodd, same place.

Claim.—1. The inwardly-projecting flange E, formed around the upper part of the fire-box A, whereby the water entering the latter from the annular chamber C will be directed downward, as and for the purpose specified.

2. The fire-chamber A, with the flange E and perforated walls, the casing D completely inclosing the same, with the annular water-conducting chamber C between them, and the air-tube F, all constructed and arranged as and for the purpose specified.

101,754.—SAW-CLAMP.—Platt Merrill, Port Sanilac, Mich.

Claim.—A clamp for filing saws, constructed and applied substantially as herein shown and described.

101,755.—RAILWAY-CAR SEAT.—Ezra Miller, New York, N. Y.

Claim.—A back-rest for reversible car-seats, consisting of projections J on the arms of the back of the seat, and recesses applied to the arms of the seat, adapted to receive such projections, substantially as described.

101,756.— FEED-WATER REGULATOR AND LOW-WATER ALARM.—Albert W. Morrell, Niles, Mich.

Claim.—1. The combination of the small cylinder B, piston P, spring S, and rod H, with a globe or other valve located in the feed-water pipe of a boiler, between the pump and tank, substantially in the manner and for the purpose above set forth.

2. The combination of the accident or low-water alarm W with the feed-water regulator, substantially in the manner and for the purpose above described.

101,757. — TRACK-CLEARER FOR STREET-CARS.—James A. Morrison, Brady's Bend, Pa.

Claim.—The combination, with a street or other car, of the brushes N, suspended from any suitable

support above the rails, and arranged for vibration, as described, and the reciprocating toothed rods gearing therewith, and connected to the wheels E, substantially as specified.

101,758.—TABLE FOR CHANGING GAUGE OF RAILWAY-CAR TRUCKS.—George F. Morse, Portland, Me.

Claim. 1. The inclined planes of the tables *b b'* and tracks *a a'*, as herein shown, operating as described.

2. In combination with the said inclined planes, the stops *f* and *f'*.

3. In combination with the said inclined planes, the screws *c* and right-and-left-hand screw *c'*.

101,759.—GRAIN-DRIER.—Ira Y. Munn, Chicago, Ill.

Claim.—1. The covered bin A, when provided with an air-space, C, vent-openings E and G, grain-passages F and D, and man-hole I, all constructed and operating substantially as specified.

2. The perforated tubes, when attached to a grain-bin without exterior connection, substantially as and for the purposes specified.

101,760, antedated April 5, 1870.—CIRCULAR-SAW MILL.—Peter Neeb, Buffalo, N. Y.

Claim.—In combination with a circular-saw, the sliding table B, frames A A', segments D D, shaft E', pinions E E, and pinch-bolts F F, when constructed and arranged substantially as and for the purpose set forth.

101,761.—TANK FOR STORING OIL.—Person Noyes, Lowell, Mass.

Claim.—1. An oil-cabinet, substantially as described, the same consisting of a tank or holder, with an upper case or sink, or inclosure, and provided with a pump and a vent-tube, constructed as described, and all combined, arranged, and operating in the manner and for the purpose specified.

2. The air-admission tube I, in combination with the oil-tank or holder, in the manner and for the purpose substantially as described.

3. The outlet-tube K, in combination with the tank or holder, in the manner and for the purpose substantially as described.

4. The combination, substantially as described, of ventilator-pipes I and K with the tank or holder, for the purpose and substantially as set forth.

101,762.—BOILER-FEEDER.—Samuel J. Parker, Williamsport, Pa.

Claim.—1. The combination of the vessels A G and the movable valve-seats E, substantially as shown and described.

2. The combination of the stationary valve I and movable valve-seats, the connecting-pipe, with the diaphragm N upon its upper end, and the weighted lever C, substantially as described.

3. The arrangement of the pin K for holding the valves in position, it being such that the upper one is opened by the upward movement of the vessel, and closed by its downward movement, while the lower one is closed by its upward and opened by its downward movement.

4. The arrangement of the pipes D and L for conducting the steam from the generator to the upper portion of the vessel A, and for conducting the water from the lower portion of such vessel to the generator.

101,763. — MACHINE FOR BURRING AND CLEANING WOOL, &c.—Ziba Parkhurst, Milford, Mass.

Claim.—1. The curved plate G, provided with the obliquely-set, curved, and tapered ribs, having oblique slots arranged between them, as set forth.

2. The combination and arrangement of the partition D', with the cylinders F and H, or F, H, and K, and one or more beaters I M L, arranged as specified.

3. The arrangement and combination of the curved plate G, constructed as described, with oblique slots *a* and tapering, curved, and obliquely-set ribs *h*, with the transferring beater I and the cylinders H and F, as set forth.

4. The combination with the cylinders F and H, provided with the plates G G', constructed as described, and the beaters I and M, of the beater L, having serrated and plain wings arranged thereon, as and for the purpose specified.

101,764. — EASY-CHAIR.—Wilhelm Charles Poppendieche, New York, N. Y.

Claim.—1. The improved adjustable easy chair above described, consisting of legs A B, seat-frame C, standards G, pivoted hollow sliding arm-rests H, bars I, spring bolts J, pivoted back-frame D, having arms *b*, springs T, rods F, cams *c*, link-braces L, pivoted foot-rests E, provided with pivoted platform M, hinged platform N, and catches *d*, all relatively arranged as and for the purpose specified.

2. In combination with the above, the arm O, hinge *f* R, notched segment S, spring *h*, and reading-desk P, as and for the purpose specified.

101,765.—GATE. — Fitch Raymond, Cleveland, Ohio.

Claim.—The chain F, constructed with joints C and shoulders I, in combination with the arm E, gate B, and cord G, arranged and operating conjointly, substantially as and for the purpose set forth.

101,766.—FOWL-FEEDER.—Joseph Richardson, Ballston Spa, N. Y.

Claim.—1. The trough b^3, in combination with the flexible tube b'', when arranged as described, for the purpose set forth.

2. The apparatus described, consisting of the chambers A B, troughs *a b* with transparent covers *e*, tube *b'*, and treadles *d d*, with their connections, the whole being constructed and arranged as described, for the purpose set forth.

101,767. — STEAM-GENERATOR. — Michael Ritchey, Paterson, N. J.

Claim.—1. Supplying hot water to a steam-generator by means of a heating-chamber, A', and series of winding pipes, all placed contiguous to the fire, whereby the water is retarded in its progress and heated before it reaches the boiler, as set forth.

2. The combination with boiler of inlets and outlets *b d e*, chambers A A', and pipes C C' D E, all arranged with respect to the furnace in the manner described.

101,768.—WASHING-MACHINE. — James D. Royse and John Royse, Cane Valley, Ky.

Claim. — The deeply-grooved and perforated boards H, pivoted at their lower edges to the straight sides of the box D, and connected at their upper edges to the stationary bars F by the pivoted connecting-rods I, in combination with the grooved and perforated stationary board G, uprights F, and oscillating box or tub D, substantially as herein shown and described, and for the purpose set forth.

101,769. — STREET-LAMP. — William G. Schmidlin and Jeremiah W. Driscoll, New York, N. Y.

Claim.—The frames h for the name-plates, projecting outside of the upper part of the frames *e* and glasses *g*, and to which frames h and pyramidal frame *a* are connected, as set forth.

101,770.—MONEY-SAFE.—Philipp Schreyer, New York, N. Y.

Claim.—1. The safe, constructed of the shells A and B and bottoms C, D, and E, all parts being connected by means of bolts G, passing through the bottom, as set forth.

2. The money-safe and table, formed of the ring T and legs F, shells A and B, bottoms C D E, and bolt G, all constructed and fitted together in the manner shown and described.

101,771. — REGULATING DEVICE FOR GAS-BURNERS.—Henry Schultz, Milwaukee, Wis., assignor to himself and Henry C. Bentley, same place.

Claim.—1. A regulating device or cock to be applied to gas-fixtures for controlling the supply of gas to the burners, consisting of body *a a a a*, tube *f*, and packing-ring *i*, arranged substantially as described.

2. Tube *f*, openings *n*, enlargement *m*, regulator *p*, with openings from the enlargement *m* to the head of tube *f*, arranged substantially as described.

3. A gas-regulating device constructed with ports *h* and *m*, and openings *e*, *b*, and *n*, arranged substantially as described.

101,772, antedated March 28, 1870.—STORE AND HOUSEHOLD GRAPPLE.—John Seltzer, Philadelphia, Pa.

Claim.—The combination of the jaws A and B, the upright C, the spring D, the wire or rod E, the socket F, the handle G, the bifurcated prong *a*, and the combined hammer, ice-pick, and tack-extractor, or their several equivalents, arranged, constructed, and operating in the manner and for the purposes substantially as described.

101,773, antedated April 7, 1870.—IMPLEMENT.—W. A. Sharp, Tama City, Iowa.

Claim.—The combined tool consisting essentially of the spirit-level L, try-square, bevel, sliding-gauge S T, foot-rule D, plane N, and marking-gauges, all arranged upon the stock A, substantially as herein shown and described.

101,774, antedated April 4, 1870.—TUBULAR WELL.—Jehyleman Shaw, Bridgeport, Conn.

Claim.—1. The adapting of a single pump to a plurality of well-tubes, by connecting the upper ends of the latter to a pipe with which the pump-cylinder communicates, substantially as shown and described.

2. The inserting of the plates *b b* within the strainer C, said plates being crossed so as to be at right angles with each other in their transverse section, and the strainer of taper form longitudinally, substantially as and for the purpose specified.

101,775.—ROOFING-TILE. — George Shove, Yarmouth Port, Mass.

Claim.—The composition, made of the materials and in the manner, and covered by a water-proof protective matter, substantially as described.

101,776. — MULTIPLE SPONGE. — Hamilton Erastus Smith, Newark, N. J.

Claim.—The multiple sponge, composed of a series of small pieces of sponge, which are connected by concealed thread, as set forth.

101,777.—MOP, MAT, AND WIPING-CUSHION. Hamilton Erastus Smith, Newark, N. J.

Claim.—The mop, mat, or wiping-pad, made of sponge, which is surrounded by a porous covering, as set forth.

101,778. — WASHING-MACHINE. — Hamilton Erastus Smith, Newark, N. J., assignor to Mrs. Mary Jane Smith, same place.

Claim.—A perforated and corrugated washing-cylinder divided into two longitudinal apartments by means of a corrugated diametrical partition, B, substantially as herein shown and described.

101,779.—MECHANISM FOR OPERATING THE FEEDING-WHEEL IN SEWING-MACHINES.—Friedrich Spoehr, Philadelphia, Pa.

Claim.—1. The feed-wheel A, driving-piece B, shoe and feed-lever F, shoes H I, and the intermittent lever G, when constructed and arranged substantially as shown.

2. The driving-piece B, in combination with the bolt *b*, spring *m*, shoe and feed-lever F, shoes H I, and the pins *c d*, as shown.

101,780.—APPARATUS FOR MOVING CARS.—Ezra Springer, Davis, Ill.

Claim.—1. The combination and arrangement of the lever X, sectors B' B'', cam-plates C and N, and bar D, with the frame-pieces A A and slots J' and S', substantially as described and for the purpose set forth.

2. The rods R and P, when combined with the sectors B' B'' and cam-plates C and N, substantially as described and for the purpose specified.

101,781.—PICTURE-NAIL.—John H. Squier and Ezra J. Warner, Newark, N. J.

Claim.—A wire spring imbedded in the plastic porcelain while being molded, as and for the purpose described.

101,782.—VENEER-CUTTER.—William Steele, Sistersville, West Va.

Claim.—The self-adjusting frame B, in combination with the bearing-bar F, knife D, measuring-roller G, and dividing-cutters J J J, substantially as described, and for the purpose set forth.

Also, the frame B B with its knife and bearing-bar as connected with the frame B by means of the balance-yokes C C or their equivalents, substantially as described and for the purpose set forth.

101,783.—MANUFACTURE OF SUGAR AND ALCOHOL FROM LICHENS.—Sten Stenberg, Stockholm, Sweden.

Claim.—1. The employment of lichens as described for the property of being more easily and more completely turned into grape-sugar than any other cellular tissue of plants.

2. The application of diluted acids to the cellular tissue of lichens, for the practical manufacture of grape-sugar and alcohol.

3. The boiling-vats in which the lichens are boiled with diluted acids.

4. The process by which the lichen is changed into saccharriferous jelly.

5. The process by which alcohol is obtained from this saccharriferous jelly.

101,784.—MILK-CAN.—A. Sunderland, Madison, Ohio.

Claim.—As a new article of manufacture, a can provided with a convex-flanged bottom, B, made in one piece, the flange *b* not extending below the bottom of the can, and having a hoop, C, on the outside, the hoop, body, and flanged bottom being riveted together, as set forth.

101,785.—WOOD-PULP MACHINE.—Stephen Clarendon Taft, Mendon, Mass.

Claim.—1. The combination with the grinding-stone D, which is bound with metal hoops, of the plates *a* and C, the stone being clamped between said plates, as set forth.

2. The plate C, provided with the projecting ribs *d*, which fit into corresponding grooves or recesses in the surface of the stone, as set forth.

3. The annular frame F, subdivided by partitions *i*, to receive the several weights G, and combined with a grinding-stone, as set forth.

4. The stone D, provided with a circular groove, *h*, directly below the inner ring *g* of the stationary annular frame F, as set forth, for the purpose of permitting adjustment of the stone, as specified.

5. The combination of the annular frame F, weights G, and revolving stone D, with the annular trough I, all arranged as set forth.

6. The revolving sieve L, supported by the rings which form its ends, and combined with a wood-pulp machine, as set forth.

101,786. — PAPER FOR CHECKS, DRAFTS, NOTES, &c. — George F. Thomae, Jr., Brooklyn, N. Y.

Claim.—A fugitive-tinted paper, manufactured essentially as and for the purpose set forth.

101,787.—Dust-Arrester for Railroad-Cars.—William M. K. Thornton, Rolla, Mo.

Claim.—A self-acting dust and cinder-arrester, consisting of a shield, C, a wing, D, and eyes *a a*, constructed to operate substantially as described.

101,788. — Scroll-sawing Machine.—Eliphalet A. Tripp, Newark, N. J.

Claim.—1. The combination of the adjustable pivoted grooved plate K with the sliding block J, to which the lower end of the saw I is attached, substantially as herein shown and described, and for the purpose set forth.

2. The combination of the adjustable right-angled plate L with the grooved plate N attached to the table B, and with the adjustable pivoted plate K and sliding-block J, to which the lower end of the saw I is attached, substantially as herein shown and described, and for the purpose set forth.

3. The combination of the connecting-rod P, curved lever Q, connecting-rod R, crank or crank-pin S, wheel T, band U, wheel V, crank W, connecting-rods X, and treadle Y, with each other, and with the block J, to which the lower end of the saw I is attached, and frame B, substantially as herein shown and described, and for the purpose set forth.

101,789, antedated April 9, 1870.—Fruit, and Extension-Ladder.—Melzer Tuell, Penn Yan, N. Y., assignor to himself, Lewis D. Young, and Benjamin F. Fenner, same place.

Claim.—The sections A and B, auxiliary parts C and D, and the platform E, all constructed, arranged, and operating substantially as herein described and for the purpose set forth.

101,790.—Counter and Show-Case.—Louis F. Vienot, New York, N. Y.

Claim.—The counter A and show-case B, relatively constructed, adjusted, and fitted together, as set forth.

101,791.—Railway-car Brake.—Edward P. Vining, Grand Rapids, Mich.

Claim.—1. The application of the horizontal governor, constructed as above described, with arms *t t* and *t' t'*, weights *g g*, and spring S, to the axle of a car, when used and operated in connection with an automatic car-brake, as above set forth.

2. The arrangement of the governor G, the grooved wheel W, the collar U, forked lever C, and the lever L, in such a manner as to force the front end of the lever L outwardly when the train is in rapid motion, allowing the bar B to be pressed back upon the lever M, as above set forth, thus applying the brakes to the wheels of the car.

3. The construction and arrangement of the bar B, in combination with the lever M, brakes K and K', rod R, and draw-bar D, when used and operated substantially as above described.

4. The arrangement of the rods R P and levers M N, in combination with bar B, to operate the brake, either by hand or automatically, substantially as herein described.

5. The arrangement of the brake-stand H' and chain Q, in connection with the bar B, as above set forth, for the purpose of preventing the operation of the automatic brake, when desired.

101,792.—Piston-Packing.—Ellery A. Walker, Hyannis, Mass.

Claim.—The herein-described combination and arrangement of the packing-rings *d d*, springs *h h*, and end plates *e e*, the latter being provided with soft-metal bearing, and the whole operating as hereinbefore set forth.

101,793. — Coal-digging Apparatus. — William Ward, Pittsburg, Pa.

Claim.—1. Combining the "bearing-in," "knocking-down," or "side-cutting" apparatus with a supporting frame-work, in which it is operated by means of crossing chains and pulleys, substantially as described.

2. A supporting frame work, consisting of front posts *a*, rear supports *c*, and connecting-beams *b*, the latter having ratchet-shaped notches, and the parts named being hinged together and arranged to carry swinging coal-mine devices, substantially as described.

101,794.—Shirt-Bosom and Wristbands Combined.—Effingham H. N. Warner, New York, N. Y.

Claim.—A detachable divided shirt-bosom, the two parts A of which are provided with button-holes a^3 a^4 a^5, by which they are attached to the shirt-sleeve to serve as cuffs, as herein set forth.

101,795.—Grate-Bar for Steam-Generators.—Marshall D. Wellman, Allegheny county, Pa.

Claim.—1. A grate-bar having thin plate bottom and sides or flanges, inclosing a hollow or box face, so as, with a minimum amount of metal, to secure a maximum amount of heat-radiating surface, constructed substantially as set forth.

2. Chambering out the lower face of the bearing ends of grate-bars, substantially as described.

101,796. — Countersink. — Asa Wheeler, Brattleborough, Vt., assignor to George B. Wheeler, same place.

Claim.—The countersink *a b c d e* formed of metal, cast, malleableized and steelified, as and for the purpose specified.

101,797.—Dish-Stand.—Horace C. Wilcox, West Meriden, Conn., assignor to Woods, Sherwood & Co., Lowell, Mass.

Claim.—The combination with the dish-stand, of the bed or ring, constructed substantially as and for the purpose described and specified.

101,798.—Slate-Frame.—William A. Wilde, Malden, Mass.

Claim.—The vulcanizing of the India-rubber compound, or other elastic compound, onto the corners or the common slate-frame, to wit: the parts C and D, as shown in the drawing.

101,799.—Stove-Pipe Shelf.—Joseph W. Wilder, Leominster, Mass.

Claim.—1. The stove-shelf F, made with the many-sided shank *c*, substantially as and for the purposes set forth.

2. The combination, with the stove-shelf shank *c* and post C, of the shelf-supporting piece E, provided with ears *a a*, substantially as and for the purposes set forth.

3. The combination, with the post C, of the clamping-pieces D, and shelf-supporting pieces E E, substantially as and for the purposes set forth.

4. The combination, with the post C and pipe B, of the clamping-piece D', clamping-bands 2 2, clamping-pieces G G', and cam clamping-piece H, substantially as and for the purposes stated.

5. The combination, with the clamping-pieces G G', of the cam clamping-piece H, said parts being constructed and arranged for operation substantially as and for the purposes set forth.

101,800. — Machine for Twisting and Curling Hair.—Philip Wisdom, Brooklyn, and John H. Wilcox, New York, N. Y.

Claim.—1. In a machine for twisting and curling hair, the combination of the revolving tube A, having side openings 1 2 communicating with the central cavity, to both spin and curl the hair, with a reel, F, having a double motion, or motion in two directions, to further twist the hair rope after it leaves the tube A, and also cause it to be drawn through such tube and wound upon the reel.

2. In combination with the tube A and reel F, constructed and operating as described, the arrangement of the oscillating guide *d*, for distributing the spun and curled rope on the reel, substantially as set forth.

3. The combination and arrangement of the wheels *h''*, *l*, and *l'*, for revolving the reel on its axis, and regulating its motion, substantially as and for the purposes set forth.

4. A machine for twisting and curling hair, its several parts constructed, arranged, and operating severally and together, substantially as described, and for the purposes set forth.

101,801.—Charles B. Withington—Suspended.

101,802.—Rocker for Chairs.—Wilhelmina Julianna Zakrzewska, Berlin, Prussia.

Claim.—The combination of devices or rocker, as described, composed of two or more sections, hinged together and provided with the short and longer mortises *d e*, and with means, as explained, for fastening such rocker to a chair, the whole being substantially and for use as specified.

101,803. — Padlock. — Andy M. Adams, Washington, D. C.

Claim.—1. The bolt G, formed as shown, and provided with slot and pivot g^1, and pivot e^3, and spring H, constructed, arranged, and operating in the manner and for the purpose herein set forth and described.

2. The tumbler E, formed as shown, and operating in connection with the bolts D and G and the recess e^1, in the manner and for the purpose herein described.

3. The locking-bolt D, under stay B, dog C, and guides *b b'* and *d d'*, combined and operating in the manner and for the purpose herein set forth and described.

101,804.—Wooden Box.—Olif Abell, Wolcott, Vt.

Claim.—1. A wooden box, whose body is formed of a hoop of thin wood, with a narrow strip of thin wood wound spirally around its exterior, as set forth.

2. A wooden box, having its lid or bottom or both formed of two pieces with the grain running at right angles and stamped into a concave shape, substantially as and for the purposes herein set forth.

101,805.—Wooden Box.—Olif Abell, Wolcott, Vt.

Claim.—A wooden box, whose sides are formed of two or more pieces or strips of wood of unequal widths wound spirally around a mandrel, by which the joints are broken, and having a cover with sides formed in like manner, the top and bottom of the box being formed of two pieces of wood placed with the grain at right angles, all as set forth.

101,806.—Apparatus for Lighting and Extinguishing Gas.—Almon N. Allen and Rodney H. Dewey, Pittsfield, Mass.

Claim.—1. The method herein described of igniting and extinguishing gas automatically by the action of the day-and-night track A, or any equivalent mechanism, in combination with a mechanism for carrying and igniting a match or fuse at the proper intervals, substantially as herein set forth.

2. The day-and-night track A, having cams and depressions corresponding to the variable length of the days and nights in different seasons, in combination with the lever B, which controls the position of the valve admitting gas to the burner, substantially as described.

3. The magazine G, in combination with the day-and-night track A and with the lever B which controls the position of the gas-cock or valve, substantially as set forth.

4. The escapement-wheel *f*, carrying cams *o*, in combination with the valve-lever *p* and friction-disk *n*, substantially as described.

5. The cam f^2 and spring e^1 in combination with the magazine G, substantially as set forth.

6. The movable head a^2 and cam e^3, in combination with the spiral day-and-night track A, substantially as described.

7. The toe e^3 and projection f^2, in combination with the movable head a^2 of the day-and-night lever, with the spring d^2, cam e^3, and spiral day-and-night track A, substantially as set forth.

101,807.—Oil-Cup.—A. C. Ancona, Evansville, Ind.

Claim.—1. The tubular stud D, arranged for the twofold purpose of receiving the tube E and for confining the body A of the cup to its place, substantially as described.

2. The combination of the inner stationary tube of the oil-cup and a detachable tube, substantially as and for the purpose described.

3. The detachable tube E, fitted to an oil-cup, and having lateral openings arranged at a point above the surface of the oil, for the purpose described.

4. The combination of the lateral openings *f f* in the wick-tube, with the spring-pin *t* and set-screw G.

101,808.—Attaching Knob to Spindles. Matthew Andrew, Melbourne, Colony of Victoria.

Claim.—The flat spring C, attached to the knob-spindle and adapted to engage with the ratchet-teeth *a a*, and extended beyond the side of the spindle B, in combination with the extended chamber *b* and the opening *d*, in the shank of the knob A, substantially as and for the purpose set forth.

101,809. — Corn-Husker. — L. Augustus Aspinwall, Albany, N. Y.

Claim.—1. The husking rolls R R, having the depressed portions *r r* provided with teeth P P, constructed and arranged substantially as shown and for the purposes herein set forth.

2. The combination of the husking rolls R R, when constructed as described, with the gears L L, when said parts are arranged together in the manner and for the purpose set forth.

3. The combination of the knives M M, with the depressed portions *r r* of the rolls R R, and the teeth P P, when said parts are constructed and arranged to operate in the manner and for the purpose herein set forth.

101,810.—Churn. — Mahlon B. Atkinson, Georgetown, D. C.

Claim.—The churn herein described, having in combination the dasher D, sieve H, side-beaters E, and downward guide or flanch *c*, when constructed and arranged to operate as and for the purposes specified.

101,811.—Cloth-Stretching Machine.—Solomon H. Austin, Providence, assignor to Wanton J. Austin, Smithfield, R. I.

Claim.—1. In combination with a cloth-stretching roller, the stanchions A, pivoted substantially as described, for the purposes specified.

2. The combination of the several series of live lags with the operating cams, when so arranged that each series of live lags shall perform a stretching service in the relative order and manner substantially as shown and described.

3. In combination with angular slashes, the longitudinal grooves in the middle of the faces of the live lags, substantially as shown and described.

4. In combination with the longitudinal grooves in the faces of the live lags, angular slashes, radiating toward the inner ends and outer edges of the said lags, substantially as shown and described.

5. The combination of the recessed heads D with the slotted dead lags E, fitted with ends abutting against the shoulders of the recesses, substantially as shown and described.

6. The improvement in scrimp-bars, which consists in constructing them in the form of a roller, adjustable to fixed positions in its bearings, by

means of which new faces may from time to time be presented for use, substantially as described, for the purpose specified.

7. The cylindrical scrimp-bar I, provided with spirally-cut slashes, in combination with the longitudinal grooves, substantially as shown and described.

8. In combination with the cylindrical scrimp-bar I, adjustable to fixed positions in its bearings, provided with spirally-cut slashes and longitudinal grooves, the arms K, arranged so as to admit of the fixed adjustment of the scrimp-bar relatively to the peripherical surface of the cylinder with which it may be used, substantially as shown and described.

101,812.—APPARATUS FOR TANNING BY INFILTRATION.—John G. Baker, Wilmington, Del.

Claim.—1. The arrangement of the cocks in the tub-pipes with their nozzles facing to the center of the tan-tubs, so as to float the skins under the liquor without any contact with themselves or the tubs, substantially as hereinbefore set forth.

2. The combination of the vat or tank and the tan-tub with the feed-pipe, filling-pipes, their cocks or faucets, and the stand-pipe or overflow-pipe, substantially as and for the purpose set forth.

101,813.—STAND FOR TEA AND COFFEE-POTS.—Jonah H. Bigelow, Worcester, Mass.

Claim.—1. The combination in a tea or coffee-pot stand of a scalloped binding-wire, with radial supporting-wires, substantially as and for the purposes set forth.

2. The combination with the scalloped binding-wire A of the radial supporting-wires B C, constructed substantially as specified, so as to furnish a support for the bottom of the pot, and also legs for supporting the stand.

3. A tea and coffee-pot stand, the parts of which are constructed and combined together, substantially in the manner shown and described.

101,814.—AUTOMATIC RELIEF-VALVE.—Arthur M. Black, Providence, R. I.

Claim.—The pressure-chamber A, provided with piston and rod, capable of such adjustment as will cause the piston to yield at any stated degree of pressure, in combination with any suitable valve, also capable of similar adjustment, and arranged with relation to such valve, and so connected therewith that a certain movement of the pressure-chamber piston-rod will instantaneously open or admit of the immediate self-opening of the valve, substantially as shown and described.

101,815.—TUBULAR SHAFT FOR CLOCKS.—Gilbert H. Blakesley, Bristol, Conn.

Claim.—A clock or alarm-socket, consisting of the solid drawn tube or socket A and the collet B, substantially as described.

101,816.—WIRE-WORK FOR RAILINGS, &c. Wannibald R. Boerner, Chicago, Ill., assignor to himself and C. R. Boerner, same place.

Claim.—The herein-described method of securing the wire or wires to their supports or rails by means of the loops or ears, substantially as set forth.

101,817.—MECHANISM FOR STOPPING THE SHUTTLE IN LOOMS.—Saml. Boorn, Lowell, Mass.

Claim.—The arm I, the jaws G H, and the spring K, as arranged, together and with the shuttle-box, as described, the jaws being in advance of the picker when at its rearmost position in the box, and the whole being to operate as specified.

101,818.—BRAKE-BLOCK FOR WAGONS.—William H. Bradt, New Scotland, N. Y.

Claim.—1. In a brake-block, the wedging-shoe C, when constructed with the concave side *c*, and convex side *c'*, and with the guide-ways *s s*, substantially as and for the purpose set forth.

2. In a brake-block, the cheeks E E, furnished with grooves *z z*, substantially as and for the purpose set forth.

3. The spring *g*, when attached to the bar B, in the manner set forth for the purpose specified.

4. A brake-block, consisting of the several elements specified, when combined substantially in the manner described, and effected in its several parts by the action of a revolving wheel, substantially in the manner set forth.

101,819.—HORSE-COLLAR BLOCK.—E. L. Brazenor, Birmingham, Great Britain, assignor to Richard Brazenor, same place.

Claim.—1. The expansible formers B B and tension former D, when combined and arranged with the gauge-plate C operated by the screw *a*, and jointly operating therewith, as described.

2. The arrangement of the tension-former D, gauge-plate C, expansible formers B, screw *a*, cord F, and movable head E, when operating together, as described.

101,820.—SPECTACLE-FRAME.—Chauncey Buckley, Meriden, Conn., assignor to Charles Parker, same place.

Claim.—1. The channel *i*, formed in the end piece, so as to leave the bearing *n* around the screw *f* to receive the turning part of the temple, substantially as set forth.

2. The temple A, formed complete from sheet-metal, with the turning part B thrown to one side to give the requisite spread to the temple, and at the same time to form the shoulder *a*, combined with the end piece constructed as described, with the projection *b* to support the shoulder *a*, as herein set forth.

101,821.—SPOKE-SOCKET FOR CARRIAGE-WHEELS.—A. J. Carleton, Springfield, Mass.

Claim.—The combination in a spoke-socket of the metallic cup A, with flanges B and C, the whole being so arranged with the spoke that it rests against the bottom of the cup A, as shown and described.

101,822.—COTTON AND TOBACCO-PRESS.—Nash Cheek, Chapel Hill, N. C.

Claim.—1. The double-acting lever H, provided with boxes *e e*, swords I I, and spring J, all constructed and arranged substantially as and for the purposes herein set forth.

2. In combination with the above, the mortised beam D provided with toothed blocks *b b*, bar C, and follower B, all constructed as described, and operating substantially in the manner and for the purposes herein set forth.

101,823.—INDIA-RUBBER CARPETING AND EMBOSSED MATTING.—John H. Cheever, New York, N. Y.

Claim.—As a new manufacture, vulcanized India-rubber carpeting or embossed matting, composed of vulcanized India rubber, in combination with a backing of cloth or canvas made of jute, substantially as set forth.

101,824.—COMBINED PULLEY AND CLAMP. Milton W. Clark, Worcester, Mass.

Claim.—As a new article of manufacture, a pulley provided with a projecting hub, formed so as to constitute a tapering and split clamp-sleeve upon which is screwed the clamping-ring or nut, so as to clamp the pulley in any desired position upon the shaft, substantially as shown and set forth.

101,825.—SEAT AND CAP FOR TIE AND SILL-PLATE.—Peter S. Clinger, Conestoga Centre, Pa.

Claim.—The post-cast A, also forming a cap, the plate B', and sill-plate or plates B B' with their pins C, all combined and arranged in one piece, substantially in the manner and for the purpose specified.

101,826.—BREECH-LOADING FIRE-ARM.—John Joseph Cloes, Liege, Belgium, assignor to Edward De Beaumont, same place.

Claim.—The combination of the movable breech C and hammer D, constructed with the spindle *f* and needle *d*, with the cam cylinder *n* and handle E, inclosing the mainspring *a*, and trigger F, and sear G, the whole constructed and arranged to operate in the manner described.

101,827.—RAILROAD-TANK VALVE.—Marshall Cowing, New York, N. Y., assignor to himself, John P. Cowing, Philo Cowing, and George Cowing, same place.

Claim.—The valve B, provided with the leather facing C and gun-metal valve-seat D, in combination with the swivel hinge E and body A of the valve, substantially as described, and for the purposes set forth.

101,828.—MANUFACTURE OF ARTIFICIAL FUEL.—James F. Cranston, Jeremiah H. Banks, and John M. Ingersoll, Springfield, Mass.

Claim.—The composition and treatment of the ingredients, or their equivalents, substantially as herein described, forming an artificial fuel.

101,829.—MACHINE FOR ARRANGING NEEDLES.—C. O. Crosby, New Haven, Conn.

Claim.—1. The inclined table A with the grooves G G, and with or without its grooves I I, in combination with the band or wheel, substantially in the manner and for the purpose set forth.

2. In combination with the subject-matter of the first clause of claims, the hopper B, constructed and arranged so as to deliver the needles at right angles across the said inclined tables, substantially in the manner described.

101,830.—BRONZE-COLLECTING ATTACHMENT TO BRONZING-MACHINES.—Samuel Crump, New York, N. Y.

Claim.—1. The combination of a suction-fan or device with a bronzing-machine, or the case inclosing the same, and a tubular passage connecting said case with a suitable receptacle or receptacles for collection of the floating bronze, substantially as specified.

2. The combination of the bags D with the tubular passage C, the suction-fan B, and the bronzing-machine A, or its case *a*, essentially as shown and described.

101,831.—TOE-CALK FOR HORSESHOES.—George Custer, Monroe, Mich.

Claim.—The toe-calk for horseshoes herein described, having its upper edge beveled and provided with the spurs or pointed wedges *c*, having notches *a a* at each side, when constructed as and for the purposes specified.

101,832, antedated April 2, 1870.—PRESSURE-GAUGE.—Herman Chwatal, New York, N. Y., assignor to W. Stachlen and L. Portong.

Claim.—In steam and other pressure and vacuum-gauges, the employment of the crank I, when provided for adjusting the pin J of said crank with the screw M and sliding block L, substantially as and for the purpose herein shown.

101,833.—COAL-BOX.—Benjamin Richard Deacon, Montreal, Canada.

Claim.—The combination of the outer shell *a*, double inclined bottom *c c'*, regulating-board *d*, lower opening or mouth *e*, with door *f*, all working together substantially in the manner and for the purpose described.

101,834.—PERCH SPRING-CLIP.—John Deeble, Plantsville, Conn.

Claim.—1. The three-pronged clip consisting of plate *c*, provided with a single bolt on one side, arranged opposite to two bolts on the other side, and made in one piece, substantially as and for the purpose described.

2. In combination with the above, the single or double perch plate *a b*, substantially as and for the purpose described.

101,835.—MANUFACTURE OF BUILDING-BLOCKS FROM SLAG.—Charles Diebold, Lebanon, Pa., assignor to E. L. Butterfield, trustee, Brooklyn, N. Y.

Claim.—1. The removing the blocks from the molds and covering them with sand or other material, so as to exclude the air during the cooling process.

2. The excluding the air from the blocks during the cooling process, by covering with sand or other material, whether the blocks are still left in the molds or first removed.

101,836.—WHEAT-DRILL.—Joseph Dillier, Greensburg, Ind.

Claim.—1. The gutta-percha screw *k* for distributing the seed, in the manner set forth.

2. The combination of screw *k* and wheel *j* with shaft *g*, furnished with pinions *n* and *e*, the whole arranged and operated in the manner and for the purpose substantially as specified.

3. The combination of seed-box H, furnished with screw *k*, wheel *j*, shaft *g*, pinions *e* and *n*, tubes P, slide G, hinged beams C, and standards *d*, the whole constructed and arranged substantially as set forth.

101,837.—BAG-FASTENER.—Samuel C. Dix, Neponset, Ill.

Claim.—The metallic clasp or fastener for bags, herein shown and described, consisting of two plates A and B pivoted together at one end, the free end of plate A having a serrated outer edge C, and the other plate B having a curved pawl or catch D loosely pivoted to it, all constructed and operated substantially in the manner and for the purpose herein set forth.

101,838.—APPLE-CORER AND SLICER.—Robert J. Dodd, Orth, Ind.

Claim.—1. The horizontal reciprocating box D, provided with the corer E and tube *a*, and arranged upon the table A, with an aperture through which drops the quartered apple, while the core is passed through the tube upon the apron J, as set forth.

2. In combination with the reciprocating box D, with corer E, and tube *a*, the employment of one or more movable shafts, S T, having horizontal forks for holding the apple while the corer operates upon the same, as set forth.

3. The combination and arrangement of the benches A C, legs B B, box D, corer E, bars G G, arms I I, apron J, levers K K, shaft L, connecting-bar N, treadle P, and staffs S T, all constructed and operating substantially as and for the purposes herein set forth.

101,839.—OIL-CAN.—Patrick J. Dwyer, Elizabeth Port, N. J.

Claim.—1. An oil-can, provided with a loose and readily detachable elastic bottom, for operation substantially as specified.

2. The combination and arrangement with the body A of the detachable bottom C, the packing or packings *b c*, and the screw-ring D, essentially as and for the purposes herein set forth.

101,840.—PISTON-ROD PACKING.—Peter Eckford and James Eckford, Cincinnati, Ohio.

Claim.—1. In combination, the segmental rings

D and D', inclosing-ring of soft metal, and spring c, when said spring is used to bind the segmental rings to the spindle, without the action of the steam, substantially as shown and described.

2. The packing-case, composed of the parts C and C', fitted between the cylinder-head and gland, in the manner shown, in combination with the segmental packing and inclosing-rings, when the same is constructed as shown, to prevent the ingress of steam to the stuffing-box.

101,841.—Hose-Coupling.—Jacob Edson, Boston, Mass.

Claim.—Each connection-neck C or C' and its collar D, as made or provided with the helical cams *t t*, the shoulders *u u*, the passages *v v*, and the bayonet-studs *g g*, arranged as set forth.

Also, the collar D, as made or provided with the conical annular recess *x x* and the rounded edges *y y*, arranged together and with respect to the collar, and for the purpose in manner substantially as described.

Also, the connection B, as provided with the notches *w w*, for the passage through it of the projections of the bayonet-catches of the neck.

101,842.—Mold for Casting Pipe.—Jacob Edson, Boston, Mass.

Claim.—The core D, with shoulders *d*, for casting flange-pipes or columns, substantially as described and for the purpose set forth.

101,843.—Caster for Sewing-Machines. William P. Elliott, New Haven Conn., assignor to himself and Leverett F. Goodyear, same place.

Claim.—The block G, with its caster H secured to the leg of a sewing-machine, by means of a slot, L, and set-screw I, and so as to be adjusted substantially as described.

101,844.—Caster for Sewing-Machines. William P. Elliott, New Haven, Conn., assignor to himself and Leverett F. Goodyear, same place.

Claim.—The arrangement of the lever C, with its caster, D, upon the legs of a sewing-machine, when the said lever C is provided with a pawl, E, so as to automatically lock the caster in its down position, substantially as described.

101,845. — Magazine Fire-Arm. — Darwin Ellis, Whitestone, N. Y.

Claim.—1. The combination of the chambered breech-block C and the discharger J with the lever G, substantially as described, and whereby the said breech-block is depressed by the lever out of line with the barrel in advance of the discharger being operated by said lever to expel the shell, essentially as specified.

2. The combination of the catch H and spring clips I I with the lever G and discharger J, essentially as shown and described.

3. The combination of the loader L, the chambered breech-block C, and the discharger J, with the lever G, essentially as described.

4. The loader L, constructed to operate substantially as described, in combination with the magazine depresser M and spring N.

101,846, antedated April 4, 1870.—Friction-Clutch for Engaging and Disengaging Gearing.—George D. Emerson, Calumet, Mich.

Claim.—1. The combination, with the segments B B, sliding in the same line toward and from each other on arms *d d*, of the toggle-levers D D, jointed to said segments and operating together, substantially as described.

2. In combination with the expanding segments B B and toggle-levers D D, the elastic disks *e e*, for the purpose set forth.

3. The segments B B, in combination with the wooden facings *c c*, operating substantially as set forth and described.

101,847.—Sheet-metal Can.—Horace Everett, Philadelphia, Pa.

Claim.—The crease or indentation *d*, made in the body of the can, in the position described.

101,848.—Perfume Ejector.—Christian L. Fehrensen, New York, N. Y.

Claim.—The perfume ejector above shown, consisting of a vessel, A, perforated stopper B, and hollow stem C, whose end terminates in a ring or handle having an ejection-orifice, E, the said parts being combined and arranged substantially as described.

101,849. — Combined Harvester and Thrasher.—J. D. Field, Keokuk, Iowa.

Claim.—1. The hinged box W, hinged to the draft-frame and running on casters *f*, substantially as specified.

2. The bar C, the hinged braces F F', the shaft D, and nut *e*, all arranged in the manner as and for the purpose specified.

3. The flanged braces A on top of legs U supporting the thrasher-frame T, arranged in the manner as and for the purpose set forth.

4. In combination with a two-drive-wheel harvester draft-frame A, a thrasher, O, and thrasher-frame T, made and arranged to be readily removable to leave a harvester and mower-frame for use, as specified.

101,850.—Ice-Pitcher.—Thomas B. Fifts and Augustus D. Cooke, New York, N. Y.

Claim.—The clothing of the exterior of a single-walled, or the exterior of either of the walls and bottoms of a double-walled pitcher or receptacle for containing ice, with woolen cloth, flannel, or other woolen fabric cemented thereto, when such fabric is subject to free circulation of air, substantially as and for the purpose herein described.

101,851.—Rigging for Vessels.—Robert B. Forbes, Boston, Mass.

Claim.—1. The combination of stay-sails running on traveling stays, with said stays and with gaff-top sails worked without gaffs, all between the masts of schooners.

2. The combination of traveling stays with stay-sails running thereon between the masts of schooners in the place of the common gaff sails, all substantially as and for the purposes hereinbefore set forth.

101,852.—Rotary Blotter.—Frederick W. Frost and Stephen L. Hayward, Somerville, Mass.

Claim.—A rotary blotter, composed of a cylindrical box or drum covered by a ribbon of blotting-paper or other absorbent material, the ends of which are carried within the drum and wound upon two longitudinal shafts arranged therein, so as to be rotated from the outside of the drum whenever it is desired to change the blotting-surface, substantially as shown and set forth.

101,853.—Apparatus for Molding Pipe.—Frederic Fuller, Providence, R. I.

Claim.—1. The improved apparatus for use in the manufacture of cast-metal pipes, which consists of the combined molders' bench and flask-rest A, the match-plate C, and flask B, in combination substantially as described.

2. The improved clamp for molders' flasks, consisting of the top and bottom plates F F', and the connecting-bars G, (one pair furnished with trunnions or bolding-ears *g*,) constructed and combined substantially as described.

101,854.—Sash-Pulley.—Oliver S. Garretson, Buffalo, N. Y.

Claim.—The arrangement of the lip *e* and rivet *f*, with the flanges *c c*, so that a cap cast in one piece may be secured by a single rivet to the face-plate thereof, substantially as hereinbefore set forth.

101,855.—Paper Collar.—Gustavus Adolphus Goldsmith, New York, N. Y.

Claim.—As a new article of manufacture, a paper collar or like article, made with a smooth or highly-finished border or edge, and a linen or equivalently finished body, substantially as shown and set forth.

101,856. — Churn.—William F. Goodwin, Metuchen, N. J.

Claim.—1. The spiral twist or track B^2, rigidly attached to the bottom of the churn, in combination with the churn-dasher, substantially as set forth.

2. In combination with a churn, a heating or cooling-chamber arranged outside of the body of the churn, and a connecting-pipe which discharges the air into the churn at or near the bottom, substantially as set forth.

3. The combination of a device adapted to introduce air into a churn at or near the bottom, and a dasher to assist in agitating the cream, substantially as set forth.

101,857.—Candle for Miners' Use.—Peter R. Gottstein, Houghton, Mich.

Claim.—As a new article of manufacture, the within-described candle for miners' use.

101,858. — Giffard Injector. — James Gresham, Manchester, England.

Claim.—The combination of the two screws b^2 b^3 upon the cone-spindle *b*, for operation, the one in connection with the ram, and the other through a stationary box or plate, substantially as specified.

101,859. — Winding Watch.—A. Etienne Guyot, Renau, Switzerland.

Claim.—1. The winding-wheel *e*, with the cavities 2 2, in combination with the back-plate *g* and inwardly-projecting stud 3, as and for the purposes specified.

2. The winding-wheel *e*, ratchet-wheel *c*, and pawls *f* and *d*, in combination with the revolving back *g* and stud 3, substantially as set forth.

101,860.—Carriage-Wheel.—John William Guider, St. Joseph, Mo.

Claim.—1. In combination with the wooden hub A and spokes F F of a carriage-wheel, the metal bands B C and flanges D E, said bands being secured to the hub by screws *c c*, and arranged one upon each side of the spokes, each of said bands having a threaded surface on its inner portion adapted to similar threads cut within the inner surfaces of the flanges D E and said flanges, when so adjusted, being secured by bolts *d d*; all being arranged to operate together substantially as shown and described.

101,861, antedated March 30, 1870.—Composition of Matter, called "Metaline," for Journals, Bearings, &c.—Stuart Gwynn, New York, N. Y., assignor to American Metaline Company, same place.

Claim.—The manufacture or preparation of a composition of matters, which I denominate "Metaline No. 1," when the same possesses the properties, and is compounded of the ingredients or their equivalents, in the proportions, by the process, and for the purposes set forth.

101,862, antedated March 30, 1870.—Composition of Matter, called "Metaline," for Journals, Bearings, &c.—Stuart Gwynn, New York, N. Y., assignor to American Metaline Company, same place.

Claim.—The manufacture or preparation of a composition of matter, which I denominate "Metaline No. 2," when the same possesses the properties, and is compounded of the ingredients or their equivalents, in the proportions, by the process, and for the purposes set forth.

101,863, antedated March 30, 1870.—Composition of Matters, called "Metaline," for Journals, Bearings, &c.—Stuart Gwynn, New York, N. Y., assignor to American Metaline Company, same place.

Claim.—The manufacture or preparation of a composition of matters, which I denominate "Metaline No. 3," when the same possesses the properties, and is compounded of the ingredients or their equivalents, in the proportions, by the process, and for the purposes set forth.

101,864, antedated March 30, 1870.—Composition of Matter, called "Metaline," for Journals, Bearings, &c.—Stuart Gwynn, New York, N. Y. assignor to American Metaline Company, same place.

Claim.—The manufacture or preparation of a composition of matters, which I denominate "Metaline No. 4," when the same possesses the properties, and is compounded of the ingredients or their equivalents, in the proportions, by the process, and for the purpose set forth.

101,865, antedated March 30, 1870.—Composition of Matter, called "Metaline," for Journals, Bearings, &c.—Stuart Gwynn, New York, N. Y., assignor to American Metaline Company, same place.

Claim.—The manufacture or preparation of a composition of matter, which I denominate "Metaline No. 7," when the same possesses the properties, and is compounded of the ingredients or their equivalents, in the proportions, by the process, and for the purposes set forth.

101,866, antedated March 30, 1870.—Composition of Matter, called "Metaline," for Journals, Bearings, &c.—Stuart Gwynn, New York, N. Y., assignor to American Metaline Company, same place.

Claim.—The manufacture or preparation of a composition of matter, which I denominate "Metaline No. 5," when the same possesses the properties, and is compounded of the ingredients or their equivalents, in the proportions, by the process, and for the purposes set forth.

101,867, antedated March 30, 1870.—Composition of Matter, called "Metaline," for Journals, Bearings, &c.—Stuart Gwynn, New York, N. Y., assignor to American Metaline Company, same place.

Claim.—The manufacture or preparation of a composition of matter, which I denominate "Metaline No. 6," when the same possesses the properties, and is compounded of the ingredients or their equivalents, in the proportions, by the process, and for the purpose set forth.

101,868, antedated March 30, 1870.—Composition of Matter, called "Metaline," for Journals, Bearings, &c.—Stuart Gwynn, New York, N. Y., assignor to American Metaline Company, same place.

Claim.—The manufacture or preparation of a composition of matter, which I denominate "Metaline No. 8," when the same possess the properties, and is compounded of the ingredients or their

equivalents, in the proportions, by the process, and for the purposes set forth.

101,869, antedated March 30, 1870.—PROCESS OF FORMING COMPOSITIONS OF MATTER, CALLED METALINE, FOR JOURNALS, BEARINGS, STEPS, AND OTHER ARTICLES LIABLE TO FRICTION.—Stuart Gwynn, New York, N. Y., assignor to American Metaline Company, same place.

Claim.—The process, herein described and illustrated, of selecting, treating, compounding, and consolidating certain natural substances, by which I produce a new composition of matter, denominated by me "metaline," designed for the purpose of journal-boxes, journal-box linings, and other similar articles, whose surfaces in use are subjected to friction, which possesses such properties and conditions that in the practical use in machinery and elsewhere in the arts, of such articles made of it, so little friction is actually caused, and so little heat thereby developed, that all necessity for the application of oil, or any other lubricant, is entirely obviated, substantially as hereinbefore specified.

101,870.—KILN FOR BURNING BRICKS, &C. William Samuel Hall, of New York, N. Y., assignor to Henry W. Adams.

Claim.—1. The kiln A, when set and operated substantially in the manner and for the purposes described.

2. The construction of the partition-wall H, in the manner described, to prevent the heat of the fires in the fire-places B B, in fig. 2 and fig. 3, from passing by a direct side draught into the flues N N, and for the purposes set forth.

3. In a covered kiln, A, the construction of the partition-wall I, in combination with the draught-flues N N, in the manner and for the objects described.

4. The construction and use of the gradually-shrinking partition-wall I, in the manner and for purposes herein before explained.

5. The draught-flues N N, in combination with the fire-places B B, in the manner and for the uses substantially as shown.

6. The draught-flues N N, in combination with the chimneys M M, in the mode and for the objects indicated.

7. The arrangement and use of the flexible and adjustable hose P P, in combination with the blast-pipes o o, substantially in the manner and for the objects described.

8. The use of a jet of steam, escaping from the blast pipes o o into the flues N N toward the chimneys M M, for the purpose of drawing the water-smoke from a kiln charged with bricks or other articles composed of clay, direct from one opening, without the use or intervention of pigeon-holes, as shown.

9. The use of a jet of compressed air to exhaust the compartments of the kiln A of its water-smoke, substantially as explained.

10. The use of a jet of compressed water to discharge the water-smoke, substantially as set forth.

101,871.—TUBE-WELL.—William R. Hamilton, Oakland, Pa.

Claim.—The combination of the tubing A, sliding rings B, and springs C, constructed and arranged to operate in the manner described.

101,872.—DRIVING-GEARING.—George B. Hamlin, Willimantic, Conn.

Claim.—The employment, in combination with a pulley to be driven by them and adapted to fit to the peripheries thereof, of two or more driving-pulleys, the faces of which are partially plane or flat, in cross-section, and partially grooved, substantially as and for the purposes herein set forth.

Also, the use of a driving-belt, the friction surface of which consists of a plane, having one or more ribs or tongues, substantially as described, for the purposes set forth.

Also, the employment, in combination with the stationary pulley and shaft and the movable pulleys and shafts of swinging stands I and m, as and for the purposes specified.

101,873.—PAPER-CUTTING MACHINE.—Anson Hardy, Boston, Mass.

Claim.—1. The knife E, in combination with the screw-shaft G, nuts L, and links M and N, arranged and operating substantially as described, for the purpose specified.

2. In combination with the elements named in the first clause of claim, the stop *b*, for limiting the motion of the knife in a downward direction, substantially as described.

101,874.—RAILWAY-CAR BRAKE.—Aaron Higley, Cleveland, Ohio.

Claim.—The shell D, core E, and braces G G', in combination with the links J L, ball K, yoke H, and collars I I', when constructed and arranged substantially as and for the purpose set forth.

101,875.—KNITTING-MACHINE.—Jonas Hinkley, Norwalk, Ohio, assignor to the Hinkley Knitting-Machine Company, Bath, Me.

Claim.—1. The wheel F, constructed as shown, or its equivalent, when used in a machine for the production of knit fabrics, in combination with the eye-pointed needle, for carrying the yarn or thread, the vibrating looping-hook for taking the loop from the needle, and the comb on which the loops are deposited or the "work" is "set up," the said parts being constructed and arranged to operate substantially in the manner set forth and specified.

2. The wheel F, constructed as shown, or its equivalent, when used in a knitting-machine, in combination with the eye-pointed needle, the vibrating looping-hook, the comb, and the tension mechanism, the whole being constructed and arranged to operate substantially in the manner set forth and specified.

3. In a knitting-machine, the combination of the eye-pointed needle, the vibrating looping-hook, and the comb, the looper or looping mechanism operating to take the loop from the needle and deliver or transfer it to a tooth of the comb, substantially as set forth and specified.

4. In combination with the sleeve of the needle-carrying arm and its pin, the collar, bolt, and spring, for retaining the needle-arm in connection with or allowing it to be moved away from its operating devices.

5. The slide G, having the mechanism described for changing its position on the comb, and also the projection for operating the arm 4, which moves the recording disk, all substantially as described.

6. A knitting-machine comb, having the upwardly-curved or inclined teeth, the whole being as and for the purpose shown and hereinbefore explained.

7. A knitting-machine composed of all the devices and instrumentalities shown in the accompanying drawings and herein described, when constructed, combined, and used substantially in the manner and for the purposes specified.

101,876.—APPARATUS FOR THE MANUFACTURE OF ICE.—D. L. Holden, New Orleans, La.

Claim.—1. The combination of removable ice-forms D with fixed freezing-chambers D', when the latter are made in the receptacle B, the arrangement being as set forth.

2. The rubber packing and wipers *h* placed around the mouths of the freezing-chambers, substantially as and for the function specified.

3. The method of agitating and vaporizing the hydrocarbon residuum by the introduction of air or gas to the same by means of perforated pipes *h'' h'''*, substantially as explained.

101,877.—MOLD FOR METALS.—John W. Hollingsworth, Mount Vernon, Ind.

Claim.—1. The metal mold, constructed as described, and so arranged as to force the metal into the mold by mechanical means, substantially as set forth.

2. The flask A, cylinder B, funnel C, handle D, and plunger E, all constructed, combined, and arranged substantially as and for the purposes herein set forth.

101,878.—KNITTING-MACHINE.—Henry A. House, Bridgeport, Conn., assignor to himself and Frank Armstrong, Hamburg, Germany.

Claim.—1. The groove *g*, in combination with the main working-groove *g'* and latch *f*, or its equivalent, substantially as and for the purposes described.

2. The groove *g²*, in combination with the main working-groove and the gate *v*, the latter being constructed and arranged substantially as described.

3. The switches *r r'* and latches *k k*, in combination with the groove *g'* and switch-grooves *s s'*, substantially as and for the purposes described.

4. A grooved needle-sheath, E, constructed substantially as described.

5. A needle-sheath or quill, E, in combination with a knitting-needle, when both are allowed vertical movements independent of each other during the operation of knitting, substantially as described.

6. The quills or sheaths E, notched at *k*, substantially as described.

7. The clamping-bar *d* and nut *d²*, in combination with the frame-section A and adjustable head B², substantially as described.

8. The vertically-swinging gate *v*, notched or stepped, as specified, in combination with the grooved frame-section A, substantially as described.

9. The sections A B B¹ and gate *v*, combined and constructed substantially as described.

10. The combination, with the needles and their sheaths, of the upright crank-shaft *a'*, provided with spur-wheels *a a*, when said spur-wheels engage directly with the needles and their sheaths, substantially as described.

11. The combination of the adjustable cams D with the sheaths of the needles, when said sheaths are independent in their adjustment of the needles, substantially as described.

12. The tension-hooks J J J connected to the double cord J' and adapted to operate substantially as described.

101,879.—LINING AND COVERING REFRIGERATORS AND REFRIGERATOR-CARS.—Theodore Hyatt, New York, N. Y.

Claim.—1. The construction of refrigerators and refrigerator-cars, when the chambers between their inner and outer shells are filled, lined, or packed with asbestos of any suitable form or condition.

2. The construction of refrigerators and refrigerator-cars, when the chambers between their inner and outer shells are lined, filled, or packed with asbestos combined with any other non-heat-conducting substances, as heretofore described.

3. The construction of refrigerators and refrigerator-cars, when the chambers between their inner and outer shells are filled, lined, or packed with bricks, blocks, or slabs composed of asbestos and other non-heat-conducting materials, as heretofore set forth.

4. The construction of refrigerators and refrigerator-cars, when the surfaces of the inner and outer shells looking into the chambers between them are covered or sheathed with asbestos or asbestos fabric, as mentioned, and the space between said sheathings are filled with other non-heat-conducting materials, as heretofore described.

101,880.—PAINT AND PIGMENT.—Sardis W. Isham, Hinckley, Ohio.

Claim.—The paint herein described, prepared in the manner substantially as specified.

101,881.—STEM-WINDING WATCHES.—Charles E. Jacot, Chaux-de-Fond, Switzerland.

Claim.—The swinging plate *k*, formed with depressions on opposite sides for gears *l m n* that gear into each other, in combination with the stud 11, and winding and setting mechanism, substantially as and for the purposes set forth.

101,882, antedated April 4, 1870.—BEDSTEAD AND LOUNGE.—Robert Jewell, New York, N. Y.

Claim.—The combined bedstead, lounge, and writing-desk herein described, having case A, bunk B, bottom C, moldings E, hinged plate *e*, lounge G, drawers K and L, lid K, brace P, and rod R, constructed and arranged as specified.

101,883.—TOBACCO-BAG.—George W. Johnson, Danville, Va., assignor to James P. Hawkins, same place.

Claim.—As a new article of manufacture, the within-described tobacco-bag formed of a single piece of muslin folded over and seamed by a single thread down the sides and bottom, with the bottom puckered, and the top puckered by a string sewed around it loosely, all as set forth.

101,884.—CONFLUENT PIPES FOR BATHS.—Henry Jones, Philadelphia, Pa.

Claim.—A valve, *h*, arranged in the communicating-tube between the valve-chests of a bath-room cock, in respect to the vertical branch E and shower-branch F, as set forth.

101,885.—LUBRICATING AXLE.—Milo F. Kellogg, Pittsfield, Ohio.

Claim.—The combination of the spindle A with the projection E, chamber *d*, passage *e*, and offsets *a b*, with the thimble B, with an enlargement, G, all substantially as set forth.

101,886.—CUT-OFF AND STEAM-VALVE.—Adoniram Kendall, Cleveland, Ohio.

Claim.—1. The valve F and seat B, as constructed and arranged in relation to each other, and in combination with the shell or chamber A, substantially as described.

2. The disk I, in combination with the shaft G and lugs H H', as specified.

3. The slides J K and pins *b c* in combination with the disk I, substantially as set forth.

4. The oscillating lever M, disk I, slides J K, shaft G, and lugs H H', when combined and arranged in relation to each other so as to co-operate conjointly, substantially as described.

5. The lever O, as arranged, in combination with the pin *c* and slides J K, as specified.

6. The annular chambers or recesses *a' b'*, as arranged in relation to the valve F and seat B, as set forth.

101,887.—SEWING-MACHINE.—George F. Kendall, Fitchburg, assignor to himself and John G. Folsom, Winchendon, Mass.

Claim.—1. The combination and relative arrangement of the sliding levers T V with the triangular-shaped cam R upon the lower end of the upright shaft C, as and for the purposes set forth.

2. The combination and relative arrangement of the mechanism for operating the feed device W with the mechanism for operating the shuttle, substantially as described and as shown.

101,888.—LAMP FOR BILLIARD-TABLES.—Rudolph Kleemann, Chicago, Ill.

Claim.—1. The kerosene-lamp for billiard-tables, whose oil-reservoir, A, is placed into an outside vessel, C, said vessel suspended to the shade E or other fixture, substantially as herein set forth.

2. In combination with the above, the shade E, substantially as set forth.

101,889.—Bottle for Gaseous Liquids.—John Frederic Kubly, New York, N. Y., and Charles Frederic Crailsheim, Paris, France.

Claim.—The side neck *c*, tube *n*, and valve *s*, constructed and applied substantially as set forth, in combination with the neck *b* and stopper *l*, as and for the purposes set forth.

101,890.—Ore-washing Machine.—N. H. Lebby, Charleston, S. C.

Claim.—1. The method herein described of washing ore by the agitation, circulation, and scouring of the ore by means of the impinging force of one or more streams of water against the ore in any vessel, so formed that each lump of ore is repeatedly brought to or near the entrance of the stream or streams, substantially as set forth.

2. The funnel-shaped vessel A, provided with a strainer at or near the top, and a valve, C, in the bottom, and with one or more pipes conducting one or more streams of water into the vessel, substantially as and for the purposes herein set forth.

101,891. — Enamel for Clock-Dials.—Thomas Graham Liebenau and Alfred G. Heaney, Plainville, Conn.

Claim.—The hereinbefore-described sizing, composed of isinglass and parchment, substantially as and for the purpose specified.

Also, the combination of soluble glass, oil of turpentine, and the oxides of antimony, zinc, and arsenic, or their equivalents, substantially as shown and for the purpose set forth.

101,892. — Surface-Condenser. — Reuben Lighthall, Brooklyn, N. Y.

Claim.—1. A surface-condenser, made up of independent and detachable tubular frames or structures E E E, arranged to intersect the shell, the one in advance of the other, substantially as specified.

2. The arrangement of both the inlet and outlet G and H for the water which effects condensation, on the upper portion of the condenser, and at opposite ends thereof, substantially as specified.

101,893. — Portable Furnace. — James Hammond Lyon, Pittsburg, Pa.

Claim.—The combination of the two grates A A, cover B, and stand D, all constructed substantially as and for the purposes set forth.

101,894.—Safe.—Obadiah Marland, Boston, Mass.

Claim.—A safe or chest, any single boundary of which is protected by one plate, of such size that there shall be no joint through said boundary, when such plate is made of iron or steel changed superficially by conversion, and in which the steel is hardened, substantially as described.

Also, a door-frame for a safe, vault, or chest, when said frame is made in one integral piece of soft iron and hard steel, substantially as described.

Also, a safe or chest or vault-door, made of or protected by a plate covering the entire opening which the door controls, when said plate is made of iron or steel superficially changed by conversion, and in which the steel is hardened, substantially as described.

Also, a safe or chest, the sides, top, and bottom of which are made of strata of combined iron and steel as a continuous band without joints, and in which the steel is hardened.

101,895.—Atmospheric Brake for Railway Cars.—Sylvester Marsh, Littleton, N. H.

Claim.—The combination of the piston-rods of the air-tight cylinders and the car-axle or wheels, with the means herein described, or their mechanical equivalent, for coupling or connecting the same, under the arrangement specified, so that the pistons while remaining at rest during the upward travel of the car shall be at once thrown into operation when the car begins to descend, substantially as and for the purposes set forth.

101,896.—Brick and other Molds.—Angus McAlpin, Savannah, Ga.

Claim.—The dovetails *c*, constructed and arranged on the tapering sides and ends A B, and case or band C, as herein described, for the purpose set forth.

101,897.—Scroll-Saw.—Reuben McChesney, Birmingham, Conn.

Claim.—1. The horizontal and vertical guide E, applied to a vertically-adjustable guide, D, substantially in the manner and for the purposes described.

2. The pulley b^2, of the saw-connection c', applied to an adjustable bearing, *j*, or its equivalent, substantially as and for the purposes described.

3. The cushion *i*, arranged above the saw-carrying head g', substantially as and for the purposes described.

4. The device *l*, for adjusting the saw for different rakes, applied to holder *k*, so as to serve as a back-bearing, substantially as described.

5. An air-pump, which is constructed and applied to a sawing-machine, substantially as described.

6. The saw-frame A, made of rigid sections, connected together by tubes a', tenoned into the frame, and by tie-rods passed through said tubes, substantially as described.

101,898.—Dredging-Machine.—John McClean, New Orleans, La.

Claim.—1. The operating frame, consisting of the levers B B, and end frame C, when provided with the adjustable plow D, pulleys J K, and rope L constructed as shown, and hung and arranged so as to admit of the plow being raised or lowered as desired, as herein set forth and described.

2. The plow D, consisting of the plow-plate D', plows *d* and d^1, plow-frame d^2, attached to the frame C, as shown, and provided with the pulleys F G and rope H, so as to admit of its angle being determined or adjusted as desired, as herein set forth and described.

101,899.—Paint or Coating for Ships' Bottoms.—Levin Albert Messinger, Philadelphia, Pa.

Claim.—A paint or coating for ships' bottoms, &c., composed of arsenite of copper, verdigris, sugar of lead, South Carolina or other vegetable tar, and turpentine.

101,900. — Telegraph Apparatus. — Bernard Meyer, Paris, France.

Claim.—1. The revolving spiral blade, in combination with the message-holding cylinder and tracer, substantially as and for the purpose described.

2. The combination of the straight electro-magnet, the permanent magnet, the paper-supporting lever, and the spiral blade, substantially as and for the purpose described.

101,901.—Broom-Head.—William A. Middleton, Harrisburg, Pa.

Claim.—The use of the stay-rod *e e*, in combination with the skeleton head A, and rows of stitching *a b*, in the brush B, as and for the purpose herein set forth and described.

101,902.—Lamp.—Leon Eugene Cameron Moore and James Shockey Hamilton, Pittston, Pa.

Claim.—In combination with a lamp, the employment of an absorbent, *a*, of any suitable material, secured by the clamp or band B and a spring, C, all substantially as specified.

101,903.—Bung-Cutter.—John L. Munroe, Woburn, Mass.

Claim.—1. The holding device, consisting of the independent spurred stud *g*, held in revolving shaft E, stud *r*, reciprocating head *s*, lever I, connecting-rod *v*, treadle *w*, spring *y*, or their equivalent actuating devices, when arranged substantially as described and shown.

2. The cutters *f f*, in combination with rods *h h* and couplings *g g*, whereby the cutters may be extended to compensate for wear, substantially as and for the purposes specified.

3. The combination of the slotted head *b*, sliding T-pieces *e e*, and cutters *f f*, substantially as and for the purposes specified.

4. In combination with cutters *f f*, extension-rods *h h*, T-pieces *e e*, and head *b*, the slotted sliding flange *j* and actuating lever *m*, substantially as and for the purposes specified.

101,904.—Horse Hay-Rake.—John I. Munroe, Woburn, Mass.

Claim.—The combination of seat A, pivoted in uprights *g g* formed rigidly upon tilting-bar M, with pivoted stirrup *j*, substantially as and for the purposes specified.

101,905.—Manufacture of India-Rubber Packing, Belting, and Hose.—John Murphy, New York, N. Y.

Claim.—1. The combination of abestos, rubber, and canvas, or equivalent fabric, so as to form packing, belting, hose, or similar articles, as described.

2. The improved packing, belting, and hose herein described, formed by combining asbestos with the same, during the process of manufacture, as described.

3. A packing for steam-cylinder, valves, pump-pistons, and the like, made by covering a core of asbestos with a rubber-coated fabric, as described.

101,906.—Stove-Pipe Shelf.—George Newcomer, Cleveland, Ohio.

Claim.—1. A shelf, when constructed in two sections, B C, and connected to each other by a hook and eye, E F, or its equivalent, wedging-keys H H, and clamp I, substantially as described and for the purpose set forth.

2. The combination of the shelf with the rods L and bows L′, when constructed and arranged in relation to each other substantially as and for the purpose specified.

101,907. — Hanging-Basket. — John H. O'Neil, Cleveland, Ohio.

Claim.—A hanging wire-basket or body portion thereof, formed from wire-gauze stamped or molded into shape, and with the corners or angles of the piece from which it is made turned over to form rolls, substantially as specified.

101,908.—Hinge.—George Franklin Ontten, Norfolk, Va.

Claim.—The combination of the plate A and brace-plates A′ A′, tubes *a a*, rods C C, and blocks C′ C′, substantially as described, as and for the purpose specified.

101,909. — Spool-Thread Case. — Albion Parsons, Burlington, Iowa.

Claim.—The revolving drum D, with curved-shaped flanges E E E E and stripe H H H, constructed as described, and combined with the case A, provided with a drawer, C, substantially as and for the purpose specified.

101,910. — Extension Traveling-Bag.—Julia W. D. Patten, Washington, D. C.

Claim.—An extension traveling-bag, with one section arranged to slide over another, the sections being adjusted in relation to each other by means of straps or equivalents, and operating within the bag, substantially as shown and described.

101,911. — Base-burning Hot-air Furnace.—John G. Porter, New York, N. Y.

Claim.—1. The drop-flues D D of graduated size, in combination with the fire-chamber A, annular bottom flue E, and smoke-pipe F, substantially as and for the purpose herein described.

2. The perforated annular air-distributer, arranged around the annular smoke-flue E, in combination with the casing G, flues D D, fire-chamber A, and smoke-pipe F, substantially as and for the purpose herein set forth.

101,912.—Whip.—Addison C. Rand, Westfield, Mass.

Claim.—A whip or whip-stock having an inner metal core encompassed by a series of stripe, which are surrounded by the wrapper, substantially as shown and described.

101,913.—Whip.—Addison C. Rand, Westfield, Mass.

Claim.—A whip having a handle A, through which runs an elastic metal wire or core *a*, and a tip B, which is formed of or cored with whalebone or other suitable non-metallic material.

Also, a coupling having at each end a socket to which the adjacent end of the handle or tip is secured, and between these ends a solid screw-spindled connector *b*, having a central nut-threaded bore into which the end of the wire core screws.

101,914.—Whip.—Addison C. Rand, Westfield, Mass.

Claim.—A stock for a whip, composed of two or more strips of metal, any two or more of which are wound spirally one within another in opposite directions, either with or without an inclosed stay-rod or core.

Also, a whip, having combined with its outer wrapper or covering the crossing metal strips, substantially as described.

101,915.—Whip.—Addison C. Rand, Westfield, Mass.

Claim.—A whip, having a metallic core, when such core has coiled or braided around it a strand or thread, or a wire or ribbon, interposed between the core-enveloping strips and the surface of the core, substantially as shown and described.

101,916.—Reservoir for Cooking-Stoves.—Albion Ransom, Albany, N. Y.

Claim.—1. A compound hot-water tank or reservoir, constructed in the manner and for the purposes above set forth and described.

2. The aforesaid described process or mode of constructing hot-water tanks and other similar vessels, consisting of making the outer case of iron, sheet, wrought, or cast, and the inner lining of sheet-tin, tinned on one or both sides, or other suitable sheet metal, as above described, closely fitted together and painted or coated between adjoining surfaces, substantially as described.

101,917.—Grinding-Mill.—Charles Henry Roberts, Evansville, Ind.

Claim.—1. The combination of a bur revolving in fixed bearings, an adjustable case inclosing the bur, and a concave secured to the case, all substantially as described.

2. The case H, containing a concave, I, and adjustable on a frame, B, substantially as described.

3. The combination of the adjustable case H and a concave consisting of plain and serrated plates, arranged as set forth.

101,918.—Elevated and Suspended Gardens. — Frederick O. Rogers, Boston, Mass.

Claim.—1. An elevated or suspended garden for growing plants or other vegetation, consisting of a receptacle formed with a bottom coating of bituminous cement, in combination with metal-lined sides, substantially as and for the purpose set forth.

2. A series of receptacles, A A, so constructed, arranged one below another, and suspended from a support above, either separately or together, or part suspended and part supported from below, substantially as herein set forth.

3. A flower-stand or garden-pyramid formed of a series of receptacles, one supported upon another by an independent central standard, B, and pivot *c*, so that each may revolve independently of the other, substantially as set forth.

4. In combination with the elevated receptacles for plants, of the form and materials described, or of other suitable form and materials, the system of drainage, consisting of the regulating-apertures *h h*, arranged at different altitudes in the side of the receptacles, operating substantially as and for the purposes set forth.

5. In combination with the elevated receptacles A A the clock L, for automatically revolving the same, substantially as set forth.

101,919. — ARTIFICIAL HORIZON FOR SEXTANTS, &c.—Joseph A. Rogers, New Haven, Conn.

Claim.—1. The float M, having a sight-vane or its equivalent attached, the whole being so suspended in a transparent liquid inclosed in a suitable case, that the buoyancy of the float tends to bring the sight-vane to rest in some fixed and definite position with reference to the horizon, substantially as and for the purpose described.

2. The construction of the case for containing the transparent liquid and float of an artificial horizon, the same consisting of the intersecting cylinders A and C D, provided with the lens O and transparent plate E, substantially in the manner herein shown and described.

3. The spring Q, in combination with the float M and sight-vane N, arranged to operate substantially as and for the purpose set forth.

101,920.—LIFTING-JACK.—Josiah Rosecrans, Berkshire, Ohio, assignor to Adelia R. Swartz, Carlisle, Pa.

Claim.—The adjustable base, for lengthening the jack C, which is provided with the lever A by means of the unequal arms of the base D and E, substantially as herein shown and described.

101,921.—POTATO-DIGGER. — Enoch Ross, Washington, Iowa.

Claim.—In combination with the fork A and riddle S, the cross-bar *s* and lever Z, connected to the end of the handle, and braced by the rod *t*, all constructed and arranged to operate in the manner and for the purposes herein shown and described.

101,922. — CLOTHES-WRINGER. — John G. Roth, New York, N. Y.

Claim.—1. The hand lever G, provided with an eccentric head, *a*, in combination with a ratchet L, and cross-piece H, or their equivalents, when constructed substantially as herein described, for the purpose of adjusting the upper roller, as set forth.

2. The rollers I and J when constructed in sections, each section consisting of a metallic hub with a rubber covering, and arranged upon a shaft so as to be interchanged or removed, as desired, substantially as and for the purpose set forth.

3. The journals M with the gear-wheels N and O, when constructed as herein described, so as to be attached to and removed from the shafts of the rollers, substantially as and for the purpose set forth.

4. In combination with the rollers of a clothes-wringer, the gear-wheels N and O, when constructed and arranged to operate in the manner substantially as herein described.

5. The detachable drip-board *l*, in combination with the end pieces B C of the frame, said pieces being provided with the grooves B, inclined in opposite directions, substantially as and for the purpose set forth.

101,923. — WATER-HEATING ATTACHMENT FOR STOVE-PIPES. — Nathaniel Rowe, Emmittsburg, Md.

Claim.—The combination and arrangement of the stove-pipe section A, constructed with a water-space, B, and circulating-pipes B', the pipes C and C' and the water reservoir C², substantially as set forth.

101,924.—CASTER FOR SEWING-MACHINES. Benjamin F. Ryder, New York, N. Y., assignor to Sargent & Co., New Haven, Conn.

Claim.—As an article of manufacture, the herein-described caster, consisting of the yoke A, with arms B B, to support the wheel C, and provided with the clamping-bar D, the whole constructed so as to be applied in the manner described, and with or without the flange *d*.

101,925. — WELL-BORER. — Thomas Sandbach and Joseph William Fowler, South Bend, Ind.

Claim.—The combination of the auger A with the tube B and additional or outer tube C, geared or connected and disconnected, when required for operation, in relation to each other, substantially as and for the purpose specified.

101,926. — FEED-OPERATING MECHANISM FOR SEWING-MACHINES. — Nowell F. Sawyer, Haverhill, Mass.

Claim.—The shaft *j*, with its arms *f*, *g*, and *k*, arranged as described, so as to be operated by movement of an incline on the connecting-rod *c*, to impart the forward feeding motion to the feeder *n*, leaving the spring *r* free at the proper time to produce the reverse movement of the feeder.

101,927.—COUPLING FOR HOSE AND PIPES. Frederick Shaller, Hudson, N. Y.

Claim.—1. The combination of the bars B B', tightening-screw C, and nut *f*, substantially as and for the purpose herein described.

2. The tightening-screw D, bridge *g*, brace *h*, checks *e e*, and strip *j*, in combination with the bars B B', tightening-screw C, and nut *f*, substantially as and for the purpose herein set forth.

101,928. — GAS-HEATER. — James Sheedy, New York, N. Y.

Claim.—The combination and arrangement of the perforated conical distributer E and disk or spreader F within the upper portion A of the body of the heater, and relatively to the burner or socket D, by which the heater is supported on the burner, substantially as specified.

101,929.—METALLIC CAN-COVER. — Henry W. Shepard, Mannsville, N. Y.

Claim.—As a new article of manufacture, the milk-can cover B B', when the same is constructed of one piece of metal and with a suitable opening for ventilating-tube, substantially as described, as and for the purpose specified.

101,930.—CUTTER-BAR FOR HARVESTERS.—E. G. Shortt and C. Oberly, Carthage, assignors to themselves and E. B. Sims, Antwerp, N. Y.

Claim.—1. The connecting-edges of each knife of a cutter-bar, provided on the one side with a V-shaped tongue and on the other with a V-shaped groove, as and for the purpose set forth.

2. The combination of a grooved bar, C, with the knives A A, which have a lip to fit in the groove in said bar, substantially as and for the purpose set forth.

3. The combination of the grooved bar C with the knives as constructed, and with a nut for confining and tightening said knives upon the shaft, substantially as herein set forth.

101,931.—LEATHER-CUTTING PRESS.—N. J Simonds, Woburn, Mass.

Claim.—1. The swinging or vibrating cutting-block F, whereby the cutting-die E is uncovered as the block recedes therefrom, substantially as and for the purposes specified.

2. The arrangement of the vertical moving section D, the vertical and vibratory section E, arms M N, guide O or its equivalent, all arranged to operate substantially in manner as and for the purposes specified.

3. The let-off spring *i*, or its equivalent, in combination with the pivoted arms M N and the vibratory section E, substantially in manner as described and shown.

4. The revolving cutting-block P, in combination with the cutting-press, substantially as and for the purposes specified.

5. The combination and arrangement of gear-wheel *b'*, worm *d'*, ratchet *e'*, and pawl *f'*, whereby the relative changing of position of arms M N and shaft E shall impart a rotary motion to cutting-block P, substantially in manner and for the purposes specified.

6. The process of cutting and compressing in the cutting-die the already-pasted stock, substantially in manner as and for the purposes specified.

7. In combination with the cutting-die, the plate *k'*, rod *l'*, stop *n'*, toothed hub *o'*, gear-wheel *p'*, and pawl *s'*, weighted lever *u'*, and stop *m'*, to hold the rod *l'* as it descends, and checks the same when the desired amount of stock is cut into the die, and eject the same, substantially in manner as and for the purposes specified.

8. In combination with the cutting-die, the bars U, provided with lateral adjustment, and the die-seats, substantially as described and shown.

9. The combination of pulley F, clutch G, lever J, with the uprights *l m*, actuated by treadle H, and weight, *n* or their equivalents, for imparting motion to the press and arresting the same, substantially in manner and for the purposes specified.

101,932.—PAPER COLLAR.—David Francis Smith, Sullivan, N. H.

Claim.—A paper collar, constructed of two equal parts or halves, each provided with overlapping ends and button-holes, in the manner substantially as herein shown and described, and for the purpose set forth.

101,933. — LUBRICATING AXLE-BOXES. — Thomas S. Speakman, Camden, N. J.

Claim.—The lubricating-vessel D, provided with flange *c*, screw-neck *d*, and opening *e*, in combination with the screw-opening *b* in the under half B of the axle-box, when used substantially as and for the purpose set forth.

101,934.—CHILD'S BODY-BRACE AND SUPPORTER.—Linda Spigelmyer, Hartleton, Pa.

Claim.—As a new article of manufacture, the child's body-brace and drawers and skirt-supporters, the same consisting of back A, gore B, elastic bands C, lacer D, sleeves E, skirt-supporter F, drawers-supporters I, and front portion H, combined and operating substantially as and for the purpose described.

101,935.—TREATING FATTY MATTER FOR THE MANUFACTURE OF CANDLES.—Antoine Radisson St. Cyr, Lyons, France.

Claim.—1. Making use of a comparatively small excess of alkali for transforming the fatty matters to be operated on into a semi-fluid soap containing an excess of alkali.

2. The gradual regular heating to about 65° Fahrenheit, and suitable stirring of the said soap, in vessels which allow of effectually excluding the atmospheric air from them during the heating, stirring, and cooling of the soap, and the transformation of the latter into a light porous mass from which the solid fatty acids may be separated, in the manner described.

3. The perfect exclusion of the air from the interior of the vessels containing the above-mentioned semi-fluid soap during the heating, stirring, and cooling of the latter.

101,936.—CHURN.—Thomas B. Stephens, Washington, Iowa.

Claim.—The arrangement of the horizontal shaft with beveled wheels and vertical or perpendicular shafts, with pinions and long perforated dashers, when such shafts and their parts are arranged with the divided lid or cover, as herein recited.

101,937.—SPRING-VISE FOR GUN-LOCKS.—John Stokes, Springfield, Mass., and Thomas Bennett, Hartford, Conn.

Claim.—1. The slotted bar A having the projection D thereon, in combination with the slotted bar H, having the hooked projections *n* and *n'* thereon, the same being operated by means of the screw L, and constructed substantially as described.

2. In a device for setting mainsprings in gun-frames, the slotted bar H having the hooks *c* and *c'* upon the projection *n* and *n'*, by means of which the device may be used for setting either right or left-hand springs, substantially as described.

101,938.—SAW-FILING MACHINE. — R. H. Strong, Galesburg, Ill., assignor to himself, J. F. Boyd, and E. F. Greene, same place.

Claim.—1. The combination and arrangement of the jaws A A, clamps B B, hand-wheel D, pinion E, and rack *e*, with the plates G and F, slotted as described, bolts *g*, hinges H and bolts I, substantially as described and for the purpose set forth.

2. The combination of the file-holder K, blocks J, gibs M, spiral spring P, thumb-screw N, bolts *h h'*, and bar *o*, substantially as described, and for the purpose set forth.

3. The arrangement of the plates F and G, and bolts *g*, as and for the purpose described.

101,939.—SEED-PLANTER AND CULTIVATOR. William D. Stroud, Oshkosh, Wis.

Claim.—1. The combination of the receiver B, cylinder *f* provided with the valve *h*, brush *j*, seed-conductor *i*, marker and coverer D, rods *x*, belt *c'*, supporting and driving-wheel E, cross-bar *u*, conical pulley F, and frame A, substantially as and for the purpose hereinbefore specified.

2. The combination of the indicator *k* with the cylinder *f*, provided with the valve *h*, substantially as and for the purposes hereinbefore specified.

3. The combination of the seed-conductor *t*, marker and coverer D, rods *x*, supporting and driving-wheel E, cross-bar *u*, and frame A, with the receiver C, gauge *v*, cylinder *q* provided with the plate *o'* and brushes *s*, belt *d'*, fast pulley H, and loose pulley G, substantially as and for the purposes hereinbefore specified.

101,940.—REGULATING POWER CONVEYED BY FRICTION-SURFACES.—Benjamin Tatham, New York, N. Y.

Claim.—The means, substantially as herein set forth, of regulating and transmitting the power conveyed by friction-surfaces.

101,941.—SUSPENSORY BANDAGES. — John L. Taylor, New York, N. Y.

Claim.—The bag *a*, having the head-piece *b*, that is connected removably to the band *e*, in combination with the ring or eye *l*, that is removably connected to the bag *a*, near the middle, at the bottom, and through which the strap *k* passes, as and for the purposes specified.

101,942. — METHOD OF MANUFACTURING CIRCULAR SAWS.—Thomas Taylor, Philadelphia, Pa., assignor to Henry Disston and Son.

Claim.—1. As an improvement in the manufacture of segmental plates for circular saws, the method hereinbefore described.

2. The segmental tapering plates or blanks, (from which to form segments of circular saws,) having unground rolled surfaces, as specified.

101,943, antedated April 1, 1870.—LADDER. John A. Thompson, Auburn, N. Y.

Claim.—1. In a round or step-ladder, the angle

bars or rails, whether made of wood or metal, when arranged for the reception and support of the round or step, as and for the purposes set forth.

2. In combination with the described bars and the rounds or steps, the metallic lock rests, when constructed as and for the purposes set forth.

3. The described round and step-ladder, composed of the angle bars A, rounds H' H', or steps H H with the described lock rests, all constructed and arranged as and for the purposes set forth.

4. The peculiar construction of the steps H H from a simple plank, when arranged with the thick edges on the front side, for the purposes set forth.

5. The described ladders, composed of the side bars A, steps H, lock rests L, hinged braces with their adjustable cross-connections C C, and double-acting hinges M, all arranged and operating as and for the purposes set forth.

101,944. — FRUIT-JAR. — William Sinclair Thompson, Rochester, N. Y.

Claim.—1. The combination of the clamp C and flat spring D, united through the medium of the slots *h i* and bearings *k l*, in the manner and for the purpose specified.

2. The clamp, provided with the guards *b*, forming a cavity, *c*, for the purpose of supporting the spring and preventing a lateral movement of the same, substantially as set forth.

101,945.—DEVICE FOR TENONING SPOKES.—C. W. Thompkins, Assyria, Mich.

Claim.—The combination of the block C, ears D D, set-screws *a b*, auger E *d e*, crank G, lever I, and strap J, all constructed and arranged as described, to operate substantially in the manner and for the purposes herein set forth.

101,946.—MACHINE FOR SCOURING GRAIN, &c.—B. T. Trimmer, Rochester, N. Y.

Claim.—1. The teeth-rims *g g*, made in corrugated or zigzag form, and combined with the beaters G and beds H, in such a manner as to produce a rubbing or scouring action, auxiliary to that produced by the indirect passage of the grain over and through the teeth, as herein described.

2. In combination with the beaters and beds, either or both, provided with the projecting teeth-rims *g g*, the intermediate coating of emery or equivalent material, operating in the manner and for the purpose specified.

3. The combination and arrangement of the steel brushes *p p* on fan L, vertical brushes *k k* and beaters G, substantially as and for the purpose set forth.

4. The arrangement on the spindle C of the fan I above the beaters and beds, fan L below the same, and fan N below the casing A B, substantially as and for the purposes specified.

5. The combination of the inner perforated cylinder E, made in sections, with the beaters and beds G H, as described.

6. The arrangement, in the grain-scourer herein described, of the inclined beaters and beds G H, the perforated cylinders B E, the brushes *k p*, and the fans I L N, substantially as herein set forth.

101,947.—COTTON-SEED PLANTER.—Joseph Trump, Springfield, Ohio.

Claim.—1. The revolving barrel-shaped hoppers H H' A A', fitted with bars or projection M, as and for the purpose described.

2. The stationary diaphragm C and revolving picker J, operated as described and for the purpose set forth.

3. The revolving case I I', constructed and operating substantially in the manner and for the purpose set forth.

4. The covering-share Q Q' and R R', in the described combination with shaft G.

5. The slide N, operated as described, in combination with the revolving picker *J*.

101,948.—WHEEL FOR VEHICLES.—Ferrand G. Wallace, Syracuse, N. Y.

Claim.—A metal socket or *ferrule*, *R*, having a point or projection, D, and nut M, when combined with a wedge-shaped block, M, inserted between the joint or joints or other parts of the felloe, for the purpose of lengthening the spokes, and at the same time tightening the tires of carriage-wheels, substantially as shown and described.

101,949.—HAND CORN-SHELLER.—Theophilus Weaver, Harrisburg, Pa.

Claim.—1. The major and minor frames, when they are provided with shanks W W', spring receptacles A' B', stay receptacles L L', ledges or standards Q B', respectively, and adapted to be applied to each other, substantially in the manner as and for the purpose hereinbefore set forth.

2. Providing major frame with arch A, spanning the straight sides F, and forming plunger-head M curved, that arch and head may conjointly shield the hand of the operator, and arrest detached grains, in the manner herein set forth.

3. The studs, when solidly attached to arch A and plunger-head M, by the shanks *a b c d e*, and when furnished with the shelling-barbs 1 2 3 4 5, and the winding shears *m*, all constructed and arranged in the manner as and for the purpose set forth.

4. The combination of plunger M with the major and minor frames, when its stem P is inserted in the cavity of the hollow two-part shanks W W' in the handle, in the manner set forth.

5. The combination of shanks W W' with handle E T, by means of screw or pin X, in the manner herein set forth.

101,950.—GRAIN-SCOURER.—Valentin Weismantel, Belleville, Ill.

Claim.—The conical drum *a* and shell *b*, constructed substantially as described, in combination with the lever K, screw L, and step *m*, arranged substantially as set forth, for the purpose of regulating the amount of space between the drum *a* and shell *b*, as specified.

101,951. — RAILWAY-SWITCHES. — William Wharton, Jr., Philadelphia, Pa.

Claim.—1. The combination with the rail A of the switch-rail D', forming a continuation of the rail B of the siding, and restricted in its movement toward the said rail A, as set forth.

2. The combination of the subject-matter of the first claim with a guide-rail, G.

101,952. — DIE FOR FORMING CARRIAGE-SHACKLES,—Le Roy S. White, Plantsville, Conn.

Claim.—The dies A and D D, arranged with proper griping mechanism, and constructed with rounded corners at the point for forming the inside corners of the ears and body of the shackle, all substantially as and for the purpose described.

101,953, antedated February 15, 1870.—INKSTAND. — Charles H. Wight, Baltimore, Md.

Claim.—1. The passage H, constructed substantially as described, in combination with case B, fountain C, and movable mouth-piece.

2. The plunger E, provided with spring *h* and valve *f*, seated from below, arranged in combination with fountain C, substantially as and for the purpose set forth.

3. The double-acting cover J, operated by means of the rod *m*, collars *n o*, spring *i*, and tube *k*, on the case B, substantially in the manner and for the purposes herein set forth.

101,954.—LUBRICATOR.—Joseph H. Wilkinson, South New Market, N. H.

Claim.—The combination of the valve or device for regulating the discharge of the oil, with a system of levers, or the mechanical equivalent of the same, connected with said valve and operated as herein described during the movement of the oil-cup, to allow the intermittent escape or discharge of oil from the reservoir, as shown and set forth

2. The combination, with the oil-reservoir, of an indicator constructed as herein described, for determining the quantity of oil in the cup.

3. The construction of the cover of the oil-cup or reservoir, in the manner shown and specified.

4. An oiling or lubricating device for movable bearings, composed of the cistern *a*, with its outlet-port *b*, the valve *f* and lever *g*, pivoted together as explained, in combination with the bracket A' or its equivalent, the whole being arranged and operating substantially as hereinbefore explained.

5. The arrangement of the valve-stem and its bearing *k*, whereby the height of the valve may be varied to compensate for injury to the lever *g*, or other actuary of such valve.

101,955.—WOOD PAVEMENT. — Joseph H. Wilkinson, Concord, N. H.

Claim.—The series of longitudinal keys, each formed with a tongue extending to or nearly to the surface of the blocks, shoulders to support the blocks and tapering from the shoulders to the base, in combination with blocks formed to fit said keys, as herein described, the keys being supported upon the sleepers or other substructure, as set forth.

101,956.— BARREL. — Henderson Willard, Grand Rapids, Mich.

Claim.—A barrel or similar package, when constructed of one single spiral stave of wood, metal, or other suitable material, substantially in the manner herein described.

101,957. — CHAIR. — Henderson Willard, Grand Rapids, Mich.

Claim.—1. A chair cut from a complete cylinder of wood, substantially in the manner herein described.

2. A spring seat, consisting of a spirally-coiled strip of wood, substantially as described.

101,958. — FASTENING FOR FRUIT-JARS.—Theodore F. Woodward, Winslow, N. J., assignor to Hay & Co., Philadelphia, Pa.

Claim.—The combination and arrangment of the jar A, cover B, having a recess, *c*, provided with a spring, F, the clamp C, screw D, and packing-ring E, substantially as and for the purpose above set forth.

101,959. — ADJUSTABLE CARRIAGE-SEAT.—Alexander Wright, Wilmington, Del.

Claim.—The use of the ways *b b*, substantially as and for the purposes hereinbefore set forth.

2. The hinged seat-supporters *d d*, substantially as and for the purposes hereinbefore mentioned.

3. The sliding rods *c c*, substantially as and for the purposes hereinbefore mentioned.

4. The front seat, with its hinged supports and hooks *e e*, in combination with the sliding rods *c c*, substantially as and for the purposes hereinbefore specified.

5. The combination, with the seats and hinged supporters *d d*, of the sliding rods *c c*, ways *b b*, catches *g g*, and stays *f f*, substantially as and for the purposes hereinbefore set forth.

101,960.—PUMP.—Robert L. Wright, West Nantmeal, Pa.

Claim.—A pump, consisting of the cylinder B, pipes C and E, the latter having jet F and cap *f*, and also being so arranged that the stream can be caused to issue either in an upright or horizontal direction, plunger I, washer-valves D D, and lever K, the whole being so arranged as to operate substantially as described, as and for the purpose set forth.

101,961.—LAMP. — Joseph Bell Alexander, Washington, D. C.

Claim.—The tube C, as arranged in a removable or stationary fount of a lamp, A, in combination with the lower orifice D, the air-hole E, valve M, spring L, hinged cover H, cam N, elbow-joint K, rod G, spring S, valve T, and spring bolt Y, and these in combination with the bowl B, tube R, pipe P, and burner-cup O of a lamp, substantially as described and for the purpose set forth.

Also, the tube C and air-vent E, as arranged in a removable or stationary fount of a lamp, A, in combination with the lower orifice D, rod G, hinged cover H, spring S, spring S', valve T, and spring bolt Y, or its equivalent, and these in combination with the bowl B, tube R, pipe P, and burner-cup O of a lamp, substantially as described and for the purpose set forth.

Also, the combination of the fount, shown in fig. 5, with the tube *k*, pipe *l*, and chandelier, as shown in fig. 6, substantially as described and for the purpose set forth.

Also, the prevention of the overflow of oil or liquid in the burner-cup O when the lamp is tilted or inclined, as in figs. 7 and 10, by so arranging the receiving-orifice of the duct leading to the burner-cup O that it will stand below, but near the surface of the liquid in the bowl B, when the lamp stands horizontally, and immediately rise above the surface of the liquid when the lamp is inclined, substantially as described.

Also, the tube R, in combination with the bowl B, pipe P, and burner-cup O, and these with any automatic reservoir-fount, substantially as described and for the purpose set forth.

Also, the narrow chambers *j j* and holes *i i*, in combination with the bowl B, pipe P, and burner-cup O, and these with any automatic reservoir-fount, substantially as described and for the purpose set forth.

Also, the peg Q, in combination with the bowl B, pipe P, and burner-cup O, substantially as described and for the purpose set forth.

Also, any automatic reservoir-fount, in combination with the spirally-grooved rod *t*, nut *v*, set-screw *w*, pedestal *z*, and case *u*, substantially as described and for the purpose set forth.

101,962.—COTTON-THINNING MACHINE.—E. M. Greeson, Americus, Ga.

Claim.—The arrangement of the frames A B and D, adjustable wheel E, and the cutters C, all substantially as specified.

101,963. — CONVERTING CAST-IRON INTO STEEL.—William Harris and Adam Woolover, Allentown, Pa.

Claim.—The process of manufacture, substantially as and for the purpose set forth.

101,964.—BURNING PETROLEUM AND OTHER HYDROCARBON OILS.—Lucius E. Truesdell, Warren, Mass.

Claim.—1. The combination of a water-chamber, *e*, with the oil-chamber *f* in the fire-pot D, for the purposes set forth.

2. The air-conduits or flues *g*, or their equivalents, in combination with the water-chamber *e* and oil-chamber *f*, for the purpose set forth.

3. The fire-cover or covers H, in combination with the fire-pot and air-conduits *g*, whether used in connection with or without a fan-blower or force-blast, for the purposes described.

4. The arrangement of an air-conduit, *d*, in the fire-cover or covers, having a series of openings for projecting air upon the flame, as described.

5. The combination of a water-reservoir, N, and an oil-reservoir, M, and their respective pipes, *m*, *n*, and *o*, with the water-chamber *e* and oil-chamber *f* of the fire-pot, as described, for the purpose set forth.

6. The arrangement of the drip-pan *a* and pipe *b* in connection with the oil-chamber *f*, for the purpose specified.

101,965, granted for 25 years, 10 months, and 4 days from June 8, 1861.—FURNACE. Joseph R. Morris, Houston, Texas.

Claim.—The arrangement of the channels D, of iron or some other suitable material, in combination with the water-space *e* surrounding the fur-

nace A, and communicating with the same through openings *g*, the whole being constructed and operating substantially as and for the purpose described.

101,966.—Beer-Faucet.—Felix Maaz, Allegheny City, Pa,

Claim.—The combination of the valve C with the perforation H, and side opening I, in connection with plunger D, caused to manipulate by the slots G and F, so as to force the beer through the perforation H when the valve is being turned off, and produce a creamy surface when tapped in a vessel, substantially as and for the purpose herein specified.

REISSUES.

3,910.—Railroad-Car Ventilator.—Henry D. Carroll, Robert Hitchcock, and John H. Hare, of Springfield, Mass., assignees of Robert Hitchcock.—Patent No. 67,877, dated August 20, 1867.

Claim.—Forming in a car-ventilator two currents, one current being turned upward before entering the car, and the other passing outward, in the manner and for the means herein described and explained.

3,911.—Machine for Making Needles.—C. O. Crosby, of New Haven, Conn.—Patent No. 51,150, dated November 28, 1865.

Claim.—1. The combination of the series of dies for forming the eye and head of the needle, the said dies being constructed and arranged in the order relative to one another, substantially as described, with a series of devices for holding the blanks, and with mechanism to intermittingly transport the said holding devices and blanks to the several dies of the series, substantially as described.

2. The combination of the series of intermittingly transporting blank-holding devices set forth in the next preceding clause of claim, with the second series of intermittingly-transporting blank-holding devices and mechanism for transferring the blanks from the holders of the first series to those of the second series, substantially as described.

3. The combination of the two series of intermittingly-transporting blank-holding devices, mechanism to transfer the blanks from the holding devices of one series to those of the other series, and the grinding or milling devices, substantially as described.

4. The combination of the feeding device D with the carrier H, constructed to receive the wires, substantially as described, and having an intermittent progressive movement, as and for the purpose specified.

5. The carrier H, having an intermittent progressive movement, in combination with flattening-dies A^1, substantially as and for the purpose specified.

6. The carrier H, having an intermittent progressive movement, in combination with grooving-dies A^2, substantially as and for the purpose specified.

7. The carrier H, having an intermittent progressive movement, in combination with countersinking-dies A^3, substantially as and for the purpose specified.

8. The carrier H, having an intermittent progressive movement, in combination with eye-punching dies A^4, substantially as and for the purpose specified.

9. The carrier H, having an intermittent progressive movement, in combination with trimming-dies A^5, substantially as and for the purpose specified.

10. The carrier H, having an intermittent progressive movement, in combination with flattening and grooving-dies A^1 and A^2, substantially as and for the purpose specified.

11. The carrier H, having an intermittent progressive movement, in combination with flattening, grooving, and countersinking-dies A^1, A^2, and A^3, substantially as and for the purpose specified.

12. The carrier H, having an intermittent progressive movement, in combination with flattening, grooving, countersinking, and eye-punching dies A^1, A^2, A^3, and A^4, substantially as and for the purpose specified.

13. The carrier H, having an intermittent progressive movement, in combination with flattening, grooving, countersinking, eye-punching, and trimming-dies A^1 A^2 A^3 A^4 A^5, substantially as and for the purpose specified.

14. The carrier H, having an intermittent progressive movement, in combination with grooving, countersinking, eye-punching, and trimming-dies A^2 A^3 A^4 A^5, substantially as and for the purpose specified.

15. The carrier H, having an intermittent progressive movement, in combination with countersinking, eye-punching, and trimming-dies A^3 A^4 A^5, substantially as and for the purpose specified.

16. The carrier H, having an intermittent progressive movement, in combination with eye-punching and trimming-dies A^4 and A^5, substantially as and for the purpose specified.

17. The carrier H, having an intermittent progressive movement, in combination with one or more finishing-mills, as well as buffs or burnishing-mills, or their equivalents, as and for the purpose specified.

18. The carrier H, having an intermittent progressive movement, in combination with a carrier, H^1, provided with revolving spindles P^1, and having an intermittent progressive movement, substantially as and for the purpose specified.

19. The combination of the cone P^2, or its equivalent, with the spindles P^1, substantially as and for the purpose specified.

20. The combination of the cone P^2 with the carrier H^1, provided with revolving spindles, and having an intermittent progressive movement, substantially as and for the purpose specified.

21. The direct combination of the revolving spindles P^1 with one or more intermittent hammers T^2, and one or more grinding, filing, polishing, or burnishing-wheels, arranged substantially as and for the purpose specified.

3,912.—Straw-Cutter.—Warren Gale, of Peekskill, N. Y., and B. B. Belcher, of Chicopee Falls, Mass., assignees of Warren Gale.—Patent No. 31,001, dated December 18, 1860; reissue 1,977, dated May 30, 1865; reissue 2,127, dated December 19, 1865.

Claim.—1. The bent metal chopping-handle F B, constructed substantially as described, with the moving knife attached to the part B, in combination with the metal mouth-piece with stationary blade *a a* attached, and also provided with an extension at one end to serve as the carrier of the handle, substantially as described.

2. The step C, in combination with a chopping-handle of a lever feed-cutter, and so arranged as to allow of angular adjustment of the moving knife, substantially as described.

3. The step C, so constructed as to allow of the angular adjustment of the moving knife when said step is connected to the mouth-piece A or stationary blade, substantially as described.

4. The combination of the bent chopping-handle F B, mouth-piece A, or stationary blade *a a*, and horizontal step C, all combined and arranged substantially as described.

5. The combination of the step C and the flanged pivot D, so arranged and operated as to allow of the angular adjustment of the moving knife, substantially as described.

3,913.—Seeding-Machine.—Frederick H. Manny, of Rockford, Ill., assignee of William Workman.—Patent No. 28,934, dated June 26, 1860.

Claim.—1. The combination in a seed-wheel of cups or cells and outwardly-inclined discharging edges, when the cups or cells are arranged in or near the periphery, and the inclined edges are used on one or both sides, substantially as described.

2. The combination of the principal seed-box C and supplemental seed-boxes F, the latter being provided with the inclined planes *b b* and wheels H, and fixed in the trough D, having the inclined bottom or scattering board E, as described, for the purpose set forth.

3,914.—Trace-Holder.—O. B. North & Co., of New Haven, Conn., assignees of Stephen Stout.—Patent No. 78,154, dated May 19, 1868.

Claim.—The ring or strap-connection B, having formed therein or made a part of the same a rein-guard and hook-attachment for securing the traces, substantially as and for the purpose specified.

3,915.—Sash-Fastener.—The Judd Manufacturing Company, of New Haven, Conn., assignees of Morton Judd.—Patent No. 39,052, dated June 30, 1863.

Claim.—1. The lever *c* and projection 3, in combination with the plate *a* and flange *b*, substantially as specified.

2. The hollow hub 2 and helical friction-spring 4, operating longitudinally of the axis, in combination with the sash-fastener lever *c* and plate *a*, substantially as and for the purposes specified.

3,916.—Felting-Machine.—John T. Waring, of Yonkers, N. Y., assignee of Rudolf Eickemeyer.—Patent No. 87,763, dated March 16, 1869.

Claim.—1. In combination with the felting-surfaces which grasp the cloth between them in the operation of felting, the weighted levers, substantially as described, whereby a determinate but yielding pressure may be applied with great force through the felting-surfaces to the fabric, without incumbering the jigger-motion with a heavily-weighted jigger.

2. In combination with felting-surfaces whose grasp upon the felt cloth is automatically released at regular intervals, an automatic mechanism to advance the felt cloth when the felting-surfaces are released, substantially as described.

3. In combination with felting-surfaces whose grasp upon the felt cloth is released automatically at regular intervals, automatic mechanism for advancing the felt cloth, when regulated with respect to the width of the jigger-plate so as to advance the felt but a short distance at a time as compared with the width of the jigger-plate, substantially as described, whereby all parts of the felt are acted upon equally by all parts of the felting-surfaces.

4. In a felting-machine for felting cloths, the combination of a jigger-plate with a platen in whose surface lines, figures, or other patterns are cut, engraved, or otherwise formed, substantially as described, whereby the felt may be finished with lines, figures, or patterns, continuous or otherwise, felted in its surface during the operation of felting.

5. The cylindrical platen or felting-cylinder with scored or roughened surface, in combination with the concave jigger-plate, substantially as described, whereby the felt may be advanced when released from the action of the jigger without separating it from the cylinder, thus insuring accurate patterns.

6. The carrying-cloth, in combination with the concave jiggering-apparatus and felting-cylinder, substantially as described.

3,917.—Street-Sprinkler.—Lorey F. Bancroft, of Worcester, Mass., and Andrew B. Yetter, of New York, N. Y., assignees of L. F. Bancroft.—Patent No. 53,557, dated April 3, 1866.

Claim.—1. The cylindrical or partly-cylindrical tank, secured by adjustable clamps or bands, and provided with apparatus for discharging jets of water, and mounted upon a carriage for use in sprinkling streets, substantially as described.

2. The turret G upon the tank, as arranged with relation to the valve and to the sprinkling apparatus, substantially as described, and for the purposes set forth.

3,918.—Wrench.—Loring Coes, of Worcester, Mass., assignee of George C. Taft.—Patent No. 66,220, dated March 26, 1869.

Claim.—The hammer-jaw shank made substantially as described, viz: with the part B wider than the part C or remainder of the shank, as set forth.

Also, the movable jaw and its carrier as made or combined with the side lips *f f* to project therefrom beyond the bearings or parts to rest against the rear face of the part B of the shank, the whole being as and for the purpose substantially as specified.

Also, the head A recessed as described, when cast in one piece with the shank.

Also, the movable jaw D and its carrier D^2, recessed or chambered as described, when cast in one piece.

Also, the combination and arrangement of the holding-pin *a* with the armed ferrule, the shank or bar, the operative screw, the hammer-jaw, and the movable jawed carrier, the whole being substantially as set forth.

3,919.—Railway-Car Wheel.—Gustavus Natorp, of New York, N. Y.—Patent No. 83,722, dated November 3, 1868.

Claim.—Connecting the blocks of wood, which are interposed between the body of the wheel and the rim or tire, by fitting the blocks to a dovetail groove in the outer periphery of the body of the wheel, substantially as described.

Also, in combination with the body and wooden blocks so connected, the employment of a metallic rim interlocked with or retained on the wooden packing without any separate retaining-bands, substantially as set forth.

3,920.—Converting Iron into Steel.—The Barron's Patent-Steel Manufacturing Company, of New York, N. Y., assignees of Thomas J. Barron.—Patent No. 60,823, dated January 1, 1867.

Claim.—1. The conversion of decarbonized or partially decarbonized iron partly or wholly into steel, after the metal shall have been formed into any desired form or shape, by the application of gases introduced or generated in a retort or other medium, in which the said metal is heated, substantially as described.

2. The method herein described of converting wholly or partially decarbonized iron into steel to a greater or lesser depth, by subjecting the said iron while hot to the action of carbureted hydrogen and nitrogen, or cyanogen gas, or of carbureted hydrogen, nitrogen, and carbonic-oxide gas, and either with or without ammoniacal or chlorine gases.

3. The use, in combination with the process of converting iron into steel by the application of such gases, of chlorine gas, preliminary to such process, for the purpose and in cases as set forth.

4. Protecting the metal, after it has been steeled or converted into steel, and when the same is to be hardened, while being transferred to the hardening-bath, from contact with the atmosphere, for the purposes set forth.

DESIGNS.

3,963.—Adjustable Counting-House Calendar.—Samuel Sage Coe, Cleveland, Ohio.

Claim.—The herein-described form and configuration, as a design, for the advertising perpetual calendar specified.

3,964.—Knitted Fabric.—Thomas Dolan, Philadelphia, Pa.

Claim.—The design for a knitted fabric, substantially as described, and as represented in and by the accompanying drawing.

3,965.—Stocking Fabric.—Thomas Dolan, Philadelphia, Pa.

Claim.—The design for a stocking fabric, substantially as described, and as illustrated in and by the accompanying drawing.

3,966.—STOCKING FABRIC.—Thomas Dolan, Philadelphia, Pa.

Claim.—The design for a stocking fabric, substantially as described, and as represented in and by the accompanying drawing.

3,967.—HAND-STAMP.—Hiram W. Hubbard and Francis P. Follett, Hartford, Conn.

Claim.—The design for a hand-stamp, as shown.

3,968.—SHADE FOR GAS OR LAMP-BURNERS. Philip Lair, Philadelphia, Pa., assignor to Hartell & Letchworth, same place.

Claim.—The design for a shade, substantially as described, and as represented in and by the accompanying drawing.

3,969.—SHADE FOR GAS-LIGHTS, &c.—Felix Rodgers, Philadelphia, Pa.

Claim.—The design for a glass shade, as shown.

3,970. — OIL-CLOTH PATTERN.—Wisner H. Townsend, New York, N. Y.

Claim.—The design for an oil-cloth, as shown.

3,971.—BLOTTING-PAD.—James S. Bryant, Hartford, Conn.

Claim.—The design for a letter-copying book blotter, as set forth and shown.

3,972.—ORNAMENTING GLASS-WARE.—Stephen Hipkins, Jr., Bell Air, Ohio, assignor to the Belmont Glass-Works, same place.

Claim.—The design for ornamenting glass-ware, as shown and described.

EXTENSIONS.

AZEL S. LYMAN, New York, N. Y.—Letters Patent No. 14,510, dated March 25, 1856.

"Improved Method of Cooling and Ventilating Rooms, &c."

Claim.—The combination of a descending conduit or cold-air flue, with a reservoir for containing cooling materials, substantially in the manner and for the purposes described.

POLLY HUNT, of Jersey City, N. J., and GEORGE W. HUNT, of Newburg, N. Y., administrators of WALTER HUNT, deceased. Letters Patent No. 4,376, dated July 25, 1854; reissue No. 1,828, dated November 29, 1864.

"Improvement in Shirt-Collars."

Claim.—A shirt-collar composed of paper and muslin, or their equivalent, and polished or burnished, substantially as and for the purpose described.

E. H. STEARNS, of Erie, Pa.—Letters Patent No. 14,700, dated April 15, 1856.

"Improved Head and Tail-blocks for Saw-Mills."

Claim.—1. The eccentrics 13, 13, one, two, four, more or less, or their equivalents, in combination with the setting arms 11 11, and ratchet racks 9 9, or their eqivalents, for the purpose of moving and setting the log laterally to the saw, substantially as set forth in the foregoing specification; the said eccentrics being worked substantially as specified and represented in the accompanying drawings, or by other equivalent means.

2. The combination of two or more pieces composing the sliding dogs, passing through one or more openings on the same side of the saw, so near each other that they may be driven in or out of the log by the same blows of the mill bar, the ends of these dogs being so beveled or chamfered as to cause them to bind and tighten themselves in the openings through which they pass, which dogs may be made in separate parts or joined partially at their heads, but not so close or firm as to prevent the parts from binding in their openings when driven into the log, as substantially set forth in the foregoing specification.

3. The combination of the levers 22 and 23 and recess 25, made in the under part of the sliding head 5, in the foot-block, and operated by the motion given to the sliding head, which combination forms an extra safety-trip for stopping the saw-carriage when the dogs come opposite to the saw, to prevent the saw from striking the dogs, all substantially as and for the purposes set forth in the foregoing specification, or any other mechanical equivalents which are operated by the motion given to the sliding head 5, as before mentioned.

MARGARETTE L. BARTON and CHARLES A. BURLL, of Chatham, Conn., administrators of JASON BARTON, deceased.—Letters Patent No. 14,593, dated April 8, 1856; reissue No. 1,798, dated October 25, 1864.

"Improvement in Pressure-Bells."

Claim.—The combination and arrangement of the bell-striking instrument, arranged to swing in a plane, substantially at right angles with the plane of the rim of the bell, and piston extending through the axis of the bell, these three operating substantially as set forth.

Also, the combination of the bell-striking instrument, piston, and curved stand, whereby the striking-instrument is permitted to swing across the bell in a plane, substantially at right angles with the plane of the rim of the bell, substantially as set forth.

Also, the combination of the bell-striking instrument, piston, and stand, substantially as described, so that the piston strikes another part of the apparatus before the hammer strikes the bell, in a plane substantially at right angles with the plane of the rim of the bell, substantially as set forth.

EDWARD WHITELEY, Cambridge Mass.—Letters Patent No. 14,622, dated April 8, 1856; reissue No. 3,058, dated July 28, 1868.

"Improvement in Culinary Boilers."

Claim.—The trap G and cap I, or its equivalent, as arranged and applied to the vessel B, whereby the latter may be employed either as a boiler or steamer, as set forth.

Also, in combination with the vessel B, the interior vessel H, perforated to admit the steam, when placed within the outer receptacle B, and entirely surrounded or inclosed thereby, substantially as and for the purpose set forth.

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PATENTS.

101,967. — APPARATUS FOR MEASURING BOARDS.—Isaac J. W. Adams, Salisbury, Md.

Claim.—The combination of the table F (with the lengths marked thereon) with the ratchet dial-plate and disks above described, substantially as and for the purposes specified.

101,968.—SPIDER-FURNACE FOR BURNING BAGASSE. — John Amick, Assumption parish, La.

Claim.—The placing of two reverse open-work or spider-like domes within the furnaces of sugar-mills, when the same is done by means of arches B and D, as herein described, for the purpose set forth.

101,969.—MANUFACTURE OF STEEL FROM CAST OR PIG-IRON.—Haydn M. Baker, Washington, D. C.

Claim.—1. The process herein described for the production of nitric acid and the products of its decomposition, for the purpose of transforming the high carbides of iron into steel.

2. The application and use of nitric acid and the products of its decomposition to cast or crude pig-iron, at elevated temperatures, in the manner herein described and fully set forth, for the purpose of manufacturing steel.

101,970.—ROOFING MATERIAL.—M. G. Balfour, Manston, Wis., assignor to himself and B. Boorman, same place.

Claim.—1. A compound composed of brimstone, iron ore, coal-tar, and sand or clay, in about the proportions named, when heated and well mixed, and cast in wet pans the required size for use.

2. The process of covering a roof with a composition composed and manufactured as above described, the joints cemented with a hot iron, as above described.

101,971. — HAY-DERRICK. — Alden Barnes, Bloomington, Ill.

Claim.—The improved hay-derrick, consisting of the base A, inclined post B, inclined braces C, pivoted and hinged upright E, arm F, wheel H, having pins *a*, the elevating and swinging ropes *f b*, and the stop rope *b*, all constructed, arranged, and operating as herein shown and described.

101,972.—VENTILATOR.—Orlando Batt, Beloit, Wis.

Claim.—1. The combination in a ventilator of the valve B, pivoted, in the manner substantially as described, to the frame A, and having a weight attached, so constructed and arranged that the weight balances the valve upon its pivots, and causes it to operate automatically, substantially as and for the purpose specified.

2. Hanging the weighted valve B upon a sharp-edge bearing to prevent friction, substantially as shown and described.

101,973, patented in England, June 15, 1866.—STEAM-GENERATOR.—Julien François Belleville, Paris, France.

Claim.—1. The employment, with steam-generating tubes arranged substantially as described, of a cylinder or other suitable vessel, J, connected and communicating with the highest and lowest series of said tubes, and with the water-feed, substantially in the manner and for the purposes set forth.

2. The combination of the generating-tubes, upper and lower collectors, and external cylinder, communicating with said collectors and with the feed-water, under the arrangement and for operation as specified.

3. The employment within the upper collector of a tube connected with the steam-outlet, and perforated to divide the supply of steam, substantially as shown and described.

4. The combination with the generating-tubes and upper and lower collectors, communicating with the equalizing and feed-cylinder, as specified, of the purifying-apparatus connected either directly with the generating-tubes or with the superheater or drier interposed between it and the tubes, as and for the purposes set forth.

101,974.—WATER-PROOF COMPOUND FOR BOOTS AND SHOES.—Martien H. Böttger, Sacramento City, Cal.

Claim.—The manufacture or preparation of a compound which I denominate "water-proof grease," of the ingredients, in the proportion, and for the purposes as herein set forth.

101,975.—LATHE-SPINDLE.—James E. Boutelle, Fishersville, N. H.

Claim.—In combination with the fixed center of a lathe, the revolving rim-center C, substantially as and for the purposes herein shown and described.

101,976.—CULTIVATOR.—Jacob Bower, Dayton, Ohio.

Claim.—The combination of the cultivator-teeth shanks B, shovels C, and frame A, the parts being constructed, arranged and operating in the manner and for the purpose substantially as described.

101,977, patented in England, December 21, 1868.—STOP-COCK FOR STEAM AND LIQUIDS.—Joseph Breeden, Birmingham, England.

Claim.—The combination and arrangement of the spindled valve *e f f*², constructed as described, with the valve-seat *d d*², screw-rod *i i*², tube *g*, and coiled spring *h*, substantially as and for the purposes shown and set forth.

101,978. — BELT-REPLACER. — William C. Bridges, Michigan City, Ind.

Claim.—1. The semi-annular plate A, provided with the shoulder *b* and flange *a*, to serve as a belt-replacer, substantially as herein shown and described.

2. The combination of the lever C with the rod B and semi-annular plate A, all arranged to constitute a belt-replacer, as set forth.

101,979.—CLOTH-MEASURING APPARATUS.—Thomas M. Brintnall, Medina, Ohio.

Claim.—1. The combination of the pivoted flat springs I, bearings *y*, and screws *p*, with the roller G, all constructed, arranged, and operating substantially as described.

2. The swiveled clutches, constructed as described, with lips *i i i i*, so as to hold either a roller or a flat board, as herein set forth.

3. The relative arrangement, herein shown and described, of the clutch *i*, shaft *u*, pinion K, wheel J, and crank-handle, all operating as and for the purpose set forth.

4. The combination of the cloth-covered registering-roller F, the tension-roller G, pivoted flat springs I, screws *p*, graduated wheel H, tooth *o*, indicator *r*, and spring *s*, all constructed, arranged, and operating substantially as and for the purposes described.

5. The combination and general arrangement of the devices for holding the bolt containing the cloth to be measured, the supporting-roller with gauge-collars, the pivoted tension device and tension and registering-rollers, the registering mechanism, and the means for holding and winding the folding-board or roller, all adapted for joint operation, substantially as herein described.

101,980.—SHIFTING RAIL FOR BUGGIES.—Ira Bronson, Lockport, N. Y.

Claim.—In the construction of a carriage-seat, the rim C fitting down closely upon the back of the rim A, the cross-straps *f f*, bracing end straps *e e'* and buttons *g g'*, all combined and arranged substantially as herein shown and described.

101,981. — TURNING-CHISEL. — Reuben P. Buttles and Salmon Sweet, Mansfield, Pa.

Claim.—The herein-described arrangement of the chisels A B, the screws *a* and *b*, and elastic cushion h, all constructed and operating substantially as set forth.

101,982.—SAW-SET.—Erastus Y. Clark, New York, N. Y.

Claim.—1. In combination with a saw-set, the adjustable back M, arranged and operated substantially as and for the purposes described.

2. The adjustable guide-pin P, substantially as and for the purposes described.

3. The arrangement of the screws E F and N with relation to each other, the punch C and stock A, as shown and described, whereby said punch may be adjusted as specified.

101,983, antedated April 14, 1870.—SHUTTER-WORKER.—Abe C. Cornell, St. Louis, Mo.

Claim.—A pair of window-blind hinges consisting of the leaves A H, case B, disk I, pintle K, with its fastening-lug L, enlargement D, worm wheel F and worm E, each of said parts being constructed and arranged with reference to the others in the manner described.

101,984.—BARK-MILL.—John G. Curtis, Emporium, Pa.

Claim.—The combination of cylinder B with teeth D, winding in spiral lines, to act singly and successively with isolated and projecting adjustable teeth K N and stationary teeth H, when all these parts are arranged and constructed as herein described, and for the purpose set forth.

101,985. — CAMERA-STAND. — William W. Dames, San José, Cal.

Claim.—The horizontally-moving inclines H, in combination with the pawl M and rack L, arranged to operate substantially as and for the purpose specified.

101,986, antedated April 4, 1870.—SHIFTING RAIL FOR CARRIAGE-SEATS.—Caspar Disser, West Union, Ohio.

Claim.—The arms *e e*, formed rigidly on the lower ends of the swiveled pins *d d*, and adapted to be locked by friction with the inclined under surfaces of the plates *a a*, and to pass through the slots in said plates for the purpose of detaching the front portion of the rail B of the carriage-seat A, as set forth.

101,987.—SLATE-WASHER.—Samuel G. Dugdale, Richmond, Ind.

Claim.—The non-compressible case A, with holes *n n*, lips *c c*, sponge B, cotton cloth *i*, or its equivalent, and rubber *f*, when arranged and used in the manner and for the purpose above set forth.

101,988.—HEMMER FOR SEWING-MACHINES.—John V. D. Eldredge, Detroit, Mich.

Claim.—In sewing-machine hemmers, the spring E, for the purpose of securing a lateral elasticity, substantially as herein described.

Also, in combination therewith, the springs B and C, and presser-foot A, when constructed, arranged, and operating as and for the purpose herein set forth.

101,989.—LOOM.—Albert R. Field, Central Falls, R. I.

Claim.—1. The vibrating bars P H I', uprights O L, and rigid transverse bars M R, all attached to the frame, and arranged and operated as set forth.

2. The combination of bar H, rails G, block J, pivoted upright L, horizontal lifting-rail M, vertically-reciprocating upright O, and vibrating bar P, frame R, and vibrating bar I', when said parts are relatively arranged to be operated by a vibrating lever, B, as set forth.

101,990, antedated April 7, 1870.—WHEAT-DRILL.—John F. Fisher, Greencastle, Pa.—assignor to himself and Daniel Breed, Washington, D. C.

Claim.—1. The projection B upon the ear of the boot, or its equivalent, substantially as set forth.

2. The central set between the check-link C and the ear of the boot, substantially as described.

3. The check E, or its equivalent, on the spring bar, having a set with the check-link, substantially as specified.

4. The loose guide-pin I, or pin without a bar, substantially as set forth.

5. The loose washer H, made separate from the guide-pin I, substantially as set forth.

6. Stirrup G, when provided with a cap or cup to receive the top of the spring, substantially as set forth.

101,991, antedated April 7, 1870.—AXLE FOR WHEAT-DRILLS.—John F. Fisher, Greencastle, Pa., assignor to himself and Daniel Breed, Washington, D. C.

Claim.—The above-described brace A, in combination with the axle B, for the purposes substantially as specified.

101,992.—BOILER FEEDER.—Lucius Foote, Fairfield, Ohio.

Claim.—The arrangement of the float I and tubular arm, J, directly attached to and in combination with the shaft H, when employed for the purposes and in the manner substantially as described.

101,993.—VELOCIPEDE.—Frederick J. Forsyth, Bay City, Mich.

Claim.—1. The construction and arrangement of the frame E, arbors *e*, coiled springs F, geared-barrels G, gears H^1, H^2, I^1, I^2, J^1, J^2, K, and K', shafts H, I, and J, axle B, hubs L provided with clutches, *d*, clutch-pins *s*, springs *f*, clutch-collars M, rock-shaft O, lever O^1, links O^2, bell-cranks N, and link P, for the propulsion of a vehicle, in the manner set forth, shown, and described.

2. In self-propelling vehicles, the construction and arrangement of the worm-wheels T, worms U, shafts S and R, gears S', and R^2, and crank R, in combination with the arbors *e*, in the manner and for the purpose set forth.

3. In combination with the foregoing parts, the body A, wheels C D, standard *d*, and tiller *b*, the whole constructed, arranged, and operating substantially as described.

101,994.—MANUFACTURE OF ELASTIC ROLLS.—James B. Forsyth, Boston, Mass.

Claim.—An elastic roll, the basis of which is composed of semi-elastic material, with cloth, duck, or other suitable material interposed or not, and secured to the shaft, substantially as set forth.

Also, the within-described cement, composed of the ingredients and mixed in about the proportions set forth.

101,995.—PUMP-SPOUT.—John H. Gloim, Tipton, Mo.

Claim.—1. The adjustable spout D, open at both ends, and swinging on pivot D', when combined with eduction and induction-spouts B C, so as to lead the water off from the pump or convey it back thereto, in the manner described.

2. The combination and arrangement of the spouts B, C, and D, and the cover H, substantially as and for the purposes described.

101,996.—TURBINE WATER-WHEEL.—D. W. Glendinning, Detroit, Mich.

Claim.—1. The rigid deck F and rotating deck H, when interposed between the upper and lower series of buckets, and operating as herein set forth.

2. The arrangement of the buckets E and K and hub C, with reference to each other, there being a greater number of buckets in the lower than in the upper series, as herein specified.

3. The combination of the case A, hub C, shaft D, buckets E K, and decks F H, when constructed and operating substantially as herein described.

4. The volute shell A, with channel of uniform size, provided with thrust B, having its base in the same plane as the deck H, and its top elevated above the top of the hub C, and inclining downward until it terminates at the inner side of said thrust B, at which point its top is in the plane of the top of said hub C, constructed and arranged as above shown and set forth.

101,997. — GUM-WIPER. — Herman Grove, Sparta, Wis.

Claim.—The spirally-grooved contracting and expanding wiper A, made of vulcanized India rubber or other suitable substance, and provided with the screw-threaded rod *d*, secured at the bottom of the central bore, and all adapted for the application of the internally screw-threaded tubular extension of the ramrod, all substantially as specified.

101,998. — FARM-GATE. — Michael Gunshenan, New York, N. Y.

Claim.—1. The latch E, arranged to operate as described, in combination with the brace D and post B, for the purpose specified.

2. The brace D' and notched horizontal bar, in combination with the brace D and latch E, arranged to operate as and for the purpose set forth.

3. The hinges E', when constructed and applied as and for the purpose described.

101,999. — CLOTHES-DRIER. — Joseph C. Haines, West Philadelphia, Pa.

Claim.—The toggle-braces *d*, one or more, provided with extensions or levers 4, and employed to spread the arms *a a*, substantially as described.

102,000.—SINGLE-TREE.—Andrew J. Hanna, New Garden township, Pa.

Claim.—The employment of a dog, catch, or trigger in combination with a spring, arranged and operating substantially as and for the purposes set forth.

102,001, antedated April 8, 1870.—SHEET-METAL-BENDING-MACHINE.—C. C. Hare, Kansas City, Mo.

Claim.—1. The pendent bearings c^1 c^1, set-screws c^2 c^2, side pieces C C and C' C', bars *c c*, and matrix A, when constructed and arranged as described.

2. The described mold-former I, with the matrices A and A', and their adjustable bearings, respectively, and their other parts with the cam-levers E E', and the metal bearings H H, when combined and arranged as described.

3. The described matrices A and A', with their respective journals, hog-chains, struts and brackets, the cam-levers E and E', with the pendent bearing c^1 c^1, set-screws c^2 c^2, side pieces C C and C' C', and bars *c c*, when constructed and arranged as described.

102,002.—SINK AND WASH-STAND.—Christer L. Hedell, Galesburg, Ill.

Claim.—The construction and arrangement of the sink or drawer A, with its conducting-pipes B, C, G, and D, in combination with the stand, slide, and groove E, as shown and described.

102,003.—GATE.—Samuel Henry, Chenoa, Ill.

Claim.—1. Bars A, pivoted at B to the main posts, combined with vertical rails D E, rod F, and beam G, whereby a downward pressure on one of the posts D will raise the opposite end of bars A, and open the gate, in the manner set forth.

2. The platforms H, slide I, crank-rod K, and weighted support L, combined with the beam G to regulate the latter in its up-and-down position, as set forth.

3. A crank-shaft, K, arranged on a gate, as set forth, combined with cords M M and post O O to trip the supports L, in the manner described.

4. The weighted cords M M and spring P, when combined and arranged in connection with a gate, as set forth, to automatically close the same at the time and in the manner specified.

102,004. — CORN-PLANTER. — Christopher Hippensteel, Lee's Cross Roads, Pa.

Claim.—1. The combination and arrangement of the double mold-board A A, seed-box G H, coverers J J, roller K, and mechanism *l*, O, N, P, Q, for operating the seed-dropping slide from the shaft of the roller, substantially as and for the purposes set forth.

2. The combination with the shield U and cut-offs *u u*, of the elastic roller V, arranged to operate as herein described, for the purposes set forth.

102,005.—STEAM-CONDENSER.—John Houpt, Springtown, Pa.

Claim.—1. The arrangement and combination of a primary condenser and a secondary condenser with an intervening valve, for the purpose of dividing the exhaust steam preceding each stroke of the piston of a steam-cylinder into two parts, in such a manner as to retain the smaller portion of the high steam of the exhaust within the primary condenser A for condensation, and the consequent production of a more perfect vacuum in front of the piston in the said cylinder, substantially as herein-before set forth.

2. In combination with the primary condenser A, the secondary condenser B and the valve C, arranged as described; the employment of cold-water jet-spreader, *l'*, in the secondary condenser B, the same being arranged to operate therein, substantially as and for the purposes hereinbefore set forth.

3. In combination with the primary condenser A, the secondary condenser B and the valve C, arranged as described; the employment of the over-balanced valve *g'*, arranged to operate between the space *b''* in the condenser B and the escape-pipe H, substantially as and for the purpose hereinbefore set forth.

102,006.—BOLT-CUTTER.—Hiram L Howard, Mendon, Mich.

Claim.—The construction of an implement for the purpose described, wherein the jaws A, provided with cutting-edges B, the standard or frame C, the ears D, levers E, links *b*, and bolts *a*, *c*, and *e*, are arranged substantially as herein set forth.

102,007.—WHIP.—Livenus Hull, Charlestown, assignor to American Whip Company, Westfield, Mass.

Claim.—As a new manufacture, a whip stock, formed of cloth or paper and vulcanized India-rubber or gutta-percha composition and a heart piece of metallic wire, arranged together as set forth.

102,008.—WAGON-TIRE TIGHTENER.—Artemas Bodman Hurd, Watkins, N. Y.

Claim.—1. The jaws or clamps A A, for attaching to the spokes under the rim, and expanding screws G G, or their equivalents, resting under the rim on opposite sides of the spoke, operating together as described, leaving a washer space between the shoulder of the spoke and rim, substantially as herein shown and set forth.

2. The construction and arrangement of the expanding device, consisting of the jaws A A, clamping-screws C C, and expanding-screws G G, with bearing-blocks *f f*, the whole operating in the manner and for the purpose specified.

102,009.—WAGON-BRAKE.—Reuben Hurd, Morrison, Ill.

Claim.—1. The method herein described of applying brake-blocks to the wheels of vehicles, the means employed being a toggle-joint acting upon a wedge, substantially as and for the purpose set forth.

2. The construction of the brake-block H, substantially as and for the purpose set forth.

3. The combination of the brake-block H, the wedge G, levers F^2, links F^1, sleeve F, and the rod upon which said sleeve slides, substantially as and for the purpose specified.

102,010.—EXPANSION JOINT FOR PIPES.—J. Evans Jones, Tidioute, Pa.

Claim.—In combination with the pipe A, the nut *a*, packing-box *b*, and gland *c*, to form joints for the pipes B and C, all constructed and arranged as shown and described.

102,011. — DOVETAILING-MACHINE. — Dedrick Jordan, Charlestown, Mass., and Joseph Dill, Grand Rapids, Mich.

Claim.—1. The cutter-head *c*, composed of the standard V, head *o* provided with the open slots *t t*, knife *r* supplied with the projections S, washer *w*, and nut *s*, all constructed and operating in the

manner and for the purposes described and set forth.

2. The wedge-shaped block *m*, provided with the curved groove *n'*, the horizontal paring-chisel *g*, having two edges to enter the dovetails cut by the cutter-head *e*, at right angles with the chisels *f f*, in combination with the socket L, provided with the pivoted tongue *n*, (to operate the chisels *f f*,) all arranged and operating substantially in the manner and for the purposes set forth.

3. The lever C, provided with the open slots *z* and *b*, and the longitudinal slot *j*, when arranged and operating as described.

4. The arrangement of the cutter-head *e* and chisels *g f f*, when constructed as described, and for the purpose specified.

102,012.—CLOSET AND BED.—William Kelly, Bath, Me.

Claim.—The combination and arrangement of the frame A with the door B, having in its front side a closet with doors *a a'*, shelves *b b*, and the washing-shelf *c* attached to the door *a*, the several parts being constructed and arranged substantially as described.

Also, the combination and arrangement of the frame A and door B, with the mirror *d* shutting into a recess, *x*, the writing-desk *e* with its supports *f* and drawer *g*, substantially as described.

Also, the combination and arrangement of the frame A and door B, with the bed-frame in two parts *h h'*, hinged by joint strap-hinges *p p* having a slant jointure of their parts, with notches *i i* and legs *j j* under them, and legs *k k* connected with bar *l*, all constructed and arranged substantially as described.

102,013. — PRINTERS' FURNITURE.—Anson N. Kellogg and J. James Schock, Chicago, Ill.

Claim.—A block bridge for forms of type, adapted to be locked within the form in such a manner as to receive different heading blocks without the form being unlocked, substantially as described, for the purpose specified.

102,014.—BOOT-JACK AND BRUSH.—Samuel Kennedy, Rochester, Pa.

Claim.—The flanged plate A, having a dovetailed groove on the under side, and the brush E fitting therein, in combination with the fork B and box C, made in a single piece and recessed to receive and support the former, as set forth.

102,015.—SWEEP HORSE-POWER.—Richard J. M. King, Ypsilanti, Mich.

Claim.—In sweep horse-powers, the bed-piece A, sweep B, draft-pole C, sleeve D, draft-box E, rope F, and suitable guide-pulleys, constructed and arranged to operate as and for the purposes set forth.

102,016.—BELL.—Joseph Kintz, West Meriden, Conn., assignor to himself and P. J. Clark, same place.

Claim.—Attaching the clapper to a bell by means of a ball and socket, substantially in the manner herein shown and described.

102,017.—CORN-PLANTER.—James M. Kiracofe, Mount Solon, Va.

Claim.—1. The roller K, pulley L, and band M, in combination with the hopper E and axle B, substantially as herein shown and described and for the purpose set forth.

2. The sliding shield T, connected with and operated by the clutch-lever D, when used in combination with the dropping-cylinder I of a corn-planter, substantially as herein shown and described and for the purpose set forth.

3. An improved corn-planter formed by the combination of the wheels A, axle B, clutch C, clutch-lever D, hopper E *e'*, dropping-cylinder I, roller K, pulley L, band M, connecting-rod O, shaft Q, stirrer R, apron S, frame F, tongue H, plow-beams W, plows X A', conductor-spout Z, adjustable covering and gauge, roller B', sliding shield T, bent lever U, and connecting-rod V, with each other, said parts being arranged and operating substantially as herein shown and described and for the purpose set forth.

102,018.—APPARATUS FOR REMOVING OILS, GREASE, GUMS, AND THE LIKE, FROM COTTON AND WOOLEN WASTE, AND RECOVERING THE SAME.—James William Kreppe, Chicago, Ill.

Claim.—1. The cleansing of cotton or woolen waste, by immersing the same in hydrocarbons, or other solvents of oil, in a closed rotating cylinder, accompanied with agitation to facilitate the process of cleansing, substantially as above described.

2. Further cleansing the same material, after the oils, grease, &c., have been nearly removed by the aforesaid solvents, by washing it in the same closed rotating cylinder, accompanied with agitation, substantially as above described.

3. The rotating cylinder A, provided with the internal perforated and relatively stationary receptacle D, substantially as set forth.

4. The adjustable diaphragm H and wings *l l l*, in combination with the rotating cylinder A and internal receptacle D, substantially as herein set forth.

5. The rotating cylinder A, resting in the adjustable or tilting frame B, substantially as and for the purpose herein set forth.

6. The combination of the rotating cylinder A, perforated internal receptacle D, adjustable diaphragm H, and wings *l l l*, with the still K and condensing and receiving-tank L, substantially as and for the purpose herein set forth.

102,019.—DENTAL APPARATUS FOR CASTING PLATES FOR ARTIFICIAL TEETH.—James Alanson Loomis, Carthage, Ill., and Charles Frederick Moll, San Francisco, Cal.

Claim.—1. The furnace A, having hinged grate resting on two removable rods, and a device for attaching a flask, and a removable vessel beneath, to receive the whole contents of the fire, as set forth.

2. A dental casting-mold, formed of calcined bone and plaster, in the proportions specified.

3. A vertical flask, H, with sprue above and open bar-work below, as set forth, in combination with the surrounding protector R, as and for the purpose described.

4. A vertical flask, H, and protector, each relatively constructed as set forth, combined with a detachable metal cap, *m m*, as and for the purpose described.

5. A suspended flask, H, having cap thereon, and constructed as set forth.

102,020.—SMOKE-STACK.—Hector Mackinnon, Cleveland, Ohio.

Claim.—The combination of the outer casing B, the upper portion of which is made as described, with wire-gauze C, the pipe A, deflector H, hinged lid F, of gauze, and the jointed strap G, all constructed, arranged, and operating substantially as described.

102,021. — CHERRY-STONER. — Jonah Marchant, Farmington, Ill.

Claim.—1. Feeding the punch or punchers of a cherry-stoner by means of a horizontal rotating plate, B, having countersunk perforations, *a a a*, &c., around its periphery, situated in annular groove, *w*, said countersunk perforations carrying the cherries under the punch or punches, substantially as and for the purposes described.

2. The "bed" A with its perforations *p p* and *o o*, when applied as stated, as and for the purposes described.

3. In combination with the above parts, the punches *b b*, when carried in the cross-head *c*, the cross-head *c*, its guide, D, punch-guide *d*, clamp *m*, and screw, shaft *h*, with its dogs *i i* or equivalents for rotating the plate B, winch *k*, crank *g*, connecting-rod *f*, and hopper C.

102,022.—FOLDING CHAIR.—George McAleer, Worcester, Mass.

Claim.—The folding-chair herein described, having the long posts A formed in one piece, and with the angle at the points at which the central round is attached, as herein shown and described, for the purpose specified.

102,023.—COMBINED HAY-RACK AND WAGON-BOX. — Felix G. McClellan, Attica, Ohio.

Claim.—1. The combination of the sills *a*, cross-pieces *c*, rollers *k* with rack-bar *y* and ladder *z*, braces *m*, bottom pieces *i* and *n*, side pieces *o* and *r*, bottom boards *v*, side boards *u*, and end gates *f* and *g*, substantially as and for the purposes hereinbefore specified.

2. The combination of the sills *a*, cross-pieces *c*, rollers *k* with rack-bar *y* and ladder *z*, braces *m*, bottom pieces *n*, side pieces *o* and *r*, bottom board *v*, side boards *u*, and end gates *f* and *g*, substantially as and for the purposes hereinbefore specified.

3. The combination of the sills *a*, cross-pieces *c*, braces *m*, bottom board *v*, bottom pieces *i* and *n*, side pieces *o* and *r*, side boards *u*, and end gates *f* and *g*, substantially as and for the purposes hereinbefore specified.

102,024, antedated April 2, 1870.—FRUIT-JAR. — Robert McCully, Philadelphia, Pa.

Claim.—A fruit or other jar, can, or vessel, having a spring around its neck or mouth for the cap or cover to engage with, in the manner substantially as shown and described, and for the purpose set forth.

102,025.—AXLE AND ITS BOXING.—Rob Roy McGregor, Covington, Tenn.

Claim.—1. The rollers D, having corrugated surfaces, in combination with the axle A, said axle having semicircular slots B and shoulders E, as shown and described, and for the purpose set forth.

2. The corrugated boxing F, having the surface G to act upon and in combination with the rollers D.

102,026, antedated April 4, 1870.—BOLT-CUTTER.—William Mendham, Philadelphia, Pa.

Claim.—1. The combination of the levers E F, having the toothed segments G H, the rack-bar I, and the adjusting screw S, in the manner and for the purpose described.

2. The movable cutter B, with V-guides, in combination with the slotted and recessed rack-bar, and the levers E F, with toothed segments G H on their ends, in the manner and for the purpose specified.

102,027. — SHEET-METAL-GROOVING MACHINE.—David H. Metcalf and Daniel Squier, Battle Creek, assignors to themselves and Martin Metcalf, Grand Rapids, Mich.

Claim.—1. The triple wheel E, when constructed and operated substantially in the manner and for the purpose herein described.

2. The eccentric F, in combination with the triple wheel E, when constructed and operating substantially in the manner and for the purpose specified.

3. The combination of the bars D and G, triple wheel E, and bolt F, when constructed and arranged to operate substantially in the manner and for the purpose specified.

4. The combination of the frame A B C with the bars D and G, spring and friction-roller *b*, wheel E, and adjustable eccentric bolt F, when the same are constructed and arranged to operate substantially in the manner and for the purposes herein specified.

5. The bar G, eccentric bolt F, screw *d*, and pinion *c*, when arranged and operating substantially as described.

6. The supporting-arm H, triple wheel E, and gauge I, when arranged to operate as set forth.

102,028.—AGRICULTURAL STEAMER.—Henry W. Millar, Utica, N. Y.

Claim.—1. The combination of a circulating heater and a tank to feed it, and stop-cock and check-valve, substantially as described and for the purposes hereinbefore mentioned.

2. The use of a separating-chamber Z, in combination with any circulating heater, substantially as described, and for the purposes hereinbefore mentioned.

102,029. — DOOR-SPRING. — Abel Mishler, New York, N. Y.

Claim.—The windlass *g*, or an equivalent device for tightening an elastic rubber door-spring, when both are inserted in the body of the door, and arranged to operate substantially in the manner as and for the purposes specified.

102,030.—METHOD OF TREATING TRACING-PAPER.—Julius Moog, Karlsruhe, Germany, assignor to Emil Heusner, Newark, N. J.

Claim.—Restoring the original non-transparent quality to tracing-paper after the same has received the design, substantially as herein shown and described.

102,031. — COOKING-UTENSIL. — James A. Morrison, Brady's Bend, Pa., assignor to himself and A. J. Elliott, same place.

Claim.—The frame A, reflectors D and E, and the grate G, constructed, arranged, and combined substantially as and for the purpose herein shown and described.

102,032.—WINDMILL.—William D. Nichols, Chicago, Ill.

Claim.—The series of weights C, when hinged to the arms A of a rosette windmill, and connected to the sets of sails so as to operate them, substantially as specified and shown.

102,033.—APPARATUS FOR REDISTILLING AND RECTIFYING SPIRITS.—Alonzo Noteman, Toledo, Ohio.

Claim.—The arrangement of the rectifier A, the inlet-pipe *a*, the outlet-pipe *b*, the condenser B, the rectifier C, the water-inlet pipe *c*, and water-outlet pipe *d*, and spirit-discharge pipe *e*, when constructed as described, and for the purpose set forth.

102,034.—RULE AND CALCULATOR.—Nels Ockerlund, New York, N. Y.

Claim.—1. A combined rule and calculator formed by the combination of the jointed arms A B, disk C, sights D E, spirit-bottle M, slides F G, scales or arms H I, pivoted sliding scale J K, and thumb-screws L, with each other, substantially as herein shown and described.

2. The combination of the graduated disk C and sights D E with the jointed rule A B, substantially as herein shown and described and for the purpose set forth.

3. The combination of the two slides F G and two scales H I with the jointed rule A B, substantially as herein shown and described and for the purpose set forth.

4. The combination of the two slides F K and two scales H J with the jointed rule A B, substantially as herein shown and described and for the purpose set forth.

5. The combination of the screws L and scale I with the jointed rule A B, substantially as herein shown and described and for the purpose set forth.

102,035, patented in England, May 4, 1868. ALARM AND OTHER BELL.—Thomas Pemberton and George Arthur Pemberton, Birmingham, England.

Claim.—The combination with the pivoted clapper or hammer of an independent single or compound lever, which is unattached to, but actuates the hammer, and is restored to its original position by the action of the same, the said lever and clapper or hammer being constructed, arranged, and operating substantially as described and illustrated.

102,036. — ATTACHMENT FOR HEATING-STOVES.—John L. Pfau, Jr., Quincy, Ill.

Claim.—An air-heating and mixing device for stoves and furnaces, consisting of the case A, with dividing-plate F, and the hollow perforated hood C, arranged for application and operation, substantially as specified.

102,037.—STEAM-TRAP.—Louis H. Plum, Cincinnati, Ohio.

Claim.—1. The tubular plunger E, secured to the pipe B, with an adjustable steam-tight joint, by means of a prolonged screw-thread and jam-nut H, and operating in combination with the plug or seat D, pipe A, and cylinder C, as set forth.

2. The obliquely-perforated plug D *d d'*, constructed and applied substantially as and for the purposes described.

102,038.—HOSE-COUPLING.—Charles Powell, Birmingham, England.

Claim.—The section A, provided with notched projections B, and the section F, provided with the collar E, with spiral flanges D, all combined and arranged substantially as specified.

102,039.—LOOM.—Pierre François Ramel and Jean Drogat, Lyons, France.

Claim.—1. The combination, with two parallel roughened take-up rolls A B, of gear-wheels *a a*, pawls *b*, ratchet C, lever *d*, cords *e g*, shaft *f*, and lifting-rod F, all constructed and arranged in a loom as set forth.

2. The combination, with roller D, of leather-covered friction-roll O, adjustable tension springs *r*, ratchet-pawl *s*, lever *t*, cord *u*, shaft *f*, and lifting-rod F, all constructed and arranged as and for the purpose set forth.

3. The transverse horizontal shaft *f* and lifting-rod F, combined with take-up rolls A B, roll D, and their immediate connecting mechanism, all being constructed, arranged, and operated as set forth.

4. A knife I, sliding on the transverse rod J, in combination with two fixed knives *c' c'* located upon the bar H, as and for the purpose set forth.

102,040.—HARNESS-BUCKLE.—George Reyer, Indianapolis, Ind.

Claim.—A buckle, constructed with a tongue, F, secured on the shaft of the lever E and at right angles or nearly so thereto, said lever being pivoted in the lugs D to the frame C, and arranged to operate by means of the spring H, in the manner and for the purpose set forth.

102,041, antedated April 7, 1870.—COOLING ALE AND BEER.—Michael Reynolds, New York, N. Y.

Claim.—The ice-shield *f*, applied around the beer pipe and within the refrigerator, as and for the purposes set forth.

102,042.—CHIMNEY.—Francis Richardson, Hebron, Ill.

Claim.—1. The arrangement of the double flues D D, throats E E, and fire-place A, substantially in the manner and for the purpose described.

2. The combination and arrangement of the passages G G and throats F F, with the flues D D, throats E E, fire-place A, and cavity C, in the manner substantially as described and for the purpose set forth.

102,043.—RAILWAY-RAIL SPLICE.—George P. Rose, Elmira, N. Y.

Claim.—The rails B, provided with overlapping offsets and shoulders, and with rectangular holes through the web for the reception of the bolts E and H, in combination with the fish-plate and chair combined, C and D, and the locking-plate F, substantially as and for the purpose specified.

102,044.—STOVE-PIPE THIMBLE. — Philip Henry Rose and Miller Barney Hudson, Canandaigua, N. Y.

Claim.—The construction and arrangement of the safety-tube, as herein described, consisting of the two parts A *a* A' *a'*, sliding one within the other, and forming but a single outside cylinder or band, B, which reflects the heat, and avoids contact with the pipe, except at the separated flanges *b b*, as herein specified.

102,045.—CULTIVATOR. — Hervy S. Ross, Millville, Ohio.

Claim.—The construction, combination, and arrangement of the frame A A B C D *d*, the standard attaching devices *y z y' z'*, and the teeth or tines F F', all as herein represented and described, for the purposes set forth.

102,046.—WASHING-MACHINE AND BOILER. John Russell and Theodore T. McGrath, Fentonville, Mich.

Claim.—1. In a washing-machine and boiler combined, the false bottom C, when provided with the perforations *b*, slots *b'*, ribs *a* and deflectors *c*, when constructed and operating substantially as described.

2. The shaft D stepped upon the stud B and rotated by the handle F traveling upon the small roller *d'*, in combination with the false bottom C and cylindrical case A, when arranged and operating substantially as herein set forth.

102,047.—EGG PACKING.—George Ruston, Freeport, Ill.

Claim.—Egg-packing cases composed of cells formed by paper strips B D E, constructed and arranged as described, and placed within an exterior strong box or case of wood, or other suitable substance, all substantially as specified.

102,048.—SHOEMAKERS' EDGE-PLANE.—Joseph Henry Sanford, North Bridgewater, Mass., assignor to Chandler Sprague, same place.

Claim.—1 A sole-edge plane having its handle A and shank or part B formed or cast in one piece of metal, substantially as set forth.

2. A sole-edge plane having all of its several parts A B C D made of metal, formed and constructed as described, and applied together substantially as set forth.

102,049.—DREDGING APPARATUS.—Charles A. Scanlan, Charleston, S. C.

Claim.—1. The combination, in a dredging apparatus, of a pair of pivoted rakes, A A, a frame, B, for the attachment of said rakes, provided with a stem or standard, C, a rod, D, for working the rakes, and arms or levers, E, on the rakes for the attachment of said rods, substantially as herein set forth, for the purposes shown.

2. In the described combination, with the rakes A, levers E, frame B, stem or standard C, and rod D, of a dredging apparatus of the description set forth, the clamp-screw H, or its equivalent, for the purpose stated.

102,050.—FUNNEL CAN-FILLER.—Thomas Scantlin, Evansville, Ind.

Claim.—A fruit-funnel, consisting of the body A and horizontal flange B, combined and arranged as described.

102,051.—CARTRIDGE-CASE.—Oswald Schevenell, Marion, Ala.

Claim.—The case A, formed of staves A', recessed at the joints, and forming a cylindrical cavity in the middle, combined with wads C C graduated to the size of gun-bore, all constructed as and for the purpose specified.

102,052.—HORSE-COLLAR CAP.—John Sellors, Bellevue, Mich.

Claim.—The saddle-shaped cap A, provided with the openings *a b*, and the key-bars P, provided with the spurs *c c'*, as and for the purpose set forth.

102,053.—HEATING-DRUM.—Charles W. Servoss, Chicago, Ill.

Claim.—1. The construction and arrangement within the shell A of the heads B C, diaphragms D E, reversible flue F, damper G, and smoke-duct H, the air-tubes I I' and J, and annular smoke-pipes K, operating in the manner and for the purpose set forth.

2. The spiral wire soot-cleaner M, when employed in the manner and for the purpose set forth.

102,054. — EYELETING-MACHINE. — Elijah Shaw, Milwaukee, Wis.

Claim.—1. Spring hand O, and set W, and pin N, arranged substantially as described.

2. The combination of the locking-lever Z, swinging carrier T, and frame A, substantially as described.

3. Guide-block X, friction-roller Y, swinging carrier T, rod Q, and spring *l*, arranged substantially as described.

4. Locking-lever Z, in combination with swinging carrier T, frame A, and set N, substantially as described.

5. Adjustable rod H, swinging arm G, arm I, pawl L, and ratchet-wheel K, combined and arranged substantially as described and for the purpose set forth.

6. The swinging carrier T, locking-lever Z, rod Q, spring *l*, set W, holding-pin N, spring hand O, anvil or setting bed M, hopper D, revolving bed *p*, curb A, chute F, spring jaws P P, bent lever B, arm G, rod H, pawl L, and ratchet-wheel K, combined and arranged as described.

7. Hopper D, revolving bottom *p*, horizontal brushes *g*, adjustable curb *h*, chute F made of two pieces and bent so that the eyelets go into the chute F flange down, and turn over so as to present themselves to the anvil flange up, handle I, ratchet-wheel K, pawl L, adjustable rod H, and swinging arm G, all combined substantially as described.

102,055. — BUTTER-WORKER. — William S. Shoemaker, Towsontown, Md., and E. H. Shoemaker, Columbus, Ohio.

Claim.—1. In combination with the vessel A, the removable bottom B, wedges A^2, straps A^1, and cross-bar C, as shown and described, and for the purpose set forth.

2. The combination of the vessel A, removable bottom B, straps A^1, wedges A^2, and agitator D, with dashers D', as set forth.

102,056. — WATER-WHEEL REGULATOR.—James P. Sibley and Arthur Walsh, Bennington, Vt.

Claim.—1. The ratchet-wheel M, in combination with the sliding frame I and pawls L L', arranged to operate substantially as and for the purpose herein shown and described.

2. The plate *s'*, in combination with the pawls, substantially as and for the purpose specified.

3. The stop X, in combination with the shaft O and ratchet-wheel M, substantially as and for the purpose specified.

102,057.—ROTARY PUMP.—Anthony Sluthour, Cleveland, Ohio.

Claim.—The cylinder A provided with heads *a*, channel-plates B B', valves *b* and *b'*, induction-pipe C, eduction-pipe F, valve J, cup K, shaft *d*, piston E, valves *c* and *c'*, lever H, handle I, and discharge-spout G, when each of said parts is constructed as described, and all are combined and arranged to operate as and for the purpose set forth.

102,058.—WRENCH.—O. J. Smith, Wauwatosa, Wis.

Claim.—1. The combination of the jaw and shank A, jaw C, stop or wedge D, piece E, and screw F, substantially as described.

2. The combination of the ring H, shank A, and pin I, substantially as described.

3. The combination of the projection G on shank A, screw F, ring H, and pin I, substantially as described.

102,059.—CLOTHES-DRIER.—Lewis A. Stave, Oconomowoc, Wis.

Claim.—1. The rising and falling frame E E, with its revolving panel-frames, as constructed and operated, for the purpose specified.

2. The combination of frame E E with the main bracket-frame A A, as constructed and operated, and for the uses and purposes before mentioned.

102,060.—TURBINE WATER-WHEEL.—Gilbert Stover, Crystal, Mich.

Claim.—The arrangement of the buckets G and cylinder H with reference to the curbs or guides D and deck A, that the water will overflow the top of the cylinder H, and operating substantially as herein set forth.

Also, the bell-shaped cone I, in combination with the above-named parts, to guide the water in its descent to the inner ends of the lower series of curved buckets J, when operating and constructed as herein specified.

Also, the gates F, to open or close the throats *e*, when operated by the connecting-rods M, collar-lever L, arm O, slotted arm P, and stem R, substantially as herein described.

Also, a wheel wherein the water has a direct action upon the upper series of buckets, and thence is discharged by a central overflow, in such a manner as to have direct and reaction upon the lower series of buckets, with a centrifugal discharge, substantially as herein set forth and shown.

102,061. — ROOFING COMPOUND.—William M. Stuart, St. Clair, Mich., assignor to himself, Austin O. Whitcomb, William S. Holmes, and Robert H. Holmes.

Claim. — The roofing composition hereinbefore described and set forth.

102,062.—BLOWER.—Benjamin F. Sturtevant, West Roxbury, Mass.

Claim.—In combination with a centrifugal blower, cupped fan-blades, arranged as described.

Also, a centrifugal blower, in which a side plate has the air-inlet therein spanned by arms which support a bearing of the fan-shaft, when said arms are part of the plate and can only be moved by movement of the plate, substantially as described.

Also, a centrifugal blower, in which a side plate, having supporting-arms for the fan-shaft, is clamped to the blower-case, so as to admit of any degree of angular adjustment of the plate and arms, substantially as described.

102,063.—FAN-BLOWER.—Benjamin F. Sturtevant, West Roxbury, Mass.

Claim.—A fan-wheel for a centrifugal blower, in which the fans *i* are made of sheet-steel, and are combined with the wheel-shroudings, as and for the purpose specified.

Also, the pipe A arranged to the inlet passage so as to be adjustable thereon, and so as to fit either side of the blower, and so as to support a bearing for the fan-shaft, substantially as described.

Also, the ring *d* which serves as a base to which the bearing support arms are united, when said ring is extended inward, and closes with the driving pulley the opening in one side of the blower.

Also, in combination with a centrifugal blower, two or more inlet-pipes, each of cross-area substantially equal to the area of the inlet-opening in the side of the blower, when said pipes are each provided with valves by which they may be shut off from the blower, as and for the purpose specified.

102,064. — REFRIGERATOR. — Anthony B. Sweetland, Fitchburg, Mass., assignor to himself and James Daley, same place.

Claim.—1. In combination with a refrigerator having ice-box D, the doors A B provided with shelves C, as and for the purpose specified.

2. The outside space F around the ice-chamber, tube I, and the outside pipe H, combined and operating substantially as and for the purposes described.

102,065.—SAW-MILL.—Charles Taylor, McKeesport, Pa.

Claim.—1. The combination with the mandrel, of the saw C and the floor A, of the right-angled pivoted levers K, bar M, and wedge N, all substantially as specified.

2. The combination with the saws C B of the two carriages O S, when arranged for operation by pinions Q U on the same feed-shaft, and the pinion Q is arranged for gearing and ungearing with the rack of the carriage S, all substantially as specified.

102,066. — DRILL.—Alexander Thompson, Burlington, Vt.

Claim.—1. The combination of tube C, spindle D, and holder E, all threaded, operated, and relatively constructed as set forth, and for the purpose specified.

2. The improved brake, formed of clamp F, the threaded rod, spring, and thumb-screw, all constructed and arranged upon the drill, as and for the purpose set forth.

3. The combination of wheel *l*, locked as described, with holder E, tube C, and spindle D, all relatively constructed as and for the purpose described.

4. The combination of clamp F with tube C, holder E, and wheel *l*, all constructed and operated together as specified.

102,067.—DETACHING-HOOK.—Joseph Wood Tuttle and Julius Peterson, Rochester, N. Y.

Claim.—The shank constructed as herein shown and described, provided with a hinged arm, C, swinging catch D, and clevis B, all combined and arranged as herein shown and described.

102,068.—MACHINE FOR MAKING WROUGHT-IRON CHAIRS FOR RAILROADS.—William Van Anden, Poughkeepsie, N. Y.

Claim.—1. The converging and vertically-moving jaws B B′ for supporting, retaining, and elevating the chair-blank or plate during the bending and shaping operation, substantially as described.

2. The combination of the converging and vertically-moving jaws B B′ and die *j*, substantially in the manner and for the purpose described.

3. The combination of the die *j*, jaws B B′, and mechanism for moving the jaws vertically during their approach toward another, substantially as described.

4. The combination of the die *j*, shoulders *i i*, jaws B B, recesses *e e*, and mechanism for elevating the jaws while they are made to approach each other, substantially as described.

102,069.—DOVETAILING-MACHINE. — James R. Van Epps, Albany, N. Y.

Claim.—1. The rotating dovetail-cutters A A A, having a lateral adjustment and vertical movement, as set forth, supporting-table provided with clamp wedge *m*, adjustable guide-bar *n*, and the spring guides O to govern depth of dovetail, all constructed and arranged with respect to each other in the manner described.

2. The shafts *r* and their several pulleys, the belts *p p p* and drum *q*, all located on a vertically-reciprocating carriage, C, the belt *a′*, tightening-pulley *b′*, and driving-pulley X, all arranged, constructed, and operating in the manner and for the purpose herein shown and described.

3. The arrangement, upon the frame E, of the carriage C D, bands I I, springs J J, treadles F, and beds for the timber, as specified, so that the mortise and tenon may be respectively cut in the manner set forth.

4. The cutters B B, each arranged on the vertically-moving frame D, in combination with the tipping bed *u*, all as shown and described.

102,070.—MACHINE FOR MOLDING GLASS BUTTONS.—Charles Vigneron, Providence, R. I.

Claim.—The combination of the bed-plate E and flask-cover B with the detachable matrix-bed A, and the piston D fitted to the flask-cover and operated by pressure, substantially as described.

102,071.—HANDLE-SEAT FOR PLOWS.—Edward Wiard, Louisville, Ky., assignor to B. F. Avery.

Claim.—A plow provided with the seat D, having one face fitted closely upon the inner surface of mold-board A, having an outwardly-projecting notched flange upon its rear edge to support the corresponding portion of handle C, two cross-flanges to support the inner side of handle C, and a socket, *a*, to receive the mold-board end of the cross-brace, all as and for the purpose specified.

102,072.—LOCOMOTIVE AND CAR-BRAKE.—Joseph C. Wilson, Winneconne, Wis.

Claim.—1. The construction and arrangement of locomotive, truck, and car-brake, when the same is composed of a shaft upon which is adjusted a cam, when said cam is surrounded by a wheel and operated by a lever, so that, by reason of the eccentric cam, the wheel can be made to impinge upon the wheels of the locomotive or car-trucks, in the manner and for the purpose herein described.

2. The combination of the friction-wheels A A, hung eccentrically upon the cam-journal B, in combination with the levers E and car-wheels C C, in the manner and for the purpose herein described.

102,073.—FEEDING-APPARATUS FOR NAIL-MACHINE.—Uriah S. Wolff, Burrel township, Pa.

Claim.—1. The combination of the rods B and G and cylinder F with the sliding cross-heads D and J, all arranged and operating substantially as described.

2. In combination with the subject-matter of the first clause of claim, the racks and pinions M O L N and spring P, or its equivalent, as and for the purposes set forth.

3. The combination of the rod G and arm *d* with the connecting-rod *e*, swivel and double lever *f*, and rod *h*, for the purpose described.

4. In combination with the subject-matter of the third clause of claims, the cross-head D, rod B, cylinder F, and rack and pinion M L, substantially as set forth.

5. The rack O on the cross-heads J J′, and the cog-wheel N driven by the ratchet-wheel R, in combination with the ratchets S S′, lever *t*, connecting-rods *r r′ r″*, cam T, and spring U, for giving the feed-motion, as described.

6. The system of levers for operating the belt-shifting device, in combination with the cam V, all arranged substantially as set forth.

102,074. — BELT-TIGHTENER. — Alvin N. Woodard, Fenton, Mich.

Claim.—In belt-tighteners, the clamps above-described, constructed with the bed-pieces C and E, the hinged jaws C′ and E′, links *b* and *b′*, stirrup-guides G, clamp-plates H, and screws I, when arranged to operate as and for the purpose set forth.

2. The screws F, gears J and K, shaft A, and crank D, in combination with the clamps above described, constructed with the bed-pieces C and E, the hinged jaws C′ and E′, links *b* and *b′*, stirrup-guides G, clamp-plates H, and screws I, when constructed and arranged to operate as and for the purposes set forth.

102,075.—TOOL-HANDLE.—Edwin L. Abercrombie, Florence, Mass.

Claim.—1. The shank *b*, having the projection *a* thereon, in combination with the holder D and wedge or key C, substantially as described.

2. The improved tool-holder D, when constructed substantially as herein shown and described.

102,076.—BUCKLE.—John J. Adair, Portland, Ind., assignor to William J. Huey, same place.

Claim.—The fastener herein described, for attaching buckles to straps without sewing, consisting of the frame A, loop A^2, and cross-bar A^1, carrying the fixed and rigid tongue B, substantially as specified.

102,077. — ELECTROTYPING. — Joseph A. Adams, Brooklyn, N. Y.

Claim.—Connecting a battery with the face of a mold to electrotype the same, substantially as described and specified.

102,078.—PROCESS FOR FACING VALVE AND VALVE-SEAT FOR STEAM-ENGINES. — Quimby S. Backus, Winchendon, Mass.

Claim.—1. The method herein described of facing valves and valve-seats for steam-engines, with steel, welded to the iron in the mold while the iron is in a liquid state, substantially as herein set forth.

2. A valve, faced with steel, in the manner and for the purposes herein set forth.

3. A valve-seat, faced with steel, in the manner and for the purposes herein set forth.

102,079.—WHEEL-GEAR FOR CARRIAGES.—Albert Baxter, Howard, N. Y.

Claim.—1. The connection of the wheels with the axles by means of the collars *c* and *b*, and box E, square, or otherwise equivalently-formed journals *d*, screws and nuts *e f*, and the encircling clamp-heads G G, the whole arranged as described, and operating in the manner and for the purpose specified.

2. In combination with the above, the single clip *a*, embracing the cross-block B, box E, and axle D, as herein described.

102,080. -STOVE FOR RAILROAD CARS.—Gain Beeman, Ironton, Ohio.

Claim.—1. The combination of the annular plates or rings F F, cage or tripod F, and bolts E, as and for the purposes set forth.

2. The arrangement of roof-formed and slotted tank O, *o o′*, P, cylindrical valve Q, sloping ledge M, and base B, for the purposes set forth.

3. The provision of valve-guarded aperture *n* in the bottom of the tank, for the object stated.

4. The hinged grating T, for the purpose set forth.

5. The provision in the bottom *b* of the base B of pipes J and plugs *j*, forming controllable draught-inlets, out of reach of irresponsible persons.

102,081. —GRAIN-DRILL TEETH. — Lyman Bickford, Macedon, N. Y.

Claim.—1. A jointed drill-tooth, one portion of which maintains a fixed relation to the drag-bar, while another portion is made capable of yielding to obstructions, as specified.

2. The drill-tooth, composed of two sections, jointed to each other, in combination with the wooden pin *e*, or equivalent device, for the purpose set forth.

3. The drill-tooth, made in sections, substantially as and for the purpose described, in combination with the perforated or slotted arm *b* and adjusting-bolt *e′*, or an equivalent device, whereby the tooth may be set at any desired angle of presentation to the ground, as required.

102,082.—HEMMER FOR SEWING-MACHINE. Almon W. Boomer and John P. Haskins, Poultney, Vt.

Claim.—The combination of the guide-plate A, provided with the folding-space *i* and notches *l l*, and the guide-plate B, provided with the curved folding-plate *m*, the plate B being adjustable on the plate A, all substantially as and for the purpose herein specified.

Also, the pivoted folding-plate *m*, with its adjustable guide-rod *r* or its equivalent, substantially as and for the purpose herein set forth.

102,083. — WASHING-MACHINE. — Samuel Brackett, Wenona, Mich.

Claim.—The arrangement of the longitudinal elastic bars D, resting upon the transverse supports B, when provided with skids E, for the purpose of vertically adjusting the roller F, vertical bars K provided with the blocks I and cross-piece *o*, the rollers F and M, and band N, when constructed and operated substantially as described.

102,084.—CHURN-DASHER. — Isaac Brewbaker, Fincastle, Va., assignor to William A. McCue.

Claim.—1. The guides C C C′ C′ in their relations to each other and in combination with arms D D D′ D′, provided with the plates O O O′ O′ and paddles Z Z Z′ Z′ and shaft A, arranged and operated for the uses and purposes herein described and shown.

2. The guides C C, so arranged upon the shaft A that when it is forced down the lower horizontal parts of the guides will operate to prevent the arms D D or paddles Z Z coming in contact with the dasher S, substantially as shown and described.

3. The guides C′ C′, so arranged upon the shaft A that when it is elevated the lower horizontal parts of the guides operate to prevent the arms D′ D′ or the paddles Z′ Z′ from coming in contact with each other, substantially as shown and described.

4. An arm, D, provided with a vertical paddle, Z, on its lower extremity, and swinging or vibrating in the plane of the horizontal axis of a shaft, A, upon a journal, X, at or about its longitudinal center of gravity, and connected at its upper extremity by a vertically-perforated plate, O, to and operated by an inclined guide, C, attached to a shaft, A, working in a directional aperture, E, all arranged so that the motion of the shaft causes the paddle to move in a direction at right angles to that of the motion of the shaft.

102,085.—GLOBE-VALVE.—Isaac W. Brown, Jefferson City, Mo.

Claim.—The two hand-wheels on the stems A and C, when separated a sufficient distance to enable a man to give motion to the stem A with one hand, and at the same time give a different motion to the stem C with the other hand, when constructed and combined with the spring D and the valve B, for the purposes set forth.

102,086.—HOT-AIR FURNACE.—Lorenzo W. Brown, Cleveland, Ohio.

Claim.—The arrangement of the air-pipes F and fire-pot C, in combination with the air-chamber G, hollow cone H, and flue E, in the manner substantially as and for the purpose herein described.

102,087. — BOX-HOOK. — Charles Bruso, Worcester, Mass.

Claim.—1. The combination, with lever A, of the claws or clutch-hooks B B, provided with projections *g g*, substantially as and for the purposes set forth.

2. A combined box-hook and cant-lever, the parts of which are constructed and combined together substantially as shown and described.

102,088.—CAPSTAN.—Ebenezer Buel, Silver Creek, N. Y.

Claim The loose clutch-sleeve C, carrying the

sweep D, in combination with the drum B and shaft a, projecting through and above the sweep, and the hand-lever E, the several parts being arranged to operate as hereinbefore set forth.

102,089, antedated March 31, 1870. — SPRING-BED BOTTOM. — Jeremiah N. Bull, Springfield, Mass.

Claim.—The spring for bed-bottoms formed with the two coils A B, the two hooks *b b'*, and the loop *c* projecting backward from the said hooks *b b'*, when used in combination with the leather connection E, formed with two holes for receiving the hooks *b b'*, and attached to the slat G, substantially as shown and described.

102,090.—ADJUSTABLE HOLLOW DRILL.—Charles E. Butler, Hudson, N. Y.

Claim.—1. The cutting-lips on the ends of the jaws, as and for the purpose set forth.

2. The combination of the conical shell A, cutting-jaws *a a a*, mandrel B, and chock-nut C, as and for the purpose set forth.

102,091. — HEAD-BLOCK OF SAW-MILL.—James A. Clark, Leavenworth, Ind.

Claim.—1. The combination of the block C, with its sliding knee D and pulley *d'*, with the vibrating arm F, with the pawls *c* and *d*, and chain *e*, when arranged to operate substantially as described.

2. The dogs A and *i*, with their levers *j* and springs *k*, pivoted to the ways B, in combination with the projections *l* and *m* on the carriage, and the stud *n* of the vibrating-arm F, all constructed and arranged to operate substantially as described.

3. The cam or projection *m*, with the screws *p* for adjusting the same, substantially as set forth.

102,092. — COMBINED MANURE-FORK AND SCRAPER.—John W. Clarke, Kingston, Wis.

Claim.—1. The manure-fork consisting of the curved tines D, with the braces E attached to the frame A and having handles C attached, substantially as described.

2. The scraper I, in combination with a horse manure-fork, substantially as set forth.

102,093.—EXTRACT FOR THE CURE OF CANCER AND OTHER DISEASES.—Pleasant A. Cobb, Lynchburg, Va.

Claim.—The extract for the cure of cancers, &c., made in the manner and of the ingredients as herein recited.

102,094.—PATTERN-CHAIN FOR LOOM.—Hilas D. Davis, North Andover, Mass.

Claim.—The combination of a series of detached reversible plates, with the main plate or link, to form the working-card of a pattern-chain, substantially as described.

102,095.—HORSESHOE BLANK.—John Day, Buffalo, N. Y.

Claim.—As an article of manufacture, the bar of metal, shaped as herein described, and as represented in the drawings.

102,096.—OPERATING FAN TREMOLOS.—Joseph H. Dow, Birmingham, Conn., assignor to himself and Darius Wilcox, same place.

Claim.—1. Combining the tremolo-shaft with the pedal by which the bellows or feeder are operated, through mechanism consisting of the pulley H, shafts D and E, and frictional-wheel F, all operating substantially as set forth.

2. In combination with a mechanism connecting the pedal B' to the tremolo-shaft N, the arrangement, substantially such as described, to open or release the bellows or feeder from the action of the pedal while the tremolo is in operation.

102,097. — CONCRETE PAVEMENT.—Nelson H. Downs, Birmingham, Conn.

Claim.—A concrete pavement, consisting of the materials and in the proportions substantially as described.

102,098.—TRUNK BEDSTEAD.—Richard C. Du Bois, Washington, D. C.

Claim.—The combination and arrangement of the trunks or chests C C, arches *a a*, braces *b b*, and cross-slats *c c*, substantially as set forth.

102,099.—THILL-COUPLING.—George W. Dubuisson, Norwich, Conn.

Claim.—1. The thill-iron C, provided with flanged block D and cap E, substantially as and for the purposes herein set forth.

2. The combination of the cup B with flanges *a a* and recesses *b b*, thill-iron *c*, with flanged block D and cap E, all constructed and arranged substantially as and for the purposes herein set forth.

102,100.—HAME-ATTACHMENT.—Charles H. Easto, South Boston, Mass.

Claim.—The independent eye H, hung on the bolt E, and receiving the ring I, substantially as and for the purpose described.

102,101.—LAWN-MOWER.—Norman Eaton, Woburn, Mass.

Claim.—1. The combination of the stationary knife B, adjustable recess *c c'* of the auxiliary frame, and the adjusting-screw R, all constructed and arranged substantially as described.

2. The arrangement of the main frame O, having slot *p*, the auxiliary frame A, having recess *e u*, and slot *a*, the knife B, and screws R and G, all constructed and operating substantially as described.

3. In combination with the loose bail, the adjusting arrangement for the handle, when arranged as set forth, and when used for the purpose described.

102,102.—ROAD-SCRAPER.—James C. Evans, Delaware, Ohio.

Claim.—1. The draw-bar C' and the rod C provided with the arms *i i*, in combination with the sliding bolt *d* provided with the pins *d'*, the springs *e*, and projections *e e'*, substantially as and for the purpose set forth.

2. The side-pieces *a'*, when provided with the lips *b* and combined with the bail *a*, in the manner described, and for the purpose of preventing the tipping of the frame and scraper over upon the team when the scraper is filled and not unlocked.

102,103.—LUNCH VALISE.—Sigmund Feust, New York, N. Y.

Claim.—The combination of the body A B and A, frame C, half-circles F, rivets G, dish K, and appendages L, constructed as shown and for the purpose set forth.

102,104.—ELASTIC ROLL.—James B. Forsyth and John J. Haley, Boston, Mass.

Claim.—An elastic roll, in which the metal mandrel or arbor, being first coated with duck or other strong cloth saturated with rubber, and extending around but not through the arbor, such coat is fastened to the arbor by staples, pins, or rivets, the rubber sheet or sheets being then vulcanized upon the roll and to the coating, as described.

102,105.—COMBINATION TOOL.—Calvin A. Foster, Fitchburg, Mass.

Claim.—The combination tool, consisting of the disks A A', handles B B', jaws C C', D D', and E E', and awl G, constructed and arranged substantially as described.

102,106.—SCISSORS-SHARPENER.—Calvin A. Foster, Fitchburg, Mass.

Claim.—A scissors-sharpener composed of the

grinding-wheel A, detachable clamping-frame D, guiding-ring L, and inclined scissors-supporting piece H I, said parts being constructed and arranged for joint operation, substantially as herein shown and described.

102,107.—WHEEL FOR LOCOMOTIVE LAND CONVEYANCE, AND COAL-HOISTING APPARATUS.—James S. French, Alexandria, Va.

Claim.—1. The wedge-shaped groove A, constructed in the driving-wheels of locomotive-engines, in combination with the rails on which they run, substantially as described, for the purpose set forth.

2. The construction of a single-track railway in which my wedge-shaped drivers are used, in combination with common road-wheels, substantially as described.

3. The grooves constructed in car-wheels and wheels for land conveyance, whether cast in the wheels or rolled in the tire, substantially as described, and for the purpose set forth.

4. The material for packing the grooves with, substantially as described, when employed as herein set forth.

102,108.—SHUTTER-FASTENER. — Frederick W. Frost, Somerville, Mass.

Claim.—Providing the blind-fastening, composed of the catch-bar *b* formed and fulcrumed, as described, to the under side of the lower bar or rail of the blind, with the post *k* and the spring *i*, the whole operating as hereinbefore explained.

102,109. — METALLIC CARTRIDGE.—Adonis Nicolas Cristin Gavard, Paris, France.

Claim.—The above-described metallic cartridge, entirely formed of metal, and composed of a thin steel case, rolled up with an oblique joint, free to expand, and having a metal base in the groove, in which is secured the shoulder of the steel shell.

102,110.—WIRE-COVERING MACHINE.—Ambrose Giraudat, New York, N. Y.

Claim.—1. The spool A hung upon the tube B, which is held in line with the tubular axles *a a* of a rotary frame, and secured by the cross-bar *c* and ears *e*, in combination with the spring *f*, all arranged as set forth.

2. The spring *f*, string *g*, and swivel-pin *h*, combined with cross-bar *c*, all relatively arranged on a wire-coverer, as set forth, and for the purpose described.

3. The pivoted plates *k k*, bar *c*, and notched arm *n*, all combined with the tube B, as and for the purpose described.

102,111.—SCREW PROPULSION FOR TUG-BOATS. — Edward D. Gird, Syracuse, N. Y.

Claim.—1. The double-ended flat-bottomed hull H, in connection with the reversible rudders P P, situated on and let into the sides of the same, substantially as described and shown.

2. The shafts D D D, carrying the propellers C C C, in combination with the hangers F^2 F^2 and H^1, the bevel-gears B B, G G G, and E E, the transmitting-shafts T T, and the vertical shaft and gear-wheel A, arranged and operated substantially as described and for the purpose set forth.

102,112.—SAWING-MACHINE.—Allen Goodman and Hardin Goodman, Williamsburg, Mo.

Claim.—1. The combination with a truck-frame, A, of the saw-supporting frame K, and links Q, substantially as specified.

2. The combination with the saw-supporting frame K and truck A, connected as described, of the reciprocating saw and saw-gate, substantially as specified.

3. The combination with a truck-frame, A, saw-supporting frame K, and reciprocating saw and saw-gate, as described, of the connecting-rods I, crank-shaft D, driving-wheel B, and intermediate gears, substantially as specified.

4. The arrangement with the driving-wheels of the truck-frame, and driving-wheel and shaft, of the train of feeding-gears, *s*, s^1, and s^2, substantially as specified.

102,113. — FLY-NET FOR HORSES. — John Graham, New York, N. Y.

Claim.—1. The fly-net for horses, made of longitudinal straps and transverse cords united by metal clasps, as specified.

2. The fly-net for horses, made of longitudinal straps and transverse cords, at the ends of which cords metallic tags are applied, as and for the purposes set forth.

102,114.—STOVE-PIPE SHELF, HEATER, AND DAMPER.—Edward Hall, Beloit, Wis., and Francis D. Searl, Rockton, Ill.

Claim.—1. The combined stove-pipe shelf, heater, and damper, when constructed substantially as herein described, and operating with the deflector D and lid C, substantially as herein set forth.

2. In a stove-pipe shelf, the funnel-shaped deflector D, when attached to the stove-pipe and independent of the drum, substantially as herein described.

3. In a hollow stove-pipe shelf, heater and damper combined, the combination of the damper E and upper and lower openings *c b* in the stove-pipe within the hollow shelf, substantially as described.

4. The combination of the drum B, lid C, deflector D, damper E, and stove-pipe A, provided with lower and upper openings *b c*, constructed and operating substantially as described.

102,115. — BRICK-MACHINE. — George W. Harlan, Cincinnati, Ohio.

Claim.—A machine for the manufacture of brick, consisting of mixing-box A, shafts *a a'*, molding-box E, and shafts with blades *c c* and molds *l l*, constructed and arranged to employ steam to temper and mix the clay and to mold the brick, substantially as herein set forth.

102,116.—NON-CONDUCTING COVERING FOR STEAM-BOILERS. — Washington Harris and William Howell, Philadelphia, Pa.

Claim.—1. In combination with plaster of Paris and hair, the use of ground or granulated cork, substantially in the proportion and manner described, for the purpose of producing the non-conducting coating for steam-pipes, boilers, &c., hereinbefore set forth.

2. The application of tin plates, or other thin sheet metal, as an inner lining surface for the non-conducting or porous covering of a steam-pipe or boiler, for the purpose of preventing the rapid escape of the heated air, through the said porous covering, from the air-space left between it and the heated vessel, substantially as hereinbefore set forth.

102,117.—PIE-STAMPER AND CUTTER.—Allen Hawkes, Providence, R. I., assignor to Oliver E. Bigelow, same place, for one-half of the invention.

Claim.—The stamp A, in combination with the cutters B B, as and for the purpose set forth.

102,118. — MINERAL PAINT. — Edward B. Heckel, Vincent, Pa.

Claim.—The combination of the hereinbefore-described brown silician mineral with linseed or other oil, substantially as and for the purpose specified.

102,119.—STOVE-PIPE DRUM.—Jacob Heger, Jefferson, Wis.

Claim.—1. The method herein described of securing the cylinder B to the drum A by means of

the collars *a a*, substantially in the manner and for the purposes herein set forth.

3. The arrangement within the drum A of the cylinder B, cross-bars D, plate E, dampers *c c*, and damper-key *d*, all substantially as shown and described.

4. The method herein described of securing the top and bottom to the body of a stove-drum by means of screws passing through the body of the drum into flanges on said top and bottom, substantially as herein set forth.

5. The method herein described of forming T-joints for pipes, substantially as set forth.

102,120.—FAUCET.—Joseph Heine and John Vonficht, Toledo, Ohio.

Claim.—1. The combination of an ordinary stop-cock, A *b*, and a drip-gate, D, to close automatically the outlet of the cock, for the purpose set forth.

2. In combination with an ordinary stop-cock, A *b*, the gate D, constructed with the twisted strip B, flange *d* operated by the cam *c*, substantially as described.

102,121.—HORSESHOE.—John Henderson, Albion, N. Y.

Claim.—As a new article of manufacture, a horseshoe having its rear ends B B brought together, but not attached, and turned in toward the toe and down to form the calks, having beveled edges A A on the top and outside, substantially as shown.

102,122.—MECHANISM FOR MAKING WIRE HEDDLES.—Emil T. Hertle and Richard Thompson, New York, N. Y.

Claim.—1. The mechanism for holding and confining the sides of the heddle-eye along the sides of the die or former F during the operation of the twisting mechanism, substantially as and for the purpose described.

2. The clamps G K combined with the pincers A, substantially as described, so that they are moved automatically toward the die or former by the operation closing the "pincers," substantially as described.

102,123.—COVER FOR TABLES, FLOORS, &c. August Herzog, New York, N. Y.

Claim.—The construction of a wood and India rubber cover, as herein described, which can be used and rolled up on either side, and cleaned by water.

102,124.—SIRUP-PITCHER.—John H. Hobbs, Wheeling, West Va.

Claim.—A sirup-pitcher, when made of glass or porcelain, and having its discharge-nozzle constructed and arranged as herein described, it being separated from the induction-aperture by a bar, as shown, the same constituting a new article of manufacture, as and for the purpose set forth.

102,125.—HINGE FOR SHUTTERS.—Johann Hof and Philipp Brenneis, Baltimore, Md.

Claim.—The spring-latch *a e e'*, applied, as shown, in a transverse socket in one leaf of the hinge, so as to be retracted by an outward pressure, and engaging with a catch of suitable construction on the other leaf, substantially as described.

102,126.—HYDRANT.—James P. Hyde, New York, N. Y.

Claim.—The combination of the hydrant-valve B, having the additional valve-surface *a*, to close and open the waste-passage *c*, with the spring *n*, arranged to keep the valve-surface *a* pressed close to the opposite surface of the pipe E, substantially as herein specified.

102,127.—AXLE-BOX FOR CARRIAGES.—David Jewett, Lynn, Mass.

Claim.—The grooved collar E and the grooved nut G for the reception of elastic packing *k*, in combination with an axle, D, substantially as and for the purpose described.

102,128.—EARTH CLOSET.—George Baker Jewett, Salem, Mass.

Claim.—The combination and the arrangement of the agitator K, with the educt B and the dumper C combined therewith.

Also, the hopper, as made with the inclined bottom, and the dumper, as made with the correspondingly inclined top, and supported by inclined ways, so as to be capable of being moved, in manner as set forth, with reference to the hopper.

Also, the arrangement of the rods or devices H, by which the dumper is connected to the seat-cover F so as to be movable thereby, as set forth, such devices, by the said arrangement, being disposed entirely above the hinges of the cover.

Also, the dumper C, as made, with the concave and inclined top and the hopper educt, as constructed with the inclined and curved bottom, as described, to operate with such top of the dumper.

Also, the arrangement and combination of the lip *d* with the dumper C and educt B of the hopper A, as described.

Also, the spout D and its closer I, as arranged and combined with the dumper C, substantially in manner and so as to enable the spout to operate as set forth.

102,129.—STOPPER FOR JARS AND BOTTLES. Henry W. Ketcham, New York, N. Y.

Claim.—An improved bottle-stopper, formed of the conical shouldered stopper or plug A and cylindrical packing-ring *c*, constructed and operating substantially as set forth.

102,130.—MACHINE FOR ROLLING CONICAL AND OTHER TUBES.—Charles Kewin, San Francisco, Cal.

Claim.—1. The two series of rollers F F', mounted upon the adjustable plates G, in combination with the series of adjustable forming-rollers L, substantially as and for the purpose above described.

2. The circular revolving table D, with its elastic upper surface for imparting frictional pressure for revolving rollers F F', and its regulating-bar V, substantially as and for the purpose described.

3. The adjustable pressure-rollers *e e*, in combination with the revolving friction-table D, substantially as and for the purpose specified.

102,131.—HARVESTER.—William A. Kirby, Auburn, N. Y.

Claim.—The guide-way F, slide R, hinged pitman N O, uniting the crank-shaft and cutter-bar, combined and arranged substantially as described.

102,132.—KNOB FOR SAFE-DOORS.—Joseph G. Kittredge, San Francisco, Cal.

Claim.—The detachable knob, constructed of pieces *a b c* surrounding a central screw, *i*, to attach the knob to the spindle of the lock, and the flanges of the pieces having pins *d d d* to fit into holes *e e e* in the flanges of the cylinders, and operated substantially as herein recited.

102,133.—ANIMAL-TRAP.—John O. Kopas and George W. Bauer, Washington, D. C.

Claim.—The combination of the plates *a*, bolts *b*, bait-holders *c*, links *d*, guard A, and springs *i*, all constructed and arranged to operate as described.

102,134.—ANIMAL-TRAP.—John O. Kopas, Washington, D. C., assignor for one-half his right to Sydney Irving Wailes, Salisbury, Md.

Claim.—The box or case A, provided with guards C C', bolt-hooks D D', loops E E', wires O O', forming-knees G G', and springs M M', rotary platforms B B' B² B³, and sliding drawer H, when all the parts are constructed and arranged to operate as herein described, for the purpose specified.

102,135, patented in England, December 4, 1868.—TREATING PARAFFINE AND OBTAINING IT IN CRYSTALS.—Frederick Lambe, London, England.

Claim.—1. The mode of treating and purifying paraffine as above described.

2. The revolving blades or beaters, and pervious periphery A, in combination with the case D, arranged and operating substantially as and for the purpose set forth.

102,136.—ROTARY PUMP.—Erwin Lavens and James C. Lamb, Middletown, Conn.

Claim.—The arrangement of the supply-pipe C, cylinder A, with channel B, aperture *a*, egg-shaped cylinder E, upon the cross-shaft D, box G with removable cover, roller H, and outlet-pipe I, all constructed to operate substantially as set forth.

102,137.—PISTON-ROD PACKING.—Harvey Thomas Lee, Marysville, Cal.

Claim.—The packing formed by the two divided beveled rings D and E, the beveled edge of one fitting into that of the other, so that the pressure of the gland will cause the outer one to expand against the sides of the stuffing-box, while the other is compressed against the rod or stem, substantially as described.

102,138.—HAMES FOR HARNESS.—Josiah Letchworth, Buffalo, N. Y.

Claim.—A metallic back-strap for wooden hames, composed of a lower portion, B, of wrought iron, welded to an upper cast portion, B', of malleable iron, provided with a socketed tip, *b*, substantially as and for the purpose hereinbefore set forth.

102,139.—COFFEE-URN.—Eugene Martin, Waterbury, assignor to himself and Blaise Soules, Bridgeport, Conn.

Claim.—1. The vessel A, with its steam-tight cover B and discharge-tube D, constructed and arranged substantially as described, and combined with the spirit-burning channel or base C, as described.

2. In combination with the foregoing, the filter, consisting of the perforated pan F and perforated plate H, arranged and operating as described.

102,140.—ROTARY PUMP.—Henry W. Mather, New York, N. Y.

Claim.—1. The recess L in the inner circumference of the case A, for relieving the floats from the pressure of water while being retracted by the cams I I.

2. The cam I', as an auxiliary means of retracting the floats E E', in combination with the case A, recess L, and butment K, as set forth.

3. The pocket M, below the water-passage H and continuous thereof, forming a chamber near the induction-pipe, as and for the purpose set forth.

4. A rotary pump, consisting of the cylindrical case A, with eccentric periphery L, cams I I, and supplementary cam I', with concentric revolving cylinder C and floats E E', combined, arranged, and operating substantially as set forth.

102,141.—BRICK-KILN.—William T. Mathews, Negaunee, Mich.

Claim.—The combination and arrangement, in the kiln herein shown, of the perforated and flued ceiling C and cover B, ventilator D, exterior fire-chamber E, descending bridge wall E', flue E², and air-draught F', constructed substantially as described, and for the purpose set forth.

102,142.—SELF-WINDING AND BALANCING CURTAIN-FIXTURE.—Ferdinand C. D. McKay, Elmira, N. Y.

Claim.—A wheel, placed on the axis of a curtain-roller, in combination with and driven by a second wheel fixed on a separate shaft, when the driving-wheel acts upon the roller-wheel differentially, or so that, in rolling a curtain up during each rotation of the wheel, one or more dead-points occur, at which the tension of the spring is equalized by the weight of the curtain, and the latter hangs at rest.

102,143.—STOVE-GRATE.—Henry Miner, Green Island, N. Y., assignor for one-half his right to Louis Harter, same place.

Claim.—The grate D and cross bar B, constructed and operated substantially as herein described and for the purposes set forth.

102,144.—PAVING BRICK.—David Moffat and John Thomson, Philadelphia, Pa.

Claim.—A brick or block for pavements, provided with the recess B, and otherwise constructed substantially as and for the purpose herein set forth.

102,145.—PICKER-CHECK FOR LOOM.—William Montgomery, Northampton, Mass.

Claim.—The combination, with the picker, of the wooden check-piece P, having butt F, the metal shank G, having flange H, and the bent piece of sheet metal L, the whole constructed and arranged substantially as shown.

102,146.—MANUFACTURE OF STEEL.—Charles Motier Nes, York, Pa.

Claim.—The process of producing steel from cast-iron and ore, substantially in the manner and for the purposes set forth.

102,147.—SAFETY-VALVE.—Henry J. Paine, Providence, R. I., assignor to himself and Joseph Kelly, same place.

Claim.—1. A safety-valve, E, constructed with an inclosed cylindrical steam-chamber, F, having an upper, *d*, and a lower acting face, *e*, in the manner and for the purpose substantially as described.

2. A safety-valve, E, constructed with a cylindrical steam-chamber, F, in combination with an outer, *a*, and an inner seat, *b*, substantially as described.

3. A safety-valve, E, constructed with a cylindrical steam-chamber, F, in combination with the ingress-opening *c* and the series of exit-openings *f*, substantially as described.

4. The escape-openings *f* of the cylindrical steam-chamber F of the valve, inclined downward, as represented, for the purpose of facilitating the escape of the steam after it has performed its lifting action upon the top *d* of said valve, substantially as described.

5. The exit-openings *f* of the cylindrical steam-chamber F of the valve, arranged around the vertical sides thereof, so that their aggregate area will be equal to that of the ingress-opening *c* of said chamber, whereby the steam has equally as ready an escape as ingress, without affecting its lifting power within the cylindrical chamber, substantially as described.

6. The valve E, having its lower acting face *e* braced against the pressure of the spring G when upon its seat *b*, in the manner herein shown and described.

7. The combination, in a safety-valve, of the cylindrical supporting-shell A, the central inverted conical hub C of the inner valve-seat *b*, the cylindrical chambered valve E having an ingress-opening, *c*, and exit-opening, *f*, with the central projecting stem I, pressure-spring G, and adjusting-yoke J, the whole constructed, arranged, and operating as described.

102,148.—TREATING TIN SCRAP TO OBTAIN USEFUL PRODUCTS.—Dubois D. Parmelee, New York, N. Y., assignor to Walter K. Marvin.

Claim.—1. The process of removing the tin from "waste tin scraps" by treating the same in an inclosed vessel with chlorine gas, and then carrying off and condensing the vapor or fumes arising from the chemical union of the gas with the tin coating, substantially as set forth.

2. The herein-described apparatus for carrying out the process above specified.

102,149.—CAR-COUPLING.—William B. Parsons, Short Tract, N. Y.

Claim.—1. A car coupler consisting of the hinged bent lever C, gate E provided with the pin *b*, latch G, and stop I, when constructed and arranged to operate substantially as herein described, in connection with a link and draw-heads, as set forth.

2. The combination of the lever C, link *d*, and gate E having pin *b*, with a coupling-link, H, when constructed and arranged to operate substantially as herein described, and for the purpose set forth.

3. The combination of the stop I, latch G, and lever C when constructed and arranged as herein described, for operating the locking-pin of a car-coupler, as set forth.

102,150.—DOUBLE-SHOVEL PLOW.—George Perry, Granville, Ill.

Claim.—A cultivator-tooth or shovel, consisting of the standard B, constructed with flanged arm B', and shovel A attached to said arm, substantially as and for the purpose set forth.

102,151.—JOINT FOR PITMAN-HEADS, SICKLES OF HARVESTERS, &c.—Iva Poffenberger, Champaign county, Ohio.

Claim.—1. A pitman-joint, consisting of a conical hole, with a correspondingly conical wrist, flattened at its sides, substantially as described.

2. In combination with the joint above described, the spring arm D, attached to the pitman, and provided with the set-screw E, substantially as set forth.

102,152. — HULLING-MACHINE. — William Porter, Brooklyn, N. Y.

Claim.—The arrangement of the regulators F F, backers D D, adjusting-screws E E, or their equivalents for regulating the set of steel knives C C in hulling-cylinders, substantially as and for the purpose described.

102,153.—PAPER-FILE.—John P. Quarles, Richmond, Va.

Claim.—The combination of the base A and rod or wire B, having an eye or slot *a*, when constructed and arranged substantially as and for the purpose herein set forth.

102,154.—SCREEN-ATTACHMENT FOR WINDOWS.—George Reed, William C. Hoagland, and John J. Newson, Brooklyn, Cal.

Claim.—The combination, with a double-sash window, of the top screen A, lower detachable screen B, and middle guard-strip C, constructed and arranged as herein described.

102,155.—MACHINE FOR UNITING BOOT AND SHOE-SOLES TO THE UPPERS.—T. K. Reed, East Bridgewater, assignor, by mesne assignment, to Gordon McKay, trustee of the McKay Sewing-Machine Association, Boston, Mass.

Claim.—In combination with a machine for nailing boots and shoes with nails cut from wire, or wire-like material, the shoe being supported by a last and jack-mechanism, a gauge around the outside of the shoe, and mechanism operated by such gauge, to effect such variation in the extent of wire-feed as is required by the varying thickness of the parts to be united.

102,156.—APPARATUS FOR PITCHING BEER AND OTHER BARRELS.—Hermann Rentti and Philipp Winkelhaus, Hamilton, Ohio.

Claim.—1. The closed charcoal-furnace having the blast D, and one or more nozzles *H*, for the purpose designated.

2. The mode of firing or pitching casks and barrels, substantially as set forth.

102,157.—INKING-APPARATUS FOR COLOR-PRINTING.—Israel L. G. Rice, Cambridge, Mass.

Claim.—1. A fountain made with a clamp, D, and having a roller with a key, so that the fountain may be readily adjusted to any position on the bar M and shaft N, substantially as and for the purpose set forth.

2. The bar M and shaft N, when used in combination with the fountains described above, substantially as, in the manner, and for the purposes set forth.

102,158.—APPARATUS FOR REEFING SAILS. Nathaniel Wiley Rich, Swampscott, Mass.

Claim.—The arrangement of the series of common tying reef-points A^2 applied to the inboard part of the sail, with the series of reefing-points applied to the outboard parts thereof, their leading-lines *a* and *b* affixed to the fore and aft leeches of the sail, and the two blocks *c f* and tackle-rope *g* thereof, the whole being substantially as described.

102,159, antedated April 9, 1870.—MACHINE FOR TRIMMING THE HEELS OF BOOTS AND SHOES.—Everett P. Richardson, Lawrence, assignor to himself and Francis W. Carruth, Boston, Mass.

Claim.—1. The knife or shave D, having, in addition to its forward shaving action around the heel, a motion crosswise or laterally thereto, for the purpose of effecting a drawing cut, substantially as described.

2. The annular knife D, in combination with the devices, substantially as described, for moving and guiding the heel in relation thereto.

3. The pivoted frame F, in combination with the clamp H, substantially as and for the purpose set forth.

4. The gauge or guide E, so arranged as to rest against the edge of the top lift of the heel, substantially as and for the purpose set forth.

102,160. — MACHINE FOR JOINTING THE CLEANING TEETH OF CROSSCUT-SAWS.—John H. Robson, Ovid, Mich.

Claim.—The metallic pieces *f* and *b* and the screws *c c*, combined and arranged substantially as described and shown, and for the purpose herein stated.

102,161, antedated April 12, 1870.—COMPOUND TO BE USED IN TREATING RHEUMATISM AND OTHER DISEASES.—John B. Rodgers, St. Louis, Mo.

Claim.—The medical compound herein described, compounded of the materials and applied in the manner substantially as specified.

102,162.—PLOW.—Samuel D. Sayre, Rockford, Ill.

Claim.—The combination and arrangement of the beam A, standard B, share C, mold-board D, handles E E', land-side F, wheel G with its adjustable hinges, scrapers A A, and caster-wheel I, with iron J, as described, for the purpose set forth.

102,163.—LAMP.—Bennett B. Schneider, New York, N. Y.

Claim.—1. The combination, with the bottom plate of the reservoir B, having an aperture therein for the admission and escape of oil, of one or more plates, *b* or *c*, having a corresponding aperture, and so attached to the bottom of the reservoir as to be capable of being turned thereon, substantially as hereinbefore set forth.

2. The combination of the bottom plate of the reservoir B, having an aperture through it for the ingress and egress of oil, one or both of the plates *b* and *c*, the arm *c*, and the cup A, having a groove formed within it for the reception of the arm *c*, substantially as and for the purpose set forth.

3. The combination of the outside wick-tube H, the deflector I, and the chimney-gallery J, all firmly united together, so as to form a single piece, substantially as set forth.

4. Constructing the plate or sheet of metal which unites the deflector I to the tube H with a series of apertures in close contiguity with the tube H, as set forth.

5. The combination of the tube H and strips of metal *i i*, substantially as set forth.

102,164.—BOBBIN-WINDER FOR SEWING-MACHINES.—Thomas Shanks, Baltimore, Md.

Claim.—1. The shaft H, fitted in bearings A A near its ends, and having attached to it, between its bearings, the plate G, provided with an S-shaped slot, in combination with the worm-wheel F, pin *e*, worm B, and spindle C, the two latter being arranged beneath the former, and all operating in the manner and for the purpose set forth.

2. The combination of the plate G, provided with an S-shaped slot, the pin *e*, worm B, and the worm-wheel F, when the latter is provided with holes at different distances from the center, in either of which the pin may be inserted, substantially as described.

102,165.—WATCHMAN'S TIME-CHECK.—David Shive, Philadelphia, Pa.

Claim.—The combination with a clock, having hour and minute-hands, of the disk C, provided with twelve cardinal numbers, corresponding with those on the clock-dial and a fixed marking surface and mounted on the axis of the hands, and connected with one of the hands by means of the curved socketed arm F, so as to allow the free rotation of the other hand, all constructed and arranged as herein set forth.

102,166.—CLEANING WOOL AND HAIR.—Charles F. A. Simonin, Philadelphia, Pa., and Edward W. Coffin, Glendale, N. J.

Claim.—The process of cleaning wool, hair, hides, feathers, &c., by means of the vapor of the lighter hydrocarbons distilled from petroleum or coal, such as naphtha, benzine, benzole, or gasoline.

102,167.—DEVICE FOR HANGING PICTURES, &c.—Corelli W. Simpson, Bangor, Me.

Claim.—1. The hinged cord-holder or clasp *a*, with its rings *c c*, constructed as shown.

2. In combination with the hinged clasp *a*, the suspending cord-holder C and nail or hook *d*, constructed as shown and described.

102,168.—LAMP.—Francis Vanvost Sleeth, Keokuk, Iowa.

Claim.—A lamp provided with the features of, first, an open air-chamber surrounding the wick-tube, and descending into the bowl; second, an opening, L, for filling the bowl by; third, a reflector-plate E, on top of the bowl; fourth, a match-safe in the base of the lamp, all substantially as set forth, as a new or improved article of manufacture.

102,169. — VAPOR-BURNER. — Charles E. Smith and Henry J. Rice, Columbus, Ohio.

Claim.—The combination of a burner having provision, as described, for enlarging or diminishing its supply of oxygen, with a generating-chamber having a needle-hole orifice communicating with a long conducting-pipe which connects such chamber with the burner, substantially as shown and described.

Also, the combination of the tube Q with the burner and its openings *o*, and valve, as and for the purposes described.

102,170. — SEWING-MACHINE. — George A. Smith and Edward L. Miller, Philadelphia, Pa.

Claim.—The combination of the take-up lever, link, and bent lever, constructed with a cam-face and operated by the movement of the needle-arm, as described.

102,171.—CHURN POWER.—Ruth N. Smith, New York, N. Y.

Claim.—The churn and power, consisting of the frame A, the crank-shaft B, the bifurcated rod D, the shaft E, the gudgeons *e e*, the swivel-head *d*, the gearing *a b*, the crank C, the cross-bar *g*, bracket *h*, and churn, all combined, arranged, and operating as described.

102,172.—HORSE HAY-RAKE.—Solomon P. Smith, Waterford, N. Y.

Claim.—1. The arrangement of the pairs of teeth of the twin spring drag-bars firmly and rigidly braced to each other and to the teeth, the inclined hinged tilting-frame, and the parallel division bars *g*, for confining the spring-hinged ends of the drag-bars within separate compartments of said frame, as herein shown and described.

2. In connection with drag-bars united to each other so as to diverge laterally toward their hinged ends, the spreading blocks h, for the purpose of imparting to each branch of the twin bar a constant expanding force at their open ends, in the manner herein shown and described.

3. The foot-lever P, maintained in a rearward inclined position by its connection with the arm K, so as to admit of a slight rising and falling motion for the purpose of locking, by its weight, the front bar of a tilting-frame, extending forward of the axle, to support said frame in an inclined position against the upward pressure of the drag-bars when the teeth are raking, as herein shown and described.

4. The combination of the tilting and carrying frame, constructed with division bars *g*, hinged to and extending forward of the axle, the lateral diverging spring drag-bars, constructed with spreading blocks h, the inclined locking-lever P, the hand-lever Q, the seat F, and the supporting-frame, the several parts being constructed and arranged as shown and described.

102,173. — HAY-TEDDER. — Walter Smith, Weston, Mass.

Claim.—1. The arrangement of the driving-wheels *e e* with the lantern-frame B, and the series of arms *r* applied to the cranked shaft *o*, such frame and arms under such an arrangement being projected outwardly beyond the said wheels *e e*, substantially as set forth.

2. The combination and arrangement of the eccentrics *n n* with the cranked shaft *o*, its arms *r*, the boxes *p p*, the lantern-frame B, the driving-wheels *e e*, and gears *f, g, k, l*, or mechanism for revolving the lantern-frame B, by means of the driving-wheels *b e*, as explained.

102,174. — GOVERNOR-VALVE. — William Smith, Philadelphia, Pa.

Claim.—The double conical valves D D', in combination with the upper and lower sides of the seats F' and H, substantially as and for the purpose set forth.

102,175.—APPARATUS FOR COOLING GRAIN. Solomon A. Stebbins, Toledo, Ohio.

Claim.—The combination of the bin A or its equivalent, perforated cylinder B with perforated ends, supports C, and pipe D, adapted to receive a current of air from the outside of the bin, substantially as and for the purpose hereinbefore specified.

101,176.—SELF-ACTING EQUALIZING-VALVE. John J. Steiger, Peoria, Ill.

Claim.—1. The chambers A and B, provided with the diaphragms *b k*, connected with the two spindles *e* and *z*, reacting on a connecting-lever, D, by

which one of the diaphragms contracts the passage in pipe over a discharge or relieving-valve, *i*, substantially as and for the purpose set forth.

2. The valve *a*, diaphragm *b*, piston-head *c* with its spindle *c*, and lever D, in combination with spindle *z*, with its piston-head *m*, diaphragm *k*, valve *i*, and spring *h*, substantially as set forth.

3. The lever D supported by an adjustable screw-threaded fulcrum *g*, in combination with spindles *c z*, diaphragms *b k*, and valves *a i*, substantially as set forth.

4. The arrangement of the chambers A B, pipe C partition *d*, valve *a*, diaphragm *b*, spindles *c*, screw-cap *z*, fulcrum *g*, lever D, spindle *z*, vaulted cap *o*, diaphragm *k*, valve *i*, spiral spring *h*, and screw-cap *q*, substantially in the manner and for the purpose as herein set forth.

102,177.—Amalgamator.—Charles C. Stevenson, Gold Hill, Nevada.

Claim.—The combination in an amalgamator of the guides B, curved spirally lengthwise, and having their upper surfaces concave transversely, for throwing the pulp upon and toward the center of the muller, with the inclined plates D and openings E, for carrying the pulp beneath the muller again, substantially as described.

102,178.—Folding Chair.—Alexander W. Stewart, Boston, Mass.

Claim.—In combination with the crossing pivoted legs and with a dropping seat, the seat supporting braces pivoted to the legs *a a'*, and thrown out under the front of the seat when the legs are spread, and back into the plane of the legs when the chair is folded, substantially as described.

102,179.—Folding Chair.—Alexander W. Stewart, Boston, Mass.

Claim.—A folding chair, having, in combination with the crossing pivoted legs, a back-frame, hinged to the legs *e e'*, as seen at *g*, and connected to and operated by the legs *a a'*, by means of slots *k* and pins *i*, as shown and described.

102,180.—Folding Chair.—Alexander W. Stewart, Boston, Mass.

Claim.—The combination of the dropping seat and the folding leg-frames, when the seat *f* and one of the frames *e f g h* are respectively pivoted to the ears or bracket bearings extending from the other frame, as shown and described.

Also, in combination with the above, the bar or stretcher *h* of the leg-frame *e f g h*, said bar pushing the seat up and supporting it when the chair is opened, and retreating and letting the seat fall when the chair is folded, as shown and described.

102,181.—Metal-Capped Cork.—Edwin Street, East Haven, Conn.

Claim.—The herein-described metal-capped cork, consisting of the cork disk B, loop C, and cap D, all combined and secured together substantially as set forth.

102,182.—Spring-Bed Bottom.—Richard Tattershall, Beloit, Wis.

Claim.—The grooved pieces *a*, slat-supporters C with hook-ends *b* and plates *d*, springs *e*, slats D, provided with openings *e*, *f*, and *g*, and the pieces E with downward projections *h*, all arranged and operating together, substantially as and for the purposes set forth.

102,183.—Type-Distributing Machine.—David B. Thompson, Brooklyn, N. Y.

Claim.—1. The employment of the inclined table or shelf, with spaces D and ribs C and frame L, when provided to operate in the manner, and in combination with the table A, substantially as and for the purpose herein shown.

2. The levers K and slides F, provided with the pins E, combined and operating with the frame L and table A, substantially as and for the purpose herein described.

3. The combination of the table A, levers K, ribs C, spaces D, pins E, and slides F with the notch 1 and nose 3, the frame L and cams N, X, and Z, arms W, shafts O and U, arms U' and bar Y, operating substantially as and for the purpose herein set forth.

102,184.—Machine for Grinding and Polishing Marbles.—John H. Volk, Chicago, Ill.

Claim.—1. A machine for grinding down and polishing marble, granite, or stone columns, consisting of the frame A, carriages B B' with their adjustable blocks *b b'*, and centers C C', gear-wheels F *f* and G, pulley H, shaft I, and cross-belt *h*, or their equivalent, when constructed and arranged substantially as herein described, for the purpose of causing a stone column mounted therein, and a belt passing about it and the shaft I, to move in opposite directions, as set forth.

2. A rubbing or polishing-cylinder, sleeve or ring L, constructed and arranged to be operated in the manner substantially as herein described and for the purposes set forth.

102,185.—Carpet-Fastener.—Redford W. Walker, Washington, D. C.

Claim.—1. The strip B, with the pointed staples D securely attached thereto, in combination with the rods E and sleeves F, substantially as herein shown and described.

2. The angular corner strip I, with the slotted pointed staples H rigidly secured thereto, in combination with the bent corner rod L, arranged and operated substantially as herein shown and described.

102,186.—Still for Petroleum.—John Warren, Flushing, N. Y.

Claim.—The employment of an adjustable support for a still-bottom, substantially as and for the purpose specified.

Also, the support A, provided with the screw-thread and nut *a*, and with the collars B and B', and connected with the still-bottom D by means of the cross C or other equivalent mechanical device, substantially as shown and for the purpose described.

Also, closing the mouth of the tar-pipe at its junction with the still-bottom, substantially as and for the purpose specified.

Also, the plug G, fitting into the tar-pipe F, and operated by means of the rod H, or its equivalent, substantially as and for the purpose set forth.

102,187.—Stop-Valve for Petroleum Packages.—Albin Warth, Stapleton, N. Y.

Claim.—1. The cup-shaped disk suspended within the package A, receiving the screw *b*, and forming a valve-seat, in combination with the valve *g*, suspended from the screw between guides *h*, substantially as and for the purpose described.

2. The vent-hole *c* and discharge-opening *d*, in the cup-shaped disk, in combination with the central screw and with the valve and the guide-arms, all constructed and operating substantially as described.

102,188.—Tap for Liquid Packages.—Albin Warth, New York, N. Y.

Claim.—A valve for opening and closing the aperture of a package for liquids, operated by a spring or screw arranged within a perforated valve-chamber which is provided with a tube or nipple, *d*, projecting beyond the depressed surface of the cup-shaped disk *b*, on a level with the external surface of a package, substantially as shown and described.

102,189.—Copy-Book.—John D. Williams, New York, N. Y.

Claim.—A copy-book having the lines running crosswise on the paper, that is, parallel with the center or line of folding, and the copies arranged on each side of said folding line, in reverse position, so that the writing upon each page shall run from the center outwardly, substantially as and for the purposes herein set forth.

102,190.—Button-Fastening.—Morris Wise, New York, N. Y.

Claim.—The combination and arrangement of the button-head G, the washer D, and the clasp C, in such a manner that, on screwing the head G and the washer D to each other, the clasp C is also thereby secured, substantially as shown and described.

102,191.—Shutter-Worker.—Hermann Wolff, Milwaukee, Wis.

Claim.—1. Tumbler E, fitted onto shaft M, with its pin O working in slot K in piece I, so as to hold piece I firmly in position when turned back or forward, which holds the blind open or closed, piece I being attached to the opening or closing apparatus, substantially as described.

2. Piece F, cylinder G, piece I, (cylinder G swinging on pintle H,) operated by shaft M and tumbler E, and pin O operating in slot K, for the purpose of opening and closing a shutter or window-blind, substantially as described.

102,192.—Shutter-Worker.—Hermann Wolff, Milwaukee, Wis.

Claim.—1. Shank D, case E, beveled or screw-shaped at its ends, with slot Q and and pin P, substantially as described.

2. Tumbler H, playing on its fulcrum pin M, by means of which the sliding rod F fits tightly and works easily in the cylinder L, substantially as described.

102,193.—Artificial Teeth.—John H. Wood, Lebanon, Ohio.

Claim.—Artificial teeth or blocks of teeth formed with double dovetailed depressions at the ends, extending from near the outer surface entirely back to and including the inner surface, and inclining or deepening both toward the center of the outer surface and toward the cutting-edges, so that the metal runs between the blocks from near the outer surface entirely back to the inner surface, extending from one end of each block around the inner surface to the other end, as shown and described.

102,194.—Medicine for Coughs and Colds.—Allen Young, Pittsborough, N. C.

Claim.—The combination of the above-named ingredients, in or about the proportions specified as a bronchial syrup, compounded, as and for the purpose set forth.

102,195.—Machine for Forming and Cutting Eyelets and for the Preparation of Stock for the Same.—Solomon W. Young, Providence, R. I., assignor, by mesne assignments, to Elisha Dyer, same place.

Claim.—1. The combination of the swaging-dies Nos. 1 and 2, the feed-carriages A and B, and the clearing-lifters L, substantially as shown and described.

2. The combination, with a series of dies and a series of feeding-devices, arranged substantially as herein described, of the cam E, spring lever F, feed-bar G, and adjustable dogs H, substantially as shown and described.

3. In combination with the die No. 3, for removing the bottom of the blank, the feed-carriage C, fitted to slide upon the face of the female die, provided with a longitudinal groove, and arranged so as to deliver the blanks in the strips of metal to the cutting-die in a vertical position, substantially as shown and described.

4. The improved machine for making eyelets and other similar articles from sheet metal, embracing, essentially, the swaging-dies Nos. 1 and 2, the cutting-dies Nos. 3 and 4, the feed-carriages A, B, C, and D, the lifters L, and fingers K, combined and operating substantially as shown and described.

5. The improvement in the preparation of sheet-metal stock for the manufacture of eyelets or other similar articles, which consists in cutting away portions of the metal from the edges of the ribbon or strip, at regular intervals corresponding to the length of stock required for each eyelet or other similar article, thus forming a strip of partly-formed planchets or blanks, substantially as shown and described.

102,196.—Advertising-Desk.—H. W. Crotzer, Philadelphia, Pa.

Claim.—A combined writing, advertising, and card delivery table, all constructed and arranged as herein shown and described.

102,197.—Door-Spring.—Alexander T. Ballantine, Titusville, Pa., assignor to himself, W. W. Kingsland, N. R. Bates, and L. D. Phelps, same place.

Claim.—The strap F, connected to the door-frame and to the curved spring arm E, in such manner that the former will hug the convex side of the latter when the door is closed, and operate, by such connection, to pull said curved arm around over the top of the door as the latter is opened, as and for the purpose herein described.

102,198.—Bronzing and Gilding.—John L. Duffee, Washington, D. C.

Claim.—In a gilding compound having for its base any bronzing or gilding powder, the use of alcohol, ether, and ammonia, and one or more adhesive polishing-gums, for the purpose and applied as herein described.

2. The liquid solution, compounded as herein described, and used with any metallic bronzing or gilding powders.

3. In a liquid gilding compound prepared and used as described, producing different shades or tints by the admixture of different colors of metallic powders, as herein described.

4. The liquid bronze or gilding compound herein described, as a new article of manufacture.

102,199.—Pump.—Benjamin F. Gustin, Middletown, Ind.

Claim.—1. The division plug P, in combination with the upper and lower chambers D E of the pump, and the suspended valve K, constructed and operating substantially as herein described and shown.

2. The auxiliary air-chamber L, arranged on the outside of the pump, and communicating with the lower water-chamber E thereof, in the manner and for the purpose herein shown and described.

3. The sealing-valve K of the lower water-chamber E, united to and operated by means of a connecting-rod, Q, held up when closed by the latch *d*, and supported when open, in the manner and for the purpose herein shown and described.

4. An ordinary lifting-pump which may be converted into a forcing-pump or hydrant by means of the division P and valve K, operated as described.

5. The combination in a lifting-pump of the division plug P, the upper and lower water-chambers D E, the communicating opening *a*, the suspended valve K, with its opening and closing connecting-rod Q, the auxiliary air and water-chamber L with its connecting-pipe M, nozzle O, and stop-cock N, the whole arranged, constructed, and operating as herein shown and described.

REISSUES.

3,921.—Treating Organic Materials with Air.—Rudolph D'Heureuse, New York, N. Y.—Patent No. 93,182, dated August 3, 1869.

Claim.—1. The mode of purifying and improving organic fluids or semi-fluids by impelling air through the same in any manner described to effect the purpose, and thus, with the inseparable mechanical agitation, to induce an oxidation of the nitrogenous

parts in the fluid, or in the solids that may be immersed, to preserve and otherwise improve them.

2. The mode of arresting or preventing putrefaction or decay in organic fluids or solids by artificial currents of air, or air in connection with sulphurous vapors or other gases through said substances, substantially in the manner and for the purpose described and set forth.

3,922.—HOISTING-MACHINE.—William Miller, Cincinnati, Ohio.—Patent No. 48,579, dated July 4, 1865; reissue 2,066, dated September 5, 1865.

Claim.—1. An elevator or hoisting-machine whose platform is sustained by a single traveling worm-wheel adapted to span the hatchway.

2. Elevating or depressing the platform of an elevator or hoisting-machine by means of a single traveling worm-wheel which meshes within two or more corresponding screw-racks or segmental nuts.

3. An elevator platform supported by rollers G, or their equivalent, on a single worm-wheel resting in worm-racks or segmental nuts, substantially as set forth.

3,923.—GRAIN-SEPARATOR.—Grant B. Turner, Cuyahoga Falls, Ohio, assignee of Grant B. Turner and James A. Vaughn.—Patent No. 1,013, dated April 9, 1861.

Claim.—The arrangement of a series of riddles inclined in one direction, with a series of directing-boards inclined in an opposite direction, so that the grain shall pass from one series to or over the other series, substantially as and for the purpose described.

Also, in the arrangement, with a series of riddles inclined in one direction and a series of directing-boards inclined in the opposite direction, so that the grain shall pass from one onto the other throughout the series, of a shake motion to agitate and expedite the grain in its passage or transmission over the riddles and directing-boards, substantially as described.

Also, the arrangement, with a series of riddles inclined in one direction and a series of directing-boards inclined in an opposite direction, so that the grain will pass through the series of riddles and be carried from one to the other of the series by the interposed directing-boards, of a fan-blast for making a final separation of the very light material from the grain after the coarser material has been taken from it by the series of inclined riddles, substantially as described.

Also, the arrangement, with a series of riddles inclined in one direction and a series of directing-boards inclined in an opposite direction, and so as to carry the grain from one to the other of the series, of a shake motion, and a fan-blast for expediting the transmission of the grain through the machine, and for a final separation of the very light material therefrom, substantially as described.

3,924.—GAS-GENERATOR.—Benjamin Best, Dayton, Ohio, assignee of Patrick Kelly.—Patent No. 22,317, dated July 6, 1859.

Claim.—1. The combination of the tank B, hollow plunger B^1, induction-valve B^2, eduction-pipe K, valve A^2, air-holder A^1, and tank A, for pumping and storing atmospheric air, substantially as set forth.

2. The combination of the tank A, air-holder A^1, pipe D, and series of carbureting-chambers E, connected by pipes F, all constructed and arranged to operate substantially as set forth.

3. An apparatus for carbureting air, combining in its construction an air-pumping device, B B^1 B^2, a connecting-pipe, K, an air-storing device A A^1 A^2, a connecting-pipe, D, and a series of carbureting-chambers, E, connected by pipes F, substantially as and for the purpose set forth.

3,925.—MILL.—James B. Brown, Peekskill, N. Y., assignee of Charles B. Hutchinson. Patent No. 29,490, dated August 7, 1860.

Claim.—1. In the combined portable cider-mill and press, substantially as herein shown, an improved arrangement of parts, consisting of a permanently-fixed pomace-making apparatus, and the press-screw F, both connected to the upper part of the same legs which embrace and support the curb E, said screw bearing centrally upon the follower, while the delivering-aperture of the mill is completely within the area of the curb, so that the pomace will fall directly from the mill into the curb without the aid of a lateral chute or director, all in the manner and for the purposes herein set forth.

2. The case B, provided with its hopper and discharge-opening, in combination with the press-screw F passing vertically through the said case B, when these parts are constructed and arranged as and for the purposes herein set forth.

3. In combination with case B and press-screw F, passing vertically through said case, the frame A, the cross-piece A^1, bed K, and curb E, embraced and supported thereby, when all these parts are arranged substantially in the manner and for the purposes herein set forth.

3,926.—MILL.—James B. Brown, Peekskill, N. Y., assignee of Charles B. Hutchinson. Patent No. 29,490, dated August 7, 1860.

Claim.—1. The peculiar-shaped teeth Q *a b* and *a' b' c'* shown on wheel M' and case N, arranged to operate in connection with each other and with the "mill-dress" M', as herein shown and described.

2. In combination with the mill herein described, the disk shown in figs. 4 and 5, provided on one face with crushing-teeth *a' b' c'* and on the other with shelling-teeth 1 2 3, when the mill, the disk, and its teeth are constructed and arranged as and for the purposes herein set forth.

3. The case or carrier B, inclosing disk M', when provided with the extension herein shown, serving as a support and casing to wheels U and T, all said parts being constructed and arranged as and for the purposes herein shown and set forth.

3,927.—HAND-STAMP.—B. B. Hill, Chicopee, Mass.—Patent No. 50,395, dated November 6, 1866; reissue 2,836, dated January 14, 1868; reissue 3,981, dated January 12, 1869.

Claim.—1. The series of type-wheels and a series of indicating characters, for the purpose described, when used in connection with the die, and when all parts are attached to and operate with the vibrating portion of the stamp, substantially as set forth.

2. The bracket H, made on or secured to the case G, having a step, *e*, or its equivalent, to enter the lower end of the spindle and orifice for the screw *e*, for attaching and detaching said case to and from the spindle E, substantially as and for the purpose described.

3. The flanch K, in combination with the chase L, for the purpose of easily and quickly attaching the type-plate to or detaching it from a hand-stamp, when constructed and operating substantially as herein described.

3,928.—OILER FOR LOOSE PULLEYS.—Charles A. King and Daniel B. Wesson, Springfield, Mass., assignees of Charles A. King. Patent No. 26,912, dated October 19, 1859.

Claim.—1. A valve for pulley-lubricators, operated by the centrifugal force obtained from the revolution of the pulley, said valve opening and closing a passage communicating with the pulley-bearing.

2. The combination of the annular chamber A, oiling-tube B, valve F, and spring I, all constructed and operating substantially as described.

3. In a self-oiling device, the tube B with its reservoir N, in combination with a supply-duct, E, substantially as described.

4. The independent annular oil-chamber A, constructed in the manner and for the purpose set forth.

3,929.—BAKER'S OVEN.—Mary Ann Elizabeth McKenzie, Brooklyn, N. Y., assignee of Duncan McKenzie.—Patent No. 28,130, dated May 1, 1860.

Claim.—1. A system of flues communicating between the fire-places and the interior of the oven, directly through the floor or bottom of the latter, substantially as herein described.

2. The combination of the flues D, escapes K K, and flue I, in the lower part or floor of the oven C', and for the purpose herein shown and described.

3. The enlargement and downward extension of the rear end of flue I, in combination with flue I^1, as and for the purpose herein shown and described.

4. The arrangement, in combination with the oven G, of the flues I^2, I^1, I, D, and the dampers K K and L, as and for the purpose herein shown and described.

3,930.—ROLLER FOR CLOTHES-WRINGER.—Woonsocket Rubber Company, Woonsocket, R. I., assignees of John F. Holt.—Patent No. 49,030, dated July 25, 1865.

Claim.—1. The spiral-grooved mandrel or shaft, constructed substantially as described, for the purpose specified.

2. The binding of a preliminary sheet or thickness of vulcanized material on the mandrel, substantially in the manner and for the purpose described.

3. A wringing-machine roller, constructed by first binding on a shaft, by means of a cord or wire, a covering of India rubber or other suitable material, and afterward vulcanizing over and onto the latter an outer layer or coat of a vulcanizable substance or compound.

3,931.—MACHINE FOR SAWING MARBLE.—P. J. Torney, for himself, and Charles W. Hayden and John L. Kidwell, assignees of P. J. Torney, Washington, D. C.—Patent No. 84,518, dated December 1, 1868.

Claim.—1. The shafts *a a* with worm-wheels B B and pulleys *b b*, in combination with the endless chains D D and pulleys *d d*, all constructed and arranged substantially as herein set forth.

2. In a marble-sawing machine, the rock-shafts *f f* and connecting-rods *g g g g*, when constructed as described, to allow the saw-frame E to reciprocate, all substantially as set forth.

3. The arrangement of the shaft I with pulleys J and L L and pinion H, operating in combination with the pinion G and worm screw-threads on the shaft C to raise or lower the saw-frame, substantially as herein set forth.

4. The combination of the shaft I, cog-wheel M, and arm N, the latter provided with a dog or pawl, O, and connected in a suitable manner with an engine, for the purpose of feeding the saw while the machine is in operation, substantially as herein set forth.

DESIGNS.

3,973.—MASONIC CHART.—James Ames, Indianapolis, Ind.

Claim.—The design for a masonic chart, as herein represented and described.

3,974.—BUGGY-BODY.—William M. Armstrong, Middletown, Ohio.

Claim.—The pattern A, as herein described, and as represented in the accompanying drawings.

3,975.—WATCH-CHAIN.—Montraville Buffum, Leominster, Mass.

Claim.—The design for a watch-chain, substantially as described and shown.

3,976. — CARPET-PATTERN. — Robert R. Campbell, Lowell, Mass., assignor to Lowell Manufacturing Company, same place.

Claim.—The configuration of the design hereunto annexed, when made by being inwrought into three-ply, ingrain, or other carpeting, in the form similar to the photographic print accompanying this specification.

3,977.—CARPET-PATTERN.—Elemir J. Ney, Dracut, assignor to Lowell Manufacturing Company, Lowell, Mass.

Claim.—The configuration of the design hereunto annexed, when made by being inwrought into three-ply, ingrain, or other carpeting, in the form similar to the photographic print accompanying this specification.

3,978.—CARPET-PATTERN.—Elemir J. Ney, Dracut, assignor to Lowell Manufacturing Company, Lowell, Mass.

Claim.—The configuration of the design hereunto annexed, when made by being inwrought into two-ply, ingrain, or other carpeting, in the form similar to the photographic print accompanying this specification.

3,979.—CARPET-PATTERN.—Elemir J. Ney, Dracut, assignor to Lowell Manufacturing Company, Lowell, Mass.

Claim.—The configuration of the design hereunto annexed, when made by being inwrought into two-ply, ingrain, or other carpeting, in the form similar to the photographic print accompanying this specification.

3,980.—CARPET-PATTERN.—Elemir J. Ney, Dracut, assignor to Lowell Manufacturing Company, Lowell, Mass.

Claim.—The configuration of the design hereunto annexed, when made by being inwrought into two-ply, ingrain, or other carpeting, in the form similar to the photographic print accompanying this specification.

3,981.—CARPET-PATTERN.—Elemir J. Ney, Dracut, assignor to Lowell Manufacturing Company, Lowell, Mass.

Claim.—The configuration of the design hereunto annexed, when made by being inwrought into three-ply, ingrain, or other carpeting, in the form similar to the photographic print accompanying this specification.

3,982.—CARPET-PATTERN.—Elemir J. Ney, Dracut, assignor to Lowell Manufacturing Company, Lowell, Mass.

Claim.—The configuration of the design hereunto annexed, when made by being inwrought into two-ply, ingrain, or other carpeting, in the form similar to the photographic print accompanying this specification.

3,983.—CARPET-PATTERN.—Elemir J. Ney, Dracut, assignor to Lowell Manufacturing Company, Lowell, Mass.

Claim.—The configuration of the design hereunto annexed, when made by being inwrought into two-ply, ingrain, or other carpeting, in the form similar to the photographic print accompanying this specification.

3,984. — TRADE-MARK. — Daniel A. Page, Dover, N. H.

Claim.—The above-described design.

3,985.—HANDLE FOR SPOONS, FORKS, LADLES, &c.—John R. Wendt, New York, N. Y.

Claim.—The design for handles of spoons, forks, &c., herein shown.

EXTENSIONS.

WARREN S. BARTLE, of Newark, N. Y.—Letters Patent No. 14,708, dated April 22, 1856; reissue 558, dated May 18, 1858.

"Improved Machine for Sowing Fertilizers."

Claim.—The combination of two or more verti-

cal shafts, provided with arms, with the outlet tubes of a machine for sowing fertilizers, &c., the whole being constructed, arranged, and operated in the manner and for the purposes substantially as set forth.

E. N. HORSFORD, of Cambridge, Mass.—Letters Patent No. 14,722, dated April 22, 1856; reissue 2,597, dated May 7, 1867; reissue 2,979, dated June 9, 1868.

"Improvement in Pulverulent Acid for use in the preparation of Soda Powders, Farinaceous Food, and other purposes."

Claim.—1. As a new manufacture, the above-described pulverulent phosphoric acid.

2. The manufacture of the above-described pulverulent phosphoric acid, so that it may be applied in the manner and for the purposes above described.

3. The mixing, in the preparation of farinaceous food, with flour, of a powder or powders, such as described, consisting of ingredients of which phosphoric acid, or acid phosphates and alkaline carbonates are the active agents, for the purposes of liberating carbonic acid, when subjected to moisture or heat, or both.

4. The use of phosphoric acid or acid phosphates when employed with alkaline carbonates, as a substitute for ferment or leaven in the preparation of farinaceous food.

DISCLAIMERS.

MARY G. PRATT, of Marple township, Pa., administratrix of RANDALL PRATT, deceased.—Letters Patent No. 40,067, dated January 8, 1856; reissue 1,893, dated February 28, 1865.—Filed January 7, 1870.

"Improvement in Horse Hay-Rakes."

LEWIS FRANCIS and CYRUS H. LOUTREL, of New York, N. Y., assignees of LEWIS FRANCIS and FREDERICK W. LETMATE.—Letters Patent No. 43,192, dated June 21, 1864; reissue 2,805, dated November 26, 1867.—Filed March 28, 1870.

"Improved Composition for Inking-Rollers, Pads, &c."

ISSUE OF APRIL 26.

PATENTS.

102,200.—REVENUE AND POSTAL STAMP.—Lewis Abraham, New York, N. Y.

Claim.—1. An adhesive postal or revenue stamp composed of two or more layers of paper, perforated substantially as herein set forth and for the purposes described.

2. An adhesive stamp composed of two or more sheets of paper, both or all of which are so perforated that when united such perforations shall constitute given designs.

102,201. — CULTIVATOR. — Clark Alvord, Courtland, Wis.

Claim.—1. The axle I combined with the props G, when the latter project upward and forward from the axle, for the purpose of enabling the drag-bars, whose ends they support, to be lifted from the ground by turning the axle upon which they rest, as and for the purpose described.

2. The axle I, combined with the upwardly and forwardly-projecting props G, tongue B, and drag-bars C, when the two latter are each pivoted between the props, as and for the purpose set forth.

3. The combination and arrangement of stay-bars D and lever E with such axle.

4. The application of plate L to the drag-bar and cultivator-teeth, as above shown and described.

5. The stay-bar D, combined with the tongue B and standard K, in the manner and for the purpose herein shown and described.

6. The tongue B and drag-bar C, when pivoted upon one and the same rod.

102,202.—COAL-SCUTTLE.—Samuel J. Anderson, Canenovia, N. Y.

Claim.—The loose bottom, with spout B, as described, and supported by the rods D and bail C, substantially as set forth.

102,203.—APPARATUS FOR MIXING HYDROGEN AND AIR.—Daniel Ashworth, Wappinger's Falls, N. Y.

Claim.—1. The combination of the gas and air-cylinder, provided with the reciprocating partitions connected together for joint action as described, of the four-way valve, the valve-actuating mechanism, the connecting-pipes, and the receiver, all substantially as specified.

2. The combination with the reciprocating partition C and the valve-arm R of the vibrating arm X, the spring W, cam-disk V, arm T, and rod S, substantially as specified.

3. The four-way valve, constructed and arranged substantially as specified.

102,204.—LAMP.—J. S. Atterbury and T. B. Atterbury, Pittsburg, Pa.

Claim.—1. A glass lamp-reservoir, having one or more bosses or knobs *g* formed on its glass peg G, substantially as and for the purposes described.

2. A glass lamp-stand or pedestal, B, having one or more bosses or knobs *g'* formed on its peg G, substantially as and for the purposes described.

3. The parts A and B of a lamp, connected together by means of a metallic tube, C, having angular grooves *c c'* formed in it, and receiving knobs or bosses formed on the pegs G G' of said parts A B, substantially as and for the purposes described.

102,205.—CONCENTRATING OIL OF VITRIOL.—William Henry Balmain, St. Helens, Great Britain.

Claim.—1. The concentrating of strong or pure vitriol in an iron vessel, within which is suspended or supported a vessel of lead for receiving weaker and impurer vitriol.

2. The arrangement within the outer iron vessel of a leaden receptacle, so that the contents of the latter may boil over and into the outer vessel, as specified.

102,206.—MODE OF STORING AND TRANSPORTING OIL OF VITRIOL.—William Henry Balmain, St. Helens, Great Britain.

Claim.—The storing or transporting of vitriol of the strength and purity herein described, in iron vessels.

102,207.—Suspended.

102,208.—CHIMNEY-COWL.—Charles B. Barlow, Portsmouth, N. H.

Claim.—The ventilator for ships' flues and chimneys herein described, having main pipe A contracted at the top, inner head *c* with cap B, and perforations *a*, outer cap D with outlet *a'*, and perforations *c c* in its concave bottom, all constructed and arranged to operate as specified.

102,209.—SPRING-GUARD.—John S. Behm, Elizabeth township, (Penn Post-Office,) Pa., assignor to himself and George Koehler, same place.

Claim.—The bar A, with its looped end *a*, when combined with a bar, B, through a similar loop-head, *b* together with its forked ends E E *c c*, attached and secured to vehicles in the manner shown and for the purpose specified.

102,210.—HOT-AIR DRUM FOR COAL-STOVE.—George J. Bentley, Michigan City, Ind., assignor to himself and Edward Highfield, same place.

Claim.—The rectangular air-heating case D, stove A C, and outer case H, provided with the cold-air pipes K, connecting with the pipes F of the inner case, when all constructed, combined, and arranged as herein shown and described, for the purpose specified.

102,211. — ENVELOPE-FASTENER. — Max Emanuel Berolzheimer, New York, N. Y.

Claim.—The fastening device described, consisting of two parts A B, one toothed and the other correspondingly perforated, constructed substantially as described, and to operate together as and for the purposes specified.

102,212. — DEVICE FOR MANUFACTURING CHAIR-SEATS.—Osmore A. Bingham, Cavendish, Vt., assignor to George C. Winchester, Ashburnham, Mass.

Claim.—The devices by which the web *g* is applied to the strip *a*, consisting of the former *b*, band *c*, and frame A, arranged and operating substantially as described.

Also, in combination with the above, the devices for applying the strip *a* and web *g* to the seat-frame, consisting of the bed *n*, plate *m*, and press-screw *u*, substantially as shown and described.

102,213. — COUNTERPOISE PLATFORM FOR ORDNANCE.—Alanson T. Brewer, Brighton, Mass.

Claim.—1. The gun or piece of ordnance with carriage, platform, and counterpoise weight, when constructed, arranged, and operating in combination, substantially as described.

2. The platform of a siege or garrison gun or piece of ordnance, in combination with levers and weights constructed to operate substantially as and for the purposes described.

3. A gun or piece of ordnance with its carriage and platform, in combination with levers and a counterpoise, when constructed, arranged, and operating in such manner that the transfer of an auxiliary or make-weight shall cause the gun to ascend and descend, substantially as and for the purposes described.

4. The construction and arrangement of the auxiliary or make-weight, in combination with the gun and its carriage, in such manner that the recoil of the gun shall transfer the weight from the counterpoise to the carriage, and cause the gun to descend to be loaded, substantially as described.

5. The construction and arrangement of the auxiliary or make-weight, in combination with the counterpoise, in such manner that running the gun into battery shall transfer the weight from the carriage to the counterpoise, and cause the gun to ascend to be fired, substantially as described.

102,214. — RAMMER-STAFF. — Alanson T. Brewer, Brighton, Mass.

Claim.—1. The telescopic rammer-staff for ordnance, constructed and arranged to operate substantially in the manner described.

2. The combination of rings and levers or arms, substantially as and for the purposes set forth.

102,215.—LUBRICATOR FOR LOOSE PULLEY.—Joseph W. Brockway, New York, N. Y.

Claim.—The tubular journal *d*, within the journal-box *c*, forming the bearing for the revolving shaft *a*, in combination with the pulley *b* on the shaft *a*, the pulley *e* on the tubular journal *d*, and the openings through said tubular journal *d*, for oil to pass to the revolving shaft *a*, as and for the purposes specified.

102,216.—CALCULATOR.—Alexander Brodie, Union, Mich.

Claim.—The isosceles triangle C B D, having one of its sides equally divided and indexed to show the weight in pounds of a bushel of any article, and its base divided and indexed to show prices, in combination with the bar D, pivoted at the vertex of the triangle, all constructed, arranged, and operated as set forth.

102,217. — HOT-AIR REGISTER. — Willis S. Bronson, Hartford, Conn.

Claim.—The sliding bar *o*, having the bar *l* on its upper edge and the slots *m* in its lower edge, and made substantially as described, for the purpose set forth.

Also, the sliding bar *o*, in combination with the spring *z* and frame *e*, the whole being constructed and arranged as described, for the purpose set forth.

Also, the combination of the frame *e*, end piece *b'*, sliding bar *o*, and slats *s s s s*, the whole made substantially as described, for the purpose set forth.

Also, the combination of the frame *e* and the bottom plate *d*, bearing the cylindrical connection-piece *c*, the whole being made substantially as described, for the purpose set forth.

Also, the end pieces *b* and *b'*, made substantially as described, for the purposes set forth.

102,218. — OIL-STONE HOLDER. — Homer Brown, Hamilton, Ill.

Claim. — An oil-stone holder composed of the clamping-plates A, brace G, clamping-rod H, and nut I, all arranged for clamping the stone at the side, substantially as specified.

102,219.—PLANING-MACHINE.—Timothy L. Carley and Milton Broughton, Homer, N. Y.; said Milton Broughton assigns his right to said Carley.

Claim. — The screw D, rigidly secured in the framing A *a*, and carrying the bed B and hand-wheel nut E, said bed being provided with rollers *c c*, and with guides *b b*^{1} *b*^{2} fitted on the screw, all constructed, arranged, and operating substantially as described.

102,220. — CORE-BARREL. — Robert Cartwright, Chicago, Ill.

Claim.—1. The hollow center shaft A, in combination with the center shaft B, substantially as described, and for the purposes set forth.

2. The spider and rims D and E, in combination with the center shaft A, substantially as described, and for the purposes set forth.

3. The braces G, in combination with the staves F and center shaft A, substantially as described, and for the purposes set forth.

4. The staves F, in combination with the center shaft A and rims D and E, substantially as described and for the purposes set forth.

102,221.—WHIP-SOCKET.—Edwin Chamberlin, Lansingburg, N. Y.

Claim —1. In a whip-socket, the annular ring or projection *a*, substantially as and for the purpose set forth.

2 In a whip-socket, the tubular cushion *c*, substantially as and for the purpose set forth.

3. In a whip-socket, the disk *e* placed at the bottom, substantially as and for the purpose set forth.

4. In a whip-socket, the tubular cushion *c*, when placed at or near the bottom, substantially as and for the purpose set forth.

5. In a whip-socket, the combination of the jaws *d* and *d'* with the body A, when furnished with any or all the cushions *c* or *e*, and with or without the disk *e*, and arranged in the manner set forth, for the purpose specified.

102,222.—CUTTER-HEAD.—Milton W. Clark, Worcester, Mass., assignor to R. Ball & Co., same place.

Claim.—A sectional cutter-head for wood-working machines, having the holding-sections C C' and cutters D, constructed and arranged upon the driving-spindle B, substantially as herein shown and set forth.

102,223.—CULTIVATOR.—Albion P. Clements and John C. Neuley, Monroe, Me.

Claim.—The combination of the cultivator proper, the front adjusting-wheel a, and the adjustable guiding and smoothing-roller E, all constructed and arranged to operate substantially as described and shown.

102,224.—OINTMENT.—Thomas Combe, Yonkers, N. Y.

Claim.—The manufacture or preparation of a medical compound which I denominate "Combe's Scrofula Ointment," of the ingredients, in the proportions, and for the purposes set forth.

102,225.—DREDGE-BOX, CAKE-CUTTER AND GRATER.—Sydney Cooke, Bayonne City, N. J., assignor to himself and Frederick E. Bulkley, Brooklyn, N. Y.

Claim.—An improvement in dredge-boxes for cooking purposes, whereby I combine the five following articles in one, viz: the doughnut-cutter, cake-cutter, jagger-iron or knife and the raised graters, all of which articles are attached to the box, substantially as and for the purpose set forth.

102,226.—SEWING-MACHINE.—William Cooney, Bridgeport, Conn.

Claim.—1. The combination with the sliding feeding-arm A and a support for the same mounted on a lifting and depressing carrier, which may oscillate about or in the line of the axis of the needle, of a vertically-moving curved or circular plate, F', and a retracting spring, G, the said plate acting against the incline on the feed-arm, and all substantially as specified.

2. The combination with the feed-arm A and shoe B, wherein it slides, of the lever C, cam N, shaft O, and spring N', all substantially as specified.

3. The combination with the feed-arm A, shoe B, and lever C, of the curved or circular plate F', shaft O, and spring L, all substantially as specified.

102,227.—SASH-LOCK.—Albert Cooper, Harrisburg, Pa.

Claim.—The combination of the lever C, pivoted at its end to the bolt D, with the lug B, the inclined rim or projection F, and the opening in the side of the upper casing, all arranged so that, when the bolt is withdrawn, the lever passes within the end of the case, for the purpose herein set forth.

102,228.—VENTILATED RUBBER BOOT.—Henry C. Cottrell, Norwich, assignor to W. H. Hayward, Colchester, Conn.

Claim.—1. Forming the channel or channels for the passage of air between the lining and the outer rubber portion, and having the rubber portion protruded or shaped up, while the lining preserves the usual shape, substantially as described.

2. The method or process of making such ventilated boot by the employment of a cord or flexible core, laid in during the molding of the material on the last, and withdrawn after the boot is desulphurized, substantially as hereinbefore set forth.

102,229, antedated April 16, 1870.—FIRE-EXTINGUISHER.—George Cowing, Seneca Falls, N. Y.

Claim.—1. The combination for holding and delivering, or retaining and preserving, the chemicals of an air-tight case or reservoir, the water-pipes, and adjuster, substantially as specified.

2. The combination with the sectional water-pipes of the adjuster I, arranged for admitting or preventing the escape of the chemicals, substantially as specified.

3. A chemical fire-extinguisher attachment for steam fire-engines, arranged substantially as herein described, for connection between the sections of hose, or with a fire-engine or other means of forcing water and the hose thereof, and for delivering the chemical substances to the water, or shutting them off therefrom, or for varying the amount of the delivery, all substantially as specified.

102,230.—DRIER.—Albert W. Cox, Indianapolis, Ind.

Claim.—A drier, whose vertical smoke-pipes G G' are located within coves or recesses K K' in the sides of the casing or chamber, as and for the object stated.

102,231.—SPRING BED-BOTTOM.—Warren S. Crippen, Grand Rapids, Mich.

Claim.—The spring bed-bottom, consisting of the coiled springs E, spring slats C, stays I I, slats D and F, and cross-piece H, all combined and arranged to operate as herein described and shown.

102,232.—MACHINE FOR MAKING WOODEN BOXES.—John Cronin, Richmond, Va.

Claim.—1. The above-described machine for making wooden boxes, substantially as set forth.

2. The construction and arrangement of the nail-feeder K, provided with the slides *a b*, or their equivalents, for forwarding a single nail at a time, substantially in the manner set forth.

3. The combination of the punch N, the nail-driver L, and the hammers O and M, substantially as described.

4. The follower V, fig. 4, for gauging the size of the box while being clamped and nailed, substantially as set forth.

102,233.—FURNACE GRATE-BAR AND GRATING.—John Cuthbert, Pittsburg, Pa.

Claim.—1. A grate-bar made with a rear surface, *e'*, depressed below or lower than the front surface *e*, substantially as described.

2. A grate-bar, the main part of which, A, is of the ordinary or any known form, and the extreme rear end of which, B, is inclined backward and upward, so as, when in use, to rest on a bridge wall, *c*, substantially as shown and described, with reference to fig. 1.

3. In the construction of furnace-grates, an inclined grating, B', arranged next the bridge wall at the rear of the fire-chamber, substantially as shown and described, with reference to fig. 3.

102,234.—DIRECT-ACTING ENGINE.—Charles P. Deane, Springfield, Mass.

Claim.—1. The contingent mechanical connection of motive-piston F, carrying main slide-valve C, with a separate secondary slide-valve D, or its rod *a*, whereby said motive-piston is moved mechanically by power from the engine, when not moved with sufficient promptness by the previous action of the secondary valve.

2. The arrangement of the valve C and double valve D in the same chest, substantially as shown.

3. The manner of operating the motive-piston F by the valve D, constructed and having ports arranged substantially as shown.

102,235.—EXTENSION TABLE.—Anton Dietsch, Frankfort Station, Ill.

Claim.—The extension table above described, consisting of the frame D H H' H² G G', the legs *d*, the tops A A', the leaves B, C, and C', the center-piece E, the bars K, the springs O, and the sliding braces M, when the several parts are constructed as described, and all are arranged as and for the purpose set forth.

102,236.—CARD-GRINDER.—Joseph Standring Dronsfield, Oldham, Great Britain.

Claim.—1. The combination of the arms *k k*, the shaft *c*, the lever *n*, and the worm and wheel *r* and *p*, substantially as and for the purpose hereinbefore set forth.

2. The combination of the said arms, shaft, lever, worm, and worm-wheel with the fan and with the other parts of the machine, forming the complete card-grinding machine, substantially as hereinbefore set forth and as shown in figs. 1 and 2 of the drawings.

102,237, antedated April 23, 1870.—PAPER-FILE.—George W. Emerson, Chicago, Ill., assignor to John R. Barrett, same place.

Claim.—The construction of the cleat D, as an article of manufacture, substantially as and for the purpose hereinbefore set forth.

102,238.—HORSE HAY-RAKE.—David S. Emrick, Fayette, N. Y.

Claim.—1. The combination and arrangement of the toggles I K, the slide H, spring *m*, shipper G, and cam *k*, when employed in connection with the axle and clutch, substantially in the manner and for the purpose specified.

2. The toggle-levers I and K, constructed and arranged in such a manner that a projection, *n*, on lever I serves to operate toggle K, as and for the purpose set forth.

102,239.—APPARATUS FOR SEPARATING WOOD FIBER FOR PAPER, &c.—Albert Fickett, Rochester, N. Y., assignor to himself, Isaac Butts, and Charles T. Moore, same place.

Claim.—1. The toothed cylinder B, in combination with the eccentrically-located concave D, when the teeth in each are inclined in an opposite direction, substantially as and for the purposes set forth.

2. The sectional concave D, provided with teeth of gradually-increasing fineness, as and for the purposes set forth.

3. The within-described pulping-apparatus, consisting of toothed cylinder B, and eccentrically located concave D, when used in connection with any device for separating wood fiber by longitudinal pressure, for the purposes specified.

102,240.—LAMP.—John S. Fish, Cleveland, Ohio.

Claim.—1. The tube D, having its lower portion made of perforated metal, and its upper part D' whole, and provided with flanges *d d'*, as shown, and for the purpose described.

2. The tube D, in combination with the tube in a lamp, when the parts are constructed and arranged as described and for the purpose set forth.

102,241, antedated April 22, 1870.—OIL-WELL PUMP.—John S. Fish, Cleveland, Ohio.

Claim.—1. The tubes B C, with the valves *a d*, in combination with and arranged within the barrel A, all constructed and arranged to operate substantially as described.

2. In combination with the parts mentioned in the above claim, the valves *e f*, arranged and operating substantially as described.

3. In combination with the barrel A, cylinder B, tube C, and valves *a d e f*, the solid or hollow rod A, substantially as described.

102,242.—HINGE FOR SHUTTERS.—Charles Henry Forbes and William Forbes Rutter, Philadelphia, Pa.

Claim.—The section C', its pin *b* and cam *f*, in combination with the section C, its cam *f*, recess receiving the end of the pin *b*, and spring *e*, arranged within the recess at one side of the pin, all substantially as described.

102,243.—INK FOR PRINTING AND OTHER PURPOSES.—Lewis Francis, New York, N. Y.

Claim.—The use of glycerine, saccharine matter, and gum, or their equivalents, when combined with any suitable coloring matter, to form an ink for printing or other purposes, substantially as herein set forth.

102,244.—RAINBOW SPINNING-TOP.—L. Ottmar Franke, Baltimore, Md.

Claim.—A top provided with one or more disks, *a b*, and combined with wings *d*, substantially in the manner described.

102,245.—DEVICE FOR BORING WELLS.—Oliver P. Franz, St. Anthony, Minn.

Claim.—The cylinder B, constructed substantially as described, for the purpose set forth.

102,246.—COMPOUND FOR CLEANSING SILK.—Karolina Frics, West Zanesville, Ohio.

Claim.—The manufacture or a preparation of a compound, which is denominated "Cleansing Soap," of the ingredients and in the proportions, and for the purposes set forth.

102,247.—REVOLVING-BAR TOY.—Henry N. Gallagher, Worcester, Mass.

Claim.—1. The revolving bar, in combination with its guards and supports, when constructed and operating as described.

2. The combination of the bar, guards, supports, and balanced toy, or other object, to revolve with it as set forth.

102,248.—BOOK-RACK OR STAND.—George Gardner, Clarksville, N. J., assignor to himself, Oliver L. Gardner and William Gardner, same place.

Claim.—A rack or stand of shelves in which the shelves or certain of them, and the side pieces of the frame are provided with locking-knees C C and projections *c*, substantially as and for the purpose herein set forth.

102,249.—FOLDING DESK.—Henry E. Gillet, Oswego, N. Y., assignor to himself and E. Bickford, same place.

Claim.—1. The combination with the standard A and the arm B, whereon is the guiding-rib or flange E, the knob H, and the stop I of the brace C, all arranged as described and for the purpose specified.

2. The combination with the brace C and the end support A of the rod or shaft D, for the purpose specified.

102,250.—TAMPING PLUGS FOR BLASTING.—Edwin Gomez, New York, N. Y.

Claim.—1. A conical expander, passing into the conical hole of the cylindrical plug and expanding the same when the charge is exploded, as and for the purposes specified.

2. The tamping-plug *a*, in combination with the expander *b* and chamber *d*, substantially as set forth.

3. The plug *a*, expander *b*, and chamber *d*, in combination with the fuse *n* and nipple 3, substantially as specified.

102,251.—VAPOR-BURNER.—Franklin Gould, Paterson, N. J., assignor to himself and William C. Gould, St. Louis, Mo.

Claim.—The improved burner A, combining the supply-tube *e*, adjustable valve *f*, air-inlet *c*, flattened top *b b*, and rib *d*, each constructed and relatively located essentially as and for the purpose described.

102,252.—SYSTEM OF TELEGRAPHING.—Frederick J. Grace, Coytesville, N. J.

Claim.—1. The combination and arrangement of the main line and battery or batteries at the several stations on a telegraphic circuit, substantially as and for the purposes herein specified.

2. The arrangement of the main line as a ground wire with respect to batteries at remote points, substantially as and for the purpose herein specified.

102,253.—CASTER.—Guy E. Grosse, Massillon, Ohio.

Claim.—The improved caster for furniture of the class described, when its plate C is provided upon the upper surface with the angular or straight vertical flange *a a*, arranged and applied to furniture in the manner described, for the purpose specified.

102,254.—COATING METALS.—John Daniel Grüneberg, Camden, N. J.

Claim.—The mode of coating or plating metals substantially described within.

102,255.—WASHING-MACHINE.—John Habermehl, Allegheny, Pa.

Claim.—"The inclined arrangement of the tub," in combination with the rim A, rod B, blocks C and D, as shown and described.

102,256.—YARN-WASHING MACHINE.—Edward Hadley, Lowell, Mass.

Claim.—The combination and arrangement of the two rotary carriers, D D', and mechanism for revolving them, as described, with a vat or cistern, A, or its equivalent.

Also, the combination and arrangement of the movable pivots E E with the two carriers and mechanism for revolving them, as described, such carriers being combined with or for application to a vat or cistern, or its equivalent.

Also, the arrangement and combination of the lifter H with the carriers D D' and mechanism for revolving them, as described.

Also, the arrangement and combination of the movable pivots E E, the pair of carriers D D', the lifter H, and mechanism for revolving the carriers, as described.

Also, the combination and arrangement of the tub or cistern A, the movable pivots E E, the pair of carriers D D', the lifter H, and mechanism for revolving the two carriers, so as to cause them to operate substantially in manner, when used, for either of the purposes as hereinbefore mentioned.

102,257.—MACHINE FOR PRINTING ON SPOOLS.—Gardiner Hall, Jr., South Willington, Conn., and George W. Averell, New York, N. Y.

Claim.—1. A feeding device T U and rotating carrier H, combined with reciprocating dies *f f*, constructed as and for the purpose described.

2. The combination, with a carrier-wheel, H, headers *f f*, and feeding channel T, of a revolving shaft D, cams A *a*, and lever *u u'*, whereby a corresponding number of spools will always be fed in and headed automatically.

3. The combination of the stationary cam *d*, with the lever *a*, and spring *a'*, shown and described, to hold the spool while being imprinted, and allow its exit from the chamber at the time and in the manner set forth.

102,258.—GAS-HEATER.—Lavinas Bush Hamilton, Boston, assignor to Edwin A. Eaton, Winchester, Mass.

Claim.—In combination with a burner, *a*, capable of delivering gas in a wide, thin jet, or in laterally-directed jets, the employment of a tube, *b*, constructed, at its upper end, substantially as described, and with an open lower end arranged, as set forth, relatively to the gas-delivery orifice of the said burner, for the purpose specified.

102,259.—HOLDER FOR NECK-TIES.—William Henry Hart, Jr., Philadelphia, Pa.

Claim.—1. The within-described fastener F, consisting of arms *a a* bent to clamp the opposite ends of the elastic loop B, and a flat hook or tongue, *b*, all arranged as described.

2. The said fastener F, when provided with a tongue or lip, *i*, arranged to be bent around the lower edge of the shield.

102,260.—CONVERTING RECIPROCATING INTO ROTARY MOTION.—Joachim F. Hartmann, Richmond, Ind., assignor to himself and William Morningstave, same place.

Claim.—Combining and arranging the wheel D, segment A, pinion F, pinion G, segment B, pinion E, ratchets S, pawl L, and spring P, in connection with frame C and shafts H and I, arranged and operated as above set forth.

102,261.—LIFE-BOAT.—Philip Heinrich, Allegheny City, Pa.

Claim.—The air girdle B, divided as represented at C C C, the seats I I with chambers D D, in combination with the weights M and tube L, with chain attachment, substantially as and for the purpose herein set forth.

102,262.—ACUPUNCTURE INSTRUMENT.—Gardner Herrick, Albion, Mich.

Claim.—The lancets *i i*, in combination with the converging feeding-strips *f f*, the latter not extending to the points of the lancets, and hence not entering the wounds, as set forth.

102,263.—SAW-MILL.—Enoch Highley, Beechy Mire, Ind.

Claim.—The combination of the gum-elastic piece L, gib I, and cap G, arranged as above described, when used in connection with saw M, constructed as described, the whole being arranged as above set forth.

102,264.—WASHING-MACHINE.—Cyrus Hill, Foxcroft, Me.

Claim.—The washing-machine, having the vertical V-shaped projections *e* arranged parallel to each other on the interior faces of the walls of the said machine, the diagonally arranged projections *f* on the bottom thereof, and the space *d*, as herein described.

102,265.—MANUFACTURE OF PAPER.—Isaac Hoffman, Oregon, N. Y., assignor to Mary and Mary C. Hoffman.

Claim.—1. Causing the return to the paper-making machine for repeated use, of the waste water which runs or is drawn therefrom in its operation, substantially as herein described.

2. The showering-pipes *b' c'*, or either of them, in combination with the pump E, substantially as and for the purpose herein described.

3. The discharge-pipe *a* of the pump E, in combination with the box G and vat A, substantially as and for the purpose herein set forth.

4. The vat I and the pump M, in combination with the paper-making machine, substantially as and for the purpose herein set forth.

5. The vat L and pump N, in combination with the vat I and the pulp-engine, substantially as herein described.

102,266.—STOVE-PIPE DAMPER.—George Hollinger and Samuel H. Fry, Rothsville, Pa.

Claim.—The intermediate oval disk B, or spark-arrester, and double fines or spaces produced by the arrangement, in combination with the segmental disks A A', in the manner shown, for the purpose specified.

102,267.—SIGNAL AND OTHER FLAGS.—John Holt, Lowell, Mass.

Claim.—1. As a new article of manufacture, a flag or ensign as described, the stars and stripes of which are produced by the press-dyeing process, as specified.

2. As a new manufacture, the field or union A, the stars of which are produced by press-dyeing the fabric which surrounds them, as and for the purpose set forth.

3. As a new manufacture, the stripe portion of a flag or ensign, the stripes which compose the same having been produced by press-dyeing, substantially as described.

102,268.—MANUFACTURE OF INDIA-RUBBER BELT.—Albert H. Hook, New York, N. Y.

Claim.—A rubber belt composed of cloth, the filling of which crosses the warp diagonally.

102,269.—SKATE-FASTENING.—Horace B. Hooker, Rochester, N. Y.

Claim.—The runner A, in combination with the eccentrically-pivoted link *m*, or other device for operating the sliding pivoted clasping-plate *f*, by a horizontal lateral movement of said runner.

2. The link *m*, in combination with a sliding pivoted clasping-plate on the runner A, operating substantially as herein shown and described.

3. The arrangement of the pivots *t* upon the disk *d'*, with relation to the links *m'*, whereby the clasps *b'* are locked, as said pivots are forced slightly past a line drawn through the centers of the bolts *n'* and disk *d'*, substantially as described.

4. In combination with the swiveled heel-clasp *f a*, operating substantially as described, the lever *l*, clamping over the toe of the runner, and between it and the foot of the wearer, whereby both ends of the skate may be clasped upon the foot at one operation.

102,270.—MACHINERY FOR STRIKING OUT LEATHER.—Samuel Hutchinson, Leeds, England.

Claim.—The combination of a plain roller, having provision for fastening a skin thereto, with a vertically-adjustable spirally-fluted roller, arranged and used in manner and for purposes substantially as shown and described.

102,271.—CAR-COUPLING.—George H. Jones and Louis D. Boyce, Rochester, N. Y.

Claim.—The arrangement within the draw-head A of the buffing-slide D, with its guide-bar E, and the spring F, so applied as to bear directly upon the link G, in order to retain the same in a horizontal position, as and for the purpose herein described and represented.

102,272, antedated October 26, 1869.—STEAM-CONDENSER.—Thomas L. Jones, Natchez, Miss., assignor to himself and Joseph Mitchell.

Claim.—1. The combination of the funnel-shaped mouth of the water-pipe B and the hemispherical separator C, in the manner described and for the purpose set forth.

2. Providing the hemispherical separator with the chamber C'', into which live steam is admitted at one side, and with the perforations *c* in its plane face, for the purpose specified.

102,273.—BINDING-GUIDE FOR SEWING-MACHINE.—James Franklin Kellogg, North Bridgewater, Mass.

Claim.—The binding-device, consisting of a plate, A, having lips B G, bent as shown, and a plate, D, having the tongues E and E' and guiding-lips *a* and *a'*, when struck up from sheet metal, and formed as described.

102,274.—HOISTING-MACHINE.—Richard A. Kendall and William Kendall, Mineral Point, Wis.

Claim.—1. The combination with floor-doors of the severally herein specified portions of the hoisting-machine, substantially as and for the purpose set forth.

2. The folding property, as herein specified and for the purpose set forth.

3. The herein specified hoisting-machine, combined with weighing-scale and the manner of adjusting the same, substantially as and for the purpose set forth.

4. The severally herein claimed and specified devices, whether used separately or in combination.

102,275, antedated April 18, 1870.—PNEUMATIC HOIST.—Joseph C. Kent and Henry C. Rich, Phillipsburg, N. J.

Claim.—1. A pneumatic hoist, the relative weights of the cars of which being such that the heavier the car when lowering, unloaded, raises the lighter car and its load, and the heavier car with its load is raised to the top of its lift by the descent of a pneumatic cylinder, aided by the lighter car while lowering.

2. The combination and arrangement of the well A, cylinder B, blast-pipe L, rope C, pulley D, shaft E, and its pulley K, cars F G, with their guides b^1 b^2 b^3 b^4 ropes *c d*, and pulley H I, substantially as and for the purpose shown and described.

102,276.—PROPELLER.—Charles Kinzler, New York, N. Y.

Claim.—1. The arrangement of the hub B and shaft S, when their respective axes are made adjustable in relation to each other, in the manner and for the purpose set forth.

2. In combination with the blade A, constructed substantially as described, the opening D, for the purpose specified.

102,277.—WOODEN PAVEMENT.—Strickland Kneass, Philadelphia, Pa., assignor to John Haldeman, West Point, Va.

Claim.—In combination with a series of blocks A that abut against each other or nearly so, and have rebates above and below such adjacent parts, a series of bearing-strips E in the lower rebates, and concrete in the upper rebates, for the purpose of forming a wooden pavement on a previously-prepared foundation, as herein described and represented.

102,278.—TOOL-ELEVATOR FOR LATHES.—Charles Knox, Chicopee, Mass.

Claim.—1. An improved tool elevator, consisting of the blocks C and the wedge B, both having thereon the dovetailed guides *a* and *c*, and the vertical guide E, and operating by means of the screw *b* working in its bearings A', all constructed substantially as specified, and operating to move the tool in a vertical direction, as herein described.

2. In combination with the wedge B and the screw *b*, the check-nut *c'* and set-screws *c''*, for the purposes specified.

102,279.—MILL-BUR FEEDER.—Arthur P. Lawsha, Harper's Ferry, West Va.

Claim.—The inner bowl *a*, provided with flaring and forked half-tubes B B, and combined with the outer detachable bowl *c*, provided with the funnel-shaped flange *d*, all constructed to operate as described.

102,280.—CARRIAGE-WHEEL.—Adin H. Leach, Marathon, N. Y.

Claim.—The combination of the wide felloe *a*, the wide tire *b*, the clasp or strap *f*, the bolts and nuts *g g*, and holes *h h*, with the ordinary wheels of any vehicle whatever, substantially as and for the purpose hereinbefore set forth.

102,281.—NAVIGATORS' BEARING-INDICATOR.—Joseph D. Leach, Penobscot, Me.

Claim.—In combination with the bearing-indicator, consisting of the vertical shaft *e*, the sighting device or telescope D, the pointer *f*, the case A, and the mariners' compass C, and the stationary graduated index-card *b*, arranged substantially as described.

102,282.—METALLIC PACKING FOR STATIONARY JOINTS.—Harvey T. Lee, Marysville, Cal.

Claim.—A packing for stationary joints made out of malleable metallic strips, wires, or rods, by

forming upon them two opposite sharp edges, substantially as above described.

102,283. — MANUFACTURE OF RAILROAD RAILS.—Hugh Lee, Beloit, Wis.

Claim.—As an improvement in the construction of railroad rails, twisting together the parts forming the pile prior to passing it through the grooves by which the proper form is imparted to it, in order that the grain of the metal shall run in a spiral direction, and thus prevent lamination and abrasion, also giving a harder surface to the rail, substantially as set forth, as and for the purpose described and set forth.

102,284. — MODE OF LIGHTING STREET-LAMPS.—Hiram Lenox, Trenton, N. J.

Claim.—The arrangement of the gas-tube A with partition B and perforations *a*, and the cock F with upwardly tapering perforations *b*, when constructed to admit the full head of gas to the perforated subdivision, as and for the purposes shown and described.

102,285. — BUNG. — David Lichtenstadt, Brooklyn, and Rafael Pentlarge, New York, N. Y.

Claim.—The screw I, bridge H, plate K, and flexible packing-ring L, when said parts are relatively constructed and arranged with respect to the bush A, as and for the purpose set forth.

102,286.—SAW.—C. V. Littlepage, Austin, Texas.

Claim.—The tooth or teeth A A formed on the saw-blade, when such tooth or teeth are constructed and arranged in relation to ordinary sawing-teeth, as herein described and shown.

102,287.—STEAM-GENERATOR.—John C. Ludwig, Stockton, Cal.

Claim.—A steam-generator, constructed by uniting the circular portions A and B, when the latter is corrugated and the generator is provided with suitable heads, substantially as described.

102,288.—ROSSING-MACHINE.—John H. Lufberg, Rahway, N. J.

Claim.—The rossing-machine described in the foregoing specification, when made substantially as described, and used for the purpose named.

102,289.—NURSING-BOTTLE.—Edward Jones Mallett, Jr., and William S. Ward, New York, N. Y.

Claim.—A nursing-bottle, having a plug, A, provided with an automatic vent-valve, constructed and arranged substantially as herein specified.

102,290, antedated April 18, 1870.—FAUCET-LOCK. — V. L. Maxwell, Wilkesbarre, Pa.

Claim.—Devices substantially as herein described for locking a cock or faucet, viz., a bolt C, one or more transverse apertures pierced in the cock or faucet and continued into its spigot, valve, or valve-stem to receive the bolt, and a key D, so fitting the bolt as that it may be readily attached thereto or detached therefrom after its insertion into the cock or faucet, when said devices are combined and made to operate substantially as herein set forth.

102,291.—TRUNK.—William S. Mayo, Poughkeepsie, N. Y.

Claim.—1. The trunk, wash-stand or other similar article, with its cover hinged in the manner specified, so that said cover will move forward when being opened, and rest on its back when open substantially in the manner herein described.

2. The combination of the double-jointed hinges, slotted plates, and studs K, substantially as and for the purpose specified.

102,292. — TRUNK. — William S. Mayo, Poughkeepsie, N. Y.

Claim.—1. The top of a trunk, wash-stand, or other like article, provided with a semicircular back C, and pivoted to the ears D attached to the bottom, and arranged substantially as specified.

2. The hooks L pivoted to the ends of the body A of the trunk, and slotted at their opposite ends to fit over the studs M of the top B, whereby to support the latter in a vertical position on its pivots, all as shown and described.

3. The arrangement, with the bottom A and top B, of the vertical extension of the back F, all substantially as specified.

102,293.—GAS-GENERATOR.—Archibald Lafayette McKay, Bolton, Miss.

Claim.—The casing C, by means of which the conducting-tube A is entirely surrounded, substantially as and for the purposes herein shown and described.

102,294. — ATTACHMENT FOR SEWING-MACHINE.—Joshua E. Mellen and Elisha Van Sandt, Adrian, Mich., and Milton J. Palmer, Syracuse, N. Y., assignors, by mesne assignment, to William Nixon, Elisha Van Sandt, and Milton J. Palmer.

Claim.—1. In combination with the spring arm B, and clamp screws *t* for attaching different appliances, the presser-plate *m* arranged in the base-plate A, and adapted to be held in a projected or withdrawn position, as required, by a spring catch, *f*, substantially as shown, for the purposes specified.

2. The combination, in the hemming appliance T, of the pair of turning scrolls *b'' b''*, and the corresponding guides *b'*, formed and arranged substantially as represented and described, for the purposes shown.

3. The welt-guide R formed from a single strip of sheet metal, and provided with a cord-aperture, *c*, and an adjusting slot, *l*, substantially as represented and described.

4. The combination and arrangement of the slotted base-plate A, and the described hemming appliance T, as and for the purpose shown.

5. The combination and arrangement of the slotted base-plate A, gauging-flange *i i*, and the described adjustable welt-guide R, as and for the purposes set forth.

102,295.—POCKET INDUCTION APPARATUS. Curt W. Meyer, New York, N. Y.

Claim.—1. The arrangement of the bent bar *a*, of the iron core, in the manner described, to act as a retaining spring for the graduator.

2. The combination of a lead cup, B, insulator D, tube E, coil F, core G, graduator H, and rod *i*, all being arranged as described.

3. The combination of duplicate cups, insulators, and zinc tubes, with rods *e f*, and core G, graduator H, and spring I, all being arranged as described.

4. The method of securing the rods *g* to the pins *h* by passing the former through a slot in the latter, then turning back their ends to secure them, and finally soldering the ends of said slots, all as set forth.

102,296. — FRAME FOR PASSE-PARTOUT.—Paul Mignot, New York, N. Y.

Claim.—1. The hollow metal frame, made of a groove form in its transverse section, and having one of its sides or ends C' constructed to open and close, substantially as specified.

2. The combination of the shoulder-pieces *b b* with the opening and closing section C', of the hollow metallic frame C, essentially as shown and described.

102,297.—BOOT AND SHOE. — Robert A. Miller, Boston, Mass., assignor to himself and Joseph C. Skinner, same place.

Claim.—The combination of the double spring D E F with the horizontal hollow seat B C, having

the deepest part, G, between the middle and the inside of a boot or shoe, as fully set forth and described.

102,298.—FRUIT-DRIER.—Joseph Mongene, Vincennes, Ind.

Claim.—The combination of a furnace, vertical air-flues B, perforated plate F, and drier C, all parts being arranged to operate substantially as herein shown and described.

102,299.—FOOT-BOARD FOR LOCOMOTIVES. George F. Morse, Portland, Me.

Claim.—The combination of the board *a*, the curved slots *b*, the studs *c*, and the bolt *h*, as herein described.

102,300.— PNEUMATIC VACUUM-ENGINE.—John S. Morton, Philadelphia, Pa.

Claim.—1. The single vacuum-vessel *p*, comprising two distinct vacuum-chambers, and a surrounding water-jacket, and single valves for the top and bottom apertures of the chambers, respectively, substantially as set forth.

2. The combination of the said vacuum-vessel *p*, the two connecting-vessels *j*, with their respective valves, the cylinder *a*, piston *d*, and air-valve *l*, substantially as set forth.

3. The combination of said vacuum-vessel *p*, the single connecting-vessel o^2, with its two valves e^2 and f^2, the cylinder *a*, piston *d*, and valve q^2, substantially as set forth.

4. The eccentric o^2, in combination with the self-adjusting device h^2 and valves e^1 and f^1 at the top and bottom of the vacuum-chambers *q* and *r*, substantially as set forth.

5. The frames for the valves e^1 and f^1, constructed wholly or partly of open tubes to admit the passage of air through them, substantially as set forth.

6. The V-shaped guard o^1, to shield valve f^1 from the direct influence of the heat, and for directing the heat alternately into the two vacuum-chambers *q* and *r*, substantially as set forth.

7. The vacuum-vessel *p*, in combination with the described devices for generating heat.

102,301.—PNEUMATIC VACUUM-ENGINE. — John S. Morton and Joseph H. Laning, Philadelphia, Pa., assignors to John S. Morton.

Claim.—1. The two separate vacuum-vessels or chambers, *m* and *n*, with their valves $r\ r^1\ r^2\ r^3$ for the top and bottom apertures of said chambers, respectively, constructed substantially as set forth.

2. The cylinder *a*, its piston, ports, valves and valve-rods, in combination with the vacuum-chambers *m* and *n* and fire-box, in the manner and for the purpose substantially as set forth.

3. The arrangement of the vacuum-chambers *m* and *n* in connection with a device for producing heat, so that the heat, rarefied air, or gaseous products of combustion, shall rise into and pass out of said chambers, substantially as set forth.

102,302.—APPARATUS FOR COOKING MEAT BY STEAM.—George H. Munroe, New York, N. Y.

Claim.—1. The cylinder A and jacket B, arranged as described, and provided with steam-pipe D and vacuum-pipe C, substantially as and for the purposes set forth.

2. The method of cooking meat or other substances *in vacuo*, by the use of steam applied to the exterior of the receptacle containing the article to be cooked, the whole arranged substantially as above described.

102,303.—WINDOW-SASH.—Harvey L. Myers, Kingston, assignor to himself, N. Braitegam, and T. Slag, Tarlton, Ohio.

Claim.—The metallic frames C, fitted into the rabbets on the outer side of the sash, and bent obliquely inward at their outer edges, to hold the panes of glass in the grooves thus formed, as shown and described.

102,304, antedated April 18, 1870.—MOLD FOR STEREOTYPES. — Mortimer Nelson, New York, N. Y.

Claim.—A sheet of woven material, such as Canton-flannel, prepared by a coating upon its surface, for use in making stereotype-molds by pressure, the said coating forming the surface of the matrix, and that is prevented from separating by the fibers of the woven fabric running throughout the composition, as set forth.

102,305.—STREET-LANTERN.—Joseph Neumann, Philadelphia, Pa.

Claim.—The combination of the pendulous door *a'*, the stud a''', the perforated and curved sheet-metal spring b''', and the notch b'', the said parts being constructed and applied to a street-lantern in the manner and for the purpose hereinbefore set forth.

102,306. — CUTLERY. — Josiah H. Nichols and William Bower, Beaver Falls, Pa.

Claim.—The combination, in handles of table-cutlery, of core, bevel-edged scales, and skeleton, substantially as described.

102,307.—WRENCH.—Johan Fredrik Nordquist, Gottenburg, Sweden.

Claim.—The eccentric *h*, lever *g*, and piece *f*, for the purpose of securing the movable jaw or head *e* to the stem *b* of a wrench.

102,308. — PAINT-PAIL. — Charles R. Otis, Chicago, Ill.

Claim.—1. The strengthening-wire or band C, in combination with the body A of a sheet-metal can or pail, substantially as herein shown and described, for the purpose specified.

2. The sheet-metal paint-pail or can, constructed as described, with the strengthening-wire C, bail E, and cover G united to the body by the bent edges H I, substantially as herein shown and described.

102,309. — SWIFT AND REEL. — Caroline Parks, Milan, Ohio.

Claim.—The chambered metal standard or support A B, screw-shaft J, cam-wheel L secured to the pinion and spring K, in connection with the adjustable forked arms E and spindle C, all constructed, arranged, and operated as described, to form a combined winding-reel and swift, as set forth.

102,310.—BROOM.—John H. Parsons, Jonesville, Mich.

Claim.—The application to the brush of a broom an adjustable band, B, made of iron or other suitable metal, provided with a clasp, C, and two or more eyes, *d d*; also, the slots *x*, *y*, and y^1, substantially as herein described, together with the use and arrangement of two or more metallic ties, S and A, or their equivalents, for the purpose set forth.

102,311.—FLOWER-POT.—Charles R. Penfield, Lockport, N. Y.

Claim.—The earthenware pot B, suspended within the metal vase A, leaving an air-space around its sides, and a water-space below it, in combination with openings *a*, communicating with said air-space, as herein set forth.

102,312.—RADIATING OR BOILER-PLATE.—Abraham Liddon Pennock, Philadelphia, Pa.

Claim.—The heating or radiating-plate, composed of alternate inwardly and outwardly-projecting pyramids, as set forth.

102,313.—KNITTING-MACHINE.—John Pepper, Lake Village, N. H., assignor to Ipswich Mills, Ipswich, Mass.

Claim.—1. The forwarding-bar, composed of

movable plates, substantially as described, mounted in a movable frame, and acting on the needles to drive them forward in position to be actuated by the needle-operating cams.

2. The forwarding-bar, composed of movable plates, substantially as described, mounted in a movable frame, in combination with pattern-mechanism for varying the width of the operating edge of the forwarding-bar or device, for the purpose set forth.

3. The combination of the stationary needle-bed *a* and its needles, the rocker-frame *r*, the pattern-barrel b^3, and the forwarding-bar *s*, when constructed substantially as described, and combined and sustaining the relations to each other and to the rest of the machine as herein set forth.

4. The combination of the stationary needle-bed, the cam-bar with its described members, the forwarding-bar *s*, pattern-barrel, and rocker-frame, constructed substantially as described, and sustaining the relations to each other and the rest of the machine as herein set forth.

5. The stationary cam h' and sliding bar g', the movable side-wings l' m, carriers p' q', or their substitutes, posts b' w', and compound lever or tripper f^2 for actuating the needles, the whole being combined and operating as herein explained.

102,314.—VENTILATED RUBBER BOOT.—R. W. Perkins, Colchester, Conn., assignor to W. H. Hayward, same place.

Claim.—The employment in a ventilated rubber boot, having a channel or channels formed between the rubber and the lining, of a strip of rubber, F, or its equivalent, substantially in the manner and for the purposes stated and set forth.

102,315.—ADJUSTABLE METALLIC DASHER FOR VEHICLES.—George M. Peters, Columbus, Ohio.

Claim.—An adjustable dash, constructed and operating as described.

102,316.—RAILWAY-CAR ROOF.—Benjamin F. Pickett, Nashville, Tenn.

Claim.—The combination, with a wooden roofing, of the ridge B, sheets C, fastening-plate D, and cap E, constructed and arranged in the manner and for the purpose described.

102,317.—SCHOOL-DESK.—John F. Piehl, Richmond, Ind.

Claim.—1. Hinging the desk to the standards or uprights A by means of the joint M, when composed of the hub I, piece B, washer C, (as constructed,) with its flange F, nut D, and screw E, when all the parts are constructed and arranged to operate as herein described, for the purposes specified.

2. In combination with the above, the flange K and ears L L, for the purposes specified.

102,318.—SAW-SWAGE.—Levi W. Pond, West Eau Claire, assignor to himself and the Eau Claire Lumber Company, Eau Claire, Wis.

Claim.—1. Bar A, clasps B B, and shank D, clasps E and swage-blocks G, H, and I, substantially as described.

2. Bar A and clasps B B, constructed and arranged as set forth, for the purpose of giving pitch to the swage, substantially as described.

102,319.—SAW-SWAGING MACHINE.—Levi W. Pond, West Eau Claire, assignor to himself and the Eau Claire Lumber Company, Eau Claire, Wis.

Claim.—1. A saw-swage, composed of the carriage M, stock N, clasp P, swaging-blocks Q, R, and S, pin T, and set-screws W, arranged to operate as described.

2. The clamping-machine A, blocks G G, operated by screws F F, removable ways H H, set-screws K K, and screws I, arranged to operate as described.

102,320.—PRINTING-TELEGRAPH APPARATUS.—Frank L. Pope, Elizabeth, N. J., and Thomas A. Edison, New York, N. Y.

Claim.—1. The combination of a number of automatic printing-telegraph instruments, arranged in one main circuit, and operating simultaneously in unison, when the electro-motive power used in operating the same is derived exclusively from one or more main batteries placed in such main circuit without the aid of secondary or local batteries, or of mechanism actuated by springs or otherwise, substantially in the manner and for the purpose set forth.

2. The combination of a polarized magnet with an electro-magnet placed in the same electrical circuit, and operated substantially as described, and for the purpose set forth.

3. The combination of the ratchet-wheel I, bar F, pawls A A', stops i i', and type-wheel T, arranged and operating substantially as and for the purposes herein specified.

4. The combination of an electro-magnet, with the ratchet-wheel, bar, pawls, stops, and polarized magnet, substantially as and for the purposes herein specified.

5. The arrangement of the permanent magnet N S, polarized magnet E, electro-magnet M, tongue C, arm D, bar F, pawls A A', stops i i', springs j j', ratchet-wheel H, type-wheel T, and standards J K, all constructed, arranged, and operating substantially as and for the purpose herein specified.

6. The roller *t*, serrated wheel *q*, pawl *e*, ratchet-wheel *r*, click *x*, and standard *p*, in combination with the polarized magnet E and the electro-magnet M, and their appurtenances, for the purpose set forth.

7. The screw-stops *d* d' upon the standard A, in combination with the type-wheel T, substantially as herein specified.

8. The arrangement of the tongue C in the slot *b* of the permanent magnet N S, by means of a pivot, *a*, and screw *c*, whereby the inductive magnetic influence of the permanent magnet N S upon the tongue C is greatly increased, substantially as herein set forth.

102,321, antedated April 19, 1870.—VELOCIPEDE.—William Quinn, Philadelphia, Pa.

Claim.—1. The combination of the cranked axle with the sliding boxes, operated by the links and levers, as described and shown.

2. The mode of restricting the motion of the boxes in the slots by means of the pins and holes, for the purpose and with the effect described.

3. The mode of operating the propelling-wheel against the block, to act as a brake, as set forth and described.

102,322.—VELOCIPEDE.—Joel H. Rhodes and William Reed, Philadelphia, Pa.

Claim.—1. The cavity *a*, throughout the whole length of the figure of a horse or other animal, and the arrangement therein of the wheel B and steering apparatus, substantially as described.

2. The combination of the steering-levers G G and rods F F with the horse A and axle C', as above set forth.

3. The construction of the axle C', with a curve, *c*, arranged in relation to the fixed bar D, as and for the purpose specified.

102,323.—CRANK-MOTION.—Martin A. Rowe, Martinsville, Ill.

Claim.—1. The combination of the crank-arm or slide B, wrist-pin wheel or crank A, elliptical guide C, and connecting devices between the said slide and the guide C, substantially as and for the purpose described.

2. The swivel-jaws *g* *g'* *g''*, applied to a swivel-plate E on the wrist-pin slide B, in combination with the elliptical guide C, substantially as described.

102,324.—MANUFACTURE OF ALLOYS OF MANGANESE.—Elliot Savage, West Meriden, assignor to himself and Julius Hotchkiss, Middletown, Conn.

Claim.—The production of alloys of manganese and other metals, by subjecting such metals and the oxide of manganese, together, to the action of heat, in an atmosphere of ignited reducing gases, substantially as herein described.

102,325.—APPARATUS FOR THE MANUFACTURE OF AERATED BREAD.—Alfred Scatchard, No. 4 Cambridge Road, Mile End, England.

Claim.—1. The arrangement of the gears *d e g h*, shaft *e* and crank *s*, as described.

2. In combination with the above, the device for carrying the loaf or loaves when formed, by means of an endless apron, *r*, and the hexagon drums *p p*, and shafts *n n*, as shown and described.

102,326.—SHADE-ROLLER ATTACHMENT.—Peter J. Shirts, Highland Falls, N. Y.

Claim.—1. The weight C, applied to one of the journals of a shade-roller, substantially as and for the purpose herein specified.

2. The wrist D, in combination with the weight C, to form a crank, substantially as and for the purpose herein set forth.

102,327.—SLEIGH.—Hugh Smith, West Gray, Me.

Claim.—The combination of the head *b*, projection *c* formed on the end of the thill-iron *e*, the hole to receive the head *b*, and the aperture *a* formed on the curved runner *d* of a sleigh, as herein described.

102,328.—COAL-STOVE.—James Spear, Philadelphia, Pa.

Claim.—The grate G with opening K' in front, and hearth-plate M arranged within the base A, substantially as herein described.

102,329.—RAILWAY-RAIL JOINT.—Charles Easton Spooner, Bron-y-Garth, Port Madoc, and George Augustus Huddart, Brynkir, Wales.

Claim.—The combination of plates D D' *d d'*, with spring clips F, and pins or screws G, arranged as and for the purpose set forth.

102,330.—MACHINE FOR MIXING PAINT, SOAP, AND OTHER MATERIALS.—John Stainthorp and Isaac Cole, New York, N. Y., assignors to John Stainthorp.

Claim.—The improved mixing-machine composed of a stationary vessel, A, in combination with a stirring-wheel, W, or stirring-wheels W W^1 W^2 P^1, &c., having the duplex movement horizontal and vertical around the same center of motion, substantially in the manner and for the purpose herein set forth.

102,331.—CARPET-TACKING MACHINE.—Francis H. Stauffer, Philadelphia, Pa.

Claim.—1. The arrangement of a tack-hammer, H, when provided with a cutter, K, in combination with a channeled and slotted shoe, A, spring or springs U, or their equivalent, with a handle, B, in the manner shown and for the purpose specified.

2. In combination with the arrangement of the shoe and hammer, the feeding device, when so constructed that, by raising the hammer, a strip of leather, or its equivalent, provided with tacks at regular intervals, will be propelled forward in the manner shown, for the purpose set forth.

102,332.—DIE FOR MAKING THRASHING-MACHINE TEETH.—Charles H. Thompson, Alliance, Ohio.

Claim.—The herein-described dies, provided with a rudimentary matrix, C, and finishing matrix D, for forging thrashing-machine teeth, in the manner substantially as described and set forth.

102,333.—TRACE-BUCKLE.—James Thornton and Charles F. Demmen, Wellsville, N. Y., said Demmen assignor to said Thornton.

Claim.—1. A plate, cast with the buckle-frame, when its under side is inclined, substantially as shown and described, for the purpose set forth.

2. The combination of the frame C, tongue-plate B, and screw or rivet *d*, all constructed and arranged to operate substantially as set forth.

3. The improved buckle herein described, consisting of a frame with bottom plate A and slots *g g* and the sliding frame C, hinged tongue-plate B, and screw or rivet, all constructed and arranged to operate substantially as specified.

102,334.—PAPER-FOLDER.—E. Palmer Tiffany, Hartford, Conn.

Claim.—1. The adjustable pins b^4, with springs b^5, when used in connection with holes b^2 and top piece B, as described, for the purpose set forth.

2. The paper-folder described, consisting essentially of the base-plate A, spring top piece B, with spring pins b^4 b^5 and flap C, when combined and arranged as described, for the purpose set forth.

102,335.—VAPOR-BURNER.—Thomas Tully, St. Joseph, Mo.

Claim.—1. The concave-convex oval spreader, constructed as described, of a clam-shell shape, with its longer axis horizontal.

2. The construction and relative arrangement, as set forth, of the two concave oval-shaped spreaders, so that the upper edge of the outer spreader shall be below the corresponding edge of the inner one.

3. The relative arrangement, as set forth, of the inclined jet and the concave oval spreaders.

102,336.—WRENCH.—Gabriel Utley, Chapel Hill, N. C.

Claim.—The combination of a hand-wrench with adjustable fingers, substantially in the manner described, and for the purpose set forth.

102,337.—SPRING BED-BOTTOM.—Matthew Van Vleck and Lawrence Van Vleck, Monroe, Wis.

Claim.—The arrangement of the double right-handed and left-handed springs B, connected by the loops C, E, and F, the top and side rails, and the bars H, provided each with three or more circular perforations, when constructed to operate together as described.

102,338.—HAIR-CURLING PIN.—Annie Vogel, New York, N. Y., and Fannie Krebs, Georgetown, D. C.

Claim.—The combination of the forked pin, the sheath, and the elastic connecting-cord, the whole constructed for joint operation, substantially as set forth.

102,339.—VAPOR-BURNER.—Thomas Ward, Franklin county, Ohio.

Claim.—The novel-arranged burner, provided with the inclined plane E and perpendicular lip or flange F, in combination with the nipple C, all constructed and operating as described.

102,340.—SPRING.—James Wayland, New York, N. Y.

Claim.—A spring made up of a series of corrugated plates, the corrugations of which are made to abut at their convex portions against each adjacent plate, substantially as shown and described.

102,341.—FAUCET.—Darius Wellington, Boston, Mass.

Claim.—In combination with the flexible washer

r and the valve-spindle k, having a flange, m, that packs the washer against the cap, the screw o, washer n, handle n, sleeve s, and spring t, when the spindle is so formed, and the sleeve s so arranged that, by turning up the screw o, the flange is tightened against the washer r, substantially as described.

102,342.—LAMP-BURNER.—James S. Wetherby, New York, N. Y.

Claim.—The cone A, with porcelain or other earthen covering, and inner perforated conical jacket P P, provided with tube C to hold the wick-holder or burner B, and standards or arms 1 2 3 4 on the outside of the chimney, and hook H, all arranged and operating in the manner and for the purpose set forth and shown in the accompanying drawings.

102,343.—SHINGLE-MACHINE.—Emery T. Wheeler, Cannelton, Ind., assignor to himself and William H. Vaughan, same place.

Claim.—The combination of the bars I, sliding bar J, lever K, catch or guide L, and pawl M with each other, the bed-plates H, carriage D, and frame A, substantially as described, for setting the bolts independently of each other at both ends of the machine, as herein set forth and shown.

102,344.—CURTAIN-FIXTURE.—James S. Whitney, Lowell, Mass.

Claim.—The curved foot g' in combination with the sliding spring bolt h, and with the rim or band e, all arranged and operating in the manner and for the purpose described.

102,345.—HOISTING-MACHINE.—Nelson J. Wilkinson, Kalamazoo, Mich.

Claim.—The improved hoister described, having in combination, the lever, lazy-tongs, rope and pulleys.

102,346.—BARREL.—Henderson Willard, Grand Rapids, Mich.

Claim.—1. A barrel or other similar package constructed of a double, "an inner and an outer," set of horizontal sections of strips or bands of wood or other suitable material, so arranged vertically above each other in each set that the spaces between sections of the inner set will break joints with the spaces between sections of the outer set, substantially as and for the purpose herein described.

2. The strips of wood or other suitable material provided with split ends a a', when arranged between the inner and outer cylinders to hold the heads of a barrel or similar package, in the manner herein described.

102,347.—BARREL.—Henderson Willard, Grand Rapids, Mich.

Claim.—A barrel or other similar package, constructed of an outer and inner cylinder, each formed of a spirally-coiled strip of wood, metal, or other suitable material, the coils running in the same direction, but so arranged that the spaces between the coils of one cylinder break joints with the spaces between the coils of the other cylinder, substantially as and for the purposes herein described.

102,348.—BROILER FOR MEAT.—Henderson Willard, Grand Rapids, Mich.

Claim.—The bottomless meat-broiler, constructed substantially as described, in which the meat is suspended from spits, or their equivalents, vertically over the fire, in such a manner that the only point of contact of the meat with any part of the metal shall be the points of suspension, as herein set forth.

102,349.—BOTTLE-STOPPER.—William Wilson and David Wilson, New York, N. Y.

Claim.—The combination of the hook D, constructed with the point F, with the pad-carrying plate E of the link C, when such plate is formed with the notch b and inclined surface a', substantially as and for the purpose herein set forth.

102,350, antedated March 19, 1870.—PRESSURE-GAUGE.—Edwin A. Wood, Utica, N. Y.

Claim.—1. The gauge-case A, with an aperture C at the top, so arranged that the works may be placed in, removed, or adjusted without removing the dial, index or glass, substantially as described, and for the purposes hereinbefore mentioned.

2. The attachment of the supporting-frame W, of movements directly to the upper end of the siphon when placed within the gauge-case, and the arrangement of the operating-lever O, substantially in the manner described, whereby the expansion or contraction, or other movements of the siphon are prevented from affecting the registry of the gauge, substantially as described and for the purposes hereinbefore set forth.

3. The combination of the long lever O and its spring P, and the crank R or its equivalent, in substantially the manner described and for the purposes hereinbefore mentioned.

4. The combination of the spindle T and nut V, substantially in the manner and for the purposes hereinbefore mentioned.

102,351.—EAR-BRUSH.—George W. Wood, New York, N. Y., assignor to Joseph W. Kendall, Philadelphia, Pa.

Claim.—1. An ear-brush provided with a suitable shield or protector, which may, at pleasure, be made to cover the sponge portion, substantially as set forth.

2. The shouldered perforated teat, in combination with the sponge and sleeve, substantially as and for the purposes set forth.

102,352.—LACING FOR SHOE.—Rufus Wright, Brooklyn, N. Y.

Claim.—The shoe-lacing herein described, consisting of the metal stripe or ways a attached to the upper surface of the quarters, the clasps c, the double tapes d, the tapes f connected by the cord e, and the lacing-cord g, arranged to connect said clasps in the manner specified, all operating as set forth.

102,353.—BASSO-TENUTO FOR MELODEONS, &c.—Alfred Zawadski, Syracuse, N. Y., assignor to himself and J. C. O. Redington, of same place.

Claim.—1. The stickers or connecting-pins F, when made with shoulders f or their equivalents, to engage in the depressed position with a suitable detent, for the purpose herein specified.

2. In combination with the "sticker"-pins and sliding detent, the knee-lever K, when all said parts are constructed and arranged to operate as herein described.

102,354.—CHURN.—Charles T. Anderson, Clarksburg, Md.

Claim.—1. The paired dashers, working in separate chambers, and each composed of a horizontal bottom plate, D, and an oblique upper plate D', sloping downward toward the opposite chamber.

2. In combination with the aforesaid paired dashers D D, constructed as specified in preceding clause, the arrangement of the partition C c and operating-levers, and rods H, G G', F F', E E', all as described.

102,355.—LAMP-BURNER.—Philander Baker, Chicago, Ill.

Claim.—In combination with the deflector A, the spring E or F, attached thereto, and branch H of an auxiliary spring, the said auxiliary spring serving to connect the deflector and chimney to the base, substantially in the manner described.

102,356.—PERFORATED WIRE.—Samuel Beatty, Norwalk, Conn.

Claim.—The herein-described flattened and perforated wire, as a new article of manufacture.

102,357.—CAR-MOVER.—Samuel Becker and Peter Loucks, York, Pa.

Claim.—1. The curved or bent arm G, dog H, pawl J, serrated jaw E when combined with the arched head B of the lever A, and walking leg C D, substantially as shown and described.

2. The walking legs C D, made of unequal length and provided with the feet L, having sharp-edged biting-knives H, when combined with the arched head B of the lever A, and serrated jaw E swiveled thereto, arm G, dog H, and pawl J, all constructed substantially as shown and described.

3. The hinged arm G, curved at its forward end, and having pivoted to it the serrated dog H and pawl J, in combination with the notched jaw E, substantially as and for the purpose described.

4. The dog H pivoted to the arm G and made adjustable for the purpose described.

102,358.—WASHING-MACHINE.—Nelson W. Beckwith, McDonough, N. Y.

Claim.—The arrangement of the doors D D to the inner or working-cylinder B and compartments C C, arranged within the latter so that each inner door controls two compartments, as shown and described.

102,359.—TANK FOR RAISING SUNKEN VESSELS.—Frederick W. Beers, New York, N. Y.

Claim.—1. A tank for raising sunken vessels, having its bottom formed substantially as shown and described, for the purpose set forth.

2. In combination with the tank A, the pipes F F', with valves F², arranged to operate substantially as and for the purpose set forth.

3. The combination and arrangement of the sliding bolts G and levers G², substantially as and for the purpose set forth.

4. The valve E, attached to the end of the vertical shaft E', having its bearings in the screw-threads at the top of the tank, and operated by means of the wheel, substantially as set forth.

5. The chain-stoppers, composed of the jaws H, links H', bar H², link H³, and lever H⁴, substantially as and for the purpose set forth.

6. In combination with the elements in the preceding clause, the angle-irons h, with fingers h' and pivoted clutch H⁵, substantially as and for the purpose set forth.

102,360.—FOLDING LOUNGE.—Jacob Beiersdorf, Chicago, Ill.

Claim.—1. A sofa-bedstead, consisting of the parts A and B hinged together, with the detachable end piece C, and the bolster m, all arranged as herein described.

2. The detachable end piece C, provided with the pin n on its rear edge, the dovetailed projection at its bottom, and the depending front piece j as set forth.

3. The detachable back D, provided with the dovetailed cleats or projections h, arranged to fit into corresponding recesses in the frame A, substantially as described.

102,361.—STREET-PAVEMENT.—James C. Blake, Elizabeth, N. J.

Claim.—An improved method of forming paved street-ways, consisting of alternate sections of stone pavement A D D, with street-pipes and sewer underlying the same, and of wood or composition pavement, substantially as and for the purpose set forth.

102,362.—MANUFACTURE OF BOOTS AND SHOES.—Lyman R. Blake, Boston, Mass.

Claim.—The process of fastening the sole and upper, by entering the point of the straight needle at or near the edge of the sole, the needle being parallel, or nearly parallel, with the face of the sole, and then changing the path of the movement of such needle, so as to cause its point to pierce through the face of the sole, as shown and described.

102,363.—PINION.—Virgil W. Blanchard, Bridport, Vt.

Claim.—1. Forming a pinion provided at its small extremity with a flange to strengthen the teeth, and with a journal springing from said flange, substantially as and for the purpose set forth.

2. Forming a pinion of four teeth, provided at its small extremity with a journal of greater diameter than its greatest diameter at the pitch line of its teeth, substantially as and for the purposes specified.

3. Forming a pinion, having in the section occupied by the teeth only the teeth and a central core of metal, of sufficient size to join the teeth longitudinally at their base, substantially as and for the purpose described.

4. The head C and teeth D D, in combination with the flange B and journal A, in a pinion composed of cast metal, substantially as and for the purposes described.

102,364.—WINDMILL.—Addison P. Brown, Syracuse, N. Y., assignor to Continental Windmill Company, New York City.

Claim.—1. In combination with the radial arms of a wind-wheel of the class herein described, the said axis or section bars, with screw gudgeons, substantially as described.

2. The within-described method of staying the slats of wind-mills by means of the slots and wire or metal strips by means of a metal rim or band inserted in slots in the ends of the said slats, substantially as shown and described.

102,365.—BALANCE-PIVOT GATE.—David Brown, Hampden, Me.

Claim.—The bars e e, when so prolonged and bound together at the extremities of their extended parts as to form a joint brace, and afford an inclosed space for the reception of a counter-weight, in combination with the pivoted latch-bar c, provided with beveled heads r r, springs s s, and detent t, in the manner and for the purpose specified.

102,366.—SEWING-MACHINE.—Franklin H. Brown, Chicago, Ill.

Claim.—1. The crank a, in combination with the feed-bar F, carrying the horizontal extensions f, working through the eye g, and with the swinging bar G, said crank being pivoted to the bar F, and fitted in the upper end of the bar G, as herein described, for the purpose specified.

2. The shuttle-carrier J, when provided with the extension i, with the hinged cap L, and with the ing m, all arranged substantially as described to operate as set forth.

102,367.—VARIABLE CUT-OFF VALVE-GEAR AND VALVE.—William Brown, Hoboken, N. J.

Claim.—1. The combination of the one or more side ports c c' in the valve-seat, and the valve having a longitudinal and an oscillating or transverse motion, substantially as and for the purpose herein described.

2. The combination of the two segments B C of the valve with the taper interposed portion m of the valve-stem, substantially as and for the purpose herein described.

3. The combination of the loose sleeve-connection j of the eccentric with the valve-stem and the lever L, connecting the said stem, by the square or feathered portion i, with the governor, substantially as and for the purpose herein specified.

102,368.—SHUTTLE FOR LOOM.—Edmund F. Burrows, Mystic River, Conn.

Claim.—1. A weaver's shuttle, having at its end or ends a point or piston, the movement of which is independent to the extent described, of the body of the shuttle, substantially as and for the purpose set forth.

2. A shuttle-point which receives the impact from the picker or other motion-imparting device,

the inner end of which comes in contact with a spring or other yielding substance, substantially as and for the purpose set forth.

3. The combination and the arrangement of the cylinder E, piston or point F, and spring G, substantially as and for the purpose set forth.

102,369. — PUMP. — Aaron Carver, Little Falls, N. Y.

Claim.—The valve H, constructed with an annular groove between its disk and its guides, to receive and retain an elastic packing-ring, substantially as set forth.

102,370.—STRAP-FASTENING FOR PACKAGES. Joseph C. Cary, New York, N. Y.

Claim.—1. The improved strap fastening A, provided with slots B lengthwise of the strap, alternating with holes C intermediate of the slot, substantially as described.

2. The slots B and holes C, arranged in such a manner that the distances of the holes from the slots shall be less than the length of the slots, substantially as described.

102,371.—PIPE-TONGS.—Aury Gates Coes, Worcester, Mass.

Claim.—1. The movable jaw or latch *c*, in combination with a rod or bar *f*, having one of its ends pivoted to the jaw, and the other end arranged to slide upon the bar of the instrument, whereby said jaw or latch can be adjusted, substantially as described.

2. The improved pipe-tongs before described, the same consisting of the primary jaw B and bar A with its screw C, and the latch or movable jaw *c*, the latter being fulcrumed to or stepped within the clasp or slider *b*, and adjusted by the rod or handle *f*, the slide being caused to traverse the bar by means of the nut D, to which it is swiveled, and the whole operating as before set forth.

102,372.—DIE FOR FORGING OX-SHOES.—Horace Colburn, Stafford, assignor to himself and Sylvester Colburn, Ansonia, Conn.

Claim.—The two dies A and C, the die C provided with a ledge, *f*, to form the groove and perforations, and constructed substantially as herein described.

102,373. — WASHING-MACHINE. — Hanson Cook, New Bridgeport, Pa.

Claim.—The construction and arrangement of the rubber D with rollers having oblique corrugation, and arranged transversely at the middle of the tub, so as to leave spaces N at each end for clothes, &c., and under the rubber for sediment, in combination with the metallic plates G G, and journals, confining-strips H H, and slats *d*, as shown in fig. 3, the rubber F, the suspended and pivoted frame I K, and tub A, as shown and described.

102,374.—BOILER-TUBE CLEANER.—Patrick H. Coyle, Newark, N. J.

Claim.—The combination, with a circular system of scrapers, of the double springs 1 2, when the latter are all rigidly affixed to the heads, as shown and described.

Also, the combination, with an expansible boiler-tube cleaner, of the ribbed spear-head K, as and for the purpose set forth.

Also, the combination, with an expansible boiler-tube cleaner, of a brush acting in rear of the scrapers, as and for the purpose set forth.

Also, the combination of the ribbed spear-head, a circular system of scrapers, and a follower-brush, substantially as shown and set forth.

102,375.—CARTRIDGE-CASE.—Selden Allan Day, Bowling Green, Ohio.

Claim.—1. The tool-box F, constructed substantially as herein described, and arranged so as to be between the upper side of the body and the cover or flap of a cartridge-box, as set forth.

2. The block or case G, having cylindrical holes cut entirely through it, terminating in beveled or grooved sides, and provided with flaps *g*, constructed and arranged substantially as described, and for the purpose set forth.

3. The combination of a cartridge-box, A, with a tool-box, F, and block or case G, provided with flaps *g*, when constructed and arranged substantially as herein described.

102,376.—COAL-BARROW.—Peter K. Dederick, Albany, N. Y.

Claim.—1. The scoop-form of the body B, suspended between the wheels of the barrow, substantially for the purpose set forth.

2. The bale F, or its equivalent, in connection with the body B, suspended as described.

102,377.—CONVEYER-BLOCK.—Welman De Witt, Tallmadge, Mich.

Claim.—The combination of the block E and staple-like device F with the staves *g*, springs h, guide *i*, and block *k*, when arranged and operating substantially as described.

102,378.—COATING AND BRONZING IRON.—Lansing Dockstader, West Meriden, Conn., assignor to Bradley and Hubbard, same place.

Claim.—The process herein described for bronzing iron, the same consisting in coating the iron with a surface of copper, and then applying lacquer or varnish by means of heat, as described.

102,379.—SASH-BALANCE AND LOCK.—William H. Doe, Oshkosh, Wis.

Claim.—The sheaves A and C and the roller B, arranged as described, and the lock-bolt T, operated as shown, all arranged on one plate for convenient insertion at one operation.

102,380.—NEEDLE.—James W. Donaldson and Daniel Sheets, Suisun, Cal.

Claim.—1. A sewing-needle, the elastic finger of which is constructed with a projection, *c*, and the beveled sides, substantially as and for the purpose described.

2. The elastic finger *c*, provided with the projection *c*, and limited in length so as not to reach the shoulder *d*, substantially as and for the purpose described.

102,381. — VENTILATED HORSE-COVER.—Charles P. Eager, Boston, Mass.

Claim.—1. The horse-cover when made with adjustable ventilation, substantially as described.

2. The devices, substantially as described, for raising and lowering, in combination with the top and sides of the cover, when arranged to operate as set forth.

102,382.—REFRIGERATOR AND COOLING APPARATUS.—Alfred B. Ely, Newton, Mass.

Claim.—1. The combination of pipes C and D, when constructed and arranged in relation to each other, and to room A, substantially as shown and described.

2. The combination of pipes C and D and a receptacle for cooling material, when constructed and arranged in relation to each other and to room A, substantially as described.

102,383.—MACHINERY FOR DRILLING ROCK. William H. Elliot, New York, N. Y.

Claim.—1. The combination of the rigid suspending shaft *g*, when made adjustable in a vertical direction upon ways or guides *v*, and rigidly fastened to a car by any suitable means, with a drilling-machine attached to its lower end, substantially as specified.

2. The combination of the rigid suspending shaft *g* with the horizontal axis or bearing *b''* and the joint *u*, substantially as and for the purpose specified.

3. The joint *u*, suitably supported upon ways *d'*, in combination with suspending shaft *g* and a drilling-machine, substantially as set forth.

4. The joint *y*, in combination with the ways *d'* and joint *u*, when these devices are so constructed and operated as to allow free movement of the supporting shaft of the drilling-machine, as described, and also so as to hold the said shaft rigidly fixed to the car, substantially as described.

5. So arranging several pulleys, in relation to the suspending shaft *g* and hollow axis *b'*, that the belt *q* shall pass down to the drilling-machine and return through said hollow axis, substantially as herein specified.

102,384.—PATTERN FOR CASTING. — Amon L. Finch, Sing Sing, N. Y.

Claim.—1. The mode herein specified of making a pattern in type-metal or alloy, by casting the same into the space formed between the mold of the pattern as first taken, and the wood pattern reduced to the extent required for the thickness of such cast patterns, substantially as set forth.

2. The patterns for tubular traps and bends, formed of metallic sections of curved tubes united together, substantially as and for the purposes set forth.

102,385.—WASHING-MACHINE. — Elias Fiscus and Solomon Arney, Albion, Iowa.

Claim.—The framing 1 2 3 4 5, gearing 7 8 9, tub 12, rubbers 13 14 27, lever 15, pitman 16, rock-shaft 20, and guides 21, combined, arranged, and constructed as herein represented and described.

102,386.—SPRING SEAT AND BED-BOTTOM.—Mark Flanigan, Detroit, Mich.

Claim.—The continuous wire spring B, having coiled in it the helices *a a'*, and provided with the perches *c* and hooks *b*, in connection with the frame A, substantially as described.

102,387.—MANUFACTURE OF YEAST.—Henry Fleischmann, New York, N. Y.

Claim.—1. A compressed yeast, suitable for baking and other purposes, prepared from the froth or scum formed during the fermentation of "mash" used for the manufacture of malt or spirituous liquors, as herein set forth.

2. The process, substantially as described above, of making yeast from the "mash" used in the manufacture of malt and spirituous liquors.

102,388.—DEVICE FOR MOVING CARS.—John Foreman, Pottstown, Pa.

Claim.—The L-shaped lever, with its long arm or handle *f* and short arm A, in combination with a clamp, D, to which the lever is hung, and with a rod, E, so hung to the arm A that it can be detached and reversed, the whole being constructed and operating as described.

102,389.—MACHINE FOR ROLLING METAL BARS. — Thaddeus Fowler, Seymour, Conn.

Claim.—In combination with the wheels, disks, or frames, carrying reducing-roller *a a*, the holding-rollers *d e* on one side, and the drawing and finishing-rolls on the other side, all operating together in the manner and for the purpose described and represented.

102,390.—PIPE AND BOLT-WRENCH.—Louis Frey, Newark, N. J., and George Macardle, Brooklyn, N. Y.

Claim.—The adjustable slip-nut C, as herein described, in combination with the sliding jaw B and rocking or tilting cam E, for the purpose as herein substantially set forth.

102,391.—LUBRICATOR.—Gregory Gordom, New York, N. Y.

Claim.—1. The foot *e*, extending from the tube or shank C of the platform B, when combined with the headed screw *a*, reservoir A and cap E, substantially as set forth.

2. The lubricator herein shown and described, that is to say, consisting of the protecting-cap E, platform B, headed screw *a*, tube C having foot *e* provided with an orifice for the passage of oil, and a follower D, substantially as herein shown and described.

102,392. — TUBULAR ARCH-GIRDER FOR BRIDGES AND OTHER STRUCTURES.—David Hammond and Job Abbott, Canton, Ohio.

Claim.—1. The combination of the arch-pieces A A with curved webs A and edge flanges *a a' a a'*, thimbles *f*, or channel-bars K, and broad plate B, the several parts being arranged and united by rivets or their equivalents, substantially as and for the purpose specified.

2. The combination of the arch-pieces A A with curved webs A and edge flanges *a a' a a'*, channel-bar H or L, arch-pieces A^1 A^1, with edge flanges *a a' a a'*, and channel-bar K, the several parts being arranged and combined by rivets or their equivalents, substantially as and for the purpose specified.

3. The combination of the arch-pieces A A with curved webs A and edge flanges *a a' a a'*, channel-bar H or L, arch-pieces A^1 A^1 with edge flanges *a a' a a'*, and thimbles *f f*, the several parts being arranged and combined by rivets or their equivalents, substantially as and for the purpose described.

4. The combination of the arch, composed of the arch-pieces A A A^1 A^1, with curved or polygonal webs and edge flanges *a a'* and channel-bars H and K, arch-shoes C C, chords E E, posts F F, and tie-rods G G, the several parts being arranged as and for the purpose specified.

102,393.—TUBULAR ARCH-GIRDER.—David Hammond and Job Abbott, Canton, Ohio.

Claim.—1. The combination of the tubular arch, composed of the three arch-pieces B A B, of rolled iron, with curved or polygonal webs and edge flanges, and the channel-bar C, arch-shoes F F, chords E E, posts H H, and tie-rods K, the whole forming a bow-string girder, substantially as is herein specified.

2. The combination of the tubular arch, composed of the four arch-pieces A B B D, of rolled iron, with curved or polygonal webs and edge-flanges, arch-shoes F F, chords E E, posts H H, and tie-rods K, the whole forming a bow-string girder, substantially as is herein specified.

102,394.—TRUSS-GIRDER BRIDGE. — David Hammond and Job Abbott, Canton, Ohio.

Claim.—1. Forming a point of suspension from which to support the sections of the upper or lower chords in trusses provided with tensional, main, and counter-braces, by means of a clamping-piece, so secured to said pieces at their intersection as to be held from slipping on either of them in case of the slackening of the other.

2. The combination of the shoe R, provided with the slotted side walls 7 7, chords Q Q, provided with the slots *x* and *y*, and adjusting-wedges *u u*, provided with the bolt-ends *v*, with nuts *w*, the several parts being arranged substantially as and for the purpose specified.

3. The pin *f*, arranged in holes in the plates *e e*, or their equivalents, secured on the inner faces of the chords Q Q, the ends of said pin abutting against the inner faces of said chords, so that it serves as the distance-piece against which said chords are clamped, substantially as and for the purpose specified.

4. The combination of the chords Q Q, plates *e e*, clamping-bolts or rivets *d d*, and pin *f*, the several parts being arranged substantially as and for the purpose specified.

5. The combination of the braces I I J, provided with eyes at their lower ends, pin *f*, plates *e e*, chords

Q Q, and clamping-bolts or rivets *d d*, the several parts being arranged substantially as and for the purpose specified.

6. The head-block *f*, provided with the cavity *f''* and slots *f' f'* when used in combination with the lateral I Y, braces Z Z, and bolt *k*, the several parts being constructed and arranged substantially as and for the purpose specified.

7. The U-shaped piece *q*, when used in combination with the tubular lateral *a* and bolt *q'*, substantially as and for the purpose specified.

8. The adjustable chord-splice herein described, the same being constructed with two bolts welded into the ends of the chords, each bolt being provided with an eye and bent bolt-end with nut, or with two eyes and a tie-bolt, substantitially as and for the purpose specified.

9. The combination of the post-base P, chords Q Q, stirrup *g*, or its equivalent, and floor-beam S, said post-base resting as a saddle-block on the upper edges of said chords, and the several parts being arranged substantially as and for the purpose specified.

10. The notches ll ll in the flanges of the floor-beam S, when acting in combination with the stirrup *g*, to prevent the floor-beam from sliding in said stirrup, substantially as and for the purpose specified.

11. The saddle-block F, when used in combination with the upper chord A B A, and strut D E D, and rods I I, substantially as and for the purpose specified.

102,395.—Washing-Machine.—Benjamin R. Hand, Lancaster, Pa., assignor to himself, S. J. Eby, and B. S. Trout, same place.

Claim.—The combination and arrangement of the handle-like crank-rod M, slotted head-block D, reciprocating board C, guides G, press-rockers K with springs L, all combined and operating substantially in the manner and for the purpose specified.

102,396, antedated April 23, 1870.—Machine for Sawing Shingle-Bolts.—Matthew Hart, Boston, Mich.

Claim.—The movable saw-table E, provided with cap or covering F, double dog G, lever H and rack-bar I, all substantially as and for the purposes herein set forth.

102,397.—Hydraulic Air-compressing Apparatus.—Michael Hey, Philadelphia, Pa.

Claim.—1. In combination with any suitable vessel A B for receiving and discharging water and air or other fluids, the mechanical device D E, consisting of the cylinders 1, 2, and 3, spring K, rod M, with its disk L and hook 8, the hook 15, catch-hooks 13 and 18, the inlets F and 5, and the outlet-slot 4; the said parts of the device being constructed and arranged to operate together, substantially in the manner described, for the purpose of suddenly or quickly opening and closing the water-inlet and outlet-valves, as described.

2. In combination with the said mechanical device D E, and its containing vessel A B, a float, C, arranged to operate upon the said device D E, substantially in the manner and for the purpose set forth and described.

102,398.—Stationary Furniture.—Adaline D. Hibbs, Trenton, N. J.

Claim.—The clerk's caster herein described, having rotating disk B, adjustable standard C, and ball D, the said disk being constructed with openings *a*, and having removable cups H, when all the parts are arranged substantially as and for the purposes specified.

102,399, patented in France, December 16, 1865.—Screw Propeller.—Hermann Hirsch, Paris, France.

Claim.—1. Constructing screw propellers with blades, the faces of which are formed of concave lines in cross-section, in combination with an increasing pitch or helicoidal inclination from the axis to the circumference, substantially as set forth.

2. In combination with said transverse curvature and graduated helical form, the recession of the forward terminal edges of the blades, substantially as and for the purposes set forth.

102,400.—Detachable Saw-Teeth.—Patrick J. Hogan, Cincinnati, Ohio.

Claim.—The movable tooth A, provided with jaws *a a'*, in combination with the semicircular-ended side recesses *b b'* of the saw-body, constructed substantially in the manner and for the purpose specified.

102,401.—Shank-Stiffener.—George Houghton, Hudson, and Stephen Moore and Homer Rogers, Sudbury, Mass.

Claim.—As a new article of manufacture, shank-stiffeners made of paper-pulp, formed into shape in a mold, substantially as described.

102,402.—Cider-Press.—Francis Hovey, New York, N. Y.

Claim.—1. The combination and arrangement of the mashers B B', made to revolve at different velocities in reverse directions, and composed of blades which are serrated on their sides, in combination with the knives or ribs *e*, on the sides of the hopper, in proximity to the ends of the one masher, substantially as specified.

2. The combination of the knives *f f* in the bottom of the hopper, with the mashers B B', made up of serrated blades, arranged and operating essentially as herein set forth.

3. The combination and arrangement of the upwardly-projecting knives *d*, the revolving serrated-blade mashers B B', the cross-bottom knives *f f*, and the ribs or knives *e e*, substantially as shown and described.

102,403.—Horse-Collar Pad.—James S. Huston, Mechanicsburg, Pa.

Claim.—The flexible metallic pad A, when permanently secured to the collar B, as shown and described, and for the purpose specified.

102,404.—Alphabetical Index.—William C. Huston, Eaton, Ohio, assignor to himself and Nelson J. Quinn.

Claim.—The combination, substantially as described, of case or frame A B, rollers D D' *d d'*, endless cord E, pulleys F F', adjusting devices G H, index I J K, and support L, for the object stated.

102,405.—Seeding-Machine.—Joseph Ingels, Milton, Ind.

Claim.—1. In combination with the circular openings B, through the bottom of the seed-box, the concave C, constructed as herein described, viz: circular at top to margin, the circular hole, taporing, conical, and cup-shaped, as and for the purpose described.

2. In combination with the concave and seeding-wheel, the hub, or hubs, *e e*, between the ends of said wheel and the sides of the concave, substantially as represented.

3. In combination with the concave and seed-wheel turning therein, the projections *a b c* on the concave, for the purpose of forming, in conjunction with the wheel, the receiving and the distributing chambers, from which the wheel takes and delivers to the receiver the grain to be sown or drilled, and prevents all other from passing, substantially as described and represented.

4. In combination with the concave, a receiver which is pivoted to the main seed-wheel shaft by stirrups, so as to swing on said shaft as a center, substantially as described.

5. In combination with the shaft G, and the receiver suspended thereto by a stirrup H, the sleeve *h*, united and acting therewith as and for the purpose described.

6. The receiver, terminating in a tube, which has, near its end, a swell, and below it a taper, for the purpose of receiving the India-rubber or other flexible tube, and fastening it thereto as described.

102,406.—Plane-Stock.—Julius Katz, Cincinnati, Ohio.

Claim.—Facing a plane-stock with a congeries of strips of bone or like substance glued and screwed together and fastened to the stock proper in the manner set forth.

102,407.—Stove-Pipe Damper.—William J. Keep, Troy, N. Y.

Claim.—The handle C or its equivalent, permanently attached to and in combination with the damper B, substantially as and for the purpose specified.

102,408.—Carriage-axle Lubricator.—John Killefer, West Richfield, Ohio.

Claim.—1. The combination with the carriage-axle A R of the oil-cup J, provided with the ball L, and having the bottom of its interior cavity formed in the shape of a flattened hemisphere, the several parts being so constructed and arranged as that the vibrations of the carriage-axle shall cause the said ball to act as a rolling-valve regulating the passage of the oil from the oil-cup to the spindle, substantially as is herein specified.

2. The combination of the iron axle R, wooden part C, axle-clip O, and oil-cup J, the shank of said oil-cup passing through the clip O and wooden part C, and the several parts being arranged substantially as and for the purpose specified.

3. The arrangement of the washer I in the cavity *d*, at the lower end of the hole *f* in the wooden part C of the axle, for the purpose of insuring an oil-tight connection between the iron axle R and oil-cup J, whenever said oil-cup is screwed into its proper position, substantially as herein specified.

4. The combination of the iron axle A R, provided with an oil-channel, G, extending from a point, *b*, on the bearing-face of the spindle A, to a point, *a*, on the upper face of the axle R, and behind the spindle collar *c*, wooden part C, axle-clip O, and oil-cup J, provided with the rolling ball-valve L, the several parts being constructed, arranged, and operating substantially as and for the purpose specified.

102,409.—Curtain-Fixture.—A. Hayden Knapp, Newton Centre, and George W. Bailey, Boston, Mass.; said Bailey assigns his right to said A. H. Knapp.

Claim.—The improved balance-spring A, formed of separate springs, *a b c*, united by connecting holders *d d d*, or of concentric or redoubled series of spirals or coils, *a b c*, as and for the purposes herein specified.

Also, the combination and arrangement of the spring A in a metallic barrel or case B on the stick C, the shaft D turning in the said case, and the shaft H, with its head or knob G, turning in the bracket E, with ratchet and pawl, and coupled to said shaft D, as herein specified.

Also, forming the stick C of several sections of wood, extending from center to circumference, and joined radially, as herein set forth.

Also, the adjustable brake-spring I, with its open loop *n*, arranged in combination with the drum *k* and cord M, as and for the purposes herein specified.

102,410.—Slide-Valve.—James Larkin, Detroit, Mich.

Claim.—A double-seated valve A B and balance-plate C, provided with two boxes E, springs D, caps F, and set screws F, in combination with a steam-chest cover, G, provided with openings H and glands I J, when constructed and arranged in the manner substantially as herein described and set forth.

102,411.—Animal Trap.—James H. Lord, San Francisco, Cal.

Claim.—The revolving wings A', the box B having a curved floor corresponding to the movement of the arms, the crank E provided with a bait-hook, the spring bolt *d*, and the cage G, provided with the hinged gate I, when said parts are combined together and arranged to operate as herein set forth.

102,412.—Eaves-trough Hanger.—Robert A. Lucas, Wooster, Ohio, assignor to himself and Horace S. Weston, same place.

Claim.—1. The hanger-bar D, provided with the end lips or flanges *d e*, when used in combination with the metal strip C, secured on the inner edge of the trough A, and having the rolled edges *a a*, substantially as and for the purpose specified.

2. The hanger-bar D, provided with the open circular clasp F, and with the end lips or flanges *d e*, when used in combination with the eaves-trough A, provided with the circular rolled edge B, and having the metal strip C, with rolled edges *a a* secured on the opposite inner edge, substantially as and for the purpose specified.

102,413.—Adjustable Feet for Clock-Cases.—Ormel R. Luther, Waterbury, Conn.

Claim.—As a new article of manufacture, the herein-described adjustment for clock-cases, consisting of the plate A, with the shank B, combined with the socket C, constructed for adjustment substantially in the manner described.

102,414.—Peat-Machine.—James B. Lyons, New Haven, Conn., assignor to Vulcan Peat-Manufacturing Company, New York City.

Claim.—In the peat-machine herein shown, an improved arrangement of parts consisting of the top and bottom flanged wipers a^2 and intermediate cutter-knives *a* upon the shaft *b*, stationary blades *c*, retaining-plates *d*, and dies *e e e*, when said parts are constructed and arranged to operate as and for the purposes herein shown and described.

102,415.—Bakers' Oven.—Terrence P. Mahon, New York, N. Y.

Claim.—1. The water-boiler H, in combination with the oven, when the said water-boiler and oven are constructed and arranged in relation to each other, substantially as described, for the purpose specified.

2. The grate G, arranged in the floor of the oven as described, on pivots *b*, supported in projection *a* above the bed-plate, and operated by means of the chain *e*, and locked by the rod *f*, the whole being arranged in relation to each other, in the manner substantially as described.

3. The flues K, L, M, N, O, P, and Q, arranged in relation to the oven, and fitted with dampers, substantially as described, for the purpose specified.

102,416.—Public Urinal.—Samuel Males, Cincinnati, Ohio.

Claim.—1. The urinal-bowl E, when constructed with an overhanging hood, H, covering the top of the pot, with the opening in front, substantially as and for the purpose specified.

2. The pot E, provided with the funnel-shaped nozzle or discharge-pipe *e* to receive the strainer V, substantially as and for the purpose set forth.

3. The peculiarly-constructed shield F and pipe D, fitted to the pot E, and sink C, substantially in the manner and for the purpose described.

4. The strainer V, formed with depressions U for the passage of fluid, and fitted with anchor W to connect the strainer to the pot E, as and for the purpose specified.

5. The described combination and arrangement of the pot E *e*, shield F, pipe D, and the sink and foot-plate B C, constructed, combined, and arranged substantially as and for the purpose described.

6. A urinal fitted with yielding and self-adjusting

screens I' I', fig. 2, so arranged as to hide the occupant from view on either side, substantially as described.

7. The hinged seat T and shackle U, constructed and arranged for the use of water-closets and urinals, substantially in the manner and for the purpose specified.

8. The pendent folding apron Y, loosely attached to the hinged seat T, substantially as described and for the purpose specified.

9. The gravitating anchor hinge-plate, figs. 12, 13, 14, embodying the anchor 1 2 3, the eye 4, with orifice to receive pintle 5, and the single or double helical flange L or L', substantially as and for the purpose specified.

10. In the described connection with a public urinal or privy, the single bayed or curved door I, when so constructed that in the shut condition it will entirely inclose the urinal-bowl, and provided on one side, with spring or gravitating hinges for automatic closing, and at opposite side with a yielding spring catch, E S, arranged and operating substantially in the manner and for the purpose described.

11. In combination with the devices embodied in the preceding clause, the door or shield I', fig. 1, arranged and operating substantially as and for the purpose described.

12. The anchor-plate a' Q, fitted with pad P and yielding spring catch E S, as and for the purpose stated.

13. In the described combination with the devices embodied in the tenth clause of claims, the prop N and the chain O, operating in the manner and for the purpose specified.

14. The step B, concave and perforated at C with a large hole to admit pipe D, and having an ascending lip, *d*, in the rear, all as shown and described.

102,417.—Nursing-Bottle.—John L. Mason, New York, N. Y.

Claim.—Securing the rubber tube D in the cover C by glass stops inserted in the tube on either side of the cover, substantially as described.

102,418.—Bolt and Rivet-Machine.—John Morgan, Jr., Wheeling, West Va.

Claim.—The combination of the plunger W, operating in the twofold capacity of an anvil or supporter for and discharger of the blank, with the header M, the mechanism to cause the plunger to advance and expel the blank simultaneously with the withdrawal of the header, and the series of dies in the intermittently-rotating die-holder G, substantially as described.

102,419.—Life-preserving Garment.—William Morris, Philadelphia, Pa.

Claim.—The combination with a garment of air-tight tubes *b b d e f*, arranged as described.

102,420.—Tool-rest for Grindstones.—William H. Moesteller, Sharonville, Ohio.

Claim.—The tool-rest for grindstones, herein described, consisting of the slotted bed-plate C *c*, frame D, hinged plate E, and adjusting screws F, all the parts being constructed and arranged relatively to each other, as set forth.

102,421.—Helical Spring.—William Rhoda Nichols, Philadelphia, Pa., assignor to Nichols, Pickering & Co., same place.

Claim.—A helical spring, composed of vertical and parallel coils, with upper external flange, as set forth.

102,422.—Spring for Railway Cars and other Vehicles.—William Rhoda Nichols and Charles Williams Pickering, Philadelphia, Pa.

Claim.—The combination of the bent ends of the plates of a car-spring with a pin, B, and a block or blocks, D, recessed at one or both sides, to receive a portion of each plate, substantially as described.

102,423.—Velocipede.—Stas Nisiosduff, Lowell, Mass.

Claim.—1. The combination of the levers M and N, the spring lever P, connecting-rods Q, R, and S, crank-shaft b, cranks d, clutch-gears H and I, key d^1 and gears J and K, with the axles E, all combined and arranged to operate substantially in the manner and for the purpose specified.

2. The lever *e*, in combination with the crank-shaft *b*, and with the clutch-gears, in the manner and for the purpose set forth.

3. A three-wheeled vehicle or velocipede as described, all the parts of which are constructed, combined, and arranged to operate substantially as and for the purpose specified.

102,424.—Suspender.—Edwin Oldfield, Norwich Conn.

Claim.—The application of metallic stops B B, or their equivalents, with the suspender and brace-ends *c c*, substantially as and for the purpose set forth.

102,425.—Churn.—George N. Palmer, Greene, N. Y.

Claim.—1. The air-conductor E, for the purpose of giving the air-chamber B the same temperature as the inside of the churn, substantially as herein set forth.

2. The conical-shaped bulb, chamber, or guard D, to give free access for the cream to flow in and out, substantially as herein set forth.

3. The air-chamber B, in combination with the bulb-chamber D, and air-conductor E, all substantially as and for the purposes herein set forth.

102,426.—Dumping-Wagon.—Charles F. Parker, Greenfield, Ohio.

Claim.—The wagon-bed, made of narrow planks pivoted at the ends so as to open and close, as described; the same consisting of the planks A, pivoted in the slotted rail B, connected, by the staple-hooks F, to the bar C, which is connected in turn to the lever E, substantially as described and shown.

102,427.—Elastic Door-Guard.—Deon E. Peck, Burlington, Conn.

Claim.—As a new article of manufacture, a door or furniture stop, consisting of the stop B and rivet *a*, with its head *c* imbedded in the interior of the India-rubber ball A, the whole constructed and arranged substantially as shown and described.

102,428.—Dredging-Can.—Daniel Webster Pepper, Philadelphia, Pa., assignor to William Jenks Fell and Joseph E. Taylor, same place.

Claim.—A box, having a perforated permanent or detachable end, and a rib at the edge, in combination with a perforated cover having at the edge a flange which embraces the rib on the box, substantially as described.

102,429.—Breech-loading Pistol.—Samuel M. Perry, Plainfield, N. J., and Emerson Goddard, Brooklyn, N. Y., assignors to E. S. Renwick, New York city.

Claim.—The combination of the stock and barrel of the fire-arm with a duplex catch, substantially as before set forth.

102,430.—Portable Shoe-Brush and Box.—Edwin A. Pierce, New York, N. Y.

Claim.—The brush constructed to receive the box of blacking between the sections *b* and *c* of bristles in combination with the inclosing case made with a lid, as and for the purposes specified.

102,431, antedated November 2, 1869.—Fire-Extinguisher.—George F. Pinkham, Cambridge, Mass.

Claim.—The arrangement upon a truck or carriage of two or more cylinders or reservoirs, connected by pipes, which are controlled by stop-cocks, and which pipes communicate with an issue-pipe, tube, or nozzle common to all the pipes, so that, in extinguishing a fire, one reservoir may be resupplied while another is being exhausted, and thus a continuous supply and stream be kept up and thrown upon the fire, substantially as described.

102,432.—Barrel.—Henry G. Porter, Grand Rapids, Mich.

Claim.—1. In combination with a barrel having a series of horizontal sections, A or B, beveling the inner edges of the top section and the circumference of the top C, so, when placed together, they form an even surface on top, as shown and described.

2. In combination with the top C and horizontal sections A or B, the elongated brace *b*, which extends on the exterior of the sections, and is bent over on the cover, and under on the bottom, all as set forth.

3. In combination with the top section B and cover C, (or bottom section and bottom proper,) the metallic brace *c*, passing from the inner part of the section, between it and the cover, (or bottom,) and over and upon the cover or bottom, as set forth.

102,433.—Low-water Indicator.—Peter W. Reinshagen, Cincinnati, Ohio, assignor to himself, Daniel Wiehl, Andrew P. Lusk, and John H. Buckman, same place.

Claim.—1. The stem B, having a rounded or spherically-shaped valve-face *b*, in the described connection with the conical seat D, constructed substantially as described, and for the purpose specified.

2. The counter-weight C, arranged as shown, and for the purpose set forth, in the described combination with the float A and stem B.

3. In the described combination with the float A B C, pipe J, and whistle E, the cage F G H, constructed substantially as described, and for the purpose set forth.

102,434.—Breech-loading Fire-Arm.—Edward S. Renwick, New York, N. Y.

Claim.—The combination of the barrel, stock, grooved pivot, transverse pin, and ring-bearing, substantially as before set forth.

102,435.—Street-Car.—Jacob Elwood Ridgway, Philadelphia, Pa.

Claim.—1. A street-car, having at the rear a projection or extension, provided with two doors, arranged substantially as described.

2. The combination of the said two doors at the rear of the car with the conductor's platform D on the exterior of the same.

3. The combination of the subject-matter of the second claim with the opening *m* in the rear end *b* of the car.

102,436.—Button-shank Gauge.—James F. Russell, Washington, D. C.

Claim.—1. A graduated or stepped gauge, provided with slots within which the shank is formed, and a neck for the withdrawal of the gauge from the shank, constructed and arranged substantially as described, for the purpose set forth.

2. In combination with the button-shank gauge, the bodkin, thread-cutter, nail-file, nail-cleaner, and inch measure, all, or any one or more, substantially as and for the purposes set forth.

102,437.—Manufacture of Shears.—Joseph Ryals, Terryville, Conn.

Claim.—The handles or parts B of scissors and shears cast onto the blades A, the cast metal inclosing the end of the blade, substantially as herein described and shown.

102,438.—Manufacture of Fertilizer.—William I. Sapp, Baltimore, Md., assignor to B. M. Rhodes & Co., same place.

Claim.—The employment of soluble silicic acid or water glass, for rendering soluble the phosphates in phosphatic guano.

Also, the new fertilizer, made from silicated phosphates, produced by the process herein described.

102,439.—Dropping-Platform for Harvesters.—Joseph B. Sawyer, Templeton, Mass.

Claim.—1. The combination, with the finger-bar of a harvesting-machine, of a flexible reciprocating elevating discharging-apron, substantially as and for the purposes set forth.

2. The combination, with the flexible reciprocating and discharging-apron, of the mechanism, substantially as described, for elevating and depressing the same.

102,440.—Padlock.—Hiram S. Shepardson, Shelburne Falls, Mass.

Claim.—A padlock having one or more swinging locking-dogs so constructed and arranged as to lock the hasp at both sides, when said dogs have rotating tumblers pivoted in recesses in their sides, and are arranged to operate in connection with the stationary stop *l*, substantially as herein described.

102,441.—Metallic Roofing.—John Siddons, Rochester, N. Y.

Claim.—1. The employment, in connection with the double-locked seam *b*, of a suitable water-proof cement, *i*, substantially as and for the purposes set forth.

2. The herein-described method of securing the lapped end of the sheets of metal roofing, that is to say, by forming countersinks or recesses in the sheets, then inserting the screws part of their length, then applying a coating of paint or cement, and screwing in the screw, so that a portion of the paint shall be under the head, and a portion shall also flow over the head in the recess, as set forth.

102,442.—Pump.—James A. Sinclair, Woodsfield, Ohio, assignor to himself, Samuel L. Mooney, same place, and William W. Jordan, Ottawa, Kansas.

Claim.—The combination of the chamber A, inclosed bulb or cylinder *l*, pipes *b c*, stationary piston *d*, and movable cylinder *e*, all constructed and arranged to operate as set forth.

102,443.—Connection for Lead-Pipe Joints.—Isaac Smith, New York, N. Y.

Claim.—A connecting socket, having two or more tapering ends, *a*, and swell *b* between them, said swell extending beyond the periphery of the pipes to be connected, for the application of heat, in the manner set forth.

102,444.—Road-Scraper.—Perry M. Stephens, Deer Creek, Ill., assignor for one-half his right to Perry M. Tuttle, same place.

Claim.—1. The lever F, so arranged as to depress or elevate the land-side E, as described, in combination with beam B of plow A, substantially as set forth.

2. The mold-board C, with extension D as attached thereto, curved guide *d* and handle *a*, in combination with plow A, substantially as set forth.

3. The lever F, with land-side E, having a depressing and elevating motion, and handle *a*, as arranged with mold-board C, provided with handle *a*, and having the extension D adjusted by means of the curved guide *d*, in combination with plow A and beam B thereof, substantially as set forth.

102,445.—Mechanism for Transmitting Power to Lathes and other Machinery.—James F. Stewart, Fredrich Klinkerman, and James Lamb, Aurora, Ind., assignors to James Lamb and James F. Stewart.

Claim.—The combination and arrangement of

the driving-wheel F with its toothed flange a, loose collar b, spring c, belt f, dog A, and spring i, all constructed and operating substantially in the manner and for the purposes herein set forth.

102,446. — SKATE-FASTENING. — George W. Street, Brooklyn, N. Y.

Claim.—A skate-fastener, composed of the plate A, spring d, uprights a b c, point k, clamping-screw e, lugs f f, and slot h, constructed as and for the purposes hereinbefore set forth.

102,447. — MACHINE-BELTING. — John G. Street, Brooklyn, N. Y.

Claim.—A half-round machinery belt, constructed as and for the purposes hereinbefore described.

102,448. — TIRE-UPSETTING MACHINE.—Thomas Sullivan, Corning, N. Y.

Claim.—1. In combination with the movable bed-plate C, arm G, and curved rack I, the pinion M lever N, and friction-roller H, all constructed and operating substantially as and for the purposes herein set forth.

2. The combination and arrangement of the frame A with pin L, bed-plates B C, eccentrics D D, rack I, and pinion M, all constructed and arranged to operate substantially as and for the purposes herein set forth.

3. In combination with the fixed bed-plate B, the grooved flange O, substantially as and for the purposes herein set forth.

102,449.—LAMP-BURNER. — Alvin Taplin, Somerville, Mass., assignor to Bristol Brass and Clock Company.

Claim.—The combination and arrangement of the tapering dividing flanges g g, the two wick-tubes a b, carrying flat wicks at their lower portions, and converging into a circle at f, with the lifters c d on independent shafts, operated in unison by the gears e e, through the mill-head on one of said shafts, as shown and described.

102,450.—PREVENTING MILDEW AND DECAY IN SAILS, AWNINGS, TENTS, TARPAULINS, AND OTHER ARTICLES AND FABRICS.—William A. Torrey, Mount Clair, N. J.

Claim.—1. The process herein described, for preventing mildew and decay in sail-cloth, awnings, and other articles and fabrics, such as hereinabove named, by impregnating such articles with carbolic acid or its related compounds, and then drying them, as set forth.

2. The improved articles herein described, made by the process set forth.

102,451, antedated April 15, 1870.—METAL-ROOF PROTECTOR.—George D. Volkmar, Baltimore, Md.

Claim.—1. The conductors d d' e, constructed substantially as described, to operate as and for the purpose set forth.

2. The provision, in the transverse seams or joints of a metal roof of conductors d d' e, adapted to carry off the water resulting from moisture or sweat from its inner to its outer surface, substantially as set forth.

102,452.—PUMP.—Henry Wadsworth, Duxbury, Mass.

Claim.—The within-described pump, having the plank A, or equivalent frame-work extending from the pump-cylinder to the fulcrum of the operating-lever, the pulley L, weight M, and flexible connection m, arranged as represented, in combination with the casing N, operating means H, rod G, moving tube E, fixed tube D, and their necessary valves, and the chamber C, as herein specified.

102,453.—HOLDER FOR FRUIT-JARS.—William P. Walter, Philadelphia, Pa.

Claim.—A jar-holder consisting of a frame or plate, for receiving the base of a jar, and arms, secured to or forming part of the plate or frame, extending upward, and bent so as to bear with a yielding pressure on the top of the jar, as described.

102,454.—ROTARY MECHANICAL MOVEMENT. Addison Goodyear Waterhouse, San Francisco, Cal.

Claim.—1. The combination of the three wheels A, B, and C, to be propelled in the manner and for the purposes substantially as hereinbefore set forth.

2. The combination of brakes, clutches, or other devices with either wheel A, B, or C, for the purposes of creating a variety of motions in the same machine, as described.

3. The wheel C, divided into two parts C and C', fig. 6, substantially as and for the purpose hereinbefore set forth.

102,455.—COMBINED FILTER AND COOLER. James E. White, New York, N. Y.

Claim.—1. In combination with a cooler, A, a movable filtering-vessel, C, having curved or arched ice-supporting cross-bars E above the filter, and openings F near its upper end, the whole constructed and arranged substantially as herein described.

2. In combination with the suspended filtering-vessel C, the curved or arched cross-bars E, constructed and arranged substantially as described, for holding the ice so that it may be surrounded by the cold air, as set forth.

102,456.—POLE-SOCKET.—Charles W. Wilcox and Joseph D. Wilcox, Kingston, R. I.

Claim.—The pole-socket A, constructed with a shoulder and cap or end piece C, the whole constructed and arranged substantially as described for the purpose of holding the yoke to the pole.

102,457.—LAMP-BURNER.—J. D. Willoughby, Shippensburg, Pa.

Claim.—1. The arrangement upon the shaft of the wick-raiser of two or more ratchet-wheels, so that the teeth of the one wheel will point in a direction opposite to that of the teeth of the other, as and for the purpose set forth.

2. The removable spring D, with the elastic portion or fold below the wick-tube, as described, in combination with the burner A.

3. The combination of a removable spring, D, with a burner, A, substantially as described, and for the purpose set forth.

102,458.—PUMP.—James Edward Wilson, Bridgeport, Conn.

Claim.—1. The combination, with the pipes C and D and piston B, of the valves H H', and G, substantially as herein specified.

2. A pump-piston, constructed with ports d d' and e e', and partition S, substantially as herein specified.

3. The combination of the valveless cylinder A, piston B, pipes C and D, valves H H', and G, and partition S, substantially as herein specified.

102,459.—GOUGE.—James F. Wood, Philadelphia, Pa.

Claim.—A gouge, so formed that its cutting-edge shall coincide with a parabolic curve or a portion of an ellipse, oval, or other equivalent form, for the purpose specified.

102,460. — BRUSH. — Oscar D. Woodbury, New York, N. Y.

Claim.—A brush, constructed by binding the bristles with wire in a spiral manner, so as to form a screw to connect with the stock, by screwing them into suitable recesses therein, as shown and described.

102,461.—TAG-LABEL. — Dennis D. Foley, Washington, D. C.

Claim.—The tag B, case A, and spring C, combined and arranged substantially as and for the purposes set forth.

102,462. — COOKING-STOVE. — Richard M. Hermance, Troy, N. Y., assignor to Joseph B. Wilkinson, same place.

Claim.—1. The employment of the casing F surrounding the reservoir E, when the reservoir is placed in the top of the stove and in the rear or at the back thereof, substantially as described and set forth.

2. The said casing F surrounding the reservoir E, when the same is placed above the top of the stove, substantially as described and set forth.

3. Conducting the heat and products of combustion from a cooking-stove around the bottom and sides of a reservoir, E, placed at the back of the stove and in the top thereof, in such a manner that the same will circulate freely upon all sides of the said reservoir, substantially as described and set forth.

4. Conducting the heat and products of combustion from a cooking-stove around the bottom and sides of a reservoir, E, placed entirely above the top of the stove, in such a manner that the same will circulate freely upon all sides of the said reservoir, substantially as described and set forth.

5. Placing the exit-pipe of a three-flue cooking-stove in the casing F surrounding a reservoir, E, so that the same may be heated by a direct draught, in the manner substantially as described and set forth.

6. The removal or its equivalent of the part of the back or vertical plate of a cooking-stove, thereby forming the apertures K and K', to admit heated air, smoke, and the products of combustion from the rear or vertical flue or flues against a water-reservoir in the rear or back of the stove, and set in the top plate of said stove, substantially as described and set forth.

7. The arrangement and location of a water-reservoir or culinary boiler with regard to the back or vertical flues or flue of a cooking-stove, when said reservoir is situated in the rear of and wholly below the top extended plate adjoining the flues, and suspended by a rim or flange to or in said extended plate, substantially as described and set forth.

8. The bending of the rear or vertical plate P of a cooking-stove above the bottom oven-plate, for the purpose of making a hot-air chamber or its equivalent on one or all sides of a water-reservoir, substantially as described and set forth.

9. The location, construction, and use of the check-damper C^3 or its equivalent in the rear vertical casing of the hot-air chamber containing a water-reservoir, whether such chamber is below or above, or partly below and partly above the top plate of the stove, substantially as described and set forth.

10. A diving-flue cooking-stove, with the exit-flue constructed across the bottom and up the rear upright side of the tank, reservoir, or other culinary vessel, substantially as described and set forth.

102,463.—HAY AND COTTON-PRESS.—Henry R. Walton, Philadelphia, Pa.

Claim.—1. The hay or cotton-press substantially as shown, in combination with a scale and beater, constructed and automatically operated substantially as and for the purpose herein set forth.

2. The combination in a press of the scale G and beam H, with tripping-lever E, rod D, and beater C, all operating together substantially as herein described.

102,464. — ADJUSTMENT OF MERCURIAL PRESSURE-GAUGE.—Matthew E. Campfield, Newark, N. J., assignor to American Eagle Steam-Gauge Company.

Claim.—The tubular plunger H, connected with the indicating-tube K of a mercurial pressure-gauge, and operated by the screw-nut I, for the purpose of adjusting accurately the height of the mercurial column in the said tube, substantially as described.

REISSUES.

3,932.—CULTIVATOR.—Julius Gerber, Rockford, Ill., assignee of Irulus R. Smith.—Patent No. 28,016, dated April 24, 1860.

Claim.—1. An auxiliary frame carrying two or more shovel-standards upon each side, as shown, when said frame is hinged to the pole between the evener and neck-yoke, as described, for the purpose set forth.

2. The combination of the main frame, consisting of the tongue, axle, and beam C with the auxiliary frame, consisting of the beam B, standards A, with its lifting devices, when the frames are made separate and distinct from each other, and are connected only by the joint M, as described, for the purpose set forth.

3,933.—WINDOW-BLIND.—Stephen Hebron, Buffalo, N. Y.—Patent No. 94,599, dated September 7, 1869.

Claim.—1. Window or other blinds having the slats made removable by means of the inclined grooves or their equivalent, substantially as and for the purpose hereinbefore set forth.

2. The combination of a mosquito-bar with the frame of a window or other blind, the slats of which are made removable, substantially as and for the purpose hereinbefore set forth.

3. The arrangement of the flexible strap C with the removable slats B and guide-bearing d, substantially as and for the purposes hereinbefore set forth.

4. The arrangement with the slats B and flexible strap c of the staples a, when inserted at the inclination with the face of the slats, as shown and described.

3,934.—STOVE-PIPE ELBOW.—C. Hoeller, Cincinnati, Ohio, assignor to himself and Henry Samuel Hoeller, same place.—Patent No. 82,407, dated September 22, 1868.

Claim.—The stove-pipe and other elbows, constructed as herein shown and described, as a new article of manufacture.

3,935.—SHUTTLE FOR SEWING-MACHINE.—James C. Wade, Boston, Mass.—Patent No. 93,845, dated August 17, 1869.

Claim.—A shuttle having a tension-regulator, substantially as described, having no endwise motion, and actuating a thread-brake against the upper wall of the shuttle, as it lies in the machine ready for use, such regulator being so located as to be accessible and operated from the upper side of the shuttle.

Also, in a sewing-machine shuttle, adapted for having the tension of its thread adjusted through an opening in its upper side, the screw-threaded spindle A having no endwise movement, the thread of which actuates and controls the pressure of a spring thread-brake, substantially as described.

Also, the combination, with a shuttle, of the grooved and threaded spindle A and its detaining-screw F and spring B, arranged and applied substantially as shown and described, and so that the screw-stock shall neither advance nor recede during its revolution.

Also, the combination, substantially as described, of a swinging tension-spring, B, with a fulcrum which is a screw-thread, so that the fulcrumed end shall be positively confined between the threads of the screw, and be free to turn thereon, while the adjustment of the screw shall vary the pressure of the free end of the spring against the wall of the shuttle.

3,936.—VENTILATED HORSE-COVER.—Penuel B. Eager, Boston, Mass., assignee of Charles P. Eager.—Patent No. 97,896, dated December 14, 1869.

Claim.—1. The horse-cover, composed of sections d d, when connected longitudinally by the cover e

attached to rigid braces *e e*, substantially as for the purposes described.

2. The horse-cover provided with elastic straps for holding the same to the horse, or together, substantially as described.

3,937.—HORSE HAY-RAKE.—William Emmons, Sandwich, Ill.—Patent No. 88,858, dated April 13, 1869.

Claim.—1. The buckle *f*, made of one piece of metal bent into a curved form, and having a narrow slot near each end, through which slots pass the main portion of the tooth G while the bent or attached portion thereof passes through the two slots, and grasps the central piece of the buckle under the main part of the tooth, as shown and described.

2. The arrangement of the rake-head E, dogs or pawls *e e*, and springs *d d*, with the notched plates or bars *b b*, on the axle A, for the purpose of holding the rake in any position desired, substantially as herein set forth.

3. The arrangement of the rake-head E, handle F, thumb-piece A, rod *g*, three-armed lever *f*, and connecting-rods *e e*, for the purpose of withdrawing the dogs or pawls *e e* from the notched bars *b b*, substantially as herein set forth.

3,938.—FLUTING-MACHINE.—Susan R. Knox, New York, N. Y.—Patent No. 89,91-, dated November 20, 1866.

Claim.—1. In combination with a movable frame carrying one of the fluting-rolls and its journal-boxes, a main frame or standard by which the movable frame is sustained, and which is so arranged as to permit the unobstructed passage of the work, substantially as set forth.

2. In combination with the movable roll-frame E and stationary standard D H, a single pressure-spring J and set-screw I, substantially as and for the purposes set forth.

3,939.—URINAL.—Samuel Males, Cincinnati, Ohio.—Patent No. 73,907, dated January 28, 1868.

Claim.—1. A public urinal or necessary, having the curved or bayed door or doors F or F', adapted, when open, to screen the occupant from public view, and when not in use to close automatically, by spring or gravitating hinges, to a position in which the door or doors will snugly inclose the urinal-bowl, in the manner and for the purpose specified.

2. The combination and arrangement of the door or doors F or F', shield K, pot D', sink M, and pipe E, substantially as and for the purpose set forth.

3. The formation of a water-closet by means of a recess in the wall, A a, fig. 5, sloping seat D, and doors F F', substantially as and for the purpose set forth.

4. In connection with a public urinal or privy, constructed substantially as described, the provision of the frame J, as and for the purpose specified.

3,940.—Division A.—TOOL FOR CUTTING-SCREW-THREAD.—The National Screw Company, Hartford, Conn., assignees of Elijah S. Pierce.—Patent No. 87,196, dated February 23, 1869.

Claim.—The improved double tool for cutting screws, constructed substantially as herein described.

3,941.—Division B.—SCREW.—The National Screw Company, Hartford, Conn., assignees of Elijah S. Pierce.—Patent No. 87,198, dated February 23, 1869.

Claim.—The screw, as shown, combining a conical point to the core and a supplemental thread or elevation between the convolutions of the thread proper, all substantially as and for the purpose set forth.

3,942.—WATER-PROOF SHOE.—Thomas C. Wales, Dorchester, Mass.—Patent No. 37,413, dated January 13, 1863.

Claim.—The combination of a binding-cord, *c*, and a lapping band or cover, *d*, together, and with two layers or pieces, *e f*, of cloth or other material, forming part of the upper of a shoe.

Also, as a new or improved manufacture, and of my invention, a shoe, as made, with its upper provided with a strengthening cord, *c*, a lapping or covering band, *d*, and two layers, *e f*, of cloth or other material, arranged against the outside surface of such band and cemented thereto, substantially in manner as set forth, the arrangement causing the lapping band to be exposed to view, and to constitute a finish between the two outside layers, as represented.

3,943.—BUTTER-WORKER.—Emory P. Walker, Belchertown, Mass.—Patent No. 77,135, dated April 21, 1868.

Claim.—The arms *d d*, constructed with the guide-bar *g* sliding in the slots *a a*, in combination with the adjustable roller *b*, bottom A, flanges D D placed at the mouth or front end of A and hole *a*, when all the parts are constructed and arranged with reference to a butter worker, and operated substantially as described.

3,944.—INSOLE FOR BOOTS AND SHOES.—William Williams, Rochester, N. Y.—Patent No. 89,105, dated April 20, 1869.

Claim.—1. The insole, consisting of the bottom piece *c*, with the paste board contiguous thereto, in combination with the covering *f* and a felted layer interposed between said covering and the paste-board, substantially as described.

2. For the purpose of an insole-stiffener, the flexible shank-piece *d* or its equivalent, applied substantially as described.

DESIGNS.

3,986.—COMB.—Edward F. Coffin, Newburyport, Mass.

Claim.—The design for a comb, as shown.

3,987.—SHAWL-MANTLE.—Eberhard Flues, Fort Washington, Pa.

Claim.—The design for a lady's outer garment, as shown.

3,988.—SHAWL-MANTLE.—Eberhard Flues, Fort Washington, Pa.

Claim.—The design for a lady's outer garment, as shown.

3,989.—CAKE-DISH.—George Gill, Taunton, Mass., assignor to Reed & Barton, same place.

Claim.—The cake-dish or tazza design, substantially as hereinbefore described, and as exhibited in the accompanying drawing.

3,990.—FLOOR OIL-CLOTH PATTERN.—James Hutchison, Newark, N. J., assignor to Deborah Powers, Albert E. Powers, and Nathaniel B. Powers, Lansingburg, N. Y.

Claim.—The design for floor oil-cloths, as shown on said drawings, and herein described.

3,991.—FLOOR OIL-CLOTH PATTERN.—James Hutchison, Newark, N. J., assignor to Deborah Powers, Albert E. Powers, and Nathaniel B. Powers, Lansingburg, N. Y.

Claim.—The design for floor oil-cloths, as shown on said drawings, and herein described.

3,992.—BRACKET.—Albert D. Judd, New Haven, Conn.

Claim.—The design of the shape and configuration of the ornamental bracket set forth.

3,993.—TRADE-MARK.—Henry Kellogg, Chicago, Ill.

Claim.—The design for a trade-mark, described and shown.

3,994.—SHAPE OF THE SLOTS BETWEEN SAW-TEETH.—Edwin Moore, Brooklyn, E. D., N. Y., assignor to the Bissell and Moore Manufacturing Company, New York City.

Claim.—The shape and configuration of the slot between the teeth *a* and *b*, as shown.

3,995.—PRUNING-SHEARS.—Eli L. Nichols and F. A. Edler, Folsom, Cal.

Claim.—The above-described pattern or design for pruning and grasping-shears.

3,996.—SHAWL-MANTLE.—Annie Ellen Taylor, Philadelphia, Pa., assignor to Harry Taylor, same place.

Claim.—The design for a "Metternich" or "shawl-mantle," as shown.

3,997.—SHAWL-MANTLE.—Annie Ellen Taylor, Philadelphia, Pa., assignor to Harry Taylor, same place.

Claim.—The design for a "Czarina" or "shawl-mantle," as shown.

3,998.—OIL-CLOTH PATTERN.—Wisner H. Townsend, New York, N. Y.

Claim.—The design for oil-cloths, as shown.

3,999.—SKEWER-CUSHION.—John C. Wilson, New York, N. Y., assignor to Richard Campbell, same place.

Claim.—The design for a skewer-cushion herein shown and described.

4,000.—DRAWER-PULL.—Albert D. Judd, New Haven, Conn.

Claim.—The design of the shape and configuration of the drawer-pull, as described and represented.

4,001.—LAMP-CHIMNEY CLEANER.—Christian Oblinger, Camden, N. J.

Claim.—A lamp-chimney cleaner, consisting of radial arms or wings A, curved to conform to the shape of the chimney, and attached to a handle B, all substantially as shown and described.

ISSUE OF MAY 3.

PATENTS.

102,465.—TIN-GUTTER MACHINE.—James N. Adams, Chillicothe, Mo.

Claim.—The combination with the cylinder, provided with the heads B D and tube C, of the guide-rib E, hooked brackets F, and one or more extensions, I, of the latter, all substantially as specified.

102,466.—TIN-TUBING MACHINE.—James N. Adams, Chillicothe, Mo.

Claim.—1. The combination of the shell and mandrel or former, constructed, arranged, and operating substantially as specified.

2. The combination, with the shell and mandrel, of the presser G, substantially as specified.

102,467.—STAVE-DRESSING MACHINE.—M. Pascal Adams, Pittsburg, Pa.

Claim.—1. The arrangement of weights *d* adjustable on levers *d'*, bearings *b'* of a pair of feed-rollers, each weight being connected with the bearing of the opposite roller, as described.

2. A weighted drop-lever, *g'*, operating an eccentric or cam, *f*, in combination with a double-toothed rack ram, substantially as and for the purposes set forth.

3. A ram, with double-toothed rack, in combination with gear-wheels *o o'*, a tripping device to operate at one end of its stroke, and eccentric at the other end, arranged and operated substantially as and for the purposes set forth.

4. A lug, *s*, adjustable in the ram R, so arranged with reference to a weighted lever, *g*, and eccentric *f*, as, in the manner described, to terminate the reverse motion of the ram.

5. A lug, *s*, attached to the ram, in combination with a lever, *f'*, rigidly attached to the eccentric shaft, for bringing the weighted lever back to a vertical position, substantially as described.

102,468.—DIE FOR DRAWING WIRE.—Joseph D. Alvord, Bridgeport, Conn.

Claim.—The die constructed as described, with a spiral groove to lubricate it.

102,469.—GUIDE FOR SEWING-MACHINE.—J. S. Alter, Leavenworth, Kansas.

Claim.—The combination of the plate A, provided with the slot, the guiding projections, and the screw *b*, the plate B provided with the adjusting slot, the scale, and the depressions *a*, the nut C, washer *c*, and the spring, all constructed and operating substantially as and for the purpose described.

102,470, antedated April 28, 1870.—STRAW-CUTTER.—Julius Ambrun, Leavenworth, Kansas.

Claim.—1. The frames C D of a straw-cutter, when combined with the straps or belt *d* and roller *e*, to operate substantially as herein shown and described.

2. The pivoted feed-plate P, in combination with the elbow crank O, bar *i*, and reciprocating frame D, all arranged to operate substantially as herein shown and described.

102,471.—NEEDLE-CASE.—William Avery and Albert Fenton, Redditch, England, assignors to William Avery.

Claim.—The link F, combined with the cap B and needle-packet holder E, all relatively constructed and arranged so that the packet and cap will be simultaneously raised above the case, as set forth.

102,472.—WASHING-MACHINE.—William Badger, Hastings-on-Hudson, N. Y.

Claim.—The combination, with a wash-tub, of a cover, B, having an oscillating shaft and agitating rotating arms attached, and arranged for operation by a hand-lever, G, the said cover being arranged for attachment to the tub by wedges C, substantially as specified.

102,473, antedated April 20, 1870.—FASTENER FOR BEDSTEADS, TABLES, &c.—James M. Baird, Wheeling, West Va., assignor to himself, John McLure, James W. Ward, and John Boone McLure.

Claim.—The construction of a fastener, consisting of the plates or articles A A, with the projections B B, bevels C C, with or without the recesses F, and key G, all arranged as and for the purpose described.

102,474.—SAND-PAPER HOLDER.—Joseph Barker, Chicago, Ill.

Claim.—1. The shoe-blocks C, provided with

plate-metal shoes B, when said shoes are conformed to the face of the molding to be smoothed, tapered outward, and lapped over the ends of the sand-paper A, so as to hold it in place on block D, as set forth.

2. The combination of the block D (when inclined upward at its ends, provided with grooves or channels F to hold the angles of sand-paper A) and shoe-plate B, for holding the ends of the sand-paper, as set forth.

3. A sand-papering block, consisting of the combined parts D E C, dowels J, screws I, and shoes B, when all of the said parts are arranged as and for the purpose set forth.

102,475.—DEVICE FOR ATTACHING PICKER TO PICKER-STAFF. — John D. Barrie, Lawrence, Mass.

Claim.—The combination of the clamp, the forked wedge, and the binding-screws, with the picker and staff, substantially as herein described.

102,476.—ORE-SEPARATOR.—Thomas Bates, Pinos Altos, New Mexico Territory.

Claim.—The combination of the table or spout A, grinding-mill E F, table G, amalgamator H, stirrer I, when constructed, arranged, operated, and adapted for application to and use with a battery, all substantially as specified.

102,477. — WASHING-MACHINE. — Charles Bean and Suel Logee, East Douglass, Mass.

Claim.—An improved washing-machine, formed by the combination of the tub A, semicircular stationary cover B, semicircular movable cover C, shaft D, crank E, circular plate F, pins G, and tubular washer H, with each other, said parts being constructed and operating substantially as herein shown and described, and for the purpose set forth.

102,478.—VENTILATOR FOR WINDOWS. — William C. Betts, Brooklyn, N. Y.

Claim.—The combination with each other of two parallel frames A B, provided with pivoted slats *a' b'*, whether the slats of the inner frame be vertical or horizontal, to adapt them for insertion in windows, doors, or in openings in the wall or walls of the room to be ventilated, substantially as herein shown and described, and for the purpose set forth.

102,479.—POTATO-DIGGER.—Joseph H. Billmeyer, Raisin, Mich.

Claim.—The potato-hooks or teeth A A' A'', supported by the double heads A and B and beam R, to be operated by the handles *m m*, in connection with the trucks, all arranged in the manner and for the purposes set forth and described.

102,480.—EARTH-CHAMBER VESSEL.—William H. Bliss, Newport, R. I.

Claim.—1. The combination of the annular earth-receiver C, divided into compartments by radial partitions, and discharge-plate D, with a receptacle or vessel, A, substantially as herein shown and described, and for the purpose set forth.

2. The cover, formed by the combination of the body F, made with one or more compartments, the discharge-plate G, and the rod H, with each other, to adapt it for use as a cover for the seat E, or for an ordinary chamber, substantially as herein shown and described.

102,481.—CHURN.—Charles A. Boone, Shickshinny, Pa.

Claim.—The dasher, having the hollow shaft B, hollow paddles D, and paddles C, in combination with the stationary perforated wings I, substantially as and for the purpose hereinbefore specified.

102,482.—RACK FOR CARS.—Albert Bridges, New York, N. Y.

Claim.—As a new article of manufacture, the within-described basket-rack, having perforated sheet metal E *e*, connected and arranged relatively to the other parts, as herein set forth.

102,483.—WORKING AND LOCKING RAILWAY-SWITCH AND SIGNAL.—John Brunton, Kensington, England.

Claim.—1. The system or mode of actuating the switches, points, or movable rails of railway permanent way, and of locking the same in their open and shut positions by the aid of cams, or otherwise, in conjunction with wedge-pieces or blocks mounted upon one and the same rocking-shaft, substantially as hereinbefore described.

2. The use of a rocking-shaft and grooved cam for directly moving and actuating railway switches, points, or movable rails, as hereinbefore described, the cam being located beneath, and directly connected with the switch or point which it actuates, as set forth.

3. The peculiar arrangement of interlocking sectors, whereby each of the three movements necessary for the whole operation, namely, the blocking the main line by signal-moving, and locking the points and opening the siding or branch by signal, or *vice versa*, must be completed before the next movement can be made, substantially as hereinbefore described.

102,484.—PREPARING THE PITH OF CORN-STALKS FOR USE IN THE ARTS.—William M. Bryant, Alexandria, Va.

Claim.—The process of manufacturing vegetable pith by compression, and coating with tenacious material, substantially as specified.

102,485. — FEED-CUTTER. — Cornelius H. Cain, Dayton, Ohio.

Claim.—The feed-cutter herein described, having box B, opening D, lever E, and slotted knives H and I, constructed and arranged to operate substantially as specified.

102,486.—DIRECT-ACTING ENGINE.—Adam Scott Cameron, New York, N. Y.

Claim.—1. A compensating mechanism composed of a hinged lever and tappet-rod, either the lever or the tappet-rod being made adjustable, in combination with an auxiliary cylinder or cylinders, in which the steam is changed by the action of the main piston on said tappet-rod, the piston of the auxiliary cylinder serving to change the slide-valve of the main cylinder, substantially as herein set forth.

2. The combination of screw-rods with the piston-valves I I', substantially in the manner described.

3. The arrangement of a spring, m^1 or m^2, or of an equivalent device, acting on the levers J J', which controls the valve or valves of the auxiliary cylinder or cylinders, substantially as described.

4. The air-cushions *n o*, in combination with the lever J controlling the valve or valves of the auxiliary cylinder or cylinders, substantially as set forth.

5. The air-cushion cylinder L, in combination with the auxiliary piston or pistons, and with the main slide-valve C, substantially as described.

6. The elastic cushions *s* on the inner surfaces of the heads of the blowing-cylinder, substantially as described.

102,487.—CLAMP.—Charles B. Canfield, Oriskany, N. Y.

Claim.—The arrangement of the eccentric D, lever B, and an inclined arm of the shaft A, when constructed to operate in the manner and for the purpose specified.

102,488.—FRUIT-BASKET.—Lauren Carpenter, St. Joseph, Mich.

Claim.—The protector A, in combination with a basket composed of five splinters, of which one pair is made double and extended beyond the top, to support the protector, constructed as herein described.

102,489.—DRAWER-SLIDE.—John L. Chapman, West Roxbury, Mass.

Claim.—The combination and arrangement of the irons *c c*, the movable slide *b*, with the slots A A and stop *e* attached, and the cleat *g*, with the groove and drop *d* attached, the whole being combined and arranged for the purposes and substantially in the manner above described.

102,490.—DEVICE FOR SECURING THE FEATURES OF A CORPSE IN PLACE.—Amos S. Chesebrough, Hartford, Conn.

Claim.—The elongated pad-plates *a b*, and adjustable elastic bands *c d*, for securing the features of a deceased person in their natural position, substantially as set forth.

102,491.—HORSE-POWER.—Philo W. Clark, Oblong, N. Y.

Claim.—1. The combination of the two wheels B C, each being provided with its own draft-rope G, central shaft A, whether movable or stationary, sweep D, lever E, and one or more catch-bolts F, with each other, substantially as herein shown and described, and for the purpose set forth.

2. Constructing the wheel or wheels of a horse-power of a series of deep and narrow radial spokes, rabbeted upon the upper edge of their outer ends, and connected with rods, substantially as herein shown and described, and for the purpose set forth.

102,492.—EXCAVATING APPARATUS.—Philo W. Clark, Oblong, N. Y.

Claim.—1. The combination of a scraper, A, plow E, draft-ropes B and F, chain G, and stay-posts C and H, with each other, substantially as herein shown and described, and for the purpose set forth.

2. An apparatus consisting essentially of a plow, earth-collector, and inclined plane, each arranged with respect to the others, as specified, whereby on its forward movement the earth is loosened, while on its return movement it is gathered and carried up to a point where it may be readily dumped into any receptacle prepared for it.

102,493.—LIFTING-JACK. — William Clark, Decatur, Ill.

Claim.—The combination of the hinged post A B with the curved top lever D, and plates or bearings *c*, when constructed and arranged as described, and operating in the manner and for the purposes substantially as set forth.

102,494.—EARTH-CLOSET.—William Robert Cotton Clark, New Orleans, La.

Claim.—The combination of a swinging hopper, A, provided with a shoe, B, and a notched trigger, G, with an earth-closet or commode, which is provided with a hinged cover, E, in connection with elbows *g*, bars *c* and *b*, when the parts are constructed, arranged, and operated as herein described, for the purpose set forth.

102,495.—EARTH-CLOSET.—William Robert Cotton Clark, New Orleans, La.

Claim.—The links G and F, the rock-arm D, and the gates C and C', in combination with a cover, H, a conduit, A, and a hopper, B, when the parts are constructed, arranged, and operate as described, for the purpose set forth.

102,496.—LIME-KILN.—James Clarkson and George W. Decker, Washington, D. C.

Claim.—1. The metallic cylinder B, lined with fire-brick or equivalent, surrounded with a jacket, D, in combination with the air-flue G and openings *d*, constructed as herein shown and described.

2. The combination of the gauge or receiver H and tube I, extending into the fire-chamber E above the grate, combined and constructed substantially as described.

3. The throat of the metal cylinder B, provided with removable draw-bars *b b* and damper L, combined and arranged with the gauge or receiver H, as herein set forth.

4. The concentric metallic cylinders C D, combined and operating together substantially as and for the purpose described.

102,497, antedated April 22, 1870.—CATTLE-POKE.—Samuel P. Clemons, Dansville, N. Y.

Claim.—The combination and arrangement of the roller *c* with the bar B, cross-heads *d* and A, strap *e*, bow A, and shield springs and spurs, as described, as and for the purposes specified.

102,498.—REVERSIBLE SEAT FOR RAILWAY-CARS.—Thomas J. Close, Philadelphia, Pa.

Claim.—In a seat provided with a combined reversible seat and back, the curved end frames A A thereof, with their respective inside grooves *a' a'*, having the recess or notch 2 in the mid-length of the upper boundary of each of said grooves, in combination with the friction-rollers 6 6, secured on the outer sides of the respective ends of the two branches *c' c'* of the respective standards or supports C C, the said parts being constructed and arranged to operate together substantially as and for the purposes hereinbefore set forth.

102,499.—MATCH-CASE. — Frank B. Coleman, Southampton, Mass.

Claim.—1. A match-case, composed of one piece of sheet metal, constructed in the manner and for the purpose set forth.

2. A match-case, having the opening C, roughened springs A A, downward pendants G G, with curved projections B B, substantially as described.

102,500.—CAR-COUPLING.—John Coleman, Lynchburg, Va.

Claim.—The combination of the bumper A, having open sides, with the detent *b* and link *c*, in the manner and for the purpose set forth.

102,501. — MANUFACTURE OF MALLEABLE IRON.—John J. G. Collins, Philadelphia, Pa.

Claim.—The application of steam, combined with the blast in the tweer or pipes connected therewith, for the purpose of reducing magnetic and other refractory ores to a malleable state, as herein described.

102,502.—POT FOR SMELTING GLASS.—Roy Combs and Henry J. Leasure, Wheeling, West Va.

Claim.—A pot for smelting glass, constructed in two or more parts, as herein described.

102,503, antedated April 27, 1870.—APPARATUS FOR BLASTING LOGS.—Matthew Cooke, Sacramento City, Cal.

Claim.—The cavity in the wedge *a a a*, fig. 1, and the perforation *b b b*, fig. 1, at any angle from top or side of wedge, connecting with said cavity.

102,504.—HORSESHOE.—George Copeland, Denver, Colorado Territory.

Claim.—1. A horseshoe, A B, curved upwardly at the heel, and provided with six conical holes, as shown and described.

2. A horseshoe-nail, having a head formed of two cones whose bases lie in the same central plane thereof, as an improved article of manufacture.

102,505. — TAILORS' SCALE. — William G. Cummins, Civil District No. 10, Tenn.

Claim.—The tailors' scale above described, one side thereof being adapted to the front, and the other to the back of the person, while the edges are respectively devoted to transverse and longitudinal measurements for coat and vest, and the central ones to pants, all the divisions and subdivisions being arranged and applied as specified.

102,506.—LET-OFF MECHANISM FOR LOOM. John Day, Paterson, N. J.

Claim.—The combination, with the warp-roll of a loom, of the auxiliary roll, mounted in a vertically-sliding weighted frame, and guide-rolls H, I, and K, when the said warp-roll and guide-rolls H I are arranged, as shown, in a vertical extension of the loom-frame, substantially as specified.

102,507.—COVER FOR KETTLES AND OTHER VESSELS.—Ephraim K. Dean, Bangor, Me., assignor to William C. Lovering, Taunton, Mass.

Claim.—A cover for pots, kettles, and similar articles, provided with an automatically-closing spring valve, substantially as shown and described.

102,508.—PLOW-GRINDER AND POLISHER.—Michael Devault, Charleston, Ill.

Claim.—1. The combination of the adjustable cross-beam C, swinging bars G, adjustable-pivoted beam H, and handles L, whether the spring plate J be used or not, with each other, substantially as herein shown and described, and for the purpose set forth.

2. The combination of the adjustable device M N O, or equivalent, with the adjustable pivoted beam H, swinging bars G, and adjustable cross-beam C, substantially as herein shown and described, and for the purpose set forth.

102,509, antedated April 29, 1870.—CHURN. Jonathan L. Devol, Parkersburg, West Va.

Claim.—1. The combination of the screw-formed perforated dashers I I', and the flat perforated dashers K K', arranged to operate substantially as and for the purpose set forth.

2. The semicircular rods, when their lower ends are provided with a tongue and groove, substantially as and for the purpose set forth.

3. The combination of the screw disks I I', and the flattened rods H H', substantially as shown and described.

4. Arranging within a churn two dasher-rods, having one flat surface, and upon which there are secured two semicircular dashers, one of a screw form and the other flat, the arrangement being such that the two flat surfaces come in contact with and thus support each other, substantially as and for the purpose set forth.

102,510.—PUNCHING APPARATUS.—Thomas De Witt, Detroit, Mich., assignor to John T. Maxson, De Witt, Iowa.

Claim.—The combination of the casing A with die *b*, grooved cam D, mandrel G with roller *i*, dog *p*, and screw *f*, all constructed and arranged to operate substantially as and for the purposes herein set forth.

102,511.—PUMP.—Thomas De Witt, Detroit, Mich., assignor to John T. Maxson, De Witt, Iowa.

Claim.—1. The glass lining C, secured by means of the shoulder *a*, bar *b*, and wedge-keys *d d*, substantially as herein set forth.

2. The combination of the sections A B, glass lining C, with bar *b* and keys *d d*, plunger D, and vertically-operating valves *h h'*, all substantially as herein set forth.

102,512.—WASHING-MACHINE.—Thomas De Witt, Detroit, Mich., assignor to John T. Maxson, De Witt, Iowa.

Claim.—The combination and arrangement of the bench A, posts B B, box C, with the plunger D, constructed with inclined openings and under flange *d*, connecting-rods E I, lever G H, and slats J J, all as shown and described.

102,513.—PRUNING-HOOK.—Andrew Downer, Hammondsville, Ohio.

Claim.—The combination of the cutter B, hook D, and saw L, when the latter is connected with the former, substantially as and for the purposes shown and described.

102,514.—SPINDLE-STEP CAP.—William F. Draper and Joseph B. Bancroft, Hopedale, Mass.

Claim.—The spindle-step cap, as provided with one or more shoulders or offsets *d*, arranged in it between its spindle-mouth *c*, and sustaining shoulder *e* or surface, substantially as and for the purpose as hereinbefore explained.

Also, the spindle-step cap as made with the shoulder *d*, and the insulating-space *f*, arranged together and in such cap and with respect to the mouth *c*, and the supporting-shoulder *e* or sustaining-surface, substantially in manner as hereinbefore described.

Also, the spindle-step cap C, as made with the shoulder *e*, and to extend around the outside of the step, in manner as represented.

Also, the cap C, as made with the supporting-shoulder *e*, and with one or more oil-intercepting offsets *d* arranged in it, as set forth.

102,515.—SHAFT OR POLE COUPLING FOR CARRIAGES.—Charles G. Dudley and Jacob Gulden, Key Port, N. J.

Claim.—The coupling B, applied to the pole or shaft of a vehicle, and formed by the combination with the hinged parts *c* and *d*, which are adapted to receive the head of the pole or shaft of the carriage, of the ring C and spring-catches *e*, substantially as herein shown and described.

102,516.—STUMP-EXTRACTOR.—James M. Eason, Charleston, S. C.

Claim.—The combination with the two pairs of arms B B' suspended from the frame, connected to the hook or ring D, and to the right-and-left-threaded nuts E, as described, of the right-and-left threaded screw, ratchet, ratchet-lever, and the hand-levers K, all substantially as specified.

102,517.—MAINSPRING BARREL ATTACHMENT FOR WATCHES.—Ola L. Eliason, Salt Lake City, Utah Territory.

Claim.—The combination and arrangement of the spring-barrel A, the annular wheel B, with its annular bearing-flange, between the recesses *b* and *b*¹, its horizontal and vertical bearings, the overlapping ratchet-wheel C, and pawls F F, with springs *f f*, arranged and constructed as and for the purpose set forth.

102,518.—CHURN.—Arthur H. Elliott, Albion, Mich.

Claim.—The arrangement and combination of the platform gallows-frame, multiplying-gear E F, balance crank-wheel G, hinged latch-bearing L, and bent connecting-rod J, with any suitable churn, H, and dasher S, substantially as and for the purpose hereinbefore set forth.

102,519.—COFFEE-CLEANING MACHINE.—William H. Elton, Baltimore, Md.

Claim.—1. The combination of the imperforate cylinder, the teeth, and the perforated heads, all these parts being constructed to operate in combination, as set forth.

2. The combination, with the cylinder, of the heads, constructed as described, with apertures between the peripheries of the heads and the cylinder.

102,520.—SAW.—James E. Emerson, Trenton, N. J.

Claim.—1. Securing insertible teeth in the plate of a saw, in the manner and by the means herein described.

2. The saw-tooth C, provided with the angular aperture *c'*, saw-plate A, provided with a semicircular aperture, *c*, in combination with the rivet *d*, all the parts constructed in the manner and for the purposes described.

102,521.—STEAM-BOILER FOR COOKING FOOD FOR STOCK.—William J. Estes, Penn Township, Ill.

Claim.—The two halves of boiler A and B, with wedge-shaped flanges and gripes *m m m*, steam-dome C, superheater D, fire-box E, return-flue F, filling-can G, steam-pipe H, and pressure-valve J, with pipe *n*, substantially as herein described and set forth.

102,522.—SECTIONAL STEAM-GENERATOR.—Hampton W. Evans, Philadelphia, Pa.

Claim.—1. The combination of the sections A A' A'', constructed substantially as described, having heat-flues *b* through them and spaces *a* between them, and arranged in relation to the fire-box D and grate E as hereinbefore described.

2. The conical bosses *c* on the sections A A', and the conical projections *c'* on the balls F F and F', in combination with the openings *f* and *f'*, substantially as described.

102,523.—CHURN.—Francis Theodore Fairchild, Sheboygan, Wis.

Claim.—In combination, the frame A, lever G, having the slot H, spiral shaft F, dasher D, socket O, bearing P, and churn B, substantially in the manner and for the purpose hereinbefore specified.

102,524.—COMBINED HAY AND PRUNING-KNIFE.—John Fasig, West Salem, Ohio.

Claim.—The combined chopping and pruning-knife herein described, having elbow in the shank at *n*, and sliding adjustable foot-step D, arranged to be keyed at any height on the shank, as specified.

102,525.—HARVESTER-RAKE.—Vanderlyn Howard Felt, Kendall, N. Y.

Claim.—1. The arrangement of the jointed arms L N, rock-arm P cam M, latch Q, catch *m*, and cord or chain *l*, the whole operating in the manner and for the purpose specified.

2. The combination of the cam M, with pitman G, spring latch Q, and catch *m*, as described, and for the purpose specified.

3. The described arrangement of the single cord or chain *l* with the rake E, to elevate and depress said rake at the extreme of each motion, substantially as set forth.

102,526.—BEE-HIVE.—Charles Finn, Des Moines, Iowa.

Claim.—1. Constructing a bee-hive with hollow walls, by alternating layers of wood and paper, or their equivalents, substantially as described and for the purposes specified.

2. The ventilator, composed of a chaff-box, substantially as described, and for the purposes specified.

3. The feed-box, combined with the ventilator or chaff-box, substantially as described and for the purposes specified.

102,527.—DUST-RING FOR WATCH-FRAME. James H. Flynt, South Bend, Ind.

Claim.—1. The unbroken dust-ring A, having projection E and recess F thereon, combined with a screw G to fasten it between the plates B C, in the manner described.

2. A dust-ring for watch-frames, having a raised projection, H, on the edge thereof, to prevent it from being sprung against the main wheel, in the manner described.

102,528.—TABLE-LEAF SUPPORT.—Asa Forrest, Moingona, Iowa, assignor to himself and O. L. French, same place.

Claim.—1. The jointed brace D E, when permanently attached to the fall leaf at one end, and to the frame of the table at the other, and having its two arms of such proportional length as to fold up, in the manner described.

2. The combination, with the leaf and the brace, of the safety-catch H, arranged and operating substantially as specified.

102,529.—SETTING-UP DEVICE FOR CIRCULAR KNITTING-MACHINES.—William Franz and William Pope, Crestline, Ohio.

Claim.—1. A setting-up device for circular knitting-machines, consisting of a disk provided with an expansible series of elastic hooks, said series of hooks being composed of a single wire, substantially as set forth.

2. The setting-up device, consisting of the disk A and hooks B, when the latter are constructed from a continuous wire, in the manner substantially as shown and set forth.

3. The combination of the slotted disk, eye-bolt, thumb-nut, and elastic hooks, substantially as set forth.

102,530.—LAP-BOARD.—William F. Gammel, Elizabeth, N. J., assignor to himself and Jacob R. Weible, same place.

Claim.—The lap-board, consisting of board A, cross-strips *a'*, hinged legs B, box C, and arm *c'*, all constructed, arranged, and adjusted together as and for the purpose described.

102,531, antedated April 18, 1870.—FASTENING TUBE IN GRAIN-DRILLS.—Franklin Gardner, Carlisle, Pa.

Claim.—1. The double-beveled washers D and E, in combination with the mouth of a tube of a grain-drill, as specified.

2. The combination of the tube, with its washers, with the tube-board of a grain-drill, substantially as and for the purpose set forth.

102,532.—CORN-HARVESTER.—Marshall A. Getzendaner, Polo, Ill.

Claim.—1. The spring and block *o'* and *o*, in connection with the pin *p*.

2. The combination of the rollers E and E', with the reel D, the husker X, and the spring and block *o'* and *o*, with the pin *p*, each arranged in connection with the other, as hereinbefore shown and described.

102,533.—COOKING-STOVE.—Henry G. Giles, Troy, N. Y.

Claim.—The chamber H, flues E F, and damper G, in combination with the chamber A and fire-pot B, as and for the purposes set forth.

102,534.—WORK-HOLDER.—Jane E. Gilman, Hartford, Conn.

Claim.—The combination of the standard *b*, the piston *c*, with its cap *d*, the spring *i*, and the lever *e*, the whole constructed substantially as described, for the purpose set forth.

102,535, antedated April 29, 1870.—SEEDING-MACHINE.—M. L. Gorham, Rockford, Ill.

Claim.—1. The thimbles *o* and *r*, with stirrers *p* attached, when constructed and applied as and for the purpose set forth.

2. The universal joint *b* on shaft G, levers K and L, and ratchet *u*, when constructed and arranged substantially as and for the purpose set forth.

3. The supplemental seed-cups, figs. 10 and 11, when constructed and applied as and for the purpose set forth.

4. The drag-tooth N, beam M, and safety slide-plate *w*, with tension-bolt, when constructed as and for the purpose set forth.

5. The combination and arrangement of the drag-teeth N, in beams M, hung upon rod P, supported in hangers *y*, secured to main frame A, substantially as and for the purpose set forth.

6. The combination and arrangement of the levers T, curved rods U, lifting-beams V, supported upon rod P by connections W, substantially in the manner and for the purpose set forth.

7. The openings underneath the seed-distributing wheels with valves *f*, substantially for the purpose set forth.

8. In a seeding-machine, supported upon carrying-wheels, with lifting seed-distributing wheels, inclosed by partitions, with openings underneath to admit the seed to the seed-distributing wheels, with scatterers, upon which the seed falls; also, independent drag-teeth, substantially for the purpose set forth.

102,536. — EMBROIDERY-HOLDER. — Henry Gundaker, Lancaster, Pa.

Claim.—The combination of a bent wire, A, with its cap B, when the same is applied for holding embroidery, or the like piece-goods, in the manner and for the purpose shown and specified.

102,537, antedated April 25, 1870.—SELF-ACTING MULE FOR SPINNING.—William Hackley, Moosup, Conn., assignor to himself and Charles T. Almy, same place.

Claim.—1. The loose pulley E^1, connected with and driven from the main pulley A, in the manner substantially as and for the purpose of reversing the spindle in the mason, or other similarly-constructed self-acting mules.

2. The mechanism, substantially as described, for detaching the friction-pulley E^1 from the band-pulley E and connecting the latter with the loose gear E^3, for the purpose described.

3. The band-pulley G, connected with and operating the rock-shaft and its connections, substantially as described.

4. The arms J, J^2, and V, operated simultaneously by the pin q' at the completion of the inward run of the carriage, to hold the running-in catch-gear F^1 apart, and place the part of the clutch E^2 in proper position to be operated upon, as described, at the completion of the outer run of the carriage to close the friction-pulleys and back off.

5. The combination with the arm of the rock-shaft N, of the arms U U^1, and arm V, provided with pin v', operating substantially as described, for the purpose specified.

6. The clutch F^1 F^2 for running in the carriage, when constructed and operated substantially as described, from the backing-off mechanism.

102,538. — REVERSIBLE BUTT-HINGE. — D. Frank Hale, Chicopee, Mass.

Claim.—Connecting the upper or projecting end of pintle *d* and leaf *e*, by means of cap *a*, projection *b*, and slot *c*, substantially as specified.

102,539.—STOVE-PIPE DAMPER. — Richard M. Hermance, Half Moon, assignor to Joseph B. Wilkinson, Troy, N. Y.

Claim.—1. The annular plate A and curved supports C, extending outward from each side, when cast in one single piece, substantially in the manner and for the purpose set forth.

2. The plate A and supports C, when formed as described, in combination with the perforated caps D, when combined and arranged to form a stove-damper, substantially as shown.

102,540.—SHOE-BRUSH.—Frank D. Holland, Lewiston, Me., assignor to Henry J. Holland, same place.

Claim.—The brush described, consisting of the main brush A, with handle *a*, receptacle B with opening *b*, and threaded tube *b'*, small brush *c*, and lever D, with pin *d* and spring *d'*, when all the parts are constructed, combined, and arranged as described, for the purpose set forth.

102,541.—COTTON-CHOPPER.—Wilson Holt, Dawson, Ga.

Claim.—The arrangement of cam-groove *d'*, which actuates the arm of the hoe G, on a boss of the draft-wheel, as shown and described.

102,542, antedated April 29, 1870.—SCAFFOLD.—Edward R. Holzer, Philadelphia, Pa.

Claim.—1. The construction and arrangement of the sill-piece B, substantially as and for the purpose set forth.

2. The arrangement of the grooves *g* in the post A; also the strap S sliding therein, or their equivalent, whereby the extension-plate P or a brace can be held and guided on the post so as to slide past the bracket without interfering with it.

3. In combination with the strap S and sill-piece B, the construction and arrangement of the extension-plate P, as and for the purpose set forth.

4. The arrangement of the platform F, provided with frames composed of pieces *p*, p^1, p^2, and p^3, straps T and T', set-screws D^1, D^2, D^3, D^4, and D^5, as and for the purpose set forth.

5. Constructing the edge of the platform F, also the inner edges of the framing-pieces *p* and p^1, or p^2 and p^3, with grooves for inserting and securing the edges of the canvas screens C and C', as and for the purpose specified.

102,543.—CULTIVATOR-PLOW.—Louis Hornighouse, Baltimore, Ohio.

Claim.—1. In combination with the frame A B C of a double-shovel cultivator, constructed to cultivate simultaneously both sides of a row of corn, the two adjustable rotary fenders N N, so combined and arranged with reference to each other and to the main shovels *b b*, as to inclose and shield both sides of the plants, substantially as herein set forth.

2. The extra and auxiliary detachable shovels J and M, when so combined with a cultivator as that one of said shovels, M, shall be placed to work in the rear, and the other, J, in front of the main shovels *b b* of the implement, substantially as and for the purpose herein set forth.

102,544.—STUMP-EXTRACTOR. — George L. Howland and William M. Howland, Topsham, Me.

Claim.—1. The combination of the lifting-bar, the griping-pawls, levers, working-levers, rods, and the shifting springs, substantially as specified.

2. The combination with the crotched hook and lifting-bar, of the swinging frame, substantially as specified.

102,545. — WASH-BOARD.—Saunders Hubbell, Jr., West Salem, Ohio.

Claim.—The wash-board frame, constructed of galvanized iron, substantially as shown and described, and its arrangement with reference to the double corrugated plates, as specified.

102,546.—MANUFACTURE OF SOAP.—Charles Wager Hull, New York, N. Y.

Claim.—1. The process of making soap, substantially as herein specified.

2. The new article of manufacture of a bar or cake of soap composed of two or more parts differing in kind, color, or perfume, or in either of said qualities, the line of junction or contact between the different kinds, colors, or perfumes being definite and distinct, substantially as herein specified.

102,547.—WEATHER-STRIP.—James H. Hull, Irasburg, Vt.

Claim.—The combination of stop C, constructed as described, with grooves K, springs R, and screws *m*, all arranged for a weather-stop for doors and windows, substantially as set forth.

102,548.—CLOTHES-LINE HOLDER.—Abel L. Hurtt, Monticello, Ind.

Claim.—The within-described line-holder, consisting of the cam A and the cam B, with flange M, when secured on the post H by the pivot-screws D C or their equivalents, and acting in combination with each other, as and for the purpose specified.

102,549.—TOBACCO-ROLLER.—Charles Augustus Jackson, Petersburg, Va.

Claim.—1. The tobacco-rolling machine herein described, in which the tobacco is placed inside the belt C and pressed between the same and the grooved wheel B, as set forth.

2. The die-wheel, provided with the pins *k*, and combined with the shaft *c*, arms *h i*, and knife *h'*, in the manner described and for the purpose of cutting the strips into plugs.

102,550.—PROCESS FOR TEMPERING STEEL.—Jabez Jenkins, Philadelphia, Pa.

Claim.—The above-described process for tempering hardened steel, by surrounding it with steam heated to the temperature required.

102,551.—LANTERN. — Joseph M. Jenness, Boston, Mass., assignor to himself, James D. Jenness, and Samuel D. Jenness, same place.

Claim.—The combination and arrangement of the lateral aeroducts *n* of the primary deflector, with such deflector, the lamp, the auxiliary deflector, and the lantern body, arranged as set forth.

Also, the arrangement and combination of the lateral aeroducts *n n*, and their caps *o o*, with the primary deflector, the lamp, the auxiliary deflector, and the lantern body, arranged as specified.

Also, the primary air-deflector, as made with the female-screw collar *h*, for supporting and fixing the deflector on the neck of the lamp by a male screw formed thereon.

102,552.—LAMP-BURNER.—James H. Johnson, Newark, N. J., assignor to Holmes, Booth & Haydens, Waterbury, Conn.

Claim.—The openings 3 in the wick-tube, combined with the wings 4, extending out from the bottom portions of such openings, substantially as and for the purposes specified.

102,553.—CAUL FOR LAYING VENEERS.—Luther A. Johnson, New York, N. Y.

Claim.—As an article of manufacture, the hollow veneering tool or former A, having an S-shaped coil of pipe, arranged therein as shown and described, and for the purpose specified.

102,554.—DRY-DOCK.—William Jones, New York, N. Y.

Claim.—1. A balance dry-dock, constructed with central tanks B B, separated by bulkheads, in which are gates 7 7, side tanks A A, connected with the central tanks by gates 5 5, the self-delivery gates 2 2, pump discharge-orifices 3 3, and sinking and self-delivery gates 1 1, said gates 1 2 3 being in series, arranged at different elevations, all arranged and operating substantially as described.

2. In a dry-dock having chambers thus located and provided with valves and connections, the arrangement of the pump-well and discharge-orifices 3 3, as set forth.

102,555.—SOLDERING FIRE-POT.—Elias W. Kimball, Hudson, N. Y.

Claim.—The combination of pipe B with cross-pipe E and damper C above the fire, and with opening F, ash-pit or draught-chamber G, and adjustable ash-pan D, below the fire, substantially as and for the purposes hereinbefore set forth.

102,556.—SUBMARINE TORPEDO.—William R. King, Washington, D. C.

Claim.—1. A compressible cushion C attached to a moving torpedo, rocket, or projectile, substantially as and for the purposes set forth.

2. The combination of a horizontal rudder R, cushion C, and lever L, substantially as and for the purposes set forth.

3. The combination of a ballasted, moving torpedo, with a compressible cushion, C, and horizontal rudder R, substantially as and for the purposes set forth.

102,557.—SHOE-FASTENING.—Albert E. Krüger, Norwalk, Conn.

Claim.—The arrangement of the front piece or tongue A with the slotted metallic plates B and C, and the studs E, in the manner substantially as herein set forth, and for the purpose described.

102,558, antedated April 18, 1870.—COAL-STOVE.—Joel Laforge and Jonathan T. Crane, Rahway, N. J.

Claim.—The vertical air-heating tubes *d*, when placed around the fire-chamber E, and arranged so as to receive cold air at their lower ends, in connection with the air-heating space or passage *e*×, which surrounds the case *e* inclosing the tubes *d*, all arranged substantially as shown and described.

Also, the vertical tubes *d*, in combination with the chamber G, pipes *h i*, air-heating passage *e*×, and the flue C between the walls *e e* of the body B, all arranged substantially in the manner as and for the purpose set forth.

102,559.—BOAT-RUDDER.—William C. Law, New York, N. Y.

Claim.—1. The continuous rod B and brackets C D, combined with the slotted sockets F F and unslotted socket G, as and for the purpose described.

2. The elongated rudder E, extending below the keel, and having a long tenon, *e'*, perforated at intervals, as and for the purpose described.

102,560.—MACHINE FOR GRANULATING TOBACCO. — Christian H. Lilienthal, Yonkers, N. Y.

Claim.—1. The combination of the elevator-box A and endless elevator-belt C with the guide or table G and cutter-rollers F, constructed substantially as described, and for the purposes set forth.

2. The cutter-rollers F and guide G, in combination with the descending "chute" I and granulating-rollers H, constructed substantially as described, and for the purposes set forth.

3. The combination of the sieve and brush J and K with the elevator-box A and endless elevator-belt C, by means of the discharging-tube or passage-way P, connecting the interior of the sieve with the lower end of the elevator-box, substantially as described, and for the purposes set forth.

102,561. — PRINTING-TELEGRAPH INSTRUMENT.—Landy Tunstall Lindsey, Jackson, Tenn.

Claim.—1. The combination of the series of levers A B C D, &c., arranged in a circle and properly supported in a frame with the arm *a*, anvil *m*, and rotating shaft F, in the manner and for the purpose set forth.

2. Extending the wires connecting with the points *i* and *i'*, in the relay magnet M, to plate *d* and platina point 3, for the purpose of keeping the circuit through the magnet O closed after the contact of the points *i* and *i'*, substantially as described.

3. The brake-wheel L, so arranged as to break the circuit through the magnet O, after the contact of the type-wheel and impression-roller has been maintained long enough to move the strip of paper for a distance sufficient to form a space between the letters, in the manner substantially as set forth.

4. The combination of the printing-telegraph instrument with the electro-magnetic motor, in the manner and for the purpose described.

5. The combination of the slotted plate *k* or its equivalent, with the arm and pawls operating the ratchet-wheel, as described.

102,562. — ELECTRO-MAGNETIC MOTOR.—Landy Tunstall Lindsey, Jackson, Tenn.

Claim.—1. The arrangement of a metal slide, *i*, properly supported in a fixed or movable frame, E, between adjusting screw-points D D', on which to successively strike, when driven in either direction by a lever, O, that is caused to vibrate by the alternate action of two magnets, which successively control an armature fixed thereon, either screw-point, when in contact with the slide, representing such a connection as it may be desirable for it to form.

2. The introduction of such connections as will

insure an automatic and uninterrupted motion of the lever O, by joining together a terminal wire from each of the magnets M M', and extending a wire-connection from their junction to, and connecting it with one of the posts B, thereby establishing metallic communication between these magnets and the slide *i*; extending the remaining terminal wire of magnet M, *via*, and connecting it with adjusting-screw D, to binding-screw N, where it unites with one pole of a battery; extending the remaining terminal wire of magnet M', *via*, and connecting it with adjusting-screw D', to binding-screw N', where it unites with the other pole of a battery, thus completing the metallic circuit of the battery, and including the coils of both magnets therein, the alternations of the current through the coils of the magnets, and their successive effect in attracting the lever thereto, being accomplished as hereinbefore described, and for the purposes set forth.

102,563.—POLICEMAN'S NIPPERS.—George Lutz, Danforth H. Royce, Michael Trenor, and Robert Chadwick, Columbus, Ohio.

Claim.—The combination of the clasps A, connecting-rod B, tumbler D, springs E and S, thumb-rod G and ratchet-bar F, as and for the purposes specified.

102,564.—CORN-PLANTER.—James Wilson Magers, Reinersville, Ohio.

Claim.—1. The combination of the crank-axle D, cog-wheel D', toothed ring D'', sliding box *a*, lever *b*, and rack *c*, in the manner and for the purpose described.

2. The conductors C, attached to the axle A' by means of hinges *n*, as and for the purpose specified.

102,565.—COMPOSITION FOR FINISHING WAX-LEATHER.—Patrick Maguire, New Boston, Mass.

Claim.—A compound composed of the foregoing ingredients.

102,566.—MANUFACTURE OF BOLTS.—Alexander Mailer, Buffalo, N. Y., assignor to George C. Bell and R. H. Plumb, same place.

Claim.—The method of manufacturing bolts from round iron of the size of the round portion of the bolt, by first squaring a portion to form the neck, and then upsetting the neck and head together, substantially as hereinbefore set forth.

102,567.—STREET-MOISTENING COMPOUND.—Morita Marcus, New York, N. Y.

Claim.—The street-sprinkling compound herein set forth.

102,568.—MACHINE FOR FOLDING POWDERS.—Joseph W. Maxwell, Louisville, Ky.

Claim.—1. The combination of the sliding frame or case B, the frame C, the trigger G, and the spiral spring E^1, the frame M, and the spool D, for delivering the paper, substantially as and for the purpose set forth.

2. The combination of the hopper L, the slides H and K, the graduating hole I, the pipe J, and the pitman O, the folders D^2 D^2, the wooden guide D^3, and the frame N, and base A, substantially as and for the purpose set forth.

3. The combination of the frame A^1, the rolls R R, the wheels P P and Q, the crank D^3, and the shears U, the guide S, and miter-wheels T T, substantially as and for the purpose set forth.

4. The sliding frame X, the yoke J, the end-folder Z, the cam W, and crank C^1, the folding-box and stand B^1, the springs A^2, the block B^2, and the front rest A^3, substantially as and for the purpose herein set forth.

102,569, antedated April 23, 1870.—FARM-GATE.—John Mayben, Milroy, Pa.

Claim.—The grooved pulley H, in combination with the uprights B B, the grooved guide *s*, the pulleys F and G, the gate D, the sill or bed A, and grooved head-post C, all constructed and arranged as described, and for the uses and purposes set forth.

102,570.—COMPOUND FOR DRESSING TEXTILE FABRICS.—John McGill, Boston, assignor to Benjamin S. Goodwin, Boston, and Hiram Whitney, Watertown, Mass.

Claim.—1. The compound formed by the mixture of sulphate of ammonia with starch, size, or other articles used for dressing, finishing, polishing, or stiffening goods, substantially as described.

2. The use of said compound, substantially as set forth.

102,571.—WATER-MOTOR.—William McGinniss, Auburn Township, Ohio.

Claim.—1. The rotating bucket K, vibrating arms or levers F, pulleys M, and cords N, when combined and arranged to operate in the manner substantially as described and for the purpose set forth.

2. The rotating bucket K, vibratory arms or levers F, as arranged, to operate in combination with the feed-gate C, substantially as and for the purpose specified.

3. The combination of the levers F, bucket K, pulleys M, cord N, feed-gate C, and shaft S, substantially in the manner as described and for the purpose set forth.

102,572, antedated February 15, 1870.—TUBE-WELL.—James McMillan, Fairport, N. Y.

Claim.—1. The arrangement of the detachable sections B B of the drive-rod, provided with screw sockets *b b*, the screw coupling D, the drifting-shaft C, and the washers *d d*, the whole operating in the manner and for the purpose specified.

2. The draw-rods J J, combined with the driving-rod B B, in the manner and for the purpose specified.

3. The screen, formed with a screw-thread, to let in and support the wire, and leave a flush surface with the tube, substantially as described.

4. The point G, formed with an extended shank, K, and a flange, *p*, forming together a groove, in combination with the vertical slots *m m* and pin *l*, and operating substantially as herein shown and described.

102,573.—BIRD-HOUSE.—Henry Miller, Johnston, R. I.

Claim.—The bird-house *a*, provided with the tapering screw *b*, in the manner described and for the purpose set forth.

102,574.—DOOR-CLAMP.—Benjamin Moore, Hart, Mich.

Claim.—1. The combination of the frame A, levers *a* and *i*, spring *f*, gauge *w*, connecting-rod *s*, and eccentric clamp *v*, cross-pieces *k* and *m*, pieces *j*, and clamps *q*, substantially as and for the purposes hereinbefore specified.

2. The clamp *q*, provided with the flange *r*, and thumb-screw *a'*, in combination with the plate *x*, provided with the studs *y*, substantially as and for the purpose hereinbefore specified.

102,575.—CORD-CATCH.—Charles C. Moore, New York, N. Y.

Claim.—The cord-catch formed of disks B C and screw A, constructed, attached together, and applied as set forth.

102,576.—FENCE AND GATE.—Enoch Muirheid, Greenfield, Ohio.

Claim.—1. In combination with the panels C and D, composed of the rails *c*, *a*, *b*, *i*, and *k k*, pales *a a' a''* and bolts *f*, the posts E and *d*, pieces *h*, plates *l*, ties A, B, and F, stakes *n*, and braces *m*, *E*, *m'*, *l'* and *n'*, arranged relatively one to the other, substantially as described, for the purpose specified.

2. In combination, the battens *u u u u*, rails *c' c'*, pales *t*, bolts *f*, uprights *p* and *q*, rods *d'*, *f'*, and *f''*, bolts *e'* and *e* and *h'*, shaft *g'*, and pivot *i''*, arranged relatively one to the other, substantially as described, for the purpose specified.

102,577.—PLANING-CHUCK.—Augustus Newell and William Pim, Chicago, Ill.

Claim.—The self-adjusting jaw D, carrying-bolt C, and clamping-nut *c*, combined with bed A and screw B, all arranged and relatively constructed as and for the purpose described.

102,578.—HORSE HAY-RAKE.—George Notman, Deerfield, Ohio.

Claim.—1. The arrangement of the bent rod *b*, between the arms *a a* and teeth *t t*, so as to act both as a raiser and presser of the rake-teeth, in connection with the lever L and rod *n*, as herein shown and described.

2. The bent rod *b*, arranged between the arms *a a* and teeth *t t*, acting as a raiser and presser, in connection with the lever L, rod *n*, shaft *r*, rods *m m*, and clearer C, as herein shown and described.

102,579.—ROSETTE FOR BRIDLES.—James O. Brien, Geneseo, Ill.

Claim.—The employment of two plates or disks between which straps are secured by means of studs or pins attached to one of said disks, and interlocking with the other.

Also, the disk A, provided with the pins B, in combination with the disk C, provided with the shoulders D, substantially as and for the purpose specified.

Also, in combination with the disks A and C, the screw E, substantially as shown, and for the purpose set forth.

102,580.—CARRIAGE-HUB.—James O'Connor, Jackson, Mo.

Claim.—The construction of the collar C with wedge-shaped partitions *c c*, terminating in a sharp edge at the periphery of the collar, in connection with the spokes B, made as described, whereby the spokes are not only securely wedged between the partitions *c c*, but are brought into contact with each other, as herein shown and described.

102,581, antedated April 23, 1870.—BOILER-FURNACE.—John A. T. Overend, San Francisco, Cal.

Claim.—The combination, in a boiler-furnace, of the metallic plate A, bridge-wall B, wall E, and fire-back D, when arranged substantially as specified.

102,582, antedated April 19, 1870.—FIRE-EXTINGUISHER.—William M. Parker, Boston, Mass.

Claim.—1. In the construction of a portable chemical fire-extinguisher, a liquid acid vessel, attached to a screw-plug in the top of the main receptacle, and introduced through the opening controlled by such screw-plug, mouth downward, closed with a stopper relatively stationary, such stopper being attached and held in position independently of the acid-vessel, the contents of which are discharged by lifting the vessel from the stopper; in combination with the devices by which a gas-tight joint is formed on the inside of the screw-plug when the acid-vessel is opened; in combination, also, with one or more perforated plates or diaphragms placed within the main receptacle below the acid-vessel, to facilitate the neutralization of the acid and alkaline ingredients employed in charging the apparatus, and increase the absorption by the water of the carbonic acid disengaged, and to prevent the accumulation of liquid acid at the bottom of the main vessel, substantially as shown and described, and for the purposes set forth.

2. In a portable chemical fire-extinguisher, forming a gas-tight joint on the inside or inner part of the screw-plug controlling the main opening, substantially as shown and described, and for the purpose set forth.

3. In the construction of a portable chemical fire-extinguisher, one or more perforated plates, partitions, or diaphragms, placed within the main receptacle below the acid-vessel, when such plates, partitions, or diaphragms are employed to distribute liquid acid through an alkaline solution contained in the main vessel, to facilitate the neutralization of the acid and alkaline ingredients employed in charging the apparatus, and prevent the accumulation of acid at the bottom of the main vessel.

102,583.—ANCHOR.—Gurney C. Pattison, Baltimore, Md.

Claim.—One or more auxiliary pivoted catches G or H, in combination with the swinging fluke of a non-fouling anchor, substantially as and for the purpose herein described.

102,584.—ANCHOR.—Gurney C. Pattison, Baltimore, Md.

Claim.—1. Lateral elbows or angular projections *f f*, formed upon, or combined with, the shank of a pivoted fluke-anchor, substantially in the manner and for the purpose herein set forth.

2. A movable shackle, chain, or tie-bar, combined with the shank and the pivoted fluke-arm of an anchor, to operate as a diagonal tie, for the purpose of supporting the fluke-arm when it is thrown out from the shank in either direction, substantially as herein set forth.

102,585.—FLY-TRAP.—Max Patzauer, New York, N. Y.

Claim.—1. The base A, rod B, and chamber C, combined and arranged as and for the purpose specified.

2. The base A, rod B, and chamber C, combined with the dripping-pan D, all as and for the purpose described.

102,586.—SEWING-MACHINE.—Rufus H. Peabody, Chelsea, Mass.

Claim.—An under needle and looper, constructed in separate pieces and parts, said pieces and parts being attached and adjusted to each other, substantially in the manner and for the purposes described.

102,587.—BOBBIN FOR SPINNING, &c.—Oliver Pearl, Lawrence, Mass.

Claim.—The bobbin, as made with the middle reinforce *i*, and the two chambers *g h*, and foot-bushing or bearing arranged therewith, as set forth.

Also, the bobbin, as made with the middle reinforce *i*, the two chambers *g h*, and the upper and lower-end plugs, bushings, or heads, the whole being substantially as hereinbefore explained.

Also, the combination of the bobbin, made with the central reinforce *i*, and the two chambers *g h*, and lower bearing or bushing, with a spindle, made to terminate at top in the central bushing, or lower part of the upper chamber of the bobbin, as specified.

102,588.—GRINDING-MILL.—Walter Peck, Rockford, Ill.

Claim.—1. The grinding-machine above described, consisting substantially of the plates A A^1, grinding-plates B B^2, shaft a^1, case c^1, lever E, hand-wheel c^2, with screw c^3, collar *d*, clasps d^1 d^1, and grooves D d^2, arranged and operated substantially as described.

2. The combination of the plates A A^1, provided with the grooves *b* b^2, with reversed cutting-edges, when arranged and operating as described, for the purpose set forth.

102,589.—AUTOMATIC WAGON-BRAKE.—Frank M. Pickerill, Indianapolis, Ind.

Claim.—In the construction of wagon-brakes, the slotted bar S, arranged to support the loop crank-bar V, when used in combination with the sliding bar J, operating in loops attached to the under side of the reach, and with brake-shoes R, as described.

102,590.—HEATING AND VENTILATING ATTACHMENT FOR STOVES AND FIRE-PLACES.—Emily S. Potter and Betsey R. Potter, Boston, Mass.

Claim.—The apparatus herein described, consisting of an air-chamber provided with an inlet and outlet-pipe, when the air-chamber is so constructed as to be applied to a heater, the whole being and operating as described.

102,591.—APPARATUS FOR POLISHING COFFEE, &c.—John Thomas Randall, Baltimore, Md., assignor to F. W. Elder & Co., same place.

Claim.—The combination of the internally corrugated cylinder A, and its hollow journals, the beater-shaft D extending longitudinally through said cylinder and journals, and the series of peculiarly-inclined beater-arms *b* mounted upon said shaft, substantially as specified, the said cylinder and shaft being revolved in opposite direction, and the whole constructed and arranged for joint operation, as shown and set forth.

102,592.—OFFICE-REGISTER AND DIRECTORY.—Henry Rentchler, Belleville, Ill.

Claim.—An improved office-register, consisting of standard A, hinged arms B, staples, hooks C, case D, dial E with hooks thereon, and dial F, with hands G H, all said parts being brought together, notated, and relatively constructed as and for the purpose described.

102,593.—CORN-SHELLER.—John W. Ricker, Chelsea, Mass.

Claim.—The combination of the hinged projecting plate *a*, rod *c*, and spring *d*, applied and operated substantially as and for the purpose herein set forth.

Also, in the corn-sheller constructed substantially as herein described, the combination of the wheel C with its curved teeth or bars *g*, hinged plate *a*, rod *c*, and spring *d*, as and for the purpose set forth.

102,594.—BALL TOY GUN.—Charles Robinson, Boston, Mass.

Claim.—The combination of the elastic cord C, looped and tied or connected at *d*, and the ball D, grooved or notched at *f f*, substantially as and for the purpose herein specified.

102,595.—WATER-COOLER.—John Rutter, West Chester, Pa.

Claim.—1. In combination with a water-cooler, A, the employment of one or more capillary tubes, E, substantially as and for the purposes set forth.

2. In combination with a cooler, A, the employment of the inner absorbent material *d d*, communicating with an outer absorbent covering, *e e*, all substantially as set forth.

3. The water-cooler A, divided into compartments B C, and provided with one or more capillary tubes, E, absorbent material *d d*, and absorbent covering *e*, all substantially as and for the purposes described.

102,596.—HEMP-BRAKE.—George Rymel, Paris, Ky.

Claim.—1. The combination of hoppers S T and brake-bars B C with fingered cleaners J K, all arranged nearly in the same vertical line, so as to act successively upon the hemp, in the manner described.

2. The combination of horizontal brake-bars B C, fingered cleaners J K, and endless discharging-belt R, all arranged as and for the purpose set forth.

102,597.—HOISTING APPARATUS.—Hans Asmus Schneekloth, New York, N. Y.

Claim.—1. The tread-wheels D D, constructed as described, in combination with shaft B, pinion *f*, and spur-wheel *f'*, to operate shaft of drum E by the foot and weight of a man, as set forth.

2. The combination, with tread D D and shaft B, of the brake F, to regulate the speed of descending weights, as set forth.

102,598.—BARLEY OR GAVEL-FORK.—Dennis P. Sharp, Ithaca, N. Y.

Claim.—A fork whose tines are so bent that the points terminate at right angles to the handle, and secured on the under side of the head B by pins *c* and wire brace E, running through the center of said tines at the beginning or center of the curve, all arranged to operate for the purpose specified.

102,599.—DITCHING-PLOW.—Isaac S. Sheets, Troy, Ohio.

Claim.—The combination of plow-plate C, guide-plate G, and wing H, when said parts are arranged on one side of the beam, and operated successively to raise the dirt from the furrow, guide it to the side of the ditch, and push it from the edge thereof, in the manner described.

102,600.—LOCK-NUT.—Edwin R. Shepard, Scranton, Pa.

Claim.—1. The combination of the bolt A, nut B, and washers C E or washer D, constructed and operating substantially as set forth.

2. The elastic elliptic washer C, provided with an elongated slot, substantially as described.

102,601.—RAILWAY RAIL.—Edwin R. Shepard, Scranton, Pa.

Claim.—A compound railroad rail, consisting of a central tread with a wedged-shaped shank, confined between two corresponding wedge-shaped recesses in the base-pieces, in combination with a self-tightening device, substantially as set forth.

102,602.—COMPOUND RAILWAY RAIL.—Edwin R. Shepard, Scranton, Pa.

Claim.—1. The system herein described of punching the bolts or rivet-holes in the base or lower portion of a compound rail.

2. The system herein described of punching slots in the thread or head portion of a compound railroad rail.

3. Laying and spiking down compound railroad rails in the manner and under the arrangement herein described and set forth.

102,603.—BOB-SLED.—Sylvander C. Shepard, Richfield, Ohio.

Claim.—1. The pivoted standard I, block D, and beam H, in combination with the plate J, guide-plate G, standards B, and rails C, constructed and arranged in the manner and for the purpose substantially as set forth.

2. The standard I and guide-plate J, provided with flanges *j*, in combination with the lug K, block D, and guide-plate G, provided with sockets F, constructed and arranged substantially as and for the purpose set forth.

3. The bolt J', collar M, and plate P, in combination with the plates Q R, pivot *q*, bolster O, and beam H, constructed and arranged in the manner and for the purpose substantially as set forth.

102,604, antedated April 29, 1870.—SASH-HOLDER.—R. L. Sibbet, New Kingston, Pa.

Claim.—The flat spring G, with its notch H, when arranged to operate with the hook C, substantially as herein described.

102,605.—CLAMP FOR SETTING RIGGING.—Jacob W. Slaight and Jacob W. Androvatt, Prince's Bay, N. Y.

Claim.—A rope-clamp, consisting of the toothed or notched bar A, and clamping-lever B, and arranged to operate as set forth.

102,606, antedated April 23, 1870.—SAWING-MACHINE.—Addison Smith, Perrysburg, Ohio.

Claim.—The sun gear I, planet-gear K, strap L, when combined with the axle *c* and handle *o*, and arranged to operate as and for the purposes described.

102,607.—COMBINED CORN-SHELLER AND VEGETABLE-SLICER.—Jeremiah P. Smith, Hummelstown, Pa.

Claim.—The combination of the shelling and cutting-disk B, with the concave D, and hopper E, substantially as and for the purposes herein specified.

Also, the arrangement of the concave D, constructed with the teeth *p p*, and projection *d*, in combination with the movable slotted cross-bar G, substantially as and for the purpose herein specified.

Also, the construction of the hopper E with its movable back *u*, enlarged bearing *v*, and stops *w w*, arranged in combination with the cutting and shelling-wheel B, substantially as and for the purpose herein set forth.

Also, the teeth *y y*, on the inner surface of the movable hopper-back, for the purpose herein specified.

102,608.—CULINARY VESSEL.—John C. Smith, Rochester, N. Y., assignor to himself and John H. Poppy, same place.

Claim.—The combined boiler and steamer herein described, having the conducting-tube made in sections *a* a^1 a^2, fitting one within the other, and the cover fitting both the steamer and boiler, as herein set forth.

102,609.—ROLL FOR MAKING RAILS FOR STREET-RAILWAYS.—George A. Springer, Chicago, Ill.

Claim.—1. The herein-described rolls for rolling rails, provided with stubs or projections, and a circular flange, so that, when the rail is rolled, two or more series of notches or indentations will be formed along the upper surface, and a continuous groove along the under side, substantially as herein set forth.

2. As an improved article of manufacture, a rail having two or more series of indentations on its upper surface, and a continuous groove on its under side, substantially as and for the purposes herein set forth.

102,610.—ROCK-BORING APPARATUS.—Thomas St. John, Dunbar, Pa.

Claim.—The combination with the auger D, having a threaded shank, and the mortised supporting-beam A thereof, of the loose nut E and brace G, relatively arranged, as and for the purpose described.

102,611.—HAND CORN-PLANTER.—William D. Stroud, Oshkosh, Wis.

Claim.—The combination of the receiver *e*, sliding-valve *b*, spring *l*, brush *m*, guide-bar *r*, upright *s*, and perpendicular bar *g*, arranged relatively one to the other, substantially as described, for the purpose hereinbefore specified.

102,612.—SHIRT.—Seligman H. Strouse and Joseph Strouse, New York, N. Y.

Claim.—The shirt-back, cut out and gathered, in the manner specified, in combination with the yoke *i*, applied to such shirt-back and attached thereto, substantially as and for the purposes specified.

102,613.—HAT-BLOCKING MACHINE.—Jacob Surerus and William H. Behrens, Newark, N. J., assignors to Archibald T. Finn, same place.

Claim.—1. A frame for stretching the hat-cone, consisting of a series of expansible arms F^2, provided with shields or plates overlapping one another, to prevent corrugations and abrasions in the square of the hat, substantially as described.

2. The pressure-pads B^4, operating in combination with the stretching-frame F^2, substantially as and for the purposes set forth.

3. A hat-blocking mechanism, when applied to a shaft, whereby it can be swung around for operation in and out of a tank, substantially as set forth and shown.

4. Providing the clamps to the blocking-frame with slides G^2, for regulating the width of brim, substantially as shown.

5. A hat-blocking mechanism, provided with radially arranged clamps for holding the brim, in combination with levers M and ring N, operating together substantially as and for the purposes set forth.

6. A hat-blocking mechanism, provided with a series of clamps capable of a radially-expansive motion, for holding and stretching the brim, in combination with a banding-ring, against which the hat is stretched and the band is broken.

7. In a hat-blocking mechanism, the combination of ring Y, clamps L U, springs Z^2, ring N, and levers M, all operating together in the manner and for the purposes specified.

102,614.—OVEN.—Charles Swain, Laconia, N. H.

Claim.—The combination and arrangement of the stand A, revolving grate B, and elevated grate C, constructed and operating substantially as and for the purposes herein specified.

102,615.—MOLD FOR ARTIFICIAL TEETH.—Eli Sweet, Whitney's Point, N. Y.

Claim.—In a mold for artificial teeth, providing the slide to form dovetails in the teeth, with a slot *x*, and set-screw *z*, whereby to adjust the slide on the plate A, substantially as and for the purposes herein set forth.

102,616.—BAG-HOLDER.—George D. Sweigert, Martic township, Pa., assignor to himself and Samuel Eshleman, same place.

Claim.—The arrangement of the supports A A' with the head-pieces C C, united by the rods E, between the hinged upper ends of the said uprights, with or without the sliding adjusting block D, and the hopper H, all combined, in the manner and for the purpose described.

102,617.—CARVING-KNIFE.—Owen W. Taft, New York, assignor to himself and Ernest Mitchell, Flushing, N. Y.

Claim.—As a new article of manufacture, the combined carving-knife and skewer-extractor herein described.

102,618.—CORN-PLANTER.—Levi B. Tarbox, Collinsville, N. Y.

Claim.—The double hand corn-planter, herein described, consisting of two adjustable single hand corn-planters, A, provided with brushes *n n*, discharging-tubes C, and plungers *e*, operated by the slotted levers *m m*, having adjustable handles *t*, and connected by the yoke-bar E, having the perforations *s s*, when constructed, arranged, and operated substantially as and for the purposes herein specified.

102,619.—APPARATUS FOR THE COMBUSTION OF PETROLEUM AND OTHER HYDROCARBON LIQUIDS.—Homer Taylor, Montreal, Canada.

Claim.—1. The within-described process, by means of which petroleum and other hydrocarbon substances are vaporized by being passed through a perforated pipe, *k*, whence they fall upon the heated surface of the gas-generator B, and pass thence into the gasometer or mixer A, substantially as shown and described.

2. The within-described process, by means of which steam is obtained in the steam-generator F, and, in conjunction with the gaseous products of petroleum or other hydrocarbon substances, passes into the gasometer or mixer A, substantially as shown and described.

3. The within-described process, by means of which steam and the gaseous products of petroleum are thoroughly intermixed by means of the partitions *a*, *b*, and *c*, and utilized by the means of burners *i*, substantially as shown and described.

4. The within-described process, by means of which superheated steam is obtained and supplied to the gas-generator C, where it comes in contact with the gaseous products of petroleum or other hydrocarbon substances, and such superheated steam and products in conjunction is supplied by means of the pipe O and perforated pipes *x*, to the gasometer or mixer A, wherein it is thoroughly intermixed by means of the partitions *a*, *b*, and *c*, and then utilized by means of the burners *i*, substantially as shown and described.

5. The auxiliary gas and steam-generators, in combination with the gasometer A, in the manner and for the purpose described.

6. The combination of the groups of burners with their respective reverberators, for the purpose set forth.

7. The combination of the perforated cover G, or its equivalent, with the gasometer A, for the purpose set forth.

8. The arrangement of the perforated partitions *a*, *b*, and *c* in relation to each other, to the perforated pipes *x*, and to the gasometer A, as described, for the purpose set forth.

9. The combination of the burners *i* with their reverberator and with the perforated cover G, as shown and described.

10. The auxiliary gas-generator C, in combination with the gas-generator B and gasometer A, substantially as shown and described.

11. The perforated slide *h*, for regulating the supply of gas, arranged and operated substantially as shown and described.

102,620.—COMBINATION PADLOCK.—George Thompson, Trenton, N. J., assignor to himself and John H. Cogill, same place.

Claim.—The hasp or shackle D, when constructed with a recess, *d'*, and cut-away beveled projection D', in combination with the cut-away beveled hook C^3 of the dog C, and spring C^1, substantially as and for the purpose set forth.

102,621.—WASHING-MACHINE.—Horatio N. Thomson, Auburn, N. Y.

Claim.—The washing-machine herein described, having rollers D E E, carriers G G, pivoted levers F F, endless band K, perforated tube *c*, and boiler A, substantially as shown and described.

102,622. — SASH-FASTENER. — Theodore R. Timby, Saratoga, N. Y.

Claim.—1. The button F, rigidly attached to and operated by a spindle, D, provided with a catch, H J, for retaining it in its locked position, substantially as described.

2. The cap or casing C, combined with the button F, operating-spindle D, and socket G, substantially in the manner set forth.

3. The combination of the button F, spindle D, sleeve H, collars E I, and connecting-pin P, or its described equivalent for the purposes set forth.

102,623.—DRAIN AND WATER-PIPE.—George H. Titcomb and John P. Culver, Jersey City, N. J.

Claim.—The improved composite water-pipe herein shown, consisting of the metallic pipe A, perforated, as described, and lined within and covered without by the coatings of cement B and C, in the manner and for the purpose herein shown and set forth.

102,624.—FAUCET.—William H. Trissler, Cleveland, Ohio.

Claim.—The faucet hereinabove described, composed of the wood body A, smooth metal shell B with wooden interior, band C, key E', shield F, and bush D, when the several parts are constructed in the manner and for the purpose as described.

102,625.—MACHINE FOR BORING HUBS.—Abraham Troup, Lewisberry, Pa., assignor to himself and Herman Kirk, same place.

Claim.—The combination of the bow *e*, mandrel B, cross-bar A, nuts *c*, and arms *b*, provided with the clamps *a*, and feet *d*, all constructed and arranged to operate as described.

102,626. — BLOWER FOR BLACKSMITHS' FORGE.—John George Techoulin, Baltimore, Md.

Claim.—In combination of the fans C C', situated in the casing or casings B B', the working apparatus, consisting of the wheel D, band *e*, and pulleys *d d'*, all arranged and operating substantially as and for the purpose described.

102,627. — ELASTIC TIP FOR LEGS OF CHAIRS, &c.—Silas Van Patten, Albany, N. Y.

Claim.—1. Securing an elastic plug in the leg of a chair by winding a cord around the shank-portion of said plug, and after inserting it cutting the cord to allow its expansion, substantially as described.

2. The herein-described method of preparing rubber plugs for chairs, &c., by stretching cylindrical pieces of rubber, and tieing cord around alternate sections of the same, as set forth.

102,628. — WASHING AND WRINGING-MACHINE.—Joseph B. Wakeman and Alfonzo R. Field, Hamden, N. Y.

Claim.—1. The combination of metal-covered washing-rollers D E, carrying-roll I, and rubber-covered wringing-roller F, when all are constructed and arranged with respect to each other as specified.

2. The combination of elliptic bands *a a* with set-screws *b b*, when applied to the uprights A and bottom B, to allow for warping, as set forth.

102,629.—STONE PAVEMENT.—Charles G. Waterbury, New York, N. Y.

Claim.—A pavement composed of stone blocks laid upon a board foundation, with a bedding of sand or cement between the stone and said board foundation, and having the interstices between the stone blocks filled with gravel and tar or other suitable cement, substantially as described.

102,630.—ATTACHING HANDLE TO JOINERS' PLOW.—Charles H. Weigle, York, Pa.

Claim.—The metal dovetail socket B, secured by screws *a* in a recess in the rear end of the wooden stock A of the plane, and adapted to receive the rib D on the front edge of the handle C, all as shown and described.

102,631.—CULTIVATOR. — Nicholas Werts, Magnolia, Ill.

Claim.—1. The brackets G, vertical rods D, with crank-levers *n q*, pivoted arms O, angular connections R, and braces H' H, as constructed and arranged with beams J, C, and F, substantially in the manner and for the purpose as herein shown and described.

2. In combination with the above, the hinged extension *u* of the arm E, substantially as shown and described.

102,632. — APPARATUS FOR DISTILLING.—John M. Weyand, St. Louis, Mo.

Claim.—1. The chamber A, containing the heating surfaces *k*, the steam-pipe *h*, and perforated false bottom *i*, to disturb and agitate the mash and evaporate its alcoholic contents, as set forth.

2. The drum I, receiving the mash and steam, the latter near the bottom, so that it will agitate the mash, as set forth.

3. The mash-evaporating pan G, combined with the steam-chamber J, substantially as and for the purpose herein shown and described.

4. The chamber B C D E, arranged as described, to let the mash and phlegm pass slowly downward, and the alcoholic vapors upward, as set forth.

5. The chamber F receiving the mash-tube *a*, and water from the dephlegmator and refrigerator, or either, and discharging the water through a pipe *d'* around the pipe *a*, as specified.

6. The dephlegmator L L', connected by the pipes *t* with one of the evaporating chambers C to return the phlegm to the same, as set forth.

7. The aromatizer N containing the perforated shelves *v v*, and arranged within the annular steam-chamber O, substantially as herein shown and described, to operate as set forth.

8. The refrigerator P, arranged within the inclined cold-water chamber R, and connected with the aromatizer or dephlegmator, substantially as herein shown and described.

9. The herein-described combination with each other of the several compartments A B C D E F, dephlegmator L L', and refrigerator P, all arranged to operate as set forth.

102,633.—EVAPORATING AND DISTILLING BY SOLAR HEAT. — Norman W. Wheeler, Brooklyn, and Walton W. Evans, New Rochelle, N. Y.

Claim.—1. The arrangement of the imperfect diaphragms *t* in the troughs *c c c*, substantially as and for the purpose described.

2. The combination and mounting of the distilling-apparatus herein described, with and upon the bracket *m* and standard *n*, substantially as and for the purpose described.

3. The combination of the segment K, or its equivalent, with the above-described apparatus, substantially as and for the purpose described.

4. The combination of the box *a* with the pipes *i* and *j*, or their equivalents, substantially as and for the purposes described.

5. The combination of the sash *b b*, box *a*, troughs *c c c*, and tubes *f f*, or their equivalents, substantially as and for the purposes described.

6. The combination of the pipes *d* and E, with the troughs *c c c*, or their equivalents, substantially as and for the purposes described.

7. The combination of the pipes *p p* with the troughs *c c c* and tubes *f f*, or their eqivalents, substantially as and for the purposes described.

8. The method herein described of distilling liquids by means of solar or artificial heat, through the instrumentality of gaseous currents, substantially in the manner and with the apparatus herein described, or the equivalent thereof.

102,634.—PUMP.—James T. Whipple, Chicago, Ill.

Claim. — Coupling A, when constructed with shoulders F, G, and H, shoulder G being oblique and screw-threaded on its inner surface, in combination with valve-seat C, the several parts being so arranged that said valve-seat may be withdrawn through the main pipe, substantially as and for the purpose specified.

102,635.—SAFETY-SOCKET FOR WHIPS, UMBRELLAS, BILLIARD-CUES, &c.—John W. Whiteman, Christiana, Del.

Claim. — The combination of clamping-springs and a locking device, with a hinged socket, substantially as and for the purpose specified.

102,636. — WATER-COCK FILTER. — Nahum C. Wilder, Hartford, Conn.

Claim.—As an improved article of manufacture, a filter for water-cocks, having a nozzle, *a*, with lip *d*, sleeve *b*, packing *c*, connected to the nozzle by a screw connection, gauze *f*, upon the shoulder *e*, and sponge A, all combined and arranged as and for the purpose set forth.

102,637.—MACHINE FOR BENDING WOOD.—Willis D. Williams, Raleigh, N. C.

Claim.—The combination of the permanent curved-faced block A, curved blocks D hinged thereto, yokes and levers G H, substantially as specified.

102,638, antedated April 18, 1870.—FORMER FOR HOOP-SKIRTS.—Charles C. Wilson, Baltimore, Md.

Claim.—The combination of the hinged ribs C, adjustable waist-block D, sliding sleeve E, hinged and adjustable braces F, and shaft B, the parts being arranged and constructed as and for the purpose herein shown.

102,639, antedated April 18, 1870.—COAL-HOD.—William Wilson, Boston, Mass.

Claim.—A coal-hod, having in its bottom part an ash-receiving chamber, separated from the main chamber by a screen which is provided with an open slide, by movement of which the communication between the two chambers may be opened or closed.

102,640. — STRAP-FASTENER. — William R. Wing, Newark, Ohio.

Claim.—Crupper or other strap-fastenings, consisting of the metallic parts A B, fitted for connection by a T-headed projection, and adapted for locking by a ring, as described, and the sliding locking-ring, all combined and arranged substantially as specified.

102,641.—BENDING-MACHINE.—Henry Winter, Honesdale, Pa., assignor to himself and Thomas W. Ball, New York City.

Claim.—The mold herein described for bending canes or sticks, formed of the clamp *e*, with the projection *g*, in combination with the strap *f*, fence *b*, and bed *a*, the parts being constructed and operated substantially as specified.

102,642. — ADJUSTABLE AWNING-FRAME.—Louis Yenne, New York, N. Y.

Claim.—The combination of shafts B E, bars *a*, roller D, pivoted braces F G having hooks and clasps *e f*, and the bevel-gear *b c*, all constructed and arranged as and for the purpose described.

102,643.—EVAPORATING APPARATUS.—Alanson Youngs, Berlin, Mich.

Claim.—An evaporating-pan or vessel, constructed, arranged, and operating substantially in the manner and for the purpose herein described and represented.

102,644.—SUBSTITUTE FOR JAM-NUT.—Theodore B. Young, Louisville, Ky.

Claim.—The revolving steel pin C, in combination with the nut B and bolt D, when arranged, constructed, and operated in the manner and for the purpose set forth.

102,645.—SCREW-PROPELLER.—Charles Arlan and Charles Gautschi, New York, N. Y.

Claim.—The spirally-arranged flanges *b b*, constructed to form a hollow, *c*, around the outer edge of the spiral plate B, essentially as shown and described.

102,646.—STOVE-BLACKING BOX.—William W. Armington, New Haven, Conn., assignor to himself, Stephen L. Usher, and Fred. A. Welton, same place.

Claim.—The pan A, provided with a cover C, having combined with, or arranged thereon, a grater D, substantially in the manner and for the purpose specified.

102,647, antedated April 25, 1870.—WELL-TUBE.—Isaac Ayres, Elkhart, Ind., and David C. Payne, Delavan, Wis.

Claim.—The combination and arrangement of the slotted pipe A with wires *a a* and ring *b*, point B, shield C, strainer *d*, and coupling D, all constructed as described, substantially as and for the purposes herein set forth.

102,648.—Drying Guano. — Edwin Pugh Baugh, Philadelphia, Pa.

Claim.—1. A series of grated casings arranged upon and extending above the surface of a bed or receptacle for guano or other material, and communicating with flues for passage of heated gases, substantially as described.

2. Mineral guano treated by the direct application of heated gases, as a new product.

102,649.—Clapboard-Gauge.—Joab S. Biddlecom, Macedon, N. Y.

Claim.—The stock A, with its spurs or blades *b*, in combination with the gauge-rest C, and sliding spurs or blades *a*, constructed, arranged, and operated substantially as set forth.

102,650, antedated April 25, 1870.—Liquid-Meter.—Nathaniel L. Blanchard, Spuyten Duyvil, N. Y.

Claim.—1. The combination, with a tilting or rocking-measure, of a pendent diaphragm, provided with a bulb or hollow chamber, *c*, arranged and operating to displace a portion of the liquid, so as to cause the measure to be tilted by the greater weight of liquid on the opposite side of the tilting axis of the measure to that occupied by said diaphragm, substantially as specified.

2. The arrangement, with relation to the tilting-measure and its pendent diaphragm, constructed as described, of valves operating by their own gravity, in the manner shown and described, for the purpose set forth.

3. The combination and arrangement of the tilting measure A, the pendent diaphragm E, the rocking inlets and outlets B C, with the valve-boxes G I, and valves H and L L′ therein, and the apertures and branches *e e′*, *g g′*, *f f′*, *h h′*, *k k′*, and *i*, substantially as shown and described.

102,651. — Hay-Carrier. — Columbus S. Boothby, Saco, Me.

Claim.—The arrangement of the line *a*, having the bar A, in connection with the fork, as shown in fig. 2 and the dog *c*, as described, to operate as set forth.

102,652. — Plow-Clevis. — Thomas E. C. Brinly, Louisville, Ky.

Claim.—1. The construction of the clevis B, substantially in the manner shown and described.

2. The combination of the within described clevis B with the slot in the end of the plow-beam, substantially as and for the purpose specified.

102,653.—Saw.—Henry Broomell and Albin W. Wilson, Christiana, Pa.

Claim.—1. The saw A and set-screw E, placed centrally in line with the mandrel, and operating as and for the purpose described.

2. The sliding cap G, with projecting finger H, arranged and operating substantially in the manner and for the purposes herein set forth.

3. The hard-rubber cushion or washer *b*, or an equivalent spring of any form or material, when used to operate against the pressure of the projecting finger H of the sliding cap G, substantially as and for the purposes herein set forth.

102,654. — Pyrometer. — Edward Brown, Philadelphia, Pa.

Claim.—1. The arrangement of the black-lead bar O within the metal-expansion and protecting tube N, and operating the pointer of the dial through the spring pin G, substantially as herein described and shown.

2. The combination of the black-lead bar O, porcelain tube L, the metal tube N, and spring pin G, arranged to operate substantially as and for the purpose herein described.

3. The arrangement of the screw W, or its equivalent, operating the frame B, as described, in combination with the pinion D, segment C, and spring pin G, for adjusting the pointer, substantially as herein set forth.

102,655. — Water-Elevator. — George C. Canfield, Mechanicsburg, Ohio.

Claim.—1. The arms *k k k k*, when attached to shaft *m*, and used in combination with lever *l*, gearing mechanism, cord *c*, weight W, and escapement device, substantially as shown and described, for the purpose specified.

2. The combination of trough T, hinged float *f*, pendulum-rod J, and escapement device, substantially as shown and described, for the purpose specified.

102,656, antedated March 17, 1870.—Slate-Frame Clamp.—James H. Coffin, Danielsville, Pa.

Claim.—The combination of the levers *b*, *c*, *d*, and *e*, spring *g*, levers *k m n*, spring *o*, and stationary and movable gauge-pieces *r s t u*, in the manner and for the purpose substantially as set forth.

102,657.—Carriage-Wheel Hub.—Almond F. Cooper, San Francisco, Cal.

Claim.—The axle-box B and its nut E, when constructed with grooves or cavities *g*, to allow of the expansion of the rubber, as set forth.

Also, the perforated packing-rings C D, operating substantially in the manner and for the purpose described.

Also, the perforated packing-rings C D, in combination with the grooved axle-box D and grooved nut D, as and for the purpose described.

102,658. — Sash-Balance.—William Damerel, Brooklyn, N. Y.

Claim.—1. The two-threaded semi-cylindrical blocks M, inclosing the removable roller or friction-surface, and forming, when closed, a perfect cylinder with a continued screw-thread, substantially as and for the purpose described.

2. In a pulley-block thus constructed, the flattened ends M M, whereby the block may be readily grasped and operated, substantially as and for the purpose described.

102,659, antedated April 22, 1870.—Staple-Machine.—John T. Darnell, Florence, N. J.

Claim.—1. The arrangement of the heads H and H′, on the shafts S and S′, the said heads being constructed as herein specified, and provided with barbing-tools T and T′, lugs L and L′, screws R R¹ R² R³, and adjusting-screws C and C′, so as to operate as and for the purpose set forth.

2. The within-described staple-machine, composed of the parts herein set forth, all combined and operating substantially as specified.

102,660.—Composition for and Mode of Ornamenting Wood.—Thomas Hale Davis, Philadelphia, Pa., assignor to Cheney Kilburn and Joel Hale Gates, same place.

Claim.—1. A size for coating wood, composed of glue and gum tragacanth, dissolved in water with coloring matter, as set forth.

2. The ornamenting of wood by preparing it with the above composition, and graining the prepared surface with oil-colors, as specified.

102,661.—Padlock. — James M. A. Dew, Chicago, Ill.

Claim.—1. A padlock case, consisting of the part A, cast complete, with a recess around the inner side of its rim, and the plate C set therein, and secured by riveting the edge of the rim down upon the plate all around, substantially as described.

2. The pin D, secured in place by being screwed into the ear of the case, and having a washer riveted upon its outer end, substantially as herein set forth.

102,662. — Process and Apparatus for using Liquid-Fuel for Producing Heat and Light.—Thomas S. Dickerson and Rodney M. Whipple, Chicago, Ill.

Claim.—1. The improved apparatus herein described, composed of a steam-boiler, superheater, gas-generator, and gas-holder, arranged and combined as described.

2. The combination of the generator and gas-holder, so as to form one compact vessel, as described.

3. The combination of the dome, generator, and gas-holder.

4. The combination of the pipe K with the dome L, for the purpose of supplying steam to aid in carrying off the gas or vapor, and for mixing with the same, as described.

5. The steam-pipe F, with its two branches, D and E, or their equivalents, so as to supply steam to the different parts of the apparatus, for the purpose described.

6. The introduction of superheated steam into the dome or top of the machine, so as to mix and combine with the gases or vapors from the oil, in any desired proportions, and thereby produce a new compound or gas, as described.

7. The process herein described, for burning petroleum and other vaporizable hydrocarbons, the same consisting in first vaporizing the gas-producing material by means of superheated steam, and then mixing with the gas or vapor superheated steam, substantially as described.

102,663.—Safety Derrick-Lamp. — Jonathan Dillen, Petroleum Centre, Pa.

Claim. — Making safety derrick-lamps of tenacious metal, when all the parts are constructed and arranged in the manner herein described and shown.

102,664.—Pump-Valve.—Joseph W. Douglas, Middletown, Conn., assignor to W. & B. Douglas, same place.

Claim.—The valves of a pump suspended by pins passing through holes in the flexible portion, whereby the advantages of a swinging joint are combined with the flexibility of the material, substantially as set forth.

102,665.—Seasoning Wood.—Richard A. Douglas, Philadelphia, Pa.

Claim.—1. The herein-described process of treating wood, that is to say, subjecting to the action of hot water, and then drying it by heated air, substantially as described.

2. The tank A, connected with the furnace, and having inlet-pipe B, and outlet-pipe D, arranged and operating substantially as set forth.

102,666.—Machine for Cutting Vegetables.—William R. Dunn, Alton, Ind.

Claim.—The combination with the casing E, provided with one or more vertical hoppers D D, of the shaft *f*, wheel B, knives A A *e*, and the adjustable bar *i*, all being arranged to operate together, substantially in the manner herein shown and described, and for the purpose set forth.

102,667, antedated April 29, 1870.—Sash-Holder.—William A. Eisenhower, Friedensburg, Pa.

Claim.—The combination of the elastic roller H, its yoke F, sliding in the sash, and adapted to a square recess, *j*, in the sash-frame, the handle *a* connected to the yoke, and by which the latter can be withdrawn from the recess, and the spring A, by which the yoke is forced into the recess, the whole being so constructed and arranged that, when the yoke and roller are in said recess, they can only be withdrawn by operating the said handle, and the sash is so securely fastened that it cannot be raised by the mere application of an upward pressure.

102,668.—Piano-Forte.—George Ely, New York, N. Y.

Claim.—1. The agraffe-bar J, provided with a lip underlapping the bottom edge of the tuning-blocks, in combination with the several bearing-points of the metal frame A, which press the agraffe-bar up against the tuning-block by the tension of the strings, substantially as described.

2. The transverse bar E, cast with the metal frame and forming a support for one edge of the sounding-board, substantially as set forth.

3. The method herein described of constructing and attaching the sounding-board by introducing the same in a curved state, caused by previous compression, and setting it straight by means of screws passing through the bars B E F and the edge of the hitch-pin plate H, all as set forth.

102,669.—Bottle-Stopper.—William Ely, New York, N. Y.

Claim.—The combination with the closing-plate B and its latch *f* of the segmental holding-strap A, united by a wire, *b*, and having cast with it in one piece the arms *c* and nose *g*, the whole substantially as and for the purpose described.

102,670.—Roughing-Roll.—David Eynon, Richmond, Va., assignor to Tredegar Company, same place.

Claim.—The three high rolls, constructed as set forth, with grooves A, B, and C, of the forms herein shown and described.

102,671.—Agricultural Boiler.—Francis Farquhar, Richmond, Ind.

Claim.—1. In an apparatus substantially as herein described, the perforated pan or false bottom B, arranged in the boiler A, in connection with the fire-box I, provided with flues C, as and for the purpose set forth.

2. The steamer C, pivoted levers E E, rollers F F, and track H, when constructed and operated substantially as described.

102,672. — Washing-Machine.—Benjamin F. Fellman, Sellersville, Pa.

Claim.—The tank A with its perforated rubbing-bed C and slotted rock-shaft H, in combination with the perforated rubber *b* secured in a fixed position to an arm *a* hung to the rock-shaft H, all substantially as described.

102,673. — Spring-Seat for Wagons. — Hickman E. Foster, Decatur, Ill., assignor to himself, D. J. Block, and J. T. Gates, same place.

Claim.—The combination of the springs B and G, when used lengthwise of the wagon, and with the springs B and G, the blocks C C′ and E, seat A, and hook F, forming a wooden spring seat for wheeled vehicles, when constructed substantially in the manner and for the purposes set forth.

102,674.—Lamp-Burner.—Samuel W. Fowler, Brooklyn, N. Y., assignor to Alfred C. Hodgman.

Claim.—1. In a lamp-burner, the combination with a wick-tube, provided with a semicircular or curvilinear top, of a cone, provided with a slot of uniform width, and of such depth as to present no obstacle to the free expansion of the flame, in the manner and producing the results substantially as herein specified.

2. In a lamp-burner, the combination with the cone, of the spring *a*, provided at one end with a lock-piece, *b*, arranged and operating substantially as and for the purpose herein specified.

3. The combination, in a lamp-burner, of a cone, H, constructed as described, a semicircular or curvilinear-top wick-tube, A′, a spring, *a*, stop *b*, lip *e′* and groove *f*, substantially as and for the purpose herein specified.

102,675.—Metallic Cartridge.—Richard J. Gatling, Hartford, Conn.

Claim.—The combination, in a cartridge-case formed from sheet-metal, of a solid rim, *c*, a central internal teat, *d*, and a mass of solder, *e*, and the anvil *d'*, the said anvil being secured by striking the metal of the teat *d* around the neck of the anvil, or by upsetting the anvil over the said teat, these features being combined in the manner hereinbefore specified, and for the purpose herein set forth.

102,676.—MATCH-SAFE.—George Geer, Meriden, Conn., assignor to Charles Parker, same place.

Claim.—In the construction of match-safes, forming the ears *a* upon one part and corresponding recesses *d* upon the other part, so that the two parts may be secured together by the said ears and recesses, substantially in the manner set forth.

102,677.—COMBINATION TOOL.—George W. Gregory, New York, N. Y.

Claim.—The implement herein described, composed of the hammer, chambered-handle, and tool-holder, when constructed and arranged substantially in the manner specified.

102,678.—SPRING SEAT.—Daniel Frederick Haass, Philadelphia, Pa., assignor to himself and Emilius Nicholas Scherr, Jr., same place.

Claim.—1. A spring seat, consisting of frames A and B, connected together by springs C, when the latter are attached directly to one of said frames, and to the other by links *h*, all substantially as set forth.

2. The said springs C, arranged at the sides of the frame, when the arms of adjacent springs are inclined in opposite directions, as set forth.

102,679. — COAL-SCUTTLE AND SIFTER.—William Hazlet and William H. Flanigan, Philadelphia, Pa.

Claim.—The combination of the slide I with the bottom *h*, having an opening, *h*, the said slide being arranged and operating in relation to the grate C, and being supported by the springs *i i*, attached to the rebated strips J J, substantially as described.

102,680, antedated February 2, 1870.—REFRIGERATOR.—William G. Holden, Jr., Covington, Ky.

Claim.—The combination and arrangement of the case A, constructed as described, pendent portable cans D *d d'*, and cooler E, provided with flange *e* and pipe F G, substantially as set forth.

102,681.—VENTILATOR FOR MINES.—Jenkin B. Jones, Laurel Run, Pa.

Claim.—Providing the main shaft of a mine with doors, arranged to be operated substantially as and for the purposes described.

102,682.—BASE-BURNING STOVE.—William J. Keep, Troy, N. Y.

Claim.—In a stove using the downward draught, and having a fire-pot supplied with fuel from a magazine, contracting the lower end of said fire-pot, substantially as and for the purpose set forth.

Also, in a stove using the downward draught, the employment of a fire-pot having a contracted lower end, in combination with a suitable device for sustaining the coke, placed immediately beneath said fire-pot, substantially as shown and for the purpose described.

Also, in a stove using the downward draught, the admission of air to the base of a column of fuel by means of one or more annular flues, *l*, substantially as shown and for the purpose set forth.

Also, the employment of the annular flue *k* at the lower end of the fire-pot M, substantially as and for the purpose specified.

Also, in a stove using the downward draught, compelling the air for feeding the fire to pass between the magazine and smoke-flue (or combustion chamber) so that the heat radiated from the latter shall not pass into the former, substantially as shown and for the purpose described.

Also, in combination with the flue or flues *l*, the circular damper I', constructed and arranged to operate substantially as and for the purpose shown.

Also, the employment between the combustion-chamber and the ash-box of a partition containing suitable openings, which may be closed, when desired, by means of corresponding slides or valves, substantially as shown and for the purpose specified.

Also, the hereinbefore described ash-sifting device, consisting of the bars R, the rods S, and the partition O, provided with the openings *o*, substantially as set forth.

102,683.—COOKING-STOVE.—Edward Kirk, Sharon, Pa.

Claim.—1. The combination with the water-back C of the elevated reservoir E, surrounding and serving to heat the oven or hot closet F.

2. The opening *b*, and valve *c* in connection with the oven or hot closet F, substantially as and for the purpose herein described.

3. The perforated steam-pipe G, in connection with the reservoir E, substantially as and for the purpose herein set forth.

102,684. — SEEDING-MACHINE. — Hermann Koeller, Adams county, Ill.

Claim.—1. In a seed-planter, the curved bars H, constructed with the sockets *e* upon their rear ends, and connected with the axle, substantially as shown and described, and combined with the supporting-rods and driver's seats, as and for the purposes specified.

2. The seed-planter herein described, having markers K, metallic wheels A with concave peripheries, levers F and M, feeder O, valves *v*, seats C and D, scrapers E, and rods *g*, *h*, *i*, *k*, when constructed and arranged to operate substantially as and for the purpose specified.

102,685. — BOTTLE-STOPPER. — George W. Ladd and Frederick W. Copcutt, New York, N. Y.

Claim.—The stopper, consisting of a stem, B *b*, body A, rubber C, and plate D, when all these parts are arranged to operate as described.

102,686.—COMPOUND FOR TREATING RHEUMATISM.—William Landert and John Deggeller, Chicago, Ill.

Claim.—1. The combination or compounding of the ingredients which are named in the first division, or as constituting the "herb steam-bath" or "bathing-tea," in substantially the quantities described, it being for the purpose set forth.

2. The compounding or combining of the ingredients named in the second division as constituting the pills, in substantially the quantities specified, it being for the purpose set forth.

3. The compounding or combining of the ingredients named in the third division as constituting an ointment, in substantially the quantities specified, it being for the purpose set forth.

4. The compounding or combining of the ingredients named in the fourth division as constituting a liniment, in substantially the quantities specified, it being for the purpose set forth.

102,687. — PLOW. — William M. Lanham, Noblesville, Ind.

Claim.—In combination with the double plow A, connected by the whiffletree B, the curved rods E E, bar G and bar C, connected to the plows A A by the vertical swivel-bolts D D, all substantially as set forth.

102,688.—BARBER AND DENTAL CHAIR.—Michael Leidecker, Rochester, N. Y.

Claim.—The arrangement of the toothed block C, pawl-arm D, spring or springs K, toggle-arms E G, shaft H, and pedal I, when combined with the parts A B of the chair, in the manner described, and for the purpose specified.

102,689.—MANUFACTURE OF FERTILIZER AND OIL FROM FISH.—Orazio Lugo, Baltimore, Md.

Claim.—The boiling, steaming, or cooking of fish in acid or acid-salt solution, for the purpose and in the manner herein described.

102,690. — PIPE-TONGS.—Stephen Lynch, New York, N. Y.

Claim.—The box *c*, connected to the outer end of the handle D of a pair of pipe-tongs, and forming the guide for a slide-bit, *b*, substantially as herein shown and described.

102,691. — SHADE-HOLDER FOR LAMPS.—James W. Lyon, Brooklyn, N. Y., assignor to himself and John Fellows, same place.

Claim.—1. The fixed looped radial arms, formed of one piece of wire, in combination with the sliding arms, also of wire, substantially as described.

2. The sheet-metal central support, in combination with the looped radial arms, formed of wire, and sliding arms, also of wire, the whole put together substantially as described.

3. The combination with the sliding arms, the looped radial arms, riveted to a central support, substantially as described.

102,692.—LANTERN-GLOBE.—Israel C. Mayo, Gloucester, Mass., assignor to himself and John J. Currier, same place.

Claim.—The glass body part A, as made with the lenticular bull's-eyes, and with transparent connections thereto, as described.

102,693.—MACHINE FOR SPLITTING GRINDSTONES.—James McDermott, Cleveland, Ohio.

Claim.—The bar C, having the teeth on the end and set with diamonds as described, in combination with the mechanism consisting of the screws L L, shaft I with screws *i i*, gears K, shaft D', cluch *n*, pulleys G E H F, or their equivalent devices, substantially as and for the purpose set forth.

102,694. — SHOE-FASTENER. — Alendo McKenney, Portland, Me.

Claim.—A boot, having a spring or spring wire, *d*, inserted in its lapping edge *b*, substantially as and for the purpose set forth.

Also, the spring *d*, formed with the coil *e*, substantially as shown and described.

102,695.—ATTACHMENT OF POLE OR SHAFTS TO WHEELED VEHICLES. — James McMillin, Ripley, Ohio.

Claim.—1. The combination of the vertical shaft *b* and crank *n* with the bolts *e*, springs *i*, and pole *d*, provided with the cross-bar *c*, all constructed and arranged to operate substantially as described.

2. The combination of the spring arms *o* with the pole *d*, in the manner and for the purpose specified.

102,696.—SEAL-LOCK. — David A. McNair, Washington, D. C.

Claim.—1. A lock, having a chamber or receptacle for the insertion of a stamp or similar seal, said chamber being so arranged that it shall be securely closed by the closing of the door or lid to which the catch is attached, to prevent access to the seal, and having its sliding bolts so constructed and arranged in relation to the seal, that the movement of the bolt in unfastening the lock shall tear or otherwise cancel said seal, substantially as herein described.

2. The bolt H, having a series of spring catches, I, pivoted thereto, when constructed and arranged substantially as and for the purpose set forth.

3. The combination of the bolt H, having a series of spring catches I pivoted thereto, with loosely-rotating disks *e*, when constructed and arranged to operate substantially as and for the purpose set forth.

4. The combination of the catch *b* and the sliding locking-bolt C, pivoted with the spring jaws L, when constructed and arranged to operate substantially as and for the purpose set forth.

102,697.—TRANSMITTING POWER.—Albanus W. Morton, Morrisania, N. Y.

Claim.—1. The combination of a spiral-faced driving-clutch with a pair of loose and independent friction-disks, the one of which is made capable of longitudinal motion relatively to its axis, and is in free gear with the driving-clutch, substantially as specified.

2. The combination of the driving-clutch B, made spiral-faced on its opposite sides or faces, the two pairs of friction-disks C D and C' D', and half clutches *b b'*, for operation, in connection with suitable gearing, for keeping up motion to a secondary shaft, essentially as herein set forth.

102,698.—HYDRANT.—John Myers, Cincinnati, Ohio.

Claim.—1. The combination, substantially as described, of the inlet-cylinder A *a*, barrel D *d d'*, passage E, orifices F, vacuum-chamber K, perforated delivery-pipe L V, plunger M, seats *j k*, positively-closing valves N O, and automatically-closing valve G *g*, for the purposes set forth.

2. The arrangement and combination of the barrel D, with orifices F at its upper portion, the automatically-closing valve G *g*, springs H, and adjustable screw-threaded plug J, for the object explained.

102,699.—WELL-TUBE.—Simon Neff, Clymouth, Ind.

Claim.—The within-described well-tube, formed of a frame-work of rings *a a*, and stays *b b*, its point B connected with the coupling C, and having wrapped around said frame a piece, A, of sheet metal, slotted, all substantially as herein set forth.

102,700.—SASH-MARKER. — Governeur M. Nickason, Ellenville, N. Y.

Claim.—The arrangement of the shaft A, heads B B, markers C C, and adjusting-screws F, when constructed as herein shown and described.

102,701.—ROCKING AND RECLINING-CHAIR. Theodore J. Palmer, New York, N. Y.

Claim.—The combination of the elastic arms D D with the back A and base C of a chair, substantially as and for the purpose herein described.

102,702.—SOFA-BED.—Frederick C. Payne, New York, N. Y.

Claim.—1. The sliding jointed mattress or cushion C C', having end pieces D D', and folding legs *b b*, and the oblong frame A, having a receptacle, B, combined for operation, as and for the purpose herein described.

2. The combination, with the mattress C and frame A, of the rollers *a* and incline way *d*, as and for the purpose herein set forth.

102,703.—PISTON CONNECTION. — Hart F. Pease, Brooklyn, N. Y.

Claim.—The adjustment of the cylindrical half sockets B B' within the piston A by means of the set-screw *d*, as herein shown and described.

102,704.—SMITHS' BELLOWS. — George H. Peck, East Hamburg, N. Y.

Claim.—The smiths' bellows and its operating hand-lever F, and the intermediate levers B C, constructed, arranged, and operating substantially as and for the purpose hereinbefore set forth.

102,705.—WASHING-MACHINE.—Spencer B. Peugh, Salem, Ind.

Claim.—1. The combination with the rubbers B and B', of the fixed frame C and the swinging frame

L, between which the said rubbers vibrate horizontally, substantially as described.

2. In combination with the rubbers B and B', the links J, cross-bars T and T' on the shaft S, and the cams V on the shaft W, arranged to vibrate the rubbers, substantially as specified.

3. The combination, with the frame L, of the cranks M and M', shaft O, arm P, bent lever Q, and adjustable weight R, arranged to operate substantially as and for the purpose set forth.

4. The combination, with the rubbers B and B', of the rollers H and H', substantially as and for the purpose specified.

102,706.—GRADING-MACHINE.—James Preston, Atchison, Kansas.

Claim.—1. The arrangement and combination of the connecting-rod L with the lever N and arm I rigidly attached to the shovel D, by means of which the latter can be operated, in the manner as herein shown and described.

2. The combination of the shovel D and the slide E, substantially as herein shown and described.

102,707.—DIE FOR FORMING KING-BOLTS.—Franklin B. Prindle, Southington, Conn.

Claim.—1. The hereinbefore described dies C and G, for forming clip king-bolts, C being provided with the grooves E, F, and *f*, and G having the swell or protuberance H, as and for the purpose set forth.

2. The hereinbefore-described blank, for forming a clip king-bolt, fig. 1, provided with the ears *a* and *a*, and divided longitudinally from its upper end to said ears, substantially as shown, and for the purpose set forth.

102,708.—DIE FOR TRIMMING KING-BOLTS.—Franklin B. Prindle, Southington, Conn.

Claim.—The dies A and D, constructed and shaped as described and represented.

102,709. — HUB OF ROAD-CARRIAGES.—John Raddin, Lynn, Mass.

Claim.—In combination with the hub-body *a*, and its metal bushing *b*, the flanged collars *c d*, surrounded by rubber or other elastic rings or tubes *f*, when the flange of each collar covers the end of the adjacent ring or tube *f*, and the flanges of the opposite collars are connected by bolts, *g*, running through the body *a*, all substantially as described.

102,710.—SEWING-MACHINE.—George Rehfuss, Philadelphia, Pa., assignor to American Button-hole Over-seaming and Sewing-machine Company, Pa.

Claim.—1. The combination of a feed-bar, B, operating at one side of a needle-opening, *i'*, and an adjustable plate, G, which, when elevated, operates at the rear of said opening, substantially as described.

2. The combination of the adjustable plate or section G of the feed-bar with a spring-locking device, K.

3. The combination of a shuttle and a tension-spindle, so split at one end as to form elastic fingers, which extend through and bear against the sides of an opening in the shuttle-case, substantially as and for the purpose described.

102,711.—MACHINE FOR MAKING CHAIN-LINKS.—Henry Reynolds, Aurora, N. Y.

Claim.—In combination with a fixed "former" and a vertically-moving die-plate, that receives, holds, and carries up the blanks obliquely to the former, the horizontally-traversing bending-rolls, for bending and shaping said blanks into chain-links, substantially as described.

Also, the arrangement herein described, in relation to one another, of the oblique holding-groove, the cutters, the former, and the rolls, in virtue of which the ends of the bent-up link shall lap each other, so that the weld shall be on the round part of the rod, and not on the scarfed ends or surfaces, substantially as described.

102,712.—WASH-BOILER APPARATUS.—Jacob Ringle, Jersey City, N. J.

Claim.—In a wash-boiler of the ordinary construction, the arrangement of the plate C, with hooks *a b*, the plate B, and tubes *c d*, as shown and described, for the purpose set forth.

102,713.—SCHOOL-DESK.—Charles Hamilton Roberts, Geneva, Ohio.

Claim.—1. A folding desk-lid, provided on each side with a pin or pins, in combination with standards A A, furnished with grooves *a b* and *b d*, arranged as herein shown and described.

2. A school-desk, consisting of standards A A, desk D E, spring latch *e*, folding seat G H with lugs *h h*, all constructed and arranged to operate as described.

102,714.—WASHING-MACHINE.—W. T. C. Runnells, Searsport, Me.

Claim.—Attaching to the open or cage-roller flat tapes, by which, by the revolution of the rollers, the articles to be washed are held to the open roller, which is furnished with guards *c c*, as shown and described, in combination with tub *a*, with its corrugated end and slotted end pieces *d d*, adjusting-roller b^3, and crank *f*, arranged as described, for the purpose as set forth.

102,715.—COMPOUND FOR REFINING CIDER, WINE, &c.—Oliver Schaffer, Dayton, Ohio.

Claim.—The manufacture or preparation of a compound for clarifying cider, wine, and other liquors, of the ingredients, and in the proportions substantially as set forth.

101,716.—CASK FOR LAGER BEER.—John J. Schillinger, New York, N. Y.

Claim.—The door-way D, produced by means of the frame E, formed with a bung-hole, and having projections C on its outer surfaces, and forming, in connection with the cask A, casings or bearings for the door F, provided with suitable fastening devices, substantially as described.

102,717.—CLOTHES-DRIER.—Henry Schryver, Kingston, N. Y., assignor to himself and J. Deyo Chipp, same place.

Claim.—A clothes-rack, consisting of the rectangular frames A and C and side pieces B, when constructed, hinged, and pivoted, as herein described, and arranged to operate as set forth.

102,718.—TEA AND COFFEE-STRAINER.—Andrew B. Searles, Providence, R. I.

Claim.—A rim for strainers, the two folds running around the bottom thereof, substantially as described, and for the purposes specified.

102,719.—HOISTING-GEAR.—Henry F. Shaw, West Roxbury, Mass.

Claim.—The drums G and H mounted upon the same shaft, each being provided with an internal gear and sustaining half the load to be raised, when said drums are made to revolve in opposite directions by the action of a single spur-gear mounted upon an eccentric upon the actuating-shaft, substantially as described.

102,720.—HEEL-STIFFENER FOR BOOTS AND SHOES.—George V. Sheffield, Northbridge, Mass.

Claim.—A leather counter for boots and shoes, the rounded side of which is shaped by compression in a die, and the other planed off to remove the surplus stock, as shown and set forth.

102,721.—SHANK-PIECE FOR BOOTS AND SHOES.—George V. Sheffield, Northbridge, Mass.

Claim.—A leather shank-piece for boots and shoes, planed off on its upper side, and having its lower and rounded side shaped by compression in a die, substantially as shown and set forth.

102,722.—MACHINE FOR COVERING REEDS FOR HAT-TRIMMING.—George A. Shepard, Bethel, Conn.

Claim.—1. The combination of the revolving endless apron I, folding-gauge N, and revolving and pressing-cutters E and E', when the several parts are constructed and arranged to operate in the manner and for the purpose above described.

2. The spring *h* over shaft C', in combination with the revolving and pressing-cutter E' and cutter E, having recess *o* and groove *e*, all arranged to operate in the manner substantially as and for the purposes set forth.

102,723.—REVERSIBLE-LATCH.—William E. Sparks, New Haven, Conn., assignor to Sargent & Co., same place.

Claim.—The yoke G, pivoted to the latch-bolt B, so as to be turned to opposite sides, combined with the levers E F, constructed to be set in position on the fulcra *c* or *d*, as the case may be, for the purpose of reversing the action of the latch-bolt, substantially as set forth.

102,724.—RAILWAY-SWITCH.—William H. Staats, Crescent, N. Y.

Claim.—A railroad-switch, formed by the combination of the movable portions C C, connecting-rod E, box F, springs H H sliding-bar G, and guard-rails D D, the springs H H, having their bearings within the box F, all being arranged to operate together, as shown and described.

102,725. — APPARATUS FOR PRESERVING WOOD.—Francis A. Stevens, Chicago, Ill.

Claim.—1. The cylinders or shells A and B, when so arranged as to leave a water, steam, or air-space between them, substantially as and for the purposes specified.

2. The pipes *a b*, in combination with the cylinder B and a steam-generator, substantially as described.

3. The application of water, steam, or hot air to the apparatus for vaporizing oil or other substances for preserving wood, when interposed between the heat and the oil or other substance to be vaporized, substantially as set forth.

102,726. — HEATING-STOVE. — David L. Stiles, Rochester, N. Y.

Claim.—1. The combination and arrangement of the series of tubes B B B, chamber C, jacket D, interior cylinder E, with valve H, and the smoke-chamber G, the whole constituting the top of the stove and producing an indirect passage, as herein described.

2. The arrangement of the perforated plates K K and connecting-passage *k*, combined together as described, and operating in the manner and for the purpose specified.

102,727.—KNIFE-SHARPENER.—Septimus C. Stokes, Manchester, N. H.

Claim.—1. In combination with the plates B and C, the lever E, with projections *i*, arranged to operate substantially as and for the purposes herein set forth.

2. The combination of the handle A, plates B C, bars D, and lever E, all constructed as described, and arranged to operate substantially as and for the purposes herein set forth.

102,728.—LAMP-BURNER. — Alvin Taplin, Forestville, assignor to Bristol Brass and Clock Company, Bristol, Conn.

Claim.—The arrangement down within or between the wick-tubes *a a*, of the tube E, projecting below the tops of the side-openings *b* formed by and between said wick-tubes, substantially as described.

102,729.—HAY AND LIME ELEVATOR. — Abraham Thomas and George D. Thomas, St. Thomas, Pa.

Claim.—1. In combination with the lever K and arm *i*, the beveled bar M, and notch *k*, substantially as and for the purposes herein set forth.

2. In combination with the lever K, with its shoulder *n* and arm *i*, the hook L and pin *m*, substantially as and for the purposes herein set forth.

3. The combination of the beam B, with its arms E and I, and latch L, with the carriage A, with weighted lever K, arm *i*, opening D, beveled bar M, and pulley H, with bail *h*, all being constructed and operated substantially as set forth.

102,730.—COMBINED THREAD AND NEEDLE-CASE.—Theodore R. Timby, Saratoga, N. Y.

Claim.—The thread and needle-case, consisting of the box B, rigid frame B', inner chamber C, vertical spool-spindles F, and tray J, all arranged substantially as and for the purposes described.

102,731.—MACHINE FOR MAKING PLOWS.—James Uric, Evansville, Ind.

Claim.—The improved machine herein described for manufacturing plow-irons, consisting, essentially, of the trip-hammer L, anvil T, and die M, the die-beam D, the series of interchangeable dies for forming mold-boards, uprights, and shares, and the punching device, all constructed and operating substantially as described.

102,732. — COPY-BOOKS. — Philip F. Van Everen, Brooklyn, N. Y.

Claim. — The above-described supplementary cover E, provided with a blotter C, for writing-book, as shown in fig. 3, the same being constructed and used substantially as set forth.

102,733.—BOOK-COVER PROTECTOR.—Philip F. Van Everen, Brooklyn, N. Y.

Claim.—The above-described sectional cover, made in four parts, adjustable in relation to each other, substantially as set forth.

102,734, antedated March 16, 1870.—HAND STAMP-CANCELER.—Livingston B. Van Kleeck, New York, N. Y.

Claim.—The piercing-pins or tubes D, when attached to the stationary bed A of the stamp-canceler, and when fitted through the sliding bed C of the same, substantially as herein shown and described.

102,735.—REFIGERATOR.—George W. Walker, Malden, Mass.

Claim.—An ice-chest, made to open and close at the top, when provided with an ice-tray adapted to be slidden on ways from end to end of the chest, and removably arranged within the chest, and furnished with a drip-trough or troughs, and a conducting-pipe or pipes, substantially as and for the purpose specified.

102,736.—STRAW-CUTTER.— Columbus M. Weathers, Rocheport, Mo.

Claim.—1. In combination with the screw-shaft, the upright slide, with its horizontal bar and weight, as described.

2. In combination with the screw-shaft E, the rod L, when constructed to operate as described.

3. The combination and arrangement of the rod L, rod I, and screw-shaft E, when constructed to operate as described.

4. The combination and arrangement of the box D, slide F, strap H, weight G, and rod I, when constructed to operate as described.

102,737.—LAVATORY APPARATUS.—Darius Wellington, Boston, Mass.

Claim.—In combination with a supply-cock,

opening into the bowl, and with a drain-pipe, into which the waste water flows from the bowl, a water-receiving bowl, set in a basin and arranged to overflow at its rim into the same, the overflowing water being discharged from the bottom of the basin into the drain-pipe, all substantially as described.

102,738.—WATER-CLOSET BOWL.—Darius Wellington, Boston, Mass.

Claim.—In combination with the bowl *b*, the surrounding water-chamber *f*, into which the water-supply-pipe *h* opens, and from which the water overflows into the bowl, substantially as described.

Also, in combination with the above, the orifice *l*, leading from the chamber, and discharging water into the bowl, substantially as described.

102,739.—LUBRICATOR FOR LOOSE PULLEYS.—Isaac P. Wendell and Stephen P. M. Tasker, Philadelphia, Pa.

Claim.—The tube C, constructed with a bisected oil-chamber, D D′ and having a packing, E, in its inner end, and combined with the hub B, with or without the screw-plug A, the tube being adjustable to the shaft by means of the central screw G, the whole being constructed and arranged substantially as described.

102,740.—MANUFACTURE OF WROUGHT IRON FROM ORE, CINDER, OR SLAG.—James Davenport Whelpley and Jacob Jones Storer, Boston, Mass.

Claim.—1. The use of cast or pig-iron as an auxiliary to the obtaining of wrought iron from a mixture of ore, cinder, or slag and carbon, by the process and manipulation, and for the purpose and in the manner substantially as described.

2. The combination of the process herein described, with the form of furnace and process described in our patent No. 53,208, dated March 13, 1866, reissue No. 3,857, dated March 1, 1870, and patent No. 101,067, dated March 22, 1870.

3. The use of a furnace-hearth composed of cinder or oxide of iron, in combination with the process of reviving iron from ore, cinder, or slag, prepared and manipulated substantially as described.

4. The process herein described for obtaining wrought iron, the same consisting in the treatment of a mixture of either ore, cinder, or slag and carbon with cast-iron, substantially as set forth.

102,741.—AUTOMATIC GATE.—Samuel Whitaker, Bel Air, Md.

Claim.—1. The hinged loops H H, provided with rigid arms *z z*, in combination with the gate A, provided with vertical pin C, at its inner lower corner, substantially as specified.

2. In combination with the gate A, provided with crank B, the hinged elongated loops H, cords *a a b b*, and loops D D, provided with the pendent weighted arms *c c*, substantially as shown and described.

102,742.—DRIER.—George W. White, Malden, and Lewis E. Wentworth, Melrose, Mass.

Claim.—In a drying apparatus connected with a furnace or source of hot-air supply, a series of close-bottomed drawers or trays, through any one or more of which currents of hot air may be established or cut off, by a system of dampers arranged substantially as described.

102,743.—PUMP.—F. C. Wilson, Watkins, N. Y.

Claim.—The combination of the detachable suspending-hooks *a*, spiral spring C, and piston-rod B, of a pump, arranged substantially as and for the purposes set forth.

102,744.—HAY-RAKE AND LOADER.—George A. Wing, Albany, N. Y.

Claim.—1. The combination of sleeve-coupling N, cam-loop M, operating-lever K, and bent-lever G with rollers D′ and D, and endless belt or apron L, substantially as herein shown and set forth.

2. The combination and arrangement of basket R and rake-teeth S with rake-head T, substantially as herein shown and specified.

3. The combination and arrangement of sleeve-coupling N, cam-loop M, operating-lever K, bent-lever G, rollers D′ and D, and endless belt L, with basket R, rake-teeth S, and rake-head T, substantially as and for the purpose herein specified.

102,745.—APPARATUS FOR DISTILLING SPIRITS.—Francis M. Young, Nashville, Tenn.

Claim.—1. The combination of the purifying-chamber *b*, with the inlet and discharge-valves *j k*, for the purpose set forth.

2. The combination and arrangement of the doubler B, and purifying-chamber *b*, when the latter is provided with chambers *a a*, and the valves *j k*, substantially as and for the purpose set forth.

3. The valves *j k*, provided with angular-faced valve-rods *k k*, moving through angular perforations in the standards *n*, and coupled in the manner and for the purpose set forth.

102,746.—UMBRELLA.—Solomon W. Young, Providence, R, I.

Claim.—The improvement in umbrellas herein described, which consists in the combination of the thimble E, tension-spring F, and extension bows D, with a suitable frame-work and cover, for the purposes specified.

102,747.—PROPELLING-WHEEL.—A. C. Loud, San Francisco, Cal.

Claim.—The propelling-wheel herein described, consisting of two disks or wheels, B B′, secured in an oppositely-inclined position upon a shaft, A, so that they intersect each other along a common diametrical line, *a*, substantially as described and for the purpose specified.

REISSUES.

3,945.—CULTIVATOR.—A. R. Blood, Alexander Hathaway, and V. R. Beach, Independence, Iowa.—Patent No. 79,304, dated June 30, 1868.

Claim.—1. The levers J J, strips *a a*, bar L, and pivoted frame I, when all are arranged and operating substantially in the manner and for the purposes set forth.

2. The set-screw H, seed-slide *b′*, levers J J, strips *a a*, bar L, and pivoted frame I, all combined and arranged as and for the purpose described.

3. The arrangement within the slotted bar F of the shank K, provided with tooth G, when constructed as described, and the upper end of the shank, provided with two or more holes *g g*, and held by a wooden pin passing through either of said holes, and both ends of said pin resting upon the top of the bar F, substantially as and for the purposes herein set forth.

4. The combination and arrangement of the frame A, seed-box E, with rod *j*, and mechanism for operating the same, seed-slide *b′*, set-screw H, levers J J, strips *a a*, bar L, frame I, cultivator-bars F F, shanks K K, and teeth G G, all constructed as described, and operating substantially in the manner and for the purposes herein set forth.

3,946.—BREECH-LOADING FIRE-ARMS.—William N. Ely, Stratford, Conn., trustee and assignee of John Cloves Symmes.—Patent No. 22,094, dated November 16, 1858.

Claim.—1. The elastic flexible lip, substantially as described, when applied to checking the escape of gas from the breech of a gun.

2. The backward and downward-swinging breech, constructed and combined with a percussioning or transmission means for exploding the cartridge, substantially as shown, when arranged to operate substantially in a line with the bore of the barrel, as set forth.

3. The backward and downward-swinging breech, having a percussioning for exploding the cartridge passing through it, substantially as shown, in combination with the hammer, when arranged to operate thereon, substantially in the manner described.

4. In combination with the barrel of a fire-arm, an unchambered breech-piece, hinged at its forward end, and swinging away from the chamber of the barrel to open it, and toward such chamber to close it, and cover the cartridge, when provided with an elongated hinge-pin hole, or its equivalent, as and for the purposes substantially as described.

3,947.—MOWING-MACHINE.—John P. Greeley, Boston, and Levi W. Buxton, Lynn, for themselves and Thomas H. Dodge, assignee of one-third interest, Worcester, Mass.—Patent No. 39,288, dated July 21, 1863.

Claim.—1. The arrangement, with the frame which supports the shafts or draft device, of a hinged finger-beam, and forwardly-projecting narrow vibrating frame for supporting the hinged finger-beam, substantially as described.

2. The combination with a hinged vibrating frame and hinged finger-beam, of a bell-crank for operating the cutter-bar, for the purposes stated.

3. The combination, with a vibrating frame, in a mowing-machine, of a hanger-piece, hinged finger-beam, and intermediate hinged cramping and elevating piece.

4. The combination, with the vibrating frame, hinged finger-beam, and windlass or wheel of the elevating cord and guide-pulley, substantially as described.

5. The arrangement between the bell-crank, which is supported upon the vibrating frame, and the cutter-bar, which is supported upon the hinged finger-beam, of an intermediate link or hinged connecting piece, for the purposes stated.

6. The combination with a vibrating frame upon which is arranged the bell-crank, a hinged finger-beam and a hinged cramping and elevating piece, of an elevating lever and chain.

7. The hinged cramping and elevating piece H, substantially as and for the purposes set forth.

3,948.—ORE-CRUSHER.—John Hamilton, George W. Hamilton, and Joseph Hamilton, for themselves, and Joseph Hamilton, assignee of L. E. Hanson, Wheeling, West Va.—Patent No. 90,532, dated May 25, 1869.

Claim.—1. The combination of the detachable rims of chilled or hardened iron of the grinding-wheels with the detachable floor or track of the hopper, substantially as and for the purpose described.

2. The arrangement herein described of the arms I, secured to the upright shaft, the braces K K, extending out beyond the wheels, the rods L L on the axle G, and the detachable sleeves H H, for keeping the wheels in place, all constructed and operated substantially in the manner set forth.

3,949.—EXTENSION-TABLE.—Charles Philipp Lenz, Poughkeepsie, N. Y.—Patent No. 94,617, dated September 7, 1869.

Claim.—1. The combination of the rails A A, metallic groove-pieces B B, and tongues C, with a sliding extension frame and removable leaves, all the said parts being arranged with respect to each other so that room is formed in the table for storing away the extension leaves, as set forth.

2. The combination of the hooks G, with corresponding sockets on the edge of the leaves, as and for the purpose described.

3,950.—STEAM GAS-GENERATOR.—Hiram S. Maxim, New York, N. Y.—Patent No 71,490, dated November 26, 1867.

Claim.—1. A head-light or front lamp for locomotive-engines, in which the flame or light is produced from vapor of volatile hydrocarbon fluids, when generated by the heat of the steam drawn from the boiler and applied to the apparatus for that purpose, substantially as described.

2. Superheating the gas by the steam in its passage from the generator to the burner, substantially as described.

3. Controlling the flow of the steam to or through the generator and the production of the gas, by the pressure of the gas so generated, in the manner and by the means substantially as described.

4. In combination with a steam gas-generating apparatus for locomotive head-lights, the telescope-joint connection, or its equivalent, in the steam-pipe between the apparatus and the steam-boiler, in the manner and for the purpose substantially as described.

5. The wire-gauze screen, or its equivalent, in the steam-passage of the apparatus, constructed and operating in the manner and for the purpose substantially as described.

6. The combination of the steam-jacket with the hydrocarbon gas-generator, substantially as described.

3,951.—Division 1.—BREECH-LOADING FIRE-ARM.—Benjamin S. Roberts, United States Army.—Patent No. 36,531, dated September 23, 1862; reissue 2,067, dated September 5, 1865.

Claim.—A tapering chamber or cartridge-seat, in breech loading fire-arms, when combined with a suitably-constructed and operating breech-piece for closing and opening the breech, and a device for extracting or starting the cartridge-case from the barrel that is operated by the movement of the breech-piece made in opening the breech, substantially as and for the purposes specified.

3,952.—Division 2.—BREECH-LOADING FIRE-ARM.—Benjamin S. Roberts, United States Army.—Patent No. 36,531, dated September 23, 1862; reissue 2,067, dated September 5, 1865.

Claim.—The breech and lever breech-piece A, with its sliding plug B, when arranged and located, in relation to each other, in a breech-loading fire-arm, as herein described, or in any equivalent manner, so that a hook or tooth, or its equivalent, formed on one end of the lever breech-piece, shall, while the latter is moving in the act of opening the breech, engage with the cartridge-case and remove or start it from its seat in the barrel, substantially as described.

3,953.—BREECH-LOADING FIRE-ARM.—Benjamin S. Roberts, United States Army.—Patent No. 36,531, dated September 23, 1862; reissue 2,067, dated September 5, 1865.

Claim.—The combination and arrangement of the within-described parts, or their equivalents, by means of which the swinging breech-plug, consisting of the lever B and sliding breech-plug C, in opening and closing the breech, shall have the combined rotary and right-line motion, as above described, permitting it, while swinging on its axis, to close down on a recoil-shoulder that is perpendicular, or nearly so, to the axis of the bore of the barrel, and fill the space between such shoulder and the barrel of the gun, substantially as specified.

3,954.—RAILWAY CAR-WHEEL.—John K. Sax and George W. Kear, Kingston, Pa. Patent No. 88,743, dated April 6, 1869.

Claim.—1. A wheel, having a cast-iron body welded to a rolled or hammered cast-steel band, tire, reinforce, or tread, substantially in the manner and for the purposes set forth.

2. A wrought-iron ring, tube, or reinforce welded in and to a cast-iron hub to receive the axle, sub-

stantially in the manner and for the purposes set forth.

3,955.—Division A.—HARVESTER.—John F. Seiberling, Akron, Ohio, assignee of George Esterly.—Patent No. 23,666, dated April 19, 1859.

Claim.—1. The combination, with the bent or crooked arm, which is attached to, supports, and carries the head of the rake-teeth in an automatic-raking harvester, of a short downwardly-projecting arm, *p*, provided with a roll, 6, and a stationary projecting rib, 9, for holding the rake to the platform while the cut stalks of grain are being moved therefrom, to form a gavel.

2. The combination, with a grain-platform, adjustable independently of the finger-beam, of an adjustable automatic rake, substantially as and for the purposes set forth.

3. The combination, with the bent arm G A, arranged in respect to journals 2 2, as described, of a double-hinged connection-piece, *f*, for operating the same, and arranged in respect to the main driving-wheel, substantially as and for the purposes set forth.

4. The combination, with the spindle or arbor which supports the rake, and by which it is moved back and forth over the platform, of an adjustable socket or bearing-piece, substantially as and for the purposes set forth.

5. The combination, with the bent or crooked arm which supports the rake-head and teeth in an automatic-raking harvester, of a short projecting guide-arm, *p*, a horizontally-projecting rib 9, for holding the rake to its work as it sweeps over the platform to remove the cut stalks of grain therefrom, and a separate cam-way for guiding the rake-arm, when the rake is being returned to repeat the raking operation.

6. The combination, with the hinged tubular bearing-piece H, of the slotted pieces 4 4, and adjusting-screws 5 5, for the purposes stated.

7. The combination, with the rake-head guiding arm, of two friction-rolls, arranged in relation to each other, substantially as shown and described.

8. The combination, with the rake-head supporting arm, of a spur or rod, *e*, and connection *f*, substantially as and for the purposes set forth.

9. The combination and relative arrangement of the rake-head arm and its spur, with the arm G A, connection *f*, and crank, clutch, and lever devices, as and for the purposes shown and described.

10. The combination, with the quadrant-shaped platform, of an automatic rake and an adjustable guard-finger, substantially as described.

3,956.—Division B.—HARVESTER.—John F. Seiberling, Akron, Ohio, assignee of George Esterly.—Patent No. 23,666, dated April 19, 1859.

Claim.—1. The peculiarly-constructed main frame A, composed of the pieces B B', C C', D, and *a a'*, substantially as described.

2. The combination with the main frame A, constructed as described, of the hinged draft-frame H, substantially as described.

3. The combination and relative arrangement with the main frame A, constructed as described, of the hinged draft-frame H, drivers' seat F', foot-lever K, and links *f* and *g*, substantially as described.

3,957.—Division C.—HARVESTER.—John F. Seiberling, Akron, Ohio, assignee of George Esterly. — Patent No. 23,666, dated April 19, 1859.

Claim.—1. An adjustable guard, or separating-finger, supported at one end only, and arranged to vibrate over the platform in a circular horizontal path, substantially as set forth.

2. A single bar or rod supported by and capable of being turned upon a horizontal axis or journal, arranged over or nearly over the inner front corner of the platform for holding the grain-separating finger.

3. A rod or bar for supporting the grain-separating finger at one end only, which can be turned upon a horizontal axis or journal to adjust the grain-supporting finger at different heights above the platform to suit the different heights of grain to be cut.

3,958. — HARVESTER. — Richard Mortimer Williams, Rockville, Md. — Patent No. 95,864, dated October 12, 1869.

Claim.—1. The main frame, constructed substantially as set forth, of two fixed horizontal rings, arranged parallel to each other, with a space between them for a gear-wheel, and connected at their centers only.

2. The combination of the main frame, the fixed gathering-rake, the stop-rake, and the connecting-frame or perch on which the driver is mounted, all constructed for joint operation, substantially as set forth.

3. The combination of the fixed gear *s*, the rotating crown-wheel, and the gearing for driving the cutters, carried by the crown-wheel, but rotated from the fixed gear *s*, all these parts being constructed to operate in combination, as hereinbefore set forth.

4. The rotating reciprocating cutting apparatus, operating substantially in the manner described, so that it shall rotate around the main frame, and thus cut a swath wider than the length of the cutter, as set forth.

5. The combination of the reciprocating rotating cutting apparatus, and the platform revolving around the main frame with the cutting apparatus, as hereinbefore set forth.

6. The combination of the fixed gear *s*, the revolving crown-wheel, the cutting apparatus, and the coupling-arms connected with the revolving crown-wheel by a frangible connection, such as a wooden pin or its equivalent, as hereinbefore set forth, to prevent injury to the gearing.

7. The combination of the reciprocating rotating cutters with the fixed gathering-rake on the grain-side of the main frame, these parts being constructed to operate in combination, substantially as set forth.

8. The combination, as set forth, of the reciprocating rotating cutters, the gathering-rake on the grain side of the machine, and the discharging-rake on the stubble-side thereof.

9. The combination of the reciprocating rotating cutters, the rotating platform, and the discharge-rake, operated by the driver from his seat, these parts being constructed to operate in combination, substantially as set forth.

3,959.—MANUFACTURE OF YEAST FOR DISTILLERS.—Joseph Wolff, Cincinnati, Ohio. Patent No. 99,615, dated February 8, 1870.

Claim.—The process for making distillers' yeast, substantially as herein shown and described.

3,960.—HORSE HAY-RAKE.—Alzirus Brown, Worcester, Mass., assignee, by mesne assignments, of Mathias Raezer.—Patent No. 16,294, dated November 29, 1859.

Claim.—1. The combination, in a two-wheeled horse hay-rake, with a series of curved wire teeth, hinged or connected at their forward upper ends by yielding joints, of a series of independent self-adjusting guides, upon which are arranged yielding springs, substantially as set forth.

2. The arrangement, in a two-wheeled horse hay-rake, of a series of curved gathering-teeth, H, and separate detachable eye-bolts *b*, with a gained or grooved rake-head, F, whereby either one of the teeth can be easily disconnected or connected with the head by partially unscrewing the nut of the eye-bolt, substantially as described.

3. The arrangement, with the rake-head F and slide-bar L, located upon the platform A, and provided with cog-teeth, of a hand-lever, M, provided with cog-teeth, hinged connecting piece *n*, foot-lever O, provided with projections 9 and 12, foot-pad 11, and spring 10, said parts being arranged, in relation to each other, substantially as described.

4. The combination, with the rake-head F, teeth H, guides *d*, and springs *s*, of cross-spring bar I, with its depressing-springs, substantially as described.

3,961. — CONSTRUCTION OF SEWING-MACHINE COVER.—John Johnson, Hartford, Conn.—Patent No. 72,739, dated Decem. 31, 1867.

Claim.—As an article of manufacture, a paneled sewing-machine case, substantially as described, and made in distinct parts, to store or pack for transportation.

3,962.—BRONZING AND GILDING.—John L. Duffee, for himself, and John H. Johnson, assignee of one-third interest, Washington, D. C.—Patent No. 102,198, dated April 19, 1870.

Claim.—1. In a gilding compound having for its base any bronzing or gilding powder, the use of alcohol, ether, and naphtha, and one or more adhesive polishing-gums, for the purpose and applied as herein described.

2. The liquid solution, compounded as herein described, and used with any metallic bronzing or gilding powders.

3. In a liquid guilding compound, prepared and used as described, producing different shades or tints by the admixture of different colors of metallic powders, as herein described.

4. The liquid bronze or gilding compound herein described, as a new article of manufacture.

DESIGNS.

4,002.—GLASS COLUMN FOR COACH-LAMPS. Thomas Boudren, Bridgeport, Conn.

Claim.—The design for a glass column or pillar for a coach-lamp, of the form and shape substantially as described and represented.

4,003.—STOCKING FABRIC.—Thomas Dolan, Philadelphia, Pa.

Claim.—1. The within-described design for a stocking fabric, the said design consisting of a series of parallel stripes, partly straight and partly waved or zigzagged, substantially as set forth.

2. The design composed of the partly zigzagged, or waved, and partly straight stripes A, and the ribs *a a*.

4,004.—BRAND.—Max Hoffheimer, Cincinnati, Ohio.

Claim.—The design for a brand or label for barrels, substantially as shown and set forth.

4,005.—TRADE-MARK.—Otto Kornemann and Julius Jungbluth, New York, N. Y.

Claim.—The above-described design, as a trade-mark, substantially as shown and specified.

4,006.—BURIAL CASKET.—Phillipp J. Marchal, Hartford, Conn.

Claim.—The general design for a burial casket, as set forth.

4,007.—FLOOR-CLOTH PATTERN.—James Paterson, Elizabeth, assignor to R. H. and B. C. Reeve, Camden, N. J.

Claim.—The design for a floor-cloth pattern, substantially as described, and as illustrated in and by the accompanying drawing.

4,008.—TYPE.—Richard Smith, Philadelphia, Pa., assignor to Mackellar, Smiths & Jordan, same place.

Claim.—The design for printing-type, as shown.

4,009.—CROSS-CUT SAW.—William G. Tuttle, Chelsea, Mich.

Claim.—The design for cross-cut saws, as shown and described.

4,010.—TRUNK-LOCK.—Cornelius Walsh, Newark, N. J.

Claim.—1. The conformation of the projecting front part A of the lock, substantially as specified.

2. The relative form of the projecting part A and marginal flange B, the part A forming an angular bevel with the flange B, and the latter having an outline of any desired form.

3. The conformation of the hasp, as specified.

EXTENSION.

WILLIAM F. BROOKS, of New York, N. Y.—Letters Patent No. 14,551, dated April 1, 1856.

"Improvement in Making Seamless Metal Tubes."

Claim.—The grooving or removing the corners of said rollers, so that a series of parallel projections or ribs will be formed upon the tube, the rollers relieved from undue strain, protected from choking, and the reduction of the tube and the withdrawal of the mandrel therefrom facilitated, substantially as herein set forth.

ISSUE OF MAY 10.

PATENTS.

102,748.—ELECTRO-DEPOSITION OF NICKEL. Isaac Adams, Jr., Boston, Mass.

Claim.—1. The combination of nickel to be used for anodes of a metal or metalloid, electro-negative to the nickle in the solution employed.

2. A nickel anode, combined with carbon, and cast in the required form.

102,749.—VAPOR-BURNER.—John W. Baker, Columbus, Ohio.

Claim.—1. The combination and arrangement of the tubes I and L, provided with their respective apertures *x* and *z*, with the perforated flange B, substantially as and for the uses and purposes herein shown and described.

2. The tubes I and L, provided, one with a vent, *z*, the other with a circular aperture, *x*, when both tubes and aperture are arranged and constructed in relation to each other and to the flange B, substantially as herein shown and described.

3. The perforted flange B, when used in the combination or relation herein shown and specified.

4. The vapor-burner, which, after the vapor is ignited, is self-sustaining, when constructed as herein shown and described.

5. The space between the upper surface of the disk D and the interior surface of the cone C, and one of the lateral vertical surfaces of the flange B, opposite the tube *x* or *z*, when but one of the tubes is used, said space being a heating-chamber.

102,750. — EARTH-CHAMBER VESSELS.—George G. Baldwin, Milford, Conn.

Claim.—The combination of the pivoted chute B with the chest A of an earth-closet, the said chest being, by a partition, C, divided into two compartments, *a* and *b*, as set forth.

102,751.—STOVE-PIPE ATTACHMENT.—Otis B. Bartlett and George E. Bartlett, Lewiston, Me.

Claim.—1. The vertical standard C, in combination with the band B, as described, for the purpose set forth.

2. The band B, standard C, and double hook *c*, when combined as described, for the purpose set forth.

102,752.—Pruning and Hedge-Shears.—Elijah K. Bigelow, Litchfield, Mich., assignor to himself and Peter Comstock, same place.

Claim.—1. The spring H, in connection with the pulleys E and F, the handles A G, and the cutting-blade *d*, constructed and arranged as described, and for the purpose set forth.

2. The pruning-shears described, consisting of the handles A G, the standard B, provided with the curved resisting blade C, the cutting-blade D pivoted to the standard at *b*, operated with the slot *a*, set-screw *d*, and the spring H, all constructed and arranged as described and for the purposes set forth.

102,753.—Adjustable Watch-Key.—John S. Birch, New York, N. Y.

Claim.—The improved watch-key, consisting of the case A, provided with opposite longitudinal slots, in which the stay-pin C slides, the same passing transversely through the slot in the spring-jaws B B, (riveted together at their inner ends, and made semicircular in cross-section,) all arranged as specified, whereby the pin supports the strain when the key is being used.

102,754.—Crimping-Attachment to Paper-Machine.—William Henry Bleasdale, Chagrin Falls, Ohio.

Claim.—The combination and arrangement of the ribbed bar E and ribbed roller F, with a paper-making machine, substantially as and for the purpose set forth.

102,755.—Bandaging and Boxing Cheese.—Joel Blood, Watertown, N. Y.

Claim.—A cheese-truss or bandage formed of paper, the ends of which are provided with fastening devices, substantially such as herein described, so as to admit of the bandage being applied to and removed from the cheese at pleasure, the said bandage serving as the sides of the box in which the cheese is packed after having been cured.

102,756.—Collar for Attaching Cow-bells.—Thomas H. Body, Kilbourn City, Wis.

Claim.—The cow-bell safe herein described, consisting of the semi-elliptical iron bows A A, transversely curved, and provided with flanches B B, perforated at *c* to receive the fastening-screw *c*, made to fit loosely therein, but secured by a tightly-fitting nut *d*, when constructed and arranged as and for the purposes specified.

102,757.—Steam Heating Apparatus.—Elijah M. Bosley, Baltimore, Md.

Claim.—1. The heating-apparatus herein described, consisting of the hollow cylinder A, made in sections, and provided with the pipes K K′ K″ and openings P, when constructed and arranged substantially as and for the purpose set forth.

2. In combination with the cylinder A, pipes K K′ K″ and openings P, the return-flue L, provided with the dampers U, when arranged as herein described, and for the purpose set forth.

3. The combination and arrangement of the cylinder A, pipes K K′ K″, openings P, return flues L, with dampers U with the upper and lower outlets T and M, when all constructed substantially as herein shown and described, and for the purpose set forth.

102,758.—Churn-Dasher.—Francis Bosom, Jonesville, Mich., assignor to himself and W. A. Wright, same place.

Claim.—A churn-dasher with the disk A, post B, hollow standard C, conical spiral spring E, and gathering dasher F, arranged and operating substantially as herein set forth.

102,759.—Mop-Wringer.—Charles Bradway, Maquoketa, Iowa.

Claim.—An improved mop-wringer, formed by the combination of the frame A *a*′, and rod B *b*′, bent to project horizontally over the mop-pail and to form an arm *b*′, to receive the mop, substantially as herein shown and described, and for the purpose set forth.

102,760.—Bleaching, Tanning, and Coloring Sponges.—Frederick Braun and Augustus Theodore Schmidt, Pittsburg, Pa.

Claim.—1. Bleaching or decolorising sponges, by treating them in a solution in water of permanganate of soda or potash and sulphate of soda, or of other alkalies, and subsequently washing them in a solution of hyposulphite of soda or a bath of liquid or gaseous sulphurous acid, substantially as hereinbefore described.

2. Tanning sponges, substantially in the manner as hereinbefore described.

3. Coloring sponges previously bleached, by means of any desired dye or coloring matter.

4. Coloring sponges previously bleached, or bleached and tanned, by dipping them in a solution of aqua ammonia, substantially as described.

5. Sponges bleached and tanned, substantially in the manner hereinbefore described, as a new article of manufacture.

6. Sponges bleached and colored, substantially as hereinbefore described, as a new article of manufacture.

102,761.—Bird-Trap.—Silas M. Brooks, Memphis, Tenn.

Claim.—The combination of the frames A B, springs C, netting G, catch-bar D, vibrating arm E, and either the treadle or not, all substantially as specified.

102,762.—Buck-board Spring.—Thomas H. Brown, Chicago, Ill.

Claim.—A spring carriage-box, E E′ E″, consisting of a buck-board, F, which is attached at its central part to the sides of the box, and which is shorter than the box, so that, when the buck-board springs down, the ends of the box will shut past the ends of the board, as specified.

102,763.—Hoisting-Apparatus.—William H. Brown, New York, N. Y.

Claim.—1. The construction, arrangement, and operation of the apparatus, substantially as described.

2. The cross retaining-lever in the spindle *f*, by which the coupling and uncoupling is effected through the agency of the purchase-fall.

3. The hold-back levers and hooks, by which the carriage is automatically detached by the load.

4. The hanging-iron and its connections, operating substantially in the manner described.

102,764.—Hulling-Machine.—Gustav Adolph Buchholz, Regent's Park, England.

Claim.—1. The rubber blocks *d*, combined with the wire panels and case, as and for the purpose described.

2. The vertically-adjustable rocking-frame B B, combined with a cylinder, C, having two or more rectangular openings, as and for the purpose described.

3. The vertically-adjustable rocking frame B B and cylinder C, combined with the drum D and longitudinal depressible shaft E.

102,765.—Culinary Boiler.—Isaac S. Bunnell, Carbondale, Pa.

Claim.—The vessels A A, set one upon the other, provided with the perforated false bottoms C, and connected with the steam-pipe B, substantially as herein shown and described.

102,766.—Pencil-Sharpener.—Hubert Burgess, Oakland, Cal.

Claim.—1. The beveled cylinder or block A, with its central hole *a*, substantially as and for the purpose above described.

2. In combination with the beveled cylinder or block A, perforated as described, the loosely revolving extensible clasp-spring *b*, for the purpose set forth.

102,767.—Heating-Stove.—Micajah Currier Burleigh, Somersworth, N. H.

Claim.—The arrangement of the ash-pit F in the chamber D, viz., so as to be suspended from or extended down from the top thereof, and have a clear space for the smoke to course through, between the bottom of the ash-pit and that of the chamber D, before escaping through the opening at the back of such chamber, as explained.

Also, the damper *t*, as provided with the hook or hooks *u*, as and for the purpose set forth.

Also, the slot *o*, as provided with the stop *p*, in combination with the grate, supported by means and having the notch *l*, as set forth.

Also, the grate, as made with the notch *l*, as and for use as explained.

Also, the arrangement of the deflectors M with the ash-pit D, and the ash-drawer L, and its supports X X.

Also, the damper-stem *v*, as made with the ear *x* and the notch *y*, arranged, with respect to the remainder of the stem, as set forth.

102,768.—Rotary Pump.—Richard Bush, Brooklyn, N. Y.

Claim.—1. The induction-pipe *m*, placed in a tangential position to the buckets at their inner ends, in combination with the centrifugal wheel of buckets, cases *f* and *g*, and water-way *h*, substantially as specified.

2. The circular flange *i* around the induction water-chamber *l*, the induction-pipe *m*, connected to said chamber, the centrifugal wheel of buckets, *b c*, and the case *f*, arranged substantially as and for the purpose specified.

3. The conical wheel *c* of a centrifugal pump, made as a curve or concave at the base of the buckets *b*, and with the outer edges of the buckets straight, in combination with the inclosing-case and water-ways, substantially as and for the purposes specified.

102,769.—Sofa-Bedstead.—James C. Butler, Albany, N. Y.

Claim.—In a sofa-bedstead, the combination of the reversible back B, and frame ends A, and hinged bolster-board E, with a spring mattress or cushion made in parts C, C′, and C″, all arranged and operating substantially in the manner and for the purposes herein shown.

102,770.—Wrench.—Benjamin F. Buxton, West Randolph, Vt.

Claim.—1. The thumb-latch or lever E and the removable spring *f*, in combination with the movable jaw D, when constructed and arranged as described.

2. The spring *f*, in combination with the thumb-latch E and jaw D, provided with the recessed slot *d*′ *d*″, when the parts are constructed and arranged as described.

102,771.—Fall-Leaf Table.—Walter Caldwell, Bryan, Ohio.

Claim.—The table-top, when composed of four or more sections, A B C D, in combination with the sill F, arms G, and legs H, when said arms are pivoted to said sill F, as described, and for the purpose set forth.

102,772.—Spool or Bobbin.—Alexander Carmichel, Westerly, R. I., assignor to himself, Jonathan P. Stillman, Ames Stillman, Albert Stillman, and Thomas V. Stillman, same place.

Claim.—A spool or bobbin, having a head of wood in two thicknesses with the grain crossed, and a hard casing of metal extending over the entire inner surface and over the periphery, so as to coat and strengthen the surfaces and bind the wood together, when the casing is formed and applied without injury to the wood, and in the manner and for the purposes herein set forth.

102,773.—Faucet.—Isaac Carey, Morristown, N. J.

Claim.—The cap G, with the cam H attached, in combination with the valve F, chamber D, shell A, induction and eduction-tubes C B, and the water-passages *c c*, all constructed and arranged substantially as and for the purpose set forth.

102,774.—Distilling Turpentine.—David Cashwell, Wilmington, N. C.

Claim.—1. The method herein described of controlling the heat of the contents of the still, by admitting a constant and sufficient supply of water therein during distillation, thereby keeping the turpentine, while in active ebullition, above the upper flame-flue D′, in the manner and for the purpose set forth.

2. The combination of the flame-flue D, damper *a*, upper flue D′, and damper *b*, with the still B, in the manner and for the purpose described.

3. The combination of the flue D′ and damper *b* with the air-openings *d d*, in the manner and for the purpose described.

4. The combination of the float *f*′ and graduated rod *f* with the still B, when the float is constructed to operate in the manner and for the purposes described.

102,775.—Bar for Horseshoe Blank.—Ebenezer Cate, Watertown, Mass.

Claim.—A bar of angle-iron, of the shape and grooved as herein described and represented in fig. 1 of the drawing, the same constituting a connected series of blanks, suitable for making horseshoes.

102,776, antedated November 10, 1869.—Harvester.—Charles Clapp, Trumansburg, N. Y., assignor to Erastus C. Gregg and Chauncey P. Gregg, same place.

Claim.—1. The self-locking device for moving the clutch-sleeve C, consisting of the slide *b* on the guide *c*, with its cam surfaces *f f*, in combination with the slotted lever *i*, with its self-locking cams *j j*, arranged and operating substantially as herein specified.

2. The grass-shield E, constructed as described, and provided with the bearings *z z* formed to receive and adjust the height of the roller R, when secured to and arranged in combination with the inner shoe G, substantially in the manner and for the purpose herein set forth.

102,777.—Heating-Stove.—Frederick G. Cochran, St. Louis, Mo.

Claim.—1. The retort E, having close door F and sliding bottom H, combined with stove A, having close door G, the pipes I I, and the fire-box B, all relatively arranged as and for the purpose described.

2. A retort, having a sliding bottom, combined with a stove, as and for the purpose specified.

102,778.—Pump.—Alvah E. Cruttenden, Canaseraga, N. Y.

Claim.—1. The combination of bar C, having oblong slot near one end, and spring bars B B, with the body A, adjusted together to form a yoke readily detachable, as set forth.

2. The ringed tongue D, body A, spring adjusting yoke B B C, and pricking device E E F, all combined and relatively constructed as set forth.

102,779.—Friction-Roller Bearing.—Charles M. Daboll, New London, Conn.

Claim.—My improved mode of fixing the friction-rollers in their box or bearing-frame B, and to their pivots when such rollers are in each box and frame, the same consisting in contracting the carrying-

frame C upon and relatively to the series of rollers A, so as to cause the pivots of one to enter their sockets in the other, as described.

Also, the improved manufacture of friction-roller bearing, consisting of the series of rollers A, their box B, and carrying-frame C, having the latter contracted so as to force the pivots of the next adjacent ends of the series of rollers into their sockets, as explained.

102,780.—BOLT FOR SAFES, &c.—George L. Damon, Portland, Me.

Claim.—The combination, in a safe-lock, of the attaching and detaching device, to wit, the pinion c, the sleeve d, and pivoted slotted lever e, as described.

102,781.—CHILL FOR CASTING TOOTHED-GEAR.—R. T. Davis, Canton, Ohio.

Claim.—1. The described chill-die, when detached, and removable into and out of molding-flasks at pleasure, and so constructed as to give the desired form to teeth or cogs upon and as parts of wheels, and at the same time to chill, harden, and render smooth the surfaces of such teeth or cogs, substantially as above set forth.

2. Chilled tooth-gear, when cast by the above-described process, substantially as set forth, as a new article of manufacture.

102,782.—REVOLVING FIRE-ARM.—Charles Felix De Dartein and Jules Edouard De Dartein, Strasbourg, France.

Claim.—1. In combination with the cylinder X, provided with helical lugs, the bolt V, having click B, and spring R, the hammer V', tumbler G, trigger I, and spring B, all arranged to operate substantially as shown and described.

2. The sliding bolt V, grooved to correspond with the helical lugs, and provided with a click, B, and spring, R, for the purpose of imparting intermittent rotary motion to the cylinder, as set forth.

102,783.—GATE.—Benjamin F. Dickey, Marshall township, Mich.

Claim.—1. The construction and arrangement of the shaft E, provided with the arms e F, so as to form the step for the lower hinge, and the upper hinge a, all as herein set forth.

2. In combination with the rocking-shafts E E, when provided and arranged as aforesaid, the lower crank-arms e' e', and rod R, for operating double gates, substantially as described.

102,784.—GAS-GENERATOR.—Ellis Doty, Janesville, Wis., assignor for one-half his right to Thor Judd.

Claim.—1. The feed-wheel 4, provided with the buckets n n and scraper p, in connection with the chamber q, pipe r, cup s, and pipe u, arranged substantially as and for the purpose set forth.

2. In a gas-generator, the evaporation-cloth W, supported upon rods V, substantially as and for the purpose set forth.

3. In combination with a gas-generator, the air-supply pipe Y, arranged to take air from the floor or below, as and for the purpose set forth.

4. In combination in a gas-generator, wherein is employed hydrocarbon oil and atmospheric air, a single case, A, partially filled with water, a meter-wheel, G, partially submerged in the same, an evaporating-surface permanently located above the meter-wheel and water, and an automatic feeding device, all arranged substantially as set forth.

5. In a gas-generator to be partially filled with water, as set forth, a feed-pipe, d, protruding below the surface of the same, for the purpose specified.

6. In a gas-generator partially filled with water, and provided with an evaporator-cloth, W, as described, a surface-cock, b, for the purpose specified.

7. In combination with the holder z, stand-pipe w, and valve C', a valve-seat, D', constructed with a sheet of rubber confined between metallic plates, as set forth.

8. The arrangement of the gas-generating cylinder A, and the supporting-frame E, provided with lugs C, or their equivalents, so that said cylinder may be partially rotated upon its axis, as and for the purpose set forth.

102,785.—FIRE-TONGS.—Samuel Douglass, Kalamazoo, Mich.

Claim.—The tongs described, consisting of the parts A A', when constructed and united as described, for the purpose set forth.

102,786.—METHOD OF MAKING TURNED SEWED SHOES.—William Duchemin, Boston, Mass., assignor to George B. Bigelow, trustee.

Claim.—The herein-described method of making a turned shoe having a sole which has been channeled or grooved upon its inner or flesh side, to wit, by attaching the upper to the sole in the manner herein described, so that the last can be removed before sewing, then removing the last, sewing, and turning, substantially as set forth.

102,787.—TENSION-DEVICE FOR THREAD IN SEWING-MACHINE.—George L. Du Laney, Mechanicsburg, Pa.

Claim.—1. The annularly-grooved rotating disk, in combination with a removable wire fillet, for the purpose of controlling the tension of the thread or threads, substantially as shown and described.

2. The combination with the above of thin flexible disks, when applied to the central rotating disk, for the purpose of producing a graduated, yet yielding, pressure through an adjusting nut and screw, substantially as described.

102,788.—MEDICAL COMPOUND.—Charles J. Eames, New York, N. Y.

Claim.—The medical compound, substantially as herein set forth, formed by the combination of carbolic acid with gums, as set forth.

102,789.—PLOW.—Andrew F. Eppes, Stony Creek, Va.

Claim.—The stock A, made with an offset, a, and bruce a', all in one piece, in combination with the root-cutter b or d, drill-point c, and cutter c', and adjustable hinged share i or h', in the manner and for the purpose described.

102,790.—RAZOR-STROP.—William D. Evans, Philadelphia, Pa.

Claim.—1. A four-sided razor-strop, having each side provided, respectively, with the compositions named, and in the proportions specified, to form successive surfaces on which the razor is to be drawn, for the purpose set forth.

2. The finishing-side G of a razor-strop, formed of a segmental cork, with the chord thereof on the wood, and the arc covered with leather, all as set forth.

3. The combination of a leather strip with a cork layer, puckered to produce a slight concavity and greater elasticity for use, upon the sides E and F of a razor-strop.

4. A bone formed on the side C of a razor-strop from pulverized bone-dust, glue, and flour, in the proportions specified.

5. A preparation made of crocus and lard ground together, in the proportions specified, to form a surface for the No. 2, or side E, of a razor-strop.

6. A preparation made of French imperial green and lard, in the proportions specified, to form a surface for the No. 4, or side G, of a razor-strop.

102,791.—WEIGHING-SCALE.—Thaddeus Fairbanks, St. Johnsbury, Vt.

Claim.—1. In weighing-scales, the series of beams and poises D^1 H^1 D^2 H^2, &c., combined and arranged relatively to each other, and to connections, as represented, so as to bring them into play in a greater or lesser number, according to the magnitude of the load, as herein specified.

2. The conspicuous stops A^1 A^2, &c., arranged as represented relatively to the series of beams D^1 D^2, &c., when the latter are connected and made to rise in succession as the weight is increased, all substantially as and for the purposes herein specified.

102,792.—WASHING-MACHINE.—John Farmer, Rockport, Ohio.

Claim.—The rollers B and C, constructed as described, and arranged in combination with the bar or roller E, gear-wheels b c, wheel D, and box A, to operate as and for the purpose set forth.

102,793.—BOLT FOR SAFES.—John Farrel, New York, N. Y.

Claim.—The making of conical and other bolts for safes and vaults, or the locks thereof, substantially as described, for the purposes specified.

102,794.—BRICK-MACHINE.—Charles W. Ferguson, Jackson, Tenn.

Claim.—1. The described arrangement of pug-mill D d, inclined plane R, scraper S, pressing-plunger I, and gate K, for the purposes set forth.

2. The combination of the plungers I and L, gate K, scraper S, and inclined plane R, for the purpose of feeding, compressing, and discharging the contents of the mold J, in the manner set forth.

3. In combination with the elements I, K, and L, the rack l, segment-wheel M, rock-shaft m, rods N N', and studs o p, for actuating the expelling-plunger.

102,795.—NEEDLE-SETTERS FOR SEWING-MACHINES.—James W. Field, Marysville, Ohio.

Claim.—The bar b, provided with the gauge c and spring d', the latter being furnished with the tooth d, in combination with the pincers a a', provided with the slot e' and slide e, all constructed and arranged to operate in the manner described.

102,796.—MANUFACTURE OF STEEL.—William Fields, Wilmington, Del.

Claim.—1. The employment of magnesia in about the quantity specified, when used for the purposes described.

2. The process of treating iron, during the puddling or boiling process, for the purpose of converting it into steel, with a chemical compound composed of the ingredients hereinbefore first named, in about the quantities specified and prepared, and used in the manner and form described, and for the purposes set forth, being the compound first used in the process.

3. The employment of silver in about the quantity specified, when used for the purposes aforesaid.

4. The employment of platinum in about the quantity specified, when used for the purposes set forth.

5. The employment of rhodium in about the quantity specified, when required for the above-named purposes.

6. The employment of wolfram in about the quantity described, when used for the purposes set forth.

7. The employment of iridium in about the quantity specified, for the purposes mentioned.

8. The employment of osmium in about the quantity specified, for the purposes mentioned.

9. The process of treating iron for the purpose of converting it into steel, during the puddling or boiling process, with a chemical compound composed of the ingredients hereinbefore last mentioned, in about the quantities specified, and prepared in the manner and form described, and for the purposes set forth, it being the compound used in the latter part of the process.

10. The whole process of treating iron for the purpose aforesaid, as hereinbefore fully set forth and described, and for the purposes mentioned.

102,797.—MANUFACTURE OF IRON.—William Fields, Wilmington, Del.

Claim.—1. The employment of magnesia, when used, substantially as and for the purposes herein-before set forth.

2. The employment of sal-ammoniac in the process of making iron.

3. The combination of English sal-soda, sal-ammoniac, magnesia, and litharge, when used in the process of treating iron, as hereinabove described, in about the quantities specified, and prepared in the manner and form mentioned, and for the purposes set forth.

4. The process of treating iron during the puddling or boiling process with a chemical compound composed of chromate of iron, wolfram, manganese, and pulverized charcoal in about the quantities specified, and prepared and used in the manner and form described, and for the purposes set forth.

5. The whole process of treating iron, for the purpose aforesaid, as hereinabove fully set forth and described, and for the purposes mentioned.

102,798.—MANUFACTURE OF ARTIFICIAL FLOWERS.—Octave Eugene Fillion, Paris, France.

Claim.—1. The herein-described process of making artificial flowers, foliage, &c., by immersing them, after they are colored, in collodion, as set forth.

2. The herein-described composition for treating artificial flowers and foliage.

102,799.—DUCK-CALL.—Elam Fisher, Detroit, Mich.

Claim.—The construction of a duck-call, with the parts A B C, made of the material, in the general shape, and for the purpose herein specified.

102,800.—TAG-FASTENER.—Henry Fisher, Canton, Ohio, assignor to himself and William H. Williams, same place.

Claim.—In a sheet-metal tag-fastening, A, provided with one or more pointed ends a, and with the hole b, at or near its center, the stiffening rib c, formed in it from end to end, as and for the purpose specified.

102,801.—GANG-PLOW.—Peter H. Flansburgh, Haywards, Cal.

Claim.—1. The plows D D' in a gang, moved up and down by the standards E E', forming racks, as shown, the segments F F', the levers G G', or an equivalent device, operating substantially as and for the purpose herein described.

2. The braces b b', attached to the plows at one end, and operating to throw the plows out of the ground in raising, substantially as herein described, in combination with the lifting device above claimed.

102,802.—BENCH-PIN.—Henry Gabelmann, Fort Scott, Kansas.

Claim.—The improved bench-pins A or C, provided with the diagonal grooves, and adapted for holding the boards at the ends when applied to the bench in a slot in the side thereof, or on a bar along the side, substantially in the manner described.

102,803.—COMB-CLEANER.—Charles Edward Gibbs, Boston, Mass.

Claim.—An implement for cleaning combs, composed of a series of metallic corrugated or undulating wires, cast into or soldered to a metallic yoke or other suitable frame, in the manner shown and set forth.

102,804.—STANCHION FOR CATTLE.—Walter C. Gifford, Jamestown, N. Y.

Claim.—1. The fixed stanchion A, movable stanchion C, pivoted bars D D' E, notched arm F, staple G, spring catch I, and pin K, all relatively constructed and arranged as and for the purpose described.

2. The combination of lever D D', notched lever F H, and staple G, as and for the purpose described.

102,805.—DEVICE FOR HANGING PICTURE-FRAMES, &c.—John N. Gillispie, Waltham, Mass.

Claim.—The hook A, with its thumb-screw b, in

combination with the clasp B, substantially as and for the purpose set forth.

102,806.—Refining and Ageing Liquors. Samuel H. Gilman, Galveston, Texas.

Claim.—1. Heating distilled or spirituous liquors to the temperature of boiling water, or thereabouts, and then allowing them gradually to cool, all for the purpose, and in the manner above set forth.

2. Cooling distilled spirituous liquors in a water-bath after having been heated to about the boiling-point of water, all in the manner and for the purpose above set forth.

3. The use of the apparatus above described, consisting of a closed vessel to contain the liquors to be acted upon, surrounded by a water-vessel which is open to the atmosphere, when used for the purpose above described.

4. The use of an arrangement of diaphragms in air-tight vessels, in which distilled liquors are to be heated, in the manner and for the purpose above set forth.

5. Expelling the air from distilled liquors which are about to be heated above their boiling-point, for the purpose and in the manner above described.

102,807.—Match-Box.—John H. Goodfellow and Martin Russell, Jr., Troy, N. Y.

Claim.—1. The combination of upper and lower compartments A and B, substantially as herein described and for the purpose specified.

2. The formation of the recess, notch or groove *c*, in the back part of the cover or lid C, substantially as herein shown and described and for the purpose set forth.

3. The formation of the cams *g* on the semi-cylindrical portion of the cover C, substantially as and for the purpose herein shown and set forth.

102,808.—Feeding-Mechanism for Sewing-Machine.—James E. Gowen, Stoneham, assignor to himself and Charles H. Wetherell, Boston, Mass.

Claim.—The feeding-ring A, and its supporter B, arranged and combined with mechanism, substantially as described, for imparting to both vertical movements, as explained, during each period of stoppage of the rotary motion of the ring, such mechanism being the lever G, provided with the cam A, and the roller *e*, carried by the arm *f*, projecting from the shuttle-driver.

102,809.—Bureau.—Georg S. Graf, Pittsburg, Pa.

Claim.—The combination of bureaus, or similar furniture, with the sliding table A A′, with the pivoted hinges B and the brace C, arranged and operating as shown and described.

102,810.—Padlock.—Henry F. Haack, New York, N. Y.

Claim.—A padlock having a locking-dog, C, pivoted centrally, and arranged to lock into the hasp from the front side, with the tumblers D pivoted thereto at its lower extremity, in combination with the stationary stop d, all as set forth and shown.

102,811, antedated December 20, 1869.—Potato-Digger.—John Hall, Jr., and Owen Flanigan, Temperanceville, Pa.

Claim.—The combination and arrangement of the plow or digger C, adjusting wheel X, separator and agitating wheel *f*, constructed, arranged, and operating with relation to each other as hereinbefore described, and for the purpose set forth.

102,812.—Potato-Digger.—John Hall, Jr., Temperanceville, Pa.

Claim.—The combination and arrangement of the digger A with the separator and cart F, constructed, arranged, and operating substantially as herein described, and for the purpose set forth.

102,813.—Agitator-Wheel for Potato-Digger.—John Hall, Jr., Temperanceville, Pa.

Claim.—The agitating-wheel for the separator of a potato-digger, with detached hubs, which are so arranged that the hubs and wheels will rotate independently of each other upon the axle C, substantially as herein described and for the purpose set forth.

102,814.—Potato-Digger.—John Hall, Jr., Temperanceville, Pa.

Claim.—The combination of the concave plow A, the concave separator, provided with the guard *m*, and agitator-wheel *n*, constructed, arranged, and operating substantially as herein described, and for the purpose set forth.

102,815.—Grain-Binder.—William D. Harruh, Ira M. Gifford, and Edward T. Johnston, Davenport, Iowa.

Claim.—1. The tapering bonnet or hood J, endless apron H, and two or more sets of rollers K O, in combination with each other and with the frame A, axle B, and wheels C, substantially as herein shown and described and for the purpose set forth.

2. The apron H, rollers K O, combined and arranged with relation to each other and the axle C B, so as to operate in the manner described, for the purpose specified.

3. The band-tube R, arranged with relation to the rolls K O, bonnet or hood J, and endless apron H, all as shown and described.

4. The detached thimbles or band-tubes V, adapted to receive the endless bands T, and to be placed upon the stationary band-tube R, substantially as herein shown and described, and for the purpose set forth.

5. The stands W, adapted to receive and hold the thimbles or detached band-tubes V, substantially as herein shown and described and for the purpose set forth.

102,816.—Rolling-Machine.—John B. Hastings, Ironton, Ohio, and George Hastings, Jr., Wheeling, West Va.

Claim.—The described arrangement, in a "three-high" rolling-machine, of a stationary bottom, adjustable top, and yielding middle roll, for the purpose explained.

102,817.—Adjustable Shutter-Holder.—Cyrus N. Herr, Lampeter, Pa.

Claim.—The arrangement and construction of the bracket-plate A A′, with its slots *a a a a* and stay-lugs *a′ a″*, in combination with a hinged or folding hook-bolt, substantially in the manner and for the purpose specified.

102,818.—Hand Corn-Planter.—Henry Hickman, Omaha, Nebraska.

Claim.—1. The adjustable knife C, constructed as described, in combination with the handle, seed-box, and dropping device of a hand corn-planter, substantially as herein shown and described, and for the purpose set forth.

2. The combination of the pivoted fulcrum-frame J with the handle and knife of a hand corn-planter, substantially as herein shown and described, and for the purpose set forth.

3. The combination of the dropping-wheel or cylinder G and crank I with the pivoted fulcrum-frame J, conductor-spout H, and recess F of the seed-box B, substantially as herein shown and described, and for the purpose set forth.

4. The combination of the brush L, adjustable vertically and laterally with the seed-box B, recess F, and dropping wheel or cylinder G, substantially as herein shown and described, and for the purpose set forth.

102,819.—Apparatus for Distilling Hydrocarbon Oils.—Samuel A. Hill and Charles F. Thumm, Oil City, assignors to themselves and Oliver P. Scaife, Pittsburg, Pa.

Claim.—The combination and arrangement of a series of stills, so arranged with relation to each other that the flow of hydrocarbon through one or more of the stills of the series may be cut off from the other stills of the same series, and each still of the series being furnished with separate fire-chamber, so as to apply a different degree of heat to each still, substantially as herein described and for the purpose set forth.

102,820, antedated April 28, 1870.—Combined Latch and Lock.—Friedrich Hoppe, Stuttgart, Germany, assignor to Theodor Hahn.

Claim.—The weight *d*, jointed to the raising-lever *h*, in combination therewith and with the bolt *a* and tumbler *b*, operating together, substantially as herein described.

102,821.—Cue-cutting Machine.—Joseph Huber, St. Louis, Mo., assignor to himself and Solomon Brunswick, same place.

Claim.—1. The stock A, revolving head E, and cutter F, substantially as and for the purpose set forth.

2. The cutter F, arranged to turn the head piece E, and at the same time move radially about the pivot *f*, substantially as set forth.

102,822.—Church-Organ.—William Jackson, Albany, N. Y., assignor to himself and Henry C. Wilkins, same place.

Claim.—1. In combination with the bellows C C of a church-organ, the fly-wheel W, with the crank *a*, bars *c c*, levers *d d*, and connecting bar *e e*, constructed and arranged substantially as described, and for the purpose specified.

2. The extra arms *m* of the draw stop-irons *k*, in combination with the composition-bars *n n* and their pins *t*, and the T-headed lever *o*, as and for the purpose set forth and described.

102,823.—Life-Preserver.—Lyman Jacobs, Albion, Mich.

Claim.—The combination and arrangement of the cylindrical receptacles G and I, flange H, pipe *e*, balls *i* and *p*, funnel *f*, orifice *o*, bars K K, concave ball-receptacle *g*, and casing A, substantially in the manner and for the purpose shown and described.

102,824.—Acid and Water-proof Composition for Coating Cloth, &c.—Henry W. Johns, New York, N. Y.

Claim.—An improved acid and water-proof composition, formed by the admixture of paraffine-wax, paraffine-oil, and carbolic acid, with each other, and with asphaltum or other suitable adhesive material or materials, substantially as and for the purposes herein described and set forth.

102,825.—Subsoil Attachment for Plows.—Ross Johnson, Lawrence, Kansas.

Claim.—The herein described subsoil attachment for plows, provided with the angular loop or hook *a*, at its forward end, and a set-screw, *c*, at the rear end of the loop, and with the curved knife-edge *d b* extending down to the removable blade B, substantially as and for the purposes herein set forth.

102,826.—Drawer for Furniture.—George F. Joyce, Boston, Mass.

Claim.—The arm C and its controlling rod E, applied to and arranged with a drawer A and its case B, in manner and so as to operate therewith, substantially as specified.

Also, the two arms C C′ and their controlling rods E E′, applied to a drawer and its case, and arranged relatively to each other and with the drawer and case, in manner and so as to operate substantially as hereinbefore described, and as represented in the accompanying drawings.

102,827.—Sash-Supporter.—George F. Joyce, Boston, Mass.

Claim.—The combination of the button I and the slotted plate L, or their equivalent, with the window-frame and sashes, and the band F and clamp K applied thereto, essentially as hereinbefore explained.

Also, the combination and arrangement of the ring G and stud H with the button I, the slotted plate L, and the band F, applied to the window-frame and its two sashes, as specified.

102,828.—Match-Safe.—Albert D. Judd, New Haven, Conn.

Claim.—1. The match-safe, made with a back plate, *a*, and loop *e*, to receive the tongue *f* of the box, as and for the purposes specified.

2. The smaller box *i* for the burnt ends, attached to the back plate *a* below the match-box *h*, as and for the purposes specified.

102,829.—Boring Bit.—Daniel Kelley, Muskegon, Mich.

Claim.—A bit, having a conical point, *a*, provided with a cutting-lip, *b*, and its stock A, with a spur, B, and cutter C, the latter in the form of a partial convolution of a screw-thread about the stock, substantially as described.

102,830.—Mosquito-Bar.—Simon Kemper, Berger, Mo.

Claim.—1. The center-bar A, with the short bow B and hinged bows C and D joined by a cord E *e*, and rubber loops *e′*, substantially as set forth.

2. The parts before named in first claim, when combined with the netting F and its loops *f*, substantially as set forth.

102,831.—Clothes-Drier.—Hiland H. Kendrick, Fulton, N. Y.

Claim.—The additional top frame, composed of the arms D D, and slats E E, connected with the frame below by the hinges G G, and together by the hinges H H, as and for the purpose herein specified.

102,832.—Apparatus for obtaining Tanning Extracts.—Simon H. Kennedy, New York, N. Y., assignor to himself and F. G. Macomber, same place.

Claim.—A condensing-tank or evaporator, provided with a steam-chamber, F, and agitator G, in combination with the auxiliary coil-pipe C, all constructed and arranged as herein shown and described.

102,833.—Manufacture of Medicated Malt Liquors.—Hermann H. Kessler, Detroit, Mich.

Claim.—The manufacture of beer or malt liquors of the ingredients, in the manner, and in the proportions, substantially as herein described.

102,834.—Fence.—Edward Kirk, Sharon, Pa.

Claim.—The combination of the rails *a b*, blocks *c*, and hooks *d*, all constructed and arranged to operate so as to form a firm connection, and one that prevents the panels from being swung in either direction.

102,835.—Harvester.—Jacob Kline, Mechanicsburg, assignor to himself and George Winters, Harrisburg, Pa.

Claim.—1. The bar M, provided with shoulders

N H, in combination with two lugs E, formed on cutter-bar near its heel, the cap-plate A B, and the rear knife n, these parts being constructed and applied as and for the purpose herein set forth.

2. The cap-plate A B, curved at one end, and extended to overlie lugs E, bar M, and the next to the rear knife, and perforated to receive the bolts, which also pass through the adjacent knives, all as set forth.

3. The reversible and detachable rear knife n, perforated to receive lugs E, and having ledge L, the parts being constructed and arranged substantially as and for the purpose herein set forth.

102,836. — HEALING-PLASTER. — William Kramer, New York, N. Y.

Claim.—An improved healing-plaster, prepared of the ingredients, in the proportions and manner, substantially as herein described and set forth.

102,837. — VEGETABLE-CUTTER.—Henry P. Lauer and Henry C. Reichard, Pottsville, Pa.

Claim.—1. The combination of the shell A, slotted cylinder C, gauges H, and cutters M, constructed and arranged substantially as specified.

2. The combination, with the gauges H and links K, of the oblique arms L, cross-head M, and screw N, all arranged substantially as specified.

102,838.—BRIDLE-BIT.—William P. Letchworth, Buffalo, N. Y.

Claim.—A mouth-piece for bridle-bits made of half round or half oval rods or wire, twisted together as specified, as an improved article of manufacture.

102,839.—PLATFORM FOR HARVESTERS.—Christopher Lidren, La Fayette, Ind., assignor to himself and R. Jackson, same place.

Claim.—1. An improved grain platform, consisting of slotted levers B B, plate C D, and pivoted sustaining bars G G, all constructed, arranged, and operating as set forth.

2 The grain platform, constructed as described, in combination with the V-shaped finger-bar A, as and for the purpose specified.

102,840.—RAILWAY-CAR BRAKE.—Almerin H. Lighthall, Albany, N. Y.

Claim.—1. The combination, with the brake-levers, of the spring D, winding-chain I, shaft L, operating wheels, lever, and pawl, holding and tripping pawl, and bell-cord connection, all substantially as specified.

2. The arrangement of the spring D, rod C, cylinder E, disk G, and spring H, all substantially as specified.

3. The combination, with the ratchet-wheel and winding shaft, of the spring-actuated and holding and tripping pawl R, tripping lever S, and bell-cord connection u, all substantially as specified.

4. The combination, with the lever S and pawl R, of the holding spring T and stud T', substantially as specified.

102,841. — CULTIVATOR. — Truman Mabbett, Sr., Vineland, N. J.

Claim.—The combination with a cultivator of an adjustable cutting-bar or skimmer, B, substantially for the purpose shown and described.

102,842. — PLANING-MACHINE. — George H. Mansfield, Concord, N. H.

Claim.—The frame a, carrying the cutter-head c, guide I, reciprocating table e, with its stops l, in connection with tappet m, reversing-bar k, clutch j, and shaft h, when all the parts are constructed and operated as and for the purpose specified.

102,843.—TRACE-BUCKLE.—Thomas C. Martin and James Offineer, Perrysville, Ohio, assignors to Thomas C. Martin, John Taylor, and Daniel Geiselman, same place.

Claim.—1. The hame-tug tongue c on the bar I of the loop a I a, on the wedge-tongue E, substantially as and for the purpose specified.

2. The buckle-frame B, provided with the strap-holes b b, and with the saddle-strap tongue c, when constructed substantially as is herein specified.

3. The combination of the buckle-frame B, provided with the saddle-strap tongue c, tug A, and wedge-tongue E, the several parts being arranged substantially as and for the purpose specified.

4. The combination of the buckle-frame B, wedge-tongue E, provided with the tug-tongue d, draft-bar g, and loop a I a, with hame-tug tongue c, the several parts being arranged and operating substantially as and for the purpose specified.

102,844.—TWEER OF BLAST-FURNACE. — Thomas W. McCune, Pittsburg, Pa.

Claim.—1. A breast-plate, f, having passages through it for a stream or flow of water as a support for a blast-furnace tweer, substantially as described.

2. A supporting-plate, g, having water-passages, in combination with a breast-plate, f, and braces i, arranged substantially as described.

102,845.—LADDER.—William H. McHench, Cobleskill, N. Y.

Claim.—In duplicate ladders, the brackets D D, attached at the vertex of the angle formed by the ladder to the rod B, and provided with slots, closed at their lower ends, to prevent the lateral spread of the two parts beyond a certain limit.

102,846.—PAVEMENT.—Abram B. McKeon, Rutherford Park, N. J.

Claim.—A wood pavement composed of blocks having inclined grooves a a, arranged as represented, and receiving wooden keys and filling upon them, as set forth.

102,847. — HEAD-BLOCK OF SAW-MILLS.—Cornelius Meiners, Indianapolis, Ind.

Claim.—The combination of knee C, screw D, and gear c, with gears H and R, lever I, and ratchet J, when all the parts are constructed as and for the purpose specified.

102,848.—SELF-PACKING BUSH FOR SPINDLES.—Carl Miller, Sandoval, Ill.

Claim.—The combination with the bush B, having a cavity, C, with vent-holes D, of the holder G, substantially as and for the purpose specified.

102,849.—APPARATUS FOR CORRUGATING METAL.—James Montgomery, New York, N. Y.

Claim.—1. The improved machine herein described for corrugating sheet metal, the same consisting of a pair of fluted hollow rolls, A B, carriage F G for feeding sheets to the said rolls, and adjustable screw-stop I, to control the carriage, substantially as set forth.

2. The clamp or griper H, in combination with the carriage F G, substantially as and for the purpose set forth.

3. The combination of the stop I, screw J, carriage F G, and clamp H.

4. The arrangement of the table E, carriage F, and rolls A B, substantially as shown and described.

102,850.—TOOL FOR MAKING SLIDES FOR EXTENSION-TABLES.—Samuel J. Moore and George A. Buckman, Ogdensburg, N. Y.

Claim.—1. The rotating tools D F and guiders G K, severally constructed, arranged and operating together upon the table of a grooving-machine, in the manner described.

2. An extension-table slide, composed of the parts I I J, all constructed as specified.

102,851.—MECHANISM FOR STRIPPING THE TOP FLATS OF CARDING-MACHINES.—Ferdinand Morf, Wetzikon, Switzerland.

Claim.—1. The combination of the wheel g, having teeth of different widths, as specified, and the sliding pinions j t, all arranged and operating as set forth, for the purpose indicated.

2. The combination of the cam p and clutch-lever q with the sliding wheels t j and wheels g, all arranged to operate substantially as herein shown and described.

102,852. — TRUSS. — Peter Müller, Middle Lancaster, Pa.

Claim.—The strips l of steel, and m of iron, substantially as and for the purpose herein specified.

102,853. —WHEEL FOR VEHICLE. — Ira F. Munson, Washington, D. C.

Claim.—1. The rim or felloe A, constructed substantially on the principle set forth.

2. The spokes B, constructed substantially as described.

3. The loops c, for holding the outer portion of the spokes in place, substantially as described.

4. The wire or bars c' c', forming the groove for the outer portion of the spokes, in combination with the loops c, substantially as described.

5. The tire, constructed and applied so that the space g is left between the rim or felloe and the tire, substantially as described.

6. The sheathing, made in segments, in combination with the continuous metal rim or felloe, the sheathing and rim or felloe being constructed substantially as described.

7. The combination of the continuous felloe or rim A, segmental sheathing E, and retaining nuts, or retaining and jam-nuts, or the equivalent of the said nuts, substantially as and for the purpose described.

8. The auxiliary tubular spokes T, in combination with main spokes, substantially as described.

9. The screw-tapped plate F t, in combination with the screw-tapped box M e and sliding plates G H I, substantially as described.

10. The combination of the bevels f o with the rib n and notch d and notched rib q, in the construction of the hub-plates, substantially as described.

102,854.—APPARATUS FOR CLEANING AND PREPARING RAGS FOR MANUFACTURE OF PAPER.—William Edward Newton, London, England.

Claim.—1. The combination of the central shaft e, provided with the beaters d' d', substantially as shown, with the inner cage a, the whole being so arranged and constructed as to admit of being lifted out of the outer casing c, as and for the purpose herein set forth.

2. The rotating beaters d', shaped so as to impart to the rags a tumbling or vertical motion, as set forth, in contradistinction to a simple horizontal circulation, for the purpose specified.

102,855.—FUNNEL.—Peter H. Niles, Boston, Mass.

Claim.—A lever, one end of which is bent so as to form a handle, and is attached to the rim of a tunnel, in combination with a hollow connecting-rod and valve, and so arranged that the act of lifting the tunnel vertically by the handle causes the valve to rise, and by releasing the handle allows the valve to fall, as substantially described.

102,856. — ELECTRO-MAGNET. — Henry M. Paine, Newark, N. J., assignor to himself and M. S. Frost, New York City.

Claim.—An electro-magnet, whose limbs are substantially sectors or segments, bound together by a tie-bolt, C, and washer, B, in the manner and for the purpose as described.

102,857. — SELF-DISCHARGING PULVERIZING-BARREL.—Almarin B. Paul, San Francisco, Cal.

Claim.—1. The combination with a "pulverizing-barrel" of screens C D, (one or more,) arranged in its sides, and protected by shields B, constructed and arranged to operate in the manner substantially as described, as and for the purposes set forth.

2. The pulverizing-barrel, provided with discharging-screens B C D, constructed and operating as herein described, as constructed with hollow trunnions A for the introduction of material to be treated, as shown, for the purposes explained.

102,858.—LANTERN.—Samuel Peters, Crescent, N. Y.

Claim.—1. The guards E F, either or both, when bent or coiled in their lower and upper parts, either or both, to adapt them to hold the globe A in place by their elastic pressure, substantially as herein shown and described.

2. The perforated disks H, in combination with the bail G and bent upper ends f' of the spring-catches F, substantially as herein shown and described, for the purpose of guarding the parts of the lantern from accidental detachment.

102,859. — FARM-GATE. — Howard Piper, Haskins, Ohio.

Claim.—1. The combination with panel A, having groove C thereon, of post B, having hook D near the bottom, and post E, having hooks F at two or more points, the said parts being constructed and adjusted together in the manner set forth.

2. The combination of the grooved panel A C, having hook G thereon, the hooked post B D, braces K K, and hooked post E F F on the ends of fence-boards, as shown in fig. 2 of the drawing, and for the purpose described.

102,860.—PLOW.—Samuel W. Pope, Louisville, Ky.

Claim.—1. The plate E, provided with the lug e and projections e' e' e', as described, for the purpose set forth.

2. The plate E, handle F, and stretcher-rod G, when combined as described, for the purpose set forth.

102,861.—SPOKE FOR WAGON-WHEELS.—Robert Potts and Nathaniel Ogden, Chatham, N. Y.

Claim.—The spokes a, provided with shoulders d d, straight portions f f, serpentine portions e e', and hooks h, said spokes being connected to the hub by passing through into the orifice thereof, and hooked over each other, substantially as set forth.

102,862. — BRICK-MOULD AND BOTTOM-BOARD. — Albert T. Putnam, Detroit, Mich.

Claim.—The bottom-board B, provided with cross-pieces c and openings b, in connection with the brick-mould A, provided with cross-partitions a corresponding with the openings b, and with spaces d corresponding with the cross-pieces c, when constructed and arranged to operate as and for the purposes set forth.

102,863.—WHIP.—Addison C. Rand, Westfield, Mass.

Claim.—A whip or whip-stock having its body formed of or covered with steel or other metal wound in a coil or spiral form, when such coil or spiral is encompassed by an outer cover or wrapper, substantially as shown and described.

102,864. — ALARM-TILL. — Eden Reed, St. Louis, Mo., assignor to himself and Lewis L. Warren, same place.

Claim. — 1. The combination of the tumblers F, the rock-shaft *f*, rod *g*, projection *g'*, the spring G, and alarm device H I, substantially as and for the purpose set forth.

2. The combination of the detent D, tumblers F, *f'*, and keys C *c c'*, operating and arranged substantially as set forth.

102,865. — SCRUBBING-BRUSH AND MOP-WRINGER.—Edwin Rees, Stoddartsville, Pa., assignor to himself and Lewis Stull, same place.

Claim.—The combination of the uprights D and rods E, whether made in one or more pieces, the sponge F, disks G, and levers H, with each other, and with the brush A and long handle B, substantially as herein shown and described, and for the purpose set forth.

102,866. — HEATING-DRUM. — Jesse Reynolds, Philadelphia, Pa.

Claim.—The arrangement of vertical and horizontal pipes with the box or head, and directing-plates, as herein recited.

102,867. — CONNECTION OF SPRINGS FOR BED-BOTTOMS, SEATS, &c.—Charles Rich, Poughkeepsie, N. Y.

Claim. — 1. The ears B upon the sleeves A, when said sleeve or band A is used for connecting coiled springs together, in the manner and for the purposes herein shown and described.

2. The combination and arrangement of the sleeve A with ears B, and eye C with the flexible or elastic lining D, all made and operating substantially as and for the purposes shown and described.

102,868. — BLEACHING STRAW GOODS.—Amanda M. Rosbrugh, Panora, Iowa.

Claim.—1. The bleaching-box, with hinged cover B, glass windows C C, door D, stove E E, and movable frames *a a*, as described and for the purposes specified.

2. The use of bicarbonate of soda in the process of bleaching, substantially as described.

102,869. — PRESERVING AND HARDENING STONE, BRICK, &c.—Elmor J. Salisbury, San Francisco, Cal., assignor to himself and George A. Brush, same place.

Claim.—Hardening and preserving stone, bricks, cement, and other building materials, by applying the above-mentioned ingredients in about the proportions and manner above specified.

102,870.—APPARATUS FOR SAVING GOLD.—Charles Schofield, Kernville, Cal.

Claim.—1. The hopper-shaped boxes F and G, communicating, as above described, with their perforated false bottoms H and exit-cocks M M', substantially as and for the purpose described.

2. In combination with the subdivided tank A and lower tanks R, the connecting sluice or sluices Q with their adjustable gates S and T, substantially as and for the purpose described.

102,871.—RIVETING-HAMMER. — Henry A. Seymour and Willford H. Nettleton, Bristol, Conn.

Claim.—The combination of the jaws A, presser-spring *c*, heading-punch B, and hammer C, all constructed and operating together substantially as described.

102,872.—WINDOW-SCREEN.-George Shatswell, Wankegan, Ill.

Claim.—1. A two-part window-screen, hinged together in its middle part, so that it may be placed in a window and swing in it, as set forth.

2. A two-part hinged screen, provided with dowels fitting into the sash *z*, as and for the purpose set forth.

102,873.—FASTENING FOR RAILWAY RAILS. George Shatswell, Waukegan, Ill., assignor to himself and Elijah M. Haines, same place.

Claim.—A fastening for railway rails, consisting of the side pieces or bars B B, held against the shank of the rails at their junction by the grooves *c c c c*, in the head and base of the ordinary rail, as set forth.

102,874.—STALL FOR FEEDING ANIMALS.—Spicer H. Shaw, Attica, N. Y.

Claim.—The construction and arrangement of the rack as herein described, the lower part being stationary, and the upper part adjustable and reversible in position, substantially as set forth.

102,875. — FLAX-PULLER. — James Smith, Troy, N. Y.

Claim.—The arrangement of the series of griping-jaws on a wheel or hub, so that they shall rotate about a common center in a horizontal or nearly horizontal plane to enter between the standing flax, gripe it, pull it out by a motion in a horizontal or nearly horizontal direction, and deliver it on the ground at the side of the machine, out of the way of the next passage of the machine, substantially as described.

102,876.—AXLE-NUT.—Edgar A. Stanley, Brewer, Me., assignor to himself and Orlando A. Palmer, same place.

Claim.—1. The combination of the outside part C', inside nut or part C, and set-screw *d*, to form a compound or extension nut.

2. The combination of the nut or part C', inside nut or part C, set-screw *d*, and axle-screw *b*, the two parts C and C' operating together by means of the male screw *g* and the female screw *f*, substantially as and for the purpose hereinbefore set forth.

102,877.—COVER FOR CHAMBER VESSEL.—William Stockton, New York, N. Y.

Claim.—The within-described cover adapted to serve in the manner herein set forth.

102,878.—BATHING APPARATUS.—William Tell Street, Frankfort, Pa.

Claim.—A bathing-bar or cage A, provided with buoys or floats D, and with hauling-tackle, the latter consisting of a winding-drum, I, on shore, and a pulley attached to a float, G, or other support anchored in the water at a suitable distance from the shore, and a cord or rope, E, all arranged for operation substantially as specified.

102,879.—BALING-PRESS.—Bryant F. Stroud, Marshall, Texas.

Claim.—The combination and arrangement of levers F *f*, chains, links, or bars I, racks D D', and pawls E, whether double or single, with each other and with the follower C and press-frame and box A B, substantially as herein shown and described and for the purpose set forth.

102,880.—STOVE-GRATE.—Levi Stuck, Bryan, Ohio.

Claim.—1. The grate A, provided with means of adjusting the same to any width of fire-box, substantially as described.

2. The grate A, provided with braces *b*, the bar B, provided with slides *a*, and the intermediate bar C, provided with cross-arms *c*, substantially as and for the purpose set forth.

102,881.—FILTER.—Taylor P. Thompson, Charlestown, Mass., assignor to himself and Lewis R. Bradbury, same place.

Claim.—1. A filter, in which a reversible rotating diaphragm or strainer is employed, so constructed that the filtering agent serves both as means of filtering the liquid passing through the instrument, and of preventing passage of liquid about the circumferences of such filtering agent, as herein set forth and described.

2. A filter, composed of two cups joined at their circumferences, and provided with a reversible diaphragm or strainer operated from the outside of the case of the instrument, as herein set forth and described.

3. The combination and arrangement of the two rings *f* and *f'*, shaft *g*, and strainer or diaphragm *i*, when combined with a suitable case, in manner and for the purpose before explained.

102,882.—LEVELING AND GRADING INSTRUMENT.—Hamilton E. Towle, New York, N. Y.

Claim.—1. A ball-and-socket joint, with a divided ball, with or without an interposed spring, substantially as described, and either with or without an axial spindle.

2. The combination and arrangement of the graduated adjustable sights, having screw-shanks, the threads of which have a determined relation to their position, with a leveling instrument, for operation substantially as described.

102,883.—LIQUID-METER.—Sidney C. Treat, Tabor, Iowa, assignor to himself and Charles P. Treat, Oberlin, Ohio.

Claim.—1. The valve C, having the groove *d'* and slot *d''* seated in the valve-chamber *c*, and covering the ports, as shown and for the purpose described.

2. The combination with the valve-stem *g*, the lever *m*, provided with the dogs *n n'*, the sleeve *k* having the lovers *k' k''*, the springs *p p* attached to the sleeve *k* and lever *m*, for actuating the lever *m*, the pitman *l* for connecting the lever *k* with the frame E, the circular way *o* upon which the dogs slide and catch as shown, the whole being constructed, arranged, and operating upon the valve *d* as shown, and for the purpose set forth and described.

102,884. — WOODEN-BLOCK PAVEMENT. — Alexandre Trenaunay, Neuilly-sur-Seine, near Paris, France.

Claim.—1. The herein described mineralizing compound for hardening wood, substantially as set forth.

2. The composition for compressed concrete, prepared in the manner hereinbefore described, to be employed for forming a bed or base for the paving-blocks, as set forth.

3. The herein-described improved water-proof coating for the lower parts of the wooden blocks, prepared as set forth.

4. The herein-described compound for an adhesive mastic for making the joints of the blocks after placing them in position, as set forth.

5. The improved mineral glue for uniting the wooden blocks or slabs, as described.

6. The improved solid glue, prepared as and for the purposes described.

102,885. — IMPLEMENT FOR MEASURING BOARD.—Melzer Tuells, Penn Yan, N. Y.

Claim.—The combination of the graduated stock A, provided with stops H H, the pulley G, grooved conical roller B, gear-wheel D, registering-wheels E F, and chain C, or its equivalent, all arranged substantially as and for the purpose described.

102,886.—APPARATUS FOR ASSORTING POTATOES, &c.—John F. Unglish, Webster, N. Y.

Claim.—The combination and arrangement of the standards *b b b*, sieve A, having handles *g g*, and a pendent bearing B, substantially as herein described.

102,887.—METALLIC CHURN-DASHER.—Orrin Updike, Grass Lake, Mich.

Claim.—The metallic churn-dasher above described, composed of the rings A, the bars B, the wings C, the socket D, with an opening, E, and the flanges F, cast in one piece of suitable metal, constructed and arranged as described and for the purpose set forth.

102,888. — PEGGING-JACK. — Charles Varney, East Brookfield, Mass.

Claim.—The cam-supporter F, as made separate from the sustaining part D, and applied to it by means, and so as to be adjustable thereon, as specified.

Also, in the peg-jack, as described, the combination and arrangement of the spring *c*, provided or not with the metallic washer *b*, with the holder A, its sustaining post D, the cam E, and the cam-supporter F, separate from the post D, and applied thereto by screws, as and for the purpose as set forth.

102,889.—HARNESS-BUCKLE.—David Vogt, Trenton, Mich.

Claim.—1. The buckle A, and plate B, the former provided with studs *a a*, and threaded openings *b*, and the latter with corresponding openings *a'*, *a'*, and *b'*, and secured together by the bolt C, in the manner and for the purpose set forth.

2. In harness-buckles, the slide *f* in the plate B, and the groove *g* in the bolt C, as and for the purpose set forth.

102,890. — HARVESTER-DROPPER. — Aaron Ward, Dublin, Ind., assignor to himself and Jesse Hiatt, same place.

Claim.—1. The tipping cradle E, reciprocated by rack C, or its equivalent, and guided by the notched and curved bars G *g*, first obliquely rearward and then sidewise, and tipped at its point of delivery, substantially as set forth.

2. The combination of the tipping cradle E, cut-off R R' W, treadle S *s* U, and tappet V, substantially as set forth.

3. The combination of the cradle E, rack C, and reciprocating mechanism, substantially as set forth.

4. The projection P P', spring O *o*, and orifices *i i'*, in the rack-driving wheel I, combined and operating substantially as and for the purpose set forth.

102,891.—HOE.—Edward Warren, Ceresco, Mich.

Claim.—A hoe, having a circular blade between *a* and *a'*, convex at its center A', and having concave wings C C terminating in tip points C' C', when the blade thus formed is secured to a shank of such curvature and length that, when the handle is inserted, its bearing shall be opposite the center of the blade, substantially as described.

102,892.— LAMP-CHIMNEY. — Sylvester W. Warren, Boston, Mass., assignor to himself and George B. Parrott.

Claim.—The combination, with the circular rim *m* and the upper elliptical portion of a lamp-chimney, of the cone-shaped neck *k* with flattened sides, when constructed as shown, and for the purposes herein described.

102,893.—MACHINE FOR VARNISHING PENCILS, &c.—Albin Warth, Stapleton, and Philipp Hufeland and Georg Braun, New York, N. Y., assignors to Eberhard Faber, New York City.

Claim.—1. The mechanism, substantially as herein described, for varnishing pencils, composed of a hopper, a feed-channel, a cam-shaped roller, feed-rollers, a reservoir containing varnish, and a brush-head, all as set forth.

2. The combination of the agitator, constructed as described, with the hopper and feed-channel.

3. The friction surface on the cam-shaped roller, substantially as and for the purpose described.

4. The revolving brush in the brush-head, substantially as and for the purpose described.

5. The brush-head I, carrying a series of brushes *d* and *e*, the former secured in radiating tubes, the latter fastened to the radiating guides, substantially as and for the purpose herein specified.

6. The endless apron, in combination with the varnishing mechanism, constructed substantially as and for the purpose described.

102,894.—Mold for Making Rubber Pencil Tips.—William Weicker, Blackstone, Mass.

Claim.—1. A mold-plate for making rubber pencil-tips, formed in but one section, substantially in the manner and for the purpose herein set forth.

2. The grooves or channels *c* on the punchers B, substantially as and for the purpose hereinbefore specified.

3. The combination of a mold-plate A, molds C, punchers B, channels *a*, central stem *b*, and annular recess *i*, when constructed and arranged substantially as and for the purpose herein set forth.

102,895. — Lantern. — William Westlake, Chicago, Ill.

Claim.—1. The dome or cap, when provided with the tube H, in combination with the globe A, substantially as and for the purposes specified.

2. The cap or deflector I, in combination with the tube H, substantially as described.

3. The combination of the burner *g* and cone K with the annular space S and air-chamber E, and tubes D, substantially as specified.

4. The tubes L, in combination with the air-chamber E, tubes D, and air-space S, for ventilating the lantern, substantially as described.

102,896. — Lantern.—William Westlake, Chicago, Ill.

Claim.—1. The detachable cup C, in combination with the loose oil-pot D and band A, having therein a slot or opening, *i*, substantially as specified.

2. The springs *h*, in combination with the loose oil pot D and cup C, substantially as specified.

3. The springs *e*, in combination with the loose oil-pot D, detachable cup C, and band A, substantially as specified.

4. Providing the bottom of a lantern with projecting points *n*, substantially as and for the purpose specified.

102,897.—Lamp-Burner.—Hiram J. White, Boston, Mass.

Claim.—My improved lamp-chimney supporter N, as having its spring h formed by vertical and horizontal air-passages or slits *c' d* in the body, and arranged with reference to the rest of the body as specified, and as provided with the supporting-flange *a*, insulated from the springs, as set forth.

Also, the cone or deflector, as made with the slitted base, the notches *k*, and the handles *m m*, arranged on its opposite sides as represented.

102,898.—Machine-Band.—Samuel J. Whitton, Coleraine, Mass.

Claim.—An endless machine-band, composed of a central strengthening core-thread, *a*, covered by a roving or loosely-twisted fibrous material, as shown and described.

102,899.—Spring Clamp for Glass-Blowers.—Thomas Wightman, Pittsburg, Pa.

Claim.—The recess E, in combination with the plate *b* and core *c*, substantially as and for the purpose hereinbefore set forth.

102,900.—Blind, Screen, and Shutter.—Benjamin J. Williams, Philadelphia, Pa.

Claim.—The sliding bars *c c* and lever *d*, as arranged and pivoted to the rail for operating the slats, in combination with a Venetian blind and inside folding shutter, provided with wire screens D and openings *e*, substantially as described.

102,901.—Crutch.—Peter R. Wimer, Trenton, N. J.

Claim.—The manner of fastening the rod C to the arm-piece by a nut, allowing a free motion thereof, substantially as set forth and claimed in the above specification.

102,902.—Wire and Stone Fence Combined. — Henry C. Wire, Wilmington, Ohio.

Claim.—1. A combined stone and wire fence, constructed by interposing the wires between layers of stone forming the posts or pillars, substantially as described.

2. A fence, composed of wires confined between layers of stone forming the posts or pillars, and anchored to stone blocks *b*, by the binding wires at intermediate points between the posts or pillars, substantially as described.

102,903.—Brick-Machine.—Robert Wolff, New York, assignor to himself and Bernard Silverman, Brooklyn, N. Y.

Claim.—1. The yoke M and rollers 5 6 7 and revolving shaft I, in combination with the levers G and followers F of the mold for bricks or similar articles, substantially as and for the purposes specified.

2. The slide V, actuated as specified, in combination with the oil-receptacle T and molds E, as and for the purposes specified.

102,904.—Stanchion for Securing Cattle.—Elijah S. Alvord, Harmony, N. Y.

Claim.—1. The arrangement of the pinion or cog-wheel *b*, crank *d*, spring I, and rack-bar *a*, for operating the sliding bar E, substantially as and for the purposes herein set forth.

2. The sliding bar E, with springs *o o*, for working the stanchions D D, substantially as and for the purposes herein set forth.

3. The spring *o*, elbow or lever *i*, and leaf or latch H, all constructed and arranged to operate substantially as and for the purposes herein set forth.

4. The combination and arrangement of the frame A B C C', stanchions D D, sliding bar E, rack *a*, pinion *b*, crank *d*, spring I, springs *o o*, levers *i i*, and leaves H H, all constructed and operating substantiall in the manner and for the purpose herein set forth.

102,905, antedated January 13, 1870.—Buggy-Gearing.—John B. Augur, Poughkeepsie, N. Y.

Claim.—1. An axle or bolster, flat at bottom and elliptical or symmetrically curved at top to a central edge, substantially as described, in combination with the pivoted bearing and bolster-plates B^2 C^2, recessed as specified, for the purpose set forth.

2. The pivoted links A^2, connected at bottom to the rear axle-clips, and at top to the rear ends of the springs B, in combination with the springs and clips of a wagon-gearing, substantially as and for the purpose set forth.

3. Rubber or other packing placed within the shaft-clips and beneath the ends of the shafts, for the purpose of preventing noise or rattling of the same, as set forth.

4. The combination of the shield *e* with the shaft-iron E and their axle-clips B^1, substantially as and for the purpose set forth.

102,906.—Manufacture of Soap.—Haydn M. Baker, Washington, D. C.

Claim.—1. The process herein described for separating soaps from the solutions produced by the treatment or cleansing of cotton and fibrous waste.

2. As an article of manufacture, soap made from the oils and fatty substances contained in spent or exhausted cotton waste, and by the process herein set forth.

102,907.—Machine for Cutting, Stamping, and Packing Soap. — Lurandus Beach and Lurandus L. Beach, Jr., Lawrence, Mass.

Claim.—The stamper D, constructed with the gauge projections *g g*, and combination with the gauge-frame C, constructed with notches *f* arranged in its bars, as set forth.

Also, the separator G, as composed of the frame *v* and the series of jaw-blocks *w*, arranged and connected by cords, or equivalents, as set forth.

Also, the combination of the separator G with the impeller D and the series of wires *e*, for reducing a block, as set forth.

Also, the combination of the presser I and the separator G with the impeller D and the series of wires *e*, for reducing a block to cakes, as explained.

Also, the combination and arrangement of the drying-frame F with the separator G, or with such and the impeller and wires, as described, for separating a block into cakes, as explained.

102,908, antedated April 29, 1870.—Railway-Car Wheel.—Charles K. Bradford, Lynnfield, Mass.

Claim.—The combination of a main wheel and tire and binding-ring A B C with a packing-ring, D, which is shaped to fit the combined concave groove *e e'* and the convex inner periphery of the tire B.

102,909. — Water-Wheel.—Truman Bristol, Cheshire, assignor to himself and Charles Monson, New Haven, Conn.

Claim.—In a water-wheel, the arrangement of two independent sets of buckets, combined with a device for conducting water to the two sets, and so that the flow of water may be changed from one set to the other to reverse the revolution of the wheel, substantially as described.

102,910.—Fertilizer-Distributer, Corn and Cotton-seed Planter.— Rhodom M. Brooks, Woodbury, Ga.

Claim.—1. The bars *f f*, provided with arms *i i*, and operating within the hopper D, alternately, in opposite directions, up and down, substantially as and for the purposes herein set forth.

2. In combination with a plow, the hopper D, with its alternately-operating bars *f f*, pitman E, wheel G, and bar K, all constructed and arranged to operate substantially in the manner and for the purposes herein set forth.

3. The arrangement of the hopper D and pitman E with the corn-hopper H, slide J, arm *h*, and pitman I, all substantially as and for the purposes herein set forth.

102,911, patented in England, June 1, 1869. Composition for Varnish, &c.—Henry Browning, No. 77 Salmon Lane, Limehouse, England.

Claim.—The composition varnish, consisting of gum-dammar, spirit, and sugar of lead, prepared in the manner and of the proportions hereinbefore specified.

Also, the composition varnish, composed of gum-dammar, spirit, sugar of lead, wax, and corrosive sublimate, prepared in the manner and of the proportions hereinbefore specified.

Also, the composition paint, consisting of a ground color and a solution of gum-dammar, spirit, and sugar of lead, prepared in the manner and of the proportions hereinbefore specified.

Also, the composition paint, composed of ground color, gum-dammar, spirit, sugar of lead, and corrosive sublimate, prepared in the manner and of the proportions hereinbefore specified.

Also, the composition paint or varnish for stone-work, composed of gum-dammar, spirit, wax, and corrosive sublimate, prepared in the manner and of the proportions hereinbefore specified.

102,912, patented in England, March 8, 1869. — Manufacture of Iron and Steel.—James Palmer Budd, Ystalyfera, near Swansea, Wales.

Claim.—The process of manufacturing plate-iron by running the molten pig metal into pans which have previously been coated with a paste of iron ore, and permitting the metal to harden into a plate, as before described.

Also, the process of manufacturing plate-iron by running the molten pig metal into pans which have previously been coated with a paste of iron ore and nitrate of soda, and permitting the metal to harden into a plate, as described.

102,913.—Fruit-Jar.—John L. Mason, New York, N. Y.

Claim.—The combination, first, of the shoulder *b*, to receive a gasket outside and a little below the top of the jar; second, of the cover B, with the rim *d* extending down outside of the top, to press upon the gasket *c*; and, third, of the screw-ring or screw-cap C, with its screw-threads operating upon those of the jar below the gasket shoulder; all substantially as above set forth and described.

102,914.—Dropping-Platform for Harvesters. — Edson P. Cady, Trenton, Wis.

Claim.—The plate C, hinged at one end to the extension B of the sickle-bar, and at the side of the platform A, its free end resting on the ground, so that it may deliver the grain, as set forth.

102,915.—Indelible Writing-Fluid or Ink. — James Marshall Caldwell and George Worthington Caldwell, Burlington, N. J.

Claim.—The combination of carbon, a metallic salt, and a vegetable coloring-extract, such as herein described, or their equivalents, with an aniline color, so as to form a writing-ink, as set forth.

102,916. — Machine for Straightening Bars of Metal.—Ethan R. Cheney, Boston, Mass., assignor to himself and Naylor & Co., same place.

Claim.—A bar-straightening machine, having a stationary anvil, *d*, a movable jaw, *c*, (connected to and operated by the piston of a steam-cylinder,) and a lever, *p*, for operating the valve of the cylinder, the jaw *c* being mounted upon rolls, and being guided by the slot *r* and slot-pin, and having its rear movement arrested by stops *x*, cushioned by springs *y*, all the parts being combined and arranged substantially as shown and described.

102,917. — Bee Hive.—William Courtney, Richview, Ill.

Claim.—The combination of the honey-frames E, constructed with screws E', to maintain them in their relations to the walls of the hive, and the movable frame-dividers F, to preserve the spaces between the frames, substantially as set forth.

102,918.—Paper-File.—Edwin J. Crane, La Porte, Ind.

Claim.—The paper-file above described, consisting of the plate A, the hooks B and C, the thumb-plate D, and the guard F, constructed, combined, and arranged to operate as and for the purpose set forth.

102,919. — Vise. — Edwin Crawley and Thomas L. Baylies, Richmond, Ind.

Claim.—1. The combination of nut H, pawl J, pin *a*, ratchet *r*, and screw-shaft E, when arranged as described, so that a movement of the nut, by means of the screw, in one direction releases the pawl from the ratchet, and a movement thereof in the opposite direction engages said pawl and ratchet, substantially as described, and for the purpose set forth.

2. The combination of the movable nut H, screw or pin W, screw E, and jaws A and B, substantially as described, and for the purpose set forth.

102,920.—MACHINE FOR THE MANUFACTURE OF WOODEN TRAYS. — Charles Henry Dana, West Lebanon, N. H.

Claim.—1. In connection with the spherical saw C and the rotary carriage F, the slot *d*, the pivot *e*, the guides *h i k*, and the stops *l m*, arranged as described, the whole being to enable the said carriage to be moved and arrested relatively to the saw, substantially as and for the purpose as described.

2. The arrangement and combination of the single shaft B, with the circular and spherical saws C D, the block carriage F, and platform G, provided with appliances substantially as described, for holding and guiding a block in the ways, and under circumstances as set forth.

102,921. — SAWING-MACHINE. — Marcus E. Dean, Foxborough, Mass.

Claim —The frame-work A, saw E, and frame D, in combination with the fly-wheel B, connecting-rod C, shafts I M, gear *f g* H K L, worms *h h*, and screw-shafts *k k*, with their gear *i i*, constructed and operating substantially as and for the purpose described.

102,922, antedated May 4, 1870.—COMPOSITION FOR COATING WOOD, METAL, &c.—Patrick S. Devlan, Jersey City, N. J.

Claim.—An improved composition for coating wood, metal, &c., formed of the ingredients and in about the proportions and manner herein set forth and described.

102,923.—PACKING-CASE FOR SAWS.—Henry Disston, Philadelphia, Pa.

Claim.—A ring, or rings, arranged for attachment to a circular-saw blade, and for inclosing the same, substantially as described.

102,924.—MACHINE FOR PUNCHING METAL.—Ellis Doty, Janesville, Wis.

Claim.—The combination of the eccentric E and the sliding yoke A, constructed and arranged to operate substantially as described.

102,925.—COOKING-RANGE.—B. Wells Dunklee, Boston, Mass.

Claim.—1. The arrangement of the boiling-places D, D^1, C, C^1, and E, in relation to the fire-pot P and draught-flues D^2 C^2, substantially as described, and for the purpose set forth.

2. The combination and arrangement of the boiling-places, the draught-flues D^2 C^2, their dampers J J^1, and the ovens L and L^1, substantially as described, and for the purpose set forth.

3. The arrangement of the draught-flues D^2 C^2, deflectors H^2, ovens L L^1, and deflectors O O^1, substantially as described, and for the purpose set forth.

4. Combining with the hot-air closet of a range the vapor and smoke-passage R^1, substantially as described, and for the purpose set forth.

102,926.—LAMP-EXTINGUISHER. — William C. Ebert, Hannibal, Mo.

Claim.—The sleeve H, in combination with the rod G, substantially as herein described.

102,927.—CHILDREN'S CARRIAGE.—Roscoe G. Elder, New York, N. Y.

Claim.—1. The arrangement of a drop, *a*, beyond, or below the end of the sill *b* of a children's carriage, so as to protect said end and impart to it an ornamental appearance, substantially as set forth.

2. The shoulder *d* in the interior of the drop *a*, in combination with the screw *c* and axle A, substantially as and for the purpose herein shown and described.

102,928. — WASHING-MACHINE. — Daniel Elicker, Mulberry, Pa.

Claim.—The combination of the cylinder, composed of the heads D D, rollers G G, and connecting-bars E E, with the frame A, having the grooved rollers J J, said cylinder being secured above the rollers by the hooks connected to the springs I I by the rods *h*, all substantially as set forth.

102,929.—BRICK-MACHINE.—Titus S. Emery, Philadelphia, Pa.

Claim.—1. The presses J, each provided with a mold, *f*, vertical plunger *g*, lever *h*, and hinged cap *p*, and arranged radially on the disk or plate I, in combination with mechanism, substantially as described, whereby the operating parts of each press are rendered automatic.

2. The disk I, its presses J, shaft H, and pins *d* d^1, &c., in combination with the shaft E and its pin or arm *d*, operating as set forth.

3. The arm *d*, fitted to a slot in the shaft E, and adjustable therein, for the purpose specified.

4. The combination, substantially as herein described, of the rod *s* of the cap *p*, carried by arms jointed below the mold *f*, vibrating arm *t*, spring lever t^1, and pin *u* of the wheel *b*, whereby the said cap may be thrown forward over the mold *f*.

5. The combination, substantially as herein described, of the rod *s* of the cap *p* with the stationary cam-plate s^1, for throwing back the cap from the mold.

6. The combination of the arm *r*, hung to the rock-spindle *j*, with the stationary cam r^1, for operating those parts which impart the required degree of pressure to the brick.

7. The combination of the lever *k*, rod k^1, arm *l*, and stationary incline *m*, for the purpose of elevating the plunger *g*, to eject the finished brick from the mold.

102,930.—STOVE-LEG.—Elijah Evans, Sparta, Ohio.

Claim.—1. The lugs *a a*, flange *b*, and projection *d*, constructed as described, and arranged on the under side of the bottom of a stove, substantially as and for the purposes herein set forth.

2. The stove leg B, constructed as described, and provided with flange *f*, and its rear end curved and provided with flange *i*, substantially as and for the purposes herein set forth.

3. The combination of the bottom A, having lugs *a a*, flange *b*, and projection *d*, with the stove leg B, constructed as described, and the block *h* or its equivalent, all substantially as and for the purposes herein set forth.

102,931.—MACHINE FOR FOLDING OR WINDING AND MEASURING CORDS, &c.—George Penrice Farmer, Philadelphia, Pa.

Claim.—1. The rotating arms K K^1, tapering or inclined outward from the face-plate to which they are attached, in combination with a cam-wheel, M, or its equivilent, operating in unison with the arms, and caused to arrest the movement of the same, as set forth, for determining the quantity of thread in each skein, wound upon the said arms.

2. The rotating arms K K^1, in combination with the lever *j*, plate *l*, retainer l^1, and catch j^1, or their equivalents, and so arranged that after a portion of thread has been folded to form a skein or skeins, the latter are retained upon the arms in connection with the thread, and without interfering with the folding of the same into additional skeins, substantially as described.

3. The combination of the said rotating arms with a bar L and spring lever *j*, arranged to guide the connecting portion *y*, so as to prevent the tearing of the paper label *z*.

4. The combination of the said spring lever and bar L, with an adjustable plate, *l*, and cord-retainer affixed to the same, for determining the length of the connecting portion *y*.

5. The combination, with the revolving arms and thread-guide, of the arm L, adjustable in respect to the arms, for the purpose described.

6. The shaft B, carrying the disks I J, loose driving-wheel D, and clutch F, in combination with the sliding rod H, carrying the arms *d* d^1, and operating as described.

7. The combination of the cam-wheel M or its equivalent, sliding rod H, its arm d^1, disk I, and pin *g*, operating substantially as described.

8. The combination, with the revolving disk J and its arms K K^1, of the disk I, brake-lever s^1, and cam-wheel M, or equivalent devices, whereby the rotation of the said disk J may be gradually arrested.

9. The within-described stopping and starting mechanism, when the same is made common to a series of machines connected by cog-wheels or other gearing.

102,932.—BRUSH-WHEEL. — Philip Felker, Providence, R. I.

Claim.—The improved wooden brush-wheel herein described, consisting of the body A, provided with the metallic sleeve or sleeves E, fitted to recessed or projecting shoulders on the face or faces of the wheel, substantially as shown and described.

102,933.—CASTING LUGS IN STOVE-PLATES. James M. Fife, Beaver Falls, Pa.

Claim.—The within-described device for casting lugs on stove-plates or other articles with holes through the lugs, substantially as herein set forth.

102,934.—FORK FOR PEACH-PARER.—D. H. Goodell, Antrim, N. H.

Claim.—A fork, having four separate spring prongs, which spread out from and near the stock, and are then straight or nearly so, as shown and described.

102,935. — HOLD-BACK FOR VEHICLES.—William H. Groesbeck, Saratoga Springs, N. Y.

Claim.—The tongue D, provided with projection *d*, in combination with rod *a*, spiral spring *c*, hook C, and plate B, all constructed and arranged to operate as and for the purpose described.

102,936. — BROOM.—William S. Hancock, Chicago, Ill.

Claim.—A brace braid of metal, or other suitable material, when constructed and used on brooms, brush-brooms, &c., substantially in the manner and for the purposes herein set forth.

102,937.—SCAFFOLD-SUPPORTER.—David B. Hay, Dayton, Ohio.

Claim.—The device herein described, substantially as and for the purpose set forth.

102,938.— BAKING-PAN.—Allen Heminway and William A. Daggett, Lanais township, N. J., assignors to Allen Heminway and Caleb H. Bennett, same place.

Claim.—A baking-pan, composed of two pans hinged together on one side, and hasped or latched on the other, and the upper pan provided with a vent in its top, all substantially as and for the purposes herein set forth.

102,939.— WATER-WHEEL. — William H. Hubbard, New Haven, Conn.

Claim.—The disk B, fixed upon the shaft A, and provided with radial buckets C, of the form and arrangement substantially as described.

102,940.—DOUBLE AND SINGLE-TREE FASTENING FOR CARRIAGES.—Joseph Ingels, Milton, Ind.

Claim.—A single or double-tree fastening, composed of the hollow sockets, one of which is split, the plug and bolts, substantially as and for the purpose described.

Also, a brace, or neck-yoke fastening, composed of the hollow, slotted, and cut-away head and a shank, having a button at each end, one to hold itself to the trace or neck-yoke, and the other fasten the trace to the single-tree, or the neck-yoke to the pole, substantially as described.

102,941.—SCHOOL-DESK AND SEAT.—Joseph Ingels, Milton, Ind.

Claim.—In combination with a pivoted desk, D, supported on and by the end pieces A A, a double reversible pawl on the desk, and reversed ratchet-teeth on the end piece, for holding said desk when up or down, substantially as described and represented.

Also, in combination with a swinging or folding desk, an inkstand suspended thereto so as always to remain in the same vertical position, whatever may be the position of the desk, and accessible through an opening in the table portion of said desk, as described and represented.

Also, the seat C, in combination with the end pieces A, when attached thereto by front and rear pivots or studs, on either pairs of which said seat may swing in conforming to the movement of the body of the occupant, or for being folded up out of the way, substantially as described.

102,942.—MACHINE FOR LINING AND DRYING PASTEBOARD. — Gustav L. Jaeger, New York, N. Y.

Claim.—1. The heating-chambers N N^1, inclosing the rollers M M, provided with journal-bearings, constructed and operating substantially as herein shown and described.

2. Air-tight paste-reservoirs, connected by air-pipes *b* to the paste-troughs, substantially as described, to regulate the supply of paste to the troughs.

3. The arm *l*, with or without the finger *k*, in combination with the continuous lining, and so arranged as to be supported thereby while the lining remains extended, and to fall when the continuity of the lining is broken, substantially as described.

4. The steam-boxes Q, connected by telescopic adjusting-tubes, substantially as described, in combination with the pressing and drying-rollers.

5. The journaled yoke *s*, carrying the fingers *f*, when combined with the fingers *g*, both constructed and operating together in relation to the rollers A and C, substantially as herein shown and described.

6. Connecting the fingers *f* with the boxes of the roller A, so that they are raised or lowered with said roller in the adjustment of said boxes, substantially as described.

7. The combination and arrangement of the pasting-rollers A C, the pressing and drying-rollers L M, and the paste-reservoir G, with continuous rolls of lining-paper J K, substantially as described.

8. The reciprocating knife Y, moving in a horizontal plane, arranged substantially as described, so as to cut the continuous linings that connect the sheets of pasteboard.

102,943. — BREAD-MACHINE. — Lemuel P. Jenks, Boston, Mass., assignor to himself and Aaron Kingsbury, same place.

Claim.—1. In bread and other mixing or kneading-machines, the stationary plate or column (fixed to the cross-bar above,) extending from near the center of the pan to very near the periphery of the same, in combination with a rotating pan, all substantially as described.

2. The plate or cylinder-scraper L, actuated by the lever-plate and spring, and rotating round a stationary plate or column, and passing between the same and the periphery of the pan, all substantially as described.

3. The combination of the plate-scraper L with the stationary plate or column K, for the purpose above named, all substantially as described.

4. The above-described clamp or fastening Q, in combination with the bread-machine above described, all substantially as stated.

5. The general combination and arrangement of the whole machine, all substantially as described.

102,944.—SHEARS AND SCISSORS.—Charles C. Johnson, Springfield, Vt.

Claim.—In combination with the shear-blades A B, the employment of the spring C, connected to one of the handles, and secured by a screw, *b*, to one of the blades, and having its forward end either provided with a pivot, *a*, or round projection, all substantially as set forth.

102,945.—Coat and Hat-Hook.—Morton Judd, New Haven, Conn., and Hubert L. Judd, Brooklyn, N. Y.

Claim.—The hook or bracket, having a plate, *a*, and spike *c*, the latter being at an inclination downward from the surface of the former, substantially as and for the purposes set forth.

102,946.—Shoe.—Ferdinand Kilsheimer, Cincinnati, Ohio.

Claim.—A shoe having the rear upper formed of one piece, with an extension, *b*, for the purpose of pulling on and buckling the same, substantially as herein described.

102,947.—Counter Seat.—Daniel H. Krauser, Pottsville, Pa.

Claim.—The adjustable counter seat herein described, provided with pivoted brace B, arms *b*, journals *c*, and slotted brackets C D, arranged to permit the seat to be drawn out horizontally or folded vertically against the counter-front, as specified.

102,948.—Hydraulic Engine.—Albert D. Laws, Bridgeport, Conn.

Claim.—The combination, with the main engine, of an auxiliary engine, (for opening and closing the ports of the main engine,) constructed and operating substantially in the manner set forth.

Also, a piston-valve, in combination with the main engine, when moved axially by an internally arranged mechanism operating directly on the valve, substantially as described.

Also, a cylinder, having its ports formed by making recesses in the interior thereof, and combining therewith a cylindrical jacket or lining, substantially as hereinbefore set forth.

Also, the combination of a main and auxiliary engine, when all the valve and other working mechanism is confined within the cylinders, substantially as and for the purposes set forth.

Also, the arrangement, substantially as shown, of the ports, so that both cylinders exhaust through the same port, as described.

102,949.—Machine for Cutting, Stamping, and Packing Soap.—Charles Lehmann, Hartford, Conn.

Claim.—1. The incline ways *r*, in combination with the rack or bars *p*, and drier-frame *q*, for spreading the bars of soap, substantially as set forth.

2. The breakers *o o'*, arranged as described, for separating or elevating the surface of the first, third, fifth bars of soap, and so on, above the surface of the second, fourth, and sixth, or *vice versa*, or every other bar will be elevated simultaneously, as shown and set forth.

3. Arranging two cutting-wires *i i'*, and securing them in the desired position by screw and nut, substantially as shown and set forth.

4. A follower or pusher-plate, *j*, to be placed upon the table in rear of each successive tier of bars of soap, after having been pushed beyond the cutter-wires to spread or push the bars forward in diverging lines upon the rack or bars *p*, substantially as set forth.

5. The arrangement of two tables, one at right angles with the other, and capable of being detached at will, as and for the purpose set forth.

102,950.—Machine for Engraving and Chasing Articles of Metal.—Thomas Lippiatt, Orange, N. J.

Claim.—1. The beds and slides C D E and tool-holder A, constructed and arranged substantially as set forth, in combination with the pattern-wheel *h* and lever *r*, substantially as described.

2. The chatter-wheel 4J and lever *w*, in combination with the tool-holder A and lever *r*, substantially as set forth.

3. The compound lever *r*, formed with the joint *r'*, and hung on the centers 22, in combination with the pattern *h* and tool-holder A, substantially as set forth.

102,951. — Apparatus for Preserving Fruit.—William W. Lyman, Meriden, Conn.

Claim.—1. The arrangement in a steaming-apparatus of the cover D with its edge *d*, constructed so as to extend into the water and form a packing, combined with an alarm, *e*, to sound the time of boiling, substantially as set forth.

2. In combination with the foregoing, the perforated plate B, as and for the purpose specified.

3. In combination with the foregoing, the supports E, substantially as described, to support the cover in an elevated position, substantially as and for the purpose set forth.

102,952.—Fruit-Can.—Stimmel Lutz, Philadelphia, Pa.

Claim.—The can A, its annular chamber *c*, and loops or eyes *j*, in combination with the cover B, its lip A, and arms *i*, all arranged and operating as described.

102,953.—Harness-Saddle.—C. K. Marshall, New Orleans, La.

Claim.—Constructing a harness-saddle in which thorough ventilation is afforded by securing the grooved pad C', when the same are constructed of a hard, unyielding surface, to the bridge, or its equivalent, by hinge-joint connections, substantially as described.

102,954.—Mode of Operating Shutters for Hatchways.—James H. McKernan, Indianapolis, Ind.

Claim.—1. The arrangement of the cords or chains C C', attached to the shutters A and K, in combination with the sheaves or pulleys D D', *d*, and H, drum E, and vertical shaft F, substantially as and for the purpose set forth.

2. The vertical shaft F, provided with the drum E, crank-wheels G, coupling J, and guide-arms I, attached to a nut, *a*, all constructed and arranged substantially as and for the purpose set forth.

102,955.—Water-Elevator and Carrier.—Archibald A. McPheeters and Robert P. McPheeters, Arbor Hill, Va.

Claim.—The combination of the pawl D, rods E E', windlass C, provided with the ratchet *c*, plate K, rods *k k*, provided with the hooks *e*, and the bulkheads, all constructed and arranged to operate as described.

102,956.—Hot-air Furnace.—George H. Miller, Leavenworth, Kansas.

Claim.—1. The radiator M, provided with the cleaning-pipes *s s r*, and the internal diagonal flues E E, as specified.

2. In combination with the corrugated cap E, provided with flanch *e* and bead *a*, the feeding-pipe F and corrugated shell D, provided with flanch *d*, and channel *a*.

3. In combination with the tapering corrugated shell D, the lining-plate G, provided with the perforations *o o*, and the flues *z z*, leading to the air-chamber H, between the plate and shell.

102,957.—Universal Square.—David M. Moore, Windsor, Vt., assignor to Ebenezer G. Lamson, same place.

Claim.—The herein-described universal square, composed of the angular frame B, with one-half of its hypotenuse cut away, and the slotted movable

tongue A held in place by the thumb-screw *b* and bolt *a*, or equivalent devices, all substantially as and for the purposes herein set forth.

102,958.—Material for Packing Journals and Bearings.—Eliza D. Murfey, New York, N. Y.

Claim.—1. A packing or bearing, consisting of paper or other pulp condensed in dies under such a pressure as to form a dense, solid block capable of being turned and polished, as set forth.

2. A packing, consisting of pulp combined with rubber, and condensed under pressure to form a hard block, as set forth.

3. A packing, consisting of pulp condensed under pressure to form a hard block, and saturated with paraffine.

102,959.—Clod-Fender and Cultivator Combined.—Benjamin F. Neely, Daleville, Ind.

Claim.—The combination and arrangement of the fender E F, shovel G, connecting-rod H, hand-lever I, and rack K, substantially as set forth.

102,960.—Reworking Bessemer Steel.—Charles Motier Nes, York, Pa.

Claim.—1. The method of producing malleable iron from old rails, imperfect ingots, scrap, &c., of Bessemer steel, substantially in the manner herein specified.

2. The manufacture of cast steel from old rails, imperfect ingots, &c., of Bessemer steel, by first melting and decarbonizing the metal to be reworked, and then recarbonizing the same, substantially in the manner described.

3. The manufacture of puddled steel from imperfect ingots, scrap, &c., of Bessemer steel, substantially in the manner described.

102,961.—Boot and Shoe-Heel.—Gideon E. Newcomb, Bucksport, Me.

Claim.—1. In combination with a divided heel, the adjustable calks *c c*, substantially as and for the purposes specified.

2. The combination of sections A B, spur *d*, and spring *e*, with their holding recesses, substantially as and for the purposes specified.

102,962. — Noodle-Machine. — Dominick Obergfell, Wheeling, West Va.

Claim.—The cylinder B, plunger A, top F, screw-shaft E, and legs *d d d*, and the perforated bottom C, in combination as a whole, when constructed substantially as and for the purpose described as a new article of manufacture.

102,963.—Cotton-Press.—William Pendleton and Henry M. Boardman, Augusta, Ga.

Claim.—The combination of the follower-block, rollers, and inclined planes for griping and holding said block to the side-bars, substantially as described.

Also, in combination with the rollers and planes for griping the side-bars, the levers and links, and their movable fulcrum or support, for drawing down the block or applying the pressure or power, substantially as described.

Also, in combination with the rollers and planes for constituting a griping or clamping mechanism on the side-bars of a cotton-press, the wedge or tapered keys and openings *o o*, for raising said rollers and releasing them from the bar, substantially as and for the purpose described.

102,964.—Pressure Blower.—Joseph Perrault, Troy, N. Y.

Claim.—1. The case A, constructed with a central closed neck, A', for inclosing the hub of the wheel, and an enlarged arched circumference for inclosing the buckets of the wheel, substantially as hereinbefore described.

2. The central closed neck A' of the case, made with projecting hubs D, for the support and bearings of the central driving-shaft H, and attachments for the pulley-frames, as herein shown and described.

3. The arched case A, constructed with air-inlet openings *a b*, near its circumference, in combination with air-supplying chambers B, arranged contiguous thereto, and communicating with the buckets of the air-wheel, substantially as hereinbefore described.

4. The inlet air-openings *a* of the case A, provided with a circular register, E, for regulating the blast of the fan without changing the speed of the engine, as herein shown and described.

5. The arched case A, constructed with an interior encircling air-pressure chamber, F, in combination with the intermediate air-supplying chambers B, substantially as hereinbefore described.

6. The arched shells of the case A, constructed with obliquely-projecting flanges or plates G, which serve as an inclosing roof to the wheel, for the purpose of relieving it from the friction of the back pressure of the air, substantially as hereinbefore described and shown.

7. The air-wheel constructed with buckets K, having the greatest length of their ingress-openings parallel with the axis of the wheel, and that of their egress-openings in the direction of the motion of the wheel, and the two of equal area, or nearly so, substantially as hereinbefore described.

8. The acting sides of the buckets of the fan-wheel curved in a direction opposite to that of the motion of the wheel, in combination with egress-openings having their greatest length in the direction of the motion of the wheel, and their ingress-openings having their greatest length in an axial direction, substantially as hereinbefore described.

9. The annular rings *g*, surrounding the inlet-openings of the arched shells C, in combination with the annular rings A on the sides of the buckets, and the oblique-projecting roofs G, for the purpose of shutting off all communication between the air supplied to the fan and that forced from it, substantially as hereinbefore described.

10. The combination of the arched inclosing case A, the intermediate air-supplying chambers B, the arched shells C having annular obliquely-projecting roofs G, with the air-wheel, constructed with buckets as described, and the inclosing central air-pressure chamber F, the whole constructed, arranged, and operating as hereinbefore described.

102,965.—Feed-water Heater.—William Phelan, Peoria, Ill.

Claim.—1. In a condenser for steam-engines, the combination of two inverted frustums of a cone, one within the other, leaving a hollow space between their respective surfaces, and with a spiral incline uniting said surfaces winding around the chamber thus formed, the two frustums being riveted or otherwise fastened together at the top, the outer frustum having a steam and water-tight bottom.

2. The conical exhaust-chamber C, when attached to the base of the tank A, and constructed in two pieces united by horizontal flanges and bolts *d*, and having the notches *e e* cut in its base, or equivalent device for passage of steam and water thereunder.

3. The "lime-receiver" D, with the openings E F G, and the notches *f f* thereunder for the passage of water.

4. The pipe H, with valve, and connection with the exhaust-chamber C and the lime-receiver, all substantially as and for the purposes herein set forth.

5. The collapse-valve *m*, in combination with the above, substantially as described and for the purposes set forth.

102,966.—Carpenter's Plane.—Zephaniah Phillips, Dixon, Ill.

Claim.—1. The fork E, when constructed and arranged to operate in the manner and for the purpose set forth.

2. In combination with the fork E, bit B, when

constructed and arranged to operate as and for the purpose described.

102,967. — VENTILATOR-REGISTER. — Hugh M. Phinney, Cambridge, Mass.

Claim.—A ventilator-register, having valves pivoted to and shutting against the flat inner surface of the circular register-ring *d*, to close the ventilator, substantially as described.

Also, the register-ring and its valves and valve-operating mechanism combined with the thimble *a*, substantially as shown and described.

Also, the combination of the pin *f*, the nuts *t u*, the spring *w*, and the hub *g* of the levers *h i*, when relatively arranged, substantially as shown and described.

102,968.—MACHINE FOR DRESSING MILL-STONES. — William Pickens and Peter Dalrymple, Chicago, Ill.

Claim.—1. The arm G, provided with a traversing head-block O, track S S, gauge-head R, and point *a*, combined with the screw-rod J, operated by the ratchets *l*, pawls *m*, arms U, rod H, connecting-rod L Y, and lever M.

2. The adjustable and reversible center D, combined with the frame I A B, hub C, and arm G of a stone-dressing machine.

102,969.—MANUFACTURE OF SUGAR.—Juan Poey, Havana, Island of Cuba.

Claim.—The employment, in connection with carbonate of lime, of carbonic acid, to effect the clarification of the juice while the latter is heated, substantially as hereinbefore set forth.

102,970.—ATMOSPHERIC VALVE FOR HOUSE BOILERS.—John H. Rhodes, Brooklyn, N. Y.

Claim.—The atmospheric valve for house boilers, constructed of a coupling or body part, B, having male and female screw-threads *a* and *c* at its opposite ends, also provided with a side valve, C, a hollow nut, D, forming a valve-seat, *f*, and a check or stop, A, establishing openings *i i*, all being arranged substantially as described, for operation in connection with the inlet-pipe to the boiler, essentially as and for the purpose herein set forth.

102,971.—ROLLER-SKATE.—Hiram Robbins, Cincinnati, Ohio, assignor to himself and William R. Morris, same place.

Claim.—The spring pressure-pad F and oscillating arc D, connected to and operating the swiveling roller-frames C C' *e e'*, in the manner and for the purpose described.

102,972.—WASHING-MACHINE.—Job Robinson, Lawrence, Kansas.

Claim.—The means employed for imparting a motion to, and controlling the operation of the rubbers N, consisting of the rollers H, the shaft K, provided with the cranks *k*, and the bars M, substantially as shown and described.

Also, in combination with the above, the blocks or boxes *m*, working longitudinally within the bars M, and held in position against the cranks *k* by means of the spring *m'*, substantially as and for the purpose set forth.

Also, the means employed for securing in position, and rendering adjustable the rubbers O, consisting of the bars P, pivoted upon the rods Q, the studs R, the springs S, and the catches U, substantially as shown and described.

102,973. — OIL-CUP. — James Ross, North Cambridge, Mass.

Claim.—1. The combination of the double valve D, seats *c d*, passages *a a a'*, tube C, and passage F, substantially as and for the the purpose herein described.

2. The cover or top valve G, hinged spanner H, pivoted screw-rod *k*, and nut *m*, substantially as and for the purpose herein set forth.

102,974.—FUNNEL.—Carl Ruf, New York, N. Y.

Claim.—1. The combination, with a funnel, of a float-valve, for automatically retaining the contents of the funnel, constructed and operating substantially as described.

2. The combination, with a funnel, of the springs K K, substantially as described.

3. The perforated diaphragm F, supporting the tube E, in combination with the funnel A and jacket C, substantially as and for the purpose described.

4. The vibrating lever M supported on the funnel, as described, in combination with the float-valve H and stem G, substantially as shown and described.

5. The combination of the float-valve and stem with the lever M and its movable weight P, substantially as described.

102,975.—BENDING-MACHINE.—John J. H. Sercombe, New London, Wis.

Claim.—1. The combination, with the shaft C and spur-wheels D D, of swiveled screws H H, shaft F, and gears *b b c c*, to adjust the sliding blocks G simultaneously, in the manner described.

2. The revolving wheel D, uprights E, and adjustable roller I, all rigidly connected and moving together, combined with stationary former B, arranged on the frame, as set forth.

102,976.—WATER-METER.—Gerard Sickels, Boston, Mass.

Claim.—1. The swivel S, in combination with valve E, substantially as described.

2. The combination of swivel S and valve E with lever or oscillating post L.

3. The combination of post or lever L with frame H, having shoulders or jaws *m m*, substantially as set forth.

4. The combination of post L, frame H, and valve E, provided with swivel S, substantially as set forth.

5. The combination of the last combination with block D and valve-stem G.

102,977.—TABLE AND COUNTER.—Sigmund Simonson, Bridgeport, Conn.

Claim.—The combination of the hinged top A of the table or counter, and one or more pendulous racks or trays C C', substantially as and for the purpose herein described.

102,978.—LOCOMOTIVE AND TENDER-COUPLING.—Thomas D. Simpson, Mount Vernon, Ohio.

Claim.—The recessed platform A of the locomotive, and the jointed link B pivoted therein, in combination with the coupling-block C, provided with three or more recesses, and with pulling-bolts D of the tender, all said parts being constructed and arranged as herein shown and described.

102,979.—GARDEN-RAKE. — Luther Sisson, North Easton, Mass.

Claim. — A rake, in which (the blank being formed by punching out the metal between the teeth-forming portion) each tooth is twisted a quarter-twist where it joins the cross-head, as shown and described.

102,980. — MEDICAL COMPOUND. — George Hamilton Smith, New Orleans, La., assignor to himself and Stephen Gay, same place.

Claim.—The manufacture or preparation of a medical compound, of the ingredients, in the proportions, and for the purpose set forth.

102,981.—WASHING-SOAP.—John C. Smith, Bernville, Pa.

Claim.—The soap, consisting of the above enumerated ingredients, and prepared in the manner herein described and for the purposes set forth.

102,982. — HAT-CHECK. — John E. Smith, Waterbury, Conn.

Claim.—The clamping device A A, constructed as described, in combination with the check B, which serves as a means for securing the clamp and its duplicate C, constructed so that when not in use it may rest upon the clamp, and when required for use be easily detached therefrom.

102,983—MEDICATED SOAP.—Thomas Franklin Smith, New York, N. Y.

Claim.—The composition of a medicated soap for domestic use, formed of the several ingredients, in the proportions and manner herein described.

202,984. — SHOT-CARTRIDGE.—Charles Edward Sneider, Baltimore, Md., assignor for one-half his right to Josias Pennington, Jr., same place.

Claim.—Making the case or cylinder of a shot-cartridge of a single piece, partially severed or weakened in front of the powder-wad as to separate, when fired, at that point, and go out with the shot, and so obviate a chambered bore to the gun, substantially as described and represented.

Also, in combination with a shot-cartridge, the flap *c*, cut and made from the head of the cartridge-case, as a support for the firing-pin, substantially as and for the purpose described.

102,985.—VAGINAL SYRINGE.—William B. Snyder, Bridgeport, Conn., assignor to himself, James E. Dewhurst, and Robert Hubbard, same place.

Claim.—A vaginal syringe composed of perforated tubes, constructed and combined substantially as hereinbefore set forth, so as to inclose a space into which the fluid is injected.

Also, the combination of the screw-head, the neck, and the perforated tubes, all these parts being constructed to operate in combination, as set forth.

102,986.—APPARATUS AND PROCESS FOR REFRIGERATING, PRESERVING, AND VENTILATING.—Daniel E. Somes, Washington, D. C.

Claim.—1. The refrigerating-chamber B, blower or pump, and volatile liquid, in combination with the evaporators C^1, G, G^1, and G^2, substantially as described.

2. The refrigerating-chamber B, evaporators and blower or pump, in combination with the tanks C or C^1, substantially as and for the purposes described.

3. The gas-retort and conducting-pipes, in combination with the preserving-tanks C, substantially as described.

4. The gas-retort with conducting-pipe or pipes, in combination with the refrigerating-chamber B, blower or pump, and volatile liquid, substantially as described.

5. The refrigerating-chamber, having corrugated walls or floors, in combination with volatile liquid, substantially as and for the purpose set forth.

6. The refrigerating-chamber, lined with fibrous or porous material, in combination with volatile liquid, substantially as and for the purpose described.

7. Compressing fluid in one chamber, and allowing it to expand in another, in combination with evaporating devices, substantially as described.

8. The cooling and preserving room K, beneath the refrigerating-chamber B, in combination with the ventilating and evaporating-tube F, substantially as described.

9. In combination with the refrigerating-chamber B, the blower for forcing or drawing liquid or fluid, when set in a depression in the floor, substantially as and for the purpose set forth.

10. The compressing-chamber, surrounded by ice, water, or other cold substance, in combination with evaporators G^2, and blower or pump, substantially as described.

11. Refrigerating or cooling and ventilating cars by means of the apparatus or devices, substantially as herein described.

12. Refrigerating or cooling and ventilating ships, boats, and other vessels, by means of the apparatus or devices, substantially as herein described.

102,987.—FOUNDRY FLASK-CLAMP.—Charles C. Stewart, Oneonta, N. Y.

Claim.—The combination of the slotted hook D, the sliding box *d*, and the spring *e*, with the pivot *b*, the whole being arranged for operation relatively with the flask-sections, substantially as specified.

102,988. — TOY HOOP.—Cebra L. Taylor, Norwich, Conn.

Claim.—The combination and arrangement of the open spoked hoop, the furcated handle, the shaft, the driving-wheel, and the toys or automata, with their operative mechanism, to be actuated by such wheel, as set forth.

102,989, antedated May 3, 1870.—WARP-STAND FOR LOOM.—Philancy D. Tifft, Eagleville, Ohio.

Claim.—1. The stand A, provided with outwardly-folding lids B B, and with the slides I, supporting the harness-holders or guides H, substantially as herein set forth.

2. The wire or bobbin-plates C C, held on the lids B B, by means of the guide D and buttons E E, substantially as shown and described.

3. The combination and arrangement of the stand A, lids B B, plates C C, buttons E E, guide D, rod G, slides I I, and harness-holders or guides H H, all constructed substantially as and for the purposes herein set forth.

102,990. — SHIRT. — Henry Wallach, New York, N. Y.

Claim.—The arrangement, substantially as shown and described, of the strengthening cross-bands D D with the back A of the shirt.

102,991. — WOODEN STREET-PAVEMENT.—Charles G. Waterbury, New York, N. Y.

Claim.—In combination with a pavement, consisting of rows of wooden blocks set on a board foundation, with spaces between said rows, to be filled with gravel and tar, or similar substance, thin cleats of wood between said rows of paving-blocks, and nailed to the board foundation, substantially as and for the purpose described.

102,992.—THERMOSTAT FIRE-ALARM.—William B. Watkins, Jersey City, N. J.

Claim.—1. The combination of the thermostat wire S with the spring D, fixed post B, rod C with the arms M and E attached thereto, all as described, and for the purposes hereinbefore set forth.

2. In combination with the rod C and arms M and E attached thereto, the detent-lever F, bell-spring adjusting lever H, connecting-rod I, and spring L, all arranged and operating as hereinbefore set forth.

102,993.—CULTIVATOR.—Nathan G. Webber, East Springfield, Pa.

Claim.—The arrangement of the fixed bow G, the adjustable shovels K, the hinged folding handles I, and the locking and bracing yoke J, as herein shown and described, and for the purpose specified.

102,994.—IMPLEMENT FOR TURNING THE EDGE OF A SHOEMAKER'S BUFFING-KNIFE. — Benjamin B. Webster, East Haverhill, Mass.

Claim.—The knife-edge-turning implement as composed of the slitted blocks A and the steel roller or pin B, constructed and arranged substantially in manner and to operate as hereinbefore explained.

102,995.—LAMP FOR HALLS, GARDENS, &c. Adelbert W. Wehrhan, Columbia, S. C.

Claim.—1. A revolving frame, provided with a

series of stripe or ribbons of different colors, fastened either perpendicularly or obliquely, substantially as and for the purpose herein set forth.

2. The revolving frame, consisting of the central disk *e*, wings *f f*, rims *g g*, and rods *h h*, with the different colored stripe *i i*, substantially as and for the purposes herein set forth.

3. In combination with the revolving frame *f g h*, constructed as described, the pivot *d*, inverted cup G, and lamp B, substantially as and for the purposes herein set forth.

4. In combination with a revolving frame having a series of stripe or ribbons of different colors fastened around it, a series of half-round or prismatic glass sticks arranged outside of said frame, substantially as and for the purposes herein set forth.

5. The combination of the bottom A, top C, rims *m m*, glass sticks I I, lamp B, cup G, revolving frame *f g h*, and stripe *i i*, all constructed and arranged to operate substantially as and for the purposes herein set forth.

102,996.—HEAD-BLOCK OF SAW-MILLS.—Winslow Wellington, Hillsborough, N. H., assignor to Benjamin Wellington, Buffalo, N. Y.

Claim.—In combination with a head-block having a sliding post or upright, *i*, carrying two dogging-teeth, simultaneously operated, as shown, the rollers *s*, for supporting such post or upright, substantially as shown and described.

Also, in combination with such post or upright and dogging-teeth, the lever *o*, toothed rack *q*, and pawl *r*, for moving the post and locking it in position, substantially as described.

102,997.—FEED APPARATUS FOR GRINDING-MILLS, &c.—James Davenport Whelpley and Jacob Jones Storer, Boston, Mass.

Claim.—1. In combination with the tapering screw, the hopper, and the device for shifting the position of the screw, in the manner and substantially as and for the purposes described.

2. The combination of the tapering screw and hopper, with the device for shifting the screw, consisting of the sliding shaft S, adjustable forked bar L, and the notched plate for holding the handle of the same, when all those parts are constructed, arranged, and operating as herein described and for the purposes set forth.

3. In combination with the tapering screw, and with the hopper, the perforated rubber flap, in the manner and substantially as and for the purposes described.

4. In combination with the tapering adjustable screw, the shaft furnished with stirring-pins, in the manner and substantially as and for the purposes described.

102,998.—WHEEL-HUB.—Charles P. Whitman, Charlemont, Mass.

Claim.—1. A hub for carriages or wagons, consisting of the wooden body A, having the box or tube B inserted therein, and protruding at each end, with the caps G screwed thereon, substantially as described.

2. The combination of the body A, box B, spoke-receiver F, and caps G, when constructed and arranged substantially as herein described.

102,999.—GOOSE-NECK FOR HANGING CARRIAGE-SPRINGS.—Stephen M. Wier, New Haven, Conn.

Claim.—As an article of manufacture, the goose-neck constructed as herein described, consisting of the brace A, head and neck B, and brace C, between the head and base, as and for the purpose specified.

103,000. — BARREL. — Henderson Willard, Grand Rapids, Mich.

Claim.—A barrel, or other similar package, constructed of an inner cylinder, A, and an outer cylinder, B, with their open portions *a b* so arranged at opposite sides that the open portion of one cylinder shall be contiguous to the solid portion of the other cylinder, substantially as and for the purpose herein described.

103,001.—METHOD OF FORMING CYLINDERS. Henderson Willard, Grand Rapids, Mich., assignor for one-half his right to Warren S. Crippen, same place.

Claim.—The hollow cylinder herein shown and described, when produced in the manner and for the purpose specified.

103,002.—FLOUR-BOLTING REEL.—Allison L. Williams, Orth, Ind., assignor to himself and John H. Bell, same place.

Claim.—1. The arrangement of the shaft A with arms B B and C C, ribs D, and bars or rods *a a*, substantially as shown and described.

2. The wings G G, constructed as described, and pivoted between the ribs D D, and rods *a a*, substantially as and for the purposes herein set forth.

3. In combination with the pivoted wings G G, the rods *b b*, bars H H, and hooks K K, arranged and operating substantially as and for the purposes herein set forth.

103,003. — FLOURING-MILL.—Uriah Bowman, Craig's Mills, Va.

Claim.—1. The lower bur C, adjusted upon the spindle E, which carries it, and the upper bur B, suspended by its driving-spindle D, in combination with the master cog-wheel K and the gearing L L', for communicating to said burs their opposite motions, as herein shown and described.

2. The combination of the adjustable beam H with the short driving-spindle D of the upper bur B, and the metallic frame J, by which said short spindle is suspended, arranged, and operating, as herein shown and described.

3. The combination of the short spindles D and E with the anti friction wheels *c*, the graduating wedges *c* and their carrying arms *b*, all arranged and constructed substantially as herein shown and described.

4. The combination of the bell *l* with the cord *n*, the tripping-lever *m*, and the cams *o*, upon the driving gear-wheel P, all arranged and operating substantially as herein described.

5. The arrangement of the tripping devices S T U V, connected to and operated by the vibration of the handle of the bell, to automatically trip and let fall the water-gate *w*, to shut off the water from the wheel when the mill is operated by water-power, as herein shown and described.

103,004.—SEAT FOR HARNESS-SADDLES.—Peter Burns, Syracuse, N. Y.

Claim.—1. The seat C of a gig tree or harness-saddle, provided with the holes *d d*, filled with wood or other equivalent substance, substantially as set forth.

2. The seat C of a gig-tree or harness-saddle, formed with a cavity *h*, bridge *p*, and holes *d d*, all cast in one piece, substantially as herein shown and described.

REISSUES.

3,963. — RAILWAY AXLE-BOX. — John B. Fletcher, St. Albans, Vt., assignee of C. B. Boynton.—Patent No. 70,793, dated November 12, 1867.

Claim.—1. A lid or cover for the axle-box of a railroad car, when said lid is pivoted at one end to said box, so as to revolve or swing over the opening therein, and is provided with a flange or catch on its upper edge, to arrest its downward movement, and with a spring or catch to hold and retain it when closed, all substantially in the manner herein set forth.

2. A spring, interposed between and combined with the revolving lid of a car-axle box and the head of the pivot upon which it turns or swings, substantially as and for the purpose herein set forth.

3,964. — MANUFACTURE OF INKSTAND. — Thomas Smith Hudson, East Cambridge, Mass.—Patent No. 94,113, dated August 24, 1869.

Claim.—The above-described new or impoved manufacture of barometer inkstand or mucilage-receiver blank, made substantially as described, viz, with the air and liquid fountain or dome A, open only at bottom, the dipping-orifice B, the neck *n*, isolated from the dome A, the connection well or stand-walls *b b*, and the tubular extension *d*, for being formed into a bottom by being heated and contracted, in manner substantially as specified, the whole being in one piece of glass.

3,965.—BASE-BURNING STOVE.—George G. Hunt, Quincy, Ill.—Patent No. 38,828, dated June 9, 1863.

Claim.—1. The combination of the fire-pot E, the fuel-supplying chamber I, the air-damper K, and combustion-chamber *b*, when used in the manner and for the purposes hereinbefore specified.

2. The combination of the fire-pot E, fuel-chamber I, and dampers K and *d*, when used in the manner and for the purposes hereinbefore specified.

3. The combination of the escape-passages J', or their equivalent, with a fuel-supplying chamber I, when used for the purposes hereinbefore specified.

4. The combination of the escape-passages J', or their equivalent, with a fuel-supplying chamber I and damper K, when used in the manner and for the purposes specified.

5. The combination of the escape-passages J', or their equivalent, the chamber I, damper K, and pendent flange *a*, when used in the manner and for the purposes specified.

6. The combination of the chamber I, fire-pot E, combustion-chamber *b*, tubes F, annular chamber G, and dampers K and *d*, when arranged and used in the manner and for the purposes specified.

7. The annular throat *c*, when used in combination with and formed by the fire-pot E and fuel-chamber I, in the manner and for the purposes hereinbefore specified.

3,966.—DEVICE FOR FLANGING FLUE-HOLES OF BOILER-HEADS.—Edward Regan, Indianapolis, Ind.—Patent No. 99,707, dated February 8, 1870.

Claim.—1. An apparatus for flanging the flue-holes in boiler-heads, comprising a die, A, an annular counter or ring, C, surrounding said die, and a device for drawing the said die through the said counter, having its bearing on the latter, substantially as herein set forth.

2. The flanging device composed of the die A, screw B, bracket C D E, and nut and lever F and G, constructed, arranged, and operating substantially as and for the purpose set forth.

3,967.—GRATE FOR FURNACES. — Edward Sabine Renwick, Millburn, N. J.—Patent No. 81,109, dated August 18, 1868.

Claim.—The combination of the following instrumentalities, viz: the fire-box, two gangs of grate-bars, the members of one of which are reciprocatable longitudinally relatively to those of the other; a rock-shaft with which the grate-bars are connected, so that they may be tipped; and a grate-bar mover, connected with one gang of grate-bars in the vicinity of the axis of the rock-shaft, all operating substantially as before set forth.

Also, the combination of the following instrumentalities, viz: the fire-box; two gangs of grate-bars, having the relationship aforesaid; the rock-shaft, on which the grate may be tipped; the grate-bar mover, connected with one gang of grate-bars in the vicinity of the axis of the rock-shaft; and a lever-handle, arranged at the exterior of the ash-pit, substantially as before set forth.

Also, the combination of the following instrumentalities, viz: the fire-box and the two gangs of grate-bars, the members of one of which are reciprocatable longitudinally relatively to those of the other, and are also constructed at their upper edges with saw-tooth projections, abrupt at their ends, and gently inclined from their abrupt ends, substantially as before set forth.

3,968. — STOVE FOR BURNING STUMPS.—Henderson Willard, Grand Rapids, Mich. Patent No. 99,801, dated February 15, 1870; antedated January 29, 1870.

Claim.—1. The process of burning out stumps by means of a stove, constructed and adapted to partially or wholly surround and inclose the stump, substantially as set forth.

2. A stove for burning stumps, constructed substantially as described, for the purpose set forth.

DESIGNS.

4,011. — TRADE-MARK. — Robert W. Bell, Buffalo, N. Y.

Claim.—The design for a trade-mark, as herein before described and shown.

4,012.—TRADE-MARK. — Paris Gibson and Alexander Tyler, Minneapolis, Minn.

Claim.—The design for a trade-mark, as shown and described.

4,013.—FIRE-TONGS.—Sylvester S. Greene, Henrietta, N. Y.

Claim—The design for fire-tongs and griddle-holder herein shown and described, substantially as set forth.

4,014.—CALENDAR.—Hans Christian Heistad, Brooklyn, N. Y.

Claim.—The design of the shape and configuration of the calendar and ornamental three-part knob, as described and represented.

4,015.—BREAST-STRAP SLIDE.—John Henderson, Albion, N. Y.

Claim.—The design for a breast-strap slide, as shown.

4,016. — DRAWER-PULL.—Albert D. Judd, New Haven, Conn.

Claim.—The design for a drawer-pull, as herein described and shown.

4,017.—HAND-STAMP.—Albert L. Munson, New Haven, Conn.

Claim.—The design of the shape and configuration of a hand-stamp, as shown, all substantially as herein described and illustrated in and by the accompanying drawings.

4,018.—SHADE FOR GAS OR LAMP-BURNERS.—Felix Rodgers, Philadelphia, Pa.

Claim.—The design for a shade for gas and lamp-burners, substantially as shown and specified.

4,019.—MUFF. — John Simonet, Flatbush, N. Y.

Claim.—A design for muff, having a broad dark stripe on each end, and narrow stripes between them, all relieved by intermediate stripes of a light shade, as shown.

4,020.—OVERHEAD WORK FOR PASSENGER-ELEVATOR CARS. — Otis Tufts, Boston, Mass.

Claim.—The design for overhead work in passenger-elevator cars, herein set forth.

4,021. — LAMP-FOUNT. — Henry Whitney, East Cambridge, Mass.

Claim.—The design for a "lamp-fount," substantially as herein shown and described.

4,022. — CANDLESTICK. — Henry Whitney, East Cambridge, Mass.

Claim.—The design for a candlestick, substantially as herein shown and described.

EXTENSIONS.

HENRY N. BAKER, of Binghamton, N. Y.—Letters Patent No. 14,759, dated April 29, 1856; reissue No. 3,812, dated January 25, 1870.

"Improvement in Printing-Telegraphs."

Claim. — 1. In a telegraph-printer, a magnet, for producing or controlling the impressions-actuated by electrical impulses, and situated in a main circuit, distinct from, and independent of the electrical impulses and circuit which control the movements of the type-wheel, so that the impressions can be taken on the paper independently of any other operation, substantially as set forth.

2. A roller, actuated by a weight or spring, for feeding the paper, in combination with a type-wheel, actuated or controlled by a magnet, in one main circuit, and the impression mechanism, substantially as specified, actuated by a magnet in another main circuit, and liberating the mechanism that feeds the paper, substantially as set forth.

WILLIAM SELPHO, of New York, N. Y.—Letters Patent No. 14,836, dated May 6, 1856.

"Improvement in the Construction of Artificial Legs."

Claim.—The semi-cylindrical joint b, fitted with the pipes 2 and pins 3, to connect said joint together and give facility for lubricating the same in the manner and as specified.

Also, in combination with said semi-cylindrical joint, the elastic cushion 6 at the ankle-joint, for the purposes specified.

Also, the elastic cushion 9 and 10 on the upper part of the heel and lower part of the limb a, to act in the manner and for the purposes specified.

Also, attaching artificial toes of India rubber to the wooden part of the foot, to act in the manner and for the purposes specified.

ISSUE OF MAY 17.

PATENTS.

103,005. — PRUNING-TOOL. — George W. Ansley, Marengo township, Mich.

Claim.—1. In combination with a pruning-shears, the pruning-saw *s* and attachments, constructed as described, and connected with one of the handles C, so as to be removable with it for use when the said handle is made detachable, substantially as and for the purpose set forth.

2. The blade B made with the chisel-edge *d*, forming a continuation of the shear-edge, and hook A, and the hook A, which has an obtuse cutting-edge, when said blade and hook are so attached to each other that the cutting portions will diverge, as shown in fig. 2, as and for the purpose set forth.

3. The improved pruning-tool herein described, composed of the blade B, chisel *d*, and hook A, secured to the obtuse-edged hook A so as to diverge therefrom, the strained saw *s* and attachments, and the handles C C, the handle to which the saw is secured being detachable therewith, as herein set forth.

103,006.—FURNACE FOR ROASTING, OXIDIZING, AND CHLORIDIZING ORES.—John P. Arey, Georgetown, Colorado Territory.

Claim.—1. The zigzag or serpentine shaft A, in a furnace for roasting, oxidizing, and chloridizing ores or metallic products, constructed substantially as described.

2. In a furnace for roasting, oxidizing, and chloridizing ores or metallic products, the auxiliary fire-place G, arranged above one or more main fire-places, in such relation to the shaft A that the ore falling through this shaft will be subjected, to the direct action of the heat passing from said fire-place, as well as that from the main fire-places, substantially as described.

3. In a furnace for roasting, oxidizing, and chloridizing ores or metallic products, the fire-places C, combined with and arranged at or near the base of a zigzag shaft A, in combination with the fire-place G, which leads directly into the shaft, substantially as described and for the purpose set forth.

4. In a furnace for roasting, oxidizing, and chloridizing ores or metallic products, the relative arrangement of the escape-flue *a*, the fire-place G, and feeder, with respect to a shaft, A, or its equivalent, substantially as described.

5. In a furnace for roasting, oxidizing, and chloridizing ores or metallic products, the descending flue B, in combination with the shaft A, receiving-chamber E, and a suction-fan, M, substantially as described.

103,007.—HANDLE FOR BOAT-HOOKS, &c.—Francis F. Bibber, Boston, Mass.

Claim.—The handle A, made substantially as described, for the purpose of indicating the position of the hook *a*, as set forth.

103,008. — REIN-HOOK. — Grinfill Blake, Taunton, Mass.

Claim. — The above-described rein-hook, constructed as shown and described, and provided with a spring, as a new article of manufacture.

103,009. — BOBBIN. — Milton Bliss, Ionia, Mich., assignor to A. M. Bliss.

Claim.—The combination with the bobbin A and the packing ring B, of the pronged plate C, constructed as described, and confining the India-rubber ring B in an annular recess in the end of the bobbin, the prongs being passed through the bobbin-flange and then clinched, substantially as herein set forth.

103,010. — WINDOW-SCREEN. — Albert C. Brown, Chicago, Ill.

Claim.—1. The adjustable side pieces B, attached to the sides of the window-screen frame A, so that they can be adjusted thereon and adapt the frame to windows of different widths, substantially as and for the purposes shown and described.

2. The combination and arrangement of the frame A, side pieces B, and dowel-pins C, when constructed and arranged substantially as and for the purposes specified and shown.

103,011.—LAMP.—Abner Burbank, Rochester, N. Y., assignor to himself, Henry S. Joy, and George D. Williams.

Claim.—1. The lamp H, constructed substantially as described, the bracket R, and air-pipe A, combined and operating as set forth.

2. The air-chamber L S, formed by the bottom K of the reservoir and the bottom E' of bracket, substantially as and for the purpose described.

103,012.—MEDICINE-CASE.—Alphonzo Button, Dunkirk, N. Y.

Claim.—1. The combination with the case, one or more spools and webs, of the coiled spring I, ratchet-wheel K, pawl and thumb-bit, all substantially as specified.

2. The web F, attached to the spool and provided with the elastic bands O and pocket-book Q, substantially as specified.

103,013.—REVOLVING FIRE-ARM.—George W. H. Calver, Burlington, N. J.

Claim.—For removing the shell of a discharged cartridge from the rear of the cylinder, the slide G, claw H, lever J, and link K, in combination with the hammer of the arm, when arranged to operate substantially as hereinbefore set forth.

103,014.—DIGGING AND TAMPING-PICK.—Charles Carroll, North Vernon, Ind.

Claim.—The pick, with tang D, in combination with handle F, ferrule H and key G, constructed substantially as shown and described.

103,015.—AUTOMATIC FRICTION-DOG LATHE-CHUCK.—Loring Coes, Worcester, Mass.

Claim.—1. The arrangement, upon the body of the chuck, of the radial sliding blocks, and upon said blocks the two eccentric clamp-dogs, substantially as described, in virtue of which said dogs may be made to operate conjointly and grasp the rod placed there, on opposite sides, as set forth.

2. The combination, with the chuck-body A, radial sliding blocks D, and eccentric clamp-dogs H, of the adjusting-screw F, as herein shown and described.

3. The combination, with the chuck-body A, the radial sliding blocks D, the eccentric clamp-dogs H, and the double adjusting-screw F, of a centering spring, G, substantially as and for the purposes set forth.

4. The combination, with the chuck A and eccentric clamp-dogs H H, of the friction-disk J and return spring K, substantially as and for the purposes set forth.

5. The combination, with the friction-disk J and eccentric clamp-dogs H H, of the starting lugs L L and M M, and spring K, substantially as and for the purposes set forth.

103,016.—STEAM-TRAP.—Isaiah B. Coleman, Detroit, Mich.

Claim.—The pointed centering-pins H H', constructed, arranged, and applied in a steam-trap, as and for the purpose described.

103,017. — GAS-HEATER. — Joshua Cromly, Philadelphia, Pa.

Claim.—1. The construction of the joint H of the fluid-pipe, of tapered form, enlarging toward the end connecting with the elbow J, so as to facilitate the packing of the pipe, substantially in the manner described.

2. The combination and arrangement of the vapor-pipe K, constructed substantially as described, the elbow J, and fluid joint pipe H, whereby the heating of the vapor is prevented before it reaches the nipple *f*, as above set forth.

3. The combination of the swivel-disk M with the adjustable standard A, by means of the screw-stem *f*, the said disk being arranged and operating in relation to the elbow J and nipple *f*, substantially as described.

4. The combination and arrangement of the vessel F with the air-chamber C for collecting and retaining the excess fluid until removed, the vessel having its mouth packed with wire-gauze to prevent the flame passing into the vessel with the fluid, substantially as specified.

5. The combination and arrangement of the injector N with the generator for supplying the latter with fluid from a reservoir, and controlling the supply, substantially as above set forth.

103,018. — MANUFACTURE OF IMITATION HAIR-CLOTH.—Joseph J. Comstock and James Aborn, Providence, R. I.

Claim.—The new manufacture which results from the use of the fiber of the stem of the wild plantain tree, as a substitute for animal hair, in the manufacture of fabrics for purposes for which hair-cloth is suitable, substantially as herein specified.

103,019.—SUB-BASE REED-ORGAN COUPLER. George Cook, New Haven, Conn.

Claim.—The bent arms H upon the coupling-levers F, when combined with the sub-base valves E, keys B and C, and adjustable slide G', substantially as set forth.

103,020.—SHAFT-TUG.—William Hurd Correll, Nashville, Ohio.

Claim.—1. The grooved segmental casting C, provided with tongues *a a*, flanges *b b*, and pin *d*, all substantially as and for the purposes herein set forth.

2. In combination with the casting C, the double strap A, buckle B, and connecting straps D E, all substantially as and for the purposes herein set forth.

103,021. — SHAPING-MACHINE. — Alfred B. Couch, Worcester, Mass.

Claim.—1. The combination with guide-piece C C¹ C², saddle B, and sliding bar D, of the crank Q and connecting-rod R, substantially as and for the purposes described.

2. The combination with the guide-piece C C¹ C², saddle B, sliding bar D, crank Q, and connecting-rod R, of the beveled gears I K M N, as shown and described.

3. The combination with guide-piece C C¹ C² and gears I K M N, of the radially-slotted disk T and eccentrically-arranged crank-shaft P Q, substantially as and for the purpose set forth.

103,022.—SEEDING-MACHINE.—Charles H. Cowles, Nebraska City, Nebraska.

Claim.—1. The combination and arrangement of feed-box B and grain-box F, whereby the latter is kept at a uniform fullness, as described.

2. The shaft A, with bucket-wheels H, constructed substantially as described, and revolving in grain-box F in continuation with openings I.

3. The combination of feed-box B, grain-box F, feed-regulating slides, shaft A, bucket-wheels H and lever D, all constructed and operating substantially as described.

103,023.—ONE-ARMED MAN'S ASSISTANT.—George W. Dalbey, Carrollton, Miss.

Claim.—1. The bell-crank *d*, pivoted to the table-clamp A, and operated by the sliding bolt B, substantially as herein shown and described.

2. The fork C or presser-arm D, applied to a bell-crank, *d*, on an apparatus for assisting one-armed persons, as set forth.

3. The combination of the egg-holder F with the clamp A, to serve as assistant for one-armed persons, as set forth.

103,024.—SEAT-FRAME FOR VEHICLE.—Jesse W. Dann, Columbus, Ohio.

Claim.—A seat-frame or seat-bottom, constructed substantially as described.

103,025. — SPIKE, BOLT, AND RIVET-MACHINE. — Maxime Decelle, Newburg, Ohio.

Claim.—The combination of the reciprocating frame D, oscillating swage *s*, dies *e e'*, heading-ram *g*, lever G, studs *k k'*, arm E, lever *l*, and studs *m* and *n*, as and for the purpose set forth.

103,026.—SLEEPING-COLLAR.—Levi Dederick, New York, N. Y.

Claim.—A sleeping-collar composed of the neck-collar A, shaped as described, and the adjustable arm-loops B B, as and for the purpose specified.

103,027.—SUB-CUTANEOUS EXHAUSTER. — Georges Dieulafoy, Paris, France.

Claim.—1. A glass-cylinder, A, closed at the ends, and provided with a plunger B, and with nozzles G' P', and cocks G P, said nozzles being adapted to have applied to them trocar and other pipes, substantially as and for the purposes described.

2. The notch C in the piston-rod, and the block D in the end of the cylinder, so adapted to each other as to retain the piston at the end of its stroke, whereby the vacuum in the cylinder is kept up, substantially as and for the purpose set forth.

103,028, antedated May 14, 1870.—CONSTRUCTION OF TUNNELS AND DAMS.—Lewis Dodge, Chicago, Ill.

Claim.—The iron plates G and H, with round or groove joints A and the dovetail joints C D E F, and the ears B, constructed, arranged, and combined as and for the purpose hereinbefore set forth.

103,029.—EARTH CLOSET.—James Addison Drake, New Orleans, La., assignor to William R. C. Clark, same place.

Claim.—The apron D, in connection with a cord, H'', provided with a knob, H, and a weight, I, in combination with a pawl, e, when these parts are constructed, arranged, and operate as herein described, for the purpose set forth.

103,030, antedated May, 7, 1870.—SPRING BED-BOTTOM.—James F. Duffy and William P. Frailey, Chicago, Ill., said Frailey assigns his right to said Duffy.

Claim.—1. The combination of the springs B and sections F G H, when constructed and arranged as shown and described, whereby the several parts are adapted to be detached from each other, for the purpose specified.

2. In combination with a spring bed-bottom, the springs B, when provided with the curves L and with key-hole slots to receive the buttons C E, as shown and described.

103,031.—SADDLE-STIRRUP.—Joseph A. Dunnagan, Mexico, Mo.

Claim.—The arrangement of the springs G G, and foot-support D E, with respect to the bows, as and for the purpose described.

103,032.—HEAD BLOCK FOR SAW-MILLS.—Joseph Duvall and John Winterbottom, Kewaunee, Wis.

Claim.—A saw-mill head-block, constructed as shown and described.

103,033, antedated May 9, 1870.—WOOD-LATHE.—Lucius H. Dwelley, Dorchester, Mass.

Claim.—The combination of an intermittent feeding device with a hollow cutter-carrying arbor, through which the work is fed, and a stationary guide, as described.

Also, the combination of an intermittent feeding-device, a hollow cutter-carrying arbor, through which the work is fed, a stationary guide, and a vibrating or reciprocating circular cutter *f*, substantially as herein shown and described.

Also, the conveying-wheel *e*, made with openings, as described, to receive the blanks, as and for the purpose set forth.

Also, the stationary yielding receiver *g*, constructed and arranged to operate in conjunction with the carrier-wheel, substantially as described.

Also, the combination of an intermittent feeding device, hollow cutter-carrying arbor, guide, and circular cutter *f*, with a conveying-wheel, substantially as herein described.

Also, in a wood-turning machine, the process herein described of first feeding forward and turning a bar to a cylindrical form, then severing from it short pieces or blanks by means of a vibrating or reciprocating rotary cutter, and then pushing forward such severed pieces by means of end pressure of the automatically-advanced bar, into a revolving conveyer or transferrer.

Also, the combination of an intermittent feeding device, a revolving cutter, having, also, a reciprocating or vibrating motion, a hollow cutter-carrying arbor, stationary guide, and a conveying-wheel, substantially as set forth.

Also, the combination of the intermittently-operating conveying-wheel, with the tools *s*, *t*, and *w*, constructed and arranged to operate substantially as described and for the purpose specified.

Also, the combination of the intermittently-operating conveying-wheel with a wheel-checking or locking device, which also serves as a gripe for the material operated upon, substantially as shown and described.

Also, the method herein described of automatically removing from the series of blanks the short pieces formed at or by the juncture of two bars from which the blanks are made.

Also, the method herein described, of adjusting the lateral position of the blanks whilst within the openings of the wheel, by means of inclined guides.

Also, the combination of an intermittently-operating conveying-wheel with a sliding centering arbor *i'*, arranged to operate substantially as described.

Also, the combination of the arbor *i'* with the resisting and stripping levers *j' j'*.

Also, the combination of the arbor *i'*, the resisting and stripping levers *j' j'*, and the conveying-wheel, substantially as described.

Also, the combination, with a revolving and vibrating cutter, *f*, for severing the blanks from the bar, of the conveyer-wheel and the round and spur or chuck centers, substantially as shown and described.

Also, the combination of the sliding carriage *f'* with the stripper *q'*, by means of the headed rod *r'*, and the spring thereon, arranged to operate substantially as set forth.

Also, the combination, with a revolving and vibrating cutter for severing the blanks from the bar, of the conveyer-wheel, the round center, the revolving spurred or chuck center, and the automatically-moved turning-cutter *i'*, substantially as shown and described.

103,034.—COMPOSITION TO PREVENT THE SLIPPING OF MACHINE-BELTS.—Ithamar F. Eaton, Boston, Mass.

Claim.—For preventing the slipping of belts, &c., the composition, formed of the ingredients, combined in the proportions and in the manner substantially as set forth.

103,035.—ELECTRO-MOTOR ESCAPEMENT.—Thomas A. Edison, New York, N. Y.

Claim.—1. The combination of the click C, stop E, lever B, and toothed wheel A, with the electro-magnet G and armature H, substantially as and for the purposes herein specified.

2. The combination of the click D, stop F, lever B, and toothed wheel A, with the electro-magnet G and armature H, substantially as and for the purposes herein specified.

3. The combination, with an electro-magnet, G of a vibrating lever, B, provided with the stops E F, one or both, and clicks C D, one or both, arranged and operating substantially as herein specified.

4. The combination of the clicks C and D, stops E and F, lever B, spring S, toothed wheel A, armature H, and electro-magnet G, substantially as and for the purpose herein specified.

103,036, antedated May 12, 1870.—GAS-GENERATOR.—Thomas B. Fogarty, New York, N. Y.

Claim.—1. The combination of the gasoline self-regulating device E F *g h i* with diaphragmed carbureter C C', as set forth.

2. The arrangement of the gas-discharger in the shaft D of the diaphragmed carburetor C C'.

3. The combination of discharging-pipe *u*, chamber I *z*, and valve *v* with an air-chamber, to graduate the strength of gas, in the manner described.

4. The air-vessel V, composed of chambers R O T, valves *v v'*, and lever *u*, operating as and for the purpose specified.

103,037.—INSECT-TRAP.—Peter Funk and Jo. Nicodemus Baader, Buffalo, N. Y.

Claim.—The construction and arrangement of the base-board A with corrugators, in combination with the trap-board B, the killing department D, the trap-board E, the catch I, and bolt H, all to operate as described, and for the uses set forth.

103,038.—PLOW.—Horatio Gale, Albion, Mich.

Claim.—1. The detachable brace D, provided with a slot, *i*, in combination with the land-side and the handle H', as and for the purpose set forth.

2. In combination with the right handle of a plow attached to a brace, D, as described, the adjustable sliding plate *p*, having thereon a stud or post, S, for the purpose set forth.

103,039.—FLUTING-TONGS.—Henry Gerecke, Carlstadt, N. J., assignor to himself and Augustus Gerecke, same place.

Claim.—As an article of manufacture, fluting-tongs, having cast handles and rolled-wire fingers screwed therein below the pivot-joint, as shown and described.

103,040.—PROPELLING VESSELS.—Joseph Ghisi, Genoa, Italy.

Claim.—1. The auxiliary propelling means L, in combination with the rolling structure and actuated by power within the said structure, and at a higher velocity, as herein specified.

2. The locomotive C, constructed as represented, so as to stand in its proper horizontal position when it has partially climbed up one side of the concave in which it is mounted, arranged as represented relatively to the rolling structure A and to the paddle-wheels L, or equivalent auxiliary propelling means, mounted on the extended shaft of one of the supporting-wheels, as herein specified.

103,041.—THOROUGH-BRACE SPRING.—John Goller, Los Angeles, Cal.

Claim.—The combination with an ordinary thorough-brace spring, D, to the end of which the vehicle is attached, and upon which end the weight acts, of a secondary reenforcing spring, G, which is shorter and stiffer, and whose elasticity is only brought into play by a comparatively heavy load, all as shown and described.

103,042.—DOOR-GUARD.—Charles William Gschwind, Port Republic, N. J.

Claim.—1. The hollow rubber ball, applied to the outer end of a door-protector, as set forth.

2. The combination of the hollow rubber ball B with the plug A, bolt C, and nut *b*, all arranged to constitute a door-protector, as set forth.

103,043.—PADLOCK.—Elias P. Hall, Chicago, Ill.

Claim.—1. In the construction of locks, the tumbler-wheels D, provided with studs, cogs, and recesses, or their equivalents, and the key C, provided with corresponding openings and corrugations *g*, substantially as and for the purpose set forth.

2. The arrangement of the tumbler-wheels D, the tumblers E, the dog F, the springs *i* and *k*, and the hasp B, when constructed as described and for the purpose set forth.

103,044.—DOOR-CHECK AND HOLDER.—Samuel L. Hart, Mennsha, Wis.

Claim.—The plate A, provided with the lug *a* corrugated on its upper surface, in combination with jaw B, provided with double spring C and lug *b* corrugated on its lower surface, and, in connection with shield D, provided with screw E, when constructed, arranged, and operating as and for the purpose set forth.

103,045.—SAW-TEETH.—George L. Hiles, Chicago, Ill.

Claim.—1. The recesses A' in the same or alternate sides of the peripheries thereof, for the reception of movable teeth, substantially as described.

2. In combination with the recesses A', the movable teeth B, provided with bases B', corresponding in form with said recesses, and secured therein, substantially as described, for the purpose set forth.

103,046.—MUSIC-RACK.—John R. Hill, Hyde Park, assignor to himself and Henry E. Hill, Lowell, Mass.

Claim.—1. A music-rack or portfolio, as described, consisting of a case mounted on a base or legs, as shown, and provided with one or more hinged or pivoted leaves, constructed as described, with bevelled or inclined sides, G, and connected by links I K L M, and arranged in the manner and for the purpose substantially as set forth.

2. The combination, substantially as described, of a spring guide or guides, N, with the back of the inner leaf and with the incline G of the next outer leaf, in the manner and for the purpose set forth.

3. The combination, substantially as described, of a spring guide or guides, N, with the central partition D and with the incline side G of the inner leaf, in the manner and for the purpose set forth.

4. The combination, substantially as described, of a pivoted or hinged leaf or leaves, F G H, constructed as specified, with a case, A B C D, in the manner and for the purpose set forth.

103,047.—TRUSS.—Henry Howe, Council Bluffs, Iowa.

Claim.—The arrangement of the bisected and adjustable pad A, provided with rod *d*, bar *e*, slotted plate *f*, screw *i*, washer *h*, and elastic belts C E, all substantially as and for the purposes herein set forth.

103,048.—LAMP-EXTINGUISHER.—John Hughes, New Berne, N. C.

Claim.—In a lamp-burner, the arrangement of the extinguishing-caps D D, bent levers *a a*, and pendent weights *c c*, as and for the purposes herein shown and described.

103,049.—SMUT-MACHINE.—Fred Ihlenfeldt, Le Roy, Ill.

Claim.—The improved arrangement, in relation to the stationary drum A, revolving cylinder B, shaft C, fan-blower D, and pulley G, of the cam J and sifter K, operating in the manner and for the purpose set forth and described.

103,050.—LOOPING-HOOK FOR SEWING-MACHINE.—Michael Ash Keables, Brattleborough, Vt.

Claim.—The looping-hook, constructed as described, pivoted to the rocking-arm, and arranged to swing up at the point to facilitate the escape of the loop, and provided with a restoring and retaining spring, as specified.

103,051.—MACHINE FOR STRETCHING SILK, &c.—George R. Kennedy, Worcester, Mass.

Claim.—The combination, with the stretching-pulleys G G', arranged on the shaft H, of the friction stretching-pulley F, supported on an adjustable stand, arranged in the grooved plate B, whereby the degree of stretch can be varied, substantially as described.

103,052, antedated May 12, 1870.—MACHINE FOR SPINNING WOOL.—Edward Kilbourn, New Brunswick, N. J.

Claim.—The combination of the carriage for the spindles, with the endless chain, the segment-wheel, and the pinion, for transmitting a uniform motion to the carriage during the delivery of rovings, and during the winding of the yarns, and for automatically ceasing to operate the carriage when it is to be operated by other mechanism, the whole constructed to operate substantially as hereinbefore set forth.

Also, the combination of the spindle-carriage with the endless chain, the cam-plate, and the crank-pin revolving eccentrically to the cam-plate, for transmitting a progressively decreasing speed of motion to the carriage during the stretching of the rovings, the whole constructed to operate substantially as before set forth.

Also, the combination of the spindle-carriage with the endless chain, and the pawl for stopping the movement of the carriage when the stretching of the rovings is completed, the whole constructed to operate substantially as before set forth.

Also, the combination of the spindle-carriage with the endless chain, sister-wheel, pinion, cam, and pawl, for moving the carriage inward during the hard twisting of the yarns, the whole constructed to operate substantially as before set forth.

Also, the combination of the spindle carriage with the endless chain, main wheel, sister-wheel, and pins, for the purpose of placing the carriage under the control of the train of mechanism for operating it during the winding of the yarns, the whole constructed to operate substantially as before set forth.

Also, the combination of the spindle-carriage, the endless chain, and the pawl, with the mechanism for varying the position of the pawl at the time it stops the movement of the carriage, the whole constructed to operate substantially as before set forth.

Also, the combination of the driving-shaft of the spindles with the belt-shipper, spring catch, and main shaft, in such manner that the forward motion of the spindles is stopped when the hard twisting is completed, the whole constructed to operate substantially as before set forth.

Also, the combination of the driving-shaft of the spindles with the driving-shaft of the spindle-carriage, through the intervention of the ratchet-wheel, pawl, and arm, in such manner that the spindles are caused to turn backward, for the purpose of backing off the yarns, the whole constructed to operate substantially as before set forth.

Also, the combination of the driving-shaft of the spindles with the sprocket-wheel shaft, ratchet-wheel, and pawl, for the purpose of driving the spindles during the winding of the yarns, the whole constructed to operate substantially as before set forth.

Also, the combination of the drum, which imparts motion to the spindles, with the turning gear-frame, the whole constructed to operate substantially as before set forth.

Also, the combination of the driving-shaft of the spindles with the turning gear-frame, and the weight which is connected therewith, the whole constructed to operate substantially as before set forth.

Also, the combination of the faller with the vibrating arm, the leg, and the track, for the purpose of operating the faller during the winding of the yarn, the whole constructed to operate substantially as before set forth.

Also, the combination of the faller, the vibrating arm, the leg, and the track, with the stop for holding the leg erect, and with the incline for releasing the stop from the leg when the winding of the yarns is completed, the whole constructed to operate substantially as before set forth.

Also, the combination of the faller, the vibrating arm, the leg, and the track, with the shifting-screw, for varying the length of the connection with the faller, so that the place of operation of the faller in varied progressively from the heads of the spindles toward their points, the whole constructed to operate substantially as before set forth.

Also, the combination of the faller, the vibrating arm, the leg, and the leg-lever, with the pivot-screw for shifting the pivot of the leg-lever, so as to increase the vibration of the faller, the whole constructed to operate substantially as before set forth.

Also, the combination of the faller, the vibrating arm, the leg-lever, and the pivot screw, with the guard for stopping the movement of the pivot-screw when the vibration of the faller has attained the required extent, the whole constructed to operate substantially as before set forth.

Also, the combination of the faller, the vibrating arm, the leg, and the stop for holding the leg erect, with the arm for disengaging the stop and the screw for moving said arm, so as to vary the period of disengagement, the whole constructed to operate substantially as before set forth.

Also, the combination of the counter-faller, the drum for driving the spindles, and the friction-brake for modifying the speed of that drum, the whole constructed and operating substantially as before set forth.

Also, the combination of the counter-faller, the friction-brake, and the arm for tightening and slacking the connection between the counter-faller and the friction-brake, so as to put the friction-brake into operation and out of operation, as required, the whole constructed to operate substantially as before set forth.

Also, the combination of the drum that imparts motion to the spindles, the driving-shaft for driving them, and the turning gear-frame, with the means of varying the resistance to the movement of the turning gear-frame, the whole constructed to operate substantially as before set forth.

Also, the combination of the counter-faller, the faller, the hook for holding the counter-faller, and the connection between the counter-faller and the faller, the whole constructed to operate substantially as before set forth.

Also, the combination of the unwinding drums, the driving-shaft of the spindles, the main shaft, and the clutch, by means substantially as described, so that the unwinding of rovings stops when the carriage has reached the place at which the delivery of rovings is to be stopped, the whole constructed to operate substantially as before set forth.

Also, the combination of the roller-jaws, the driving-shaft of the spindles, the main shaft, and the clutch, by means, substantially as described, so that the delivery of rovings is stopped when the length required for one operation of the spindles has been delivered, the whole constructed to operate substantially as before set forth.

103,053.—REVERSIBLE LATCH.—Jacob Kinzer, Pittsburg, Pa.

Claim.—The application of a hollow eccentric, in combination with a sliding hub and swivel-head latch, substantially as and for the purpose herein-before set forth.

103,054.—REVERSIBLE LATCH.—Jacob Kinzer, Pittsburg, Pa.

Claim.—The latch, when cast in two pieces, so that the head may revolve within the tail-piece, substantially as described.

103,055.—SAUCEPAN HANDLE.—Jacob Kinzer, Pittsburg, Pa.

Claim.—The handle composed of malleable and cast-iron, constructed as described and shown.

103,056.—STAMP FOR FRUIT CANS.—Jacob Kinzer, Pittsburg, Pa.

Claim.—The construction of the segment-stamps *a a*, having the spaces or depressions *d d* between the segments, in the manner and for the purpose as set forth.

103,057.—VEGETABLE-CUTTER.—Nicholas Kipper, Seymour, Ind.

Claim.—The combination and arrangement of the frame A B C D, bars E E, shaft G, wheel H with knives I I, pinion M, cog-wheel L, shaft J, apron N, and board O, all constructed as described, and operating substantially in the manner and for the purposes herein set forth.

103,058.—POTATO-PLANTER.—John Krehbril, Clarence Centre, N. Y.

Claim.—1. The sleeve or hub E, arms F, and cups G, in combination with the axle C, slotted arched bottom of the hopper H, and conducting spout I, substantially as herein shown and described, and for the purpose set forth.

2. The combination and arrangement of the tubular opening-plow O P Q and coverers R S, with the conductor-spout I and frame A, substantially as herein shown and described, and for the purpose set forth.

3. The combination of the opening-plow O, coverers R, clutch-lever L, clutch K, block N, and keeper M, substantially as and for the purpose specified.

103,059.—STEAM-GENERATOR.—William Hartill Law, Birmingham, England.

Claim.—In combination with the steam-generator A, the flat, open water-tube E, constructed and arranged substantially as shown and described.

103,060.—CORPSE-PRESERVER.—Henry Lee, Washington, D. C.

Claim.—1. The sections C C', the latter having the vertical flanged opening D, and double reverse-looped hooks E E, when the same are so combined and arranged as to furnish a case, substantially as described, as and for the purpose specified.

2. The box A, doors F F', bands B B, and the interior case C C', and loops E E, when the whole is so combined and arranged as to operate substantially as described.

103,061.—ELECTRIC FOOT-WARMER.—Caleb V. Littlepage, Austin, Texas.

Claim.—A detachable electric sole-plate, of the form shown in figs. 2 and 3 of drawing, the plates and cover being connected and attached together, and the article being shaped to fit beneath the hollow of the foot, all as specified.

103,062, antedated May 2, 1870.—SAFETY-VALVE.—John D. Lynde, Philadelphia, Pa.

Claim.—The construction of the concave disk C, with its projection I, and the arrangement and combination of the disk C, rim D, guide-wings B, valve A, valve-spindle J, and nut Q, substantially as described.

103,063.—FLUTING-MACHINE.—Eli J. Manville, Waterbury, Conn.

Claim.—1. The roller for fluting-machines herein described, constructed with an iron pipe, which serves as a receptacle for the heater and journals for the roller, and having a corrugated brass sleeve cast upon and around it, as and for the purpose specified.

2. A swinging arm, in combination with the moving roller and frame, substantially as set forth, so that a reverse movement of the roller shall cause the separation of the rollers, as specified.

103,064.—COLD-CAP STILL FOR THE DISTILLATION OF ALCOHOLIC AND OTHER LIQUIDS.—James B. Mason, Chapel Hill, N. C.

Claim.—1. The cold-cap still herein described, having the body of the same forming a prism, as described.

2. The combination of the heaters H and connecting flues *h*, with the still A, as described.

3. The non-conducting band around the neck of the cap, so as prevent the heating of the cap, as described.

103,065.—HORSE HAY-RAKE.—Joseph A. McGee, Sharpsville, Ind.

Claim.—The lever E, the rod F, the pawls G and I, and the segmental wheel H, when constructed, combined, and arranged in the manner and form substantially as set forth.

103,066.—CHAIR, BEDSTEAD, AND CRIB.—William McGregor, Chicago, Ill.

Claim.—The construction and arrangement of the seat-frame A, legs D, and braces E, foot-frame C, legs J, and bow-frame K, back-frame B, legs I, arm-pieces F, levers G, and pawls H, in the manner and for the purposes specified.

103,067.—COMBINED COTTON-SEED PLANTER AND FERTILIZER-DISTRIBUTER.—Willis M. McLendon, Greenville, Ga.

Claim.—1. The adjustable arms E, with the beveled wheel G following immediately in rear of the plow, substantially as and for the purposes herein set forth.

2. The pan J', provided with cross-bar *a* and screw *b*, substantially as and for the purposes herein set forth.

3. The combination of the beveled wheel G, seed or fertilizer-receptacle J J', spring bar K, and coverer N, all constructed and arranged to operate substantially in the manner and for the purposes herein set forth.

103,068.—COMBINED DOOR-FASTENER AND KEY-RING.—Bryant H. Melendy, Manchester, N. H.

Claim.—1. The combination of the spring catch D and plate a^3 with the parts or pieces A and hook or claw B *b'*, substantially as herein shown and described, and for the purpose set forth.

2. The compensator C *c'*, constructed and operating in combination with the parts or pieces A, projections a^6, and hook or claw B *b'*, substantially as herein shown and described, and for the purpose set forth.

103,069.—CORD-TENSION DEVICE FOR WINDOW-SHADE.—Charles H. Miller, Buffalo, N. Y.

Claim.—1. The guide-bearing E, composed of the screw *e* and guide-arms e^1 e^1, provided with holes e^2, cast complete, substantially as hereinbefore set forth.

2. The slide-bar A, when cast with a hook, *a*, and projecting spurs a^1 a^1, separated from each other, as shown in fig. II, to permit the introduction of the pulley and to form the axis thereof, as hereinbefore set forth.

103,070.—SEWING-MACHINE.—Adam Moltz, New York, N. Y.

Claim.—1. The sectional shaft D E F, and pivoted upon link O, combined and connected with the needle-bar X, as set forth.

2. The adjustable plate *x* on rocker-shaft, arms *y f' z*, slotted plate *c'*, cam *h'*, and serrated feed-bar, and elevator *i'*, in combination, when constructed as and for the purposes described.

103,071.—PACKING FOR THE JOURNAL-BOXES OF RAILROAD CARS.—Nathaniel Monroe, Boston, Mass., assignor to himself, William T. Keen, and Charles P. Stowe, same place.

Claim.—Packing the journal-boxes of railroad cars with woody fibers, substantially as and for the purposes hereinbefore set forth.

103,072, antedated April 30, 1870.—CONDUCTOR FOR TELEGRAPHS.—James Montgomery, New York, N. Y.

Claim.—1. The flanged insulators *J j*, constructed as represented and described, when used in combination with a hollow railway rail, in the manner and for the purposes stated.

2. The couplings H, inserted in recesses in the rail ends, in the manner and for the purposes set forth.

3. The test-holes K, for the purposes specified.

103,073, antedated May 2, 1870.—TORCH-LIGHT.—Franklin A. Morley, Syracuse, N. Y.

Claim.—1. The starting-light *d*, in combination with the torch B.

2. The self-igniting torch-pot B, attached to the end of the jib-boom, and opened by a lanyard, F, igniting from the concealed light *d* or by electricity.

103,074.—COMPOUND FOR MANUFACTURE OF VARNISH AND PAINTS.—Joseph Naftel, Cleveland, Ohio.

Claim.—The herein-described mode of treating resinous or balsamic gums, or products as are suitable for varnish or admixture with pigments, by means of a solution of alkali, in the manner set forth, and with benzine or turpentine, for the purpose described.

103,075.—SAW-FILING INSTRUMENT.—George E. Norris, Glen's Falls, N. Y.

Claim.—1. The frame A, slotted arms B, adjust

able head C c', and adjustable case-hardened gauge D, in combination with each other, said parts being constructed and operating substantially as herein shown and described, and for the purposes set forth.

2. The combination of the frame A, adjustable arms B, adjustable head C c', adjustable case-hardened gauge D, gauge E, pivoted arm F, adjustable arm G, and spring H with each other, said parts being constructed and operating substantially as herein shown and described, and for the purposes set forth.

103,076.—Steam Vacuum Pump.—James H. Pattee and George H. Nye, Monmouth, Ill., assignors to themselves, H. J. Graham, and H. H. Pattee, same place.

Claim.—1. The arms J' J'' J''' I *j*, and rod or shaft *d''*, or their equivalents, for operating the three-way cock *d* by the vibration of the valve J, substantially as described, and for the purpose specified.

2. The combination of the lever L, rod L', arm L'', and shaft *d'* with the three-way cock *d*, substantially as and for the purpose specified.

3. The combination of valves J, shaft *i*, arms I J' J'' J''', rod *m*, lever M', arms M and *j*, with valve C', arm L, rods L', arm L'', and three-way cock *d*, the whole operating substantially as and for the purpose specified.

4. The pipes H *h* with valves *o o'* and *o*, when combined with the tank A and pipe C, substantially as and for the purpose set forth.

5. The levers *s s' s''* and valves C' *c*, when arranged to operate substantially as and for the purpose specified.

6. The chamber or dome F, and pipe *f*, with check-valve *f'*, combined with the three-way cock *d*, chamber or dome E, and valve *d''*, operating substantially as described and for the purpose specified.

7. The combination and arrangement of the tank A, pipes B C, valves J and C', three-way cock *d*, and chambers E and F, in the manner substantially as and for the purpose specified.

8. The construction of the tank A, stayed by bolts *a' a' a' a'* arranged as described, and by stays *a'' a'' a''*, and loops A' A', and provided with rubber or other suitable packing, *a a*, substantially as described and for the purpose specified.

103,077.—Electro-Magnetic Movement.—Frank L. Pope, Elizabeth, N. J.

Claim.—1. The combination of a polarized switch with a relay magnet placed in or operated by the same main circuit, substantially as and for the purpose set forth.

2. The combination of a polarized switch, relay magnet, and local battery, with two electro-magnets actuated by said local battery, substantially as described and for the purpose specified.

3. The combination of an apparatus for transmitting positive and negative currents with a polarized switch, relay magnet, local battery, and two electro-magnets, the whole combined, arranged, and operating substantially as specified.

103,078.—Breech-loading Ordnance.—Abiather Fales Potter, San Francisco, Cal.

Claim.—In combination with the core A, and pin C, the arrangement of the slots or recesses *d* and *e*, the keys *f*, and the cams or projections *g*, substantially as and for the purposes set forth.

103,079.—Cartridge-Case.—Timothy J. Powers, New York, N. Y.

Claim.—1. A cartridge-case, designed for breech-loading fire-arms, when formed entirely of fabricated paper, and the butt filled in and strengthened, the whole substantially as herein specified.

2. The die D with the movable bottom E, the punch F F' H, and the pressing punch G, when constructed, combined, and arranged substantially as and for the purposes described.

103,080.—Planing-Machine.—John Richards, Philadelphia, Pa., assignor to J. A. Fay & Co., Cincinnati, Ohio.

Claim.—1. The radial friction-plates *r i*, with the friction-washer *o*, constructed as described, in combination with the movable bearing *n'*.

2. The sliding carriers *b b'*, when provided with adjustable bearings *d d*, constructed as shown, for the purposes specified.

3. Connecting the levers *k k* directly to the adjusting-screws *g g* by means of links *w w* with a swivel-joint, substantially in the manner and for the purposes herein specified.

103,081.—Steam-Generator.—Peter Riley, Lancaster, Pa.

Claim.—The perforated diaphragms H I of a horizontal tubular boiler, when made adjustable, as and for the purpose named.

103,082.—Transplanting Implement.—Edwin B. Roberts and William Graham, Sturgis, Mich.

Claim.—1. In transplanting implements, the employment of a pair of alternating curved blades, E, substantially as and for the purpose set forth.

2. In combination with the blades E above described, the mechanism by which an alternating movement is given to said blades, consisting of the bifurcated stock A, provided with recesses *b c*, stop *d*, guides C, open plate D, slides F, links G, slotted plates H, ratchets *e*, and slotted sleeve I, provided with cross-bars *f g*, when said parts are constructed and arranged as and for the purpose set forth.

103,083, antedated April 10, 1870.—Cooking-Stove.—Francis H. Root, Buffalo, N. Y.

Claim.—The forward extension D, provided with dormer windows E, projecting from the receding plate *c'*, as and for the purpose hereinbefore set forth.

103,084, antedated May 9, 1870.—Curtain-Fixture.—Franklin Root, Chelsea, Mass.

Claim.—The combination of roller A and sheave *b*, with roller B and movable hangers N, with sheaves, cords, and springs, as and for the purpose specified.

103,085.—Composting Manure and Fertilizer.—Daniel Ruggles, Fredericksburg, Va.

Claim.—The process of applying steam, chemically, by direct contact with animal, vegetable, mineral, liquid, fluid, and gaseous substances for the rapid composting of manures or "plant-food" for agricultural uses.

103,086.—Straw-Carrier for Thrashing-Machine.—Clement Russell and William K. Miller, Massillon, Ohio.

Claim.—In combination with an endless carrier, to which a shake motion is imparted by the rollers *i i*, the two sets of strips *b d*, and the side guides *i' i'*, on and between which guides the said strips *b d* respectively pass, for the purpose of carrying forward the straw, and screening and drawing back the grain, in the manner described and represented.

103,087.—Steam-Generator.—George O. Sampson, Jamestown, N. Y.

Claim.—The arrangement of the return-flues E in the hollow plates A in zigzag lines, substantially as specified.

103,088, antedated May 10, 1870.—Grubbing-Implement.—John Suttazahn, Jr., Pine Grove Township, Pa.

Claim.—The grubbing-implement herein described, having runner or fulcrum E, lateral hooks B B, vertical forked claw D, and flanch *c*, when constructed and arranged to operate as specified.

103,089.—Composition Metal or Alloy.—William Schrier, Logansport, Ind.

Claim.—The combination of the within-described metals, melted in separate crucibles and poured into a mold, as described.

103,090.—Manufacture of Sugar.—Constantin Rosswog, New York, N. Y., administrator of the estate of Sebastian Schlizenbach, deceased.

Claim.—1. Extracting the sugar from the saccharine substance or plant, by means of alcohol, applied substantially as described.

2. Extracting from the saccharine plant or substance at least from seventy to eighty per cent. of the crystallizable sugar, at once free from impurities, by means of heated alcohol applied thereto, substantially as set forth.

3. Separating the sugar from the pulp or refuse, without eliminating the salts or other nutritious substances therefrom, by the use of heated alcohol, substantially as set forth.

4. Extracting the sugar from the saccharine substance by the use of heated alcohol applied thereto under pressure.

5. Extracting sugar with alcohol continuously applied thereto, first in the form of fresh alcohol, and then in the form of mother-water, the one succeeding the other in the manner substantially as described.

6. The distillation of the alcohol from a portion of the mother-water, as a part of the process.

7. The distillation of the alcohol from the refuse before removing it from the jar or chamber in which the extracting of the sugar takes place.

8. Extracting sugar from the saccharine matter or substance with alcohol, through the agency of a series of closed vessels connected together in such manner as to pass the alcohol from one to the other of the entire series, and return it to the initial point or vessel, either in the form of clean alcohol or in the form of mother-water, without once exposing it to the atmosphere or stopping the process.

9. Extracting the sugar from saccharine matter with alcohol, in a close extracting-jar or chamber, fitted with an agitator, substantially as set forth.

10. Combining a series of said jars together in a bath of water, fitted with steam and water-pipe, by which the temperature can be maintained at a certain degree on a part of said series, and at a higher or lower degree on another part thereof, substantially as described.

11. Combining a number of said extracting-jars together in a series, and uniting them with pipes and cocks in such manner that the alcohol or extracting agent can flow in and out of one jar into the other through the entire series, substantially as described.

12. Combining a number of said extracting-jars together in a series, and uniting them with pipes and cocks so made and arranged in relation to each other that the alcohol can be distilled out of one division of the series while the sugar is being extracted out of the saccharine substance in a second division of said series with alcohol, and with mother-water in a third division of said series.

103,091.—Manufacture of Extract of Hops.—Charles A. Seely, New York, N. Y.

Claim.—1. The use of hydrocarbons, in the manner and for the purpose described.

2. The extract of hops, when prepared as herein described.

3. The mixture of alcohol and extract of hops, as herein set forth.

103,092.—Horse Hay-Rake.—John S. Shrawder, Fairview Village, Pa.

Claim.—1. As an improvement in horse hay-rakes, a cam A and projecting tooth *i* arranged on pinion *d*, as and for the purpose described.

2. The arrangement of pinion *d*, provided with cam A and tooth *i*, the gears *F e a b*, pivoted frame G, and spring catch M, all being constructed and operating as described.

103,093.—Stud for Fastening Neck-ties to Collars.—William E. Simonds, Hartford, Conn.

Claim.—A shirt-collar stud having the slot *b* sawn in the bulb *a*, substantially as described, and for the purpose set forth.

103,094.—Manufacture of Steel.—Fred. J. Slade, Trenton, N. J.

Claim.—The manufacture of steel of superior quality by the decarbonization and subsequent recarbonization of a bath of molten steel or wrought iron on the hearth of the reverberatory furnace, substantially in the manner above described.

103,095, antedated May 4, 1870.—Cement for Pavements, Walks, Roofs, &c.—George Hand Smith, New York, N. Y.

Claim.—The combination with pine-tar of an alkali or alkalies, or their equivalent compounds, with a fixed or non-volatile oil, and calcined alumina or its compounds, for the production of a cement, by the method and for the uses above described.

103,096, antedated May 3, 1870.—Columnar Mattress.—Hamilton E. Smith, New York, N. Y.

Claim.—An improved mattress, made in columns placed side by side in vertical positions, as herein shown and described, and for the purpose set forth.

103,097.—Sleeping-car Berth.—William B. Snow, Chicago, Ill.

Claim.—The combination of the drum D, provided with a coiled spring in its interior, and the cord C, one end of which is wound around said drum, and the other end is secured to the front of a berth, when constructed as described, and arranged to operate as and for the purpose set forth.

103,098.—Stove-Grate.—Reuben Solliday, Allentown, Pa.

Claim.—1. The removable grate-base, consisting of the entire bottom, exclusive of the surrounding frame, when constructed with flanged sides, in combination with the correspondingly flanged base-bars of the said frame, as and for the purpose specified.

2. The combination of the flanged sliding base and vertical extension thereof, as shown in fig. 2, for the purpose set forth.

103,099.—Machine for Raking and Cocking Hay.—Zattee Cushing Steele, Pana, Ill.

Claim.—The combined hay-rake and cocker, herein described, having rake C and platforms D and H, when constructed substantially as specified.

103,100.—Machine for Raking and Cocking Hay.—Scott Stewart, Lowell, Mass.

Claim.—The combination of the rake A A, the forks E E, the slotted plates J J, the studs O O, the levers M M N, and the receiver I, substantially as described and for the purpose specified.

103,101.—Side-saddle Tree.—Jacob Straus, St. Louis, Mo.

Claim.—1. The bars A, straps B, plates C, hinged braces D D', and parts E and F, combined substantially as set forth.

2. The springs I, in connection with devices D and D', and C, E and F, in combination with the bars A and seat G, substantially as and for the purpose set forth.

3. The pommel with its leather lip A, protected and strengthened by the metallic plate A', substantially as set forth.

103,102.—Traction-Machine for Plow.—Stephen S. Stuntz, Jamestown, N. Y.

Claim.—1. The platform A, wheels B, axle C,

bolts F, planks D, wheels E, and rails G, all combined, arranged, and relatively constructed as and for the purpose described.

2. The combination, with the traction-machine, constructed substantially as described, of the guiding and traction-frames H, the temper-screws, caster-wheels, and the guiding-levers, all substantially as specified.

103,103. — BRIDLE-BIT. — John A. Swan, North Anson, Me.

Claim.—The bars A A of a bridle-bit, having one side rounded and the other side edged, when connected together by the swivel-joint B, as specified.

103,104.—MODE OF MAKING BOOTS.—Hiram Thayer, Monson, Mass.

Claim.—A boot, the parts of which are cut, formed, and combined together in the manner shown and described.

103,105.—PAVEMENT.—Aaron Van Camp, Washington, D. C., and Marcus M. Hodgman, St. Louis, Mo.

Claim.—1. So soaking the block in a composition of pyroligneous acid, sulphate of iron, and borax, or their clear chemical equivalents or deductions, as to produce the result specified.

2. Constructing a pavement, of blocks A A^1, and concrete or cement, when said blocks are grooved, as shown, and wedge-shaped, one lateral surface being straight and the other angular or inclined, substantially as described.

103,106.—GRINDING-MILL.—Andrew J. Vandegrift and George W. M. Vandegrift, Cincinnati, Ohio.

Claim.—1. The combination and arrangement, in a grinding-mill, of the hinged parts A and B and the latch *c*, as and for the purpose substantially as described.

2. The grinding-nut C, constructed as described, in combination with revolving shaft E and its operating-crank, substantially as described.

3. The combination of the temper-screw F, spring *g*, and washer S, when constructed and arranged to operate in the manner substantially as described and set forth.

4. The combination and arrangement of the plate *n*, with part *o* of the hopper G, as and for the purpose set forth and described.

103,107.—BRACKET FOR SUPPORTING STOVE-PIPE SHELVES.—Horace Vansands, Middletown, Conn.

Claim.—1. The two-part hinged shelf-socket *i i'*, with the rod *e*, substantially as and for the purpose set forth.

2. In combination with the above, the two-part clamp or bracket *a a*, bolt *d*, and wire bands *e*, substantially as set forth.

103,108. — CAR-COUPLING. — Joseph Van Steenburg, Chicago, Ill.

Claim.—1. The draw-head A, constructed in two sections or jaws, *a* and a^1, the lower one opening on a hinge, substantially as and for the purposes set forth.

2. The lever B, auxiliary lever B^1, in combination with draw-head A, substantially as and for the purposes set forth.

3. In combination, the draw-head A, constructed as described, lever B, auxiliary lever B^1, chain D, pulley *d*, spring E, rack G, and bar H, with eye *h*, when arranged and operating substantially as and for the purposes set forth.

103,109, antedated May 4, 1870.—MANUFACTURE AND PURIFYING OF IRON.—James Webster, Birmingham, England.

Claim.—The processes and applications in the manufacture and refining of iron and other metals, substantially as described.

103,110.—AUTOMATIC LIGHTING-WICK FOR LAMPS.—William H. Weeks, New York, N. Y.

Claim.—The fulminate, formed of the ingredients, in the proportions and manner herein shown and described, to prevent the injurious effect of the oil or wax in contact with said wick.

103,111.—BOX FOR TRANSPORTING EGGS.—George A. Wells, Oskaloosa, Iowa.

Claim.—A box in which eggs are to be packed for transportation, combining in its construction a series of rabbeted sections, as A^1 A^2 A^3, each provided with staples and cords for supporting the eggs, and the clamps for holding the sections together, substantially as and for the purpose set forth.

103,112.—WASHING-MACHINE. — Philander Wilbor, Milan, Ohio.

Claim.—A washing-machine, when constructed with a corrugated roller, B, reciprocating washboard E, shaft F, vibrater G, spring M, pulleys C D and case A, all arranged to operate in the manner substantially as described and for the purpose set forth.

103,113.—KNIFE-SHARPENER.—Phineas M. Withington, Stoughton, Mass.

Claim.—A tool-sharpener of the improved kind described, that is, as composed of a wooden body and a mass of emery or grinding-composition, cemented or fixed thereto, and as having the grinding-surface of such composition made convex from end to end, or from end to end and transversely, as hereinbefore explained.

103,114. — CARRIAGE-WHEEL. — Mileden Wonser, Norwalk, Ohio.

Claim.—The flanged and grooved tire F, tubular felloe E, in combination with the spokes C, and a hub, arranged as and for the purpose substantially set forth.

103,115.—PREPARATION OF FIBROUS MATERIAL.—James Woodruff and Frederick Boyd, Quincy, Ill.

Claim.—A prepared fibrous material formed of the stalk or fiber of the *Spartina Cynosuroides*, (or cord-grass,) substantially as and for the purposes herein described.

103,116.—APPARATUS FOR STEAMING LARD AND OIL-CASKS.—Christopher J. Yergason, Brooklyn, N. Y.

Claim.—The combination, with the lateral pipes C, provided with screw-threaded ends D, of the nozzles or discharging-tubes F, and screw-threaded and plugged T-shaped pipes E, all arranged for operation, substantially as specified.

103,117.—ALARM-TELEGRAPH SIGNAL-BOX. Job Abbott, Canton, assignor to Automatic Fire-Alarm Company, Leetona, Ohio.

Claim.—1. A signal-box provided with an automatic signalizing mechanism, and with a switch mechanism operated by said automatic mechanism, and so arranged that said automatic mechanism closes the switch, and thus switches the whole operating mechanism out of the circuit at the completion of each fire-alarm given by said automatic mechanism, substantially as is herein specified.

2. A signal-box divided by a horizontal partition into two apartments, and provided with a separate hinged inner door to each of said apartments, and with an outer door inclosing both the inner doors of the box, one of said apartments containing the automatic signalizing mechanism, and the other the key mechanism, substantially as is herein specified.

3. In combination with the inner door of a signal-box, a stop mechanism arranged in the interior of the box, and operated by an arm on the main shaft of the automatic mechanism for the purpose of preventing said inner door from being closed until the winding-lever is in such a position as to prevent its injury by the closing of said door, substantially as is herein specified.

4. The combination of the inner door C, provided with the slot 21, pivoted shield-piece 12 13 14, with knob-hole 15 and spring 19, or its equivalent, and winding-lever G, with knob *f*, said knob extending through the knob-hole 15 and the slot 21, substantially as and for the purpose specified.

5. In combination with a signal-box provided with two hinged inner doors, a locking mechanism operated by and acting upon said inner doors, in such a manner that the opening of either door causes the locking of the other door, so that it cannot be opened until the first opened door is closed, substantially as and for the purpose specified.

6. The switch-wheel Q, having the insulated metallic strips 23 24 25 arranged on its face, when used in combination with the four anvils, *i j k l*, forming the termini of the parts of two circuits, the several parts being arranged as and for the purpose specified.

7. In combination with a signal-box having the automatic mechanism and key mechanism arranged in separate apartments, a switching mechanism operated by the inner door which incloses the key mechanism, and combined with the different circuits in the signal-box in such a manner that upon opening the inner door inclosing the key mechanism, the automatic mechanism shall be switched out of the main circuit, substantially as is herein specified.

8. In combination with a signal-box provided with automatic and key mechanism and switching mechanism, arranged and operating as specified in seventh clause, a locking mechanism operated by the automatic mechanism, and serving to keep the inner door inclosing the key mechanism locked, until the completion of any signal commenced by the automatic mechanism, substantially as is herein specified.

103,118.—WHIFFLETREE.—John J. Adair, Portland, Ind.

Claim.—A whiffletree-coupling, consisting of the bolt C and parts B and B', the latter, B', being so constructed as to embrace the tree, and both parts B and B' being provided with the segmental flanges, substantially as set forth.

103,119.—MACHINE FOR JOINTING STAVES. John Westley Alesworth, Santa Cruz, Cal.

Claim.—The ganging-box herein described, in combination with the self-adjusting clamp L, operated by the lever K, rack F, and pinion I, as and for the purpose specified.

103,120. — STEAM-GENERATOR. — Dexter Amsdell, Hamburg, N. Y.

Claim.—1. In the construction of sectional steam-generators, the application of sections A, so arranged and constructed as to serve as fire-grates, substantially as described and set forth.

2. In combination with sections A, the air-supply tubes C, for the purpose set forth.

103,121.—AIR-COMPRESSING APPARATUS.—Benjamin T. Babbitt, New York, N. Y.

Claim.—The combination of one or more water-pipes A, air-pipes B, and the trap C, with its valve and float, the chamber D, receiver I, water-supply pipe G, inlet and outlet-valves H and J, and the check-valve M, substantially as specified.

103,122. — INSULATOR FOR TELEGRAPHIC WIRE. — Robert Breckenridge Baker, Philadelphia, Pa.

Claim.—The combination with, or application to, telegraph-wires, of metallic oxide as an insulating medium.

103,123.—STEAM COTTON-PRESS.—Augustine Baldwin, New York, N. Y.

Claim.—1. The arrangement of the arms *c c' c' c'' c''*, substantially as described and for the purpose set forth.

2. The piston E', and movable platen D, when directly connected by means of arms, as described.

3. The herein-described press with all its essential parts as above claimed, constructed and operating together as set forth.

103,124.—ALARM-TILL.—John F. Baldwin, Nashua, N. H., assignor to himself and the Miles Alarm-Till Manufacturing Company, Providence, R. I.

Claim.—1. The combination of the tilting case, the locking-bolts, and the bell-catch lever, substantially as specified.

2. The locking-bolts N, provided with the curved ends N', and combined with the tilting dogs S and a tilting case, M, substantially as specified.

3. The case M, provided with the detachable slide W, the dividing-plates V, and pivoted on the rod T, substantially as specified.

103,125.—CAN-OPENER.—Abel Barker, Wyoming, Pa.

Claim.—The disk A, with the recess B in the under side, as set forth, in combination with the movable rod or wire D, to hold the lid while resealing or closing.

103,126, antedated May 13, 1870.—DOOR FOR RAILWAY BOX-CARS.—Charles Barker, Knox county, Ill., assignor to himself and T. C. Thomas, same place.

Claim.—The revolving door B, when applied to a railroad box-car, substantially as and for the purpose described.

Also, the revolving door B, when applied to a railroad box-car, in combination with the opening *d*, for the escape of grain, which would prevent the opening of the door, when arranged with reference to each other, substantially as set forth.

Also, constructing a revolving grain-door for box-cars with the outer points of the door equidistant from the pivot on which it turns, substantially as and for the purpose set forth.

103,127.—APPARATUS FOR LIGHTING GAS BY ELECTRICITY.—William W. Batchelder, Boston, Mass., assignor to George Viles, same place.

Claim.—The arrangement and combination of the insulator R and the connecting spindle *d* with the electrical generator, constructed substantially as described.

Also, the arrangement and combination of the insulator R and the metallic connecting spindle *d* with the electrical generator, the broken circuit O M, the main insulator E, the gas-cock X, and gas-burner H.

Also, the arrangement and combination of the electrical generator, the insulator E, the broken circuit O M, the gas-cock X, the gas-burner H, the handle I, and the bracket to support the handle, under circumstances as specified.

Also, the arrangement, as described, of the insulator E with the broken circuit conductor O, the electrical generator, the gas-cock and burner, the same causing the said insulator to perform the two functions, as hereinbefore set forth.

103,128, antedated May 5, 1870.—HARNESS-BUCKLE. — Alma Bedford, Coldwater, Mich.

Claim.—1. A loop harness-buckle, A, having its cross-bar B provided with a flat rear extension, *a*, constructed and arranged substantially as and for the purpose set forth.

2. In combination with the flat rear extension *a*, the tips or projections *c*, constructed and arranged as and for the purpose set forth.

103,129. — WAGON-SEAT ATTACHMENT. — William Beers, Milan, Ohio.

Claim.—The standards B B, when constructed

belts F, planks D, wheels E, and rails G, all combined, arranged, and relatively constructed as and for the purpose described.

2. The combination, with the traction-machine, constructed substantially as described, of the guiding and traction-frames H, the temper-screws, caster-wheels, and the guiding-levers, all substantially as specified.

103,103. — BRIDLE-BIT. — John A. Swan, North Anson, Me.

Claim.—The bars A A of a bridle-bit, having one side rounded and the other side edged, when connected together by the swivel-joint B, as specified.

103,104.—MODE OF MAKING BOOTS.—Hiram Thayer, Monson, Mass.

Claim.—A boot, the parts of which are cut, formed, and combined together in the manner shown and described.

103,105.—PAVEMENT.—Aaron Van Camp, Washington, D. C., and Marcus M. Hodgman, St. Louis, Mo.

Claim.—1. So soaking the block in a composition of pyroligneous acid, sulphate of iron, and borax, or their clear chemical equivalents or deductions, as to produce the result specified.

2. Constructing a pavement, of blocks A A^1, and concrete or cement, when said blocks are grooved, as shown, and wedge-shaped, one lateral surface being straight and the other angular or inclined, substantially as described.

103,106.—GRINDING-MILL.—Andrew J. Vandegrift and George W. M. Vandegrift, Cincinnati, Ohio.

Claim.—1. The combination and arrangement, in a grinding-mill, of the hinged parts A and B and the latch *c*, as and for the purpose substantially as described.

2. The grinding-nut C, constructed as described, in combination with revolving shaft E and its operating-crank, substantially as described.

3. The combination of the temper-screw F, spring *g*, and washer S, when constructed and arranged to operate in the manner substantially as described and set forth.

4. The combination and arrangement of the plate *n*, with part *v* of the hopper G, as and for the purpose set forth and described.

103,107.—BRACKET FOR SUPPORTING STOVE-PIPE SHELVES.—Horace Vansands, Middletown, Conn.

Claim.—1. The two-part hinged shelf-socket *i i'*, with the rod *e*, substantially as and for the purpose set forth.

2. In combination with the above, the two-part clamp or bracket *c c*, bolt *d*, and wire bands *e*, substantially as set forth.

103,108. — CAR-COUPLING. — Joseph Van Stoenberg, Chicago, Ill.

Claim.—1. The draw-head A, constructed in two sections or jaws, *a* and a^1, the lower one opening on a hinge, substantially as and for the purposes set forth.

2. The lever B, auxiliary lever B^1, in combination with draw-head A, substantially as and for the purposes set forth.

3. In combination, the draw-head A, constructed as described, lever B, auxiliary lever B^1, chain D, pulley *d*, spring E, rack G, and bar H, with eye *h*, when arranged and operating substantially as and for the purposes set forth.

103,109, antedated May 4, 1870.—MANUFACTURE AND PURIFYING OF IRON.—James Webster, Birmingham, England.

Claim.—The processes and applications in the manufacture and refining of iron and other metals, substantially as described.

103,110.—AUTOMATIC LIGHTING-WICK FOR LAMPS.—William H. Weeks, New York, N. Y.

Claim.—The fulminate, formed of the ingredients, in the proportions and manner herein shown and described, to prevent the injurious effect of the oil or wax in contact with said wick.

103,111.—BOX FOR TRANSPORTING EGGS.—George A. Wells, Oskaloosa, Iowa.

Claim.—A box in which eggs are to be packed for transportation, combining in its construction a series of rabbeted sections, as A^1 A^2 A^3, each provided with staples and cords for supporting the eggs, and the clamps for holding the sections together, substantially as and for the purpose set forth.

103,112.—WASHING-MACHINE. — Philander Wilbor, Milan, Ohio.

Claim.—A washing-machine, when constructed with a corrugated roller, B, reciprocating washboard E, shaft F, vibrator G, spring M, pulleys C D and case A, all arranged to operate in the manner substantially as described and for the purpose set forth.

103,113.—KNIFE-SHARPENER.—Phineas M. Withington, Stoughton, Mass.

Claim.—A tool-sharpener of the improved kind described, that is, as composed of a wooden body and a mass of emery or grinding-composition, cemented or fixed thereto, and as having the grinding-surface of such composition made convex from end to end, or from end to end and transversely, as hereinbefore explained.

103,114. — CARRIAGE-WHEEL. — Mileden Wonser, Norwalk, Ohio.

Claim.—The flanged and grooved tire F, tubular felloe E, in combination with the spokes C, and a hub, arranged as and for the purpose substantially set forth.

103,115.—PREPARATION OF FIBROUS MATERIAL.—James Woodruff and Frederick Boyd, Quincy, Ill.

Claim.—A prepared fibrous material formed of the stalk or fiber of the *Spartina Cynosuroides*, (or cord-grass,) substantially as and for the purposes herein described.

103,116.—APPARATUS FOR STEAMING LARD AND OIL-CASKS.—Christopher J. Yergason, Brooklyn, N. Y.

Claim.—The combination, with the lateral pipes C, provided with screw-threaded ends D, of the nozzles or discharging-tubes F, and screw-threaded and plugged T-shaped pipes E, all arranged for operation, substantially as specified.

103,117.—ALARM-TELEGRAPH SIGNAL-BOX. Job Abbott, Canton, assignor to Automatic Fire-Alarm Company, Leetona, Ohio.

Claim.—1. A signal-box provided with an automatic signalizing mechanism, and with a switch mechanism operated by said automatic mechanism, and so arranged that said automatic mechanism closes the switch, and thus switches the whole operating mechanism out of the circuit at the completion of each fire-alarm given by said automatic mechanism, substantially as is herein specified.

2. A signal-box divided by a horizontal partition into two apartments, and provided with a separate hinged inner door to each of said apartments, and with an outer door inclosing both the inner doors of the box, one of said apartments containing the automatic signalizing mechanism, and the other the key mechanism, substantially as is herein specified.

3. In combination with the inner door of a signal-box, a stop mechanism arranged in the interior of the box, and operated by an arm on the main shaft of the automatic mechanism for the purpose of preventing said inner door from being closed until the winding-lever is in such a position as to prevent its injury by the closing of said door, substantially as is herein specified.

4. The combination of the inner door C, provided with the slot 21, pivoted shield-piece 12 13 14, with knob-hole 15 and spring 19, or its equivalent, and winding-lever G, with knob *f*, said knob extending through the knob-hole 15 and the slot 21, substantially as and for the purpose specified.

5. In combination with a signal-box provided with two hinged inner doors, a locking mechanism operated by and acting upon said inner doors, in such a manner that the opening of either door causes the locking of the other door, so that it cannot be opened until the first opened door is closed, substantially as and for the purpose specified.

6. The switch-wheel Q, having the insulated metallic stripe 23 24 25 arranged on its face, when used in combination with the four anvils, *i j k l*, forming the termini of the parts of two circuits, the several parts being arranged as and for the purpose specified.

7. In combination with a signal-box having the automatic mechanism and key mechanism arranged in separate apartments, a switching mechanism operated by the inner door which incloses the key mechanism, and combined with the different circuits in the signal-box in such a manner that upon opening the inner door inclosing the key mechanism, the automatic mechanism shall be switched out of the main circuit, substantially as is herein specified.

8. In combination with a signal-box provided with automatic and key mechanism and switching mechanism, arranged and operating as specified in seventh clause, a locking mechanism operated by the automatic mechanism, and serving to keep the inner door inclosing the key mechanism locked, until the completion of any signal commenced by the automatic mechanism, substantially as is herein specified.

103,118.—WHIFFLETREE.—John J. Adair, Portland, Ind.

Claim.—A whiffletree-coupling, consisting of the bolt C and parts B and B', the latter, B', being so constructed as to embrace the tree, and both parts B and B' being provided with the segmental flanges, substantially as set forth.

103,119.—MACHINE FOR JOINTING STAVES. John Westley Alesworth, Santa Cruz, Cal.

Claim.—The gauging-box herein described, in combination with the self-adjusting clamp L, operated by the lever K, rack F, and pinion I, as and for the purpose specified.

103,120. — STEAM-GENERATOR. — Dexter Amadell, Hamburg, N. Y.

Claim.—1. In the construction of sectional steam-generators, the application of sections A, so arranged and constructed as to serve as fire-grates, substantially as described and set forth.

2. In combination with sections A, the air-supply tubes C, for the purpose set forth.

103,121.—AIR-COMPRESSING APPARATUS.—Benjamin T. Babbitt, New York, N. Y.

Claim.—The combination of one or more water-pipes A, air-pipes B, and the trap C, with its valve and float, the chamber D, receiver I, water-supply pipe G, inlet and outlet-valves H and J, and the check-valve M, substantially as specified.

103,122. — INSULATOR FOR TELEGRAPHIC WIRE. — Robert Breckenridge Baker, Philadelphia, Pa.

Claim.—The combination with, or application to, telegraph-wires, of metallic oxide as an insulating medium.

103,123.—STEAM COTTON-PRESS.—Augustine Baldwin, New York, N. Y.

Claim.—1. The arrangement of the arms *e e* e^1 e^2 e^3, substantially as described and for the purpose set forth.

2. The piston E', and movable platen D, when directly connected by means of arms, as described.

3. The herein-described press with all its essential parts as above claimed, constructed and operating together as set forth.

103,124.—ALARM-TILL.—John F. Baldwin, Nashua, N. H., assignor to himself and the Miles Alarm-Till Manufacturing Company, Providence, R. I.

Claim.—1. The combination of the tilting case, the locking-bolts, and the bell-catch lever, substantially as specified.

2. The locking-bolts N, provided with the curved ends N', and combined with the tilting dogs S and a tilting case, M, substantially as specified.

3. The case M, provided with the detachable slide W, the dividing-plates V, and pivoted on the rod T, substantially as specified.

103,125.—CAN-OPENER.—Abel Barker, Wyoming, Pa.

Claim.—The disk A, with the recess B in the under side, as set forth, in combination with the movable rod or wire D, to hold the lid while reseating or closing.

103,126, antedated May 13, 1870.—DOOR FOR RAILWAY BOX-CARS.—Charles Barker, Knox county, Ill., assignor to himself and T. C. Thomas, same place.

Claim.—The revolving door B, when applied to a railroad box-car, substantially as and for the purpose described.

Also, the revolving door B, when applied to a railroad box-car, in combination with the opening *d*, for the escape of grain, which would prevent the opening of the door, when arranged with reference to each other, substantially as set forth.

Also, constructing a revolving grain-door for box-cars with the outer points of the door equidistant from the pivot on which it turns, substantially as and for the purpose set forth.

103,127.—APPARATUS FOR LIGHTING GAS BY ELECTRICITY.—William W. Batchelder, Boston, Mass., assignor to George Viles, same place.

Claim.—The arrangement and combination of the insulator R and the connecting spindle *d* with the electrical generator, constructed substantially as described.

Also, the arrangement and combination of the insulator R and the metallic connecting spindle *d* with the electrical generator, the broken circuit O M, the main insulator E, the gas-cock X, and gas-burner H.

Also, the arrangement and combination of the electrical generator, the insulator E, the broken circuit O M, the gas-cock X, the gas-burner H, the handle I, and the bracket to support the handle, under circumstances as specified.

Also, the arrangement, as described, of the insulator E with the broken circuit conductor O, the electrical generator, the gas-cock and burner, the same causing the said insulator to perform the two functions, as hereinbefore set forth.

103,128, antedated May 5, 1870.—HARNESS-BUCKLE. — Alma Bedford, Coldwater, Mich.

Claim.—1. A loop harness-buckle, A, having its cross-bar B provided with a flat rear extension, *a*, constructed and arranged substantially as and for the purpose set forth.

2. In combination with the flat rear extension *a*, the tips or projections *c*, constructed and arranged as and for the purpose set forth.

103,129. — WAGON-SEAT ATTACHMENT. — William Beers, Milan, Ohio.

Claim.—The standards B B, when constructed

with hooks C D, and arranged in relation to each other so that their points shall be in opposite directions, constructed substantially as described, and for the purpose specified, as a new article of manufacture.

103,130.—Railway-car Coupling.—James Blakeney, Springfield, Ohio.

Claim.—The combination and arrangement of the buffer-head A, the lever D^2, slide D^3, and swinging frame D^4, substantially as and for the purpose set forth.

103,131. — Roller for Sash-Strap for Carriages.—John H. Bloodgood, Bridgeport, Conn.

Claim.—1. In the construction of carriage-doors, the combination of an automatic stop, catch, or clamp, with the glass frame-holder or strap, whereby the glass may be held in any desired position, substantially as shown.

2. In combination with the foregoing, the strap *m*, arranged upon the glass frame, substantially as and for the purpose specified.

103,132. — Harness-Saddle. — Valentin Borst, New York, N. Y.

Claim.—1. The skeleton frame A, consisting of the parts *a b* B C, cast together in one piece, substantially and for the purpose described.

2. The combination of the frame A, the wooden mountings E E, and the side plates F F, substantially as described.

3. The elongated slots H in the side plates F, for securing the ends of the back-band loops by sewing, substantially as described.

103,133. — Clothes-Drier. — Harvey Bosworth, Champlain, N. Y.

Claim.—The hereinbefore-described clothes-rack A, consisting of the side pieces *a*, connected together by means of the rounds *b*, the cord *f*, the ring *h*, and the beads *e*, all constructed and arranged substantially as and for the purpose shown.

103,134.—Grate for Fire-Place.—Adolph Brase and Lemuel Salladey, Sciotoville, Ohio.

Claim. — An improved revolving grate, A B, whether made single or double, provided upon its rear side or ends with a surface adapted to serve as a fire-board, substantially as herein shown and described, and for the purposes set forth.

103,135.—Machine for Breaking, Scutching, and Separating Fibrous Material.—Edward Brasier, New Cross, assignor to John Eliot Hodgkin, Liverpool, England.

Claim.—1. A large central drum and a roller, or series of rollers, having either fluted, roughened, or plain surfaces, arranged in combination and geared together and moving to and fro upon their axes, and further in one direction than in the other, for the purposes set forth.

2. The said drum and rollers, in combination with the wheels *e* and *g*, the sector *f*, and arm f', and the pinions A and a^2, or the equivalents of these parts, substantially as and for the purposes set forth.

3. The said drum and rollers, in combination with the quadrants *i* and i', and toothed wheels a^3, *j*, and a^4, or their equivalents, substantially as and for the purpose set forth.

4. The said drum and rollers, in combination with the ratchet-wheels or teeth *l* l', pawls *k* k^1, arm *m*, and fixed piece *q*, or their equivalents, and with the rod *n*, and eccentric *o*, or other means for operating the said arm, substantially as and for the purposes set forth.

5. The large central drum and the small rollers, operating with an unequal to-and-fro motion, produced by either of the arrangements of mechanism herein described, or by any other suitable means, in combination with the feeding devices and other parts of a machine for breaking, scutching or otherwise treating fibrous materials, or for glazing or calendering woven fabrics, substantially as set forth.

103,136.—Harvester.—Clark H. Charlesworth and Joseph H. Short, Avoca, N. Y.

Claim.—The combination and arrangement of the shifting finger-bar D, endless knife-belt G, the spools E E, and the shifting leaf H, the whole operating as described and for the purpose specified.

103,137.—Milk-Can.—Charles L. Camp and John H. Chappel, Brooklyn, N. Y.

Claim.—The construction of a milk-can, with a body of one or two pieces of metal, and the bottom and lower hoop made of one piece of metal, the breast and upper hoop of another one piece of metal, and the neck and mouth of another one piece of metal, as herein recited.

103,138.—Spring-Bed Bottom.—George O. Capen, Providence, R. I., assignor, by mesne assignments, to Stephen A. Barker, same place.

Claim.—The two side springs *m m*, having their ends free in space, in combination with the bottom frame D D, and its cross-pieces G G, the latter resting on the free ends of the springs, substantially as shown and described.

103,139.—Sliding-Door Apparatus.—Jacob Capron, New York, N. Y.

Claim.—The divided way C D, when combined with way A B and slotted plate L, substantially as described, for the purpose set forth.

103,140. — Piston-Packing.—John Clark, Harrisburg, Pa.

Claim.—The combination of the packing-rings B C, annular wedge A, disk *d*, block *b*, and screws *c*, when all those parts are constructed and arranged to operate as described.

103,141.—Process of Purifying Linseed-Oil. — Richard T. Clarke, Cincinnati, Ohio, assignor to himself and Gabriel A. Taylor, same place.

Claim.—The process for the manufacture of purified linseed-oil, substantially as set forth.

103,142.—Flap-Fastener for the Dasher of Carriages.—Robert Clingen, Boston, Mass., assignor to Thomas Goddard, same place.

Claim.—The carriage-boot-cover fastener, as described, as composed of the stirrup A, the furcated hook C, and the catch-lever B, constructed and arranged substantially in the manner, and to operate together, as hereinbefore explained.

103,143.—Latch for Gate.—Henry Clymo, Galena, Ill.

Claim.—1. The combination of the vertically-vibrating gravitating catch G, applied to bracket C, a loaded lever, D, pivoted to the gate, and the horizontally-swinging tongue *B'*, applied to the gate, said parts being arranged to operate substantially as described.

2. The construction of the fixed bracket C, with a concavity, *c*, in its bottom surface, in combination with the vertically-vibrating catch G, substantially as described.

103,144. — Traveling-Bag Fastener.—Friedrich Coeller, New Haven, Conn., assignor to Cornelius Walsh, Newark, N. J.

Claim.—The combination of the cup-shaped disk D, having a notch, *a*, in one edge, and pivoted to one part A of the frame, with the stud E arranged upon the other part B of the frame, so that the said stud will pass within the cap, and be secured or released therefrom, substantially as described.

103,145. — Faucet. — William S. Cooper, Philadelphia, Pa.

Claim.—1. The detachable plate *f*, arranged within the case so as not to turn within the latter, and so as to guide the valve and prevent it from turning, substantially as described.

2. The spiral spring D, in combination with the nut *f*, its collar *m*, packing *n*, and the detachable guide-plate *f*, as described, and serving the twofold purpose of maintaining the said plate in its place and the collar against the packing, as set forth.

3. The annular rib on the collar *m* of the revolving valve-spindle, in combination with the recess and its packing *n*, in the cover *i*, as specified.

103,146. — Hand-Stamp for Cutting Checks, Bonds, &c.—John F. Cory and Jacob H. Brown, Brooklyn, E. D., N. Y.

Claim.—1. The spring punches A, provided with cutting-dies representing figures or characters, as set forth, combined with female counter-dies I arranged in series, and in such a manner that the male and female dies are counterparts of each other respectively, substantially as described.

2. The punches A and bed-plate C, provided with female dies I, in combination with the sliding spring holder J, substantially as described.

103,147. — Beater for Thrashing-Machine.—John Crowley, Sparta, Wis.

Claim.—The improved beater for thrashing-machines herein described, consisting of the shaft A, arms or heads C, and longitudinal rollers D, constructed to operate substantially as described.

103,148.—Plow-Colter.—George Curkendall, Dixon, Ill.

Claim.—The sleeve A, colter-stem B, eye-bolts E E, slotted plate G, and nuts H H, all constructed and combined, in the manner and for the purpose set forth.

103,149.—Eraser. — Henry T. Cushman, North Bennington, Vt.

Claim.—As an article of manufacture, a compound eraser and polisher, consisting of the case C, eraser A, and compound polisher and smoother B, all relatively constructed and arranged, as and for the purpose described.

103,150. — Signal-Box for Fire-Alarm Telegraph. — Sylvanus D. Cushman, New Lisbon, assignor to the Automatic Fire-Alarm Company, Leetona, Ohio.

Claim.—1. Extending the knob or handle L of the winding-lever K of an automatic fire-alarm mechanism through the slot U in the inner door C of the signal-box, for the purpose of enabling the operator to grasp said knob or handle on the outside of the door C, and thus operate the winding lever, substantially as is herein specified.

2. The covering-piece M, secured on the winding-lever K, and operating in connection with the slot U in the door C, substantially as is herein specified.

3. The combination of the screw-cup E', anvil *n*, electrically connected with the screw-cup E' by an electrical circuit through the automatic apparatus *f* G H, spring *k*, screw-cup E, rod *i*, and outer door D, with push-knob X, the several parts being arranged substantially as and for the purpose specified.

4. A signal-box for fire-alarm telegraphs, provided with suitable operating mechanism, and with a switch mechanism, so constructed and arranged as that the closing of the outer door of the signal-box acts to switch the electro-magnets out of the main circuit, but leaves the operating mechanism in said circuit, whether said operating mechanism be or be not automatic, as is hereinbefore specified.

103,151. — Stave-Jointing Machine. — Amos Cutter, Boston, Mass.

Claim.—The combination of the pivoted hand-lever E, slotted curved fulcrum-lever F, rod *h*, having spiral spring *i*, and presser-former C, with the holding-dogs D' D'' and carriage D, all constructed to operate in the manner described.

103,152. — Bolt-cutting Device. — Levi Daniels, Oak Hill, N. Y.

Claim.—The combination of the handle A, having projection *c*, the arm D pivoted to said projection, the straps E fastened at the lower end to and adjustable upon the handle A, and pivoted at the upper end on eccentric C, ears *b* attached to arm D, eccentric C embraced by said ears, and the lever B, all as set forth.

103,153.—Hand Corn-Planter.—Augustus C. L. Davis, St. Louis, Mo.

Claim.—The slide or plunger, consisting of the board B, secured together by means of the block C, and provided with the divided ends *b'* and openings or cavities F, in combination with the distributing-block D, substantially as shown and for the purpose specified.

Also, the distributing-block D, provided with the channels *d'* and springs H, in combination with the block E and the hereinbefore-described plunger, substantially as and for the purpose set forth.

Also, the hereinbefore-described device, consisting of the box A, the plunger B, C, *b'*, and F, the distributing-blocks D and E, and the springs H, all constructed and arranged to operate substantially as and for the purpose specified.

103,154. — Breech-loading Fire-Arm.—Jarvis Davis, Buffalo, N. Y., assignor to P. Smith, same place.

Claim.—In combination with a breech-loading gun, the locking-lever F and the pin I, arranged and operating substantially as and for the purposes herein shown and described.

103,155.—Clothes-line Holder.—Joseph Davis, Harrisburg, Pa.

Claim.—The apparatus herein described, constructed with bed-plate A, standard B, gate C, staples *v* and *y*, and dog *s*, when arranged substantially as specified.

103,156.—Railway Car-Coupling.—Thomas J. Delany, Loudoun county, Va., assignor to himself and Clinton Lloyd, Washington, D. C.

Claim.—1. A draw-head for cars, consisting of the bar A having the side pieces C, curved at their outer ends, attached thereto, with the hinged hook B, all constructed and arranged to operate substantially as described.

2. In combination with the draw-head constructed as above set forth, the connecting-link, having the hooks E and cross-bar D, when arranged to operate as herein described, so that when a car is thrown from the track, it shall be automatically detached from the train.

103,157.—Spoke-tenoning and Hub-boring Machine.—John Deming, Salem, Ohio, assignor to himself and A. R. Silver, same place.

Claim.—The improved boring device, consisting of the tool-head B, having ears E thereon, spindle C, slotted shank D, screw G, nut F, clamping-nut H, and clamping-screw I, all constructed and relatively arranged as set forth.

103,158.—Milk-Pail with Strainer Attached. — Loyal M. Doddridge, New Mount Pleasant, Ind.

Claim.—1. A milk-bucket, combining in its construction two compartments, each having its induc-

tion and eduction-apertures, substantially as and for the purpose set forth.

2. The arrangement of the induction-funnels B and E, and eduction-spouts C and F, substantially as shown and described.

103,159.—GUIDE FOR SEWING-MACHINE.—William C. Dodge, Washington, D. C.

Claim.—A guide for sewing-machines having its upper surface so formed as to fit the under surface of the foot or cloth-presser and permit the guide to be inserted under the foot without raising the latter from the cloth, and at the same time form a bearing for the edge of the fabric at a point directly opposite the needle, substantially as described.

103,160.—FORGE-BONNET.—Walter Dunkerly, Woonsocket, R. I.

Claim.—1. The forge-bonnet herein described, lined with fire-clay or other suitable material, and provided with the feeding-door E, sliding doors *c* and *d*, and damper *h*, as specified.

2. In combination with the conical cast-iron forge-bonnet A, having feeding-door E, sliding doors *c* and *d*, and damper *h*, the sheet-iron pipe I, having conical collar *k*, and draught-openings *z z*, substantially as shown and described.

103,161. — AXLE-BOX FOR CARRIAGES.—George B. Durkee, Alden, N. Y.

Claim.—1. The combination of the rubber ring *d*, the flanged rim E, and leather packing *f*, arranged with the axle C and box B, as and for the purpose hereinbefore set forth.

2. The nut G and packing *h i*, arranged with the cap I, outer plate O, packing-ring *s*, and screws *m*, as and for the purpose hereinbefore set forth.

3. The steel surface *u* of the cap, arranged as a bearing for the end of the journal, to prevent the inward movement of the wheel thereon, as and for the purpose hereinbefore set forth.

103,162.—WATER-WHEEL.—William T. Duvall, Georgetown, D. C.

Claim.—1. The abutment-rim B, in combination with the reaction wheel A, all constructed and operating substantially as shown and described.

2. The induction of the water on the under side of the wheel, in such manner that the weight of the latter is sustained by the pressure of the water, substantially as shown and described.

3. The combination of the neck *f*, arranged on the under side of the wheel, with the upward extension of the supply-pipe D, provided with hydraulic packing, substantially as described.

103,163.—FIRE-KINDLING.—George W. Eldridge, South Chatham, Mass.

Claim.—A fire-kindler, composed of wood coated with a mixture composed of rosin or pitch, kerosene, or other inflammable oil, and leaves, dried grasses, straw, shavings, or sawdust, substantially as herein set forth.

103,164.—SHOE.—Thomas Richard Evans, Philadelphia, Pa.

Claim.—1. A shoe having side pieces, H and H′, of the form described, extended upward to surround the ankle, and provided with a flap, J, and with buttons, when the said side pieces are secured together, and to a front piece, F, so as to overlap the upper portion of the latter, substantially as specified.

2. The tongue *b*, secured to the front piece F, substantially in the manner described.

103,165. — FURNITURE-CASTER. — Frederic G. Ford, New York, N. Y.

Claim.—A furniture caster, constructed with the bearing *b* to the pivot-pin or screw *d*, and the slide plate C, formed with vertical guiding and holding-strips *e* on its edges, whether said socket is inserted in the body of the wood or otherwise, in combination with the wheel and bracket D, substantially as specified.

103,166.—BEE-HIVE.—Thomas A. Frakes, Middletown, Ill.

Claim.—The friction-rollers G G, arranged below the shelf F, and supporting the body of the hive clear from the surface upon which said rollers rest, substantially as shown and described and for the purpose specified.

103,167, antedated May 10, 1870.—CURTAIN-FIXTURE.—George Pliny Fuller, Humphrey, N. Y.

Claim.—1. The extension-brackets D D′ formed of two or more pieces *b b′ b″*, and connected together by means of grooves *c* or rivets, as hereinbefore described.

2. The combination of the roller E, sheave G, cord H, staple *f*, pulley I and shaft K, with the curtain F, and window-frame A; the said cord being attached at one end to the pulley I, and the other end suspended, or fastened to said frame A, and the shaft K, provided with a spring, M; all constructed and arranged for joint operation, as above described.

103,168.—BITUMINOUS ROCK PAVEMENT.—Jefferson L. Fulton and Julius Brace, Covington, Ky.

Claim.—A pavement, composed substantially of bituminous rock, asphalt, and fire-clay, or other similar substance, prepared and laid down as herein set forth.

103,169.—MATERIAL FOR ROOFING AND PAVING.—Jefferson L. Fulton and Julius Brace, Covington, Ky.

Claim.—The application of bituminous rock, herein described, in the preparation of roofing and paving-materials, by treating and combining the same with other suitable substances, substantially as set forth.

103,170.—LUBRICATOR.—Gregory Gerdom, Albany, N. Y.

Claim.—1. An oil-cup or lubricator, consisting of a frame, A, follower *d*, spring *e*, disk *c*, and pipe *b*, combined, substantially as and for the purpose described.

2. The combination of follower *d*, spring *e*, disk *c*, frame A, with a top carrying a tube, *f*, substantially as described.

103,171. — STUMP-EXTRACTOR. — Charles Gernes and John H. Gruenhagen, Winona, Minn.

Claim.—1. A machine for pulling stumps, consisting of the frame A, mounted on wheels, and having the shafts C, D, and E, mounted thereon, said shafts being provided with the drums, cords, gearing, and chains, arranged substantially as described.

2. The windlass K, chain M, and grapple N, in combination with a stump-pulling machine, constructed and arranged to operate substantially as described.

103,172.—RAILWAY CAR-COUPLING.—William F. Grassler, Muncy, Pa.

Claim.—The combination of the serrated jaws C, springs C′, and serrated bar E, substantially as and for the purpose set forth.

103,173.—FILTER.—John M. Hackney, Danville, Ky.

Claim.—The arrangement, within the cylinder A, of the bottom B, sieves C D, filtering material E, receiving-pipe H, and discharge-pipe I, all substantially as shown and described.

103,174. — ELECTRO-MAGNETIC RAILROAD ALARM. — Thomas S. Hall, Stamford, Conn.

Claim.—1. The lever B, in combination with the key-lever L, rod K, and the divisions of a divided anvil, substantially as described.

2. The projection E′ on the end of lever B, arranged beneath the head of the rail, substantially as and for the purpose described.

3. The divided anvil, composed of independent parts O, supported in such a manner as to yield under the advance of the key-lever and press against the same, substantially as described.

4. The manner of operating the key-lever which throws the anvil out of contact by means of the same spring F, which restores the lever to its elevation, substantially as described.

103,175.—MECHANICAL MOVEMENT.—Richard B. Hamel and James B. Holden, Jersey City, N. J., assignors to themselves, Arthur M. Smith, and Henry W. Newkirk.

Claim.—1. A weighted or loaded wheel, B, supported on the inner surface of the rim of an outer annular wheel A, and operating upon and in connection with the same, whether the inner surface of the rim of the said wheel A is provided with teeth or with a plain friction-surface, substantially as herein shown and described and for the purposes set forth.

2. The pinion-wheel C upon the shaft F, the latter running within the hollow shafts D D′ of the outer wheel A, in combination with the loaded intermediate wheel B, and said outer annular wheel A, all operating as herein shown and described, and substantially for the purposes set forth.

103,176. — RADIATOR FOR HEATING-FURNACES.—Charles Harkinson, Philadelphia, Pa.

Claim.—1. The arrangement within the box F and drums H of the vertical partitions *g*, substantially as described.

2. The arrangement in respect to the drums and compartments of the box F, of the covered openings in the side of the said box.

3. The branch K, communicating with one of the compartments of the radiator, arranged to project through one of the side walls of the furnace, and having at its outer end a detachable perforated cap, *m*, all substantially as set forth.

103,177.—Suspended.

103,178.—SPRING-BALANCE STOP FOR SAFETY-VALVE.—Baylies Hathaway, Elizabeth Port, N. J.

Claim.—The combination and arrangement relatively to the case of the spring-balance, of the rack H, the pinion J, the lever K, and the stop or catch-lever I, essentially as specified.

103,179.—STATION-INDICATOR FOR RAILROAD CARS. — William Hebdon, New York, N. Y.

Claim.—The ratchet-belt *h*, provided with triangular teeth, in combination with the indicating-belt *e*, and pull *n*, carrying the pawl *o*, the parts being arranged and operating as and for the purposes set forth.

103,180.—CULINARY VESSEL.—Charles W. Hermance, Schuylerville, N. Y.

Claim.—In combination with a vessel, A, the tapering tube B and perforated lid C, with downward-projecting tube D, all substantially as set forth.

103,181.—STAY FOR TRUNK.—Louis Hillebrand, Philadelphia, Pa.

Claim.—1. A trunk-stay, constructed of two braces, hinged together, and adapted to spring and catch on each other, and thereby be locked or engaged, substantially as described.

2. The two braces C D, pivoted together, leaving a prolongation, E, in connection with the locking mechanism F G, formed on the straps, and operating together, substantially as and for the purpose described.

103,182.—ICE-CREAM FREEZER.—Bindloss H. Hilliar, New London, Conn.

Claim.—The plate I, the connecting-rods *z z*, the arms *p*, the sleeve and socket *o* and 2, the stationary pinion and clutch *s* and *s′*, the bail *r*, and legs *n*, the whole being constructed, arranged, and operated substantially as shown and described, and for the purpose specified.

103,183.—PERMUTATION LOCK.—Julius C. Hintz, Jr., Cincinnati, Ohio.

Claim.—The employment, in a permutation lock, of the two weights H and H′, substantially as and for the purpose hereinbefore set forth.

103,184. — STEAM-TRAP. — James Wilson Hodges, Baltimore, Md.

Claim.—1. The partition B, duct H, and plug or valve D *d*, apertures C I, when combined and arranged in connection with the main pipe A, in the manner and for the purposes specified.

2. The plugs K and L, (or a cock or cocks in lieu of either or both,) in combination with the main pipe A, partition B, and duct H, substantially as and for the purposes set forth.

103,185.—COMBINED RAKE AND REEL FOR HARVESTER.—Pliny F. Hodges, Moline, Ill.

Claim.—1. The combination, substantially as set forth, of an intermittently-revolving rake, a continuously-revolving reel, and a sectoral wheel and pinion.

2. In combination with the elements enumerated in the first clause of claim, the bevel segments L and M, substantially as and for the purpose set forth.

3. The combination, substantially as set forth, of an intermittently-revolving rake, a continuously revolving reel, and the wheels D, H, I, and G.

4. In combination with the elements enumerated in the last preceding clause, the bevel segments L and M, substantially as and for the purpose set forth.

103,186.—COMBINED RAKE AND REEL FOR HARVESTER.—Pliny F. Hodges, Moline, Ill.

Claim.—The combination of a continuously-revolving reel, and a rake hinged to a shaft which rotates intermittently within the periphery of the axle of said reel, the rake deriving its revolving motion from said shaft and its horizontal sweeping motion from the reel, as and for the purpose hereinbefore set forth.

103,187.—SWIVEL PLOW.—Frederick Holbrook, Brattleborough, Vt., and James A. Howe and Joel Nourse, Boston, assignors to Joel Nourse, Boston, Mass.

Claim.—1. The convex mold-board, constructed substantially as described.

2. The projection L on the beam, for the purpose set forth.

3. The combination of the recess, the bolt E, and cutter, with the beam, for the purpose described.

4. Constructing the share and land-side to swivel plows, so that, when combined, they shall operate to cut under the land-side, whether turning the furrow to the right or left, substantially as described, for the purposes set forth.

103,188.—METAL-INJECTOR.—John W. Hollingsworth, Mount Vernon, Ind.

Claim.—The cylinder A, constructed as described, one end being funnel-shaped and ending with a tube or apex, F, and the other end open and provided on its upper side with a funnel, B, substantially as and for the purposes herein set forth.

103,189.—ARTIFICIAL TEETH.—John W. Hollingsworth, Mount Vernon, Ind.

Claim.—Coating the inner and marginal surfaces of artificial gums with some plastic material, preparatory to casting the metal upon the same, substantially as and for the purposes herein set forth.

103,190.—COMPENSATING REGULATOR FOR WATCHES.—William H. Horton, Jersey City, N. J.

Claim.—The expanding and contracting rod I, of different expansibility from and pivoted to the regulating-hand, combined with the slotted lever H and fork G, all relatively arranged as and for the purpose described.

103,191. — SAND-PAPERING MACHINE.—Philip Hufeland, New York, N. Y.

Claim.—1. The combination of the reciprocating carriage D, carrying a strip of sand-paper and two spring jaws, with the revolving spindle E, substantially as shown and described.

2. The chuck F, provided with spring jaws *a* acted on by a rod, *d*, and lever *f*, in combination with the strip of sand-paper and with the reciprocating carriage D, substantially as set forth.

3. The pawl *r* and studs *q*, in combination with the endless strip of sand-paper, and with the reciprocating carriage D, substantially as described.

103,192.—HORSE HAY-FORK. — John W. Hull, Connersville, Ind.

Claim.—1. The lever C, angled at the point shown in fig. 1 of drawing, combined with straight rod A, each having a shield and an angular prong at its lower end, each constructed, arranged, and operated as and for the purpose specified.

2. The cars *a d*, having the shape of right-angled triangles, combined with correspondingly-shaped shields *f f*, all constructed, operated, and relatively arranged as and for the purpose described.

103,193.—JACK-SPOOL.—B. James, Worcester, Mass.

Claim.—The jack-spool herein described, consisting of the body A, heads B, disks or washers F, and flanged ferrules let into the heads and body, and the whole secured together by the screws C having the gudgeons and conical flanges, and all constructed as set forth.

103,194.—POTATO-DIGGER.—Moses Johnson, Three Rivers, Mich.

Claim.—1. The wheel D, when constructed with bent fingers *v*, substantially as and for the purpose specified.

2. In combination with the wheel D, the separator G, and plow-shares H, when constructed and arranged substantially as described.

103,195.—COMBINED SHIRT AND COLLAR.—James A. Jones, Washington, D. C., assignor, for one-half his right, to William S. Teel, same place.

Claim.—A shirt having an attached collar, provided with a neck-band, cut substantially in the manner and for the purposes set forth.

103,196.—PITMAN.—Thomas Kealy, Lewisville, Texas.

Claim.—1. The combination of the concaved blocks D E, journal or crank-pin C, plate B, cap F, and end or ball a^1 of the pitman A, substantially as herein shown and described and for the purpose set forth.

2. The combination of the socket plates H with the end a^2 of the pitman A, said plates H being constructed substantially as herein shown and described, to adapt them for attachment to the ball a^2 of the pitman A, and to the object to be moved, as and for the purpose set forth.

3. The combination of the plate B, crank-pin or journal C, concaved blocks D E, cap F, pitman a^1 A a^2, and socket plates H with each other, said parts being constructed, arranged, and operating substantially as herein shown and described and for the purpose set forth.

103,197.—PRUNING-SHEARS.—Clement A. Kellogg, Elyria, Ohio.

Claim.—The within-described pruning-shears, consisting of the curved blade C, connected at right angles to its handle, and the curved blade B, pivoted at *a* to the blade C, and provided with a slot, S, through which passes the guide *e*, connected to the part D, all constructed and operated as shown and set forth.

103,198.—FABRIC FOR CARPET-LINING, &c. John L. Kendall, Foxborough, Mass., and Richard H. Trested, New York, N. Y.

Claim.—As a new article of manufacture, a carpet-lining, made in the manner herein described, and from vegetable fibor, either alone or combined with an animal fiber

103,199.—MANUFACTURE OF ROOFING-FELT. Samuel Kingan, New York, N. Y., administrator of the estate of James Anderson, deceased.

Claim.—1. The process above described for forming roofing sheets, which consists in saturating fibrous material with a mixture of purified asphaltum and oil, or tar, at or immediately before the felting operation.

2. Sheets for roofing or similar purposes, formed of a felt body, whose fibers are held firmly together and rendered impervious to moisture by means of a mixture of oil and purified asphaltum.

103,200.—CUTTER-HEAD FOR PLANING-MACHINES.—John Kuehnle, Cincinnati, Ohio.

Claim.—The eccentrically-grooved cutter-head B *b* b^1, when constructed with blank spaces b^2 between the ends of the eccentric grooves, substantially as and for the purpose set forth.

103,201.—NICKEL PLATING.—William Jacob Kuhns, Brooklyn, N. Y.

Claim.—1. The use of a film of tin in the art of nickel plating, in the manner and for the purpose described.

2. The combination of films of tin and nickel, when the nickel has been deposited by a galvanic battery.

103,202.—AUTOMATIC RAILWAY-SWITCHES. Lewis E. Kurtz, Baltimore, Md.

Claim.—1. In combination with the pivoted plate C, having the weighted arm B, the lever *b*, with its connections, and the sinking rail H, when constructed and arranged to be operated by the weight of the passing train, as specified.

2. The automatic railroad-switch herein described, opened by the weight of the passing train, and closed by the weight of the pendent arm B, as specified.

3. The sinking rail H, of sufficient length to span the distance between any two wheels of the train, when arranged to keep the weight B up, the whole operating as specified.

103,203.—CLOD-FENDER AND PULVERIZING ATTACHMENT FOR SHOVEL-PLOW.—Edward Lannay, Mowrytown, Ohio.

Claim.—1. The flanged and adjustable clod-fender D G G', formed and adapted to operate substantially as set forth.

2. The provision of the adjustable knives H A M the front lower angle of the fender, as set forth.

3. The knives I or J J, whether single or double-bladed, projecting in an upward and forward direction, arranged and adapted to operate in the manner explained.

103,204.—COOKING-STOVE.—Silas Hoffman Le Rue, Allentown, Pa.

Claim.—The combination and arrangement, in a cooking-stove, of the revolving-grate E, pipes C D, and oven B, with an aperture in it communicating with a hot-air pipe, and a door provided with a damper, all substantially as and for the purposes set forth.

103,205.—ANCHOR.—Albert H. Law, San Francisco, Cal.

Claim.—1. The links D, secured to the shank-piece A, and connected to the shank-piece A' by means of the chains E, substantially as and for the purpose set forth.

2. The palms or flukes, consisting of the wings *i* and *i'*, forming the main fluke, and the wing *i''* at right angles to the same, substantially as and for the purpose set forth.

103,206.—FILTER FOR CISTERN.—Patrick Laughlin, Danville, Ky.

Claim.—1. The strainer, composed of the funnel N, the wire-cloth sheet K, flared rim *y*, the extra rim *r*, and the ring L, with its legs *v v v*, constructed and arranged substantially as and for the purpose described.

2. The siphon T, weight N, rod *a'*, sleeve O, lever *b* with its fulcrum S and rod *a'*, cup M, in combination, when constructed and arranged substantially as and for the purpose described.

3. The siphon U, in combination with siphon T, weight N, rod *a'*, sleeve O, lever *b* with its fulcrum S, rod *a*, and cup M.

4. The pipe A, water-chamber B, pipe C with its cap *c*, perforated plates *g g*, *f f*, and I, layers D E F, and body H, in combination with siphon U, siphon T, weight N, rod *a'*, sleeve O, lever *b* with its fulcrum S, rod *a*, and cup M, when constructed and arranged substantially as and for the purposes described.

103,207.—CAR-COUPLING.—N. Edward Leaman, Dayton, Ohio.

Claim.—The coupling pin or cam H, provided with the cross-bar I and pin K, substantially as and for the purpose specified.

Also, in combination with the coupling-pin H, cross-bar I, and pin K, the way L, provided with the inclines *l' l''*, substantially as and for the purpose herein set forth.

Also, in combination with the coupling-pin H, provided with the opening *h*, the safety-bolt M, substantially as shown, and for the purpose specified.

Also, the U-shaped guide-bar F, in combination with the bars A and B and curved plate D, substantially as and for the purpose shown.

103,208. — TANK-FURNACE FOR MAKING GLASS. — George Leuffgen, Charlottenburg, near Berlin, Prussia.

Claim.—1. A melting-tank for the manufacture of glass, composed of metal, substantially as described.

2. The arched metallic tank-furnace for the manufacture of glass, provided with openings for the introduction and eduction of flames to reduce the material in the tank, and with working openings, substantially as described.

3. The combination of the metallic arched tank-furnace *a* for the manufacture of glass, with an internal lining, *b*, of refractory material, substantially as described.

4. A metallic tank for the manufacture of glass, arranged in the manner described, that its outside surface is exposed to the action of cooling agencies, substantially as and for the purpose described.

103,209, patented in England March 4, 1868. COATING FABRICS WITH PARKESINE.—John Lewthwaite, Woburn Place, London, England.

Claim.—1. The improvements in the manufacture of fabrics and papers in sheets or lengths to render them applicable for various useful and ornamental purposes, in the manner described and set forth.

2. The modified modes of manufacture of the material or materials, as hereinbefore set forth.

3. The employment of the material or materials, as hereinbefore described and set forth.

4. The special construction of machinery for the manufacture of the material or fabric, as described and shown in figs. 1, 2, and 3 of the drawings.

5. The modified arrangements of machinery for the same purpose, substantially as shown in figs. 4 and 5 of the drawings.

103,210. — KNIFE-POLISHER. — Charles H. Lithgow, Chicago, Ill.

Claim.—1. The disks D D, provided with the brush and sectional-ribbed faces, as described, in combination with the closed case A, substantially as and for the purpose described.

2. Forming the ribs with flexible supporting-strips *m m*, interposed between the former and securing-strips *l l*.

3. In combination with the shaft C and disks D, the sleeve-bearings *o o*, cushions *p p*, and adjusting-nuts *r r*, as and for the purpose set forth.

103,211.—MILL-SPINDLE DRIVER. — James M. Logan, Springfield, Ill.

Claim.—1. In combination with the spring-boxes G, the perforated India-rubber springs K, constructed as described, and arranged to operate as and for the purpose set forth.

2. The driver D, provided with arms *d d* and with pins *e*, in combination with the India-rubber springs K, when constructed as described, and for the purpose set forth.

3. The combination of the driver D, the steel springs E, the India-rubber springs K, the spindle A, and the gear-wheel B, substantially as described and for the purpose set forth.

4. The combination of the gear-wheel B with the plate F, provided with the spring boxes G and the studs H, when constructed and arranged to operate as and for the purpose set forth.

103,212. — STEAM-ENGINE.— H. E. Long, Decatur, Ill.

Claim.—1. The combination of the shaft F, hollow shell or sleeve H, and pistons G G', all constructed and arranged as described and herein set forth.

2. The arrangement within the cylinder B of the valve-seat C, rings *d d*, and pistons G G', substantially as shown and described.

103,213.—LAMP-BURNER.—William D. Ludlow, New York, N. Y.

Claim.—1. A lamp-burner, constructed as described, so that a flat wick passes in a folded condition into the wick-tube and through the wick-raisers, and is then spread into a circular form at the top to make an Argand flame, substantially as specified.

2. The wick-tube B made of one piece of metal, substantially as herein set forth.

3. The combination of the cone D, double springs E E, wick-tube B, as constructed, and wick-raisers *c c*, all substantially as set forth.

103,214.—VARNISH FOR SURFACING RAILWAY-HEADS, DRAWING AND SPINNING-FRAMES.—Alfred Marr, Lewiston, Me., assignor to himself and George W. Buckman, same place.

Claim.—The compounds herein described, when mixed and applied as described, for the purpose set forth.

103,215. — CUTTER-STOCK FOR SWIVEL-PLOWS. — Elbridge G. Matthews, Oakham, Mass.

Claim.—1. The cutter-stock B for supporting the sward-cutter of a plow, when hinged to the plow-beam, substantially as and for the purposes stated.

2. The combination with a hinged, or swinging cutter-stock, of the wedge *d* or equivalent device for adjusting the same from right to left, or *vice versa*.

103,216.—CALENDAR.—Vve Adrien Maurin and Gustave Toiray, Paris, France.

Claim.—The calendar herein described, consisting of the standing plate *d*, provided with the guides *e* and window or opening *g*, in combination with the block or book *c*, having the millesimal number printed or otherwise formed on its cover, the several parts being constructed and adapted for use in the manner and for the purpose specified.

103,217. — HARVESTER-RAKE. — Edwin R. McCall, Simcoe, Province of Ontario, Dominion of Canada.

Claim.—1. The quadrantal tumbler *h*, constructed as described, and combined with the rake-shaft *d* in the manner set forth, and for the purpose, both of producing the rocking motion of the rake-shaft, and of preventing such rocking motion from taking place anywhere except at the ends of the throw of the shaft.

2. The combination of the rake-shaft *d*, tumbler *h*, vibrating plate *i*, and rotating plate *l*, when all these parts are constructed and arranged to operate as described.

3. The curved metal way *s*, when constructed in the lower platform, and combined with the recesses *t*, and tumbler *h*, in the manner and for the object specified.

103,218.—MANUFACTURE OF ILLUMINATING-GAS.—Edmund P. McCarthy, San Francisco, Cal.

Claim.—1. The combination and arrangement of the jet-pipe *a*, oil-pipe *L* and double conical passage *c*, substantially as and for the purpose set forth.

2. The combination of the superheating-pipe I, decomposer *c*, steam or gas-pipe K, oil-pipe L and retorts D and E, when constructed and arranged to operate substantially as herein specified.

103,219.—CHURN-DASHER.—Jacob W. McClure, Jefferson City, Mo.

Claim.—The hereinbefore-described churn-dasher, consisting of the curved wedge-shaped arms K, secured radially to or upon a shaft, substantially as and for the purpose shown.

103,220.—NUT-LOCK.—Thomas B. McConaughey and James Adams, Newark, Del.

Claim.—The combination of the bolt B, washer C, nut D, projections *a*, key-seat *b c*, and spring key *d*, all substantially as and for the purposes herein set forth.

103,221. — COUNTING-REGISTER. — William H. McNary, Brooklyn, N. Y.

Claim.—The combination, with a series of counting-wheels and spur-gear, *c*, connected with each counting-wheel of a higher denomination, of the pinion E, stop G, and recess *e*, and toothed sector F, provided in and on the wheel of lower denomination, substantially as shown and described.

103,222.—GAS-HEATER.—George F. Meigs, Boston, Mass., assignor to himself and Retire C. Sturges, same place.

Claim.—The combination and arrangement with each other of the gas-tip *a*, the air-chamber D, and the heating-chamber H, all substantially in the manner and for the purpose set forth.

Also, the combination of the mixing-chamber G with the heating-chamber H, the air-chamber D, and the gas-tip *a*, substantially as herein set forth.

103,223.—SASH-HOLDER.—Nathan J. Meigs, West Haven, Conn., assignor to himself and E. P. Merriman, same place.

Claim.—The hook C, constructed and pivoted in the casing as described, and combined with the lever D, pivoted to the hook, and the pin or projection *e* on the sash, to catch the lever D, so that the raising of the sash trips the lever, in the manner set forth.

103,224.—FLUTING-TONGS.—Sarah E. Mersereau, Binghamton, N. Y., administratrix of J. B. Mersereau, deceased.

Claim.—The fluting-tongs, herein described, consisting of the prongs B B C, connected to the spring handle A, as shown, the whole forming a single piece, and constituting a new article of manufacture.

103,225.—SAWING-MACHINE. — P. Andrew Myers, Round Hill, Pa.

Claim.—The frame or table G, slotted carriage T, springs *d d*, rods *b b*, saw R, cross-head P, and walking-beam O, with its connections for receiving and imparting motion, all constructed and arranged to operate as and for the purpose set forth.

103,226.—BED-BOTTOM.—Joseph N. Newell, Adrian, Mich.

Claim.—The combination of the recessed bars B B, springs C C, slats D D, and straps *d d*, all substantially as and for the purposes herein set forth.

103,227.—PREPARING GOLD FOR DENTISTS' USE.—George J. Pack, New York, N. Y.

Claim.—1. The herein-described method of preparing gold for dentists' use, either by rolling or drawing, substantially as set forth.

2. An article of gold for filling teeth, prepared as herein described, in ribbon form, either corrugated, coiled, or formed in pellets, as set forth.

103,228. — ELECTRO-MAGNETIC ENGINE.—Henry M. Paine, Newark, N. J., assignor to himself and M. S. Frost, New York City.

Claim.—1. The combination of the sector magnet A and sector-limbed armature F, with their adjustments or without.

2. The breaking of the circuit previous to the coincidence of the axis of magnet and armature, substantially in the manner and for the purpose specified.

103,229.—MAGNETIC ENGINE.—Henry M. Paine, Newark, N. J., assignor to himself and M. S. Frost, New York City.

Claim.—1. The arrangement of the magnets A on the shaft.

2. The breast of fulcrum magnets in their combination with the rotating magnets A, all substantially in the manner and for the purpose specified.

103,230.—ELECTRO-MAGNET.—Henry Monroe Paine, Newark, N. J., assignor to himself and M. S. Frost, New York City.

Claim.—The compounding or binding together of bars, separately wound, and in the same direction, substantially in the manner and for the purpose herein before set forth.

103,231.—CONSTRUCTION OF ELECTRO-MAGNET.—Henry M. Paine, Newark, N. J., assignor for one-half to Mahlon S. Frost, New York City.

Claim.—The interposition of metal sheets between the layers of electro-magnetic coils or the clothing of the whole wire with the same, substantially as herein set forth.

103,232.—SHIRT-BOSOM.—Moses Palmer, Jr., Boston, Mass.

Claim.—A shirt-bosom, provided with the stiffeners A in its sides, or sides, bottom, and top edges, substantially as shown and described.

103,233.—BRIDGE.—Charles H. Parker, Boston, Mass.

Claim.—The combination, with the two disconnected cantilevers, of the auxiliary central girder, united with said levers by a hinged and sliding connection, substantially as shown and set forth.

103,234.—RENDERING LARD.—James Willard Patterson, New York N. Y., assignor to Sarah Ellen Patterson and John Ashcroft, same place.

Claim.—1. The process of rendering and refining lard, tallow, cod-livers, and like substances, in a receptacle inclosed, said receptacle being completely surrounded by steam, thereby preventing loss of substance by evaporation and atmospheric action, substantially for the purposes set forth.

2. The combination of a cylinder or vessel entirely surrounded by steam, suspended within another cylinder, so as to form a steam-chamber around the entire sphere or vessel for extracting and rendering purposes.

3. The combination of the inside and outside cylinders with the space *e*, the outside cylinder-head *a*, the inside cylinder-cover *m*, the braces *d*, the metallic case *b*, the connections *i*, the faucet *h*, the steam-connections *f*, and the screw-press, as attached, the whole made substantially as described, and so as to operate in the manner set forth.

103,235. — COOKING-STOVE.—Alexander G. Patton, Troy, N. Y.

Claim.—The arrangement of the flues *a*, *b b'*, *C C'*, *d*, *e e'*, and *f*, and dampers C C, as a consequence of which the heated gases may be directed around the oven previous to being caused to surround the water-reservoir, or may be guided directly to and around such reservoir on their way from the fire-box to the exit-passage *f* at the rear of the stove, substantially as shown and described.

103,236.—MANUFACTURE OF BUNCHES FOR CIGARS.—Adolph Pearl, New York, N. Y.

Claim.—1. The combination of the two fixed cutters G G, the die I, and cutters *g g*, carried by a follower, and the movable die-block E, arranged between the fixed cutters, substantially as herein described.

2. The wedge F, in combination with the bed-plate, the die-block E, and the fixed cutters G G, substantially as and for the purpose herein described.

103,237.—RAILWAY-STATION INDICATOR.—Julius P. Pfau, Lansingburg, N. Y.

Claim.—The adjustable spring-pressed rollers A B, combined with a middle actuating-roller, F, the three rollers being relatively arranged and operated in an indicating apparatus, so as to dispense with all springs or additional rolls.

103,238.—FRAME FOR STREET-LAMPS, &c.—Jacob Radston, San Francisco, Cal.

Claim.—1. The middle bar C E.

2. The clamp shown in figs. 3 and 5, all substantially as and for the purposes set forth.

103,239.—SAND AND AIR-CHAMBER FOR TUBULAR WELLS.—John Edward Robinson, Boston, Mass.

Claim.—The closed chamber shown and described, in combination with the tubes, and the semi-globular or conical diaphragm, all constructed and arranged substantially as and for the purpose described.

103,240.—MACHINE FOR MAKING FILES.—Edward B. Rollins, Poland, N. Y.

Claim.—The combination of the helves C C^1, dies or hammers C^2, with their chisels, connecting-rod C^3, and driving-wheel B, substantially as and for the purpose set forth.

2. The combination of the helve C, the pawl E^1, ratchet-wheel F, pinion F', rack E, and shaft D, substantially as and for the purpose set forth.

3. The combination of the guide-wheel D^2, hanger E^2, lever H, and spring H^4, substantially as and for the purpose set forth.

102,241.—MACHINE FOR CUTTING OFF LEAD-PENCILS. — Philip Schrag and Philip Hufeland, New York, N. Y.

Claim.—1. The clamping-frame E, provided with shoulders *d d'*, in combination with a guide-rail, *a*, and with a moving grinding-surface, substantially as herein shown and described.

2. The arrangement of a jacket or box, C, inclosing the cutting-drum A, with the clamping-frame E and the tube F, for connecting with an exhaust-fan, substantially as herein shown and described, and for the purpose set forth.

103,242. — TOOL-GRINDING ATTACHMENT TO LATHES.—James Shaughnessy, Cincinnati, Ohio.

Claim.—The herein-described tool-grinding attachment to lathes, composed of wheel or stone B, sliding case C *c*, sliding frame G *g g' g''* H H', bar J, and driving friction-wheels D E, the whole being constructed and combined substantially in the manner and for the purpose specified.

103,243.—FEED-WATER HEATER AND FILTER.—David E. Shaw, Chatsworth, Ill.

Claim.—1. A feed-water heater and filter, consisting of the metallic box A, provided with the water-shelf F, partition B, metallic pendent rods C and D, and filter K, all constructed and arranged for operation substantially as herein described.

2. In a feed-water heater and filter, so constructing and arranging metallic pendent rods *as* to allow the water to trickle and run down them in its passage through the heater, in the manner substantially as herein described, and for the purpose set forth.

3. In a feed-water heater and filter, so constructing and arranging upon the upper side of its bottom, as well as upon that of any partition above it, alternate transverse ledges, as to form a serpentine course for the water in its passage through the heater, substantially as and for the purpose set forth.

4. In combination with a feed-water heater constructed as herein described, the water-space M, with a partition *b* and filter K, constructed and arranged therein, substantially as and for the purpose set forth.

103,244.—BOOT AND SHOE-SOLE CUTTER.—Edgar F. Shaw, Boston, Mass.

Claim.—The arrangement of the band cutter *c*, reciprocating pulleys C and D, lever B, pivoted at or about its center to the table-plate, in combination with the stomach-presser E, designed to regulate the inclination of the band cutter in forming the variably-beveled edges of the soles of shoes, substantially as and for the purposes specified.

103,245.—HEAD-BLOCK FOR SAW-MILLS.—Andrew Shearon, Richmond, Ind., assignor to Abraham Gaar, John M. Gaar, Jonas Gaar, and William G. Scott.

Claim.—1. The hand-lever H, pitman G, connecting-rod F, toothed bars E E, pinions *m m*, plates *k k*, pawls *t t*, springs *s s*, cams *b' b'*, compound wheels K K and L L, and screw-shaft D, all arranged and operating in the manner and for the purposes set forth.

2. The semicircular frame I, with its holes *j j*, stop-pin N, and temper-screw J, as and for the purposes specified.

3. The arrangement and combination of the devices herein set forth, for producing a continuous forward motion of the knees of a saw-mill head-block, substantially in the manner and for the purposes set forth.

103,246.—BARK-MILL.—Robert H. Shultis, Ellenville, N. Y.

Claim.—In the bark-mill herein shown, an improved arrangement of parts, consisting of the casing A, shaft B, revolving breaking-cone D, stationary ring E, and revolving grinding-ring F, constructed specially as shown, and arranged to operate in the manner set forth and described.

103,247.—Lid and Plate-Lifter and Pot-Hook.—Thomas Simpson, Newark, Ohio.

Claim.—The combination of the lifter A, handle B, stationary hooks C C, and swinging hook D, all constructed and arranged as described, with or without a spring, E, substantially as and for the purposes herein set forth.

103,248.—Steam-Generator.—William P. Skiffington, New York, N. Y.

Claim.—The arrangement of boxes A with openings *n*, *m*, and *x*, the latter opening being closed by a suitable plate or cover, A, in combination with a series of tubes, B, and constructed substantially as and for the purpose herein described.

103,249.—Spring Bed-Bottom.—Charles I. Skow, Racine, Wis.

Claim.—The arrangement of the V-shaped springs B B, with reference to the frame A A and coiled springs C, as herein described, for the purpose specified.

103,250.—Sawing-Machine.—Oliver C. Smith and Theodore S. Doll, Menallen, Pa.

Claim.—1. The arrangement of the lever L, connected by cords *f f* with the blocks I I, the cord *g*, roller N, pulley O, lever P, and ratchet-bar *h*, for the purpose of raising and lowering the saws, substantially as herein shown and described.

2. The supports R R, in combination with the teeth *i i*, bar or roller S, arm *k*, rod *m*, lever T, and ratchet-bar *n*, all substantially as and for the purposes herein set forth.

103,251.—Time-Alarm.—Thomas H. Smith, Urbana, Ohio.

Claim.—In combination with the cam *l* of the ordinary alarm-clock, the lever *l'*, connecting-rod *l''*, and alarm mechanism herein described, the same consisting essentially of the gearing *b b' a' a'' a'''*, springs *a a*, levers *c c*, shafts C D, and cranks or eccentric-pins *e*, substantially as and for the purpose set forth.

103,252.—Pipe for Transmitting Pneumatic Currents for Motive Power.—Robert Spear, New Haven, Conn.

Claim.—Tubes for the transmission of power, connected at the points where the direction of such tubes is changed by means of tubes or other suitable connections, of a larger diameter or size than the conduit itself, substantially as and for the purposes herein set forth.

103,253.—Apparatus for the Production of Bromine.—Hermann Stieren, Mason, West Va., and William A. Nisbet, Natrona, Pa.

Claim.—The employment of a retort for use in the production of bromine, when all of its parts are constructed of sandstone, substantially as shown and set forth.

Also, the cylindrical retort A, provided with the sloping bottom C, substantially as and for the purpose specified.

Also, the cover G, corresponding with and fitting into and upon the upper end of the retort A, substantially as shown and described.

Also, the relative arrangement of the bottom C of the retort A, and of the steam-pipe inlet E, substantially as and for the purpose set forth.

Also, the lead condensation-pipe I, constructed in the manner and for the purpose substantially as hereinbefore specified.

103,254.—Sewing-Machine.—Levi W. Stockwell, Akron, Ohio.

Claim.—The curved needle K, mounted on the slotted slide F, arranged and operating in connection with the eye-pointed needle and revolving hook, substantially as and for the purpose specified.

103,255.—Tobacco-rolling Machine.—John W. Stone, Paris, Tenn.

Claim.—1. The combination, with the pressing-rollers, of the feeding-table D, feeding-belts E and F for the wrappers, and the feeding-table A for the filling, substantially as specified.

2. The combination, with the wrapper feeding-belt E and the filling feeding-table A, of the folders I, substantially as specified.

3. The sliding spring-retracted bed-plate P, in combination with the rotary cutter O, and arranged in connection with the table N, as shown and described, for the purpose specified.

103,256.—Key-hole Guard-Lock.—Henry R. Towne, Stamford, Conn.

Claim.—1. The shield-plate A, protecting the key-hole, and, at the same time, covering the screws which secure the guard-lock in place, substantially as described.

2. In combination with the above, the tumbler H, sliders *k*, fence B, spring *l*, key C, and lock-case D, all constructed, arranged, and operating substantially as herein described.

103,257.—Clothes-Drier.—John Napoleon Valley, Detroit, Mich.

Claim.—A clothes-horse formed in sections, of the posts A A and bars B B, the sections being hinged together by means of the eye-screws *a a* moving in grooves on the posts, and screwed to the ends of the bars, provided with band *b*, substantially in the manner herein set forth.

103,258.—Potato-Digger.—Cornelius Van Derzee and Benjamin Reamer, Albany, N. Y.

Claim.—1. The wheel W, constructed with elastic covered arms, substantially as and for the purpose herein set forth.

2. The combination of circular cutters X, wheel W and share B, with lever L, frame G, links H and E, and driving-gear M, N, D, and C, substantially as and for the purpose hereinbefore shown and described.

103,259.—Corn-Planter.—William E. Vernon, Franklin county, Mo.

Claim.—The particular construction of the belt K, of wooden or metal blocks, strung onto a leather strap, for the purpose of dropping corn.

Also, the coiter B, with its flanges C C, in combination with the braces F and E, to gauge the depth of the neck A in the ground, in a corn-planter.

103,260.—Earth Closet.—Charles A. Wakefield, Pittsfield, Mass.

Claim.—1. The combination, with the hopper or reservoir A and seat B, of the earth-slide E, constructed with bars *b'* in front, and arranged to constitute a bottom to said hopper, substantially as specified.

2. The earth-slide E, provided with opening and closing flaps *c c*, in combination with the hopper A, essentially as and for the purposes herein set forth.

3. The combination of the steps *e e* in the tracks *d d*, with the flaps *e e* of the slide E, substantially as described.

4. The combination of the sliding plates *l l* with the slots *i* in the sides of the hopper, and pins *h* of the slide E, essentially as and for the purpose specified.

5. The combination of the slide E, the levers *f f*, and rods *h*, with the lid C, substantially as described.

6. The arrangement of the slide B' constructed to form a child's seat beneath the main or permanent seat B, and operated substantially as specified.

7. The slides F or B', operated by rods *n n²*, and levers *n¹ n³*, to their position under the seat B when the lid C is open, and made to retreat by the closing of said lid, essentially as herein shown and described.

103,261.—Saw-Mill.—Charles Warren, Centre Groton, Conn.

Claim.—1. The combination of the slides C C', beams D D, back E, and braces G G, all constructed and operating substantially as and for the purposes herein set forth.

2. The arrangement, with the slides C C', beams D D, back E, and braces G G, of the cross-head B, saw A, bolts *a a*, *d d*, and *c c*, and set-screws *b b*, all substantially as set forth.

103,262.—Cloth-Press.—Charles H. Weston and John Dennis, Lowell, Mass.

Claim.—1. The combination of the grooved standards C, plate J, provided with end lugs *x* and sockets *y*, the screws I, and disks U, when these parts are constructed substantially as described, and arranged to operate as and for the purpose specified.

2. The arrangement of the screws I, caps H, provided with exterior gear-balls or cones *i*, worm-shaft G, and operating pulleys *a b b*, all substantially as set forth.

103,263.—Cloth-Press.—Charles H. Weston and John Dennis, Lowell, Mass.

Claim.—In the press herein shown, the combination and arrangement of the plates A, provided with lugs *a*, hangers G, connected to follower H at each end of the same, pivoted lattice-bars E E, vertical bars C, and base-plate D, constructed substantially as described, and operating in the manner and for the purpose set forth.

103,264.—Harness.—Lewis Whitehead, Nunda, N. Y.

Claim.—1. The hip-straps *a a*, when formed in one piece with the back-strap B, and passing through loops or eyes *c c*, formed on the upper ends of the crupper D, substantially as and for the purposes herein set forth.

2. The hip-straps *a a*, when formed in one piece with the crupper D, and passing through loops or eyes *c c*, formed on the rear end of the back-strap B, substantially as and for the purposes herein set forth.

103,265.—Boring-Tool.—Edwin F. Whitney and Reuben Jones, Union Mills, Pa.

Claim.—The bit or boring-tool herein described, consisting of the cutting-lips E and F, bent outward in opposite directions, and curved upward and inward at their ends, as shown, said lips being formed on a shank which is either square or screw-threaded, as and for the purpose specified.

103,266.—Artificial Fuel.—Charles D. Williams, St. Paul, Minn.

Claim.—1. The combination of lard-oil, linseed-oil and petroleum oil, substantially for the purposes herein set forth.

2. Saturating any porous body with the combination of oils herein described, for the purpose of using the same as fuel, substantially as set forth.

103,267.—Embossing-Attachment for Printing-Presses.—Henry Willson, Chicago, Ill.

Claim.—The embossing device arranged in the manner herein described, or in any other similar and suitable manner, when affixed to tympan-sheet, nipper-bar, or any other part of the printing-press, in such a manner as to produce the embossing and the printing with type operation simultaneously, substantially as herein set forth.

103,268.—Wrench.—Walter F. Wolfkiel, Philadelphia, Pa., assignor to Morris, Tasker & Co., same place.

Claim.—1. The combination of the head A, lever B provided with a catch, *g*, links C C, and pins D D', arranged and operating substantially in the manner and for the purpose set forth.

2. The construction of the lever B with a stationary catch, *g*, substantially as described.

103,269.—Gearing for Clothes-Wringers.—George C. Wright, Leroy, Ohio.

Claim.—1. The combination of two wringer-rolls with end gear and with two intermediate gears, the upper roll being hung in a pivoted lever, operated by set-screw and spring, and the pivot for said lever being arranged in or between the planes of the cylindrical surfaces of the bases and points of the first intermediate gear, substantially as and for the purpose specified.

2. The combination of two wringer-rolls with end gear and with two intermediate gears, the upper roll being hung in a pivoted lever operated by set-screw and spring, and the pivot of the second intermediate gear being arranged above a line drawn from the pivot of the lever for the upper roll, tangent to the upper surface of the periphery of the gear on said roll, substantially as and for the purpose specified.

103,270.—Fence.—William P. Wright, Winamac, Ind.

Claim.—The arrangement of the sill A, inclined braces B B, cross-braces C C, and pieces D D, in combination with the fence-panel E G, posts H I, rail J, and connecting-slats K K, all substantially as and for the purposes herein set forth.

103,271.—Apparatus for Refrigerating and Making Ice.—Homer T. Yaryan, Nashville, Tenn.

Claim.—1. A refrigerating or ice-making apparatus, composed of horizontal pipes passing through pipes partially filled with ether or other volatile liquid, in the manner and for the purposes specified.

2. The horizontal tubes *a* within the tubes *b*, partially filled with ether or similar fluid, in combination with the vessel *f*, inclosing such tubes, so as to refrigerate simultaneously two fluids or liquids, substantially as set forth.

3. In combination with the tubes *a* and *b*, the tubes *d d c*, arranged as specified, to equalize the action of the vacuum or exhaust in the apparatus, as specified.

103,272.—Register for Odometers, &c. William Yorke, Portland, Me.

Claim.—1. The combination of the crooked reciprocating bar B with the clip C, and suitable registering devices operated by the latter, substantially as specified.

2. The combination of the escapement D and escapement-wheel E with the clip C and crooked reciprocating bar B, essentially as and for the purpose herein set forth.

103,273, antedated May 12, 1870.—Felly-Plate for Carriage-Wheels.—Francis B. Morse, Plantsville, Conn., assignor to himself and H. D. Smith & Co., same place.

Claim.—The herein-described felly-plate or band, as a new article of manufacture.

103,274, antedated May 12, 1870.—King-Bolt Socket for Carriages.—Francis B. Morse, Plantsville, Conn., assignor to himself and H. D. Smith & Co., same place.

Claim.—The herein-described king-bolt socket, as an article of manufacture, consisting of the socket A, clip-bar B, and clip D, all in one and the same piece.

REISSUES.

3,969.—Machine for Making Wrought-iron Nails.—Daniel Armstrong, Chicago, Ill.—Patent No. 93,008, dated December 21, 1869.

Claim.—1. The arrangement of the pinion on the

driving shaft and the cogged wheel on the cam-shaft in direct contact with one another, for the purpose specified.

2. The combination with the driving-pinion of the internally-cogged wheel on the cam-shaft, and the housing K, substantially as and for the pupose set forth.

3,970.—APPLE-PARER.—Asahel G. Batchelder, Lowell, Mass.—Patent No. 87,322, dated March 2, 1869.

Claim.—The combination of the lever n, the cam m, and the spring c', or the mechanical equivalent or equivalents thereof, with mechanism substantially as described, or its eqeivalent, for paring an apple or vegetable.

Also, the arrangement of the lever n and the cam m, with the table-gear f, the frame a, and the rotary fork e, the whole being substantially as hereinbefore explained and as represented.

3,971.—CHILDREN'S CARRIAGE.—Benjamin P. Crandall, William E. Crandall, and Charles T. Crandall, New York, N. Y., assignees of Benjamin P. Crandall.—Patent No. 98,351, dated December 28, 1869..

Claim.—1. In a child's carriage, the combination with the bearing to which the reach is immovably secured, of the front axle, pivoted to said bearing, substantially as and for the purpose described.

2. The casting J, constructed to support the reaches, and form the bearings for the front axle, and guides for its oscillations, and receiving the spring which bears against said axle, substantially as described.

3. In a child's carriage, the spring G, arranged upon perches, which connect together the rear and front axles, carrying the rear and front wheels B and C, substantially as described.

4. In a child's carriage, the two perches D D, supporting the body of the carriage, resting in front on a bearing, to which the front axle is secured.

5. The forked casting H, constructed as herein shown and described.

6. A child's carriage, constructed as herein shown and described, that is to say, consisting of a body, A, provided with a handle, said body supported upon springs G G', the former secured to the perches D D, the latter upon the axle, in connection with the two rear wheels arranged on the outside of the body, and the two front wheels arranged within lines of the rear wheels, substantially as described.

3,972.—CHILDREN'S CARRIAGE.—William E. Crandall, New York, N. Y.—Patent No. 100,121, dated February 22, 1870.

Claim.—1. A riding device, consisting of frames A A, connected together by a seat, so as to allow the feet of the rider to extend downwardly between the frames, substantially as and for the purpose described.

2. The combination of the box D, frames A, and seat C, substanially as and for the purpose described.

3. The wheels F, in combination with the frames A and seat C, substantially as and for the purpose described.

4. The frames A, seat C, box D, bed B, and wheels G, combined and operating substantially as described.

5. The rockers B, in combination with the frames A and seat C, substantially as described.

3,973.—MOLDING WATCH-CASES, LOCKETS, AND OTHER ARTICLES FROM HARD RUBBER, &c.—Halsey's Patent Box and Case Company, New York, N. Y., assignees of William H. Halsey.—Patent No. 81,082, dated August 18, 1868.

Claim.—1. The method or process of forming, by dies, watch-cases, lockets, or other articles, from hard rubber or like material, and attaching thereto or inserting therein, at the same time, and by the same process by which they are molded, metallic or other hinges or hinge-plates, by means of dies or molds so shaped or cut away as to receive the hinge-sections, so as to allow the material to be pressed about or over such hinge-plate without injuring or affecting the hinge-sections.

2. Beveling or serrating the edges of the hinge-plate to be inserted in such hard rubber or like material, substantially as and for the purposes set forth.

3,974.—Division No. 2.—NEW ARTICLES OF MANUFACTURE FROM HARD RUBBER.—Halsey's Patent Box and Case Company, New York, N. Y., assignees of William H. Halsey.—Patent No. 81,082, dated August 18, 1868.

Claim.—As a new article of manufacture, watch-cases, lockets, and other articles, when made of hard rubber or like substance or material, and having hinges or hinge-plates inserted in and fixed thereto at the same time they are molded, by means of dies constructed substantially as described.

3,975.—WAGON.—L. M. Ham, Boston, and John H. Dodge, Chelsea, Mass.—Patent No. 39,345, dated July 28, 1863.

Claim.—1. Hanging the front end of the wagon-body upon any suitable spring or springs below the front axle-tree of the same by means of the center-axle-bolt or rod a, substantially in the manner described and for the purpose specified.

2. The means herein described for obviating the strain upon the center bolt or rod of the front axle-tree, the same consisting of the connecting-chain a and fixed staple v, arranged with regard to the same, and operating substantially as described.

3. The arrangement of the pole with regard to the body, the spring, and the futchell of the front axle-tree, substantially as herein described and for the purpose specified.

3,976.—GRAIN-DRILL.—Joseph Ingels, Milton, Ind.—Patent No. 37,345, dated January 6, 1863.

Claim.—In combination with the concaves or secondary hoppers, and a seeding-wheel turning therein, the projecting flanges or cheeks on the inner sides of said hoppers, and opposite the ends of the seed-wheel therein, substantially as described and represented.

Also, in combination with the secondary hoppers or seed-cups, the casting of the cheeks or flanges on and with the concave, hopper, or cup, when it is cast substantially as represented.

Also, the combination of the concave *j*, inclined plate j^2, cheeks j^1, and feeding or seeding-wheel K, as and for the purpose described and represented.

Also, in a seed-drill or planter, the interchangeable, reversible, intermediate gears or gear-wheels, for regulating the machine for sowing a given quantity of seed, and changing that quantity at pleasure, as described.

Also, the combination of the shaft, brackets, and bolt, for regulating and adjusting the interchangeable, reversible, intermediate gears, in relation to the driving and driven shafts, substantially as described.

Also, the combination of the lever W, cam w', pivoted bar U, and wheel L, for disconnecting said wheel from its shaft, by the act of raising the hoes, substantially as described.

3,977.—HARVESTER.—Cyrus H. McCormick and Leander J. McCormick, Chicago, Ill., assignees of McClintock Young, Jr.—Patent No. 21,587, dated September 21, 1858; reissue No. 779, dated July 19, 1859; reissue No. 866, dated December 13, 1859.

Claim.—1. The radial rake revolving around its shaft D, and oscillating on a pivot both eccentric and transverse to said shaft, substantially as hereinbefore set forth.

2. The combination of the radial rake revolving around its shaft D, and oscillating on a pivot both eccentric and transverse to said shaft and the guide which controls the rake, both in descending upon the platform and in rising and moving forward to re-enter the standing grain, substantially as hereinbefore set forth.

3. The combination of the continuously-revolving reel-gatherers and the radial rake revolving around the same shaft as the gatherers and vibrating on a pivot, both eccentric and transverse to its axis of rotation, substantially as hereinbefore set forth.

4. The combination of the continuously-revolving reel-gatherers, the radial rake revolving around the same shaft as the gatherers, and oscillating on a pivot both transverse and eccentric thereto, and the guide which controls the movement of the rake in descending upon the platform, substantially as hereinbefore set forth.

5. The combination of a rotating shaft, D, carrying a projecting arm, L, a radial rake pivoted eccentrically to said shaft, a swiveling pitman connecting the rake and the arm, and a guide to control the movement of the rake in entering the standing grain, substantially as hereinbefore set forth.

6. The combination with a radial rake rotating around a shaft, D, and oscillating on a pivot both transverse and eccentric thereto, of a stop to limit the descent of the rake toward its axis of rotation, substantially as hereinbefore set forth.

7. The combination of rotating reel-gatherers, an arm, L, on the reel-shaft, a radial rake revolving around the same shaft as the gatherers, and connected with said shaft by a universal joint, and a pitman connecting the rake and the arm on the reel-shaft, substantially as described.

3,978.—HARVESTER-RAKE.—Cyrus H. McCormick and Leander J. McCormick, Chicago, Ill., assignees of McClintock Young, Jr.—Patent No. 24,598, dated June 28, 1859.

Claim.—1. The combination of the radial rake, revolving around its shaft, and oscillating on a pivot, both eccentric and transverse to said shaft, the fixed double-walled cam, to guide and support the rake and mechanism connecting the rake and cam, substantially as set forth.

2. The combination of the fixed double-walled cam, the radial rake revolving around its shaft, and oscillating on a pivot, both eccentric and transverse thereto, and the guide, located on the gearing side of the platform, to hold down the rake when discharging the gavel from the platform, substantially as set forth.

3,979.—COMBINED RAKE AND REEL FOR HARVESTER.—Cyrus H. McCormick and Leander J. McCormick, Chicago, Ill., assignees of McClintock Young, Jr.—Patent No. 30,103, dated September 18, 1860.

Claim.—1. The reel, having ribs or gatherers supported at one end only, and diverging longitudinally from a central hub mounted on an inclined shaft, substantially as and for the purpose hereinbefore set forth.

2. The arrangement, substantially as hereinbefore set forth, relatively to the finger-beam and platform of the reel-shaft, mounted upon and inclined at an angle to the finger-beam, and having ribs or gatherers diverging longitudinally from the shaft.

3. The combination of the reel, having longitudinally diverging gatherers, supported at one end only, and revolving on an inclined axis, with the rake revolving around said reel-shaft and oscillating on an axis both eccentric and inclined transversely to the reel-shaft, these parts operating in combination, substantially as herein before set forth.

4. The combination of the revolving-shaft, carrying diverging reel-gatherers, supported at one end only, the fixed double-walled cam, and the rake revolving around said shaft and oscillating on an axis both eccentric and transverse to said shaft, substantially as hereinbefore set forth.

5. The combination of a reel, a rake, turning on the same shaft as the reel but in a path varying therefrom, and a counterpoise to equalize the movements of the rake, substantially as described.

3,980.—FARM-FENCE.—Charles W. Reeder, Chillicothe, Mo. — Patent No. 92,359, dated July 6, 1869.

Claim.—1. The supports A A and fastenings C, for supporting and retaining the top bars *b b*, substantially as and for the purposes herein set forth.

2. The parallel bars *a a*, in combination with the supports A A, and with the fastenings C, substantially in the manner and for the purpose described.

3. The combination of the supports A A, top bars *b b*, parallel bars *a a*, rails *d d*, and the fastenings C, all constructed and arranged substantially in the manner and for the purposes herein set forth.

3,981.—REFLECTOR.—William G. Schmidlin and Jeremiah W. Driscoll, New York, N. Y.—Patent No. 32,722, dated July 2, 1861.

Claim.—1. A reflector made of curved sections of sheet metal united together to form a polygonal reflector, and protected by a lining of glass, substantially as specified.

2. A lining for metallic reflector formed of plates of corrugated glass bent into the form of a segment of a cylinder, substantially as specified.

3,982.—Division A.—EQUILIBRIUM SPRING. Charles Shea, Newark, N. J.—Patent No. 95,736, dated October 12, 1869.

Claim.—The springs B, having arms *a*, the rod D, and compensating spring E, all combined, constructed, and relatively arranged, as and for the purpose described.

3,983.—Division B.—COMPENSATING SPRING. Charles Shea, Newark, N. J.—Patent No. 95,736, dated October 12, 1869.

Claim.—The compensating springs E E, connected with the bearing-springs B B by means of the rod D and straps F F to the axle and frame of a carriage, substantially as described.

3,984.—Division C.—COMPENSATING OR EQUILIBRIUM SPRING.—Charles Shea, Newark, N. J.—Patent No. 95,736, dated October 12, 1869.

Claim.—The compensating springs M, M^1, M^2, or M^3, applied to the frames of railroad-car trucks, in combination with the main bearing springs B, B^1, B^2, or B^3, and with the axle-boxes, as set forth.

3,985.—MACHINE FOR MAKING PAPER BOXES.—Silas B. Terry, Jr., Waterbury, Conn., and Daniel S. Robeson, Philadelphia, Pa., assignees, by mesne assignments, of Silas B. Terry.—Patent No. 25,373, dated September 6, 1859.

Claim.—1. The combination, in a machine for making paper boxes, of a mandrel and a clamp rotating together, and carrying the disk of paper, substantially as described.

2. The combination, in a machine for making paper boxes, of a rotating clamp, a mandrel rotating with the clamp, and a flanged and grooved pressure-roller, substantially as described.

3. The combination with the mandrel and the clamp of the pressure-lever, substantially as described.

4. The combination, with the mandrel, of the guide-ring F, substantially as and for the purposes described.

5. The combination, with the mandrel, of a socket in which the paper disk is adjusted upon the mandrel, substantially as described.

6. The combination, with the mandrel, the socket, and the guide-ring, of stops on the mandrel and in the socket, substantially as and for the purpose described.

7. The combination, with the clamp, the mandrel, the guide-ring, and the flanged and grooved

pressure-roller, of a guide-way for the strip, substantially as described.

8. The pressure-roller, having a groove for the projecting edge of the paper disk, a flange to turn and smooth the projecting edge of the strip upon the disk, and a bearing surface to close and smooth the strip, substantially as described.

3,936.—FOLDING CHAIR.—Edward W. Vaill, Worcester, Mass., assignee of Joseph D. Merriam.—Patent No. 37,324, dated January 6, 1863.

Claim.—A folding chair, composed of pieces A A and D D, connected together by means of rounds or cross-bars, back piece H, and pivot-bar C, and provided with a flexible seat, G, substantially as described.

DESIGNS.

4,023.—CLOCK-FRONT.—John H. Bellamy, Charlestown, Mass.

Claim.—An ornamental clock-front, substantially as shown and described, reference being had to the accompanying photographs and to the letters of reference marked thereon.

4,024.—STEAM-RADIATOR.—William Burdon, Brooklyn, N. Y.

Claim.—The design for a radiator herein described and shown.

4,025.—TRADE-MARK.—William J. Clark, Providence, R. I.

Claim.—The design for a trade-mark, as described and shown.

4,026.—CARPET-PATTERN.—Jonathan Crabtree, Philadelphia, Pa., assignor to James Bromley & Brothers, same place.

Claim.—The design for a carpet-pattern, substantially as described, and as illustrated in and by the accompanying drawing.

4,027.—CARPET-PATTERN.—Jonathan Crabtree, Philadelphia, Pa., assignor to James Bromley & Brothers, same place.

Claim.—The design for a carpet-pattern, substantially as described, and as represented in and by the accompanying drawings.

4,028.—CARPET-PATTERN.—Jonathan Crabtree, Philadelphia, Pa., assignor to Israel Foster, same place.

Claim.—The design for a carpet-pattern, consisting of figures or members A and surrounding ornamentation B, arranged substantially as described, and as represented in and by the accompanying drawings.

4,029.—AX.—Carlos B. Drew, Boston, Mass., assignor to Underhill Edge-tool Company, Nashua, N. H.

Claim.—The ax design as represented and hereinbefore described.

4,030.—LABEL.—John S. Dunham, St. Louis, Mo.

Claim.—The design for a label, substantially as set forth.

4,031.—DOVETAIL.—Harry Hubbard Evarts, Chicago, Ill.

Claim.—The design for dovetails, as herein described and represented.

4,032.—CARPET-PATTERN.—Israel Foster, Philadelphia, Pa.

Claim.—The design for a carpet-pattern, substantially as described, and as represented in and by the accompanying drawing.

4,033.—GRATE.—Judson B. Gayle, Raleigh, N. C.

Claim.—The design for a grate, as shown.

4,034.—FACE-PLATE FOR LOCKS FOR SLIDING DOORS.—William Gorman, New Britain, Conn., assignor to Russell & Erwin Manufacturing Company, same place.

Claim.—The design for the face-plate for locks for sliding doors, herein described and shown in the drawings.

4,035.—CARPET-PATTERN.—William Kerr, Philadelphia, Pa., assignor to Israel Foster, same place.

Claim.—The design for a carpet-pattern, consisting of members A B and C, and of curved ribs a, the whole being arranged substantially as described, and as represented in and by the accompanying drawings.

4,036.—TOBACCO-KNIFE.—Jacob Kinzer, Pittsburg, Pa.

Claim.—The design for a tobacco-cutter, as shown.

4,037.—HAND-STAMP.—Charles G. Mortimer, New York, N. Y.

Claim.—An improved design for stamps for marking clothing, &c., as clearly shown in accompanying drawing.

4,038.—LAMP-CHIMNEY.—George W. Moyers, Gordonsville, Va.

Claim.—The design for a lamp-chimney, herein shown and described.

4,039.—CARPET-PATTERN.—Elemir J. Ney, Dracut, assignor to Lowell Manufacturing Company, Lowell, Mass.

Claim.—The configuration of the design hereunto annexed, when made by being inwrought into two-ply, ingrain, or other carpeting, in the form similar to the photographic print accompanying this specification.

4,040.—CARPET-PATTERN.—Elemir J. Ney, Dracut, assignor to Lowell Manufacturing Company, Lowell, Mass.

Claim.—The configuration of the design hereunto annexed, when made by being inwrought into two-ply, ingrain, or other carpeting, in the form similar to the photographic print accompanying this specification.

4,041.—WHEEL-HOLDING BLOCK FOR A CASTER.—Samuel J. Parker, Williamsport, Pa.

Claim.—The design for wheel-holding block for casters, as described and shown.

4,042.—PACKAGE.—George Pustkuchen, New York, N. Y.

Claim.—The design for a package, as shown.

4,043.—STOVE-PLATE.—Samuel H. Ransom, Albany, N. Y.

Claim.—The design for the plates of a parlor stove, as shown.

4,044.—STOVE-PLATE.—Samuel H. Ransom, Albany, N. Y.

Claim.—The design for plates of a cooking stove, as shown.

4,045.—STOVE-PLATE.—Samuel H. Ransom, Albany, N. Y.

Claim.—The design for the plates of a parlor stove, as shown.

4,046.—STOVE-PLATE.—Samuel H. Ransom, Albany, N. Y.

Claim.—The design for the plates of a parlor or heating-stove, as shown.

4,047.—STOVE-PLATE.—Samuel H. Ransom, Albany, N. Y.

Claim.—The design for plates of a box or six-plate stove, as shown.

4,048.—STOVE-PLATE.—Samuel H. Ransom, Albany, N. Y.

Claim.—The design for the plates of a parlor stove, as shown.

4,049.—STOVE-PLATE.—Samuel H. Ransom, Albany, N. Y.

Claim.—The design for plates of a cooking-stove, as shown.

4,050.—ARROW-GUN.—Charles Robinson, Boston, Mass.

Claim.—The shape and configuration of parts, as shown, constituting a design for an arrow-gun.

4,051.—LAMP-SHADE.—George L. Smith and Daniel W. Kissam, Bridgeport, Conn.

Claim.—The design for a lamp-shade, as shown and described.

4,052.—TOY STEAM-ENGINE.—Alanson Pierson Tyler, Boston, Mass.

Claim.—The design for an oscillating steam-engine toy, as herein fully set forth and described.

4,053.—STOVE.—Samuel S. Utter, Brooklyn, N. Y.

Claim.—The design for a stove, substantially as described and shown.

4,054.—STOVE-PLATE.—Nicholas S. Vedder, Troy, and Tobias S. Heister, Lansingburg, N. Y., assignors to J. L. Mott, New York city.

Claim.—A representation of a cotton-bale cast on and forming part of a stove-plate, substantially as herein described and shown.

EXTENSION.

THOMAS H. POWERS, of Milwaukee, Wis. Letters Patent No. 14,827, dated May 5, 1856.

"*Improvement in Furnaces for Smelting Iron.*"

Claim.—So arranging the pipe 2, 2, 2, in connection with the combustion-chamber and stack, as described, that the air passing through the pipe shall be heated and disengaged, in the manner and for the purpose set forth.

ISSUE OF MAY 24.

PATENTS.

103,275.—PREPARING THE FIBER OF RAMIE AND OTHER PLANTS.—Stephen M. Allen, Boston, Mass.

Claim.—1. The loosening or separating long-line fiber like the rheea or ramie from its hard woody stalk by means of a fermenting bath, substantially as before described.

2. The separating and cleaning of long-line fibers in the manner before named, in combination with the use of fermenting process before named.

3. The breaking, scutching, and cleaning process before named, in combination with the fermenting, crushing, and squeezing process before named.

4. The method of treating ramie or rheea, China grass, or other like fibers, to produce a long-line fiber, substantially in the manner herein described.

103,276.—SWEAT-CLOTH FOR SADDLE.—Richard Allison, New York, N. Y.

Claim.—The improved method above described of making saddle-cloths, which consists in cutting an oblong slot from a doubled piece of material, leaving a transverse strip in the middle, then cutting this strip into two parts, beveling them on their reverse sides, and overlapping these beveled parts so as to draw up the material in the middle and bring it into the desired shape for a sweat-band, all as set forth.

103,277.—STOPPING MECHANISM FOR DOUBLING, SPOOLING, AND LIKE MACHINES.—James Arnold, Pawtucket, R. I.

Claim.—1. The pressure-finger F F^1, for seizing the double thread upon the breaking of a single strand, when such fingers are free to turn on or around the rod or axle on which they are mounted, and thereby gradually check the rotation of the spool, substantially as herein described.

2. The combination of pressure-fingers F F^1, constructed as above described, with a suitable tripping mechanism or stop-motion, substantially as specified.

103,278.—HANDLE FOR KNIVES.—Jacob B. Bailey, New York, N. Y.

Claim.—The solid metal handle cast upon the tang of the blade, with the cast metal extended up around the base of the blade to form the bolster with the square shoulder, as and for the purposes set forth.

103,279.—ROTARY STEAM-ENGINE.—John W. Bailey, Aurora, Ind.

Claim.—1. The combination of a flanged and grooved cylinder, substantially as described, for the purpose set forth.

2. The combination of the cylinders D E with the case B, when constructed and arranged as described, for the purpose set forth.

3. The cylinders D and E, constructed as described, gear-wheels, pulley, and case, when arranged as and for the purpose described.

103,280.—FILTER.—Thomas Barrows, Brooklyn, N. Y.

Claim.—1. The flange-frame D *d*, arranged as represented relatively to the inclosed filtering material E, and an inclosing-case, in two parts, A^1 A^2, with connections for admitting and discharging the water, and suitable packing *c c*, for forming a tight joint therewith, as herein specified.

2. The arrangement of the filtering material E and a suitable inclosing-case, relatively to the street connection G, house connection J, and sewer or cess-pool connection R, with cocks, operated as described for changing the currents at intervals, for the purposes specified.

3. The within-described arrangement of the means M for controlling the induction, the means N for controlling the eduction, and the connecting-bar P, relatively to the filter A^1 A^2 E and its connections, all as and for the purposes herein set forth.

103,281.—BIT-STOCK.—Harry S. Bartholomew, Bristol, Conn.

Claim.—The jaws *b b*, constructed with the wings *c c* crossing each other, as described, in combination with the ridge *s*, threaded and slotted shaft A, and the thimble-nut B, all constructed and operating together, substantially as described.

103,282.—CLOTHES-WRINGER.—Elbridge G. W. Bartlett, Providence, R. I.

Claim.—1. Friction driving-plates B D K, in combination with rollers of vulcanized rubber or any other elastic compound impervious to water, for the purposes set forth.

2. A clearer, F, in combination with the squeezing-rollers of a washing and wringing-machine, geared as shown and described, for the purposes specified.

103,283.—DEVICE FOR HITCHING HORSES.—William H. Bell, Spring Lake, Mich.

Claim.—The hitching device herein described, consisting of the frame A *a a'* and the swinging hooked lever or jaw B *b b'*, substantially as set forth.

103,284. — APPLE-PARER, CUTTER, AND CORER.—George W. Bennett, Harrodsburg, Ind.

Claim.—1. The combination of the sliding carriage, provided with a pushing-handle, Q, the segmental wheel H, the toothed stationary rack I, the spindle F, gear-wheel L, and pinion M', all arranged to operate as shown and described.

2. In combination with the elements of the above claim, the knife-arm N, working in a slot of the segmental wheel H, as shown and described.

103,285.—STREET-CAR TRUCK.—John Berry, San Francisco, Cal.

Claim.—1. The rack F at the end of the frame, and pinion G attached to the brake-spindle, so that, by operating the said brake-spindle, the position of the truck-frame and wheels can be changed from left to right or right to left, substantially as and for the purpose specified.

2. The forked arm H', which guides the lower end of the brake-spindle moving on the pins I I, in the block H, substantially as described.

3. The spring K, for holding the arm against the block H, and the foot-bolt J, passing out through the platform for pressing down the arm, substantially as described.

103,286.—MARINERS' COMPASS.—John Bliss and George H. Bliss, Brooklyn, N. Y.

Claim.—1. A liquid compass, formed with two spaces, one for the compass-card, the other containing liquid and air, when the two are connected by a tube or opening provided with porous material, or its equivalent, for preventing air passing into the compass-space, substantially as set forth.

2. The chamber *g*, below the compass-chamber, in combination with the tube A, the opening of which is located at or near the center of the vessel *g*, as and for the purposes specified.

103,287.—MARINERS' COMPASS.—John Bliss and George H. Bliss, Brooklyn, N. Y.

Claim.—1. The magnet of a compass made of a disk of steel, substantially as specified.

2. A compass, in which the divisions are made upon the metal forming the magnet, substantially as specified.

3. The float, made with magnetized sheet or plate metal, substantially as specified.

4. The seat and flange, for the glass and packing formed of the sheet metal of the bowl, in combination with the rings for clamping the packing and glass to the flange or seat, substantially as set forth.

103,288. — KEY-HOLE GUARD. — James F. Bodtker, Chicago, Ill.

Claim.—The key-hole guard, consisting of the block A, provided with a female screw-thread, and the headed screw C, having the block B firmly secured thereto, for the purpose specified.

103,289. — GRAIN-PLANTER.—Isaac Bogart, Newport, Ind.

Claim.—1. Cam-wheel E, in combination with driving-wheels A A, having ratchets *a a a a*, ratchet-wheels C C, cog-wheel D, feed-slides G G having guides and springs K K and hoppers H H, substantially as described.

2. The combination of lever L and bar N with feed-slides G G and hoppers H H, substantially as described.

3. The lever V with pawl *u*, in combination with wheel E, feed-slides G G, and hoppers H H, substantially as described.

4. The combination of the double-mold-board plows P P and circular cutters T T, with the devices of a grain-planter, substantially as described.

5. Stops D' D', in combination with the feed-slides G G of a grain-planter, substantially as described.

6. The sight-standards G' G' and pointers *f f*, in combination with the devices of a grain-planter, as described.

7. The hinged platform P', in combination with the devices of a grain-planter, as herein described.

103,290.—PAINT FOR SHIPS' BOTTOMS, &c.—James Bowker, Baltimore, Md.

Claim.—An improved copper paint for ships' bottoms and other purposes, composed of arsenite or arsenate of copper, or both arsenite and arsenate of copper, wood-tar, pine-oil, asphalt, and benzine, substantially as herein set forth.

103,291.—VARNISH FOR TIN-WARE.—James Bowker, Baltimore, Md.

Claim.—A varnish composed of gum dammara, gamboge, or other suitable coloring-matter, benzine, and pyroxylic spirit, substantially as set forth.

103,292. — HOISTING APPARATUS.—George W. Brown, New York, N. Y.

Claim.—1. The tubular slides for the hoisting apparatus, formed in sections to be set together and secured in the building, substantially as specified.

2. The blocks *b*, constructed as set forth, and employed for connecting the sections of the tubular slides and securing them in place, as specified.

3. The movable frame *g h i* and platform *f*, in combination with the aforesaid tubular slides, substantially as and for the purposes specified.

103,293.—COMBINATION BATH-TUB.—Asa C. Brownell, Brooklyn, N. Y.

Claim.—As an improved article of manufacture, a bath-tub, A, having the half cylinder B rigidly fixed across the foot thereof, and extending down about half the depth of the tub, thus forming a compound sits and plunge-bath, as set forth.

103,294.—SAD-IRON HEATER.—Josiah Burgess, Zanesville, Ohio.

Claim.—1. The tube A B, connected with an elevated reservoir of hydrocarbon liquid, combined with a chamber C, deflector D, ribbed and perforated platform F, and tin-lined dome J N, all constructed and relatively arranged as and for the purpose described.

2. The chamber C, water-pan D, perforated platform F, and heating chamber E, all combined and relatively arranged as and for the purpose described.

103,295.—ADJUSTABLE COUPLING FOR JOURNALS, AXLES, &c.—Frederick Burghardt, Curtisville, Mass.

Claim.—The groove *c'* in a coupling-box, combined with collars *a' b'* of the shafts A B, as and for the purpose described.

103,296. — DIE FOR FORMING CARRIAGE-STEPS. — Leander Burns, Port Chester, N. Y.

Claim.—The series of dies A g^1 a^1 a^1 and B b^1 b^1, constructed and operating substantially as herein shown and described, for the purpose of forging carriage-steps, as set forth.

103,297.—GAS-HEATER. — Calvin C. Burt, Jackson, assignor to Gardner Herrick, Albion, Mich.

Claim.—1. The burner H, with openings *u u*, cone I and disk K, as set forth, for the purposes specified.

2. The injecting-tube D, arranged as described, when made tapering, whereby valves are dispensed with and a uniform supply produced, as set forth.

3. A gas-heater, composed of the pipes A B D, elbows C C', and a burner, G or H, with cone I, disk K, and side openings, all constructed, arranged, and operating substantially as described.

103,298.—BARREL.—Ebenezer H. Cady, Grand Rapids, Mich.

Claim.—1. A barrel, made of sections or bent timber, connected together by means of plates P and hoops M, substantially as shown and described.

2. The head D attached to the beveled hoop E, placed inside the chine, and held in place by means of the barbed fasteners G and chine-hoop F, substantially as shown and described.

3. The combination of the head D, hoop E, and fastener G, with the sectional barrel A B C, substantially as shown and described.

103,299.—DRINKING-TUBE FOR INVALIDS.—Eugene Chapin, St. Louis, Mo.

Claim.—The tube A and its influent pipe C, arranged with the opening *c'* and closed bottom *c*, combined with the arm D, shank E, and thumb-screw F, substantially as and for the purposes above set forth.

103,300.—DRINKING-TUBE FOR INVALIDS.—Eugene Chapin, St. Louis, Mo.

Claim.—The influent pipe C, arranged with the clamp spring D *d*, substantially as and for the purpose set forth.

103,301. — LOUNGE. — William H. Colley, Leavenworth, Kansas.

Claim.—The frame A, having bottom, back, and inclined fixed head-rest, all as described, combined with the hinged seat and swinging head-rest, constructed and relatively arranged therewith to form an improved compound lounge and bed, as shown and described.

103,302.—WEATHER-STRIP FOR DOORS.—Erastus G. Covey and Addison Birch, Marshall, Mich.

Claim.—1. The plate A, when extended behind the stop C, and having the arm *e*, arranged as shown, said plate being raised by the closing of the door, and fitting into the recess G, made as shown, all as herein described and represented.

2. In combination with the door-strip, constructed and arranged as described, the spring *j*, as and for the purpose set forth.

103,303.—MACHINE FOR BEVELING AND CROZING BARRELS.—Harry A. Crossley, Cleveland, Ohio.

Claim.—1. The arrangement of the frame G, ring C, shaft H, rack *p*, lever *t*, screw *u v*, the regulating-screw, pinions *o*, disk M, and cutters *n*, upon the columns B B, and platform A, all constructed, arranged, and operating substantially as described.

2. In combination with the above, the cylinder *a*, piston *b*, frame D *d e*, ring E, pumps F, and a reservoir, connecting-pipes and pump-operating mechanism, all substantially as herein described.

103,304, antedated May 10, 1870.—ROTARY INJECTOR FOR STEAM-BOILERS.—H. C. Crowell, Morgan, Ohio.

Claim.—A rotary injector, when constructed with steam and water-chambers I J, cylinder E, diaphragm K, port L, vent Q, holes M N, and case A, all arranged in the manner substantially as described, and for the purpose specified.

103,305.—MACHINE FOR CLEANING CAST PIPES.—Henry Davies, Newport, Ky.

Claim.—1. The combination, in a pipe-cleaning machine, of a set of pipe-holding and revolving rollers, and a sliding, boring, or scraping-tool, substantially as specified.

2. The combination, with the pipe-holding and revolving rollers and the sliding boring-tool, of a roller arranged for action on the end of the pipe, substantially as specified.

3. The combination, with the pipe-holding and revolving rollers, of the clamp-bar T, friction-roller and clamp V, and set-screw, substantially as specified.

103,306. — COOKING-STOVE. — William C. Davis and John W. Garrison, Cincinnati, Ohio.

Claim.—1. The horizontally-divided convertible wood and coal fire-grate, having an upper permanent member, I, to receive either the coal-basket J, or the wood-burning hearth O, substantially as set forth.

2. The perforated wood-burning hearth or bottom fire-plate O, provided with lugs *o o'*, to support same on projections P, one of which lugs *o* serves to close the orifice L in the stove-jamb.

103,307.—STOVE-GRATE.—Price Dempsey, Erie, Pa.

Claim.—1. The combination, with the circular grate arranged for oscillation horizontally, and provided with the openings at the center, of the center D, arranged to turn with the part A, and to oscillate in a vertical plane, substantially as specified.

2. The construction or form of the cone of the central grate, so that, when oscillated in a vertical plane, the fire is supported by one side of the cone, while a large opening is made on the other side of the central grate, and between said central grate and outer rim or radial parts, substantially as specified.

103,308. — NUT-LOCK. — Casper Dittman, Leacock, Pa.

Claim.—The lock-washer, consisting of a square central disk, B, and thin diagonal corner flanges A, one of which may be prolonged, as herein shown and described.

103,309.—MACHINE FOR BURRING WOOL, &c., ON THE SKIN.—George F. Dockham, Lynn, Mass.

Claim.—The combination as well as the arrangement of the rotary beam D, or its equivalent, and its operative mechanism, as described, with the vibrator C and the rotary beater E, the parts being to operate together as set forth.

Also, the combination of the stop *o* and the latch *p*, with the vibrator C, the beam D, and its operating devices, the frame A, and the beater E.

103,310.—TOWING-HOOK FOR CANAL-BOATS. James Doty and Asa H. Doty, West Falls, N. Y.

Claim.—1. The arrangement of the spring *e* with the bearing D and draw-bolt C, as and for the purpose hereinbefore set forth.

2. The circular bearing-plate D, made separate from and arranged with the base-plate A, draw-pin C, and spring lever B, so as to be capable of adjustment, as herein set forth.

3. The combination and arrangement of the hinged prop H with the lever B and draw-pin C, substantially as and for the purpose hereinbefore set forth.

4. The arrangement of the spring *b* with the prop H and lever B, substantially as and for the purpose hereinbefore set forth.

103,311.—LOOP FOR HARNESS.—George L. Du Laney and James S. Huston, Mechanicsburg, Pa.

Claim.—The metallic clasp C, when constructed as described and used for the purpose specified.

103,312, antedated May 9, 1870.—TOOL AND WHEEL FOR CUTTING AND POLISHING IRON, STEEL, AND OTHER MATERIALS.—Axiel K. Eaton, Piermont, N. Y.

Claim. — Manufacturing tools, wheels, implements, and other articles, for the purposes aforesaid,

of alumina, treated and combined substantially as herein described.

103,313.—DUMB-WAITER.—William H. Elliott, Boston, Mass.

Claim.—1. The combination of the rope G and pulley H, with the shelf, shelves, or closet A, rope D, pulley E, and weight F, substantially in the manner herein shown and described and for the purpose set forth.

2. The combination of the right-angled levers I K, and rod J, whether the spring or springs M be used or not, and notch or catch L, with the shelf, shelves, or closet A, substantially as herein shown and described and for the purpose set forth.

3. An improved dumb-waiter, formed by the combination of the shelf, shelves, or closet A, rope D, pulley E, weight F, rope G, pulley H, rod J, right-angled levers I K, and notch or catch L, whether the spring M be used or not, substantially as herein shown and described and for the purpose set forth.

103,314.—LATCH.—M. Proctor Favor, East Northwood, N. H.

Claim.—The arrangement of the latch and its pivot, and the locking-bolt, and their construction in manner as hereinbefore described and as represented in the accompanying drawing, the said arrangement consisting in placing the locking-bolt alongside of the latch-bolt, and between the pivot and recessed head of the latter, the latch-bolt being constructed with the cylindrical pivot and the recessed head, as represented.

103,315.—CORN-PLANTER.—John G. Fetzer, Brunswick, Mo., assignor to himself and A. H. Fetzer, same place.

Claim.—The combination of the inclined projections or cams G, dropping-slide E, and spring F with the wheel C, hopper D *d'*, furrowing-plow H I, covering-plows J K, and frame A, substantially as herein shown and described, and for the purpose set forth.

103,316.—SHUTTER-FASTENER.—John Bentley Field, Detroit, Mich.

Claim.—A hook-bar, provided with an extended slot, when arranged to embrace and turn upon a pivot, which, projecting centrally from an outer covering or cap-plate, serves to connect and pivot said cap-plate to the under fastening or bed-plate by which the device is secured to the shutter, all substantially as and for the purpose herein set forth.

103,317. — CHERRY-STONER.—Charles A. Fisher, Philadelphia, Pa.

Claim.—The combination of the independent plungers G with a detachable clamp, constructed and operated in the manner set forth.

103,318. — GATHERING ATTACHMENT FOR SEWING-MACHINES. — Hart A. Fisher, Elyria, Ohio.

Claim.—The tension-bar C, thumb-screw *e*, guide-rod B, cross-head D, and pin-points *i i*, all constructed and arranged as shown, and for the purpose set forth.

103,319.—MACHINE FOR ATTACHING THIN PAPER TO STRAW BOARDS. — Maurice Fitzgibbons, Brooklyn, N. Y.

Claim.—1. The combination of a revolving cleaning brush, E, or its equivalent, with an endless revolving apron, E, for the purpose of removing the paste or material from said apron so that it will always present a clean surface to receive the straw or other boards, and thus prevent them from sticking, and insure their proper delivery, substantially as before described.

2. The combination of the drying cylinder M, constructed with cams *c* and cylindrical bearings *c'* for the cutter arms with the reciprocating cutter Q, operated at proper intervals by the direct and positive action of the cams and springs *b*, substantially as before described.

103,320.—APPARATUS FOR RECTIFYING ALCOHOLIC LIQUORS. — Charles Louis Fleischmann, Cincinnati, Ohio.

Claim.—The self-regulating pressure upon the rectifying medium by means of the lever *d*, weight *f*, piston *e*, and stuffing-box *b*, substantially as described.

Also, the pipe I in the cover, in combination with the induction-pipe G and exhaust-pipe K, placed in the lower part of the chamber L of the vessel A, substantially as and for the purpose described.

103,321.—PAD-PLATE FOR HARNESS.—Conrad Gahr, Newark, N. J.

Claim.—As an improved article of manufacture, the metal pad-plate A, having raised portion *a*, shoulders *b b*, depression *c*, tail-strap loop C, sockets *e*, and shoulders *f*, all relatively arranged as and for the several purposes described.

103,322.—Suspended.

103,323, antedated May 7, 1870.—MANUFACTURE OF SHEET-IRON.—John D. Grey, Pittsburg, Pa., assignor to himself and John Lippincott, same place.

Claim.—1. Preparing sheet-iron for being polished, by removing the natural surface scale, and forming thereon a new and thin scale, as and for the purpose specified.

2. Rolling a number of cold sheets of iron in a common pack to produce a polish by their friction upon one another, rather than by pressure, in the usual manner, all as set forth.

103,324. — STEAM-BOILER FURNACE. — Charles John Hagstroem, Chicago, Ill.

Claim.—1. The door X A, constructed in two parts, provided with openings *b* Y, a partition, *g*, and sliding door *c*, as and for the purpose set forth.

2. The door X A, in combination with the lever T, cranks U O, rod N, and gate P, as described.

3. The curved steam-pipes K, in combination with the pipe G E H I, and gate P, as set forth.

103,325. — ANTI-FREEZING DEVICE FOR PUMPS.—John G. Hanning, Indianapolis, Ind., assignor to himself and Roswell R. Rouse, same place.

Claim.—1. The valve-chamber A and connecting branches B C, constructed and arranged as described, in combination with the cap G and duct J, chambered nut H, valve S, and overflow-pipe I, substantially as and for the purpose set forth.

2. The valve-seat *e*, basin L, stop-cock K, and strainer O, arranged in connection with the valve-chamber A, substantially as and for the purpose set forth.

103,326, antedated May 10, 1870.—CONDENSER FOR STILLS.—John Harrison and Caleb Low, Fawn Grove, Pa.

Claim.—1. The combination of the receiver B, pipes C C and D, and outlet *e*, when constructed and arranged substantially as described.

2. In combination with the parts named in the last claim, the trough A, combined and arranged substantially as and for the purposes set forth.

103,327. — PRUNING-SHEARS. — Aaron L. Hatfield, Clyde, Ohio.

Claim.—The pruning-shears, consisting of the parts A and B, with slot C and link D, pivoted and arranged relatively to the jaws A and B, as shown and described.

103,328. — WOOD-PAVEMENT. — Herman Haupt, Philadelphia, Pa.

Claim.—A wood pavement, composed of three elements in combination, viz, first, longitudinal timbers or planks placed on the graded surface of the road-bed, as described; second, transverse beams, constructed substantially as herein shown and described, and placed upon said longitudinal timbers or planks, as set forth; third, paving-blocks, supported by the said beams, substantially as herein shown and described.

103,329.—CONFLUENT COCK.—John H. G. Hawes, Newark, N. J.

Claim.—1. The pipe provided with the passages *a b* and the tubular plug *d*, with the side opening *c*, when said parts are constructed and arranged to operate as described.

2. In combination with the above, the index-plate *f*, when arranged in relation thereto, as set forth.

103,330.—BOX-OPENER. — Albert Heusser, Ellington, Conn.

Claim.—The implement herein shown and described, consisting of the chisel C, bar A, handle B, and shackle F, all the parts being constructed as and for the purpose set forth.

103,331. — GALVANIC BATTERY. — Joseph Hill, New York, N. Y., assignor to himself, M. S. Frost, and E. P. Huyler, same place.

Claim.—1. Suspending horizontally the negative plate in or near the top of a jar or other vessel, under such conditions as shall secure a full and equable coating of mercury and circulation of the fluids, substantially as herein described.

2. The use of wire-cloth as the positive element in a galvanic battery, substantially in the manner and for the purpose specified.

103,332.—KNITTING-MACHINE.—Warren S. Hill, Manchester, N. Y.

Claim.—1. The arrangement and combination of the reversible cylinder C, having the ring *e* and pins *w*, vibrating needle-carrier F, reversing lever J, plate M, dog *j*, and slide T and yarn-carrier *k*, all constructed and operating as described and specified.

2. The combination, with the cylinder C, provided with the ring *e* and pins *w*, of the reversing lever J, pawls *n o*, ratchet-wheels N O, reciprocating plate M, dog *j*, for changing the direction of the motion of the cylinder, substantially as described and specified.

3. The yarn-carrier, the notched and slotted plate T, in combination with the dog *j*, pivoted to the reciprocating bar M, and operated by the lever J and the pins *w* in the ring *e*, all constructed as described and specified.

103,333.—LAYING MALTING-FLOOR.—Charles Hollmann, Union Hill, N. J.

Claim.—The interposition of a layer of paper, cloth, or other suitable material between the wood and the artificial stone of a malting-floor, substantially as herein shown and described, and for the purpose set forth.

103,334.—FEED-TRAP FOR LAMPS.—Mark W. House, Cleveland, Ohio.

Claim.—The tube B and cup C, combined and arranged with the fount of the lamp A, substantially in the manner shown, and for the purpose set forth.

103,335.—SAW-BUCK.—Leonard D. Howard, St. Johnsbury, Vt.

Claim.—The plates C, combined with short bolts, to unite two halves of a saw-buck, as set forth.

103,336. — REFRIGERATOR. — Francis W. Hunt, Brooklyn, N. Y.

Claim.—1. A refrigerator, provided with adjustable revolving shelves, substantially as herein described.

2. The combination of the ice-chamber, provided with the covered openings C, tube H, adjustable revolving shelves D, and water-cooler, all constructed and arranged as herein described, for the purpose specified.

103,337.—FLY-NET FOR HORSES.—James S. Huston, Mechanicsburg, Pa.

Claim.—The manner of passing the lash D through the cylindrical rib B, thence half around the rib, and up through the same hole, and continuing it in the same direction and in a parallel line with the lash as it is first passed through the hole, as shown and described, and for the purpose specified.

103,338. — LAMP-LIGHTER, AND BURGLAR AND FIRE-ALARM.—James B. Irwin, Newark, Ohio.

Claim.—1. The combination with the catch K of the retractor L, lever M, vibrating arm O, and cord P, substantially as specified.

2. The combination with the retractor L and lever M of the pins I', spring R and the spring S, substantially as specified.

3. The combination of the lever M with the alarm-bell mechanism, consisting of the catch a^1, arm a^2, and shaft a^3, all substantially as specified.

4. The combination with the clock escapement a^6 a^7 of arms a^4 and a^5, and the oscillating shaft a^3, substantially as specified.

5. The combination of the dropping-arm A^1 with the catch A^2, pin *f*, wire *e*, lever *g*, and the cam-plate *i*, adjustably attached to the arbor of the hour-hand of a clock, substantially as specified.

6. The combination with the pin *f* of the catch A^2, the lever *k*, bell-crank *l*, wires *m r*, and the bell-crank *n*, attached to a door or window, all substantially as specified.

7. The combination with the lever *k* and connecting-arms, and bell-cranks, of the jointed arms *t u*, arranged for operation as described, and the arm *u* being suspended by a cord, all substantially as specified.

8. The combination with the lamp, of the extinguisher T, lever W, cord U, and springs X, all substantially as specified.

103,339. — WASHING-MACHINE. — Joseph Johnson, Boston, (Highlands,) Mass.

Claim.—In the improved washing-machine, as described, the combination and arrangement of the dasher C, with its adjusting side boards *a a*, the operative crank-shaft D, slide-rods *f f*, rock-shaft *g*, apron B, yielding abutment E, with its screw spindle F, nuts *i i*, and spring G, as shown, for the purpose set forth.

103,340.—MANUFACTURE OF CITRIC ACID. William R. Johnston, Memphis, Tenn.

Claim.—As an article of manufacture, dried citrate of lime obtained by pressure from sour oranges, and adapted, by the use of any suitable precipitate, to furnish citric acid, as set forth.

103,341.—MITER-MACHINE. — Francis Carter Jones, Ouachita parish, La.

Claim.—A clamp, consisting of the side pieces A A', cross-bars *a a'*, and screw-bolt B, in combination with the indicating-disk C, the frame D, when the latter is mounted with a cross-cut saw, F, and its adjuncts, as herein specified, and the said saw is driven by the gearing consisting of the parts 1 2 3 4 5 6 7, and all the parts are constructed, arranged with respect to each other, and operate as herein described, for the purpose set forth.

103,342.—TUCK-MARKER FOR SEWING-MACHINE.—James Franklin Kellogg, North Bridgewater, Mass.

Claim.—The holder A, having sockets and screws for attaching the holder to the needle-arm, and for receiving and holding the arm D, in combination with said arm having the elastic cushion, and with the vertically and longitudinally-adjustable creasing edge, all being constructed, arranged, and operating as described.

103,343.—PISTON-PACKING.—Orlando Kelsey, Worcester, Mass.

Claim.—1. The cylindrical shell D, having flanges

for the support of the bearing-rings E or packing-rings H, and divided laterally between the flanges, for the purpose herein described.

2. The cylindrical shell D, divided laterally and constructed as shown, with openings *n* for the passage of steam, in combination with an adjustable supporting-ring, E, and packing-rings H, as herein described.

3. The steam-ways K' K', connecting the steam and exhaust ends of the cylinder with the interior of the piston, either with or without the valve M, for the purpose herein described.

103,344.—GUARD FOR CARPET-SWEEPER.—Alfred J. Knight, New York, N. Y.

Claim.—A circumjacent furniture-protector for carpet-sweepers, formed of a broad and thick strip of felt, having its two ends adjustably connected, as shown and described.

103,345.—PIANO.—Christian Kurtzmann, Buffalo, N. Y.

Claim.—The metallic bar A, having the overhanging portion *a'*, forming a bridge in combination with the pins *g g*, cleat *z*, provided with pins *y y*, and cleat *z'*, having pins *z z*, to which the strings are attached, all constructed, arranged, and operated as set forth.

103,346.—PARLOR-SKATE.—John Lemman, Cincinnati, Ohio.

Claim.—1. In connection with the stock A, provided with spherical segments *a a'* and pivots G G', the concave roller-frames D D' *d d'*, combined, arranged, and operating substantially in the manner and for the purpose specified.

2. In connection with the oscillating roller-frames D D' J J', the provision of the spring I, connected and operating in the manner and for the purpose described.

103,347, antedated May 17, 1870.—SAW-TABLE.—Mitchel Lepp, Albany, N. Y.

Claim.—The arrangement, herein shown and described, of saw-table A, sliding-frame B, tool-box C, and roller D, when constructed substantially as and for the purpose set forth.

103,348.—LOCK-NUT.—Edwin T. Ligon, Demopolis, Ala.

Claim.—The nut and bolt, secured together by means of a ring, pin, or other body of solder, so combined therewith as to unite the two, when heat is applied, by means of a hot wrench, or otherwise, after the parts are screwed together, substantially as specified.

103,349.—SAWING-MACHINE.—Benjamin Little and Jonn B. Lundberg, Coffee Creek, Ind.

Claim.—The drag sawing-machine above described, consisting of the frame A, shafts B and E, gear-wheels D and G, fly-wheel H, connecting-rod I, pendulum *f*, pitman K, guide-frame M, chains N, and dogs O, when each of said parts is constructed as described and shown, and all are arranged as and for the purpose set forth.

103,350.—TUBULAR SUBMARINE VIADUCT.—W. Grayson Mann, Savannah, Ga.

Claim.—1. The combination of a shoe, D, and the system of ropes and pulleys F F', substantially as described, for guiding and uniting the end of an additional section of a tubular viaduct to a section already laid, such sections being coated before immersion with an outside layer of brick, stone, or other material to act as ballast.

2. A tubular submarine viaduct, composed of sections so constructed that the viaduct shall be laid by forcing the small end of each section into the large end of the adjoining section, as described.

103,351.—PRINTING-PRESS.—Charles Camille Maurice, New York, N. Y.

Claim.—1. The curved stationary block B, having curved printing-surface, combined with a printing-roller, E, as and for the purpose described.

2. The shaft *d* and arms F F, combined with a lever D and spring G, connected together to move the roller E backward and forward.

103,352.—POCKET CUTLERY.—William H. Miller and George W. Miller, Meriden, Conn.

Claim.—An improvement in pocket cutlery, wherein the blade *b* and back spring *i* are first secured or riveted to the scales *c c*, and the covering *a* afterward secured to the scales *c* by means of small screws or rivets, substantially as herein described.

103,353.—CURTAIN-FIXTURE.—James Montgomery, Marseilles, Ill.

Claim.—The combination of the devices above named, so as to form the window-shade as described, that is to say, of the top bar C, the springs D D, the cords F F, the staples G G, the staple H, weighted tassel I, and shade E, in combination with the window-sash B', constructed substantially as described.

103,354.—STOVE-LEG FASTENER.—Frank Moon, Newberry Court-House, S. C.

Claim.—The combination, with the bottom plate A and the leg C, provided with recesses as described, of the bolt E and spring F, substantially as specified.

103,355.—OX-BOW.—Alfred L. D. Moore, Lagrange, Texas.

Claim.—Constructing ox-bows in sections, partly of wood and partly of iron, or other suitable material, substantially as herein shown and described.

103,356.—COTTON, HAY, AND HEMP-PRESS.—William H. Morris, Troy, Tenn.

Claim.—The combination of the cross-beam F with the ratchet-bars *a a*, blocks *c c*, provided with pawls *f*, having handles *h* attached thereto, friction-rollers *g g*, and the clevises *k k*, operated by the levers *h*, when all constructed, arranged, and operating as herein described, and for the purpose set forth.

103,357.—WASHING-MACHINE.—Russell S. Morse, Wilton, Me.

Claim.—The combination of the radial arms C, the cleats *f*, and the passages *g h*, all arranged as described, with the spindle B, and with the dasher A, having perforations through its disk, and rubbers *a* applied to such disk, as set forth.

103,358.—FOLDING CHAIR.—William Morstatt, New York, N. Y.

Claim.—1. The combination of the legs B C and F G and arms E with the seat A, provided with the legs or stands D, when constructed and arranged as herein described and for the purpose specified.

2. In combination with the above, the foot-board J, as herein described.

103,359.—SAW-SET.—James Morton, Philadelphia, Pa.

Claim.—The saw-set herein described, consisting of the jaws A B, the convex anvil F, and oblique-faced bit G, having a drawing movement and provided with gauges, either adjustable or otherwise, as shown and described.

103,360.—MEAT-CUTTER.—August Nittinger, Philadelphia, Pa.

Claim.—The construction and operation of the inclined planes I P and I P', cross-piece C, brace F, supporting-blocks D and D', bed-plate P, spindle S, socket K, India-rubber stripe N and N', guides G, G, G², and G², and shaft T, nut H, bearing J, collar L, and wheel W, so as to operate substantially in the manner and for the purpose specified.

103,361.—CUTTER-BAR FOR HARVESTER.—William James Oxer, Williamsport, Ind.

Claim.—1. In combination with the sickle E, with its under projecting bar or enlargement fitting into the groove described, the shield-shaped springs I, provided with openings at their ends, and secured to the bar A, with their ends resting upon the sickle E, substantially as specified.

2. The arrangement of the bars A and C, fingers B B, knives D D, sickle E with bar *b* and the springs I I, all constructed to operate substantially as set forth.

103,362.—COMBINED CORN-HARVESTER AND HUSKER.—Samuel Patton, Chatsworth, Ill., assignor to himself, John M. Long, and Robert Allstatter, Hamilton, Ohio.

Claim.—1. The combination of a pair of thills, A A, with each spring-bar B arranged in relation to the frame O, in the manner and for the purpose specified.

2. The combination of the vertically adjustable draft-rods 2 2, evener 7, and levers H, when the latter are pivoted to the spring bars B, in rear of the axle, for the purpose of enabling the draft to balance weight on the rear of the machine, substantially as described.

3. The arrangement of the plate *f* having the rib P and joints R, with the frame O and axle C, all being constructed and operating substantially as described.

4. The drums *a* and *b*, when constructed as described, and arranged forward of the husking-rollers, for the purpose specified.

5. The notched flange *i* on the rear of the drum *a*, for the purpose specified.

6. The projections or points *r* on the rear of the flange *i*, for the purpose specified.

7. The cam X attached to the roller M near its front end, and radially in front of the rib *n*, for the purpose of preventing ears of corn from being caught by the ribs.

8. The guards *y'* combined with the pinions on the rollers L M, as and for the purpose specified.

9. The rims G' G' on the front ends of the drums *a b*, when used in connection with the guards *k*, for the purpose specified.

10. The apron *l*, in connection with the drum *a*, having the rim 8, for the purpose specified.

11. The arrangement of the axles of the drums *a* and *b* at obtuse angles with the husking-rollers, as specified.

12. The arrangement of the corn-box *q*, plates 9, rods 1 and 2, and pedals 4 and 5, constructed and operating substantially as described.

103,363.—STEAM-GENERATOR.—Abraham L. Pennock, Philadelphia, Pa.

Claim.—1. The combination of front chamber A, having partition *a* and water-inlet pipes F, back chamber B, having partition *b* and water-outlet pipes *c*, with the longitudinal pipes C, arranged in rows D E, for the purpose described.

2. The side plates H, having the troughs *f*, to form tight joints on the upper range of pipes, as set forth.

103,364, antedated April 28, 1870.—CHURN.—W. H. Pennock, Mermaid, assignor to himself and W. H. Greenwalt, Mill Creek Hundred, Del.

Claim.—The spiral beaters H, arranged and operating substantially in the manner described.

103,365.—BOOT-BLACKING ATTACHMENT TO BUREAUS.—William E. Phelps, Elmwood, Ill.

Claim.—The drawer B', as constructed, with foot-rest E, recess F, and spring F', recess H, pan A, and lids C C', in combination with bureau A, as shown and described, for the purpose specified.

103,366.—DOUGH-WORKER.—William R. Pool, Havana, Ala.

Claim.—The removable round roller C, the levers D, pivoted in slots in the vertical bearings B, and provided with the cords F and weights E, in combination with the flat table A, all as shown and described, for the purpose specified.

103,367.—ELEVATOR AND CONVEYER.—Thomas J. Powell, Naples, N. Y.

Claim.—1. The swiveled block C, holding the operating parts, and combined with the car in such a manner as to turn to any desired angle therein, as herein described; also, to be reversed in position.

2. The arrangement of the lever I with hook and arm *k l*, and pawl H with arms *d d*, the pulley E and the hoisting-rope G, used either with or without the swiveled block C, in the manner and for the purpose specified.

3. The circular stop or catch K, when combined with a hook, *k*, and arm *l*, having an angular movement, as herein described

103,368.—SAFETY SOCKET FOR WHIP.—Winthrop Davis Putnam, Chicago, Ill.

Claim.—1. A clamping device, in combination with the interior of a whip-socket or holder, operating upon the principle set forth.

2. A secret locking device, a clamping device, and a whip-socket or holder, constructed and operating upon the principle set forth.

103,369.—FLEXIBLE TUBING OR HOSE.—Thomas L. Reed, Providence, R. I.

Claim.—1. The cement wire foundation A, substantially as described, for use in flexible tubing or hose.

2. The combination of the said cement wire foundation A, as described, with one or more animal intestines, B, substantially as described, to form a flexible gas-tight tube.

3. The combination of the cement wire foundation with an India-rubber covering or tube, substantially as described.

4. The combination of the cement wire foundation A, the layer or layers of animal intestines B, and a braided covering, C, of fibrous material, as described.

5. The combination of the cement wire foundation A, the layer or layers of animal intestines B, the covering of fibrous material C, and an India-rubber tube or sheath D, substantially as described, to form a flexible gas-tight tubing.

103,370.—DROPPING-PLATFOM FOR HARVESTERS.—Martin T. Reynolds, Centreville, Ind.

Claim.—The combination, with hinged and swinging platform G and beveled strip H, having fingers N thereon, of crank J, rod K, and foot-lever L, all constructed, arranged, and operating as described, and for the purpose of receiving, separating the straw, and then delivering the butts evenly, as set forth.

103,371.—MACHINE FOR WASHING BARRELS.—Thomas Reynolds, Yonkers, N. Y.

Claim.—The combination, with the frame-work A, of the pipes C and D, when the same shall be provided with any desired number of perforated pipes C^2 and D^2, when the same shall be constructed and operate substantially as and for the purpose set forth.

103,372.—HAULING UP LOGS.—Simon H. Richardson, Bangor, Me., assignor to himself and T. N. Egery, same place.

Claim.—1. The arrangement of the shaft and wheel C D, with the wheel, shaft, and wheel E F G, in combination with the wheel, and shaft H I, all as shown and described, for the purpose of hauling up logs.

2. The combination of the shaft and wheel C D, with the wheel, shaft, and wheel, E F G, the wheel and shaft H I, and the wheel J, with the levers M and N, in the manner and for the purposes shown and described.

103,373. — DREDGING-MACHINE. —William D. Robertson, San Francisco, Cal.

Claim.—1. The scoop *q*, and back plate E, constructed and operated substantially as described.

2. The scoop *q*, back plate E, frame *r*, rack *s*, pinion G, shaft *n*, ratchet-wheel C, friction-brake wheel B, and guides *t*, combined and arranged to operate substantially as described.

3. The combination of the overhanging frame *c* and the drums *p*, with the screw *a*, substantially as described.

4. The combination of the stake-plates *f*, the frames *g* and *e*, the racks *g'*, the pawls *h* and *i*, the chains *z*, drums *n*, and suitable breaks and levers, with a scow, as and for the purpose described.

103,374, antedated May 17, 1870.—DEVICE FOR NEBULIZING PERFUMES AND VOLATILE LIQUIDS. — Edward P. Roche, Bath, Me.

Claim.—1. The application to the neck or mouth of a bottle, and below its stopper-receiving inclosure, of a foraminous diaphragm, or its equivalent device, for retarding flow of liquid from such bottle, the advantages of such a diaphragm being as hereinbefore explained.

2. Forming a score or groove in the interior of the neck of the bottle for the purpose of retaining the diaphragm in place therein, essentially as explained.

103,375.—BALANCE ELEVATOR.—Charles B. Sawyer, Fitchburg, assignor for one-half his right to John W. Labaree, Springfield, Mass.

Claim.—1. The independent shaft S, when used in connection with one or more toothed wheels, B, having two or more rolls, *a a'*, attached thereto, substantially as described.

2. The loose shaft S, in combination with the series of pulleys *a a' a''*, revolving around said shaft, constructed substantially as described.

3. An improved elevator, consisting of the pinion B', toothed wheel B, having the series of pulleys *a a' a''* attached thereto, the loose shaft S, and cord *t*, all constructed and operating substantially as described.

103,376, antedated May 13, 1870.—NAIL-MACHINE.—Henry Scheuerle, New York, N. Y.

Claim.—1. The movable block N, by which the forward movement is communicated to the pincer-bar R, in combination with the transverse sliding bar Q, by which the lateral motion is given to said pincer-bar, substantially as herein set forth.

2. The arrangement of the slotted block P, sliding block N, transverse sliding bar Q, and pincer-bar R, substantially in the manner and for the purpose herein specified.

3. The arrangement of two cranks, V V', of unequal length, connected by a bar or rod, W, and operated from a rotating shaft, L, in combination with the sliding bar Q, substantially as described.

4. The combination of the levers or springs *n n'*, sliding pins *v v'*, levers *m m'*, bar *w*, and crank V'', operating together in the manner and for the purpose substantially as set forth and described.

103,377. — AMALGAMATOR AND ORE-CONCENTRATOR.—Joseph Scott, San Francisco, Cal.

Claim.—1. The combination of the fixed pan E and basin G with the feeding-tube D, substantially as and for the purpose specified.

2. The revolving pan C and cover F, constructed and arranged substantially as described, and for the purpose set forth.

103,378.—GRATING, SIFTING, AND SLICING-MACHINE.—John F. Shepard, Hampton Falls, N. H.

Claim.—The combination and arrangement of the frame A, hopper B, cover C, sliding rack D, with the slicer E, sieve F, and grater G, as described, and for the purposes hereinbefore set forth.

103,379.—WATER-METER.—Gerard Sickels, Boston, Mass.

Claim.—The cylindrical valve D, having partitions *v v'*, slots *b b' d d'*, rollers *l l*, disk *q*, and rings Z and S, in combination with cylinders B and A, substantially in the manner as above specified.

103,380. — ROLLED IRON OR STEEL COLUMN. — Frederick H. Smith, Baltimore, Md.

Claim.—As a new manufacture, a rolled iron or steel column for compression or tension members of bridges, piers, and other structures, made substantially in the manner herein shown and described.

103,381. — BRICK-PRESS. — J. Nottingham Smith, Jersey City, N. J.

Claim.—1. The ring F, having pins or spindles *a* attached to and projecting from it, the rollers G, and wedge A, combined and arranged substantially as set forth.

2. The combination, with the die-post U and annular wedge A, of the roller V and rollers *s*, forming a compound friction-roller bearing, substantially as specified.

3. The stripper D', constructed and operated as described, in combination with the dies and the annular wedge A, substantially as set forth.

4. The combination, with the dies and the said stripper D', of the auxiliary carriers K', constructed and operated substantially as specified.

5. The oiler E', combined with the stripper D' and dies, substantially as hereinabove specified.

6. The tanks P', combined with the oiler E', stripper D', and dies, substantially as hereinabove set forth.

7. The independent feed-openings, combined with the tanks P', plug Q', and wicks *v'*, substantially as hereinabove specified.

8. The spring C', combined with the die A' and girt B, in such a manner that the said spring receives and sustains the whole pressure applied to the die A', yielding only to prevent the breaking of the machine, substantially as set forth.

9. The combination, with the die T, die-post U, and guide W, of the bolts *d'*, and the adjusting-nuts thereon, whereby the size of the opening a^2 is increased or diminished, substantially as hereinabove set forth.

103,382. — SEED-PLANTER. — Thomas H. Smith, Clyde, N. Y.

Claim.—1. The arrangement with the combined seed-box and plow G H, of the slides N J, rock-lever T, and pivot rod g^2, operating substantially as hereinbefore set forth.

2. The brush or scraper, consisting of the tubular rubber *s*, and distending arms *u u*, constructed and arranged within the seed-box G, in the manner hereinbefore set forth.

3. The seed-box G, divided into two compartments, and arranged with the plow H, and the divided ends *j j* of the slide J, for dropping plaster or other hill-indicating substance simultaneously with the seed, substantially as hereinbefore set forth.

103,383. — ELECTRO-MAGNETIC INDICATOR FOR BURGLAR-ALARM AND FOR OTHER PURPOSES.—James P. Snyder, Brooklyn, N. Y.

Claim.—An alarm-indicator arranged for automatically causing a secondary and independent circuit at the indicators by the action of the armature lever with a disk or other device, and the springs or other closing devices, and a secondary line of wire, I. H^3 connecting the battery and the magnet, all substantially as specified.

103,384.—SIZING COTTON AND OTHER FABRICS.—Jacob W. Speyer, Hamburg, Germany.

Claim.—1. A sizing compound, substantially as described.

2. The within-described process for producing a sizing compound, substantially such as herein specified, by treating the minerals obtained from the mines of Stassfurt in the manner set forth.

103,385.—APPARATUS FOR DISTILLING HYDROCARBONS.—Henry A. Stearns, Smithfield, R. I.

Claim.—The improved distillery apparatus consisting of the chamber A, with suitable inlets and outlets, and provided with a series of alternating hollow flat-surfaced evaporators, C, the interiors of which are connected and so arranged that a current of steam may be forced from one to the other throughout the series, substantially as shown and described.

103,386.—TINSMITHS' SHEARS.—Orson W. Stow, Plantsville, Conn.

Claim.—As a new article of manufacture, the improved tinsmiths' shears herein shown and described.

103,387.—TABLE.—Charles T. Sutton, Brooklyn, N. Y.

Claim.—The combination, with the supports A B, of the tubular arms C, jointed arms D D', leaves E, and set-screws H, all arranged and constructed as herein described.

103,388.—MANUFACTURE OF TUBULAR CANDLES.—Freeman Augustus Taber, Boston, Mass.

Claim.—As an improved article of manufacture, and for the purposes specified, a tubular candle, whose bore is flattened or oblong in cross-section, to receive a flat wick or wick-tube, or both.

103,389. — COOKING-STOVE. — Christian Temme, St. Louis, Mo.

Claim.—1. A wood or coal-stove, arranged with draught-opening E, rising air-duct *e*, damper F, air-inlet *f*, in combination with the fire-place A, substantially as set forth.

2. The bake-oven D, having flues *d* d^1 d^2 entirely surrounding the same, when combined with the flue-opening I, horizontal plate *g*, and damper *h*, substantially as set forth.

3. The extension flue d^3, widening transversely, and arranged to be connected with the reservoir I', substantially as set forth.

103,390. — HOT-AIR FURNACE. — Moses A. Thayer, Chicago, Ill.

Claim.—1. Constructing and arranging a grate for a stove or furnace in two parts, so that, by the action of a single lever, the two parts of the grate will move in opposite directions.

2. Combining and arranging the two parts of the grate, *f* and *g*, with the lever *h*, substantially as and for the purpose described.

3. Constructing and arranging the two parts *f* and *g* of the grate with an inclined surface, substantially as shown, and for the purpose described.

4. Combining the coal-chamber *a*, deflector *b*, and tubes *c c*, substantially as and for the purpose described.

103,391.—APPARATUS FOR OPENING AND CLOSING THE TOPS OF BLAST-FURNACES. James Thomas, Parryville, Pa.

Claim.—1. The combination of the hopper A, bell B, connecting-rod C, lever D, connecting-rod F, cross-head G, ways H, piston-rod I, piston J, cylinder K, and pipe or pipes L M, with each other, to enable the bell B to be raised and lowered automatically, by the operation of applying the blast to, or shutting it off from the furnace, substantially as herein shown and described.

2. The combination of the hopper A, bell B, connecting-rod C, lever D, connecting-rod F, cross-head G, ways H, piston-rod I, piston J, cylinder K, pipes L M N, three-way cock O, with each other, substantially as herein shown and described, to enable the bell B to be raised and lowered automatically by the operations of applying the blast to and shutting it off from the furnace.

103,392, antedated May 14, 1870.—GAS-CONDENSER.—Edward Thompson, Madison, Wis.

Claim.—1. Purifying coal-gas by passing the same through a series of horizontal or vertical tubes or chambers surrounded by cold air or water, substantially as herein shown and described, and for the purpose specified.

2. The chambers or tubes A, composed wholly or in part of corrugated metallic plates or wholly of plain metal, substantially as herein shown and described, for the purpose specified.

3. The combination of the tubes or chambers A, composed of metal plates, with the tank B, substantially as herein shown and described, for the purpose specified.

4. The arrangement, with relation to each other within the tank, of the chambers A and short tubes C, substantially as herein shown and described, for the purpose specified.

5. The pipes G H I, constructed as described, with opposite diverging or flaring sides, and operating as described, for the purposes specified.

103,393. — PAPER-HANGERS' APPARATUS.—William F. Trautman, Llewellyn, Pa.

Claim.—1. The table, composed of the three divisions or parts B B^1 B^2, all constructed and arranged separately and relatively, substantially as and for the purpose set forth.

2. The construction and arrangement of the supports F and platform F', substantially as and for the purpose specified.

3. The movable rests f^2, in combination with the platform F' and supports F, as described, and for the purposes set forth.

4. The brace H, constructed and arranged substantially as specified, in combination with the platform F', for the purpose set forth.

5. The adjustable cross-pieces I and I^2, in combination with the scaffold-support, to which they may be adjusted, substantially as described.

6. The arrangement, as shown in fig. 1 of the drawings, of the scaffold, table, and step-ladder, in combination with the wheel N^2 and pin *o*, or equivalent, for the purpose specified.

7. The supports M M', constructed substantially as described, and adapted to receive the wheel N^2, as and for the purpose set forth.

103,394.—HORSE-POWER SAWING-MACHINE. Asa Trone, Nebraska, Ohio.

Claim.—A portable sawing-machine, having the vertical shaft D, pulley H, band-wheel F, pulley I, shaft J, and crank-disk K, arranged on the frame A, and with respect to the driving-wheel B, in the manner described.

103,395.—ATTACHMENT FOR BUCKLES. — Charles H. Trott, Boston, Mass.

Claim.—The plate C, with or without a loop, *c*, when secured in place by rivets and riveted projections, in the manner set forth.

103,396.—BOB-SLED.—John Wampach, Shakopee, Minn.

Claim.—1. The combination of the T-irons C, eye-bolt F, and pivoting bolts with the knees and beams of the sled, substantially as herein shown and described, and for the purpose set forth.

2. The combination of the cross-bar J, short tongue K, and long reach L with the forward ends of the runners of the rear bob, and with the forward and rear bolsters M N, substantially as herein shown and described and for the purpose set forth.

103,397, antedated May 14, 1870.—MACHINE FOR ROLLING METALS. — William H. Ward, Auburn, N. Y.

Claim.—1. The method herein described of insur-

ing the deposition of the bar or blank in its proper place in the die-groove, that is to say, carrying the blank forward on feed-rolls continuously revolving at a speed greater than that of the die-rolls, temporarily arresting the forward movement of said blank by a stop interposed in its path, and securing the second forward movement of the blank up to and against a stop in the die-groove by the feed-rolls, in virtue of their superior velocity, and by adjustments of the mechanism so as to regulate and co-ordinate the times of arrest and of movements, all substantially as described.

2. The combination of the automatic stop-wheels n with the feeding-rolls m and die-rolls, substantially as before described.

3. The combination of the hinged arm N, and the automatic stop-wheels n connected thereto, with the feeding-rolls m and adjustable lifting-plates y, arranged directly upon the die-rolls, substantially as before described.

4. A feeding table composed of grooved rolls, arranged parallel to the axis of the die-rolls, in combination with said die-rolls and with the automatic stop-wheels n and feeding-rolls m, substantially as before described.

5. The arrangement of the die-rolls I in sections by placing two upon a central shaft and one upon the opposite ends of an upper and a lower shaft, and each receiving a positive motion from its gear-wheel, so as to match in pairs, as hereinbefore described.

103,398.—GEAR-WHEEL.—William H. Ward, Auburn, N. Y.

Claim.—1. The seat C of the fixed part of the wheel, having its continuity interrupted, so as to form recesses *a*, in combination with the toothed inclosing rim E, having projections *d*, for fitting into the recesses, substantially as before described.

2. The combination of the fixed hub A, fixed recessed concentric seat C, and adjusting-screws *b*, or their equivalent, with the toothed adjustable inclosing rim E, constructed, arranged, and operating substantially as described.

103,399. — HOUSING FOR METAL-ROLLING MILLS. — William H. Ward, Auburn, N. Y.

Claim.—For the purpose of directing ultimately the upward pressure of the journal-bearings of the upper roll of a rolling-mill laterally against solid shoulders of the cap-piece, the construction substantially as herein described and shown.

103,400.—SHUTTLE FOR LOOMS.—Horace Wells, Hopkinton, R. I.

Claim.—The combination with the spindle, of a sliding spring holding the bobbin, and the spring H, substantially as specified.

103,401.—FURNACE FOR BOILING AND PUDDLING IRON.—James Westerman, Sharon, Pa.

Claim.—1. The partition G in the water-bosh of an iron-boiling or puddling furnace, substantially as and for the purposes herein shown and described.

2. In combination with the water-bosh B and the boiler F, the neck or flue D, substantially as and for the purposes described.

103,402.—COMPOUND FOR OILING, POLISHING, AND BLACKING LEATHER.—George F. Whitney, Boston, Mass., assignor to himself and Herbert S. Merrill, same place.

Claim.—The manufacture of a preparation of a saponaceous compound, substantially as described, for the purpose set forth.

103,403.—ROOFING-COMPOUND.—Luke A. Wilder, Chicago, Ill.

Claim.—The roofing-cement, composed of the ingredients described, and combined as specified.

103,404.—APPARATUS FOR MEASURING LIQUIDS.—Moses H. Wiley and Thomas Miller, Boston, Mass., assignors to themselves and John H. B. Lang, same place.

Claim.—The combination and arrangement, in a single article of furniture constructed as described, of the main cistern A, secondary cistern D, pump B, chamber K, and registering and measuring-apparatus of the character specified, all placed in the relation and operating together in the manner and for the purpose set forth.

103,405.—WASHING-MACHINE.—Charles P. Winslow, Westborough, Mass., assignor to himself and L. P. Day, same place.

Claim.—Combining with the vibrating disk E the segment pumps, composed of parts M H, M^1 H^1, and M^2 H^2, or their equivalents, substantially as described, and for the purpose set forth.

103,406. — SPEAKING-TUBE WHISTLE.—Thomas J. Woolcocks, New York, N. Y.

Claim.—1. In combination with the cylindrically-formed barrel A, the stem F, having the reacting spring G attached to it, and operating on the outside of the barrel, as hereinbefore described, and for the purposes set forth.

2. The disk B, having a solid flange, D, and hinge piece E attached thereto, as hereinbefore described, and for the purposes set forth.

103,407.—DEVICE FOR ADJUSTING CROSS-HEADS OF LOCOMOTIVES.—James D. Akley and Richard English, Oil City, Pa.

Claim.—1. An apparatus for adjusting the cross-heads of steam-engines, constructed substantially as shown and described, and for the purpose set forth.

2. The combination of the within-described cross-head adjuster and the guides for the cross-head of a steam-engine, substantially as and for the purpose specified.

3. The combination of the yoke A, key B, bars C C, and lever D, substantially as and for the purpose set forth.

103,408. — STEAM-GENERATOR AND FURNACE.—Jonathan Amory, West Roxbury, Mass.

Claim.—In steam-generators, the combination of one or more combustion-curves with one or more conduits, arranged for circulating the water from the generator through the curve or curves back to the generator, additionally heated, substantially as set forth.

103,409.—FURNACE FOR ROASTING ORES.—Charles M. Atkins and Alexander Govan, Pottsville, Pa.

Claim.—1. An improved furnace, having a grate, a^1, ash-pit a^2, flue a^3, and bottom openings B B B, all constructed and relatively arranged, as and for the purpose described.

2. An ore-furnace, having its bottom open, to allow a free current of air, independent of any which comes through the fire, as set forth.

103,410.—CARPET-STRETCHER AND TACKER. James R. Bancroft and Robert C. Bache, Philadelphia, Pa.

Claim.—The combined carpet-stretcher and tacker, consisting of a yoke, A, provided with notched plates *a b*, sliding bar B, and spring *d*, relatively arranged, substantially as shown and described.

103,411. — LINIMENT. — William H. Batt, Monterey, Ky.

Claim.—The liniment composed of the ingredients herein described.

103,412.—PARASOL.—Lucretia Battles, Gloucester, Mass.

Claim.—An umbrella-frame, so constructed that the position of its ribs may be reversed for removal or application of a cover, substantially as described.

Also, in combination with a removable umbrella-cover, provided with hollow tips or pockets *l*, and a central eye, *k*, the fastenings, loops or pockets *m*, by means of which the cover is secured to the ribs, between the eye *k* and the tips, substantially as described.

Also, in combination with the spindle, the fastening-ferrule *n*, constructed and applied so that it may be readily slipped from or confined upon the spindle, without removal of any other fastening device.

103,413. — MOP-HEAD. — William Hewitt Beatty, Columbus, Ohio.

Claim. — The cylinder A and double rubber scrubbing-brush when provided with the mop-hooks F F, in combination with the wire prongs D D and novel arranged wire-fastening E, together with the lips G G, all arranged substantially as and for the purpose specified.

103,414. — ELEVATOR FOR BUILDING MATERIAL.—John C. Bennett and David N. Green, Coldwater, Mich.

Claim.—The combination of the portable tramroads, the inclined railway track, the turn-tables, the truck-car, and the brick and mortar boxes, all constructed and arranged to operate substantially in the manner as and for the purposes herein specified.

103,415.—LET-OFF MECHANISM FOR LOOMS. Erastus Brigham Bigelow, Boston, Mass.

Claim.—Combining a vibrator, and mechanism for operating it, controlled by a spring or equivalent, to produce the necessary tension on the warp when the shed is made, and a spring arm, operated from the lay, and engaging a pin in the vibratory-actuating mechanism, to increase the tension on the warp when the lay beats up, all combined and operating substantially as described.

103,416.—VULCANIZED INDIA-RUBBER ROLL FOR WRINGERS, GRAIN-DRILLS, &c.—James R. Bird, Brooklyn, and George C. Smith, Matteawan, N. Y.

Claim.—1. A vulcanized India-rubber roll, made of rubber of varying degrees of hardness, the harder toward the center and the softer toward the circumference of the roll, substantially as and for the purposes shown and set forth.

2. A feed-roll for grain-drills and like uses, made of vulcanized India rubber, substantially as herein described, with a roughened, scored, or indented surface, for the purposes set forth.

103,417. — STAND FOR TRANSIT INSTRUMENTS.—John Bliss and George H. Bliss, Brooklyn, N. Y.

Claim.—The plate *f*, containing sockets or points and clamped to the plate *e* by the screw *g*, in combination with the removable transit instrument and adjusting-screw *d*, substantially as specified, whereby the bed for the removable transit instrument is adjusted with facility and accuracy, as and for the purposes specified.

103,418.—WELDING-POWDER FOR IRON AND STEEL.—Samuel Bothwell, Philadelphia, Pa., assignor to himself and Ralph Ormrod, same place.

Claim.—A welding-powder composed of soda-ash and chloride of lime, as described.

103,419.—ROLLER-SKATE.—Richard T. Bradley and Henry W. Wansbrough, Cincinnati, Ohio, assignors to R. T. Bradley and C. A. Scott, same place.

Claim.—1. The peculiar rocker bed-frame B, composed of the inclined lips L L, and groove *b*, and flange *b'*, substantially as herein set forth.

2. The rocker-frame C, when composed of the following parts: rocker *c*, and inclined tenon *c'*, with inclined flange *h*, and standards *g g g*, constructed and arranged as herein set forth.

3. The combination of the above-described rocker bed-frame B, and rocker-frame C, with the skate A, and the rollers I I, substantially as herein set forth.

103,420.—NOZZLE AND STOPPER FOR CANS, &c.—Mellen Bray, Boston, Mass.

Claim.—1. The screw-threaded and conical valve stopper, in combination with the screw-threaded nozzle, provided with a circular valve-seat, to receive the conical valve portion of said stopper, as shown and set forth.

2. The stopper, formed from an undivided piece of metal, and provided with a conical valve-surface and an exterior screw-thread, substantially as set forth.

3. A can-nozzle, formed from an undivided piece of sheet metal, and provided with an internal screw-thread and a valve-seat, to receive the valve and thread of the stopper, substantially as described.

103,421, antedated May 13, 1870.—HAMMER-STRAP FOR WAGONS. — Charles Brown, Adrian, Mich., assignor to himself and Aaron G. Salmon, same place.

Claim.—The combined hammer-strap and wrench D, with the offset *h* and foot *e*, to be used in connection with the draw-plate C, constructed in the manner and for the purposes set forth and described.

103,422.—PRINTING-PRESS. — Jesse Bailey Brown, Nashville, Tenn.

Claim.—1. The combination of the keys Q with the frames M, when the latter are grooved on each side and otherwise constructed as shown and described.

2. The combination of the stationary knife R, movable knife S, sliding rods T, coiled springs U, collars V, and projections W, with the horizontal table B, type-cylinders K I, printing-rollers L J, feed-rollers H, and frame A, substantially as herein shown and described and for the purpose set forth.

3. The combination of the curved angular lock-plates Q with the curved frames M, radial and shouldered types N, and keys O, and leads P, either or both, substantially as herein shown and described and for the purpose set forth.

103,423. — PIPE-COUPLING. — Joseph R. Brown, New Haven, Conn.

Claim.—A pipe-coupling, in which the pipes A and B abut against the central flanges *d d* of the sectional collar B D, having the recess *b* and bead *a*, and are flared into recesses, and thus united to the collars by means of rolling, all substantially as described.

103,424.—CLOTHES-DRIER.—William Livingston Browne, Shortsville, N. Y.

Claim. — The above-described drying-machine, consisting of a central standard, A, with one stationary collar, B, and three movable collars or fulcra, C, D, and E, for the arms and braces of the machine, when the whole is constructed, combined, and arranged to operate substantially as described.

103,425.—SPRING BED-BOTTOM.—David C. Bronson, Great Bend, Pa.

Claim.—The arched or elliptic slat *a*, having attached to it the sockets *a a*, in combination with the shorter slat *a'*, the whole arranged and operating substantially as set forth.

103,426.—DUMPING-WAGON.—George Burket, Bluffton, and Samuel Lantz, Ada, Ohio.

Claim.—1. The platform D, provided with journals working in the slots of the inclined ways C, in

combination with the frame A, as shown and described, for the purpose specified.

2. The combination with the frame and the tilting platform, arranged substantially as described, the locking-bolt G, lever H, and rod I, substantially as specified.

3. The combination with the tilting platform D of the hinged end-board K, arm L, rod M, arranged substantially as specified.

103,427.— BROOM-CORN-SEED PLANTER. — Jacob Bush, Darien, Wis.

Claim.—The combination of the tubes D and E with the arm E', opener e, coverers e^1 e^1, roller e^2, rod f, and spring f', as described, for the purpose set forth.

103,428.—OIL-CAN.—John R. Compton and Crowell M. Toms, Rahway, N. J., assignors to themselves and Albert Asmann, same place.

Claim.—1. The spout B B, formed in two parts, one fitting over the other, and provided with the ball, valve-seat, and stop-pin, as and for the purpose described.

2. The divided spout B B, having ball, valve-seat, and stopper, combined with body A and hollow perforated stopper D, having ball-valve and valve-seat, all combined, constructed, and relatively arranged to form an improved oil-can, as set forth.

103,429.—BRAD-PUNCH.—Roswell F. Cook, Potsdam, N. Y., assignor to Sparrow & Swan, same place.

Claim.—1. The bar I, having bottom rib K, and lateral inclines M N thereon, and attached to collar R on the plunger, combined with the walls O F, as and for the purpose described.

2. The combination of a feed-rack, A, constructed as described, with the bar I, moving simultaneously with the plunger, to hold and feed said rack along, at the times and in the manner specified.

103,430.—WHEELBARROW.—Nelson Cronkite, Milford, N. Y.

Claim.—1. The curved suspended hangers or stirrups, having their ends secured to the side sills of the barrow, and carrying the journal-boxes of the wheel, substantially as and for the purpose described.

2. In combination therewith, the supporting-braces, extended inwardly and connected to one of the cross-bars beneath the barrow, substantially as shown and described.

103,431. — STEAM-ENGINE. — John Mayre Curry, South Framingham, Mass., assignor to himself, John McLaughlin, Brooklyn, N. Y., and Dennis Phalen, Watertown, Mass.

Claim.—The arrangement of the slide-valve F, the partition b, the eduction-chamber c, and the series of ports d e h i, as described, in a circular drum or case, A, and with respect to a wing or piston, E, and shaft C to operate therein, the whole being as specified.

103,432.—WALL-PAPER PROTECTOR.—Mary Disston, Philadelphia, Pa.

Claim.—As a new manufacture, a wall-paper protector, consisting of a strip, E, having a narrow lower edge, and provided with a handle, e, arranged as described.

103,433.—PROCESS OF EXTRACTING SILVER AND GOLD FROM ARSENIO-SULPHURETS. Cyprien Marie Tessié Du Motay, Paris, France.

Claim.—1. The method of roasting and the silicatization of the metallic, simple, or complex sulphurets, arsenio-sulphuret, and antimonio-sulphurets containing silver or gold, by means of the processes above described.

2. The method of liquation and fusion by successive series of argentiferous and auriferous silicates upon one same bath of lead, which desargentises and desurifies them, by which method the same object is obtained by one cupellation, which, according to the best methods at present in use, requires several.

3. The methods by which, after the oxides of lead, antimony, or copper contained in the silicates deprived of silver and gold have been brought back to the metallic state, the lead is separated from the copper with which it is united by the addition of an equivalent quantity of sulphuret of lead, or of one of the sulphurets enumerated above, and the antimony, by the action of the aerohydric or oxyhydric blow-pipes combined with the reaction produced by a small amount of sulphuret of lead.

4. The application of the above-described methods to the entire or partial treatment of copper mats and argentiferous and auriferous coppers of the minerals of antimoniferous lead and of the mineral of antimony containing silver and lead or pure silver.

103,434.—PROCESS FOR THE TREATMENT OF ORES.—Cyprien Marie Tessié Du Motay, Paris, France.

Claim.—1. The fundamental reaction of steam, in a nascent state, produced by blow-pipes, fed by air and hydrogen, or hydrogen and oxygen, upon the alloys of copper, iron, antimony, and tin, the effect of which reaction is to separate, in the metallic state, the copper which the nascent steam does not oxidize, from all metals which the steam does oxidize.

2. The employment of this reaction in metallurgic furnaces, in order to completely purify the copper, and separate it, in the metallic state, from iron, antimony, or tin, during the passage of these metals into the state of scorifiable oxides.

3. The alternate employment of the oxidizing reaction of the nascent steam upon iron, antimony, or tin, united with the copper, and of the oxygen of the air, in order to oxidize the lead which the steam does not oxidize, when this metal becomes portion of an alloy of copper, iron, antimony, or tin.

103,435.—PUMP.—Barrent W. Felthousen, Milwaukee, Wis.

Claim.—1. The arrangement of water-space B, cylinder C, air-chamber D, water-basin E, brake F, lifting-rods H, lifting-valves K K, stop-cock I, lower valves M, air-chamber O, pipe P, and inside pipe R, substantially as described.

2. Pipe T, cap U, and rod V, substantially as and for the purpose described.

103,436.—TATTING-SHUTTLE.—Beneville L. Fetherolf, Tamaqua, Pa.

Claim.—The combination of the shuttle A, heel C, tension-pad f, and slotted revolving case B, all constructed and arranged to operate substantially as and for the purposes herein set forth.

103,437.—FURNACE FOR TREATING CAST-IRON TO CONVERT THE SAME INTO IRON AND STEEL.—William Fields, Wilmington, Del.

Claim.—1. The employment of the pipes, substantially as and for the purposes set forth.

2. The inverted crown or roof, substantially as and for the purposes described.

3. The combination of the pipes, valves, and doors with the inverted arched crown, substantially as and for the purposes set forth.

4. The use or employment of the furnace, as hereinabove described, for the purpose of manufacturing iron, ordinary steel, and cast-steel from the ore or pig-iron.

103,438.—WASHING-MACHINE.—William L. Frazee, St. Louis, Mo.

Claim.—In the construction of the beam A, with its clamps and set-screw O and C, in combination with shaft B, fingers d e, shaft H, gearing F E, and crank I, supports G G, all as shown and described, for the purpose set forth.

103,439. — WATER-POWER MECHANISM. — Abel French, Central City, Iowa.

Claim.—The endless chain herein described, having buckets E, gauge-bars n, and stay chains m, in combination with the stationary rollers provided with the grooved disks B, when constructed and arranged to operate substantially as specified.

103,440. — ELECTRO-MAGNET. — Mahlon S. Frost, New York, N. Y.

Claim.—An electro-magnet, the legs of which are of conical, pyramidal, or other form, tapering in all directions from the poles, substantially as specified.

103,441.—HAY-SPREADER.—William H. H. Frye, North Fryeburg, Me.

Claim.—The arrangement of the tilting frame D, toothed stop a, geared wheel C, pinion F, fulcrum-plate E, crank-shaft e, and uprights b, when constructed as and for the purposes set forth.

103,442.—LAMP.—Jim B. Fuller, Norwich, Conn.

Claim.—1. A lamp-body, constructed substantially as shown and described, and having a safety-tube, whose lower end rests in the recess c, while the upper end fits around the collar c, all substantially as and for the purpose specified.

2. The socket h, the nut j and peg g, constructed and arranged substantially as and for the purpose described.

3. A lamp-stand, made adjustable by means of the tube or rod k, the tube m, and nut n, the whole being constructed, arranged, and operated substantially as shown and described, and for the purpose set forth.

103,443. — BUTTON-FASTENING. — Jeremiah C. Gaston, Cincinnati, Ohio.

Claim.—The button A, provided with a rigid elongated fastening-loop, B, projecting at right angles to the shank, and parallel with the button-head, as shown and described.

103,444.—SEWING-MACHINE. — Michael F. Geraghty, Jersey City, N. J., assignor to Thomas J. McArthur, New York, N. Y., and Isaac W. Parmenter, Newark, N. J.

Claim.—The rotating shafts operating the needle and the portions of sewing mechanism under the table, when connected by links, cranks, and eccentrics, substantially as described.

Also, the solid feed-dog, having no pivotal center passing through the same, and operated by an eccentric only, combined with a pivoted guiding piece for varying its throw, substantially as described.

Also, the revolving shaft, having a shuttle-driving crank at its forward end, and forward of the shuttle-race, and a feeding-dog, arranged between such crank and a stationary bearing or piece, and standing and working in a vertical plane, and having positive motions only, derived from an eccentric on the shaft.

Also, the swiveling slide O, affixed to and adapted to turn upon an adjustable lever, and clasping the feeding-dog, substantially as shown and described.

Also, the combination of the feed-dog N, slide O, and adjustable lever P, with the hand-lever S, and its thumb-screw, substantially as shown and described.

103,445.—PICTURE-POISE.—John Jefferson Glover, Quincy, Mass.

Claim.—The plate A, constructed substantially as described, in combination with a clamping suspensory hook, B, substantially as and for the purpose set forth.

103,446.—DOOR-BELL.—Elisha H. Goldman and David W. Hisey, Kansas, Ill.

Claim.—1. In combination, with the door-knocker A, the hammer E and bell F, substantially as shown and described.

2. In combination with the bell F, the hammer herein described, provided with reversible head E, having a muffling armature, Z, as specified.

3. In combination with the bell F and hammer E, the knocker A, provided with the deadening-pad B, as specified.

103,447. — ADJUSTABLE CONNECTION OF SUCKER-ROD TO WALKING-BEAMS.—Adam Good, Jr., Titusville, Pa.

Claim.—In combination with a walking-beam and polished connecting-rod D of oil-pumps, the socket support A, having journal-bearings B, the split clamping-tube C, and the clamp-nut E, for the purpose of allowing the adjustment of the polished connecting-rod, without the necessity of cutting it off, as heretofore, the whole constructed and arranged as herein shown and described.

103,448.—ORGAN. — Horatio N. Goodman, Syracuse, N. Y.

Claim.—1. In combination with the reed tubes and pipes of a reed-organ having an exhaust-bellows, the reverberatory chamber B', substantially as set forth.

2. The reed-tubes b, provided with inlets or air-passages c, substantially as set forth.

3. The combination of the reverberatory chamber B', reed-tubes b, pipes C or C', and inlets c, substantially as set forth.

103,449.—COOKING-STOVE. — James Greer and Rufus J. King, Dayton, Ohio.

Claim.—1. The draught-passage flue or jacket F F', formed by the perforate and registered plates E E', arranged on the outside of the fire-front of a cook-stove, substantially as and for the purpose set forth.

2. The imperforate inner fire-front B B' and outer perforate and registered plates E E', in the described combination, with the inner and outer sets of imperforate fire-doors D D' and G G', for the purposes set forth.

103,450. — PERMUTATION LOCK. — Henry Gross, Tiffin, Ohio.

Claim.—1. The arrangement of circular cam or eccentric plates which operate substantially as described, within oblong slots or openings made through tumblers H, so that, by a certain arrangement of the said eccentric plates, and the tumblers, the bolt of the lock may be shot back or forward, substantially as specified.

2. The secondary tumbler or pivoted rod a, in combination with the tumblers H, substantially as described.

3. The sliding guard D, provided with a nose, D', and an opening through it corresponding to the recess f in the bolt A, in combination with vibrating tumblers H, substantially as described.

4. The two pivoted dogs B C applied to bolt A, in combination with the notched plate E upon the stem b, said dogs being controlled in their vibrating movements by the action of the tumblers H upon them, substantially as described.

103,451. — BUTTON. — Ralph H. Guilford, West Cheshire, Conn., assignor to the Cheshire Manufacturing Company.

Claim.—1. The two parts B B of the shank, of semi-cylindrical form, combined with the recess a in the button-back, so that the two ends of the parts B may be secured therein in the manner specified.

2. The two disks A and C, combined with the two parts B B of the shank, having their ends a secured between the two disks, substantially as described.

103,452.—COMBINED SEEDER AND HARROW. John E. Halsted and Colope C. Halsted, Blossvale, N. Y.

Claim.—1. The seed-boxes D D, side bars C C, braces D' D', and hinged beams A A, all combined

and arranged substantially as and for the purpose set forth.

2. The combination of the hinged wings A C D', teeth *a a*, boxes D D, regulating bars E E, shakers *b b*, levers *d d*, pitmen *e e*, and wheels G G, all constructed and arranged to operate substantially as and for the purposes herein set forth.

103,453. — SODA-FOUNTAIN. — Nathan T. Hamilton, Cedar Falls, Iowa.

Claim.—In a soda-fountain, the subdivided reservoir C, provided with the force-pumps E E, having discharge-tubes G G, the coupling H, diaphragms *n n*, operated by set-screws *s s*, and single spout B, when constructed and arranged to operate as specified.

103,454.—SEED-DROPPER.—John F. Hanson and John E. Callaway, Barnesville, Ga.

Claim.—The shove-board A, seed-case B, seed-tube B', sliding bars C, and valves *b b'*, combined and arranged as and for the purpose described.

103,455.—DETACHING-BLOCK.—Thomas J. Harte, New York, N. Y., assignor to himself and James Brandon, same place.

Claim.—The improved detaching device herein described, consisting of the block A H, pulley I, hook B with its shaft C and lever D, said parts being constructed and arranged as shown and set forth.

103,456. — PIANO. — Charles Hattersley, Trenton, N. J.

Claim. — 1. The side boards or props D D, as shown in fig. 2, whether attached to the lid B by hinges or otherwise or not, as supports for the lid, and as auxiliaries thereto as a sound-board as a guide in the delivery of the sound, when used in combination with that lid, and constructed and operated substantially as described.

2. The jaws of the hinges *r r* and *f f* and the exchangeable pins *q q*, in combination with each other, when used in combination with the top composed of lid B and flap-board A, as a set of devices for opening the instrument from both front and rear, constructed and arranged substantially as described.

103,457.—HAT.—Joseph M. Heard, Aberdeen, Miss.

Claim.—A hat, consisting of the two parts A B and head-band C, connected by stays *c* and *b*, essentially as shown and described.

103,458. — STEAM STEERING APPARATUS.—Horatio F. Hicks, Grand View, Ind.

Claim.—The arrangement of the check-valves *i i*, substantially as and for the purposes specified and herein set forth.

103,459. — SAWING-MACHINE. — Gilbert P. Hill and Edward C. Dow, East Deering, N. H.

Claim.—A pair of friction-wheels, F F, to support the saw-driving shaft C D, combined with a third wheel, G, provided with spring-adjusters bearing and resting upon and holding the said shaft in position, as set forth.

103,460.—LAMP.—John H. Hobbs, Wheeling, West Va.

Claim.—A lamp-bowl and pillar or foot, united together by the socket C, substantially in the manner set forth.

103,461. — COUNTERSINK. — Samuel Elliot Holbrook, Jr., Charlestown, Mass.

Claim.—As a new article of manufacture, the adjustable reamer A and countersink D, both constructed as described, and arranged in combination with a bit or gimlet to operate as and for the purpose described.

103,462. — BIT-STOCK. — Isaac Holliday, South Brooklyn, N. Y., assignor to himself and Gevert Papo, same place.

Claim.—The arm G hinged to the outer end of the arm F of the crank A B C D E, and secured at its free end to said arm F by means of the guide-pin H and the set-screw I, all constructed and fitted together as specified, to form an improved clamp for augers or bits.

103,463.—MACHINERY FOR SCOURING OR DRESSING HIDES.—Charles Holmes and Frank E. Holmes, Boston, Mass.

Claim.—The combination of the rotary tool-supporter B, and mechanism, substantially as described, for operating each of the tools thereof in manner as explained, such mechanism consisting of the cam H, the lever G, the springs A and K, and the arm F, arranged and applied together as set forth.

Also, the combination and arrangement of the supporting arm C, (composed of the two parts, viz: the radius *c*, and the humerus *d*, applied together as described,) with the rotary tool-supporter B and mechanism, substantially as set forth, for operating each of the tools in manner as explained.

Also, the combination and arrangement of the stationary bed or table A, the jointed arm C, and the rotary tool-supporter B, applied to such arm, in manner, and provided with tool-operating mechanism, substantially as described.

103,464.—SEED-SOWER.—Thomas Howell, Morgantown, West Va.

Claim.—In a seed-sower, the rod or slide D, when provided with notches I I, formed as described, having a square edge, *b*, bevels *d d*, and circular cuts *e e*, all substantially as and for the purposes herein set forth.

103,465.—MACHINE FOR GENERATING AND CARBURETING HYDROGEN GAS.—Henry L. Hoyt, Norwalk, Conn.

Claim.—1. The apparatus, so constructed, and the metal holding basket, so arranged that the latter can be removed from the apparatus without arresting the flow of the gas to the burners, substantially as and for the purpose described.

2. The apparatus, so constructed and arranged that the carbureting vessel may be removed from the apparatus either with or without the metal holding basket, without arresting the flow of gas to the burners, substantially as and for the purpose set forth.

3. The combined coupling device and stop-cock, constructed, arranged, and operating substantially as described.

4. The combined coupling device and stop-cock, in combination with the removable carbureting-chamber and the gas-holder, substantially as described.

103,466.—STRIP-PRESS.—Philip Hufeland, New York, N. Y.

Claim.—1. The frame B, provided with one or more followers, *d*, and corresponding abutments *c*, in combination with the hinged flap *b* and pressing-flap C on the platform A, substantially as shown and described.

2. In combination therewith, the elastic pads *f* on the pressing-flap C, operating in the manner and for the purpose described.

3. The unattached double cam *j*, acting on the set of followers *d'* in reverse order, in combination with frame B, hinged flap *b*, and pressing-flap C, substantially as described.

103,467. — WHIP. — Liverus Hull, Charlestown, assignor to the American Whip Company, Westfield, Mass.

Claim.—1. The stock, consisting of a core, A, and stripe *a a* glued to the core, in combination with a covering, *y*, of cloth, impregnated with flexible water-proof material, all as described.

2. The said covering *y* applied so as to form a straight seam, *x*, as set forth.

103,468.—COOKING VESSEL.—Martin Van B. Johnson, Holden, Mo.

Claim.—The combination of the two vessels K K S and N N with their respective lids A and B and the funnel F, substantially as and for the purpose hereinbefore set forth.

103,469. — POTATO-DIGGER. — Moses Johnson, Three Rivers, Mich.

Claim.—The potato-digger herein described, having frame A, wheels C, with their unequally beveled corrugations, reel D, provided with alternate smooth and toothed horizontal bars, shovel G, apron H, elastic props P, stop K, and lug *c*, when constructed and arranged to operate as specified.

103,470.—GRAIN-METER.—John T. Keeling, Hibernia, Mo.

Claim.—1. The arrangement between the upper and lower part of the broken chute or conductor A, of the weighing-box C, with door c^3 hinged or pivoted at the upper end, chains c^7, rollers c^6, and spring catch c^5, all substantially as shown and described.

2. In combination with the above, the beam c^8, with scale-beam c^9, lever arrangement B, gate *a'*, cross-bar d^1, catch E', and clock-work E, all substantially as and for the purposes herein set forth.

3. The combination of the rock-shaft d^3 with the weighing-box C, for the purpose of stopping the movement of the machine, substantially as herein set forth.

4. The combination of the grooved and tongued weights c^9, plates c^{10} and c^{11}, and the spring c^{12}, with the upright scale-beam c^8, substantially as and for the purposes herein set forth.

103,471. — TRANSFERRING AND LOOP-RETAINING COMB FOR KNITTING-MACHINES. James N. Kendall, Nashua, N. H.

Claim.—The combination of the comb A, having slotted teeth *a*, with the retaining-hooks *b*, when constructed and arranged to operate substantially as and for the purpose specified.

103,472. — SEWING-MACHINE TABLE. — Michael J. Kerigan, Boston, Mass., assignor to himself, William P. Emerson, and Edwin Faxon, same place.

Claim.—The sewing-machine table, as provided with a top, A, adjustable as described, and having its pivot or pivots *a a* arranged in coincidence with the axis of motion of either the driving-shaft *g* of the sewing-machine of such table, or that of the driving-wheel *i* for operating such shaft by means of a band, *k*, and pulley *h*, or their equivalents, the whole being substantially as described.

103,473. — REFRIGERATING VESSEL. — Leopold Klee and Andrew Patterson, Pittsburg, Pa.

Claim.—A new article of manufacture, consisting of the dish A, having the inner chamber C, and annular chamber D with the inner wall F, in combination with the cover B provided with reservoir G, as and for the purpose specified.

103,474.—PULLEY-SHEAVE.—Victor Knecht, Cincinnati, Ohio.

Claim.—As a new article of manufacture, a cast pulley-sheave or wheel, having the alternating lugs or cheeks A A' on its opposite sides, substantially as set forth.

103,475. — WATER-WHEEL. — Jesse Krall, Hall, Pa.

Claim.—1. The notched ring H, provided with V-shaped guides *a a*, and supported by means of the arms I I, substantially as and for the purposes herein set forth.

2. The gates J J, provided with central vertical flanges *b b*, substantially as and for the purposes herein set forth.

3. The combination of the ring H with guides *a*, gates J J, bar L, and crank K, all substantially as and for the purposes herein set forth.

103,476. — CULTIVATOR.—Hugh Laird, Mechanicsburg, Pa.

Claim.—The means employed for rendering relatively adjustable the side-beams A and A', consisting of the arched braces C and D and bolts *d* and *i*, in combination with the pivoted cross-bar B, substantially as and for the purpose specified.

Also, the means employed for adapting the tongue to the various widths of the cultivator-frame, consisting of the coupling-irons F, provided with the bolts *f*, in combination with the slotted cross-bar H, substantially as shown and described.

Also, the scrapers K and K', secured upon and combined with the hereinbefore-described cultivator, substantially as and for the purpose set forth.

103,477.—PROJECTILE. — Joseph Link, of the United States Army.

Claim.—The combination of the shell A, needle B, tube C, cylinder D, and cross-bar H, in the manner and for the purpose described.

103,478. — PLATFORM-SCALE. — Chester C. Lyman, Edinborough, Pa.

Claim.—1. The wedges or inclined planes C', as arranged and operated, in combination with the plates J of the yokes I, for the purpose of elevating the levers E F, and bringing their knife-edges into bearing contact with the feet of the platform, in the manner substantially as described and set forth.

2. The weighted wheel *b*, as arranged in relation to and in combination with the scale-beam V, and cooperating therewith, in the manner as and for the purpose set forth.

3. The arrangement and combination of the weighted wheel *b*, pinion *d*, screw *f*, wheel *g*, screw *f'*, and wheel *j*, all constructed and arranged to operate substantially as described, for the purpose specified.

103,479. — SELF-RECORDING SURVEYING-MACHINE.—Henry Manger, Philadelphia, Pa.

Claim.—1. The combination of the axle-wheel B, axle N N', gearing P P' P'' P''' P'', vertical hanging frame M M, friction-roller Q, and concave roller V V, all constructed and operating substantially in the manner and for the purpose set forth.

2. The combination of twin cylinders E and E', party-colored painted, their common shaft D and independent sleeves G and G', with wheels B and B', by means of pulleys K and K' and C and C' and cords L and L', the whole constructed and operated in the manner and for the purposes above set forth and described.

103,480.—RAILWAY RAIL-JOINT FASTENING. Thomas B. McConaughey and James Adams, Newark, Del.

Claim.—1. The oval or elliptical-shaped rod or bar *c*, provided with lever *f*, and used substantially in the manner and for the purposes herein set forth.

2. The combination and arrangement of the rails A A, chair B, with flanges *a b*, curved bar C, wedge-shaped bar E, with slotted arms *d d*, rods or bars *e e*, and levers *f f*, all constructed as described, and operating substantially as and for the purposes herein set forth.

103,481. — PUMP.—Andrew Y. McDonald, Dubuque, Iowa.

Claim.—The wings C C, constructed as described, with a flange at their lower ends and beveled at their upper ends, substantially as herein set forth.

2. In combination with the flanged and beveled wings C C, the plunger B, recessed as described, for the insertion of the flanges of said wings, substantially as herein set forth.

3. In combination with the plunger B and the ex-

pending and self-adjusting wings C C, the rod E, valve D, and nut G, arranged as described, to operate substantially as and for the purposes herein set forth.

4. The arrangement in the lower portion of the cylinder A, of the wing-valve H, rounding ring-washer L, rod J, door I, and nut K, substantially as and for the purposes herein set forth.

103,482.—ROTARY BLOWER.—Henry C. McIlwain and Alonzo Brumfiel, Connersville, Ind.

Claim.—1. As an improvement in fan-blowers, a casing, A, formed of two equal circular arcs, having their lines of junction in the plane of their common chord, and having inlet and outlet-apertures, D E, in the sides thereof, as shown and described.

2. The two fans B B, arranged on shafts located in the same plane, and each composed of a semi-cylinder rounded off at the diametrical ends, concaved between said ends and the axis, and rising in a curve over said axis, so that their corresponding sinuosities will always be in contact at some point, and constantly work air-tight together, all as described.

3. The case A, constructed as described, and having side apertures D E, for receiving and discharging air, combined with two fans, B B, of the form shown, and relatively arranged within the case, as set forth.

103,483.—FENCE.—James McKee, Hunt's Station, Ohio.

Claim.—The fence-post C, rails D, and battens E, as constructed and bolted to the cast-iron projections A, with shoulders *a* and *b*, in combination with base-blocks B, substantially as described.

103,484.—SECURING CAR-WHEELS TO AXLES. Alexander McLeod and George Granville Lobdell, Wilmington, Del.

Claim.—1. The two keys D and D′, adapted to a groove in the axle, and to a groove in the wheel, and operated simultaneously by a screw or screws, all substantially as set forth.

2. The combination of the said keys with a longitudinally controlled screw-spindle, having right-handed threads for one key, and left-handed threads for the other, as set forth.

3. The said screw or screws, in combination with the wheel, and with devices whereby any lateral movement of the screws independently of the wheel is prevented.

103,485.—HORSE HAY-FORK.—Samuel P. Mecay, Kilbourne, Ohio.

Claim.—The fork herein described, consisting of the shank A, having latch *m* pivoted thereon, clasp F, fork-head C, and bar B, all constructed and arranged to operate substantially as set forth.

103,486.—CLOTHES-DRIER.—David Morris, Cutler, Ohio, assignor to Knowles & Brooker, same place.

Claim.—The arms A, and supporting-bars *a*, combined with the standard *a*, and constructed and operating substantially as described.

103,487, antedated May 17, 1870.—TAILORS' MEASURE.—Isaac Moses, New York, N. Y.

Claim.—1. The combination of the curved waist-rule, hinged longitudinal curved breast-rule, sliding transverse breast-rule and central rule, with their appropriate scales, all as shown and described.

2. The combination of the diagonal back-rule and hinged sliding neck-rule, provided with the angular graduated lines to determine the position and direction of the line *r S* with the buttons of the curved waist-rule, as set forth.

103,488.—BREECH-LOADING FIRE-ARM.—Aloyse Muller, Paris, France.

Claim.—The combination of the screw I, screw-spring *m*, and trigger J, the whole arranged and operating in relation with each other and with the firing-pin, substantially as herein described.

103,489.—FURNACE FOR PRODUCING "SPONGE" FROM IRON ORE.—George Nock, New Monmouth, N. J.

Claim.—The furnace for converting iron ore into "sponge," consisting of a series of chambers, E, arranged directly over the fire-chamber A, and over each other in succession, the bottom of one forming the roof of the next, and surrounded by one or more flues, L M, substantially as set forth.

103,490.—HARVESTER.—Charles N. Owen, Salem, Ohio.

Claim.—1. In a harvesting-machine, a double speeding device consisting of a transmitting pinion arranged to vibrate about a driven pinion or pinion-shaft as a center, in combination with two driving-gears of unequal size, with either of which the transmitting pinion may be made to engage for driving the pinion-shaft, substantially as described.

2. The vibrating arm E, notched or recessed at its free end, and spring latch F, in combination with the driven pinion *d* and transmitting pinion *d′* for throwing the pinion *d* into and out of action, substantially as set forth.

103,491.—WASHING-MACHINE.—John B. Padon, Troy, Ill.

Claim.—The trough A, corrugations *a a′*, *c c′*, drums *c c′* with their bands and transverse bars, the drums being adjustable, as described, and set in motion by the crank *h* and connecting gearing, all arranged, constructed, and operating as and for the purpose shown and specified.

103,492.—BOILER FOR STEAM HEATER.—James W. Paige, Rochester, and Dexter Reynolds, Albany, N. Y.

Claim.—A revolving generator, A, and reservoir P, or its equivalent, forming part of a circuit of pipe G and in connection therewith, and the necessary stop-cocks or valves, when constructed and adjusted to operate substantially in the manner and for the purposes herein set forth.

103,493.—TOOLS FOR FITTING BOTTOMS TO FRUIT-BASKETS.—Austin S. Parks, Winchendon, Mass.

Claim.—The lathe-tool or fixture as constructed, and operating substantially in the manner as and for the purpose herein specified.

103,494.—FEED-WATER CONNECTING-PIPE FOR LOCOMOTIVES.—Charles A. Peavey, Joliet, Ill.

Claim.—1. The flexible joint E, consisting of the parts *d*, *e*, *n*, and *o*, constructed and operating substantially as and for the purposes set forth.

2. The flexible joint B, consisting of the parts *f*, *r*, *t*, and *s*, constructed and operating substantially as and for the purposes set forth.

3. The combination of the metal tube *b*, flexible joint B, and flexible joint E, constructed, operating, and arranged as and for the purposes set forth.

103,495.—HARNESS SADDLE-TREE.—George Pennoyer, New York, N. Y.

Claim.—1. The trees D, in one piece, struck up out of sheet metal into the shape described and shown, and provided with holes *b*, and with rectangular openings for the reception of the terret-nuts G, in combination with the terrets F and terret-nuts G, provided with shoulders *d*, rectangular body *e*, and neck *g*, when constructed as described and shown, and for the purpose set forth.

2. The gig-tree above described, consisting of the saddle A, provided with the front *a*, the screw B, the hook C, back-band loop E, trees D, provided with holes on their edges and rectangular openings for the terret-nuts, the terrets F, the nuts G, provided with shoulders *d*, and body *e*, and neck *g*, when said several parts are constructed and arranged as described, and for the purpose set forth.

103,496.—PRINTING-TELEGRAPH INSTRUMENTS.—William P. Phelps, Brooklyn, N. Y., and William J. Philips, Philadelphia, Pa., assignors to William J. Philips.

Claim.—1. The vibrating bar A, in combination with the suspended points C and D, substantially as set forth, for the purpose specified.

2. The combination of the bar L, stop P, rod Q, ratchet-wheel I, ratchet J′, and spring K, substantially as set forth, for breaking the local or printing-circuit, after the printing of each letter, and keeping said circuit broken until it is closed again by the starting of the type-wheel.

103,497.—HAND CORN-SHELLER.—Charles H. Pickering, Memphis, Tenn.

Claim.—1. The combination of the revolving shellers C C, and spiral springs D D, attached to the hollow pinion B, as and for the purposes hereinbefore set forth.

2. The combination of the revolving hopper B with casing A, which serves as the support for the shafts E, substantially as and for the purposes hereinbefore set forth.

3. The combination of the shellers C C, spiral springs D D, hollow pinion B, the adjustable feed-rollers E E, and spiral springs F F, for the purpose hereinbefore set forth.

103,498.—APPARATUS FOR PRESERVING BEER.—Charles Pohlmann, Louisville, Ky.

Claim.—1. The combination of the elastic bag D with the automatic air-pressure apparatus G, substantially as and for the purpose specified.

2. The elastic bag B, closely fitting the keg or barrel when expanded, when used with a pressure of air, substantially as and for the purpose set forth.

3. The combination of the bag B, bung C, stop-cock D, elastic tube E, bellows G, and stop-cock O, when so arranged as to permit the air from the bag to be withdrawn again into the bellows; that is to say, a continuous use of the same air, as described.

103,499.—CORN-PLANTER.—Benjamin Porter, Ossian, N. Y.

Claim.—1. A wheel, A, constructed with a hollow partitioned hub, C, closed on the inner side by a circular perforated plate, J, and also with radial seed-tubes D, in combination with seed-discharging devices, substantially as described.

2. The laterally movable cams G, in combination with seed-discharging devices applied to wheel A, substantially as described.

3. The seed-drawer F, provided with adjustable block F′, a spring, *e*, and a lug, *f*, and fitted to work in a case which is between the hub C and seed-tube D, substantially as described.

103,500.—KILN FOR DRYING AND BURNING BRICK.—Nathaniel F. Potter, Providence, R. I.

Claim.—The improved kiln for drying and burning brick, provided with a close scoving and covering formed of exterior metal plates and an intermediate filling, substantially as described, in combination with apparatus for the delivery of air under pressure into the arches of said kiln, preparatory to the burning of the same, as and for the purpose specially set forth.

103,501.—SAD-IRON.—Mary F. Potts, Ottumwa, Iowa.

Claim.—The oval-shaped sad-iron herein described, formed with the convex metal interior A, inclined sides B B, non-conductor D flush with the sides, uprights E E, and wood handle C, all substantially as set forth.

103,502.—COAL-BARGE.—Julius A. Preston, New Haven, Conn.

Claim.—1. A barge or vessel formed with longitudinal trusses, and a tunnel in combination with transverse trusses placed above the longitudinal trusses, substantially as set forth.

2. A screen applied between the discharge-opening of the bin and the cart or receptacle, in combination with the tunnel of the barge, substantially as and for the purposes set forth.

3. The inclined bottoms of the separate bins, in combination with the tunnel and openings from said bins into the tunnel, substantially as and for the purposes specified.

103,503.—WASH-BOILER ATTACHMENT.—Adonijah H. Proctor, Galesburg, Mich., assignor to himself and B. J. Canfield, same place.

Claim.—A wash-boiler attachment, constructed in two parts to be accommodated to different lengths of boilers, when said parts have sloping sides A A, elliptical-shaped plate C, ribs B B, and spout D, all constructed and arranged as herein shown and described.

103,504.—BREECH-LOADING FIRE-ARM.—Orvill M. Robinson, Upper Jay, N. Y.

Claim.—1. The carrier-block E, when constructed and operating substantially as described.

2. The combination of the firing bolt and brace-block, substantially as described.

3. The combination of the breech-block, firing-bolt, and brace-block.

4. The combination of the breech-block, firing-bolt, brace-block, and covering-plate, substantially as described.

5. The gun described, provided with a longitudinally sliding breech-block, firing-bolt, brace-block, and carrier-block, when constructed and arranged substantially as described.

103,505.—STOP-WATCH.—Frederick Rotig, Havre, France.

Claim.—The combination of the disks *a* and *b*, and the oscillating cock *d*, with the axis of the stop-second hand and the pinion-staff of the third wheel, substantially as and for the purpose herein described.

103,506.—MACHINERY FOR WASHING AND DYEING FIBROUS MATERIAL.—Charles G. Sargent, Graniteville, Mass.

Claim.—1. The chute D, in combination with the vibrating pins *e*, arranged to operate substantially as described.

2. The carrier F, in combination with the chute or incline D, when constructed and arranged to operate substantially as set forth.

3. The combination of the rods H, having their lower ends secured in position and operated by the cranks T, with the carrier F and rod G, all arranged to operate substantially as described.

4. The shaft *d*, having the carrier attached, and provided with the rollers *g*, to support the same, when moving up the incline, as set forth.

103,507.—COKE-OVEN.—Lewis Schantl, St. Louis, Mo.

Claim.—1. The combination and arrangement in pairs of two or more coke-ovens, in such a manner that the burning gases given off by the coal in each may, by means of vertical and side flues, be made to pass around the sides and bottom of both ovens, for the purpose of more evenly and effectually distributing the heat to all parts of each oven, substantially as shown and specified.

2. The ovens A A′, vertical flues *d*, longitudinal flues T T′, and connecting transverse flues *g*, all in combination, substantially as shown and specified.

3. In combination with the devices above specified, the cold-air flues *k* and *f*, arranged for joint operation therewith, substantially as shown and specified.

4. The construction of the walls of U-shaped blocks, which at the same time form the vertical flues, as shown and specified.

103,508. — JACK FOR CONNECTING POLES AND SHAFTS TO WAGONS.—Mathias Schou, Englishtown, N. J.

Claim.—1. The combination of the shaft-iron B, having a tapering head, B', with the socket F, constructed and arranged substantially as specified and shown.

2. The combination of the parts of the above claim with the rubber presser E, substantially as specified and for the purpose set forth.

103,509.—FLUID METER.—Henry C. Sergeant, Newark, N. J., assignor to José Francisco De Navarro, New York City.

Claim.—1. The induction passages *l l*, arranged on opposite sides of the hollow pistons F, in combination with the ports *m*, *m'*, and *n*, arranged on their under side, substantially as specified.

2. The passages *m m'*, arranged in the bottoms of the hollow pistons, in combination with balancing apertures *r r* in their upper sides, essentially as shown and described.

3. The arrangement of the exhaust cavities *n* and the end passages *m m'* in the bottoms of the hollow pistons, essentially as herein set forth.

4. The arrangement of the ports *d d' d² d³*, *e e'*, and *f f' f² f³*, with the fixed cavities and passages in the bottom of the meter and its cover, with which said ports communicate, exhaust cavities *n*, and passages *m m'*, in the bottoms of the hollow pistons, and inlet openings to the latter, in communication with the supply-pipe or branch, substantially as specified.

5. The bar G, arranged to pass through the inlet openings *l* in the hollow pistons, for the double purpose of working the indicator and of keeping the pistons in position, substantially as specified.

103,510.—BASE-BURNING FIRE-PLACE STOVE.—Samuel B. Sexton, Baltimore, Md.

Claim.—1. A fuel-supply reservoir or magazine, having at its lower part a corrugated, ribbed, angular, or irregular shape, substantially as and for the purposes set forth.

2. The air-chamber F, surrounding the upper part of the magazine or fuel-reservoir, and connecting at back with the heating-chamber, and in front with the atmosphere through a screen or shell, G.

3. The casing K K', containing a radiating-flue or flues, and adapted to remain permanently set, while permitting the introduction and removal of a stove.

4. The combination of a removable stove and a permanent flue-casing, substantially as set forth.

5. The series of tubes H H H, arranged around the magazine E, and employed for conducting gases from the crown of the combustion-chamber to the upper flue-chamber I.

103,511.—BEDSTEAD-FASTENER.—Alfred B. Sheaffer, Ephrata, Pa.

Claim.—The combination and arrangement of the plug D, with its slot d, and screw-socket for a headed screw-bolt A B C, with the wedge E, all operating in the manner and for the purpose specified.

105,512. — MEDICAL COMPOUND FOR THE CURE OF DIPHTHERIA.—Hardy L. Sheffer, Marston, Wis.

Claim. — The composition substantially as described.

103,513.—WATER-WHEEL.—Henry W. Shipley, Portland, Oregon.

Claim.—1. The combination of three separate rows of internal buckets H W S, H having a downward, S an upward, and W a circumferential discharge, as shown and described.

2. The combination of the rim P P with the rings *y y* and buckets H W, as and for the purpose described.

3. The arrangement of the plate I *l*, hub 18, and projecting ring 16 16 with the buckets H, as and for the purpose set forth.

4. The ring M M, provided with projecting flanges *e e* and internal projecting flanges *g g*, and combined with the curved plate *c c*, the whole forming the internal guide-box, when constructed and arranged as shown and described.

5. The combination, with the internal water-wheel and internal casing, of the outside casing, constructed and arranged as shown and described, as and for the purpose set forth.

103,514.—PROJECTILE.—William H. Shock, Washington, D. C.

Claim.—A projectile, in which shall be combined the following elements or features: first, it shall be elongated; second, have a conical opening extending through it from front to rear, and of such size and form as to cause the center of gravity of said projectile to be in front of its center of length, and used with the button or wad B, or its equivalent, substantially as herein described.

103,515. — DRILLING-MACHINE. — James Smith, New Haven, Conn.

Claim.—The combination of the platform B and the mechanism to support and adjust the same with the socket *a*, breast-bearing I, and drilling apparatus, substantially as described, and arranged to operate in the manner set forth.

103,516. — TRUSS.—William James Smith, Trevillians, Va., assignor to himself and George W. May, same place.

Claim.—In a truss of substantially the described construction, the button-screw *b* upon the piece B, in combination with the teeth *c* upon the pad-arm C, when the parts are arranged as and for the purpose described.

103,517. — PREPARATION OF ARTIFICIAL LEATHER FROM SCRAP LEATHER, &c.—Soren Sorenson, Ebeltoft, Denmark, assignor to himself, Sophus Orting, same place, and P. J. McKenzie Orting, Pensacola, Florida.

Claim.—As an article of manufacture, a fabric composed of ground leather, caoutchouc and ammoniac, mixed together in the proportions specified, and manipulated in the manner set forth.

103,518. — WATER-ELEVATOR. — Hatherly Spear, Cape Elizabeth, Me.

Claim.—A series of reservoirs, receptacles, or relays, one placed above the other for the purpose of elevating water to any desired height by means of compressed air pursuing the water from the lowest, through the intermediate, to the highest reservoir, and thence out, substantially as described.

103,519.—APPARATUS FOR EXTRACTING OIL FROM ANIMAL AND VEGETABLE SUBSTANCES.—Henry A. Stearns, Smithfield, R. I.

Claim.—An apparatus adapted for use in the art of treating material which has been subjected to the solvent action of light hydrocarbons, and like volatile agents, said apparatus consisting essentially of the following apparatus or organisms in combination: first, a centrifugal extractor, constructed substantially as described; second, a vessel for containing the volatile solvent agent; and, third, a condenser for liquefying the vapors disengaged during the process; all substantially as hereinbefore described.

103,520. — MANUFACTURE OF ARTIFICIAL STONE.—Charles Stephens, New Orleans, La., assignor to himself, Robert Henry Steptoe, and William Julius Steptoe, same place.

Claim. — The manufacture or preparation of a compound, to wit, an artificial stone, of the ingredients, in the proportions, and for the purposes set forth.

103,521.—SPRING BED-BOTTOM.—Cyrus S. Stevens, Portland, Me., assignor to himself and Daniel F. Knight, same place.

Claim.—The improved device for forming an elastic bed-bottom, consisting of frame A B C, springs D, rolls F G H, and hooks I, all constructed and relatively arranged as described.

103,522.—OVERSHOE.—William W. Swann, Richmond, Va.

Claim. — The overshoe herein described, constructed with wooden front sole A, wooden heel B, both covered on the tread, with sheet iron or steel plates *s s*, spiked and connected together by the flexible strip C, and having the straps D arranged to cross in the rear of the ankle, substantially as specified.

103,523. — FAUCET.—George Taylor, New York, N. Y.

Claim.—1. A non-drip faucet, in which the nozzle and key are in one piece.

2. The combination of a non-drip faucet, together with the measuring vessel A, piston K, hollow piston-rod L, and spiral spring O.

103,524.—COMBINED HAY-RAKE AND TEDDER.—Sylvester J. Taylor, Rome, N. Y.

Claim.—1. The combination, with the couplings S and locking-tumblers or stops O *o*, of the forks T *t* and rods P 4 5, constructed and arranged to operate as described, for the purpose set forth.

2. The rolling-tumblers or stops O 3, as constructed and operating in the manner described, for the purpose set forth.

3. The combination, with the head-supporting and operating shafts H, of the pulleys M K, band L, couplings S, forks T *t*, springs U, locking-disks N 2, rolling-tumblers or stops O 3 *o*, rods P 4 5, levers Q, treadle Q' *q'*, and spring R, as represented and described, for driving and governing the operation of the heads.

4. The rake-head G *g*, as constructed with teeth, having their attaching "stubs" 6 carried up between the coils, in order to support them laterally, as described.

103,525.—PIANO-LOCK.—John Thielemann and Philipp Meyer, Newark, N. J., assignors to William Sellers.

Claim.—The toothed segments C D, the latter formed directly upon the bolt, and spring *b*, in combination with the bolt E, the latter entirely filling the perforation *f* when unlocked, as and for the purpose set forth.

103,526. — COAL-OIL STOVE. — James H. Thorp, New York, N. Y.

Claim.—1. The shield or guard-plate F, arranged and operating substantially as described and represented.

2. The plate R, with one or more openings, *s s*, having curved sides, substantially as represented, forming deflecting surfaces, whereby the air is caused to impinge upon the sides of the flame so as to maintain an approximately complete combustion.

3. The extension-chimney L, in combination with the chimney proper J *j*, for the more complete transmission of the caloric current to the objective point.

103,527. — SURFACING CAST-IRON.—Hiram Tucker, Newton, Mass.

Claim.—The described process of ornamenting and protecting the surfaces of cast-iron articles formed with sunken and raised parts, substantially as and for the purpose specified.

Also, as a new manufacture, articles of cast-iron, formed as described, superficially protected and colored in contrast, as set forth.

103,528.—WASHING AND DRYING-MACHINE.—William P. Uhlinger, Philadelphia, Pa.

Claim.—The combined washing and drying-machine herein described, having rotating basket C, with central perforated chamber D, arranged to transmit, by centrifugal force, water and steam through the goods, in combination with the pump or siphon E, subdivided reservoir L, and exhaust-pipe *m*, substantially as specified.

103,529. — SAW-FILING MACHINE.—George Z. Vanderslice and Bela L. Churchill, Philipsburg, Pa.

Claim.—The vertical sliding frame A, when arranged to support the extensible and horizontally and vertically adjustable file-carrier F, and operated by the combined action of the stirrup H and spring K, substantially as herein shown and described.

103,530.—MANUFACTURE OF WINKERS FOR HARNESS-BRIDLES.—Eugene Ward, Newark, N. J., assignor to himself, Francis C. Butler, and Elias S. Ward.

Claim.—The within-described process of manufacturing blinds for harness-bridles, it consisting in stitching the leather upon its metal lining before the blind has been formed in the dies, and afterward forming the parts by pressing or swaging them in dies, thus shaping all of the parts at one and the same time, substantially as set forth.

103,531.—MACHINE FOR PUTTING TOGETHER AND TIRING WHEELS. — Wilbur F. Waters, Dunkirk, N. Y.

Claim.—1. The combination of the inside ring B, notched to fit the spokes, with the outside clamping-blocks G, operating in the manner and for the purpose herein described.

2. The combination of the inside ring B, notched to fit the spokes, with the outside clamping-blocks G, with the rivet-holding block D, arranged and operating as herein described.

3. The steam-chamber K, arranged beneath the table A, in the manner and for the purpose herein described.

103,532.—MACHINE FOR BOTTOMING FRUIT-BASKETS. — Baxter D. Whitney, Winchendon, Mass.

Claim.—1. The conical form K, the ring J, disk I, operating in the manner and for the purposes herein described.

2. The standard A, as constructed with all of the mechanism attached, for bottoming fruit-baskets, substantially as set forth.

103,533.—CUTTER FOR CUTTING THE BODIES OF FRUIT-BASKETS.—Baxter D. Whitney, Winchendon, Mass.

Claim.—1. The combination of the cutters B, D, and E, when constructed and arranged in the manner herein described, substantially as and for the purposes specified.

2. The key F, provided with the ledges *f f* supporting the U-shaped cutter *i*, secured by the screw *j* and nut *k*, and the set-screws *h h* for adjusting the cutter, to compensate for the wear, as and for the purposes set forth.

103,534. — TREATING CANDLE AND LAMP-WICK.—Thomas Scott Williams and Freeman Augustus Taber, Boston, Mass.

Claim.—1. As an improved article of manufacture, a wick saturated or coated, or both saturated and coated, with paraffine or other material or substance capable of producing the result herein explained.

2. A wick for lamps, &c., composed in part of a woven or fibrous material, and in part of a metallic plate or strip, applied together in a suitable manner, for the purpose hereinbefore alluded to.

103,535.—APPARATUS FOR DISTILLING AND PURIFYING LIQUOR.—Francis M. Young, Nashville, Tenn.

Claim.—1. The cylinder B, constructed with the partition *a*, and chamber *c*, and connected with

the still A, worm C, low-wines receiver D, as set forth, and for the purpose described.

2. The combined purifier and doubler B, constructed with several perforated partitions, provided with valves *i*, substantially as set forth and described.

REISSUES.

3,987.—MACHINE FOR CUTTING LEATHER. Charles F. Davis, Thomas Corey, Samuel Boyd, and Roger Boyd, Marlborough, Mass., assignees of Caleb S. Stearns.—Patent No. 58,315, dated September 25, 1866.

Claim.—A movable or sliding frame, in combination with a presser-block, M, or equivalent device, by which the cutting-die in a leather-cutting machine is made to cut the leather, substantially as set forth.

Also, the hollow shaft H with its swiveling collar I, the die K, and the rod *g*, in combination with the movable arm G, substantially as and for the purpose described.

3,988.—TREE FOR SIDE-SADDLES.—Joseph B. Gathright, Louisville, Ky.—Patent No. 74,909, dated February 25, 1868.

Claim.—1. The flattened concave cantle B B with projecting points, forming in conjunction with curves *c c'*, of A A', a semicircular cavity for seat, substantially as set forth.

2. The semicircular cavity for seat, as herein described, in combination with the Texas style of bars A A', substantially as set forth.

3. The part E, being leather, or other material, operating substantially the same, cut in desired shape, and riveted to iron bars *g* and *g'*, forming at the same time a complete horn, and, in conjunction with D D', a complete back-spring, substantially as set forth.

4. As an article of manufacture, the saddle-tree, combining in its construction the semicircular cavity for seat, the Texas bars A A', and the part E, substantially as set forth.

3,989.—COATING IRON AND STEEL.—S. B. Hewett, Jr., Eagle Grove, and L. P. Jones, Iowa Falls, Iowa, assignees of Charles Usher.—Patent No. 62,706, dated March 5, 1867.

Claim.—The employment of molten cast or malleable iron, made into a flux by the use of borax or its equivalent, for coating the surface of wrought iron or steel, substantially as described.

3,990.—REVERSIBLE KNOB-LATCH.—Russell & Erwin Manufacturing Company, New Britain, Conn., assignees of Charles R. Fisher.—Patent No. 80,539, dated August 4, 1868.

Claim—The sliding plate D, latch, and slider, when so arranged that the latter, by its insertion between shoulders in the plate and a shoulder in the latch-shank, limits the action of the latch to that of the sliding plate D, and, by its removal, allows the latch to be reversed while still connected to the plate D, substantially as described, for the purposes specified.

3,991.—CARRIAGE-AXLE.—Alfred E. Smith, Bronxville, N. Y.—Patent No. 98,436, dated December 28, 1869.

Claim.—1. The D or any shaped conical metallic washer S, located at the end of an axle, abutting with its incline against the axle-skein or box, and with its sides against the nut and axle, substantially as shown and described.

2. In combination with the foregoing, the recess *a*, formed between the spindle, conical washer, and axle-skein or box, substantially as shown and described.

3. The spindle A, with or without the groove *d*, in combination with the threaded nib *e*, conical washer S, recess *a*, and nut G, substantially as hereinbefore mentioned.

3,992.—MACHINE FOR SEPARATING GRAIN AND OTHER MATERIALS.—William W. Stoll, Brooklyn, N. Y., assignee, by mesne assignments, of Charles G. Stoll and William Stoll.—Patent No. 54,26., dated April 24, 1866.

Claim.—1. The combination of the sieve E with the closed box A and the fan-blower I, or other equivalent device, substantially as described, so that the air forced into said box has no way to escape except through the apertures in the sieve, and it is compelled to act on the material placed on said sieve with its full force.

2. The yielding spring valve *f*, in combination with the long shallow discharge opening in the bottom of the hopper, and with the sieve E, constructed and operating substantially as and for the purpose set forth.

3. The closed box J, to which the air has access from below, in combination with the fan I, box A, and sieve, constructed and operating substantially as and for the purpose described.

4. The adjustable valves or partitions *r*, in the compartments *q* of the box A, in combination with the sieve E, constructed and operating substantially as and for the purpose set forth.

5. The air-valves *v v* in the bottom of the box A, in combination with the blower and sieve, constructed and operating substantially as and for the purpose described.

3,993.—CAN FOR PAINT, FRUIT, &c.—The Devoe Manufacturing Company, New York, N. Y., assignees of Herman Miller. Patent No, 43,326, dated June 28, 1864.

Claim.—1. A can composed of plates provided with solder grooves, the plates between said grooves being united by lap-joint, so as to form double-plated corners or edges, substantially as and for the purposes set forth.

2. The semi-tubular or pillar-like formation of the edges of the can, substantially as and for the purposes shown and set forth.

3. A can, the round-cornered body of which is united with the top or bottom by means of an undivided turn-down flange, as herein shown and described.

3,994. — SEWING-MACHINE. — The Globe Sewing-Machine Company, Buffalo, N. Y., assignees of Nicholas Meyers.—Patent No. 99,783, dated February 15, 1870.

Claim.—1. The driving-shaft A, cam *a'*, vibrating lever *a'''*, connecting-rods *b b'''*, elbow-lever *b'*, and shuttle-carrier, combined, arranged, and operating substantially as and for the purposes described and specified.

2. The combination with the needle-carrier, of the needle-holding and adjusting devices, constructed, arranged, and operating substantially as and for the purposes set forth and specified.

3. The arrangement and combination of the bar l^4, vibrating looper-block l^3, and levers l^5 l^6, for guiding the curved looper, substantially as and for the purposes described and specified.

4. The mechanism for connecting and disconnecting the under needle or looper for making the double-loop stitch, consisting of the bar l^3, provided with slot P and arm m^2, and the clamping-plate m^1, and screw m^3, and the shuttle-lever b^1, substantially as described and specified.

5. The arrangement and combination of the sliding lever *h'* rider *h''*, feed-lever *h*, adjustable fulcrum *i'*, eccentric *o*, and driving-shaft, substantially as described and specified.

6. The arrangement of a shuttle-race face-plate, provided with a vertically-adjustable needle-guiding block, between a shuttle-carrier and a thread-carrying looper, so that the race-face can be kept whole or continuous, to allow the shuttle to operate against it, or have an opening through it between the top of each block and the needle-hole plate, for the passage of the looper, substantially as set forth and specified.

7. The plate *d*, with the beloeafer the needle, the face of the shuttle-race, and the block h^1, provided with a groove for the needle, as combined and arranged that the groove in the block coincides with the hole in the plate, and, that the block may be moved away from the plate to form a space for the looper to vibrate in when the shuttle is removed, or kept in position to make the face continuous for the travel of the shuttle, substantially as described and specified.

3,995.—Division A.—MACHINE FOR MAKING KETTLES.—The Waterbury Brass Company, Waterbury, Conn., assignees of Hiram W. Hayden.—Patent No. 8,589, dated December 16, 1851; extended seven years; reissue No. 2,171, dated February 13, 1866.

Claim.—1. The application of a rotary metallic form or mold, or successive forms or molds, in combination with a proper tool or tools, roller or rollers, sustained, moved, and directed in a proper path by competent mechanical means, for the purpose of operating on a disk, blank, or plate of metal, so as to reduce it gradually from the center to the edge, at the same time forming it with straight sides, by successive stages, into a complete kettle, or into any similar articles to the forming of which this apparatus can be applied, substantially as described and shown.

2. The construction of the mandrel *f*, part of which is cylindrical and part fitted with a short screw, 13, to take the screw of the hand-wheel *f'*, so that great pressure may be made at the point desired, while, at the same time, the mandrel can be easily and quickly moved through a long distance, for the purposes, and as described and shown.

3,996.—Division B.—BRASS KETTLE.—The Waterbury Brass Company, Waterbury, Conn., assignees of Hiram W. Hayden. Patent No. 8,589, dated December 16, 1851; extended seven years; reissue No. 2,171, dated February 13, 1866.

Claim.—1. A kettle, or other similar metallic article or vessel made from a single sheet or flat disk or blank of metal, stretched and compressed so as to extend the sheet into its ultimate form, by the process, substantially, as herein set forth.

2. A kettle, or other similar metallic article or vessel, having its greatest thickness at the bottom, and thinned or gradually reduced in thickness toward the top, by the process, substantially, as set forth.

3,997.—FIRE-EXTINGUISHER FOR USE ON RAILROADS, &c.—William P. Van Deursen and William C. Davis, Cincinnati, Ohio, assignees of H. C. Stewart and R. T. Bradley.—Patent No. 101,404, dated March 29, 1870; antedated March 5, 1870.

Claim.—1. The provision of a holder for containing aerated water, or other fire-extinguishing agent under pressure, adapted for attachment to and discharging automatically into a stove or heating apparatus by any unusual disturbance of the vehicle carrying the same, substantially as described.

2. The application of an automatic apparatus, containing aerated water, or other fire-extinguishing agent under pressure, to a stove or heating apparatus of a car or other vehicle, for the purpose of extinguishing fire in case of any unusual concussion or collision, or of an overturn of the vehicle.

3. Discharging, into the stove or heating apparatus of a car or other vehicle, the contents of a fire-extinguisher, by a valve or cock, having an arm or lever adapted to be automatically liberated by any unusual concussion or disturbance of the vehicle.

4. The gas-holder A, cock B, arm C, spring or springs D D', ball E, and tube F, or their several equivalents, when constructed and adapted to operate substantially as set forth.

DESIGNS.

4,055.—DOG-MUZZLE. — John Braentigam and Henry Braentigam, Chicago, Ill.

Claim.—The form, shape, or configuration, substantially as shown and described, as a design for a dog-muzzle, as set forth.

4,056. — OXYGEN-GENERATOR.—Abraham H. Carpenter, Newark, N. J.

Claim.—The design for an oxygen-generator, as shown.

4,057.—STEP AND HITCHING-POST.—Morgan Dyer, Elmira, N. Y.

Claim. — The design for a combined step and hitching-post, herein shown and described.

4,058. — TOY BLOCK.—Joel A. H. Ellis Springfield, Vt.

Claim.—The design of the shape and configuration of the interlocking toy-blocks *b b*, as described and shown.

4,059.—EMERY WHEEL.—Thomas J. Frazier, Clinton, Iowa.

Claim. — The design for an emery wheel, as shown.

4,060.—AX.—Edwards Hurd, Champaign county, Ohio.

Claim.—The design for an ax, substantially as herein shown and described.

4,061.—TYPE.—Hermann Ilenburg, Philadelphia, Pa., assignor to MacKellar, Smiths & Jordan, same place.

Claim.—The design for printing-type, as shown.

4,062.—STOVE-DOOR.—Dennis G. Littlefield, Albany, N. Y.

Claim.—The design for a concealed hinge stove-door, as and for the purpose herein shown and described.

4,063. — SCREEN FOR FIRE-PLACE.—John Robbins Rose and Edward Caleby, Philadelphia, Pa., assignors to Samuel Budd Sexton, Baltimore, Md.

Claim.—The design, substantially as described, and as illustrated in the drawings, of a shield or screen for fire-place or fire-place stove.

4,064.—NEEDLE-CASE.—Jules Semelé, New York, N. Y., assignor to himself and Joseph Garrus, same place.

Claim.—The design and configuration of the needle-case herein described, and represented in the accompanying drawing.

4,065.—NEEDLE-CASE.—Jules Semelé, New York, N. Y., assignor to himself and Joseph Garrus, same place.

Claim.—The design and configuration of the needle-case herein described, and represented in the accompanying drawing.

4,066. — SPOON-HANDLE. — George Sharp, Philadelphia, Pa.

Claim.—The design for the handle of a spoon, fork, ladle, &c., substantially as shown.

4,067.—GATE-LATCH.—John W. Still, San Francisco, Cal.

Claim.—The design for a gate-latch, herein described and shown.

4,068.—SCHOOL-DESK.—William P. Uhlinger, Philadelphia, Pa.

Claim.—The design of the combined school-desk and seat, as shown in the drawing herewith

4,069.—SUGAR-TONGS.—Robert Wallace, Wallingford, assignor to the Meriden Britannia Company, Meriden, Conn.

Claim.—The design herein described for the head or spring of sugar-tongs, consisting of a straight edged narrow band, as fully shown in the accompanying illustrations.

4,070.—SUGAR-TONGS.—Robert Wallace, Wallingford, assignor to the Meriden Britannia Company, Meriden, Conn.

Claim.—The design for the spring portion of sugar-tongs, as herein illustrated and described.

4,071.—SUGAR-TONGS.—Robert Wallace, Wallingford, assignor to the Meriden Britannia Company, Meriden, Conn.

Claim.—The design for the spring portion of sugar-tongs, as herein illustrated and described.

4,072.—SUGAR-TONGS.—Robert Wallace, Wallingford, assignor to the Meriden Britannia Company, Meriden, Conn.

Claim.—The design for the spring portion of sugar-tongs, as herein illustrated and described.

4,073.—SUGAR-TONGS.—Robert Wallace, Wallingford, assignor to the Meriden Britannia Company, Meriden, Conn.

Claim.—The design for the spring portion of sugar-tongs, as herein illustrated and described.

4,074.—SUGAR-TONGS.—Robert Wallace, Wallingford, assignor to the Meriden Britannia Company, Meriden, Conn.

Claim.—The design for the spring portion of sugar-tongs, as herein illustrated and described.

ISSUE OF MAY 31.

PATENTS.

103,536.—COMPOSITION FELTING FOR COVERING ROOFS, SHIPS' BOTTOMS, &c.—Thomas R. Abbott, Lowell, Mass.

Claim.—A composition felting, as described, the same consisting of a sheet, lap, or bat of animal or vegetable fibers, or their specified equivalent, saturated with a composition of oil and rosin or pitch, as set forth, and earthy or mineral substance or silica, all combined substantially in the manner and for the purposes described.

103,537.—CULTIVATOR.—Henry A. Adams, Sandwich, Ill.

Claim.—1. The combination of the extensions E with the bent axle-arms D and elevated axle-tree A, for the purpose specified.

2. The combination of the thimbles L and the draft-bolts F with the upper axle-tree and the lower axle extensions, for the purpose specified.

3. The adjustable yoke H, in combination with the thimble L, for the purpose specified.

4. The combination of the plates J J and the adjustable yoke, for attaching the plow-beams to the draft-bolts, with a flexible connection capable of vertical adjustment, for the purpose specified.

5. The combination, with the axle extensions E and draft-bolts F, of the eye-bolts or draft-rods M, for the purpose specified.

6. A tie-rod, having its forward end attached to the cross-tree or tongue of the cultivator, and its rear end laterally adjustable, in combination with a laterally-adjustable draft-bolt, for the purpose specified.

103,538, antedated May 3, 1870.—BINDING-ATTACHMENT FOR SEWING-MACHINES.—Laurits Anderson, Chicago, Ill.

Claim.—A cloth-binding attachment, consisting of the grooved plate B, slotted flange *b*, presser-spring C, curved grooved plate D, guides E F, and wedge *g*, all constructed and arranged to operate as described.

103,539.—BOILER-FEEDER AND LOW-WATER ALARM.—Valerius D. Anderson, Kewanee, Ill.

Claim.—1. Securing the feeder B to the side of the boiler A, detachably, by means of the long bolts C, and slotted flanges D, substantially as herein shown and described, and for the purpose set forth.

2. The combination of the feeder B, steam-pipe L, reservoir E, pipe F, valve G, having the inner end of its stem H slotted, cross-arm I, levers J, and float K with each other, to adapt them for attachment to a low-pressure steam-boiler, substantially as herein shown and described, and for the purpose set forth.

3. The combination of the feeder B, steam-pipe L, reservoir E, pipe F, valve G, having the inner end of its stem H slotted, cross-arm I, levers J, float K, cross-arm M, valve N, having its inner end slotted, valve-stem O, and spring Q, with each other, substantially as herein shown and described, and for the purpose set forth.

103,540.—BARREL-TILTER.—George Armstrong, Liverpool, England, assignor to himself and William H. Eckert, Oswego, N. Y.

Claim.—A spring support for the rear end of the barrel A, so arranged as to tilt the barrel as the weight of liquor within it is diminished, for the purpose herein specified.

103,541.—WEIGHING-SCALE.—Albert Assmann, Rahway, N. J.

Claim.—The arrangement of weight E, with respect to the pointer and levers, as set forth, so that the pointer is moved by the weight after being acted upon by the levers, and thereby is enabled exactly to represent its motion.

103,542.—LOCK.—Moses O. Baker, New York, N. Y.

Claim.—The sliding collar or knife, operated by the key and working with the cylinder, in combination with the slides or tumblers, substantially as described.

103,543.—GREEN-CORN CUTTER.—Volney Barker, Otisfield, Me.

Claim.—1. In a green-corn cutter, the cutter-wheel E, with grooved rim, arranged to bear on the three small wheels *s s s*, as specified.

2. The pivoted arms H H, in combination with the guide-rollers k k of a green-corn cutter, constructed and arranged to operate as specified.

3. The hinged plate C, arranged to bear the guide-rollers, and to afford access to the interior of the corn-cutter, as specified.

4. In a green-corn cutter, the funnel or spout G, as specified.

5. The knives K K, provided with circular feeding-blades *t t*, shearing-blades *s s*, and dull scrapers *r r*, as specified.

103,544.—NUT-LOCK.—Henry Beagle, Jr., Philadelphia, Pa.

Claim.—An improved nut-lock, F G, constructed and operating substantially as herein shown and described, and for the purpose set forth.

103,545.—MEDICAL COMPOUND.—Philip Becker, South Bethlehem, Pa.

Claim.—The improved medical compound, consisting of the above-described ingredients, mixed in about the proportions specified.

103,546.—WORKMAN'S SCAFFOLD.—William H. Berger, Danville, Pa.

Claim.—A workman's scaffold, consisting of four or more screw-uprights C, furnished with the clamp B, on which rests the rail D, as hereinbefore fully described and set forth.

103,547.—SASH-HOLDER AND BALANCE.—George W. Bishop, Saratoga Springs, N. Y.

Claim.—The plate D, working in the slot in the upper arm of the latch C, and operating the same by means of the pins *d d*, in combination with the said latch C and detent C', strap E, pulley *e*, slot *b'*, and sashes B and B', arranged substantially as described, by means of which the upper and lower sashes may be moved, either together or independently of each other, as shown.

103,548.—SPRING BED-BOTTOM.—Orris Blake, Peru, Ind.

Claim.—The combination and arrangement of the transverse sections, consisting of the straps C, the bars *g*, the braces *f* and *i*; the middle sections, consisting of the bars *b*, the springs *c* and *d*, the fastening *e* and *m*, and the blocks *h* and *k*, attached to the side rails, as herein described.

103,549.—NEEDLE FOR SEWING-MACHINE.—Joseph Bond Blanchard, Boston, Mass.

Claim.—A sewing-needle, having a lateral slot or opening, *s*, leading to the eye and curved in the direction of its length, substantially as described, so as to present the points *f*, *g*, and *h*, for the purpose of preventing the escape of the thread from the eye, as set forth.

103,550.—TIGHTENING WHEEL-TIRE.—Simeon R. Bolton, Prescott, Wis.

Claim.—One or two arms K K with holes *f f* on the tapering screw C, arranged between the felly-blocks E E, said arms, in combination with the pin H, serving to secure said tapering screw in position, substantially as is herein specified.

103,551.—REFRIGERATING OYSTER-CAN.—Alfred Booth, Chicago, Ill.

Claim.—1. The sheet-metal refrigerating-can for oysters, in bulk, so constructed that one or more ice-chambers are formed in its body, to separate the bulk of the oysters, and form two or more cooling-surfaces for the same, as herein described, for the purpose specified.

2. In combination with the sheet-metal refrigerating-can, the corked-lined cover D, substantially as described, for the purpose specified.

103,552.—HAY AND STRAW-CUTTER.—Adolf C. Both, Hesse Cassel, Germany.

Claim.—The combination and arrangement of the revolving-heads B and B, slots S S, shoulders T, lugs R, set-screws D, spiral knives C C, feed-rollers K and K', spur-wheels F and H, flange G, screw I, pinions L and L', and feed-box P, operating as and for the purpose specified.

103,553.—MODE AND MATERIAL FOR CONSTRUCTING FLOORS, CEILINGS, ROOFS, &c.—Gabriel Charles Bouziat, Vincennes, France.

Claim.—1. Making blocks or plates of plaster, cement, or similar materials, in such a manner as to fit them for use for any or all of the purposes hereinbefore indicated and specified.

2. Making, in any desirable manner, blocks or plates of plaster, cement, or other similar materials, either all solid or all hollow, or partly hollow and partly solid, substantially for the purposes herein-before described.

3. Constructing ceilings, floors, roofs, walls, partitions, and similar articles, in whole or in part, of blocks or plates made of plaster, cement, or similar materials, substantially as described.

4. Constructing molds, frames, or presses, for making hollow or partly hollow blocks or plates of plaster, cement, or similar materials, substantially for any of the purposes or in the manner hereinbefore described.

103,554.—COMPOSITION FOR COATING SHINGLES AND CLAP-BOARDS.—Otis E. Bowen, Needham, Mass.

Claim.—The composition above described, of the ingredients and in the proportions set forth, for the purposes named in this specification.

103,555.—MODE OF FORMING INSULATOR.—James M. Brookfield, Brooklyn, N. Y.

Claim.—1. The combination of divided die A, constructed internally as shown in fig. 3 of drawing, with a mandrel, B, threaded on its lower end as described, so that the insulator will be threaded in its center, while the divided die will allow of its removal, notwithstanding its irregular external form.

2. The combination of the divided die A, constructed internally as described, and the end-threaded mandrel B, with the follower F that presses upon the plastic glass and forms the bottom of the insulator, in the manner described.

103,556.—CORSET-SKIRT SUPPORTER.—John W. Brooks, Boston, Mass.

Claim.—A corset skirt-supporter, consisting of the stiffeners *c c*, arranged in pockets *d g*, and fastened therein at opposite ends, and having their free ends provided with adjusting straps, substantially as shown.

103,557.—HAY AND COTTON-PRESS.—Bird R. Brown and James Toone, Jr., Jackson, Tenn.

Claim.—The sliding boxes E E', each provided with a dog, *e*, the upper one of which is connected by the link *a'* with the platen-bar H, and the lower one of which is connected by the link *b* with the lever B, in combination with said lever, when the latter is connected with the platen-bar by the link *c*, and with the vertical bar *a*, all constructed and arranged to operate as described.

103,558.—DINNER-PAIL AND LANTERN.—Nelson C. Burnap, Argusville, N. Y.

Claim.—A utensil combining the functions of a lantern, dinner-pail and heating apparatus, consisting of the lower chamber A, provided with the lamp *a*, and windows *a'*, and upper chamber B, provided with the compartment *b*, funnel b^1, cap-dipper b^2, stop-cock b^3, and receptacle *c*, c^1, c^2, when combined, arranged, and operating together as described.

103,559.—BELL FOR CLOCK.—Leonard C. Butch, Lancaster, Ohio.

Claim.—A stay attached to the foot of a clock-bell, back of the point of percussion, as herein shown, and for the purpose described.

103,560.—MOLDING-PIT FOR CASTING CYLINDERS AND PIPES.—Robert Cartwright, Chicago, Ill.

Claim.—1. The pipe D and tunnel C, in combination with the brick-work B, substantially as described and for the purposes set forth.

2. The spider E and shaft F, in combination with the mold G, substantially as described and for the purposes set forth.

103,561.—CORN-HUSKING MACHINE.—Erastus H. Carver, Preble, N. Y.

Claim.—1. The arrangement of the bent or return-lever C with the table A, reacting spring F, teeth *d*, and bed E, substantially as and for the purpose hereinbefore set forth.

2. The combination of the lever G with the lever C and bed E, arranged and operating as hereinbefore set forth.

3. The link or slotted stirrup H, pin *i*, and levers C G, arranged and operating as hereinbefore set forth.

103,562.—TREADLE FOR SEWING-MACHINE. Henry J. Case, Auburn, N. Y.

Claim.—1. The pendulum D, forked at its upper end and supported at two points, substantially as set forth.

2. The arrangement of bent pendulums D, links or connecting-rods J K, and crank-shaft G, substantially as set forth.

103,563.—HOISTING-JACK.—Edwin A. Castellaw, Savannah, Ga.

Claim.—1. The cylindrical base A, the cylindrical follower F, and the hoisting-block H, constructed, arranged, and operating substantially as and for the purposes described.

2. In combination with a hoisting-jack, the ball J, substantially as and for the purposes described.

3. In combination with a hoisting-jack, the adjustable double-curved lever K, substantially for the purposes set forth.

103,564.—SIPHON.—Seth C. Catlin, Cleveland, Ohio.

Claim.—The extension C, with the valve J, chamber F, and thumb-screw L, arranged to operate substantially as and for the purposes described.

103,565.—STAND AND CLOTHES-DRIER.—Michael E. Charles, Hope, Ind.

Claim.—The stand-top b, provided with the sockets i and staples e, in combination with the arms c, provided with the links d, substantially in the manner described, and for the purpose set forth.

103,566.—SHOEMAKERS' TOOL.—Alfred Clarke and Arthur Clarke, Philadelphia, Pa.

Claim.—1. The combination and arrangement of the gouge E and guide F in relation to each other and to the handle A, when the said guide is constructed and arranged to operate in relation to the back part of the upper, substantially in the manner and for the purpose above described.

2. The construction of the channel opener B and handle A in a single piece, substantially as described.

3. The formation of the guide F and handle A in a single piece, as above set forth.

4. The construction of the knife C and awl D in a single piece, as above described.

103,567.—PIPE-JOINT.—Robert B. Coar, Jersey City, N. J.

Claim.—The circular rib *c*, arranged upon the interior for a bell-mouthed pipe-end, so as to form an interior space for soft metal or other packing, as and for the purpose described.

103,568.—RESAWING-MACHINE.—Lucius J. Cobb, Chicago, Ill.

Claim.—1. The combination of the wheels P, located at the top of the feed-rollers, with the worms or wheels O', shafts N and X, wheels V and W, and movable frames T and T', substantially as set forth.

2. The arms L, when supported on the shaft N, and provided with bearings for the shaft X, substantially as specified.

3. The combination of the movable frames T and T' with the posts H and screws i, for adjusting the space between the feed-rollers, so as to produce boards of equal thickness, substantially as described.

4. The plate or bar G', provided with the slot A, in combination with the standards G, post F, and cross-bar M, for adjusting the pitch of the feed-rollers, substantially as specified.

103,569.—MACHINERY FOR CALENDERING AND POLISHING PAPER.—Phinehas Coburn, East Walpole, Mass.

Claim.—1. A metallic "calender" roll, for polishing or glazing paper, the periphery of which is elastic or yielding, for purposes herein stated.

2. A "calender" roll, for polishing or glazing paper, composed of an axial shaft or body and series of curved tangential plates or wings, emanating therefrom in such manner as to overlap each other, and produce a practically continuous surface, whereby I produce results herein set forth.

3. A "calender" or polishing roll for paper machinery, composed of a central shaft or body and a series of hardened steel wings or tangential plates, substantially as and for the purpose herein shown and described

103,570.—FRUIT-BASKET.—Eastman Colby, Brockport, N. Y.

Claim.—As an improved article of manufacture, a fruit-basket composed of one or more sections, B, of tapering side splints, which are regularly curved outward, with alternate ventilating openings, said splints being confined by the double bottom *d e*, with or without the coil *e*, substantially as and for the purposes set forth.

103,571, antedated May 27, 1870.—BUTTON. John F. Collins and Arthur Neill, New York, N. Y.

Claim.—The combination of the button recess D, having the raised or acute edge *d*, and the spring bars *g g* of the fastener, having heads *i i* fitting over the raised edge *d*, substantially as and for the purpose herein specified.

103,572.—COLLECTING, SEPARATING, AND PURIFYING THE GASES FROM FURNACES. Joseph H. Connelly and John McLure, Wheeling, West Va.

Claim.—1. The process of applying the gases and substances which pass off from furnaces, cupolas, stacks, and coke-ovens, by drawing or conveying them off by the means substantially as herein described, separating such substances from said gases, substantially as herein described, and then applying said gases or the hydrocarbon gas obtained, by the means substantially as herein described, to aid and assist the combustion in the fires of furnaces, substantially as herein described, and also further preparing said hydrocarbon gas for illuminating gas, as herein described.

2. The pipe E, in combination with the exhaust H, substantially as herein described, and for the purpose specified.

3. The furnace 3, coke-ovens 1, in combination with the pipe E, condenser H, scrubber K, purifier V, and holder Z, substantially as and for the purpose set forth.

4. The hoppers C C, constructed and arranged substantially as and for the purpose set forth.

103,573.—CARRIAGE AND RAILROAD-CAR WHEELS.—Almond F. Cooper, San Francisco, Cal.

Claim.—The wheel A with one or more flanges *b*, in combination with elastic packing E, and one or more covering-plates D, provided with recesses *i*, to receive one or more series of elastic buffers or springs A, the whole being constructed and operating substantially in the manner and for the purpose set forth.

Also, one or more series of projections *g*, formed in one and the same piece with the wheel, and surrounded by elastic sleeves or thimbles A, in combination with one or more covering plates D, provided with recesses *i*, for their reception, substantially as and for the purpose described.

103,574.—ORE-SEPARATOR.—George Copeland, Denver, Colorado Territory.

Claim.—1. The combination of the air and ore-receiving hopper D, with the sieves at the top, of the air-blast pipe L, and a blower arranged to deliver the air in gusts and in jets, substantially in the manner described.

2. The combination, with the sieves, receiving hopper D, and air-blast pipe, of a sucker-fan, funnel-shaped sucking-pipes, and a delivery-pipe, substantially as specified.

3. The combination, with the delivery-spout U for the dust, of a water-jet distributing apparatus, for moistening the dust, substantially as specified.

4. Ore or other sieves, composed of the spiral wire springs E, arranged side by side and stretched between end blocks or bars, and either arranged for adjustment by stretching or relaxing the springs or not, substantially as specified.

5. The arrangement of the blocks F F' in two parts, jointed together, and the plates I and adjusting-screws K, with the projecting rods G' for varying the height or pitch of the sieves, substantially as specified.

6. The combination of the blocks F F', spiral wire springs E, and the screw-threaded adjusting-rods G G', substantially as specified.

7. The combination of the skimmers and the sieves, substantially as specified.

8. The combination, with the sieves, hopper D, and air-blast pipe, of the feed-hopper A and revolving perforated valve B, substantially as specified.

103,575.—MACHINE FOR CUTTING, PRINTING, AND FOLDING PAPER. — William Pinckney Corsa, Catskill, N. Y.

Claim.—1. The combination, with the type-cylinder and the impression-cylinder, provided with the cutter and the cutting-groove, of tilting inking-fountains, and composition-roller, and a cam, arranged for causing the tilting action, substantially as specified.

2. The arrangement of the male or knife-cylinder for use as the type-cylinder, and the female cylinder as the impression-cylinder, substantially as specified.

3. The combination, with the type-cylinder, cylinder B and the fly O, of the arm V, pin-wheel T, weighted arm, and connecting-rod X, all substantially as specified.

4. The combination, with the shaft Z^3 and the flies Z^1 and Z^2, geared together, as described, and the intermittently-moving wheel T, of the cam D' on the hub thereof, the oscillating segmental bar A', and the intermediate shaft X^2, all substantially as specified.

103,576. — ENGRAVING-MACHINE.—Charles J. Coulter, Seville, Ohio.

Claim.—The combination of the bed-plate A, standard B, arm C, pulley D, crank E, band F, pulley G, shaft H, bevel gear-wheels I J, shaft K, curved arm L, universal joint M, hollow shaft N, tool-holder O, coiled spring P, pin Q, and tube or sleeve R, with each other, substantially as herein shown and described and for the purpose set forth.

103,577.—MANUFACTURE OF SHEET-IRON.—Isaac E. Craig, Camden, Ohio.

Claim.—The preparation of iron for being polished in sheets by reviving the metal of the superficial oxide.

103,578. — EMBROIDERY ATTACHMENT FOR SEWING-MACHINES.—Edwin J. Cubley, Chicago, Ill.

Claim.—The combination, with the presser-foot and its upwardly-projecting plate C, of the oscillating plate F, having the notches and pins, and the pivoted slotted arms, all constructed as described, and operated from the needle-bar through the bar L, substantially as herein set forth for the purpose specified.

103,579.—SETTING GAS-RETORT.—Thomas Curley, Wilmington, Del.

Claim.—1. The renewable protecting-tiles or shields *d d* and *e e*, in clay retort-settings, substantially as and for the purposes hereinbefore set forth.

2. The adjustable or independent damper A A, placed in the exit-flue of retort-settings or benches, for the purposes described and set forth.

3. The combination, in retort-settings, of the shield-tiles *d d* and *e e*, or either of them, with the independent damper A A, substantially as and for the purposes set forth.

103,580. — MANUFACTURE OF ARTIFICIAL FUEL.—Edward Joseph De Smedt, New York, N. Y., assignor to New York Improved Anthracite Coal Company, same place.

Claim.—The composition of matter formed by combining Trinidad bitumen or asphalt and other bitumens or asphalts which are obtained from the West India islands, with anthracite or bituminous coal, either with or without a flux, substantially as described, for the purpose specified.

103,581. — LAYING ASPHALT OR CONCRETE PAVEMENT ON ROADS.—Edward Joseph De Smedt, New York, N. Y., assignor to New York Improved Anthracite Coal Company, same place.

Claim.—The laying or forming of asphalt or concrete roads and pavement by means of alternate layers of sand, and asphalt and sand mixed, and treated or operated upon in the manner substantially as set forth.

103,582. — ASPHALT ROAD AND PAVEMENT. — Edward Joseph De Smedt, New York, N. Y., assignor to New York Improved Anthracite Coal Company, same place.

Claim.—The combination of asphalt, petroleum oil, or the residuum of the same, and Ritchie mineral, or Albertite, either or both, with suitable proportions of sand, gravel, and broken stone, or equivalent substances, treated, in the manner and for the purpose substantially as herein set forth.

103,583.—GATE.—Benjamin F. Dickey, Marshall, Mich.

Claim.—The vertical lever P formed with the eye for the upper hinge-pintle, when pivoted on a horizontal axis to the oblique face of the hanging-post B, or of a plate, E, attached thereto, as herein shown and described.

103,584.—PREVENTING REVERSE MOTION IN SEWING-MACHINES.—David A. Dickinson, Baltimore, Md.

Claim.—The arrangement of the ring *c*, curved lever *f*, spring *k*, and rod *h*, in their relation to the hub *a* and crank-shaft *b*, substantially as and for the purposes herein recited.

103,585. — TONGS FOR RIGGING. — George Dohn, Sacramento, Cal.

Claim.—In rigging-tongs of the described construction, the levers B, provided with pulley and ring, when employed in connection with the chain C and block D, as described, for the purpose set forth.

103,586, antedated May 20, 1870.—LATCH.—Thomas Dolan, Albany, N. Y.

Claim.—The catch E, pivoted as described, and combining the holding-catch *c* and locking-catch *e*, and in combination with the curved formed *a* of a latch-bar, substantially as and for the purpose set forth.

103,587.—BEARING FOR SHEAVES.—William W. Eastman, Meadville, Pa.

Claim.—Casting the center hole in sheaves for pulley-blocks or tackle on a chill, made to fit and run on a hard chilled cast-iron sleeve or thimble, when the said thimble is clamped firmly in a frame, hanger, or block, and secured by a bolt, or its equivalent, substantially in the manner as and for the purposes set forth.

103,588. — REVOLVING BACK-BAND FOR HARNESS-SADDLES. — Gustavus Elbel, Pittsburg, Pa.

Claim.—1. The combination and arrangement of

the hook B and plate A, in the manner and for the purpose herein described.

2. The construction of the hook B having formed upon it the pintle or projection D, in the manner and for the purpose herein described.

3. The plate A, containing within it the slot or open space C, and having formed upon its lower side a socket, *c*, to admit of the reception of the hook, in the manner and for the purpose herein described.

103,589. — BRICK-CART. — James Evans, Philadelphia, Pa.

Claim.—1. A brick-cart, constructed with the shafts K K′ geared to the wheel G so that the forward motion of the cart raises the box E into its position, as herein described.

2. A brick-cart, having the frame A, the shafts K K′, the cranked axle C, and box E, combined and arranged as herein described.

103,590.—ATTACHING DOOR-KNOBS TO THEIR SPINDLES.—John Evans, New Haven, Conn.

Claim.—Securing a door-knob to the latch-bar A by means of the wedge-shaped opening *b* in the socket B, the spindle being so shaped as to conform to the opening when set, and held by the screw *a*, or its equivalent, substantially in the manner as herein described.

103,591.—MANUFACTURE OF BRICKS, TILES, &c., FROM SLAG.—François Fabre, Marseilles, France.

Claim.—The manufacture or preparation of a new product obtained from the dross of blast-furnaces, plunged into cold water while still in fusion and incandescent, and its agglomerations with binding materials of any kind suitable for making solid or hollow bricks, burned or not, flat or hollow tiles of all sizes and of any kind, slabs and flooring-tiles of all kinds, cubes of various kinds, ornamented or not, pottery-ware, jars, pipkins, and generally all articles of ceramic ware, gas-retorts, drain-pipes, fire-bricks baked or not, and with or without addition of clays or sand other than dross, treated as herein described, and for making any analogous articles.

103,592.—FILTER.—Enoch S. Farson, Philadelphia, Pa.

Claim.—1. The perforated conical cap *a″*, the depressed foraminous center in the bottom *a′* of the vessel A, the nutted screw-bolt G, the concave dish F, upon which the filtering materials E rest, and the air-tubes H H, the said parts being arranged and applied to operate in combination with the vessels A and B, as and for the purposes hereinbefore set forth.

2. The removable cover C, with its imperforate outer flange *c′* and perforated inner flange *c″*, in combination with the detachable strainer D, the said parts being constructed and arranged together so that when the cover is applied over the bottom *a′* of the vessel A, as described, the expansible material around the hole in the center of the strainer D will be pressed down water-tight around the base of the perforated conical cap *a″*, and thus cause the water in the vessel A to pass upward through the said strainer before it can reach the perforations in the said conical cap *a″*, as and for the purpose hereinbefore set forth.

103,593. — READING-STAND. — Andrew C. Flint, Chelsea, Mass.

Claim.—A reading-stand, having a free-moving counterbalanced slide, substantially as described.

Also, the arrangement of the roll or pulley, spring, and slide, with reference to the shaft *d*, by which the stress of the slide-sustaining spring is regulated or increased or diminished by rotation of the slide upon the shaft, substantially as described.

103,594.—TAP FOR RUBBER BOOTS.—Francis Flynn, Smithfield, assignor to the Woonsocket Rubber Company, Woonsocket, R. I.

Claim.—A rubber tap-sole for rubber boots, formed with a long and pointed shank extending under the shank of the boot or shoe, said tap-sole being fastened to the main sole by vulcanization, substantially as and for the purpose described.

103,595.—DITCHING-MACHINE.—Robert G. Forsyth, Clayton, Ind.

Claim.—1. The double-acting ditching-plow herein described, having a triangular wooden frame, composed of the inclined supports B, horizontal beam A with swell *a′*, and prop C; also, provided with the flanched bits *a*, guides *c*, and the adjustable drag-beam D, to which are secured the mold-boards Z, when constructed and arranged to operate in the manner and for the purposes substantially described.

2. The adjustable drag-bar D, composed of the check-bars *s*, connected at each end by the pivot-blocks *t*, to which are attached the hitching-staples K, when constructed and arranged to operate in either direction, substantially as specified.

3. The foundation beam A, provided with the central swell *a′*, when constructed and arranged to operate in the manner as and for the purposes herein set forth.

4. In combination with the adjustable drag beam D and the adjustable guides *c*, the mold-boards Z, when constructed and arranged to operate substantially as specified.

103,596. — EXHAUST-NOZZLE. — Charles H. Frisbie, Chicago, Ill.

Claim.—The hollow cone B, forming the two hinged valves C C, in combination with the nozzle or cap A, and extensions E, for the purpose specified.

103,597.—HOT-BLAST OVEN.—Job Froggett, Youngstown, Ohio.

Claim.—1. Hot-blast ovens, arranged to inclose the air-pipe connections B, together with the main parts C, substantially as specified.

2. The application to hot-blast ovens of two or more sets of pipes, with separate supply-connections for dividing the blast, substantially as specified.

3. The arrangement, in connection with the gas-supply G, or the combustion-space of ovens, using other fuel, of the air-supply flues F, traversing the ovens, and perforated to supply the air directly to the burning-flue, substantially as specified.

103,598.—LAMP-BURNER.—Jim B. Fuller, Norwich, Conn.

Claim.—The cap A′, when constructed and arranged, in relation to the chimney, at the point *g*, and to the burner, in a manner substantially as shown and described.

Also, the combination of the cap A′, the chimney F, the cone D′, the tubes A and B, and the case C, the whole being constructed and arranged substantially as and for the purpose described.

103,599. — PERCUSSION-FUSE. — William Gardiner, San Francisco, Cal.

Claim.—The percussion-fuse described, consisting of the tube A, caps B and C, clamps D, sliding bolt E, nipple F, and cap G, when combined and arranged as described, and adapted to be placed independently in any proper projectile without special attachment thereto.

103,600.—LOOM.—Charles W. Gilbert, Worcester, Mass.

Claim.—1. The arrangement of central steps under the front and back girts of the loom-frame, and in combination with and supporting the cross-girt near its ends.

2. The combination with the front and back girts B of the steps M, substantially as shown and described.

103,601.—BREAD-CUTTER.—George D. Goodsell and Noyes E. Babcock, Rockford, Ill.

Claim.—1. The combination of the base A, standard B, knife H, with arms *e e*[1], drum C, and shaft *e*, when combined substantially as described, for the purpose set forth.

2. In combination with the above, the ball *d*, as described, for the purpose set forth.

103,602.—APPARATUS FOR EVAPORATING LIQUIDS.—George F. Gray, Brooklyn, N. Y.

Claim.—1. The orifices *h*, made in chimney *e*, within the evaporating-chamber B, for the purpose of ventilating the latter, by means of the draught created in the chimney by the products of combustion from the furnace, substantially as described.

2. The combination of the perforated partition *e*, chamber E, provided with a perforated bottom, evaporating-chamber B, and tubes *k*, heating-chamber C, all combined and arranged substantially as and for the purpose set forth.

103,603.—SOLDERING APPARATUS.—Jacob Gulden, Key Port, N. J.

Claim.—1. The furnace A, provided with the open-ended tubes C, for receiving the reciprocating-shanks D of the soldering irons, as set forth.

2. The springs H, combined with the blocks F, for the purpose of holding the can in position for soldering, as set forth.

103,604.—METHOD OF DISTILLING IN VACUO. Frederic Gutzkow, San Francisco, Cal.

Claim.—The chamber F connected to the steam-pipe *w*, by means of the pipes *a* and *b*, arranged substantially in the manner described, for the purpose set forth.

103,605.—PONY CARRIAGE-PHAETON.—John C. Ham, New York, N. Y.

Claim.—1. The body C of the carriage and the rumble G, when relatively constructed and adapted to be fitted together, as shown and described, for the purpose specified.

2. The combination of the pivoted bars or arms L, with the body C, and rumble G, substantially as herein shown and described, and for the purpose set forth.

3. The combination, of a spring catch, K, plate N, bolts H, bar J, and keeper M, with the body C and rumble G of the carriage, substantially as herein shown and described, and for the purpose set forth.

103,606.—DOOR-BOLT.—William H. Hart, New Britain, Conn.

Claim.—The metal plate D, made of one piece of metal, forming the two guides *c c*, the semicircular bottom upon which the bolt slides, and the back stop *d*, in the rear of the openings *c c*, and connected to the plate C by the prongs, which pass through slots in the plate, all substantially as set forth.

103,607. — COAL-BARGE. — Roger Hartley, Pittsburg, Pa., assignor to the American Coal-Barge Company, Bristol, Conn.

Claim.—A barge or vessel with receptacles above a tunnel or roadway, combined with an incline at the end of the tunnel coming up above the water-line, substantially as and for the purposes set forth.

103,608.—LOG-LOADER.—John H. Harvey, Chanticleer, Ohio.

Claim.—1. The pawl K and spring M, arranged and operating as described, for the purposes set forth.

2. In combination with the holding-pawl N, the bar P and rod T, by means of which said pawl is held out of gear, substantially as described.

3. The combination of the bar P, rods T, pawls K and N with a log-loader and roller, when the same are arranged to operate substantially as described and for the purposes set forth.

103,609.—TENSION DEVICE FOR NEEDLE-THREAD IN SEWING-MACHINES.—Moses Champero Hawkins, Edinborough, Pa.

Claim.—1. The slotted tube A, tension screw H, disks G, movable nut L, and tension spring, when all constructed and arranged substantially as specified.

2. In combination with the above, the guiding arm P, substantially as herein shown and described.

103,610.—SHUTTLE FOR SEWING-MACHINE. Moses Champero Hawkins, Edinborough, Pa.

Claim.—The combination, with the shuttle provided with the recesses *b* at the ends and the notch F at the side, of the bar A, curved thread-guide B, adjustable tension-spring D, and screw E, all constructed and arranged substantially as specified.

103,611.—HEMMER FOR SEWING-MACHINE. Moses Champero Hawkins, Edinborough, Pa.

Claim.—The hemmer for sewing-machines, composed of the plates A, tongue F, folder G, and groove K, shaped as shown, when all are constructed and arranged substantially as specified.

103,612.—CHURN.—Nathan S. Hazen, La Fayette, Ind.

Claim.—The piston-dasher G, fitting closely the churn-cylinder, and provided with valved apertures which allow the milk to be forced through it alternately up and down, as shown and described.

103,613. — WATER-ELEVATOR. — Morrison Heady, Spencer county, Ky.

Claim.—The combination of the base A, the opening C, the cover B, and the frame E E, the pulleys F and G, and the friction-rubbers R, the lever-beam J, the pulleys N, and bucket M, the hooks P, and belt O, the iron hook S, the cord L, the pulleys K, the belt H, and the weight D, when arranged, constructed, and operating in the manner and for the purpose set forth.

103,614.—COMPOSITION MADE FROM COAL-TAR.—Francis M. Hillstream, Lawrence, Kansas.

Claim.—1. The composition herein described, called "tar resinite," and prepared as set forth.

2. The combinations of silicious ingredients with "tar resinite," as and for the purposes set forth.

103,615.—COAL-SCUTTLE.—Charles Hodgetts, Williamsburg, N. Y.

Claim.—The coal-scuttle, composed of the body A, bottom B and base C, all combined so as to provide the scuttle with a double bottom and double lower part, as set forth.

103,616.—TEMPLE FOR LOOM.—William H. Howard, Media, Pa.

Claim.—1. The combination of the inclined surface *f* on the stem *d* with the corresponding surface in the interior of the lug or ear *e*, or their equivalents, substantially as and for the purpose herein specified.

2. The arrangement of the roller *g*, cover *j*, trough *i*, slot *k″*, elongated shank *l′*, substantially as and for the purpose herein set forth.

3. The combination of the trough *i* and cover *j*, cast together in one piece, or otherwise fastened with an adjustable stud, *l*, substantially as and for the purpose herein specified.

4. The combination of cover *j* and stem *d*, cast together in one piece, or otherwise fastened together with an adjustable trough, *i*, substantially as and for the purpose herein set forth.

5. In combination with the inclined projection *n* attached to the lay, as described, the stem of the temple, provided with the lug *p*, when operating together, as described.

6. The link *q*, provided with the oblong aperture *s*, and pivoted to the frame *a* by the screw *k*, when combined with the stem *d* of the temple, for the purpose of regulating its lateral movement, by means of the screw *r′*, as described.

103,617.—SELF-ACTING LUBRICATOR.—William B. Howe, Troy, N. Y.

Claim.—1. In a lubricator, the perpendicular wick C, stiffened as described, in combination with the tube B, when the said tube communicates directly from the oil-chamber D to the shaft to be lubricated, substantially as and for the purpose set forth.

2. In a lubricator, the spring S with its floor Z, in combination with the wick-tube B, substantially as described, for the purpose set forth.

3. In a lubricator, the combination of the cup A, and wick-tube B, with a stiffened wick, C, supported by a spring, S, and floor Z, and all arranged substantially for the purpose set forth.

103,618.—RAILWAY-CAR COUPLING.—George C. Hugg, Berlin, N. J.

Claim.—1. The bolt C and arm *d*, connected together by means of the longitudinal slot *b* and lifting-pin *c*, in combination with the arm *f*, made in one piece with the arm *d*, and operating as and for the purpose described.

2. The swelling or bowing stays F, fitted to the sides of the draw-head, in combination with the link-guide E, operating together as and for the purpose described.

103,619.—CHAIN-PUMP BUCKET.—Frederick P. Hunt, Northborough, Mass.

Claim.—The members *a* and *c*, with the key *d*, depressions *f f*, and flexible annulus *b*, substantially as described, and for the purpose herein set forth.

103,620.—SEAT-HOLDER.—Johiel Jackson, Columbus, Wis.

Claim.—An improved seat-holder, formed by the combination of the frame A, detachable rear arms B E F G, secured in place by spring catches D, or equivalent, detachable and adjustable end arms H E F G, and hinged blocks I, with each other, said parts being constructed and operating substantially as herein shown and described, and for the purpose set forth.

103,621.—COOKING-STOVE.—Benjamin F. Johnson, Troy, N. Y.

Claim.—1. The air-flues *a a a*, located at the top of the sides and front of a stove, and communicating with a chamber, C, substantially in the manner and for the purposes herein described.

2. The damper *d*, for the purpose of commanding the communication between the flues *a a a* and the front chamber C, in combination with such flues and chamber, for the purposes described.

3. The plate A, of whatever width used, when used for the purpose herein described.

103,622.—DRIER.—Isaac B. Kinkead, Watertown, Ohio.

Claim.—The within-described drying-house, constructed of superimposed ventilated drying-chambers, opening alternately at opposite ends of the structure, each surrounded or inclosed at its top, bottom, and inner end by a flue or hot-air passage, extending continuously from the furnace to the chimney, substantially as and for the purpose herein set forth.

103,623.—SKATE-FASTENING.—Moses Kinsey, Newark, N. J.

Claim.—1. The levers B, provided with the straight slots at their front ends, and with the apertures *d* arranged in oblique direction, to permit, by their longitudinal adjustment, the lateral adjustment of the clamps C, as set forth.

2. The combination of the pivoted levers D, which have the projecting pins *g*, with the levers B, having the slots *f*, and with the sliding toe-clamps, all arranged as set forth.

103,624.—CORK-SAVING BOTTLE-FASTENING.—Charles L. Knecht, Lower St. Clair township, Pa.

Claim.—A cork-fastening and saving device, consisting of a horseshoe-shaped holder *d*, having an inwardly-projecting flange *d'*, operating between arms *c*, by which it is connected with a collar or ring on the neck of the bottle, substantially as described.

103,625.—DINING-TABLE.—James L. Knight, Tracy Creek, N. Y.

Claim.—The combination, with the table A and waiter B, of vertical shaft D, pulleys H and I, and belt, stepping-piece G, and thumb-screws F F, all being constructed as herein described, for the purpose specified.

103,626.—GRINDING-MILL.—Philip Kraus, Augusta, Ga.

Claim.—1. The muller or grinder B, provided with teeth *e*, spiral semicircular grooves C, partly covered, and hopper F, substantially as herein described.

2. The combination of the grinder B, teeth *f*, grooves C, and hopper F, with the runners G and H.

3. The peculiarly-shaped teeth *b* and *f*, having a cutting-edge *g*, and concave and convex faces *h* and *i*, as and for the purpose set forth.

4. The spiral semicircular partly-covered grooves C in the muller B, substantially as and for the purpose set forth.

5. The combination and arrangement of the casing A, having teeth *b b'* on its inner side, with the grinder B provided with teeth *f f*, grooves C, hopper F, runners G and H, all constructed substantially as herein described and for the purpose set forth.

103,627.—PICTURE-HANGER.—George Lamb, Boston, Mass.

Claim.—The picture-hanger, when consisting of the parts B D, part H, and spar C, arranged substantially as described and for the purpose set forth.

103,628, antedated May 24, 1870.—LANTERN.—Lemuel W. Leary, Norfolk, Va.

Claim.—The guard or shield B, made with its vertical wires bent as described, to receive the horizontal wire or wires through them, in combination with the locking-loops *d*, substantially as specified.

103,629.—FASTENING FOR GATES.—John Lintner, Indianapolis, Ind.

Claim.—The arrangement of the hook C, pivoted to the post A, just above the top of the gate-stile, in such position that the latter will strike the hook below the pivoted point as the gate is closing, and throw it over into a notch in the front edge of the stile, substantially as set forth.

103,630.—HAWSE-HOLE COVER.—Robert Liston, Albany, N. Y.

Claim.—A hawse-hole cover, consisting of the parts C C, provided with the latch G, catches H, packing K, and notches in the edges for the chain-links, arranged for closing over the hole, and against the chain-link, and on detachable hinges, all substantially as specified.

103,631.—HEAD-REST.—Caleb V. Littlepage, Austin, Texas.

Claim.—1. The combination of the extensible arms B B and spring clasps C C with a cushion, A, said parts being connected by joints provided with clamp-nuts, substantially as described.

2. The lowest extensions *g* on the arms B B, in combination with clasps C C and a cushion, A, substantially as described.

103,632.—PUMP-ROD ATTACHMENT.—Henry H. Locke, Pleasantville, Pa.

Claim.—The cross-head *a*, rod *b*, slotted bolt or key *d*, and nut *g*, combined and arranged substantially as and for the purposes set forth.

103,633.—HARVESTER-KNIFE GRINDER.—Thomas Loring, Blackwoodtown, N. J.

Claim.—1. The connecting-rod G, the adjustable cross-head H, the vertical side levers F, with adjustable fulcrums *f*, and holder E, all constructed and arranged relatively to each other, as shown and described.

2. The combination of the hand-lever I and adjustable weight with the holder E, as described.

103,634.—FRICTION-CLUTCH.—Orrin Lull, Rochester, N. Y.

Claim.—1. The ring C, friction-disks D and E, the connecting-bars M and N, and the link P, when arranged to operate in combination with a pulley or gear-wheel, substantially as and for the purposes described.

2. A friction-clutch, where the friction is produced by a lateral movement of friction-disks on opposite flat surfaces, substantially in the manner described.

103,635.—STEAM-PLOW.—Mirabeau N. Lynn, New Albany, Ind.

Claim.—1. The arrangement of the divided cross-tube B', provided with the slots G, yoke C, guide-wheel F, and curved plates, all substantially as specified.

2. The arrangement, with the two sections of the legs W and the rods Z, of the pipe T's *a b d*, forming the joints of the said legs, with the rods, substantially as specified.

103,636.—CART-SADDLE.—Charles K. Marshall, New Orleans, La.

Claim.—1. The pads B B, when they are attached to the bridge A by means of the slotted plates C C, the same being held by means of bolts C' C' and nuts, whereby they can be adjusted and held at any desired point, substantially as described.

2. The bosses D D, when constructed and arranged as described, so as to relieve the base of the groove in which the chain works of all undue friction, substantially as described.

103,637.—LIFE-BOAT.—Theophile Masac, Good Hope Plantation, La.

Claim.—1. An improved life-boat, formed by the combination of the central part or body A and extension or telescopic ends B with each other, the whole being covered with a water-proof covering, substantially as herein shown and described and for the purpose set forth.

2. The buoyant covers G, adapted to serve as floating wings or outriders, in combination with the boat A B, substantially as herein shown and described and for the purpose set forth.

103,638.—COTTON-GIN.—Robert McKenna, White's Station, Tenn.

Claim.—The slat *e* and springs *f f*, when combined and arranged as specified.

103,639.—FARMERS' BOILER.—Allen N. Merrill, Batavia, Ill.

Claim.—1. The projecting front A, in combination with the fire-pot B of a farmer's boiler, when they are so constructed and arranged that either wood or coal can be used for fuel, substantially as specified and shown.

2. The removable partition plate P, when constructed and operating in a farmer's boiler, substantially as and for the purpose set forth and shown.

3. The extension plate R, in combination with the jacket M and kettle N, when constructed and operating substantially as and for the purposes described and shown.

103,640.—APPARATUS FOR PAINTING.—Asa P. Merritt, Charlotte, Mich.

Claim.—1. A painting apparatus, composed of a compressible paint-receptacle, subjected to spring pressure, substantially as herein described, in combination with a tube or conduit leading from the receptacle to the brush, and a valve located in the stem or brush-handle for regulating the discharge of the paint from the tube into the brush, substantially as shown and set forth.

2. The arrangement of the paint receptacle and its compressing springs within a box or case adapted to be carried on the person of the workman, substantially as shown and set forth.

3. The mode of forcing the paint to the brush through the supply-tube or conduit, by means of spring pressure applied to the paint-bag or receptacle, substantially as and for the purposes shown and specified.

103,641.—PRIMER FOR CARTRIDGE.—Isaac M. Milbank, Greenfield Hill, Conn.

Claim.—A priming tube, *b*, for a cartridge, formed with a closed flange, 4, a countersunk base, 2, and a fulminate space, 3, as and for the purposes specified.

103,642.—BOLT-THREADER.—Gideon W. Mingus, Pomeroy, Ohio.

Claim.—The combination of the mandrel A, ears D, die-carrying jaws B, slotted bar E, set-screw G, and eccentric lever H, all constructed and arranged substantially as specified.

103,643.—TENSION-WHEEL FOR SEWING-MACHINE.—John H. Mooney, San Francisco, Cal., assignor to Samuel Hill, same place.

Claim.—A thread-tension wheel for sewing-machines, composed of a toothed central hub and cheek-pieces, with beveled spurs, said teeth and spurs interlocking with each other, and the whole secured by rivets or other well-known devices, substantially as and for the purpose described.

103,644.—OIL-CAN SPOUT.—Samuel Moyle, Jr., Bridgeport, Conn., assignor to himself and Ashbell J. Carrier, same place.

Claim.—The combination of the cap *b*, and its stopper, *c*, with the spring *c*, rod *a*, and spout A, when constructed, arranged, and fitted for use substantially as herein described and set forth.

103,645.—SPIRAL FASTENING.—Charles S. Muscroft, Cincinnati, Ohio.

Claim.—A spiral fastening constructed substantially as described, having a center shaft or stem, A, a loop, eye, or ring, B, and a spiral coil, C, surrounding the stem A, the whole being formed in one piece, in the manner and for the purposes set forth.

103,646.—SPRING BED-BOTTOM.—Charles W. Mutell, Springfield, Mass.

Claim.—The combination, by means of rods *c* and screws *d*, of two or more sections, severally composed of slats *a h*, blocks *b*, springs *e*, leathers *g*, and pins *i*, all constructed, arranged, and operating in the manner and for the purpose specified.

103,647.—DISENGAGING VALVE-GEAR FOR LOCOMOTIVES.—Adolph Onslow, Jersey City, N. J.

Claim.—1. The combination of the cylinders A B and piston C D, in steam communication, respectively, with the engine and boiler, the valve-rod F, and rocker or driver H, to operate substantially as specified.

2. The combination, with the elements recited in the previous claim, of the guide *l* and pin *m*, essentially as and for the purpose herein set forth.

103,648, antedated May 19, 1870.—WHEEL FOR TINNERS' BEADING-MACHINES.—Benjamin S. Partridge, Pilatka, Fla., assignor to himself and W. A. Stafford, same place.

Claim.—The toothed wheels A B, having the shoulder *a* and rabbet *b*, and the groove *c* and

shoulder *d* respectively, and to be applied to a heading-machine, substantially as herein shown and described.

103,649, antedated May 19, 1870.—STEAM-ENGINE CONNECTION.—Leonard Phleger, Philadelphia, Pa.

Claim.—1. The construction and arrangement of the cross-head C and connecting-rods J and J', as and for the purpose specified.

2. The construction and arrangement of the bed-plate D, frame F, box X, upright U, bearings E and E', shaft T, fly-wheel W, and crank-pin K, substantially in the manner and for the purpose herein set forth.

3. The within-described steam-engine, composed of the parts herein set forth, all combined and operating as specified.

103,650.—TREATING SLAG, FROM IRON AND GLASS-FURNACES, FOR PRODUCING A USEFUL MATERIAL. — Augusta Amelia Player and Henry McAllister, Jr., Philadelphia, Pa., administrators of John Player, deceased.

Claim.—The method hereinbefore set forth, of producing mineral wool or vitreous fiber, by subjecting a stream of melted slag or scoria to a blast or jet, substantially in the manner herein described.

103,651. — HOT-BLAST OVEN. — Augusta Amelia Player and Henry McAllister, Jr., Philadelphia, Pa., administrators of John Player, deceased.

Claim.—1. The combination, with the oven, of the central flue, conducting and discharging the hot gases into the upper part of the oven, substantially as set forth.

2. The combination, with the central flue, of the air-pipes near its upper end, substantially as hereinbefore set forth.

3. The combination of the central flue, the blast-heating pipes, and the exit-flue, substantially as hereinbefore set forth.

4. The combination, with the central flue, of the blast-chests and blast-heating pipes arranged around said flue, substantially as hereinbefore set forth.

5. The relative arrangement of a central flue, siphon-blast-heating pipes, and fire-brick, or like refractory material, to protect the tops of the pipes from injury, as described.

6. The combination of the central flue, the combustion-chamber, the air-pipes, the blast-heating pipes, and the exit-flue, substantially as hereinbefore set forth.

103,652.—LAMP-EXTINGUISHER.—David J. Powers, Chicago, Ill.

Claim.—The lamp-extinguisher, consisting of the metal spring E and the flat cap or cover F, constructed and applied to a wick-tube substantially as described.

103,653.—WRENCH.—Turner C. Purington, Lincoln, Cal., assignor to himself and A. Mayoux.

Claim.—A wrench, constructed and arranged as herein described.

103,654.—APPARATUS FOR TEACHING STUDENTS THE USE OF TELEGRAPHIC INSTRUMENTS. — Daniel W. Putt, Wellsville, Ohio, assignor to himself, Walter G. Brownson, and Philip Brewer, same place.

Claim.—A telegraphic-signal apparatus for students' use, operated by a telegraphic key of the ordinary form, and constructed and arranged substantially as herein set forth, to produce the telegraphic sound-signals by mechanical appliances alone, without the use of electric batteries or magnets.

103,655.—COOKING-STOVE.—Josiah M. Reed, Boston, Mass.

Claim.—1. The arrangement, relatively to the ovens E and E', of the single flue F between the two ovens, the divided flue G, the single flues I and J, and the escape-port K, substantially as and for the purpose set forth.

2. The combination, with the above-claimed arrangement, of the flues of the deflecting-plate L and the valve N, substantially as set forth.

3. The damper P, when arranged to slide directly beneath the collar S, substantially as and for the purpose specified.

103,656, antedated May 19, 1870.—WRENCH. Mathias Redlinger, Freeport, Ill.

Claim.—The revolving block H, its sides being at right angles, and in which are provided right-angular troughs in each face of different dimensions, together with suitable receptacles for bolt and gimlet-heads, in combination with handle I, and stop-lever VI, all constructed and arranged to operate as and for the purpose described.

103,657. — WATER-WHEEL. — William W. Richardson, Chicago, Ill.

Claim.—1. The obtuse angular form of the cut-offs of the gate G, to prevent debris and vegetable matter from so collecting on the gate as to prevent the flow of water into the chutes of the guide-wheel R, as set forth.

2. The flanges formed around the chutes of the guide-wheel R, so that, when the outer and inner rims of the under side of the gate G are rabbeted out upward and outward, the cut-offs have the only bearing on the guide-wheel, in order that water may pass freely between the gate and guide-wheel, so as to relieve the gate from pressure of water, as set forth.

3. The peculiar construction of the dome A, it having three concave sides with rounded corners, so arranged as to form suitable supports for the anti-friction rollers *e* to rotate in when said rollers are provided with collars N, to hold the gate G in place, and when they relieve the inner flange L from friction, as specified.

4. The guide-wheel R and wheel U, when the periphery of wheel R has a truncated conical form, and has a flange, S, projecting downward and inside of the upper flange T of the wheel U, and when they are operated in combination with gate C, dome A, and roller N, as and for the purpose specified.

5. The lever X, provided with a rocker-bearing, *g*, operating inside of the cylinder *x*, in combination with the rod W, shaft B, step *d*, annular plate *n*, and collar-step Z, substantially as described.

6. The auxiliary buckets *a a*, so arranged as to discharge water into the primary buckets *b b*, so as to cause a greater pressure of water against the periphery of the wheel, when they are used with a gate, G, and guide-wheel R, as specified.

103,658.—SPRING BED-BOTTOM.—Gideon B. Richmond, Charlestown, Mass.

Claim.—The spring, consisting of a continuous wire, doubly coiled at F, and extended beyond the coils into loop *b*, forming the upper termination of the spring, and entering an opening in the slat, in connection with the ends of the wire below the coils, being connected to a piece, *f*, as herein set forth.

103,659.—DOVETAILING-CHISEL. — Newton H. Robinson, Owasso, Mich.

Claim.—The hereinbefore described dovetailing tool, provided with the straight and circular cutting-faces A and B, respectively, as is shown and set forth.

103,660.—HAMMER.—Oliver Rock, Hudson, Mass.

Claim.—The hammer-head A, when provided with the elongated lower side F, in the manner and for the purpose specified.

103,661.—COMPOSITION FOR PREVENTING INCRUSTATION IN STEAM-BOILERS.—Joseph G. Rogers, Madison, Ind.

Claim.—The composition of a carbonate of a fixed alkali and an aqueous extract of oak-bark or other tannin-bearing substance, when prepared by first nearly depriving the carbonate of its water crystallization and then uniting it with the tannin extract, so as to solidify the mass, substantially as herein specified.

103,662. — PREVENTING INCRUSTATION IN STEAM-BOILERS.—Joseph G. Rogers, Madison, Ind.

Claim.—The use of protoxalate of soda, combined with caustic soda, substantially as above set forth, for the purpose of removing and preventing scale in steam-boilers, substantially as described.

103,663. — PLOW. — Ruffin Roles, Carey, N. C.

Claim.—The share C, mold-board D, and land-side B, constructed as described, for mutual support.

103,664. — SEWING-MACHINE NEEDLE FOR EMBROIDERING.—Israel M. Rose, Brookhaven, N. Y.

Claim.—An eye-pointed sewing-machine needle, formed with a slotted guide, *c*, up one of its sides, extending below the eye *a* of the needle, and shaped to produce a twist, *d*, at its lower extremity, substantially as and for the purpose specified.

103,665.—APPARATUS TO EFFECT THE HYDRATION OF AIR IN HEATED APARTMENTS. Philip Jacob Schopp, Louisville, Ky.

Claim.—1. The permanent connection of the cup or reservoir A with one or more siphons B, and bottom plate D.

2. The connection of the mouth-piece C with the exterior end of the siphon, when arranged to operate as herein described.

103,666.—SEED-SOWER.—Samuel A. Scott, Griffin, Ga.

Claim.—The combination of the box *a*, rock-shaft *m*, beveled blocks *o*, plow *h*, covering-hoes *k*, master-wheel *e*, and connecting-rod *d*, all constructed and arranged to operate as described.

103,667.—HYDRAULIC HOUSING FOR ROLLS. George H. Sellers, Wilmington, Del.

Claim.—In a rolling-mill, the rolls of which are to be adjusted by hydraulic pressure, the combination with the rolls of cylinders of different areas, and plungers of correspondingly different diameters, the forcing-plungers *g h* being smaller than the reservoirs *f b*, in which they operate, respectively, substantially as and for the purpose described.

103,668. — KITE-STRING HOLDER.—George G. Sheldon, Chicago, Ill.

Claim.—The bent spring E, and hook C, in combination with the spool and its handle, substantially as described for the purpose specified.

103,669. — TIRE-SETTING MACHINE.—Andrew Shogren and Henry A. Adams, Sandwich, Ill.

Claim.—1. The clamps E for the purpose of clasping the felly of a wheel and clamping the wheel, when constructed and operating substantially as specified and shown.

2. The levers P and L, the connecting-rods K, and clamps for clamping the wheel, when constructed and operating substantially as shown.

3. The clamps E and guides D in a tire-setting machine, for guiding the clamps, substantially as and for the purposes specified.

103,670.—MACHINE FOR CUTTING DOVETAILS. — Willard E. Sibley, Weston, Mass.

Claim.—1. The arrangement of the collars *k' k'* and set-screws *k k*, for adjusting the shafts H and I endwise, substantially as shown and described.

2. The arrangement of the cutter X between the saw W and cutter Y, substantially as shown and described.

3. The arrangement of the saws and cutters, as shown and described, for the purpose specified.

103,671.—WASHING-MACHINE. — John Sirrine, Trumansburg, N. Y.

Claim.—The posts *a*, provided with the spiral springs *c'*, cap C' and wash-board C, in combination with the rollers D, gate B, and guide-rollers E E', the whole constructed and operating as shown and for the purpose set forth.

103,672.—SAFETY-STOVE.—Charles J. Smith, Norfolk, Va.

Claim.—The outer casing A, inner casing A', with its perforations *a' a'*, circular disk B, perforated plate C, with its solid center C' and upright rod C², hollow cone D, with its curved projecting rim *d'* and interior pipe E, when the whole is so combined and arranged as to form a combustion-chamber for a safety-stove, substantially as described.

103,673.—GRAIN-BINDER.—George H. Spaulding, Rockford, Ill.

Claim.—1. The sway-bar *e'*, combined both with the elbow-lever *b⁹* that bears the rake-head, and the rod *e* that connects it with the crank, substantially as and for the purpose described.

2. A gavel-discharger that is automatically thrown into gear through the raising of the compressing-fingers by the accumulation of the gavel, substantially as described.

3. The combination of the elevator B, flap *b*, and compressing-fingers *b''*, arranged and operating as described.

4. The combination of the stationary horizontal slotted table, the twisting device, and the discharging mechanism, constructed and operating as described.

5. The compressing fingers *b''*, combined with the binding-table in the manner described, so that the cut grain is received and compressed between two surfaces, one movable and the other stationary, substantially as described.

6. The combination of a spool for holding wire or string with the binding-finger in the manner described, so that the two devices partake of the same motion, for the purpose set forth.

7. The device for holding, cutting, and twisting the band, constructed and operating as set forth.

8. A holding, cutting, and twisting device, moving horizontally in a slot made crosswise of the binding-table, and receiving its motion from a separate binding-finger, substantially as specified.

103,674.—MICA-FRAME FOR STOVES.—Gaylord Sharp Stanard, Buffalo, N. Y.

Claim.—1. The air-space *d*, formed between the frame B C and mica *e* by means of lugs *a c*, for the purpose of allowing an uninterrupted flow of air to enter from all sides, as herein set forth.

2. Combined with the frame B and mat C, the lugs *a c*, attached to either or both, and having their inner edges made sharp or pointed to facilitate the entrance and diffusion of the air, as herein described.

3. The arrangement of the frame B, mat C, sharp-edge lugs *a c*, and air-space *d*, the whole as herein specified.

103,675.—MEDICAL COMPOUND.—James T. Stewart, Peoria, Ill., assignor to Samuel R. Whitlow.

Claim.—The medical compound, prepared of the ingredients, and in the proportions and manner, and to be used substantially as described.

103,676. — OIL-BOXES FOR CAR-AXLES.—Timothy B. Stewart, Hartford, Conn.

Claim.—The arrangement of the case C, spring D, and piece E, all constructed and combined in the manner and for the purpose set forth.

103,677, antedated May 24, 1870.—SAWING-MACHINE.—Nicholas Stilwell, Newark, N. J.

Claim.—The arrangement of the shafts *w* and *x*, spring *z*, sliding box *z*, fixed bearing *y*, and removable rolls *u v*, when constructed as shown and described and for the purpose specified.

Also, the adjustable spring guide-roller *r*, when constructed with a universal joint, and used in combination with the feed motion above described.

103,678.—COMBINATION TOOL.—George W. Stockwell, Natchez, Miss.

Claim.—A compound tool, having the hammer head A *a b*, the metal shank B, serving for rule, square, and screw-driver, united to a sliding handle C, provided with knife E and thumb-screw D, all relatively arranged as set forth.

103,679.—SAFETY WHIFFLETREE.—Melvin Stone, Vermillion, Ohio.

Claim.—In combination with the wooden whiffletree C, perforated at *b*, and provided with the sliding eye-bolt E and coiled spring *c*, the arrangement of the strengthening thimble H, extending beyond the perforation, and provided with the perforated elbow *h* and the aperture *a* for the passage of the operating cord *a*, substantially as shown and described.

103,680.—GRAIN-SEPARATOR.—Orrin Stone, Ionia, Mich.

Claim.—1. A single movable section, *b*, (with two floors, 1 and 2,) suspended on adjustable inclined slides or rods *g g*.

2. The fanning-mill shoe *c*, also suspended on adjustable inclined slides or rods *r r*, having their inclinations in opposite directions from the main slides *g g*, said shoe being attached to the movable section *b* by flexible connections, as shown at *m*, *n*, and *l*, in the drawing, thus securing an upward and forward motion in a staight line, instead of a circular motion, as hereinbefore represented, and for the purposes set forth.

103,681.—MACHINE FOR MAKING HORSE-SHOES. — James G. Stowe, Providence, R. I.

Claim.—1. The combination of the endless chain of die-blocks C, and dies *d*, with mechanism to cooperate therewith to bend the bar, and to impart to it the form of the dies, substantially as described.

2. The revolving endless chain of die-blocks C, and dies *d*, in combination with a rotary hammer, K, and stationary anvil B, substantially as described.

3. The revolving endless chain of die-blocks C, and dies *d*, in combination with the rotary hammer, K, formers F, and stationary anvil B, substantially as described and for the purpose set forth.

103,682.—BOOK-REST.—Cornelius Sullivan, Boston, Mass.

Claim.—The combination and arrangement of the rest A with the links B E F, the slides D and G, and the revolving base K, substantially as described, and for the purpose set forth.

103,683.—SAFE AND VAULT.—Timothy J. Sullivan, Albany, N. Y.

Claim.—1. In the construction of safes or vaults, the grooves *c* and tongues *c'*, in combination with the angle-irons *b b* and draw-bolts *c*, substantially in the manner set forth, for the purpose specified.

2. In safes or vaults, the stay-bolts D, to draw together the several parts of the said vault or safe, substantially in the manner set forth.

3. The combination of the hooks *h*, eyes *g*, and shaft *k*, when constructed and arranged substantially in the manner set forth, for the purpose specified.

4. The outside knob *r*, in combination with the disk *q*, pin *p*, bar *o*, and levers *n*, substantially as and for the purpose set forth.

5. In combination with a safe or vault, the door C, arranged to swing in, and a door, F, to screw into or on its place, and used in combination, for the purpose specified.

103,684.—ROTARY PUMP.—Thomas Swan, Manlius, N. Y.

Claim.—A pump which, for its chief working parts, combines the hollow globe A, wabbling disk D, and central partition or butment I, substantially as herein specified.

103,685.—DEVICE FOR CUTTING OFF METALLIC TUBES.—Stephen P. M. Tasker, Philadelphia, Pa.

Claim.—The combination, with said combination of devices, of the cutter-boxes, cutters, adjusting and set-screws, substantially as set forth.

103,686.—STOVE-PIPE DAMPER. — William Taylor, Lowell, Mass.

Claim.—1. The hollow heater A, in combination with the elastic sack F, arranged within the cylinder, and operating against the piston-head, to regulate the damper, as described, the cylinder and heater being connected by tubes or pipes, as specified, and the piston-rod with the arm on the shaft of the damper, all in the manner and for the purpose set forth.

2. The button-headed tube G, in combination with the recessed nut H, the cylinder, and the elastic sack, in the manner and for the purpose substantially as described.

103,687.—TACKLE-HOOK.—Henry Thompson, Rockland, Me.

Claim.—The arrangement of the curvilinear cleft iron, constructed of a single piece of metal, the hook, the tripping line, and the staple attached to the block through which the tripping line is lead, when constructed and jointly operating as and for the purposes described.

103,688.—CORN AND COTTON-PLANTER, FERTILIZER-DISTRIBUTER, COTTON-CHOPPER AND CULTIVATOR COMBINED.—James F. Tucker, Monticello, Fla.

Claim.—1. The construction and arrangement of the seed-dropper *b* and fertilizer-dropper *b'*, so placed and secured upon the shaft that they may be adjusted by rotating to such relative positions as to discharge their contents together, or at any desired distance apart.

2. The hopper G, constructed with removable partition, bottom, and cut-off, substantially as shown and for the purpose specified.

3. The concave in the ends of the curved arms of the feed-wheel *p*, for the purpose specified.

4. The adjustable blocks *c c*, in combination with the rod *b* and the levers *e e*, for the purpose of attaching the sweeps or other implements, varying their depth and distance apart, and elevating them above the surface of the ground.

5. The combination of the shovel-plow J, fertilizer-distributor K, coverers L L, opener F, cotton-seed feeder, and concave roller H, for the purpose of cotton planting.

103,689.— LOCK-NUT. — Ulysses B. Vidal, Philadelphia, Pa.

Claim.—Two nuts, A A, recessed on their inner faces, combined with a locking wire, C, applied as shown in fig. 1 of drawing.

103,690, antedated January 29, 1870.—LOW-WATER INDICATOR FOR BOILERS.—Charles S. Watson, Philadelphia, Pa.

Claim.—1. The cup or vessel L, lever H, weighted at one end, valve *c*, and casing A, combined and arranged substantially as herein described.

2. The casing A, with its projections *a* and *c*, and detachable cap *b*, adapted for the reception of the lever, cup, and valve, substantially as specified.

103,691.—HORSE HAY-RAKE. — David H. Weaver, South Bend, Ind.

Claim.—1. The combination of clutch F, elbow-lever H, hand-lever U, rake N, and connections J, K, and S, as described.

2. The arrangement of the wipers G, attached to clutch F, an axle, A, and the arm D, on rake-head B, as described.

3. The arrangement of rake N, hung in adjustable bearings O O, and having lever arm Q attached, the slotted connecting-rod S, spring R, and hand-lever J, all constructed and operating as described.

103,692.—RAILWAY RAIL-CHAIR.—John S. Weimer, Pleasant Hill, Ohio.

Claim.—A railway chair, formed of the two T-piece rails B B', they having shoulders *b b*, central cheeks or flanges D D', upon each side of which are formed longitudinal ridges or projections *e e'*, said rails being secured by bolts F F, and meshing together at their lower edges by means of the groove *e* and lip *e'*, as shown and described.

103,693.—PROCESS OF WELDING AND TEMPERING SHEAR-BLADES. — Hermann Wendt, Elizabeth, N. J., assignor to Henry Seymour & Co., New York city.

Claim.—The within-described process of welding the blades or cutting parts of scissors, shears, or other cutting tools, to the handles thereof, by compression in curved dies and otherwise, as described, and simultaneously tempering them, in the manner substantially as described and specified.

103,694. — BREECH-LOADING FIRE-ARM.—Frank Wesson, Worcester, Mass.

Claim.—The combination and arrangement, relatively to each other, of the operating stop D, made to project through the frame for operation from the exterior, as described, the fixed stop E, the frame A, with its breech *a*, the pin C, and barrel B, essentially as specified.

103,695.—FEEDING FUEL TO METALLURGIC AND OTHER FURNACES.—James Davenport Whelpley and Jacob Jones Storer, Boston, Mass.

Claim.—The device for introducing and regulating the supply and introduction of pulverized fuel and air into furnaces and fire-boxes, for the purposes and in the manner and with the apparatus substantially as described.

103,696.—GLOVE.—John L. Whitten, Essex, Vt.

Claim.—1. The arrangement of the leather sides D, F, G, H, and I, of the fingers, to form the curved tips L at the ends thereof and part of the backs, substantially as specified.

2. The improved back and wrist piece A B, constructed and arranged substantially as specified.

3. The combination, with the piece C for the leather front, of the part D, substantially as specified.

103,697.—BEE-HIVE. — John W. Winder, Cincinnati, Ohio.

Claim.—1. The combination of the chamber A, frames *b b b* with the sliding bottom *b'* and drop-door *d*, and slats *h h*, arranged above the recess E, and moth-chamber D, substantially as herein set forth.

2. A hive, when composed of the compartments A, B, and D, with the doors *d d* and slats *h h*, constructed and arranged substantially as herein set forth.

3. A hive, composed of the chamber A, movable frames *b b*, and bottom *b'*, supported by the slats *h h*, when combined with the chamber B, constructed and arranged as herein shown.

103,698.—REVERSING AND CUT-OFF APPARATUS FOR STEAM-ENGINES.—Daniel A. Woodbury, Rochester, N. Y.

Claim.—1. An eccentric, swung upon a center outside of the crank-shaft, and having its lateral adjustment controlled by an auxiliary eccentric, or a similarly-operating device, for the purposes set forth.

2. The swinging eccentric A and auxiliary eccentric B, in combination with a suitable device for locking them at the extremity or any intermediate point of the lateral adjustment of the former, for the purposes specified.

3. The friction-wheel J attached to the auxiliary eccentric B, in combination with the swinging eccentric A, with or without the slide C, operating substantially as described.

4. The elastic cushions *e*, in combination with the fixed hub H and stops *f* and *f'* on the wheel J, for the purposes set forth.

5. The adjustable spring check *d*, in combination with the swinging eccentric A, or slide C, and auxiliary eccentric B, operating substantially as set forth.

103,699.—HARVESTER CUTTER-BAR.—Robert Allstatter, Hamilton, Ohio.

Claim.—The knife-heel, formed of plate A, thin flange B, and bush or hub C, as and for the purpose set forth.

103,700.—SAW-FRAME.—Emanuel Andrews, Williamsport, Pa.

Claim. — A saw-frame, constructed of spring steel, substantially as described and shown and for the purpose set forth.

103,701.—CORRECTING THE DEVIATION OF THE MARINER'S COMPASS.—Louis François Alexandre Arson, Paris, France.

Claim.—1. The combination, with a magnetic needle, of an adjustable oblong frame, carrying bars or plates of soft iron, arranged as described.

2. The combination, with the said frame, of soft iron bars H H', adjustable, as set forth.

3. The permanent magnets C C, adjustable in a circle around the compass, as specified.

4. The compass B, in combination with the revolving disk E, and the frame or compensator D, sliding in said disk and inclosing the compass, as specified.

5. The combination of the compass B disk E, sliding compensator D, magnets H H', and adjustable magnets C, as set forth.

103,702.—JELLY-GLASS. — James S. Atterbury and Thomas B. Atterbury, Pittsburg, Pa.

Claim.—The new article of manufacture herein described, to wit, the jelly-cup or glass with a screw-thread pressed upon it, substantially as described.

103,703.—VENTILATOR FOR HATS.—Samuel Beatty, Norwalk, Conn.

Claim.—A hat-ventilator, consisting of a strip of flattened, perforated, and corrugated wire, constructed and arranged substantially as described.

103,704.—STEAM-PLOW.—William Bockett, Kingston, Jamaica.

Claim.—1. The combination of frames D and E, pivoted together as set forth, with the platform F, vertical shaft, hollow standard G, studs H J, and friction-wheels I, as described.

2. The subject matter of third clause, in combination with the eye-pieces K and frames L, whose outer ends rest upon the ground, in the manner described.

3. The combination of the swivelled screw A'' with the plow-truck W, and plow X, substantially as herein shown and described, and for the purpose set forth.

103,705.—Scissors-Sharpener.—Nathaniel Belcher, Boston, Mass.

Claim.—The adjustable file or sharpener B, in combination with the block A and gauge b, operating substantially in the manner and for the purpose set forth.

103,706.—Dental Mallet.—Julius A. Bidwell, Chicago, Ill.

Claim.—A dental mallet, composed of an open-ended cylinder or shell of hard metal or other hard material, inclosing a soft metal core or filling, and provided with a suitable handle, substantially as described, for the purpose specified.

103,707.—Artificial Teeth.—Julius A. Bidwell, Chicago, Ill.

Claim.—The strengthening wires *d*, applied first to the base and teeth of a rubber dental plate, and then covered with vulcanized India rubber, substantially as described for the purpose specified.

103,708.—Harness-Operating Mechanism for Loom.—Robert Bleakie, Hyde Park, assignor to Charles W. Gilbert and S. Newell Toft, Worcester, Mass.

Claim.—1. The pattern-chain, horizontal indicator-levers, the double hooks, and the horizontal travellers or slides, constructed as described, and arranged, in relation to each other and at the top of the loom-frame, as and for the purposes set forth.

2. The indicator-lever G, with its finger *d* and slotted part G', substantially as and for the purposes set forth.

3. The combination, with the horizontal slides or travellers I, arranged at the top of the loom-frame, and to one side of the center thereof, of the cords or wires 3, 4, and 7', sheaves or rolls 5 6, and under levers J', substantially as and for the purposes set forth.

103,709.—Sawing-Machine.—George W. Boll, Columbus, Ind.

Claim.—1. The combination of the saw-connecting uprights I I, cross-bar K, and the forked guide-rod L with loop *d*, all substantially as set forth.

2. The arrangement of the frames A B C, braces E, upright D, shafts *e g*, pinion *f*, cranks B N, and pitman M, which operate the saw when connected to the uprights I, which pass through the cross-heads G, all as herein set forth.

103,710.—Railroad-tie Lifter.—William C. Bomar and Anderson Troxler, Wartrace, Tenn.

Claim.—1. In combination with a tie-lifter, constructed substantially as set forth, wheels, and an axle for moving the same upon the track, as specified.

2. The construction of the bolster C, substantially as and for the purpose set forth.

3. The combination and arrangement of the bolster C, the nape or lever D, hounds D^1 D^1, cross-bar D^2, levers E E, grappling-hooks F^2 F^2, rods F^1 and rod F, substantially as and for the purpose set forth.

103,711.—Lock for Securing Revenue-Stamps on Beer-Barrels.—Frederick Brackett, Minneapolis, Minn.

Claim.—1. A stamp-holder for barrels or similar vessels, consisting of two rings having a central opening for the insertion of a spigot, said rings being hinged together, and provided with an automatic locking device, substantially as described.

2. The combination of the rings A and B, ball E, with its locking dog G, constructed and arranged to operate substantially as described.

3. The combination of the rings A and B, ball E, with its locking dog, and the sliding plate H, substantially as described.

103,712.—Clothes-Drier.—Joshua Briggs, Peterborough, N. H.

Claim.—The plate *a*, made with the sockets *b* and stepped supporting-plate *d*, adapted to receive and support in each socket a swinging arm, substantially as shown and described.

Also, the socketed and stepped plate *a*, combined with the pivoted arms *f*, substantially as shown and described.

103,713.—Wood-Pavement.—John W. Brocklebank, New York, N. Y., and George W. Tubbs, Elizabeth, N. J.

Claim.—The combination of the blocks A, spacing or supporting-joists C, the transverse sills E or G, and the sand, the sills being laid on the graded road-bed, and the sand packed between them, and the blocks being arranged either to rest wholly on the sand and the joists C, or partly on the sand, the joists, and the sills, and either secured to the sills by the joists or not, all substantially as specified.

103,714.—Clothes-line Holder.—Hamilton Browne, Des Moines, Iowa.

Claim.—The eccentric A, the movable slide B, and the horns C C, all made, combined, and operated substantially as described and for the purposes specified.

103,715.—Cooking-Stove.—Eduard Buys, New York, N. Y.

Claim.—1. In a double-fire stove, the grate E, elevated above the ash-pan, in combination with the extended bridge G, and with the damper I, swinging in the space below the grate, against the bridge in one direction, and above the ash-pan in the other direction, substantially as and for the purpose described.

2. In combination with the bridge G, forming the flue of the grate E, the damper I, arranged to swing between the front and rear parts of the stove, against the bridge and below the grate, for the purpose described, substantially as set forth.

103,716.—Portable Fence-Post Driver.—William Carns, New Cumberland, Ohio.

Claim.—The trip-hammer, with its arm F, provided with friction-roller *a*, in combination with the cam E, constructed and supported by bracing C and standards B, having guide-pins *h*, substantially as and for the purpose set forth.

103,717.—Machine for Sand-Papering Mouldings.—Frank G. Chapman, Chicago, Ill., assignor to Dennis Beach, same place.

Claim.—1. A sand-paper holder for polishing moldings, composed of two or more blocks, held within a suitable clamping device, and over whose face the sand-paper is stretched, in such a manner as to conform to the angles of the molding, to prevent the same from being cut or worn off during the operation of polishing, substantially as described.

2. The reciprocating sand-paper holder B, held upon the molding to be polished by means of the vibrating spring P, arranged as described, for the purpose specified.

103,718.—Water-Cooler.—William Stokes Cobb, Philadelphia, Pa.

Claim.—1. The combination, with a water-cooler, of a removable or detachable ice-vessel, F, provided with a detachable cover, and a packing intervening between the cover and vessel, and arranged to be submerged or partially submerged in the water-chamber, but having no communication with the latter, substantially as set forth.

2. The said vessel F, in combination with the frame *b* and with the perforated steadying-flange A, adapted to the lugs *b b* of the cooler, as described.

103,719.—Wheel-Carriage Seed-Sower.—John H. Cole, Vacaville, Cal.

Claim.—In combination with the seed-discharger *e*, or its equivalent, and its driving mechanism, operated by the movement of the carriage, the intermediate clutch and clutch-pulley operating to automatically throw the discharger out of action when the carriage backs, substantially as described.

103,720.—Blacksmiths' Bellows.—John F. Cory and Henry C. Webb, Brooklyn, E. D., N. Y.

Claim.—1. The combination, with the air-chest B of a blacksmith's bellows, of stops D, applied and operating substantially as described.

2. The counterpoise O, in combination with the cross-beam L and pumps or bellows E E, substantially as described.

3. The deflector H, in combination with the inlet-valves of the air-chest, when arranged relatively with the nozzle I, substantially as and for the purpose described.

4. The arrangement and combination, in a blacksmith's bellows, of the lever K, cross-beam L, counterpoise arm and weight N O, rods Q, and crank-arms R, with the shafts J J of the independent pumps or bellows E E, substantially as described.

103,721.—Water-Closet Valve.—Hugh H. Craigie, New York, N. Y.

Claim.—The stem *f*, having an end movement through the piston *g*, and a water-way, 3, between the stem and piston, in combination with the nut *i*, forming a valve, and the groove 6, for a water leakage, as and for the purposes set forth.

103,722.—Railroad-car Ventilator.—Henry A. Curtis, Richmond, Va.

Claim.—1. The adjustable case C, in combination with an inclosing water-case, B, and spray-wheel D, substantially as described.

2. In combination with the oscillating case C, the stop-pins J J and the adjusting vane K, substantially as described.

3. An oscillating case, C, provided with the orifices G G', placed as described, in combination with the hoods H H', for the purpose set forth.

4. In combination with an oscillating case, C, and spray-wheel D, a water-tank or receptacle, B, provided with a waste-way and draw-off cock, as set forth.

103,723.—Organ.—Charles H. Davis and William Jackson, Chicago, Ill.

Claim.—1. The combination and use of exhaust and pressure-bellows with suction and pressure-reeds, whereby American free reeds may be combined with organ-pipes and French reeds, by the appliances and means set forth.

2. Exhaust and pressure-bellows arranged and combined as described, to be operated by the same power, and use the same wind.

3. The exhaust and pressure-feeders N, of which the ordinary foot-board forms the top, in combination with the chamber L, divided both longitudinally and transversely into four compartments, for the purpose set forth.

4. The supplemental bellows or reservoir T, to receive wind from the exhaust and pressure-feeders through the pressure-bellows, for the purpose set forth, in combination with the compensating and regulating-valve Y.

5. The exhaust bellows U, in combination with the pressure and exhaust-feeders N, to supply the American reeds D and equalize the pressure thereon.

6. The yielding stop-spring *s*, for the purpose of enabling the performer to sound additional notes by an extra depression of the key, in the manner set forth.

103,724.—Machinery for Towing Canal-Boats.—Oscar De Mesnil, Brussels, Belgium, and Max Eyth, Stuttgart, Würtemberg.

Claim.—1. The endless apron *f*, rollers *g g*, pinion A, and driving spur-wheel, combined with the drum C, and press-pulleys *a a*, whereby animal power may be applied to the rope B, in the manner described, and for the purpose set forth.

2. The front leading pulley J, suspended from the balanced lever L, in combination with the guide-pulleys, all relatively arranged on the boats, as shown in fig. 1 of drawing.

3. The double-grooved guide-pulley E, with slightly inclined axis, arranged in place of the two guide-pulleys ordinarily used, substantially as herein shown and described.

4. The single press-pulley *j*, acting on the conical portions *l l'* of the two guide-pulleys G, and receiving rotary motion from the tight rope, which motion it communicates to the slack-rope pulley, substantially as described and for the purpose set forth.

5. Driving the after guide-pulley faster than the front one, by means of friction-gear, for the purpose of taking up the slack of the rope as it leaves the driving-drum, substantially as described and illustrated.

6. The swinging guide-pulleys H, hung in pivoted frames I, either on the side or in the center of the boat, substantially as herein shown and described.

103,725.—Water-Wheel.—Eliphalet Dougherty, North Lewisburg, Ohio, assignor to himself and J. M. Hood, same place.

Claim.—1. The casing A A', constructed and arranged as described, with ratchet-shaped projections B B and plates C C, substantially as and for the purposes herein set forth.

2. The double scrolls or gates D D, constructed as described, and hinged in an inclined or sloping position at the inner ends of the plates C C, substantially as and for the purposes herein set forth.

3. The combination of the ring G, arms E E, pins *a a*, and scrolls or gates D D, constructed and arranged to operate substantially as and for the purposes herein set forth.

4. The conical-shaped wheel H, provided with buckets I I, when constructed as described, according to the rules, and for the purposes herein set forth.

5. The combination of the casing A A' and the conical-shaped wheel H, with its buckets I I, when constructed as described, according to the rules, and for the purposes herein set forth.

6. The combination of the casing A A', projections B B, plates C C, gates D D, ring G, arms E E, pins *a a*, wheel H, and buckets I I, all constructed and arranged substantially as and for the purposes herein set forth.

103,726.—Saw-Gummer.—Anson B. Douglas, Clyde, Ohio.

Claim.—The construction and arrangement of the frame U, and its operative mechanism, the swinging arms or levers V, the swivels Z, with screws S and clamps A, substantially as described.

103,727.—Ratchet-Power.—William T. Elliott, Metamora, Ill., assignor for one-half to William H. Speers, same place.

Claim.—The combination of the ratchet-wheel A, levers C E, pawl D, and hook G, all constructed as described, and arranged to operate substantially as and for the purposes herein set forth.

103,728.—Preparing and Preserving Meat.—Hermann Endemann, New York, N. Y.

Claim.—The within-described process of preparing meat for preservation and nourishment, by first freeing it from fat, then drying it in a suitable oven

or kiln, at a temperature below 140°, and, finally, reducing it into fine powder, all as herein set forth.

103,729.—Door-Stop.—William H. Fahrney, Rockford, Ill., assignor to himself and John Donaldson, same place.

Claim.—1. Constructing the elastic cushion I with a suitable notch to receive the hooking head *a* of spring detent K, in the manner and for the purpose substantially as hereinbefore shown and described.

2. The combination of spiral spring H, cushion I, notched as described, and spring detent K, when these parts are constructed, arranged, and applied to operate as a whole, in connection with strike-plate M on door A, as and for the purpose herein-before set forth.

103,730.—Machine for Making Nails.—David J. Farmer, Wheeling, West Va.

Claim.—1. The traversing-table and series of nail-plate feeders or conductors, in combination with the cutters and mechanism to feed said nail-plates forward between said cutters, substantially in the manner set forth.

2. In combination with the table H, the series of nail-plate feeders I, the pinions i''', and rack O, for the purpose stated.

3. In combination with the series of feeders I, having flat surfaces i'' i'', and arranged in annular series in a rotating-table, H, and adapted to be reversed as described, the annular spring N, arranged within the series, as set forth, for the purpose shown.

4. The combination of the flange P with the traversing series of reversing feeders I, as and for the purpose set forth.

5. The combination of the guard-flange or stop Q, and adjustable extensions *q*, with the traversing series of feeders I, for the purpose shown.

6. The combination of the hinged gauge R with the traversing-table, series of feeders I, and a suitable device for temporarily reversing the motion of said table, for the purpose described.

7. The combination of the spring S, pins h''', traversing-table H, and series of feeders I with the gauge R, for the purpose set forth.

8. The stop a'', attached to the cutter-head A', in combination with the cutters, as set forth.

9. The combination, with the cutters, and with the cutter-head and table A A', of the griping-jaw T, arranged and operated substantially as described, for the purpose set forth.

10. The nipper U, arranged in upright position beneath the cutters, and adapted to receive a positive oscillation through a rock-shaft, W, and lever-arm, *w*, substantially as shown and described.

103,731, antedated April 1, 1870.—Locomotive Spark-Arrester.—Benjamin P. Freeman and Pat. Payton, Macon, Ga.

Claim.—The combination, with a locomotive stack and its flue *d*, of the arrester-disk *c*, constructed and arranged to operate as described.

103,732.—Washing-Machine.—Isaiah M. Furbish, Augusta, Me.

Claim.—The arrangement and construction of the standard B', shaft *b*, and disk D, in combination with cylinder *c*, and disk C, levers *a* and *a'*, and tub B B, as shown and described.

103,733.—Blower.—James N. Gilchrist, Connersville, Ind., assignor to himself and John L. Gilchrist.

Claim.—The described combination of driving-head composed of three convex cylindrical segments G, and the driven head having six concave cylindrical segments P, separated by convex spurs Q, the said heads being geared together and inclosed in a suitable case or shell, as set forth.

103,734.—Machine for Heeling Boots and Shoes.—John Gilson, Stoneham, Mass., assignor to Gordon McKay, trustee.

Claim.—The combination of bent awls or punches, with a block perforated with holes, which are enlarged for the purpose specified, when said parts are so arranged as to be capable of movement relative to each other.

103,735.—Machine for Heeling Boots.—Charles W. Glidden, Lynn, Mass., assignor to Gordon McKay, trustee.

Claim.—The rim *q*, arranged to enter the crease between the "upper" and the sole, and to hold and locate the work, when made with hinged side pieces which operate in connection with springs *s*, substantially as set forth.

Also, the arrangement of rim *q*, so as to turn in the directions allowed by the pivots in the brackets *u*, and by the trunnion on the ways *w*, substantially as and for the purpose specified.

Also, the arrangement of the rim *q*, so that it can be moved from side to side, from front to rear, and up and down, substantially as and for the purpose specified.

Also, the combination, with the frame of the rim *q*, of the steady-pins, for the purpose set forth.

Also, the relatively-inclined arrangement of the surfaces between which the heel is compressed, so that they shall compress the material more at the front or breast than at the rear of the heel, substantially as and for the purpose specified.

Also, the arrangement of the knife upon a block, set so as to move freely within a limited range, with reference to the carriage *j'*, and under the influence of the spring *n'*, substantially as and for the purpose specified.

Also, the gauge *r'* attached to, carried by, and made adjustable upon the piece *o'*, carried by the knife itself, and with reference to the knife-edge, substantially as and for the purpose specified.

Also, the gauge *e'* attached to, carried by, and made adjustable upon the gauge *r'*, and operative upon the edge of the shank of the sole, substantially as and for the purpose specified.

Also, the combination, with the driver-block *h*, of the extension pieces *j*, substantially as and for the purpose described.

Also, the arrangement with the drivers *h*, with regard to their operative lengths within the driver-block *h*, so that when they act they shall not reach to the upper surface of *h* or *j*, and shall leave the nails projecting from the heel, for the purpose specified.

Also, the arrangement of the last-holder with the ways *p*, so that it can be swerved from side to side, substantially as and for the purpose specified.

103,736.—Portable Furnace.—Seth Gregory, Galesburg, Mich.

Claim.—1. The fire-pot C, provided with grate *f* and side perforations *i i* substantially as and for the purposes herein set forth.

2. The combination of the stand A, body B, fire-pot C, and top ring D, all constructed and arranged substantially as and for the purposes herein set forth.

3. The damper *b* and rod *d*, in combination with grate *f* and body A B, all arranged substantially as and for the purpose described.

103,737.—Fountain-Pen.—Thomas W. Grinter, Russellville, Ky.

Claim.—The tubular shaft or handle A, having an orifice, I, at the place where the forefinger rests, closed by a rubber tube, J, in the described combination with the channel E and tongue F, and the spring or yielding valve G, closing the ink-vent D, substantially as set forth.

103,738.—Pump.—William M. Hamilton, Jacksonville, Ill.

Claim.—The valve-seat E, provided on its under side with the tapering circular flange, in combination with the tube D, valve H, and tube A, the latter provided with a flaring mouth, B, surrounded by the band C, all substantially as and for the purpose herein set forth.

103,739.—Tool-Holder.—O. Hanks, Cincinnati, Ohio.

Claim.—The clamp-frame A, constructed as described, that the tool may be secured at any desired extension therethrough, in combination with the caster or swiveling wheel D, substantially as shown and described.

103,740.—Excavating-Machine.—Andrew M. Hansen, Stockton, Cal.

Claim.—1. The buckets L, arranged in two series, moving in opposite directions, and in such relation to each other that the buckets of each series pass through the same space between the two lower wheels b' b^2, and each bucket comes between two buckets of the opposite series, substantially as and for the purpose described.

2. The sliding bar N, combined with the platform A, and provided with the blade *n'*, in the manner and for the purpose specified.

3. The shields *s*, attached beneath the frame C and on either or both sides of the chains *m*, in the manner and for the purpose specified.

103,741.—Apparatus for Enameling Sheet-Iron.—William Harris and Daniel Hall, Chicago, Ill.

Claim.—1. Broadly, in manufacturing enameled iron, the use of the composition roller T, composed of zinc and copper, or their equivalents, in combination with rollers R S, and with or without bar W, when used with any suitable heating apparatus, as set forth.

2. The combination of the heating-furnaces A B, provided with gas-pipes C V H J I, and suitable burners D, as and for the purpose set forth.

3. The stirrup-lever, pivoted to the furnace B, when used in combination with the furnaces A B and rollers R S, to assist in transferring sheet metal from one furnace to the other, as set forth.

103,742.—Wind-Wheel.—Peter Heald, Troy, Me.

Claim.—1. The combination of a vertical wind-wheel, having adjustable vanes E, with an inclosing stationary case, B, provided with adjustable shutters M, as and for the purpose set forth.

2. The arrangement of the rings G G, (with the link-wires F,) cords I I, and pulleys H H, as and for the purpose set forth.

3. The combination and arrangement of the vanes E, links F, rings G, and governor L, as and for the purpose set forth.

4. The arrangement of the shutters M, links N, rings O, arm P, cords Q, and windlass R, for the purpose set forth.

103,743.—Ruling-Machine.—William O. Hickok, Harrisburg, Pa.

Claim.—Providing the pen-beam A B with undercut slots 4, and the additional clamp *a' b'* with corresponding slots 5 to receive the sliding bolts D, or their equivalent, as and for the purpose set forth.

103,744.—Fruit-Drier.—John Hildebrand, Taneytown, Md., assignor to himself and Jacob Fringer, same place.

Claim.—1. The combination of the perforated pans *c*, whether arranged in vertical series or not, with the drums *f*, in the manner and for the purpose described.

2. The combination of the pans *c* with the rakes *l*, as and for the object specified.

3. The combination of the pans *c* with the plates *k*, as and to the end set forth.

4. The combination of the pans *c* with the shield *h*, as and for the object explained.

103,745.—Button-holing and Overseaming Attachment for Sewing-Machine.—Edmund Howard, Flushing, and William H. Jackson, Brooklyn, N. Y.

Claim.—1. The attachment for forming a button-hole stitch, constructed and operating substantially as described, and arranged to be operated by the needle-arm or shaft from above.

2. The looper I, constructed as described, and arranged to move from above diagonally across the line of the needle's movement, under the fabric and over the lower thread-carrier, substantially as described.

3. The spreader E, provided with the arm *m*, incline *n*, and toe *w*, arranged to be operated by the spring pawl *i* of cam D, the pin *e* of slide C, and the toe-piece V of the needle-bar, whereby it has imparted to it the intermittent reciprocating movements, substantially as and for the purpose set forth.

4. The hinged spreader E, in combination with the bent or crank-pin *f* and spring *g*, arranged to operate as set forth.

103,746.—Machine for Grooving Lead-Pencil Blanks.—Philip Hufeland, New York, N. Y.

Claim.—1. The pressure-roller *i*, gauge *j*, and cutter C, when arranged in relation to each other and operating in connection with the pusher F, friction-pulley *d*, and hopper E, substantially as herein shown and described.

2. The arrangement of the case H and cap I with the grooving-cutter and fan-blower, mounted on one and the same shaft, substantially as described.

103,747.—Compound for Cleaning Cloth and other Fabrics.—Franklin Truman Huntoon, Fulton City, Ill.

Claim.—The cleansing compound, consisting of the ingredients mixed together in the proportions and manner substantially as specified.

103,748.—Car-Coupling.—Oliver P. Ives, Syracuse, N. Y.

Claim.—The combination of the inclined slots *a a* and the rod D, having projection *e* and handles *d d*, all arranged as described with relation to the shoulder *g*, pin C' and link B, and operating as and for the purposes herein set forth.

103,749.—Door-Knob.—George Jones, Peekskill, N. Y., assignor to Eliza Jones, same place.

Claim.—1. The sections A C, each having an annular recess at their point of junction, combined with metal band G fitting said recesses, as and for the purpose described.

2. A knob having a series of apertures, B, in the outer casing A, combined with an ornamental plate, F, of corresponding shape within, as and for the purpose described.

103,750.—Cutter for Dovetailing-Machines.—Dedrick Jordan, Charlestown, Mass., assignor to A. S. and J. Gear & Co., New Haven, Conn.

Claim.—The herein-described cutter-head for dovetailing machines, having the cutter arranged so as to be fixed upon an inclined bearing in the head, in the manner described.

103,751.—Towel or Clothes-Rack.—James M. Keep, New York, N. Y.

Claim.—The shank F, provided with the screw G, in combination with the bar H, substantially as and for the purpose specified.

103,752.—Twine-Holder.—James M. Keep, New York, N. Y.

Claim.—As a new article of manufacture, a twine-box or holder having its cover and base constructed of cast metal, and its body of sheet metal, substantially as shown and described.

103,753.—Cow-tail Holder.—Judson Knight, Whitestown, N. Y., assignor to himself and M. C. Brown, same place.

Claim.—The combination of a cow's tail and leg-holder, having the loops E E on its main bar A, with a strap, F, and shield G, all constructed and relatively arranged as and for the purpose described.

103,754.—CRICKET AND COMMODE.—Joseph C. Knowles, New Bedford, Mass.

Claim.—A cricket and commode, A^1, constructed with the hinged lid B, having the projecting flanges K K, door C^1, seat D^1, bottom E, nest h h, and till a, all constructed and arranged as and for the purpose described.

103,755.—RUFFLING ATTACHMENT FOR SEWING-MACHINE.—Arthur M. Leslie, Chicago, Ill., assignor to himself and Cornell, Ward & Comings.

Claim.—The doubled plate A B, constructed as described, with the guiding-pin *m*, and combined with the yielding plate C secured to the part B, the parts C B being constructed substantially as described, to receive a presser-foot, and for the purpose specified.

103,756.—STEAM-PUMP.—William Livingstone, New York, N. Y., assignor to John Roach, same place.

Claim.—1. The ring valves *i i* within the pump-cylinder *b*, connected together and actuated by the piston, in combination with the induction and eduction-ports, substantially as and for the purposes specified.

2. The spindle *n* and groove, receiving a rotary movement from a pin upon the piston *d*, in combination with mechanism, substantially as specified, for connecting the said spindle to the steam-valve, as set forth.

103,757.—SHUTTLE FOR LOOMS.—Joseph Lofvendahl, Woonsocket, R. I., assignor to himself and Simeon S. Cook, same place.

Claim.—1. As an article of manufacture, the metallic shuttle, constructed substantially as described, and provided with eyelets on both sides, for the purpose set forth.

2. The metallic shuttle, in combination with the spring D and part F of the spindle, when constructed and operating substantially as described.

3. The slotted rod C^3, spring F', and slotted hollow barrel A', in combination with the hinged spindle B', substantially as described.

4. The steel springs D and I, with respective jaws E E and J J, in combination with spindle B, substantially as described.

103,758.—HINGE.—David W. Long, Parkersburg, West Va.

Claim.—A butt or hinge, one of the parts of which has a male and the other a female socket, which extend across the entire width of the same, the parts being held in position by a pintle which passes through the female socket, and has a collar upon both of its ends to support the weight of the doors or other device to be hung, substantially as and for the purpose set forth.

103,759.—COTTON-SEED PLANTER.—James Lytch, Laurinburg, N. C.

Claim.—1. The flexible brush K, arranged so as to form the bottom of the hopper, and made adjustable, as described, in combination with an endless band of buckets, so arranged and operating as to open said flexible bottom automatically by the passage of the buckets *a*, and which will close by its elasticity, as herein shown and described.

2. The stirrers *c*, curved and operated so as to enter the grain back foremost, for the purpose of passing through the seed, so as to clear themselves of fiber, and thus prevent clogging, substantially as described.

103,760.—SEED-SOWER.—Frederick H. Manny, Rockford, Ill.

Claim.—1. A cylinder box provided with triangular receiving and discharging openings, as described, for the purpose set forth.

2. A seed-cylinder, having its cells connected by grooves, when said grooves are located at the end of the cells, and used in connection with a triangular opening, used in the manner described, and for the purpose set forth.

3. The combination of a cylinder box having triangular openings above and below, with a cylinder having connected cells, when arranged as described, for the purpose set forth.

103,761.—COMPOUND FOR CATTLE-FOOD.—William Marsden, Newburg, N. Y.

Claim.—A compound for cattle-food, made of corn meal, St. John's bread, fenugreek, and gentian, mixed together, substantially in the manner and about in the proportion herein set forth.

Also, a compound, made of all the ingredients herein named, and mixed together, substantially as and about in proportion specified.

103,762.—MACHINERY FOR MAKING BARREL-HEADS.—William Mickel, Oneonta, New York, assignor to James T. Marble, Theodore P. Emmons, and Lester S. Emmons.

Claim.—The arrangement of the slide J provided with reverse beveling cutters h h, the sliding block G, and transverse slide H, with its cutter *g*, the lever I, the face-plate E, and clamp F, the whole being constructed and operating essentially as specified.

103,763.—RATCHET-LEVER.—Henry W. Millar, Utica, N. Y.

Claim.—The detachable lever, consisting of the handle A, hooked end D, and spring pawl E, in combination with the ratchet C and its supporting-shaft B, when constructed and arranged to operate substantially as herein described.

103,764. — HAND PUNCHING-MACHINE.—Gardner C. Miller, Rockford, Ill.

Claim.—1. The improved machine, consisting essentially of the base A, standards B *b*, block C, arms *d d*, joints D D, plunger E, lever F, and arms G, when combined as described, for the purpose set forth.

2. The arrangement of the vibrating cap C, frame *b b*, and toggle-arms *d d*, as described, for the purpose set forth.

103,765.—TUBULAR-ARCH BRIDGE.—Thomas W. H. Moseley, Boston, Mass.

Claim.—1. The arch-tube A, of quadrangular section, constructed of flanged plates, combined with a diaphragm-plate B, substantially as described.

2. The diaphragm-plates B and suspension-bars D, combined with each other, and with the arch A and chord-bars E, substantially as set forth.

3. The diaphragm-plate B, foot-plate C, and shoe L, when connected and arranged to act as described.

4. The combination and arrangement of the arch A, foot-plate C, shoe L L' and chord-bars E E, substantially as and for the purposes specified.

5. The diagonal braces O O, constructed and applied substantially as herein stated, in connection with the arch A, plate B and chord-bars E.

103,766.—SHUTTER-FASTENER.—Charles K. Osborn, Dixon, Ill.

Claim.—1. The blind-fastener, consisting of the casing H, angular arm and catch B B', adapted to shut over the counter-catch C, and the spring I within the casing, substantially as described, for the purpose specified.

2. In combination with the blind-fastener, as described, the recess in the lower edge of the sash, to cover the connected catches, for the purpose specified.

103,767.—ANIMAL TRAP.—Dennis J. Owen, Springville, Pa.

Claim.—An animal trap, combining in its construction a case, A, the stationary jaw B, swinging jaw B', weight D, angled lever C, and bait-bar E, substantially as set forth.

103,768. — SECTOR ELECTRO-MAGNET.—Henry M. Paine, Newark, N. J., assignor for one-half to M. S. Frost, New York City.

Claim.—The construction of radial-limbed magnets, substantially as herein described.

103,769. — THRASHING-MACHINE. — Frederick W. Pampel, Frederick, Md., assignor to himself and Thomas H. Schaeffer, same place.

Claim.—1. The cylinder D, having the exterior face of the staves *d d'* rounded and beveled from their longitudinal center to the forward edge of the stave, as shown and described.

2. The grooved or fluted shaker C, furnished with parallel racks h h, with the lower shaker C' and the slide S.

3. The combination and arrangement of the driving-wheel *a* and the pinions *b b'* and *b* with the cylinder D, the shakers C and C', and slide S, the shoe E, screen G, and fan H, all arranged in relation to each other, substantially as hereinbefore described and for the purposes set forth.

103,770. — INNER SOLE FOR BOOTS AND SHOES. — Edward W. Parish, Boston, Mass., assignor to himself and John Parish, same place.

Claim.—The application of one or more elastic tubes D E to the inner sole of a boot or shoe, for the purpose set forth.

Also, an inner sole, provided with perforations *a b*, perforated plates B C, elastic tubes D E, and with or without a covering, G, substantially as and for the purpose set forth.

103,771.—HAY-SPREADER.—Henry L. Perking, Kinsman, Ohio.

Claim.—The arrangement of the adjustable lever D, (pivoted in the stud-axles C,) having the eccentric guides K, and reel-shaft bearings attached thereto, and the reel F having pivoted bars F' and crank-arms J, all constructed and operating substantially as set forth.

103,772.—METAL TIP FOR BOOTS AND SHOES. Manasseh Pettengill, Le Roy, Minn., assignor to himself and Solon Jonson, Omro, Wis.

Claim.—As a new and improved article of manufacture, the tips C provided with wires D D, and applied to boots and shoes, substantially as described.

103,773.—VALVE-COCK FOR HYDRANTS.—Solomon Pfieger, Reading, assignor to himself and James Shoemaker Pfieger, Tamaqua, Pa.

Claim.—1. A valve-cock, consisting of a casing, A, having a passage, *b*, and a conical valve, B, having an opening, *c*, the valve and casing being fitted together and arranged in respect to each other, substantially in the manner described, so that the pressure of water or other fluid shall act directly upon the casing or valve, and have a constant tendency to force the latter tightly in its seat.

2. The lip *i*, arranged on the casing A, in respect to the opening *h*, in the valve, as specified.

103,774.—APPARATUS FOR PLAYING GAMES. Hiram Plumb, Philadelphia, Pa., assignor to himself and William A. Drown, Jr., same place.

Claim.—The employment, in connection with a spherical polyhedron, constructed substantially as described, of a table or board with spaces having figures, letters, or other characters corresponding with those of the polyhedron.

103,775.—NUT-LOCK BOLT.—Treat T. Prosser, Chicago, Ill.

Claim.—As a new article of manufacture, a screw-bolt, constructed with a concavity in its threaded end, substantially as and for the purpose set forth.

103,776. — SCREW-THREADING MACHINE.—Treat T. Prosser, Chicago, Ill.

Claim.—1. The improved disks, constructed substantially as set forth, having recesses cut transversely across their thread-forming faces, substantially as and for the purpose set forth.

2. Said improved disks G G', constructed substantially as described, arranged to revolve in parallel planes, upon shafts set in different horizontal planes, substantially as set forth.

3. The arrangement of the said improved disks G G', in relation to one another, and also to the guides H H, substantially as and for the purpose set forth.

103,777, antedated May 19, 1870.—PLOW.—William Smith Rabb, Winnsborough, S. C.

Claim.—1. The combination of the slotted beam A, two standards B, pivoted bar F, roller E, and handles C, with each other, substantially as herein shown and described, and for the purpose set forth.

2. The combination of the spring catch G and hook H with the beam A, handles C, pivoted bar F, and standards B, substantially as herein shown and described and for the purpose set forth.

103,778.—CAR-SPRING.—Frederic W. Rhinelander, New York, N. Y.

Claim.—A spiral nest spring, provided at one or both ends with a plate or plates applied to and secured upon the same, so as to form an even bearing-surface, substantially as shown and described.

103,779. — CORN-HARVESTER. — Jacob E. Rice, Moline, assignor to himself and Archibald A. Rice, Chicago, Ill.

Claim.—1. The combination of the interlocking reel *e* and picker C', when arranged to operate in conjunction, substantially in the manner described, for the purpose specified.

2. The combination of the guard I I *i* with the reel *e* and picker C', substantially as described, and for the purpose specified.

3. The combination and arrangement of the box A, fingers H H, picker C', reel *e*, guards I I *i*, arms J J J J, and tongue K, substantially as described, and for the purpose set forth.

4. The arrangement of the drive-wheel *a'*, pinions D D', shafts C and E, picker C', and reel *e*, substantially as described and for the purpose specified.

103,780.—NUT-LOCKING WASHER.—Robinson Rutter, Vallejo, Cal.

Claim.—The combination in a nut-lock of a flanged lock-strap for the head of a bolt, a grooved or indented lock-strap for the screw-end of a bolt, and a flanged washer against which the nut is placed, said washer being forced into the lock-strap, all substantially as set forth.

103,781. — LOCK FOR TRAVELING-BAG. — Joseph B. Sargent, New Haven, Conn.

Claim.—The device for securing traveling-bags to seats or other articles, consisting of a chain, C, with a cross-bar, *d*, attached to the bag, and operating in the manner described.

103,782.—SEWING-MACHINE CASTER.—Joseph B. Sargent, New Haven, Conn.

Claim.—The yoke B, supporting the wheel C, pivoted or hinged to the yoke A, and combined with

the set-screw *d*, for the adjustment of the wheel, substantially as set forth.

103,783.—PULLEY FOR WINDOW-SASH.—Zephaniah E. Sawtelle, Boston, Mass., assignor to himself and Thomas N. Stowell, same place.

Claim.—As a new or improved manufacture, the sash-pulley having its spindle of glass and made as described, when the case is formed with sockets to receive the ends of the spindle and project more or less across them, substantially in manner and for the purpose or purposes as explained.

103,784.—FLOUR-BOLTING APPARATUS.—Louis C. A. Schmidt, Tiffin, Ohio.

Claim.—1. The stationary head I, surrounding the mouth of the conductor H, and placed within the end of the bolt, substantially as and for the purposes herein set forth.

2. The arrangement of the bolt B, shaft C, head I, conductor H, toothed wheel J, and inclined plane K, all substantially as and for the purposes herein set forth.

103,785.—HOSE-COUPLING.—George Sewell, Brooklyn, N. Y.

Claim.—1. A hose-coupling, formed by means of a tubular portion with segmental flanges, in combination with a locking-ring, with corresponding flanges in the form of inclined planes, substantially as described.

2. The parts A A, with segmental flanges C C, in combination with the collars B B, having corresponding flanges D D, substantially as described.

103,786.—CONSTRUCTION OF CHAIRS.—Henry I. Seymour, Troy, N. Y.

Claim.—The forming and bending the seat-frame for the cane-bottom, as shown, in combination with the bent or curved brace-pieces A and A′, and with the bent or curved back-pieces B and D, each being constructed and arranged in the manner substantially as herein described and set forth.

103,787.—HAT-BLOCKING MACHINE.—Julius Sheldon, New York, N. Y.

Claim.—1. In a hat-blocking machine, double-jointed levers, so mounted and attached as to give centrifugal motion to the clamp, substantially as set forth.

2. In combination with a hat-blocking mechanism, a banding-ring, so arranged as to be capable of a pumping or reciprocating motion.

3. An oval-shaped tip-piece, Q, in combination with levers R R, for giving an oval shape to the tip of the hat.

4. The combination of clamps P P′, levers T *y*, and banding-ring B, all operating together in the manner and for the purposes set forth.

5. The combination of the reciprocating banding-ring B and clamps P P′, operating in the manner and for the purposes set forth.

6. In combination with hat-blocking mechanism, the crank *c*, shaft *c′*, and geared wheels *i* and *j*, for the purpose of adjusting the height of crown to the hat, substantially as shown.

103,788.—WEATHER-STRIP.—Miles H. Skiff, Westfield, N. Y.

Claim.—The strip C, plate D, cap *d*, spring rods D′ D′, cam-lever E, having flanges or lips *e e′*, sliding bar F, and button or pin *a*, when the same are combined and arranged as set forth.

103,789.—HORSE HAY-RAKE.—Solomon P. Smith, Waterford, N. Y.

Claim.—1. In connection with a tilting and carrying frame, inclining upward and frontward, the elevating-lever N, arranged in relation to the fixed foot-rest J, as described, so as to perform the functions of a hand and foot-lever to lift and hold up the teeth and to hold them down, as herein shown and described.

2. The arrangement of the single foot and hand L-shaped lever N, the fixed foot-rest *j*, the stops *i* and *n*, the link M, the inclined hinged tilting and carrying frame, and seat P, as herein shown and described.

103,790.—APPARATUS FOR RECTIFYING SPIRITS.—Luke S. Snediker, New York, N. Y., assignor to himself, William Bassett, and James Sharkey, same place.

Claim.—1. The tubular shaft B, provided with the hollow agitating-arms and branches for the purpose of conducting steam into the liquor which it agitates, as set forth.

2. In a rectifying apparatus, the application of steam to charcoal, for the purpose and in the manner herein set forth.

103,791.—BROOM-HEAD.—William C. Spellman, Providence, R. I.

Claim.—The broom-head herein described, consisting of the detached metal clasp E, hooked together at *e*, the bifurcated rod D, provided at one end with hooks engaging with the clasp E, and at the other end with a screw-threaded stem, the cap B, cup *c*, and handle A, all combined and arranged in the manner and for the purpose specified.

103,792.—BOOT AND SHOE-HEELING MACHINE.—William F. Spinney, Lynn, Mass., assignor to Gordon McKay, trustee.

Claim.—For use in a machine for nailing heels to boots or shoes from the outside, the combination of the plate *w′* with the piece which presses upon the lift through which the nails are driven.

Also, the construction of said plate with a register-gauge, when said plate is provided with means for registering its position on the piece *j*, or the driver-block.

103,793.—STEAM-GENERATOR.—Charles Spring, Hyde Park, and Andrew Spring, Weston, Mass.

Claim.—In combination with the main fluid-holding pipes, the auxiliary pipes *r*, or their equivalents, substantially as described.

Also connecting two or more series of pipes having such auxiliary flues, by lateral flues *t u*.

Also, in combination with the auxiliary pipes *r*, the hand-holes and plugs for cleaning the flues, substantially as described.

Also, in combination with the auxiliary pipes *r*, the dampers *w x*, for changing the current through the flues, substantially as described.

103,794.—TURBINE WATER-WHEEL.—Bradford Stetson, Uxbridge, assignor to himself and Elmer Townsend, Boston, Mass.

Claim.—The combination and arrangement of the vertical and horizontal sets of adjusting screws *r w* and their supports *p q* with the wheel-frame H, and the step-supporter or cross I, made with grooves, arranged in its ends, as set forth.

Also, the arrangement and combination of the operative gear and its gate-connections *f* with the turbine E, the gate-ring D, the water-directing wheel F, and the wheel-frame H, having a slotted cap-plate, as described.

103,795.—BLIND-FASTENER.—Charles E. Struck, New York, N. Y., assignor to himself and James Twamley, same place.

Claim.—A blind-fastener, adapted to interlock with or between the halves of the hinge, by passing over the pintle, and being secured by lugs to the blade of one-half of the hinge, and provided with a permanent stop and swinging latch for locking the blind when open, as set forth.

Also, in combination with such a fixture, a bolt, for securing the shutter when closed, arranged and opened as described.

103,796.—HARVESTER-DROPPER.—J. Oscar Taber, Salem, Ohio.

Claim.—1. The combination of arm D¹, which carries the platform, link, or chain F, and wing-board or fender B, arranged and operating substantially as set forth.

2. The combination of arm D¹, adjustable socket G′, rib or head G, and set-screw *g′*, whereby the platform may be raised or lowered, while at the same time a proper inclination of the teeth or slats *a* toward the fender B may be maintained.

3. The combination of arm D¹, fender B, chain or link F′, and adjustable stop *f*.

103,797.—SHUTTLE FOR SEWING-MACHINES.—William H. Thayer, Thomaston, Conn.

Claim.—The shuttle herein described, having the recess B and adjustable stop and tension-spring, when all arranged for operation as shown and described and for the purposes specified.

103,798.—ELECTRO-MAGNETIC ENGINE.—Jacob Porter Tirrell, Charlestown, assignor to Henry A. Clark, Boston, Mass.

Claim.—1. The sets of magnets placed on an inclination, so that their inner ends are in line parallel to the radii of circles described by the armatures in turning on the axis, substantially as described.

2. The double cranks, in combination with the armatures D D¹, oscillating in the spaces formed by the series of magnets, substantially as and for the purpose described.

103,799.—TREATING FABRICS TO RENDER THEM WATER-PROOF.—Charles Toppan, Wakefield, Mass.

Claim.—1. The process of treating fabrics with the mixture of paraffine, naphtha, and oil product, as before described.

2. The process of treating fabrics with the mixture of naphtha and amorphous paraffine, as before described.

3. As a new article of manufacture, the above-described compound of paraffine, naphtha, and oil product.

4. As a new article of manufacture, the above-described compound of naphtha and amorphous paraffine.

5. As a new article of manufacture, the fabric, article, or substance so treated with either of the above-described mixtures.

103,800.—COMPOSITION FOR EXTINGUISHING FIRE.—William P. Van Deursen, Cincinnati, Ohio, assignor to himself and William C. Davis, same place.

Claim.—The use or employment, for extinguishing fires, of glycerine, either with or without water, in combination with carbonic-acid gas, or its equivalent, under pressure, substantially as set forth.

103,801.—COMBINED DITCHING AND TILE-LAYING MACHINE.—Oliver W. Voorhis, Smith H. Mapes, and William M. Voorhis, Lawrence, Ind.

Claim.—1. The cutter B B′, shoe A, upright G, and adjustable wings D, all constructed and arranged substantially as and for the purpose set forth.

2. The tile-laying device, composed of the adjustable plates E and inclined slide M, attached in the rear of the ditcher, substantially as and for the purpose set forth.

103,802.—CHERRY-STONER.—John N. Webster, Peoria, Ill.

Claim.—The vertical punchers A, brace *d*, knob *f*, guides *h* and *g* of standard C, ribbon-spring B, arm *i*, cup or reservoir F, and rubber rings *e e*, constructed, arranged, and operating substantially as described.

103,803.—CHURN.—Irving E. Weston and Alvin Streeter, Winchendon, Mass.

Claim.—In combination with a barrel-churn, provided with the dasher A, having rectangular beaters C, the shaft B, provided with flat places *b*, and neck *a*, the slotted plate D, and the bearing-plate E, provided with slotted slide *z*, and closed recess *c*, when constructed and arranged to operate substantially as shown and described.

103,804.—FEEDING PULVERIZED FUEL TO METALLURGIC AND OTHER FURNACES.—James Davenport Whelpley and Jacob Jones Storer, Boston, Mass.

Claim.—1. The use and application of the within-described mechanism for the purposes described.

2. The paddle or fan, with crenated or indented edges, and reversible on a single bolt for pulverising-fans and mills.

3. The above-described collecting and returning-chamber, expanded upward and covered at the top, and the wire-gauze diaphragm therein, in combination with the cylinder or fan-case, substantially as described.

103,805.—BRICK-MACHINE.—Franklin Whitcomb, Chicago, Ill.

Claim.—1. The combination of the sweep C, lever G, segmental pulley R, with chain *r*, and forked arm P, when constructed and arranged substantially as herein described, for operating the plunger for filling the molds, as set forth.

2. In combination with sweep C, pulley R, with chain *r* and arm P, chain *t*, lever T, chain *u*, shaft S with pulleys *c′* and *d′*, chains *q* and *l′*, weight *h*, and sliding head U, when constructed and arranged to operate substantially as herein described, for the purpose of carrying the empty molds automatically into the machine.

3. The combination of the sweep C, shaft B with arms *y*, rock-shaft W with arms *b* and *z*, rock-shaft *f* with arms *c*, *g*, and *i*, rods *a′*, weight *h*, and sliding frame *l*, when constructed and arranged to operate substantially as herein described, for the purpose of moving the molds forward automatically, as set forth.

4. The slotted head of the plunger K, with pin and roller therein, for adjusting the lever G, in combination with the adjustable arm P and chain *r*, when constructed and arranged to operate as herein described, for the purpose of adjusting the vertical movements of the plunger, as set forth.

5. The adjustable arms *b* and *z* on the rock-shaft W, in combination with the adjustable arms *y* on the shaft B, with their connections, when constructed and arranged substantially as herein described, for the purpose of adjusting the movements of the sliding frame *l*, as set forth.

103,806.—CLOVER-MACHINE.—David Whiting, Ashland, Ohio.

Claim.—1. The combination of the thrashing-cylinder 10, slatted separating-apron 19 18 19, slatted separating-platform 25 25, and lower apron-roller *b* 49, said apron-roller being arranged immediately in the rear of the thrashing-cylinder, and said slotted separating-platform extending up the lower inner end of the separating-apron, substantially as and for the purpose herein specified.

2. The combination of the slatted separating-platform 25 25, slatted separating-apron 19 18 19, lower apron-roller *b* 49, thrashing-cylinder 10, and hulling-cylinder 13, said thrashing-cylinder being arranged immediately above and in front of the hulling-cylinder, and said apron-roller being arranged immediately behind the thrashing-cylinder, and directly above the hulling-cylinder, and the said slatted separating-platform extending up to the lower inner end of the separating-apron, substantially as is herein specified.

3. Extending the main driving-belt R over both the pulley M on the thrashing cylinder-shaft 8, and the pulley P on the hulling cylinder shaft 9, so that said belt serves as the means for driving both cylinders as well as for communicating the power to the machine, as herein specified.

4. The combination of thrashing-cylinder 10, hulling-cylinder 13, the slotted separating-apron 18 19, slatted separating-platform 25, and fanic-convey-

ing platform S, the several parts being arranged and operating substantially as and for the purpose specified.

5. The slat 19, provided with the notch 32, and with or without the notches 34 35, when used in combination with the apron-belt 18, provided with the loop 30, substantially in the manner and for the purpose specified.

6. The combination of the slatted separating-apron 18 19, slatted separating-platform 25, and adjustable apron-roller i 31 33, provided with the apron-belt drums 49 49, and the circular disks 31 31, arranged between the slots 25 25 of the separating-apron, as is hereinbefore specified.

7. The conveying-platform S, when so constructed and arranged as to be readily slid back from its ordinary position under the separating-apron 18 19, to allow of the turning up of the separating mechanism, as is hereinbefore specified.

8. The combination of the main bracket 61, provided with nut-cavity 64, with inner flange 78, tightening-screw 62, with nut 65 and end block 66, and journal-box 67 with slide-box 68, the several parts being constructed and arranged as and for the purpose specified.

9. As a means of steadying the journal-box 67, in the combination specified in the preceding clause, the guide-rod 63, extending from the frame-piece J through the hole 69, in the lower flange of the journal-box 67, to the main bracket 61, as and for the purpose specified.

10. The combination of the hopper-board T and triangular blocks U U, said board and blocks being so arranged as to be slid back on the side-boards 2 2, to give access to the hulling-cylinder 13, as is hereinbefore specified.

11. The swing-board 14, hinged to the back of the hopper board T, and swinging between the blocks U U, and forming, with the inclined board 15, a hopper for delivering the seed to the sieves for a second cleaning, as hereinbefore specified.

103,807.—Hand Toilet-mirror Frame.—Edward P. Williams, Elizabeth, N. J., and George H. Chinnock, New York, N. Y.

Claim.—The hand toilet-mirror frame, when made of different layers of wood, arranged and glued together, as described, the groove being formed, and the frame cut apart to admit the glass and back, in combination with the metallic spring band, having the ends inserted and held in the socket of the handle, all substantially as described.

103,808.—Hand Toilet-mirror Frame.—Edward P. Williams, Elizabeth, N. J., and George H. Chinnock, New York, N. Y.

Claim.—The hand toilet-mirror frame, when made of different layers of wood, arranged and glued together as described, the groove being formed and the frame cut apart to admit the glass and back, and then secured together, having the handle attached over the joint or cut out with the frame, all substantially as described.

103,809.—Toilet-mirror and other Frames.—Edward P. Williams, Elizabeth, N. J., and George H. Chinnock, New York, N. Y.

Claim.—The toilet-mirror frame, when made of different layers of wood, arranged and glued together as described, the groove being formed and the frame cut apart to admit the glass and back, and then secured together, all substantially as described.

103,810.—Candle-Lamp.—Thomas Scott Williams and Freeman Augustus Taber, Boston, Mass.

Claim.—1. The combination, with the candle and a wick-tube passing wholly or partly through the same, of a wick moving independently of the said tube, so that it may be withdrawn therein or into the softened part of the candle, substantially as and for the purposes shown and set forth.

2. The combination, with the candle, of a wick-tube having a movement independently of the wick which it incloses, so that said tube may may be interposed at any time between the wick and candle, substantially as and for the purposes set forth.

3. The combination, with the wick-tube and wick of a tubular candle, of instrumentalities for elevating the same, and feeding the wick as herein described, so as to raise the wick-tube and the wick either separately or simultaneously and together, as shown and set forth.

4. Applying to the orifice of the candle-supporting plate or device, a trumpet-shaped or flaring mouth or guide for insuring safe entrance of the wick to the bore of the candle.

5. The application of the wick-tube to a candle-holder or lamp for burning candles, in such manner as to permit of its elevation or depression with respect to the wick and candle, for purposes before stated.

6. The combination the barrel *p* with its wick-tube *n*, the drum *s* with its sectional nut or toothed plates *w w w*, and spring a^1, or its equivalent, the male screw or carrier *v*, and the wick b', with or without its plate or carrier *u*, the whole being organized as before set forth.

7. The combination of the cup *e*, supported upon the spring *f*, and guided by the posts *h h*, the annulus *i*, and the cap *j*, the same being constructed, arranged, and operating as explained.

8. The construction and arrangement, substantially as herein described, of the devices for feeding and suddenly lowering the wick, for the purpose stated.

9. In a candle-holder or lamp containing a flat wick, the employment, in combination with the object which supports such wick, and with the device which upholds and operates the candle, of a spline and groove connection, or its equivalent, for properly presenting the wick to the bore of the candle and to the flame-orifice of the "cone."

10. The spline and groove connection, or its equivalent, between the candle-supporting device and the outer shell of the burner or lamp, for the purpose of maintaining the proper relationship of the two, and guiding the former correctly into the latter, for purposes before set forth.

103,811.—Egg-Beater.—Turner Williams, Providence, R. I., assignor to himself and E. D. Goodrich, Cambridge, Mass.

Claim.—The beaters L L′ and K K′, arranged and operating as described, and for the purpose set forth and shown.

103,812.—Handle for "Edge-Keys."—Richard A. Woodberry, Beverly, Mass., assignor to himself and Francis Norwood, 2d, same place.

Claim.—The handle C with its sleeve D, constructed substantially in the manner and for the purpose described.

103,813.—Water-Governor.—Amos W. Woodward, Rockford, Ill.

Claim.—1. A disk, D^1, fixed upon a sliding shaft, as arranged in relation to friction-pulleys G, loose upon said shaft, and with pinions *g′*, operating the gate, substantially as described, for the purpose set forth.

2. The disk D^1, provided with inclined edges, as shown, in combination with the friction-pulleys G of shape shown, for the purpose set forth.

3. The compound adjustable lever L M, when combined with the governor-sleeve *k* and shaft D, as described, for the purpose set forth.

4. The governor described, consisting essentially of the sliding shaft D, with disk D^1, friction-pulleys G G, pinions *g′ g′*, shaft J with gear-wheels *j j*, gear-wheels j^1 j^2, coupling-sleeve I, with gear-wheel *i*, braces H, governor-shaft K with its connections, and compound adjustable lever L M, when combined as described, for the purpose set forth.

103,814.—Fountain.—Arthur P. Yates, Syracuse, N. Y.

Claim.—1. The flexible reservoir R, combined with a fountain in such a manner that the weight of the fountain-basin or basins compresses the reservoir, and thereby produces the jet of water, substantially as herein specified.

2. The self-acting valve V, in combination with the flexible reservoir R and movable compressing-basin or basins B C, substantially as and for the purpose herein specified.

3. The same parts in combination with the rack *a′* and pinion H, substantially as above set forth.

103,815.—Horse Hay-Rake.—Eli Zimerman, Pamelia Four Corners, N. Y.

Claim.—1. The combination with the rake-teeth and the reed of the system of levers, arranged substantially as herein described, to effect the movements of the reed, and consequent elevation or lowering of the teeth.

2. In a rake having the reed and teeth combined with a system of operating levers, arranged as described, the combination of the swinging arms which hold the reed, with their supporting-standards and series of sockets formed therein for the reception of the pivots of the said arms, whereby the reed and teeth may be set at any desired distance from the ground, as and for the purposes set forth.

103,816.—Device for Closing the Ends of Coat-Sleeves.—Henry F. Herkner, New York, N. Y.

Claim.—The strap B, with enlarged end, *b*, passing through the buckle C, or its equivalent, and attached to the end of the sleeve, for the purpose of securely closing the end thereof, as herein shown and described.

103,817.—Box Stereoscope.—Silas T. Jennings, Cincinnati, Ohio.

Claim.—1. In the described combination, the revolving arms C C′, the carriage composed of the flanges *k l*, the railway F F′, the springs J J′, the tongued bridge M N, and the rail cover *m*, for the purpose of adjusting a series of stereoscopic views in the focus of two pairs of lenses, as shown and set forth.

2. A sloping railway F F′, on which the frames containing the pictures, when released by the carriage, traverse the box by the force of gravity, automatically returning to their original position in contact with the springs J J′.

3. The wire frames in which pictures are mounted, having extended flattened ends or tongues H H for retention within the carriage, except when in the liberating positions herein designated for the purpose, and hooks I I′ to embrace the rails and retain the pictures upon them.

4. The carriage, composed of the two curved flanges *k l*, substantially as shown and set forth.

5. The tongued bridge M N, or its mechanical equivalent, for steadying the lower edge of the picture, when at the proper focal position, and preventing vibration.

103,818.—Spring Weighing Apparatus.—Andrew Morse, Skowhegan, Me., assignor to himself and Thomas Odiorne, Cambridge, Mass.

Claim.—The combination of the two levers A B, their connecting-rods C D, the hangers E F, index pointer I, the scale H, and the spring G or its equivalent, the whole being arranged and applied together, substantially in manner, and to operate as and for the purpose as explained.

103,819.—Door-Latch.—John H. Vickers, Norwich, Conn., assignor to William A. Aiken, same place.

Claim.—1. The pivoted hand-lever of a pull-plate latch, provided with an arm, J, on its upper side, arranged so as to act between a projection, *e*, on the latch E, and a fixed guide-boss, G, of the pull-plate, to limit the projection and retract said latch horizontally, as herein shown and described.

2. The hand-lever H of a drawer-pull latch, made with a stop or shoulder, *m*, in such relation to the elevated stem of the latch as that the free end of the lever, in being elevated, will come in contact with said elevated stem, and thus limit the retraction of the latch, as herein shown and described.

3. The hand-lever H, having its hub I mounted with bearings *d d′*, directly within the plate-pull D, instead of within the door, whereby the advantage of a short firm bearing for the lever is obtained, as herein shown and described.

4. The combination with the pull-plates D and M of the operating hand-levers H and N, the inclined acting arm J, the latch E, with its projection *e*, the stop or boss G, spring K, and the short fixed hub I and spindle O, locked in position as described, the several parts being constructed, arranged, and operating as herein specified.

REISSUES.

3,998.—Machine for Forging or Rolling Screw-Threads upon Metal Bolts.—John Cochrane, Wall township, N. J.—Patent No. 63,364, dated April 2, 1867; antedated March 24, 1867.

Claim.—1. The combination with each other of two rolls or revolving dies, having on their peripheries projecting threads of proper form and arrangement to produce or make the required screw upon the heated blank, and having a denuded portion of lower surface in either or both of said rolls or revolving dies, so as to permit the introduction of the blank bolts between them at the proper moment for that purpose in each revolution, substantially as herein described.

2. The combination with each other of two rolls or revolving dies, having screw-forming threads on their peripheries, so arranged, constructed, and operated as to produce or make screws upon metal blanks or bolts of uniform diameter, or tapering, or gimlet-pointed, substantially as described.

3. The combination with each other of two rolls or revolving dies, having annular threads or portions thereof for making screws upon metal blanks or bolts, and so inclined or placed, respectively, as to conform to the angle of such screw upon its opposite sides, and so operated as to make screws upon metal blanks or bolts of uniform diameter, or tapering, or gimlet-pointed, substantially as described.

4. The bolt-threading device, consisting of two rolls or revolving dies, with annular threads arranged in relation to each other, so that said annular threads shall conform to the rake of the required screw, substantially as described.

3,999.—Steam-Condenser.—John Houpt, Springtown, Pa.—Patent No. 102,005, dated April 19, 1870.

Claim.—1. The arrangement and combination of a primary condenser and a secondary condenser with an intervening valve, for the purpose of dividing the exhaust steam preceding each stroke of the piston of a steam-cylinder into two parts, in such a manner as to retain the smaller portion of the high steam of the exhaust within the primary condenser A for condensation, and the consequent production of a more perfect vacuum in front of the piston in the said cylinder, substantially as hereinafter set forth.

2. In combination with the primary condenser A, the secondary condenser B and the valve C, arranged as described, the employment of a cold water jet-spreader, *b′*, in the secondary condenser B, the same being arranged to operate therein substantially as and for the purpose hereinbefore set forth.

3. In combination with the primary condenser A, the secondary condenser B and the valve C, arranged as described, the employment of the overbalanced valve *g′*, arranged to operate between the space *b″* in the secondary condenser B, and the escape-pipe H, substantially as and for the purpose hereinbefore set forth.

4. The primary condenser, consisting of the chamber A, the cold-water-jet spreader K, and the valve

C, operating together as and for the purpose described, in combination with any suitable hot well or receiver of the water of condensation and the steam coming from the said primary condenser, so that the water in said hot well or receiver will be heated for supplying the boilers or steam-generators of a land or fresh-water engine, and the surplus steam allowed to escape.

4,000.—STEAM-GENERATOR.—William Lowe, Bridgeport, Conn.—Patent No. 65,405, dated June 4, 1867.

Claim.—The combination of two apertures, one on each side of the combustion-chamber B, to admit the products of combustion from opposite sides, and to bring them in conflict in the center of said chamber with an air-inlet aperture, located relatively as described, and operated to inject a current of air upon the gases while in a state of disturbance, all as and for the purpose specified.

4,001.—CONSTRUCTION OF SAFES.—Francis H. Williams, Syracuse, New York.—Patent No. 85,978, dated January 19, 1869.

Claim.—1. The safe or vault, with partition braces A in its chamber of deposit, whether such safe or vault be constructed of one or more pieces, substantially as described.

2. The fillets *a* in the walls of a safe, at the interior angles thereof, by casting its interior corners or angles in the form shown.

3. The combination of hinges D D, each having two or more joints, whereby the door of a safe or vault can be wholly supported and moved into and out of its seat, with a door having one or more tenons *g' g'*, on each of its four sides, there being also corresponding grooves or recesses in the frame B, when such grooves and tenons are made of such form and so closely fitting as to render it impossible for such door to move around single-jointed hinges at one of its edges, the whole constructed and operating substantially as described.

4. The hinges E, wholly upon the inside of the door and door-frame of a safe or other structure, substantially as described.

4,002.—NEEDLE FOR SEWING-MACHINES.—Mary P. Carpenter, San Francisco, California.—Patent No. 99,158, dated January 25, 1870.

Claim.—1. The split needle constructed as herein described, having the flattened ends *h h*, projections *b b*, and passage *a* extending below and at one side of the needle and out at the top, as and for the purpose set forth.

2. The clamp *i*, provided with the slot *c d*, opening *e*, and screw *f*, when the parts are arranged relatively to each other as described, for the purpose set forth.

3. The combination of the needle-arm, provided with the clamp *i*, the opening *e*, and slot *d*, with the needle having the passage *a* and ends *h*, the whole constructed and arranged to operate substantially as described, and for the purpose specified.

4,003.—TWINE-CUTTER.—Thomas B. Doolittle, Bridgeport, Conn., assignee of George C. Taft.—Patent No. 99,494, dated February 1, 1870.

Claim.—1. A twine or thread-cutter, composed of a suitable cutting device, in combination with a pin or hook for the attachment of the instrument or article, substantially as set forth.

2. A yielding knife-edge or cutter, in combination with the plate or shield and pin or hook-fastening, as and for the purposes described.

3. The cutting device *d*, having a series of cutting-edges, and operating substantially in the manner hereinbefore described, for the purpose set forth.

4. A shield or plate, having a fastening-hook or pin formed of one piece of sheet metal and bent into shape, as shown and described.

4,004.—HEATING-STOVE.—John M. French, Jr., Rochester, N. Y., assignee, by mesne assignments, of David L. Stiles.—Patent No, 40,663, dated November 17, 1863.

Claim.—The combination and arrangement of opposite flues *e e'* in a cylinder body, B, so as to form an oblong fire-chamber, D, within and separated by curved flue-plates C C' therefrom, one flue, *e*, descending from the upper part of said fire-chamber to a flue-space, *f*, in the bottom of the stove, and the other flue, *e'*, ascending from said flue-space to the smoke-pipe, substantially as and for the purposes herein specified.

Also, the construction of the curved flue-plate C, with a bent perforated top, *d*, and draught-pipe *h*, all cast in one piece, for the purposes set forth.

Also, the register G, having its air-holes *i i* only in the upper portion and in the outer edge of the circle, and its closed part *m* situated opposite the draught-opening of the stove, substantially as and for the purposes herein set forth.

4,005.—CAR-VENTILATOR.—M. T. Hitchcock, Springfield, Mass.—Patent No. 74,534, dated February 18, 1868.

Claim.—1. The hub *b* of the sliding valve, constructed as described, so that both a sliding and an oscillating motion can be imparted to the valve, as set forth.

2. Providing the case or shell A, in which the sliding-valve D moves, with abutments F F, which are so arranged that the valve, when striking against one of the abutments, will be brought into an inclined position, substantially as and for the purpose herein set forth and specified.

3. The shell or case A, when provided with the abutments F F, in combination with the sliding oscillating valve D and with the channel B, all made so that the lower edge of the valve does not come in contact with the bottom of the shell, and all operating substantially in the manner herein shown and described.

4. The combination of a cylindrical, or partially cylindrical shell or case, A, with a quadrangular or prismatic side attachment portion B, constructed substantially as herein described.

4,006.—COVER FOR STOVE.—Dennis G. Littlefield, Albany, N. Y.—Patent No. 53,251, dated March 13, 1866.

Claim.—A detachable cover and its seat, respectively provided with a pin and an opening, so constructed as to engage or lock with each other, for the purpose of hinging and securing a cover upon an open-topped vessel, substantially as described.

4,007.—THRASHING-MACHINE.—John O'Ferrall and Thomas L. Daniels, Piqua, Ohio, assignees of A. B. Crawford.—Patent No. 29,865, dated September 4, 1860.

Claim.—1. The combination, substantially as herein shown, of the folding straw-stacker L, with a thrashing-machine, so that the former may be transported from place to place without being detached from the latter, as herein set forth.

2. The straw-stacker *a*, when made in two or more sections *a a*, hinged together in such manner that the upper section or sections may be extended in line with the lower one for use in connection with a thrashing-machine, or may be folded under the lower section and secured thereto, so as to be capable of being transported without detachment from the machine.

4,008.—HARVESTER.—John G. Perry, Kingston, R. I.—Patent No. 86,584, dated February 2, 1869.

Claim.—1. The arrangement of the vibrating disk E^2, grooved or ribbed spirally at its rear circumferential portion, the toothed working-piece D^2 and the annular ribs *a'*, of the sleeve D^1, clutching with the wheel *d*, whereby the sickle-driving mechanism may be thrown in or out of gear.

2. The arrangement of the spur pinion c^* of the sleeve D^1, clutching the wheel *d*, with reference to the spur pinion b^* of the rake, operating the shaft E, substantially as and for the purpose described.

3. The arrangement of the spiral blades G of the shaft E, with reference to the worm-wheel C', carrying the revolving rakes, whereby the requisite rotary movement is given to the rakes.

4. The arrangement of the cam or eccentric F, with reference to the wheel C', carrying the revolving rakes, connected in pairs by braces F^1, whereby the rakes may be raised or lowered automatically

5. The arrangement of the bearing A', provided on the bracket E^*, attached to the annular axle B of the wheel B^*, with reference to the lower end of the fixed shaft B', having the cam or eccentric F at its upper end, whereby the retention of the cam or eccentric in proper position is secured.

6. The arrangement of the shaft B', worm-wheel C', and operating-wheel G, with relation to the inner end of the platform, so that the raising of the latter shall elevate the rakes at the same time, without throwing them out of gear, in the manner substantially as shown and described.

7. The arrangement of the levers J^1 and J^*, working an arm, I^1, attached to the chain *f'*, lever H^*, and the longitudinal rod H, situated back of the finger-bar, and having attached at either end thereof by an arm, f^{**}, a wheel, I, whereby the lifting of the finger-bar and its attachments is provided for.

8. The arrangement of the tilting bar K^2, and its rod *m*, with reference to the bar G^1, whereby the finger-bar may either be raised or held down, as may be desired.

9. The detachable side pieces m^*, in combination with the friction-rollers M, so as to serve the double purpose of supporting one end of the friction-rollers M, and of retaining the wheel B^* upon its annular axle B, as set forth.

10. The arrangement of the oblique slot *r*, in the bar G^1, with reference to the pin r^1, in the main frame, whereby the finger-bar is enabled to rise vertically.

11. In a two-wheeled harvester, the combination of the grain platform, revolving rake, and reel, inner open or annular drive-wheel, and suitable driving mechanism, supported by the main frame, arranged substantially as described, so that both cutters and rakes may be driven directly through the open wheel.

4,009.—Division B.—SCREEN FOR BASE-BURNING FIRE-PLACE HEATER.—David Stuart and Richard Peterson, Philadelphia, Pa., assignees of David Stuart and Lewis Bridge.—Patent No. 79,275, dated June 23, 1868.

Claim.—The combination, substantially as described, with a top-feeding, base-burning, fire-place stove, of a screen or screens, attached to, but movable on the stove.

DESIGNS.

4,075.—LABEL.—George F. Gantz, New York, N. Y.

Claim.—The design for a label, as shown.

4,076.—SCHOOL SEAT AND DESK.—Charles G. Harington, Northville, Mich.

Claim.—The design for a school-desk standard, as shown.

4,077.—METALLIC BRACKET.—Albert D. Judd, New Haven, Conn.

Claim.—The design of the metallic bracket, as shown and described.

4,078.—TRADE-MARK.—George W. Langhorne, John D. Langhorne, and Nathaniel B. Johnston, Lynchburg, Va.

Claim.—The design for a trade-mark, as described and shown.

4,079.—TRADE-MARK.—George W. Langhorne, John D. Langhorne, and Nathaniel B. Johnston, Lynchburg, Va.

Claim.—The design for a trade-mark, as described and shown.

4,080.—UMBRELLA-STAND.—James C. Sidney, Philadelphia, Pa.

Claim.—The design for an umbrella-stand, as described and shown.

4,081.—CARPET-PATTERN.—Robert R. Campbell, Lowell, Mass., assignor to Lowell Manufacturing Company, same place.

Claim.—The configuration of the design hereunto annexed, when made by being inwrought into two-ply, ingrain, or other carpeting, in the form similar to the photographic print accompanying this specification.

4,082.—CARPET-PATTERN.—Robert R. Campbell, Lowell, Mass., assignor to Lowell Manufacturing Company, same place.

Claim.—The configuration of the design hereunto annexed, when made by being inwrought into three-ply, ingrain, or other carpeting, in the form similar to the photographic print accompanying this specification.

4,083.—CARPET-PATTERN.—Robert R. Campbell, Lowell, Mass., assignor to Lowell Manufacturing Company, same place.

Claim.—The configuration of the design hereunto annexed, when made by being inwrought into two-ply, ingrain, or other carpeting, in the form similar to the photographic print accompanying this specification.

4,084.—CARPET-PATTERN.—Robert R. Campbell, Lowell, Mass., assignor to Lowell Manufacturing Company, same place.

Claim.—The configuration of the design hereunto annexed, when made by being inwrought into three-ply, ingrain, or other carpeting, in the form similar to the photographic print accompanying this specification.

4,085.—CHANDELIER.—Pietro Cinquini, West Meriden, Conn., assignor to Bradley & Hubbard, same place.

Claim.—The design for chandelier center and bracket, as fully shown in the accompanying photographic illustration, whether used separately or together.

4,086.—LAMP-BRACKET.—Pietro Cinquini, West Meriden, Conn., assignor to Bradley & Hubbard, same place.

Claim.—The design for bracket, as clearly shown in the accompanying photographic illustration, and with or without the reflector support or socket.

4,087.—MICA CHIMNEY FOR LAMPS.—Calvin Colt and Chester H. Colt, Jonesborough, Tenn.

Claim.—The design for mica chimneys for lamps herein shown and described.

4,088.—HAIR-CRIMPER.—Harriet A. Humphrey, Milwaukee, Wis.

Claim.—The design for a hair-crimper, as described and shown.

4,089.—LAMP.—Rufus Spaulding Merrill, Hyde Park, Mass.

Claim.—The general arrangement and configuration of the parts of a lamp, as herein shown and described.

4,090.—CARPET-PATTERN.—Elemir J. Ney, Dracut, assignor to Lowell Manufacturing Company, Lowell, Mass.

Claim.—The configuration of the design hereunto annexed, when made by being inwrought into two-ply, ingrain, or other carpeting, in the form similar to the photographic print accompanying this specification.

4,091.—CARPET-PATTERN.—Elemir J. Ney, Dracut, assignor to Lowell Manufacturing Company, Lowell, Mass.

Claim.—The configuration of the design hereunto annexed, when made by being inwrought into two-ply, ingrain, or other carpeting, in the form similar to the photographic print accompanying this specification.

4,092.—CARPET-PATTERN.—Elemir J. Ney, Dracut, assignor to Lowell Manufacturing Company, Lowell, Mass.

Claim.—The configuration of the design hereunto annexed, when made by being inwrought into two-ply, ingrain, or other carpeting, in the form similar to the photographic print accompanying this specification.

4,093.—CARPET-PATTERN.—Elemir J. Ney, Dracut, assignor to Lowell Manufacturing Company, Lowell, Mass.

Claim.—The configuration of the design hereunto annexed, when made by being inwrought into two-ply, ingrain, or other carpeting, in the form similar to the photographic print accompanying this specification.

4,094.—CARPET-PATTERN.—Elemir J. Ney, Dracut, assignor to Lowell Manufacturing Company, Lowell, Mass.

Claim.—The configuration of the design hereunto annexed, when made by being inwrought into three-ply, ingrain, or other carpeting, in the form similar to the photographic print accompanying this specification.

EXTENSION.

GEORGE W. HILL, of Olean, N. Y.—Letters Patent No. 14,844, dated May 6, 1856.

"Improved Saw-Mill Dogs."

Claim.—The peculiar form of the ball-block, having a front and back rest or bearing, in connection with the arm G clasping the shaft of the screw C, in the manner and for the purpose described.

Also, the die or dies H and H', in connection with the spring bar I, the rest *e* and the guard *f*, the whole arranged, combined, and operated in the manner herein set forth.

JOHN B. CORNELL, of New York, N. Y.—Letters Patent No. 14,854, dated May 13, 1856.

"Improvement in Continuous Sheet-Metal Lathing Surfaces."

Claim.—A continuous sheet-metal lath surface, formed of united strips or sections, of the shape substantially as herein set forth.

JOHN MAGEE, of Chelsea, Mass.—Letters Patent No. 14,940, dated May 20, 1856; reissue No. 1,355, dated November 18, 1862.

"Improvement in Ventilating Dampers for Stoves."

Claim.—The new combination of the damper *d*, (Figure 3,) smoke-pipe I, and air-inlet *c*, so that the movement of the damper, which diminishes the air-inlet, will increase the opening of the smoke-passage, and that which increases the opening for the smoke will diminish the inlet for air, substantially in the manner and for the purposes above specified.

FREDERICK J. SEYMOUR, of Wolcottville, Conn.—Letters Patent No. 14,887, dated May 13, 1856; reissue No. 1,183, dated May 14, 1861.

"Improvement in Making Brass Kettles."

Claim.—1. The production of kettles and articles of a similar character, by the combined process of stamping, to produce a preliminary shape, and spinning, to complete the ultimate or finished form, substantially as herein described.

2. The new method or process, substantially as herein described, of stamping up vessels by a mode of operation in which the bottom is stamped up first, and the sides are then formed or drawn in, in successive lengths, by means of dies, substantially as hereinbefore set forth; and this I claim whether the vessel be entirely finished by this new stamping process, or whether it be completed by a spinning process subsequent thereto.

EDWARD HEDLEY, of Philadelphia, Pa.—Letters Patent No. 14,914, dated May 20, 1856.

"Improved Shingle Machine."

Claim.—The formation and invention of the endless feeding-bed of beveled slats, so as to give the required taper to the shingle as it passes beneath the knives of the revolving arms, substantially as set forth in the original specification.

D. D. FOLEY, of Washington, D. C., assignee, by mesne assignments, of JAMES M. MILLER.—Letters Patent No. 14,923, dated May 20, 1856.

"Improvement in Surface-Condensers for Steam-Engines."

Claim.—Passing the water of condensation in or upon the main body of the condensing surfaces on its way to the boiler, under the pressure of the steam, and the cold external water on the other portion of the surface, as herein set forth.

JOHN TAGGART, of Boston, Mass.—Letters Patent No. 14,933, dated May 20, 1856.

"Improvement in Excavating-Scoops."

Claim.—Applying one of two dischargers within a pair of scoops, substantially as specified, and so as to operate therewith, or be operated thereby in manner and for the purpose essentially as hereinbefore explained.

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PATENTS.

103,820.—REIN-HOLDER.—John R. Achenbach, Saddle River, N. J.

Claim.—The curved slightly elastic arm A and the curved spring B, attached to said arm, as shown in fig. 2 of drawing, both combined and applied to a dash-board, as and for the purpose described.

103,821, antedated May 30, 1870.—CONSTRUCTION OF HORSE-POWER FOR COTTON-GINS, &c.—James M. Albertson, New London, Conn.

Claim.—In combination with the rafters R R R of a hip-roof, the hollow box B, placed at their intersection and provided with projections or flanges for the support of the same, the space within the box B being suited to the reception and revolution of a vertical shaft, substantially as herein described and for the purpose set forth.

103,822.—SKATE-FASTENING.—Thomas Almond, Fitchburg, Mass.

Claim.—1. A plate, C C, transversely pivoted or otherwise secured to the runner, having the jaw-sockets *d e*, arranged at an oblique angle to the runner, so that the jaws will be caused to close on the boot by the obliquity of their sockets, as set forth.

2. The jaws B, screwed into a pivoted plate C, to be adjustable, substantially as herein shown and described.

3. The heel-plate D D, embracing the runner A, and transversely pivoted thereto, having the serrated plate *c c* in front thereof, and constructed as set forth, to afford a heel-seat where the pressure of the weight and the backward movement of the runner will both tend to hold it firmly in position.

4. The spring *b*, arranged on the pivoted plate C, to hold the jaws B at an angle to said plate, as set forth.

103,823.—DRAWING OFF TALLOW, LARD, &c., FROM RENDERING-TANKS.—John H. Archer, Beaumont, Texas.

Claim.—The combination of the bent or goose-neck pipe G, provided with a stop-cock, *g'*, and the water-pipe J, provided with a stop-cock, K, and check-valve L, with the rendering or pressure-tank A, provided with its ordinary attachments, substantially as herein shown and described and for the purpose set forth.

103,824.—CONDENSER FOR THE MANUFACTURE OF COAL-GAS.—Avery Babbett and William W. Binny, Auburn, N. Y.

Claim.—1. Passing the crude gas through a series of sinuous vertical cases, for the purpose of condensing the same, as above set forth.

2. The inlet and outlet mains, in combination with a series of sinuous condensers, as and for the purpose specified.

3. The hydraulic-seals S S, between the inlet and outlet-mains, in combination with the sinuous condenser-cases, for the purpose and in the manner above set forth.

4. The application and use of a revolving column or columns of gas, for the purpose of expelling therefrom the non-illuminating properties, by means of the centrifugal force generated thereby, substantially as above described.

103,825.—ORE-SEPARATOR.—Hosea Ball, New York, N. Y.

Claim.—1. The cylinder B, having meshes or perforations of varying fineness at different parts of its length, and acting in connection with the necessary ore-carrying spout and water-pipes, to distribute the graded ore to different trunks, substantially as described.

2. The combination of the adjustable valve H with the co-axial cylinder J G F, operating as described, to emit an annular stream of ore against an ascending current of water, for the purpose stated in the specification.

3. The co-axial arrangement of the cylinders J G F, constructed and operating as described.

103,826.—LETTER-BOX.—C. R. Bancroft, Boston, Mass., assignor to C. C. Dickerman and C. W. Munroe, same place.

Claim.—1. The letter-box, so made as that be, sides a receiving slit it has a discharging-aperture which, when the box is fastened to a door frame, is either closed or kept closed by the shutting of the door, when constructed and used substantially as described.

2. The fastening of the letter-box to a door-frame by the peg-slots mentioned, so that when the door is closed the box is firmly held, yet is removable when the door is opened, in manner substantially as described.

103,827.—REMOVABLE CALK FOR HORSE-SHOES.—John D. Barnum, Amenia Union, N. Y.

Claim.—A removable calk having a tenon projection, c^2, at the end of the calk, in combination with a shoe provided with a recess, 4, in the side thereof, in addition to the grooves *a b c*, such recess receiving the projection c^2, which is driven into it to secure the calk, substantially as described.

103,828.—LANTERN FOR STREETS.—Joseph W. Bartlett, New York, N. Y.

Claim.—A lantern, having the glass inclosing the light or flame and the upper portion or dome made in one piece, and with a flange, B, by means of which the glass or lantern is suspended within the frame of a street lamp.

103,829.—TYPE-CABINET.—Chauncey Bassett, Kewanee, Ill.

Claim.—1. The slats *n* and *o* and springs or hinges *t*, in combination with pivoted sliding leaves B and cabinet A, constructed and operating substantially as and for the purpose specified.

2. The arrangement of cabinet A, constructed as shown and described, with divisions *r*, bars E, with projections C C', grooved guides H, pivoted slides or leaves B, furnished with slats *n* and *o*, and springs or hinges *t*, and handles *a*, substantially as and for the purpose specified.

103,830.—MACHINE FOR PARING FRUIT AND VEGETABLES.—Asahel G. Batchelder, Lowell, Mass.

Claim.—The combination and arrangement of the toothed sector F and its operative mechanism, substantially as described, viz, the projection *p'*, the toothed arc *q*, the pinion *v*, the cam *w*, shoulder *x*, hook *y*, and the spring *n*.

Also, the combination and arrangement of the toothed sector F, and its operative mechanism, with the table-gear E and the knife-lever G, its spring and cam, and with the discharger H, provided with mechanism for actuating it, as and for the purpose as explained.

Also, as my invention, an apple-paring machine, composed of instrumentalities, substantially as described, whereby, by whose operation, an apple may be revolved and pared, and subsequently be ejected from the fork of the machine, and the operative parts be restored to their places or normal positions ready for effecting the paring and discharging of another apple.

103,831.—APPARATUS FOR LIGHTING GAS BY ELECTRICITY.—William W. Batchelder, Boston, Mass.

Claim.—1. The combination and arrangement of an electro-generator with a gas-burner or pipe, in such manner that the gas must pass through the electro-generator to said burner, substantially as described.

2. The electro-generator interposed between the base and mouth of the burner, in such manner that one of its sections may have an axial and a partial rotary movement over and upon the stem of said burner, substantially as herein described.

3. The method of operating the upper section of the electro-generator by means arranged beneath the lower section thereof, substantially as herein described.

4. In combination with an electro-generator composed of a horizontal fixed and a movable section, A B, the arrangement of the chain H of the electrical conductor, substantially as herein described.

5. The electro-generating apparatus, clamped in position upon the bracket or gas-pipe C^2 by means of the stem E of the burner and yoke C^1, substantially as described.

6. The combination, in an apparatus for lighting gas by electricity, of the positive and negative plates A B of the electro-generator, the inclosing-sleeve D D', the locking-yoke C, the manipulating-arms I, the conductor F, with its chain H, and the

gas-burner E, the several parts being constructed and arranged substantially as and for the purpose specified.

103,832.—THRASHING-MACHINE.—David C. Banghman, Tiffin, Ohio.

Claim.—1. The arrangement of the cylinder C and fan-wheel E, with relation to each other, as herein shown, with the gearing D B, so that they are made to operate together, in the manner and for the purpose set forth.

2. The pulley F, upon the end of the crank-shaft P, pitman G, lever H, connecting-rod J, crank K, shaft L, and pulley F^1, when combined and operating together as and for the purposes described.

3. The shaft c^2, by means of which the straw-stacker is operated, spur-gears O^1 and O^2, auger O, pulley N, carriers R, and pulley C, upon the end of the main shaft, when arranged and operating together, as described.

4. In combination with the adjustable concave R, the double crank S, provided with the handle S^1, working in the stop-rack S^2, arranged and operating together as described.

5. The arrangement of the tumbling-rod A, in combination with the main shaft P, provided with alternate cranks, angular carriers or rakes P^1, and shaft L, provided with lifting-fingers, when jointly operating together as described.

103,833.—MILL-BOLT.—Wilson H. Berdan, Mooreville, Mich.

Claim.—1. A rib for a flour-bolt, flat upon the inside, reaching the cloth with each edge, and beveled on the outside, so as to let the cloth bear directly upon the edge, substantially as herein set forth.

2. The combination, in a mill-bolt, of the triangular ribs C C, with or without the arms B B, and the exterior hoops E, all substantially as set forth.

103,834.—DERRICK OR HOISTING-CRANE.—Hannibal Sewell Blood, New Orleans, La.

Claim.—The combination of the vertical mast B with the articulating and folding crane-arm C, when the same is sustained and strengthened by means of the shifting-brace D, when all the parts are constructed, united together, and operated as herein described, by means of two ropes E and F, and their adjuncts, as specified, for the purpose set forth.

103,835.—POST FOR PEGGING-JACK.—Daniel Bowker, Boston, Mass.

Claim.—The metallic jack-post, herein described, as a new article of manufacture, consisting of the hollow cylinder A, the shelf B, and the flange C, all cast in one piece and constructed as described.

103,836.—PNEUMATIC GAS-MACHINE.—David Boyle, San Francisco, Cal.

Claim.—1. The combination, in one vessel, of the meter-drum or blower, air-reservoir, and carbureting apparatus, substantially as herein described.

2. The gradually-descending coil, passing through the chamber F, or an equivalent device, together with the water-well, substantially as and for the purpose described.

3. A carbureting apparatus, when constructed and arranged substantially as herein described.

103,837.—DOOR-KEY.—James Brady, Branford, Conn., assignor to the Branford Lock Works, same place.

Claim.—As a new article of manufacture, a sheet-metal key, both the key and the piece A slotted to let one into the other, making the transverse section of the bit end of the spindle of ×-shape, constructed with a transverse piece, A, fitted centrally onto the spindle of the key, as and for the purpose specified.

103,838.—LOCK.—James Brady, Branford, Conn., assignor to the Branford Lock Works, same place.

Claim.—One or more of the tumblers of a lock, provided with a double bearing-surface, 1 2, so that by two different keys the tumbler is raised to the same point by both keys, substantially in the manner and for the purpose set forth.

103,839.—STOVE.—Adolph Brase and Lemuel Salladey, Scioteville, Ohio.

Claim.—In combination with the stove A, provided with the opening or flue B, the ball-valve D, loops C, lever E, provided at its inner end with a ring-socket for said valve, rod F, and pin G, all said parts being arranged as shown and described, to operate as specified.

103,840.—VALVE MECHANISM FOR OSCILLATING ENGINE.—Henry Broomell, Christiana, Pa.

Claim.—In combination with an oscillating steam-engine, the hand-valve E, by means of which the engine is started and stopped, and its motion reversed, substantially as described.

103,841.—BOLTING DEVICE FOR SAFES.—Stephen J. Burton, Charlestown, assignor to American Steam Fire-Proof-Safe Company, Boston, Mass.

Claim.—The arrangement and combination of the rotary arm I, with the permutation lock provided with the hook, as set forth, such arm being to operate with the tri-armed lever in manner as described, when such lever is applied to and used with the bolt or bolts and the actuator, as explained.

103,842.—REFRIGERATOR.—James C. Campbell, New York, N. Y.

Claim.—1. A series of removable shelves revolving around an ice-chamber, when constructed and arranged substantially as herein described.

2. In combination with the above, a cylindrical ice-chamber, composed of sections, extending from the top to the bottom of the refrigerator, as and for the purposes above set forth.

103,843, antedated May 23, 1870.—SAWING-MACHINE.—James Chase, Rochester, N. Y.

Claim.—1. The circular yielding clamp B, when operated conjointly with the saw-head C, for the purposes set forth.

2. The adjustable spring *i*, in combination with the foot-lever F and clamp B, when constructed to operate substantially as described.

3. The arrangement of the vertically-moving saw-head C, side-rods *h*, springs *j*, foot-lever F, clamp B, and spring *i*, operating substantially in the manner and for the purposes herein set forth.

4. The arrangement of the adjustable stop-gauge A, constructed substantially as described, and the clamp B, and head C, for the purposes set forth.

103,844.—HAY-LOADING DEVICE.—Aaron Bingham Clark, Grass Lake, Mich.

Claim.—1. In combination with a hay-rack, the standards A, dividing said racks into equal sections, as described, and provided with cross-ties *a*, and spurs *b b'*, when arranged for the purpose herein specified.

2. In combination with said rack, so provided with cross-ties and spurs, the rope B, provided with rings *c*, and operating substantially as and for the purposes herein set forth.

3. In combination with said rack A and rope B, constructed as described, the hoisting and tripping-apparatus, wherein the frame C, dog D, bell-crank E, spring F, tripping-line G and hoisting-rope H are arranged relatively to each other, and operating substantially as herein set forth and shown.

103,845.—CASK-FILLER.—David Cope, Liverpool, England.

Claim.—The combination of the body *b*, spout *c*, packing-piece *d*, and fastening-clasp *e f g*, in the manner and for the purpose set forth.

103,846.—BUGGY-TOP BED.—A. Morrell Cory, New Providence, N. J.

Claim.—1. The bars B B, of sufficient length that they may cross the seat diagonally, and receive at their rear termini the lazy-back I, and at their forward termini receive the braces D D and the arms A A in firm attachment, as at E E, substantially as and for the purposes herein described.

2. The braces D D, to be used in the combination constituting this adjustable bed, their forward attachment to be made to or near the forward ends of the bars B B, as at E E, their rear attachment to be made to the lazy-back at any desirable point for stability and neatness, with one or more branches to the arms A A and the lazy-back, substantially as and for the purposes herein described.

3. The bolt K, or its equivalent, by which, union more or less permanent, is effected between the bars B B at their junction or crossing, substantially as and for the purposes herein described.

4. The lazy-back I, by which the several members are retained in connection in this combination, substantially as and for the purposes herein described.

103,847.—MECHANICAL MOVEMENT FOR SEWING-MACHINES, &c.—Edwin Cowles, Cleveland, Ohio.

Claim.—1. A mechanical movement, consisting of rolling clutches *a*, applied between many-sided hubs *J*, and pulleys which are applied loosely on the shaft of said hubs, substantially as described.

2. The stops or studs *b*, in combination with rollers *a*, and hubs *J* inclosed by pulleys, so as to operate substantially as described.

3. Offsets *f f* on the treadles E E', arranged to receive the lower ends of the pulley straps without having these straps crossed, as set forth.

103,848.—MACHINE FOR TRIMMING BLIND-RODS.—Biram C. Davis, Binghamton, N. Y.

Claim.—The combination of the bed-piece A, bolt B, cutters C C, gauge-rod D, and lever G, the whole being constructed and arranged as shown and described for the purpose set forth.

103,849.—ROSETTE.—John W. Dayton, Waterbury, Conn., assignor to the American Suspender Company, same place.

Claim.—As a new article of manufacture, a rosette formed from felt, substantially in the manner described.

103,850.—CAR-COUPLING.—Thomas W. Defrees, South Bend, Ind.

Claim.—1. The hooks A and springs C, in combination with separate buffers B, when the said hooks are pivoted to the frame independently of the buffers, and the parts are constructed and arranged substantially as herein described, so that the hooks and buffers may act in connection, or the hooks being drawn entirely aside, the buffers may come together and receive a common link and pin-connection.

2. The clasp-hooks H and eyes I, in combination with the clutch-hooks A, for the purposes set forth.

3. The combination of the clutch-hooks A, springs C, buffers B, clasp-hooks H, and eyes I, substantially as and for the purposes specified.

103,851.—SAW-SET.—John T. Dickey, Farmington, Ill.

Claim.—1. The clamp *b b'*, constructed and arranged with reference to the anvil A, substantially as and for the purpose described.

2. The set punch, herein described, having the reversible triangular prism, adapted to set fine teeth or coarse, substantially as specified.

103,852.—MANUFACTURE OF GLUE.—Andrew Dietz, New York, N. Y.

Claim.—1. The process of chilling and hardening glue, as it is taken from the boiling-kettle, by means of currents of air reduced to a temperature but few degrees above the freezing point, for the purpose set forth.

2. The arrangement of the blower D, cooling-chamber C, provided with ice-boxes or other cooling media, and cooling-pans 6, or other equivalent, substantially as and for the purposes set forth.

3. The construction of the sleeve-valve 1 or 2, or its equivalent, for discharging the glue in a thin, broad stream, for the purposes set forth.

103,853.—BOOK-REPOSITORY.—Robert L. Dodge, Gallatin, Mo.

Claim.—The improved book-repository, consisting of the rectangular case A, provided with a series of compartments, B, and the hinged frames C E F, all constructed and arranged as shown and described.

103,854.—WINDOW-BLIND.—Thomas Donato, New York, N. Y.

Claim.—The bars B C and pivoted levers D, combined with the blind-slats A, which have double tenons at both ends, as set forth, all arranged as specified.

103,855.—COMBINED SOWER, PLANTER, CULTIVATOR, SCRAPER, AND GANG-PLOW.—James P. Eddleman, Pilot Point, Texas.

Claim.—1. The combination of the seed-box H, recessed roller I, and band J, with the wheels A, spindles B, uprights C, levers E, frame D, and pivoted frame S, to which the plows are attached, substantially as herein shown and described, and for the purpose set forth.

2. The combination of the hoppers K, dropping-slides L, cross-bar M, bow or bent bar N, springs O, plow-standards Q, and conductor-spouts R, with each other and with the frame D, levers E, uprights C, spindles B, and wheels A, substantially as herein shown and described, and for the purpose set forth.

3. The combination of the turn or breaking-plows U V W, and lever F' with the pivoted frame S, frame D, levers E, uprights C, spindles B, and wheels A, substantially as herein shown and described, and for the purpose set forth.

4. The combination of the outer cultivator-plows $A' B'$, inner cultivator-plows $C' D'$, and lever E', with the pivoted frame S, lever F', frame D, levers E, uprights C, spindles B, and wheels A, substantially as herein shown and described, and for the purpose set forth.

103,856.—VENTILATOR OR COWL.—Jacob Edson, Boston, Mass.

Claim.—1. The cone *d*, arranged inside the hood *a*, and connected to the same by means of wings *e e e e*, as set forth.

2. The cuts *g g g* on the wings *e e e*, for the purpose of discharging the water, as set forth.

3. The arrangement of the frustum *h*, projecting through the hood *a*, and entering inside the cone *d*, as described.

4. The combination of the eye-bolt *p*, screw *o*, bar *n*, and inclined planes *m m*, for the purpose as fully set forth and described.

103,857.—INSOLE FOR BOOTS AND SHOES.—Philipp Martin Ernst, New York, N. Y., assignor to himself and Ernst Schmidt, same place.

Claim.—As a new article of manufacture, a straw insole, made substantially as herein shown and described.

103,858.—SPINNING-MACHINE.—Luther W. Felt, Keene, N. H.

Claim.—1. The wheels G H, constructed and operating substantially as described, for intermittingly measuring off and holding a portion of the roving while the said wheels are revolving continuously, as and for the purpose set forth.

2. The combination, with the above, of the continuously-revolving drawing-rolls M N and the twisting-tube K, as and for the purpose described.

103,859.—Door Spring.—John T. Folwell, Camden, N. J.

Claim.—The combination and arrangement of the double inclined ways *c* with the stationary part *f* of the hinge C, and the spring rod *b* with the fly part *f'*, substantially in the manner and for the purpose set forth.

103,860. — Portable Tobacco-Press. — William S. Ford, Evansville, Ind.

Claim.—1. An improved portable tobacco-press formed by the combination of the base frame A, rods B, having eyes formed in each end, top frame D, nut F, screw E, and follower J, with each other, substantially as herein shown and described and for the purpose set forth.

2. The circular raised bottom or bearing C, in combination with base A, rods B, frame D, screw E, nut F, and follower J, all arranged substantially as shown and described, whereby the pressure is applied directly to the top of the tobacco with a direct counter-pressure upon its bottom, the staves of the cask being entirely free from strain, as set forth.

103,861.—Machine for Binding Grain.—Thaddeus Fowler, Tottensville, N. Y.

Claim.—In a binding apparatus, substantially as specified, a holding-head composed of two sections, one of which is movable upon the other, for the purpose of holding, turning, and releasing a bundle of grain, in the manner and for the purpose substantially as described.

Also, in combination with the preceding, a spear, fork, or tine, which holds the bundle when the head moves in a backward direction, to prevent the bundle from moving back with it, but is out of the way when the bundle is to be turned in a forward direction, substantially as described.

Also, in combination with the mechanism which holds and turns the bundle, a reciprocating hook that is driven into the material to be bound, and draws therefrom, and through a preceding loop, a looped tuft, which, in their series capacity, so interlocked or interlooped, forms a band for binding said bundle, substantially as described.

Also, in combination with the holding-head, a hook for drawing out looped tufts or bunches from a bundle of grain, straw, or other material, and a cast-off for throwing said loops or tufts off from the hook, when they have been interlocked or interlooped with the previously made loop, substantially as described.

103,862.—Method of Binding Grain.—Thaddeus Fowler, Tottensville, N. Y.

Claim.—The method of binding a bale or bundle of grain, straw, grass, stalks, or other fibrous material, by drawing out loops of the material to be bound from the interior of the bundle, and interlocking said loops one with the other until a band is formed around the bundle, substantially as described.

103,863.—Cover for Sewing-Machine.—Evelyn F. French, New York, N. Y.

Claim.—A cover for sewing-machines, constructed substantially as herein shown and described.

103,864.—Umbrella-Rib.—Henry S. Frost, Watertown, Conn., assignor to himself, Anthony G. Davis, and Augustus N. Woolson, same place.

Claim.—As a new article of manufacture, an umbrella or parasol-rib, constructed of twisted steel wire, as described, for the purpose set forth.

103,865.—Shade for Gas-light.—William Fullagar, Brooklyn, N. Y.

Claim.—An improved bottom shade, A, formed of porcelain, in a single piece, upwardly flanged at B, and downwardly flanged at C, each as and for the purpose specified.

103,866.—Thrashing-Machine. — John S. Fulton, Gallatin, N. Y.

Claim.—1. The cylinder B, having longitudinal smooth-faced ribs *a a*, parallel to its axis, in combination with a concave, having corresponding longitudinal smooth-faced ribs thereon, so as to roll the straw with as little as possible of rubbing-friction, to avoid cracking the grain or breaking the straw, all as set forth.

2. A concave, C, of a thrashing-machine, having longitudinal ribs thereon, running at right angles to the plane of rotation of the cylinder, and arranged in three sets, the first having ribs increasing in size toward the center, the middle having ribs of uniform size, and the last set increasing in size to the outlet, all as shown and described.

103,867. — Attaching Handles to Cutlery.—Joseph W. Gardner, Shelburne Falls, Mass.

Claim.—In combination with the dovetailed tang *a*, the similarly-recessed side or cheek-pieces C C for holding themselves and the blade or fork to the handle, by suitable rivets, as described and represented.

103,868. — Lock.—John Gérard, Trenton, N. J.

Claim.—1. The latch-bolt lever A, pivoted to the cam C by the steel pin B, working in the inclined slot G, the said cam being arranged in a slot in the top of the lock, and arranged to catch in a notch, F, to hold the lever in the working position, all substantially as specified.

2. The combination, with the striking-plate, of the friction-spring N, substantially as specified.

103,869. — Rotary Engine. — Samuel D. Gilson, Syracuse, N. Y.

Claim.—The piston-shaft B, cam L, moving in the arc described, arm M, and slotted guide-stand N, all combined, arranged, and relatively constructed as and for the purpose set forth.

103,870.—Boiler.—Myron Gore, Batavia, Ill.

Claim.—1. The furnace, composed of the end pieces A A, fire-box sides and back B B, and sheet-iron shell D, all fastened together by the bolts C C, substantially as and for the purposes herein set forth.

2. The arrangement, within the shell D, of the partition H and damper I, substantially as and for the purposes herein set forth.

3. The combination of the arch or furnace A B D, boiler E, pipe G, partition H, and damper I, all constructed and arranged substantially as and for the purposes herein set forth.

103,871. — Head-block for Saw-mill.—Cyrus E. Grandy, Upton, assignor to S. Heald & Sons, Barre, Mass.

Claim.—The frame A, provided with the scale H, swiveled screw B, crank D, cam-lever C, loose bearing-cap *a'*, knee E, roller F, and adjustable index *g*, all said parts constructed and arranged as shown and described.

103,872.—Check-Valve.—Darwin Alanson Greene, New York, N. Y.

Claim.—1. The try-cock plug C, arranged as represented relatively to one or more valves, B, so as to test the pressure or condition on either side thereof at will, as represented.

2. In combination, a puppet-valve, having a hollow vented stem, B^1, a screw-stem, H, fitted within the same, and a pet-cock adapted to test the pressure or drain the water from the chamber on either side thereof, combined in the single casing A, as herein set forth.

3. The within-described arrangement of one or more pump-connections, P^1 P^2, with a corresponding pump-chamber or chambers, J^1 J^2, so that the entire valve-housing and valves shall be contained in one casing, separate from the barrel of the pump,

and adapted to be tested in all its chambers, all substantially as and for the purposes herein set forth.

103,873.—Pruning-Knife.—Manasseh Grover, Clyde, Ohio.

Claim.—Constructing the cutting-blade A of the three-part shears, herein described, with the diagonal slot *a* through it, to receive the fulcrum-pin *b*, as set forth.

103,874. — Street-Railway Car.—Joseph Justinius Gutierrez, Jefferson Parish, La.

Claim.—1. The shield or apron E, with its reinforcing metallic strip riveted thereto, in combination with a supporting frame A B B' and C C' C'' C''' C'''', when these several parts are constructed, arranged, attached to a city railroad-car, and operate substantially as herein described, for the purpose set forth.

2. The supplemental metallic strip *a*, in connection with a supporting arm or arms, G, and a wheel, *b*, and springs *c*, when these parts are constructed, arranged, and operate as described, for the purpose set forth.

3. The combination of the metallic strip *a*, the supporting arm or arms G, the wheel *b*, and springs *c*, with a supporting frame, A B B' and C C' C'' C''' C'''', and the shield or apron E, when the parts are constructed and arranged and attached to a city railroad-car, as herein described, for the purpose set forth.

4. The above named parts, when constructed, arranged, and attached to a city railroad-car, as herein described, in combination with a rod, 3, for the purpose specified.

103,875.—Electro-Magnetic Signal Apparatus for Railroads. — Thomas S. Hall, Stamford, assignor to Hall's Electric Railway-Switch and Draw-Bridge Signal Company, New Haven, Conn.

Claim.—1. The combination of the electro-magnet A and its armature E with the rod *b*, swinging arm *c*, cord *d*, disk *e*, arbor *f*, and signal-disk F, all arranged and operating substantially as described, so that the signal is raised when the magnet is charged, as specified.

2. Connecting the swinging armature E with one or more movable bars *k o*, so that, when the armature is attracted by its magnet, it will serve to unite other wires to establish circuits through them, as set forth, whereby one signal will be caused to set others, as described.

103,876.—Compound Troche of Buchu. Henry J. Hamilton, Brooklyn, N. Y.

Claim.—Buchu troches, composed of the ingredients, prepared or treated in the manner and about in the proportions specified.

103,877. — Cotton-Scraper or Cultivator.—Thomas J. Harris, Guntown, Miss.

Claim.—The arrangement and construction, as described, of the mold-board B, share G, flange D, and foot E, for the purpose set forth.

103,878. — Iron Tender-Frame. — Benjamin W. Healey, Providence, R. I.

Claim.—The tender-frame, formed of the outer and inner bars A B, of channel-iron, short bars *a'*, brace-bars C, and plates D E F, substantially in the manner and for the purpose herein set forth and described.

103,879, antedated May 24, 1870.—Process for Making Molds for Castings of Alto-Relievo Figures, &c. — Nicholas Heintzelman, New York, N. Y.

Claim.—The method or process, substantially as hereinbefore described, for making molds for obtaining composition or other soft metal castings of alto-relievo or high relief, or under-cut ornamental figures or designs.

103,880. — Loom. — John Jacob Herbert, Philadelphia, Pa.

Claim.—1. The cloth-beam, mounted on a rotating shaft, and held thereto by the adjustable spring-clamps, substantially as described.

2. The combination, with a heddle-frame, of pivoted levers I' K' above the frame, and connected, as described, to pivoted arms H' H' below the frame, and operated by treadles, all arranged and operating as set forth.

103,881.—Bark-Mill.—Lewis N. Hermance, Kingston, N. Y.

Claim.—The combination, with a series of ordinary concentric stationary grinders, of a series of concentric runners, elongated, and adjustable toward said grinders, so as to take up wear as well as give the ordinary adjustment for coarse or fine work, the said rotating and stationary teeth being constructed and arranged with respect to each other as set forth.

103,882.—Baby Carriage.—James Higgins, Salem Crossing, Ind., assignor to himself and William S. Medaras.

Claim.—A compound cradle and baby carriage, formed of a body and rockers, held in a position upon the running gear by means of the easily-detachable king-bolt in the front axle, and the fixed stakes C C on the rear axle, all as set forth, and for the purpose described.

103,883.—Steam-Ram.—Thomas Hill, Vallejo, Cal.

Claim.—1. The combination, with a hollow projecting weapon, M, of a hinged breech-block, N, provided with a pin, *i*, and screw *m*, and the valve or water cut-off, operated by the screw *n*, substantially as and for the purpose specified.

2. The combination, with the cylinder C, of the slides H, ways I, screw L, and extensible pipes E and F, arranged to operate substantially as and for the purpose described.

3. The arrangement, in combination, of the yoke *d*, rods *f*, cranks *g*, and arms *h*, substantially as and for the purpose specified.

103,884. — Heating-Stove.— Robert Hillson, Albany, N. Y.

Claim.—1. The air-chamber, constructed as described, and located above the fire-pot C, and surrounding the central flue *o''*, in combination with the damper S', furnished with draught-holes *x*, substantially as and for the purpose set forth.

2. In combination with the chamber E, perforated as described, the chamber *o*, pipes or flues *o'*, and *p p' p''*, substantially as and for the purpose set forth.

3. In combination with the covered opening or flue *r*, the flue *o''*, and damper *r'*, substantially as and for the purpose set forth.

4. The incasing piece R, constructed with the sides R' R', substantially in the manner set forth, for the purpose specified.

5. The flues or openings *n*, in combination with the chambers G' and G'', substantially as and for the purpose set forth.

6. The flue *m*, and damper *m'*, in combination with the chamber F' and flue M, substantially as and for the purpose set forth.

7. The flue K, in combination with the circular chamber B and flue M, substantially as and for the purpose set forth.

8. The dump-hole *t*, in combination with the covered opening or flue *r* and ash-pit *u*, substantially as and for the purpose set forth.

9. Supporting the rear of the grate J by means of the jointed roller-bar *q*, substantially as and for the purpose set forth.

10. In combination with the grate J, the lever-handle *q'*, shoe *v*, rollers *v' v'*, when all are arranged substantially as and for the purpose set forth.

103,885. — Lamp-Shade Supporter.—Edward W. Holt, Corinna, Me.

Claim.—A clasp spring, B, having formed on end

side the ring E, and bent on the other side opposite the middle of the ring E, from the ring, as herein shown and described, and for the purpose set forth.

103,886.—RAILWAY CAR-BRAKE.—Thomas Hopper, Hatfield Hopper, and Chandler C. Coats, Newark, N. J.

Claim.—The combination and arrangement of the guide-rods G, and rods A, with the arms F, pulleys D and E, and chain B, as and for the purpose shown and described.

103,887. — METAL ROOFING. — Seymour Hughes, Hudson City, N. J.

Claim.—1. The roofing-sheets A, clipped at the corners to receive the lozenge-shaped joint-pieces B, as set forth.

2. The water-proof fabric C, interposed between the plates A B of a metal roof, to permit expansion and contraction of said plates, as set forth.

103,888.—PATTERN FOR CASTINGS.—James L. Jackson, New York, N. Y.

Claim.—The method herein specified of making patterns for casting by the shapes, molds, or sweeps a b, that are employed respectively for producing a base or form of plastic material, and upon that making the pattern of plastic material, substantially as set forth.

103,889.—CARDING-MACHINE.—Gilman Jaquith, Concord, Mass.

Claim.—1. The combination and relative arrangement with the main cylinder and feed-rolls of a carding-machine, of the dirt-receptacle D and vibrating flap F, constructed and operating as and for the purposes described.

2. The combination of the dirt-receptacles H and J, constructed as described, and arranged in reference to the main cylinder and doffer, as and for the purpose set forth.

103,890.—CUTTER FOR WOOD-MOLDING MACHINES.—Dedrick Jordan, Charlestown, Mass., assignor to A. S. and J. Gear & Co., New Haven, Conn.

Claim.—1. The head B, spindle A, with correspondingly-inclined surfaces, and provided with a shoulder, i, and combined with the nut C turning into the head B, and bearing against the shoulder i, so as to secure the cutters between the said inclined surfaces, substantially as described.

2. In a cutter-head, consisting of a spindle, A, head B, and spindle C, constructed and operated as set forth, the extension of the spindle to form the guide D, as and for the purpose specified.

103,891.—MOTIVE MECHANISM FOR SEWING-MACHINES.—John W. Jordan, Lexington, Va.

Claim.—1. The combination, with the swinging frame, mounted in suitable supports, and carrying a seat, a sewing-machine, and a counter-shaft, and pulley arranged to impart motion to the sewing-machine, of the pulleys O P, pawls Q R, ratchet wheels N, belts T, and the belt support, substantially as specified.

2. The combination, with the supporting-frame A and frame H, pivoted together for the said frame H to have a rocking motion, of the parallel bars S, pulleys, ratchets, pawls, belts, and the counter-shaft L, all substantially as specified.

3. The combination, with the frames H, of the springs U, substantially as specified.

103,892.—SAWING-MACHINE.—Jacob Kauffman, Gilboa, Ohio.

Claim.—The construction of the standards B C F, driving-shaft G, balance-wheel G', quarter-cranks H, and handle H', walking-beams Y, connecting-rods I L, shaft J, quarter-cranks K, spur-wheel M, counter-shaft N, pinion O, crank-wheel P, pitmans R, guides Q, saw S, standard T, cord V, sheaves a b, saw-horse U, clamp W, and treadle X, all arranged on a bed-frame, A, and operating substantially as herein described, for the purpose specified.

103,893.—PRESSURE-GAUGE AND SAFETY-VALVE.—Artemas A. Kent, Lyons, Iowa.

Claim.—The stand-pipe A, passages d d', disk D, cap E, spring H, stem G, indicator-lever J, case F provided with a suitable scale, safety-valve B, valve-stem B', and adjustable tappet I, the whole arranged and operating substantially as described, and for the purpose set forth.

103,894.—PRINTING-PRESS.—William Anderson Kerr, Easton, Pa.

Claim.—1. The racks d, wheels e, rods f, levers g, and bars h, all combined with the reciprocating type-frames, to operate the same, substantially as herein shown and described.

2. The bands j ss, arranged on and in combination with the drums B C, substantially as herein shown and described, to convey the paper in the manner described.

3. The drums B and C, combined and arranged with the plates E and F, and provided with any suitable transferring mechanism, all operating as described, whereby the sheets of paper may be printed on both sides during their passage through the press, as specified.

103,895.—MOTIVE MECHANISM FOR CARRIAGES.—George Kilner and Frances H. Simmons, Sullivan, Ill.

Claim.—1. The combination with the wheels C of the toothed rims R, pinions Q, shaft P, master-wheel O, pinion N, crank-shaft L, balance-wheels S, and foot-treadles G, all arranged substahtially as specified.

2. The combination, with the frame A and the axle E, of the belt or cord U, drum T V, and cord X, all substantially as specified.

103,896.—ADJUSTABLE CURVE FOR USE OF DRAUGHTSMEN.—Stephen R. Kirby, East Saginaw, Mich.

Claim.—1. The ribbon or rod A, posts C, with the slots E, and braces D, combined with screw-bolts, arranged to operate substantially as and for the purposes herein shown and described.

2. The combination of the slotted straight-edge G and slotted connecting-rod I with the ribbon or rod A, substantially as and for the purposes described.

103,897.—STREET-CAR STARTER.—Benjamin Lepper, St. Louis, Mo.

Claim.—The combination of the cross-head F, levers C, straps L, pawl M, inside ratchet b b, spring D, spring E, chains H, foot-lever I', bolt I, and spring i i, with each other, and the draw-bar K, as described and for the purposes set forth.

103,898.—CHURN.—John S. Lewis, Elkport, Iowa.

Claim.—The combination of the tubular receptacle B r s t w and the rifle or agitator C y z with each other and with the pivotal frame A, and the construction and arrangement of the said receptacle and rifle, as herein represented and described, for the purposes set forth.

103,899.—SUBMARINE DRILLING APPARATUS.—Samuel Lewis, Williamsburg, N. Y.

Claim.—1. The combination of two sets of pawls C E, with the spuds or vertical anchors B, for alternately grasping said spuds while the boat or platform is being raised and lowered, substantially as herein shown and described.

2. The combination of two or more pistons and piston-rods, H, and cylinders G, provided with ingress and discharge-pipes I J, with the boat or platform A and spuds or vertical anchors B, substantially as herein shown and described and for the purpose set forth.

3. The combination of the cylinders G, provided with ingress and discharge-pipes I J, piston and piston-rods H, cross-heads or beams D and F, and pawls C and E, with the boat or platform A and spuds or vertical anchors B, substantially as herein shown and described, and for the purpose set forth.

103,900.—CARRIAGE-AXLE.—Lomax Littlejohn, New York, N. Y.

Claim.—The combination of the broad-headed screw D with the recessed and threaded axle-end, for the purpose of holding the axle-box in place, as set forth.

103,901.—PACKING FOR ROTARY ENGINE.—John Loader, London, England, assignor to himself, William Henry Child, and Aaron White Cook Williams, same place.

Claim.—1. The internal bearing-piece f^3 and spring f^4, arranged as represented, relatively to the cheeks e^1 e^2, abutment f, piston d, and its inclosing casing and passages, for the purposes herein set forth.

2. The combination of the packing-pieces A, and their operating means, piston d, gyrating as described, cheeks e^1 e^2, contained piece f^1, and spring f^4, all arranged for joint operation relatively to each other and to the abutment f and casing e, as herein specified.

103,902.—STEAM-GENERATOR.—John Loader and William Henry Child, London, England, assignors for one-third their right to Aaron White Cook Williams, same place.

Claim.—One or more adjustable displacers, constructed substantially as described, and arranged within a boiler, in combination with circulators a^1 attached thereto, so as to be introduced and removed therewith, substantially as and for the purposes herein set forth.

103,903.—FENCE.—Lewis E. Lockling, Perrysburg, and Nathaniel N. Whitaker, Sheridan, N. Y.

Claim.—The upper rails C, provided with tenons a and wedges b, in combination with the loops B, substantially as described and for the purpose specified.

Also, the standard D, of the form of an inverted T, at the end of a section of fence, secured to the arched standard A and top rail C, in combination with the twisted wire F and the horizontal wires E, when constructed as described, and arranged to operate as and for the purpose set forth.

Also, the arrangement of the standards A and D, the loop B, the rails C provided with tenons a and wedges b, the wires E and F, and the clamp G, when constructed as described, and for the purpose set forth.

103,904.—VARIABLE CUT-OFF VALVE-GEAR.—George E. Long, Harrisburg, Pa.

Claim.—The combination of the governor-limb C, and valve-stem B, by means of the intermediate bent rod Z, which is hinged to the former at its lower end, and connected to the latter at its upper end, by a pin inclosed in a friction-roller which traverses the slot in arm N, when the cut-off is rendered variable and automatic by the raising or lowering of the valve-stem end M, in the manner as herein set forth.

103,905.—LOCOMOTIVE HEAD-LIGHT.—Roger W. Love, Windsor, Vt.

Claim.—The combination of the head-light reflector p of a locomotive-engine with the cylindrical tube a, and mechanism, substantially as described, for operating such tube and reflector, in the manner and for the purpose as set forth.

Also, the combination, substantially as described, for operating the said tube and reflector p, in manner and for the purpose specified, such combination consisting of the pivotal parts a d d', the standard b, and the rod n, arranged and applied together and to the locomotive and the head-light reflector, as set forth.

103,906. — HAND-SPINNING MACHINE.—William H. Main, Marietta, Wis.

Claim.—The combination of the cogged-wheel B, screw-shaft C, friction-pulleys D and E, and spindle G, all constructed, arranged, and operating substantially as shown and described.

103,907.—BALING-PRESS.—Enoch J. Marsters, Shaw's Flat, Cal.

Claim.—1. The equal-armed lever Q, ropes N, pulleys O P, and rope R, in combination with the follower M, press-box B, and drum and shaft S T, substantially as herein shown and described and for the purpose set forth.

2. The combination of the caps K with the slots of the cover H, substantially as herein shown and described and for the purpose set forth.

3. The swiveled hinge J, in combination with the cover H, box B, and frame D, substantially as herein shown and described and for the purpose set forth.

4. The combination of the plunger A', pivoted bar or bars B', rope C', guide-pulley D', and pivoted lever E', with the follower M, box B, and base-frame A, substantially as herein shown and described and for the purpose set forth.

103,908.—CHURN.—Hamilton Bell McFall, Mount Solon, Va.

Claim.—In a churn of the described construction, the bracket H, with its set-screw, when combined with the sliding frame C and dasher-rod I, as described, for the purpose set forth.

103,909.—PASTE FOR POLISHING METALS.—Peter McManus and George W. Latimer, Detroit, Mich.

Claim.—The polishing-paste, when compounded of the ingredients and in the proportions herein described.

103,910.—CLUTCH MECHANISM FOR HARVESTER.—William Michael, Murrysville, Pa.

Claim.—The flat toggle-arms O O, and levers L L, in combination with spring-clutches K M, arranged as and for the purpose described.

103,911.—IRON BRIDGE. — Mahlon Miller, Cleveland, Ohio.

Claim.—The plates D E, provided with grooves e and plates B B, with or without central plate or plates, in combination with the fillet or box d, and bolts G, constructed and arranged in the manner substantially as and for the purpose set forth.

103,912. — MACHINE FOR CUTTING OUT GRINDSTONES.—Joseph E. Mitchell, Philadelphia, Pa.

Claim.—1. The combination of the shaft B with cutters C C^1 C^2, series of shafts E with similar cutters E^1 E^2 E^3, and intermediate spur-wheels F^1 and G, substantially as and for the purpose set forth.

2. In combination with the shaft C and bearings D^2, the radial slots D^1 in the plate D, substantially as and for the purpose set forth.

103,913.—FUEL-PRESS.—Thomas M. Mitchell, Philadelphia, Pa.

Claim.—1. The changeable series of mold-boxes D D, each series being in one piece with open upper sides and ends, as shown and described, in combination with the bed-plate of the press and the adjustable feed boxes C C, substantially as and for the purpose hereinbefore set forth.

2. The combination, with the bed-plate and the open outer ends of the mold-boxes D D, of the adjustable abutment-piece K, the connected side-levers L L with their friction-rollers 24 24 and hollow cams M M, and the counterpoises k^1, substantially as and for the purpose hereinbefore set forth.

3. The combination of the adjustable yokes I 14 with the throw-out knuckle of cam-cranks 16, and its friction-roll 17, when said roll is set in an adjustable bearing, as and for the purpose hereinbefore shown and described.

4. The arrangement of the sliding feed-boxes C with the bed-plate of the machine and the adjustable cap-blocks F F, as shown and described, and for the purpose set forth.

5. The combination, with the ends of the abutment-piece K and the bed-plate of the press, of the adjustable recessed blocks N N and the wrought-iron T-head gripe O O, substantially as and for the purposes hereinbefore set forth.

6. The combination, with the abutment-piece K and the connecting-bar 19 of its two operating side-levers, L L, of the pair of running sockets 20 and their respective eye-bolts 21 and 22, substantially as and for the purpose hereinbefore set forth.

103,914.—NAIL-HAMMER.—Ephraim S. Morton, Plymouth, Mass.

Claim.—A nail-hammer, provided with a slot, C, formed at the base of the claw, substantially as and for the purpose specified.

103,915.—TIDY-PIN.—Hial H. Newton, Cleveland, Ohio.

Claim.—The combination of a pair of prongs, A, with three coils, B C D, constructed and arranged as shown in fig. 1 of drawing, to form an improved tidy-pin.

103,916.—DOOR-MAT.—Alpheus P. Noyes, Middletown, assignor to John S. Andrews, Chelsea, Mass.

Claim.—A door mat, composed of oiled or varnished threads of loom-harnesses or heddles, when cut as described, and secured to any suitable foundation, as set forth.

103,917.—LAMP GAS-BURNER.—Rufus Nutting, Randolph, Vt.

Claim.—The gasificator D, in combination with the wick-tube B, having its upper end so constructed as to form a socket, C, substantially as and for the purposes set forth.

103,918.—CULTIVATOR.—Henry W. Ostrom, Grand Rapids, Mich.

Claim.—1. The independent cross-beam C, arranged adjustably on the standards O, substantially as and for the purposes set forth.

2. The combination of the sections of plow-beams B B' B², levers E E' E², chains I', catches G on tongue K, standards O, cross-beam C, and chains I, all arranged in frame A, to operate as herein described and shown.

103,919.—BRAND FOR CANCELING STAMPS.—Amos D. Owen, Thorntown, Ind.

Claim.—1. The wick or gas-tube B, in connection with the sleeve-arm C, when constructed, arranged, and operating as and for the purposes described.

2. In combination with said tube B, and sleeve-arm C, the oil-box A, when constructed and operating for the purposes herein set forth.

103,920.—FIRE-TONGS.—Joshua J. Percival, Speedwell, Va.

Claim.—An improvement in tongs, consisting of the curved rod A, fast to one leg of the tongs and freely moving through a hole in the other, to prevent the lateral strain and twist upon the joint.

103,921.—METALLIC BOOT AND SHOE HEEL.—Alfred T. Perrine, Louisville, Ky.

Claim.—1. The combination, with the metallic base-plate B, of the heel-shell A, constructed of a single piece of seamless sheet metal, the tip-plate a, and bolt C, all constructed as herein described and set forth.

2. The combination, with the base-plate B and heel-shell A, of the plate a, provided with an inwardly-projecting flange, d, and elastic pad b, all constructed as herein described and set forth.

3. The combination, with a heel-shell constructed of a single seamless piece of sheet metal, and the plate a, provided with an inwardly-projecting flange of a grooved elastic pad, all constructed as herein described and set forth.

103,922, antedated May 23, 1870.—GRAIN CLEANER.—Chauncey Perry, Rochester, N. Y.

Claim.—1. The opening e, in combination with the chess-board a and wind-board C, for the purposes set forth.

2. The vertically and angular adjustable wind-board C, in combination with the chess-board a, for the purposes set forth.

103,923.—HOT-BLAST APPARATUS.—Jonas J. Pierce, Sharpsville, Pa.

Claim.—1. The detachable metallic pedestal or shoe for supporting and connecting the lower ends of siphon-pipes in hot-blast ovens, constructed substantially as described.

2. Connecting the lower ends of siphon-pipes in hot-blast ovens by means of elbows or return-pieces of pipe, having a base and connecting-web, substantially as and for the purpose hereinbefore described.

103,924.—PRINTING-TELEGRAPH INSTRUMENT.—Frank L. Pope, Elizabeth, N. J., and Thomas A. Edison, New York, N. Y.

Claim.—1. In a printing-telegraph instrument, the arrangement of two electro-magnets in the same electrical circuit, one being employed to rotate the type-wheel and the other to actuate the printing mechanism, when the action of the latter is controlled by that of the former by means of a branch or short circuit and a mechanical cut-off, or its equivalent, constructed and operated substantially as described.

2. An improved cut-off, which we term an electrical unison cut-off, whereby, at a given point in the revolution of a ratchet or type-wheel, a "shunt," or branch circuit may be brought into action, and the electrical current diverted from the electro-magnet controlling the movement of the said ratchet or type-wheel, so that the said movement may be arrested at such given point, the same being constructed and operated substantially as specified.

3. The electro-magnet R R' and soft-iron bar T, in combination with a polarized steel bar, n s, so arranged that said steel bar will be in magnetic contact with the said soft-iron bar, substantially as herein specified.

4. The bar M, feeder N and N', either or both, spurs q and q', either or both, bed-plates O and O', either or both, combined, arranged, and operating substantially as described and for the purpose specified.

5. The combination of the lever E, pawls F and F', stops S and J, and ratchet-wheel G, arranged and operated substantially as described.

6. The combination of the pawl F, stop S, and ratchet-wheel G, substantially as and for the purpose specified.

7. The electro-magnet R R', soft-iron bar T, and polarized steel bar n s, in combination with the spring t, insulated collar v, and pin or stud w, in the manner described, and for the purpose specified.

8. The combination, with an electro-magnet in a telegraphic printing-apparatus, of a type-wheel, whose periphery is provided with integral numbers, so arranged upon said type-wheel that fractions of numbers may be printed upon the paper, thereby decreasing the number of characters upon the type-wheel and insuring great rapidity in recording, substantially as herein shown and described.

9. In a printing-telegraph, a type-wheel, provided with letters, figures, or characters, which are arranged in two different lines drawn around the periphery of said wheel, and in such manner that the said letters, figures, or characters in the one line shall be opposite blank spaces in the other line, substantially as herein specified.

103,925.—SAW-SET.—Henry K. Porter, Boston, Mass.

Claim.—1. The saw-set, consisting of the lever-press A B, the plunger b, anvil f, gauge g, and the vibrating or swinging adjusting stop-screw l, connected and arranged substantially as described and shown.

2. The vibrating or swinging adjusting stop-screw l, substantially as described and shown.

103,926.—CALIPER.—Henry K. Porter, Boston, Mass.

Claim.—The combination of rigid limb A and pivoted limb B, constructed with sections c and d, actuating-screw f, and spring h, substantially as and for the purposes specified.

103,927.—APPARATUS FOR PACKING PRESERVES.—Christopher T. Provost, New York, N. Y.

Claim.—1. The presser B, consisting of the hollow shank b and perforated bottom a, substantially as herein set forth and described.

2. The combination of the presser B and sleeve a with the tube A, all arranged for packing and compressing fruits, vegetables, &c., as set forth.

103,928.—LAMP-SHADE.—William Reed, Jr., Boston, Mass., assignor to himself and William Reed, M. D.

Claim.—The pieces A, having projections B and orifices c, in combination with sliding wires D, substantially as described.

103,929.—GAS-RETORT.—James Rigby and Philip A. Palmer, Marietta, Ohio.

Claim.—The retort described, having the walls a a' a², plate B, receiver d, pipe d', when combined as described, for the purpose set forth.

103,930.—COTTON-SCRAPER.—Daniel G. Rittenhouse, Shelby Depot, Tenn.

Claim.—1. In a cotton-scraper, the frame E, having the supplementary standard u, with its attaching-surface q and bolt-hole p, and the head t, with its staple s, substantially as shown and described, for the purpose set forth.

2. The arrangement of the mold-board A, beam B, handles C C, stiffening-brace D, and frame E, constructed substantially as represented and described, as and for the purposes set forth.

103,931.—FUSE-COMPOSITION.—William H. Rogers, Brooklyn, N. Y.

Claim.—The above composition, substantially as and for the purposes described.

103,932.—PAPER-BOX.—John Root, New Haven, Conn., assignor to himself and Andrew Martin, same place.

Claim.—The paper A and sheet-metal clasps B, respectively, bent and fitted together in the manner specified, to form the improved box shown and described.

103,933.—MILK-CAN HANDLE.—Henry W. Shepard, Mannsville, N. Y.

Claim.—The shield A, when the same is stamped out of one piece of metal, having a curved flange, A², raised center A', with its opening a and grooves C C, and the handle B, with its guard B', when the whole is so constructed and arranged as to form a milk-can handle, substantially as described.

103,934.—STUD-NIPPER.—Granville T. Shepley, West Groton, Mass.

Claim.—The nippers, constructed substantially as herein described.

103,935.—COMBINED FEED AND WATER-TROUGH.—Joseph Sherman, Coopersville, Mich., assignor to himself and William Sherman.

Claim.—A combined feed and water-trough, to be used for feeding and fattening swine, composed of the feed-chamber F, the feed-trough T T, provided with doors H H, the water-tank W, provided with the slide faucet O, and the water-trough T' and cover H', provided with the bent lever L, all constructed, arranged, and operated substantially as above described.

103,936.—CORN-DROPPER.—James L. Smith, Pemberton, N. J.

Claim.—The improved corn-dropper, herein described, consisting of the tube A, bell-mouth B, cylinder D, conical connection H, spreader E, handle and seed-cup, all constructed and arranged substantially as specified.

103,937.—VALVE.—August Snyder, Pittsburg, Pa., assignor to Atwood & McCaffrey, same place.

Claim.—The lugs or projections B B' arranged upon the inner surface of the disks of the valve to move upon a single point of contact, all as and for the purpose shown and described.

103,938.—SASH-FASTENING.—William B. Snyder and Robert Hubbard, Bridgeport, Conn.

Claim.—The construction and relative arrangement hereinbefore set forth of the horizontally-swinging latch, the segment-shaped catch-plate, and the notched horizontally-moving plate-spring inserted vertically into the catch-plate, for the purpose described.

103,939.—GEARING FOR CARPET-SWEEPING MACHINES.—Gilbert F. Tayler, New York, N. Y.

Claim.—As a new article of manufacture, a combined gear and traction-wheel with two rims, when made, as herein described, of solid rubber, and used on carpet-sweepers, for the purposes specified.

103,940.—APPARATUS FOR SPLITTING ROCK.—Eber Thayer, Union City, Mich.

Claim.—The rock-splitter above described, consisting of the case A, provided with the removable cover B, the diaphragms C, the stud D, the ribs E, the opening F, and the conductors G, when these several parts are constructed and arranged as described and for the purpose set forth.

103,941.—CORN-SHELLER.—Ambrose B. Thompson, Owego, N. Y.

Claim.—The disks B B, upright sectional cylinder a a on shaft D, with pinion C connecting the disks, substantially in the manner and for the purpose herein described.

103,942.—MOLD-BOARD PRESS.—Andrew Thompson, Ottawa, Ill.

Claim.—The mold-board press, made as described, that is to say, of the eccentric F, the rod G, the rods H H and J J, the cog-wheel M, and pinion N, the pulley O, the fly-wheel Q, the clutch R and R', and the lever S, in combination with the molds L and L', arranged together as described and for the purpose specified.

103,943.—STOVE-PIPE VENTILATOR.—David V. Thrift, Monroe, Iowa, assignor for one-half to Levi Fisher.

Claim.—1. A stove-pipe ventilator, having one perforated head-piece, and a perforated inside cylinder, substantially as herein set forth.

2. The double cone D, constructed as described, so as to fit within the inner cylinder C, thereby forming an air-chamber, and more perfectly hold

ing and securing a stove-pipe, substantially as set forth.

3. An inner air-chamber, formed by and between a double cone and inside cylinder of a stove-pipe ventilator, in combination with suitable perforations in said inner cylinder for admitting air into the air-chamber, substantially as herein set forth.

4. The combination of the outside cylinder A, head-piece B, inside perforated cylinder C, and the double cone D, with the air-chamber formed between said inside cylinder and cone, all substantially as and for the purposes herein set forth.

103,944, antedated June 1, 1870.—VOLUTE SPRING.—Joseph Trent, Millerton, N. Y.

Claim.—As a new article of manufacture the coiled or volute spring, made of a serpentine or wave-like plate or bar of metal, substantially as herein set forth.

103,945. — WASHING-MACHINE. — David Vogt, Trenton, Mich.

Claim. — The construction and arrangement of the frame A, tub B, rub-board K, rubber L, pitman M, yoke N, cranked shafts C and H, pulleys G and J, fly-wheel F, and treadle D, substantially as shown and set forth, for the purposes specified.

103,946.—COFFEE AND TEA-STEEPER.—Joseph B. Wakeman and Alonzo M. Bush, Hancock, N. Y.

Claim.—The extension rod, formed in two parts, D and E, in combination with the box, consisting of the perforated body A, cover B, and concave bottom C, as shown and described.

103,947, patented in England December 24, 1868.—ELECTRO-DEPOSITION OF COPPER AND BRASS ON IRON AND STEEL.—William Henry Walenn, London, England.

Claim.—The improvements in electro-coating of iron or other articles with copper or brass, substantially as herein set forth.

103,948.—CONCEALED HINGE FOR LANDAU CARRIAGE.—Edward Wells, New Haven, Conn.

Claim.—A hinge consisting of the two parts C and D, the part D turned out of line so as to form an arm, E, to which the part C is attached, thereby carrying the pintle forward so that the bow will turn upon the top of the pillar without exposing the hinge, in the manner substantially as described.

103,949.—THREAD-CONTROLLER FOR SEWING-MACHINE. — Washington Wendell, Milwaukee, Wis., assignor to the Finkle & Lyon Manufacturing Company, Middletown, Conn.

Claim. — The slotted lever D, constructed as shown, and arranged transversely across the path of the needle, in combination with the pin a on the needle-bar, and the fixed eyes E and F, all operating substantially in the manner and for the purpose herein set forth.

103,950. — BOOTS AND SHOES. — Levi H. Whitney, Washington, D. C.

Claim.—A boot or shoe, the sole, or sole and heel of which are armed with hardened-steel screws, substantially in the manner and for the purpose set forth.

103,951. — FIRE-KINDLING FAGOTS. —William J. Wiggins and Charles Stout, St. Louis, Mo.

Claim.—The fire-lighter, herein described, consisting of a bundle of sticks coated with resin, and afterward covered at one end with a body of coal-slack, and wrapped, either wholly or in part, with fibrous or other suitable material, the coal-coated end serving to maintain combustion for a longer period, while the other end admits of being readily ignited with a match.

103,952.—SAW-MILL.—William M. Wilkin, Detroit, Mich.

Claim.—1. The guide-yokes J, constructed, arranged, and operating substantially as and for the purpose set forth.

2. The double forked buckles G, connected by the cross-piece *g*, each buckle being provided with a rectangular transverse bar, *e*, and the hooked yokes E with suitable keys, when the several parts are constructed and arranged as described and for the purpose set forth.

3. The saws C, provided with straps, *b*, the hooked yokes E, keys *f*, gibs *f'*, and transverse bars *e*, when constructed and arranged as described and for the purpose set forth.

103,953. — LIME BARREL OR KIBBLE.—Frank Knolton Winsor, Hillsdale, Mich.

Claim.—The construction of a barrel for the purposes specified, wherein the two sections A B, bottom C, and ring D are arranged relatively to each other, substantially as herein specified.

103,954.—MACHINE FOR MAKING OX-SHOES. Alvin L. Wooding, Bristol, Conn.

Claim.—1. The combination and arrangement of the stud or pin *d*, the cam-die *a*, and the rollers B, C, and D, the whole constructed and operating together, substantially as described.

2. The combination and arrangement of the stud *d*, cam-die *a*, rollers B, C, and D, and the rotary creasing and punching-die E, the whole constructed and operating together, substantially as described.

103,955. — APPARATUS FOR COOLING ALE, BEER, &c.— Frederick Zeitz, Philadelphia, Pa.

Claim.—1. The ice-chamber A, cooling-pan B, and the bottle-rack C, when combined and arranged substantially as and for the purpose shown and described.

2. The cooling-pan B, and its vent or air-cock, substantially for the purpose shown and described.

103,956.—MANGER.—Chester E. Albright, Muncy, Pa.

Claim.—1. The arrangement of the hay-manger and grain-feeding box side by side, as described, in combination with a vertical feeding-rack in that side of the hay-manger facing the grain-box, substantially as herein set forth.

2. The grated or slatted bottom of the hay-manger, located on or above a level with the bottom of the grain-box, substantially as and for the purpose described.

3. The vertical hinged feeding-rack, substantially as and for the purpose described.

4. The movable hinged back of the hay-manger G', substantially as and for the purpose set forth.

5. In combination with a hay manger provided with openings to feed in hay from an adjoining room or from the floor above, the swinging door F', substantially as and for the purpose described.

103,957.—VELOCIPEDE.—Arthur M. Allen, New York, N. Y.

Claim.—1. The seat in the rear of the hind wheel, supported by brackets, when combined with the driving-gear of the hind wheel and its standard, and operating as herein described.

2. The handle *d'*, secured to the frame of the front wheel, in combination with the seat, secured to brackets extending from the hind-wheel standard, substantially as described.

3. In a velocipede, having one wheel behind the other, the arrangement of a joint in the reach behind both the front wheel and the top of the hind wheel, substantially as shown and described.

4. The arrangement, in a velocipede, of a slide and groove block, forming an adjustable connection between the reach and standard, substantially as described.

5. The fork *l* and sleeves *m*, composing the standard F, as described.

6. The elastic cushions *p*, in combination with the fork *l* and sleeves *m*, composing the standard, substantially as set forth.

7. The elastic cushion surrounding the sleeves or bearings *m* of the axle, when combined and arranged with the frame or standard of a velocipede.

8. The axle of the driving-wheel of a velocipede, constructed of two parts, which are secured in the hub of the wheel by right and left-hand screw-threads, as set forth.

9. The foot-brake, composed of pedals and a shoe mounted on a rock-shaft, as described, so that it can be used either as a foot-rest, a foot-brake, or a scraper.

10. The arrangement of detachable weights, in combination with the driving-wheel of a velocipede, substantially as set forth.

11. The arrangement of the lever extending from the steering-post, and connected to the lever extending from the steering-wheel by a slot or its equivalent, and operating as herein shown and described.

12. The metallic straps, in combination with the tire formed of end-grain wooden blocks, provided with shoulders to receive said straps, one on each side, substantially as set forth.

13. The oscillating lever, in combination with a roller or slide, mounted on the crank-pin of the driving-wheel of a velocipede, and operating together substantially as described.

14. The hinged road-brake, in combination with the frame of a velocipede, for the purpose set forth.

15. The toggle-levers, in combination with the hinged road-brake, substantially as described.

16. The foot-pedals, in combination with the levers operating the road brake, and so connected to them that, by actuating the lever on one side, both sides of the road-brake are depressed with a uniform pressure, as set forth.

103,958.—SIDEBOARD AND EXTENSION TABLE.—Derk Arnaud, Boston, Mass.

Claim.—1. The combination of an extension-table with a sideboard into which it folds, when constructed and operating in the manner and for the purpose specified.

2. In combination with an extension table, and a sideboard into which it folds, the hinged top A, with its folding shelves and supports, the whole constructed and operating substantially as described.

103,959. — WASHING-MACHINE.—Frank M. Bacon, Plainfield, N. J.

Claim.—The arrangement of the swinging dashers *e f*, operated by the cranks and connecting-links *m n*, in combination with the stationary squeezing-slats *d*, substantially as set forth.

103,960.—PUMP.—Bennett C. Bailey, Constitution, Ohio.

Claim.—The arrangement, within a tight casing subdivided into compartments, of a series of lifting-pumps, the plungers of which are set in such a manner that they shall be in different parts of their strokes at the same time, substantially as and for the purpose set forth.

103,961.—PRINTING-PRESS.—Amos H. Bangle, Brooklyn, Cal.

Claim.—1. The elastic impression-roller E, in combination with the sleeves *a b*, and elastic buffers *c*, and wedge-shaped platen, substantially as and for the purpose above described.

2. The coiled wire *h*, its center forming a lever, as described, in combination with the spring *k*, for elevating the tympan-frame, substantially as specified.

3. In combination with the sliding form-bed C, the sliding frame L, with its inside racks *u* and *u'*, substantially as and for the purpose specified.

4. Operating the distributing and supply-rollers by means of the independent toothed wheel *t'*, substantially in the manner as herein specified.

5. The combination, with the roller *w*, of the rack *u*, shaft *t*, wheel *t'*, and arms *v*, when arranged to operate substantially as described.

6. The arms P and Q, secured to the extremities of the shaft *t*, in combination with the toothed segments S, for operating the inking-roller, substantially as above specified.

103,962.—CANDY-MACHINE.—Jesse S. Batchelder, Fort Wayne, Ind.

Claim.—1. The rotating batch-receiver M', provided with a surrounding hot-water chamber, S, and operated with reference to the rollers H F F F' H', as set forth.

2. In combination with the batch-receiver M', pulley *h*, and arms *c*, *a*, and *j*, the rollers H F F and H' F', when arranged to operate with the belt V, as and for t

3. In combination with the batch-receiver M', the pulley *h*, when its shaft is adjusted by the compound arms *c*, *a*, and *j*, as specified.

103,963. — FIRE-PROOF CEILING.—F. Baumann and George F. Letz, Chicago, Ill.

Claim.—1. A fire-proof ceiling, consisting of metallic girder-beams A, with their dovetailed-shaped grating C, and the metallic transverse beams B, provided with perforated flanges D, when constructed and arranged substantially as described.

2. The transverse metallic beams B, provided with perforated flanges, when constructed in the manner substantially as herein described, and for the purpose set forth.

103,964. — FLOUR-SIFTER. — Peter Becker, Mount Vernon, N. Y.

Claim.—1. The ratchet-block Y, arranged to move concentrically with the sleve, in combination with the pawl V, arranged to move eccentrically therewith, so as to cause the disengagement of the pawl, substantially as and for the purpose described.

2. The combination of the vibrating sieve with a buffer, arranged and operating substantially as described.

3. The spring lever N, pivoted to the bottom plate I, as set forth, in combination with the sieve D, substantially as described.

4. The crushers *e e*, &c., arranged in a string, as set forth, and connected by one end with the inside of an oscillating sieve, and the other end left free, substantially as described.

5. The combination with the sieve D of the outer box A, the inner box H inclosing the operating pawl and springs, and the lever N, substantially as described.

103,965.—COPY-BOOK. — Nathan P. Beers, New York, N. Y.

Claim. — A copy-book, composed of detached sheets B, held together by the envelope A, having a resting face, *b*, leaving exposed a portion of the sheets, substantially as and for the purpose described.

103,966.—PATTERN FOR MOLDING STOVE-PLATES.—Richard William Belson, Philadelphia, Pa.

Claim.—The cutter C, combined with pattern A and cavity B, all constructed substantially as set forth, whereby the sand is removed from the core, as described.

103,967. — LAMP-BURNER. — George Berkstresser, Bedford, Pa., assignor to himself, F. W. Irvine, Jacob Reed, and R. W. Berkstresser, same place.

Claim.—The combination of two smooth rollers on each shaft with the pinions on the end of each shaft, and the elliptical pressing-springs, all substantially as and for the purposes herein set forth.

103,968.—MANUFACTURE OF WOOD PAPER STOCK.—George H. Bliss and Martin Rees, West Stockbridge, Mass.

Claim.—1. The eccentric crown-saw or saw-like devices B, arranged to operate upon the wood, substantially as specified.

2. The saws *a*, having their teeth flat or perpendicular on their one side and beveled off on their back edges from the flat side of the saw or saw device, essentially as herein set forth.

103,969.—REEL FOR HARVESTER.—Jacob W. Bope, South Bend, Ind., assignor to himself and C. Aultman, Canton, Ohio.

Claim.—1. The base-plate B, upon which the reel-post is pivoted, provided with uprights or arms *b*, forming a support for the levers through which the reel is adjusted vertically.

2. The base-plate B, provided with uprights or arms *b*, in combination with the levers M and L, for adjusting the reel both vertically and horizontally.

3. The base-plate B, provided with uprights *b* and toothed rack b^1, in combination with lever M, pawl M′, and link O, for effecting the horizontal or backward and forward adjustment of the reel.

4. The toothed racks b^1 b^2, in combination with bars *p p*, which connect said racks and also serve as stops to limit the throw or sweep of levers L and M.

103,970.—REEL FOR HARVESTER.—Jacob W. Bope, South Bend, Ind., assignor to himself and C. Aultman, Canton, Ohio.

Claim.—1. The single pivoted reel-post C, in combination with a lever and link, arranged substantially as described, whereby the driver, in his seat on the machine, can control the horizontal or forward and backward adjustment of the reel.

2. The reel-post or standard, provided with the two pivots, arranged at right angles to each other, the one vertical and the other horizontal.

3. The cross-head or yoke F, in combination with rack H, pinion h, and a device for operating said pinion, to adjust the reel vertically.

4. The cross-head or yoke F, provided with the rack H, in combination with pinion h and tumbling-shaft J, for adjusting the reel, as described.

5. The sleeve K, in combination with a standard for supporting the same, and devices connecting said sleeve with the standard and with the reel, substantially in the manner described, so that the reel may be adjusted as set forth.

6. The pivoted crank-arm J′ in combination with hooks or sockets j^1, for holding the reel at any desired point of adjustment.

7. The swiveling reel-post, in combination with rod or link O and slide O′, for adjusting the angle of the reel, relative to the cutting apparatus, as described.

8. The arrangement of guide-pulleys *e e* with the driving-belt and the driver-pulley E^1, whereby the required vertical adjustment of the reel may be effected without varying the tension of the driving-belt.

103,971.—MECHANICAL MOVEMENT.—Nathaniel Bradford, Addison, Me.

Claim.—The combination of the levers *b d*, pivoted in the standard *a*, with the rods *c*, when the distances from the fulcrum of one lever to the points of its connection with the rods are less than the distances from the fulcrum of the other lever to the points of its connection with the rods, substantially as and for the purpose described.

103,972.—WATER-WHEEL.—William Braidwood and Horatio Jones Hewitt, New York, N. Y.

Claim.—1. The pen-stock A, provided with segmental flanges *a b*, and sheet-pieces *c*, forming a case which incloses one-half of the wheel, or less, leaving the other half entirely open, as set forth.

2. The bridges *e* in the pen-stock, in combination with the gate *f* and wheel B, as described.

103,973.—CHAIR-SEAT.—William G. Bulgin, Vienna, N. J.

Claim.—1. A knock-down chair-seat or bottom, when made of the inner portion of rattan cane, in the manner substantially as herein shown and described.

2. The round rims B B′ and C C′, the former provided with holes or perforations for receiving the strands, in combination with the seat A, made of the inner portion of rattan cane, by the method herein described, for the purposes set forth.

103,974.—COMPOUND FOR PREVENTING AND REMOVING INCRUSTATION IN STEAM-BOILERS.—William H. Burridge, Cleveland, Ohio, assignor to A. L. Kingman, C. G. Dodge, and H. C. Hartwell.

Claim.—1. Combining the salts of iron and copper with alkaline salts and tannin, or its equivalents, as and for the purpose set forth.

2. The described compound, separately and combined with borax, substantially as and for the purpose described.

103,975.—TOOL-HOLDER.—Reuben P. Buttles, Mansfield, Pa.

Claim.—1. The tool-holder A, provided with the removable head *d*, and locking-pin *e*, constructed substantially as described.

2. In combination with the tool-holder A, the countersink *c*, when constructed and arranged to operate substantially as and for the purpose set forth.

3. The supplemental tool-holder or chuck B, having the stem *e*, and the split and recessed head *f* for holding drills, saws, files, and similar tools, and adapted to be used in combination with the holder A, substantially as described.

4. The combination of the holder A, chuck B, and socket-pin *w*, constructed and arranged to operate as described.

103,976.—COMBINED LIQUID GAUGE AND HYDROMETER.—Samuel R. P. Camp, New York, N. Y.

Claim.—1. The combination of a transparent gauge, B, attached to a cask or vessel, E, for indicating the liquid contents thereof, with a hydrometer, *c*′, for indicating the strength or specific gravity of the liquid, substantially as herein specified.

2. In combination with the foregoing, also the arrangement of an adjustable and removable scale, P, as set forth.

103,977.—COMPUTING SPRING-BALANCE.—Samuel R. P. Camp, New York, N. Y.

Claim.—The reciprocating apron or flexible tablet E, provided with price and computing scales, and the winding shafts G H, provided respectively with a brake and winding spring, all arranged in combination with the spring-balance or scale, substantially as and for the purpose herein specified.

103,978.—BEE-HIVE.—Henry F. Carpenter, Greencastle, Pa.

Claim.—1. The arrangement of a series of comb-frames in a bee-hive, in semicircular or approximate form, with panes of glass and open spaces between them, substantially as and for the purposes herein set forth.

2. The arrangement of a bee-hive in such a manner that the comb-frames will be entirely disconnected from the sides of the box in which they are inclosed, substantially as and for the purposes herein set forth.

3. The combination of the blocks O O′, bars *f f*, panes *i i*, of glass, wires *k k*′ and *m m*′, and spring-rods *l l*′ and *n*, all constructed and arranged as described, substantially as and for the purposes herein set forth.

4. The recess G, constructed as described, and provided with slide L, shelf M, and slide N, all substantially as and for the purposes herein set forth.

5. The arrangement of the bottom A, posts B B, partition C, front D, sides E E, doors H H, I I, and J, lid K, and flanges *a a*, *b b*, and *r r*, all substantially as and for the purposes herein set forth.

6. The grooved block S, with slide T, constructed and arranged as described, on the front D, outside of the aperture *i*, substantially as and for the purposes herein set forth.

103,979.—WOOD PAVEMENT.—Louis A. Cauvet, New York, N. Y.

Claim.—A pavement, consisting of the triangular stringers or bed-pieces B and the blocks C, with the keys or strips D, all constructed and arranged substantially as described.

103,980.—TOILET-MIRROR.—George H. Chinnock, New York, N. Y., and Edward P. Williams, Elizabeth, N. J.

Claim.—The arms *a* of the cap B, constructed of a curved and concavo-convex form, for operation in the manner essentially as shown and described.

103,981.—COTTON-GIN.—Jefferson M. Clough, Ilion, N. Y.

Claim.—1. The combination of ribbed stripper, D, a brush-drum, E, and a toothed drum, B, when the latter has ribbed surfaces between its teeth, substantially as described.

2. Constructing and arranging the ribs or plates between which the toothed plates of the drum revolve, so that they present a bearing or support beyond or above the base of the teeth of said plates, for the cotton to rest upon while being operated upon, all substantially in the manner described.

103,982.—PLOW.—Henry C. Cloyd, West Alexandria, Ohio.

Claim.—1. The arrangement of the shanks C C, rods *f f*, and nuts *i i*, with the plow-beams A A, and handles E E, connected by the boxes *h h* through the slotted ends of the handles, all constructed substantially as set forth.

2. The arrangement of the beams A A, clevis B, shanks C C, plows D D, handles E E, guides *a a* and *d e*, rods *f f*, nuts *i i*, and boxes *h h*, all constructed substantially as and for the purpose herein set forth.

103,983.—CHILL-BOSH FOR BOILING AND PUDDLING-FURNACES.—Thomas Coates, Ironton, Ohio.

Claim.—1. The chill-bosh for reverberatory furnaces, consisting of a continuous ring, B, cast around the water-pipe C, in combination with the wrought-iron band F, as described.

2. The combination of the continuous cast ring B, pipe C, wrought-iron band F, and fore plate E, as and for the purposes set forth.

103,984.—SEWING-MACHINE.—James J. Cobb, Boston, Mass.

Claim.—The double-grooved cam-disk *h*, arranged on the main shaft *g*, and provided with the crank-pin *i*, when combined with and operating the levers *d* and *e* to effect the desired relative movements of the needle-bar and arms *f f*, substantially as and for the purpose specified.

103,985.—CARRIAGE-CURTAIN BUTTON.—Alonzo Comstock and James H. Nicholson, Chicopee, Mass.

Claim.—The combination of the two parts A and B, constructed with knob and post, and single quick-thread, the parts being arranged and operating substantially as and for the purpose set forth.

103,986.—ELECTRICAL COTTON-PICKING MACHINE.—Robert F. Cooke, Brooklyn, N. Y.

Claim.—1. The cotton-picker, constructed so as to be charged with electricity, and thereby attract the cotton-fibers and draw them from the bolls, substantially as and for the purpose herein specified.

2. The arrangement and use of belts or bands charged with frictional electricity, between which the cotton-plants are made to pass, for the purpose of attracting and collecting the cotton from the bolls, and convey the same to the receiving-box, substantially as hereinbefore specified.

3. The arrangement and use of suitable belts at each side of machines constructed with a device for shaking the plant, for the purpose of loosening the cotton from the bolls, in combination with suitable rubbers or electrics to charge said belts with electricity, in the manner and for the purpose substantially as herein set forth.

103,987.—QUILTING-FRAME.—John A. Cookerly, Frederick, Md.

Claim.—The reverse rollers M M′, ratchet-wheel N N′, pawls G G′, bearings D D′, and open slots *g g*′, constructed and arranged as described, so that the rollers are retained in position by the aid of the tension of the quilt, and the latter rolled from one roller under and on the other, in the manner and for the purpose set forth and shown.

103,988.—METALLIC CAP AND NOZZLE.—Edward T. Covell, Brooklyn, N. Y.

Claim.—One or more wedge-shaped flanges projecting from the rim of a metallic cap or cover, in combination with one or more recesses, lips, or hooks, formed or secured upon the nozzle upon which the cap is to fit, to fasten and secure the one upon the other, substantially as herein set forth.

103,989.—LIQUID-METER.—Robert Creuzbaur, Brooklyn, E. D., N. Y.

Claim.—1. The valve-casing F^2, with its ports, in combination with the valve formed of disks Q Q″ T T, and the three cylindrical revolving rollers R and Z, with their shafts, substantially as described.

2. The cylindrical rollers, arranged to (and caused to) roll directly upon and over the ports of a fluid-meter, for the purpose of changing the course of the fluid through said ports, substantially as described.

3. The combination, with the valve-casing F^2 and its ports N N^1 and P P^1, of the revolving valve formed of the two end disks Q Q″ or Q T′ Q″ T, and a diaphragm dividing the space between the latter longitudinally into two chambers, and so that the two edges of the latter cover and pass over two opposite ports simultaneously, or nearly so, substantially as and for the purpose hereinbefore set forth.

4. The combination, in a fluid-meter, with a valve and valve-casing, two cylinders E F, E′ F^1, two pistons G G′, and their connecting-rods I I′, of the rubber-roll piston-packing H H′, substantially as and for the purpose hereinbefore set forth.

5. The combination, with the cylinders E F, E′ F^1, pistons G G′, of any construction, and piston-packing rolls H H′, of shoulders e^2 and f^2, formed substantially as and for the purpose hereinbefore set forth.

6. The combination, with pistons G G′ and connecting-rods I I′, of the sleeves K K′ and of the pipes or cylinders L L, substantially as and for the purpose hereinbefore set forth.

7. The combination, in a fluid-meter, of a piston, G, a connecting-rod, I, and a piston-sleeve, K, placed on the end of the piston opposite to the connecting-rod I, substantially as and for the purpose hereinbefore set forth.

8. The combination, with the two reciprocating pistons G G′, connecting-rods I I′, and a revolving valve, of the drag-crank V, with the worm upon its shaft, and the registering-shaft W′, substantially as described.

103,990.—LIQUID-METER.—Robert Creuzbaur, Brooklyn, E. D., N. Y.

Claim.—1. In combination with the cylindrical shell D E of the end nozzles J and K, having their axis parallel to that of the shell, and of supply and exhaust-passages within the shell leading in a direction parallel to its axis, substantially as described.

2. The supply and exhaust-passages in a fluid-meter, passing centrally through the same in the direction of its long or major axis, as shown in the combination of the shell D E, nozzles J and K, and

the passages H, H^1, and G G, substantially as described.

3. The combination of the cylinder P with annular valve-piston N and valve-piston M, and their ports, operating substantially as and for the purpose hereinbefore set forth.

4. The combination of a casing, G, and its ports, with the segmental valve H and its ports and passages, operating substantially as and for the purpose hereinbefore set forth.

5. The combination of shell D E and piston R with cylinder P, valve-pistons M and N, sleeve G, valve H, and their ports and passages, substantially as and for the purpose hereinbefore set forth.

6. The loose counter supporting-plate T, placed tangentially to the circumference or sides of the meter-shell, in combination with the bushing-box 3 and shaft 1, substantially as described.

7. The combination, with a ratchet-wheel, 2, and a driver-carrying arm, 7, in a fluid-meter, of a motion-transmitting lever, 8, substantially as and for the purpose hereinbefore set forth.

8. The combination with a piston, F, packed with one or more rubber rolls, R, of a meter-cylinder or shell formed of two parts, D and E, when the latter are so joined that the lip e^3 serves as a retaining-ring to rubber roll R, substantially as and for the purpose hereinbefore set forth.

103,991. — Penman's Wrist-Supporter. — Henry F. Cristy, Charlestown, Mass.

Claim.—I claim my improved wrist-supporter, as described, the same consisting of the body part or plate A, provided with two rigidly-fixed studs or projections having convex bearing-surfaces, and the adjustable band D, constructed, combined, and arranged together in manner and for the purpose set forth.

103,992.—Combined Abdominal and Back-Supporter and Truss.—Richard Jackson Cundiff, Lynchburg, Va.

Claim.—1. The bar A, combined with the truss C, connecting-rod *c*, and shank *c'*, in the manner and for the purpose set forth.

2. The bar A, abdominal supporter B, and hernia truss *c* C, combined substantially as and for the object explained.

3. The hernia truss *c* C, bar A, and back-supporter D, combined substantially in the manner and with the intent described.

4. The bar A, abdominal supporter B, hernia truss *c* C, and back-supporter D, combined substantially as and with the intent stated.

103,993. — Wick-Adjuster for Argand-Lamp Burner. — William B. Curtiss, Bridgeport, Conn.

Claim.—1. Providing the tube or supporting device around which the wick is arranged with a suitable means for guiding the wick vertically.

2. The employment, in combination with the tube around which the wick is designed to pass, of an adjuster which moves the wick up and down by means of a screw thread, substantially as set forth.

103,994.—Apparatus for the Manufacture of Illuminating-Gas. — John Dailey, St. Louis, Mo.

Claim.—1. The combination of the cylinder B, revolving shaft C, and sliding tube *b* with stuffing-boxes *c d*, with the piston F, as shown and specified.

2. The combination of the piston F, rod *e*, and shaft C, the latter having its periphery cut with double intersecting threads or grooves, as and for the purpose specified.

3. The combination of the hollow set-screw *f* and rod *e* with the piston of an air-pump, as and for the purpose specified.

4. The induction-ports G G' and eduction-ports H H', in combination with the cylinder B, and arranged relatively to each other, as and for the purpose specified.

5. An air-pump, combining the several devices hereinbefore specified, all arranged, constructed, and operated substantially as and for the purpose shown and specified.

6. The gearing, composed of the wheels and pinions *p m n r l*, connected with the shafts C and J, the latter being provided with a weight and cord, by which it is set in motion, and all arranged, constructed, and operating as and for the purpose specified.

7. The combination of the tank L, perforated basket M, branch pipes *s s' s'' s'''*, and connecting-pipe *w*, as and for the purpose shown and specified.

8. The receiver S, containing an air-tight bellows, T, weighted on its top, and having the pipe R opening into it, in combination with the tank L, for the purpose of equalizing and rendering uniform the pressure of the gas therein, as shown and specified.

9. The receiver S', containing an elastic bag, W, into which the pipe R' opens, in combination with the tank L, for the purpose of equalizing and rendering uniform the pressure of the gas therein, as shown and specified.

10. The receiver S'', containing a weighted piston, X, made to rise and fall by the pressure of the gas entering beneath it through the pipe R'', in combination with the tank L, for the purpose of equalizing and rendering uniform the pressure of the gas therein, substantially as shown and specified.

11. The combination of the tank L, with its perforated basket M, pipes *w s s' s'' s'''*, and pressure-receiver, with a double-acting air-pump, arranged and constructed so as to manufacture from any of the vegetable and hydrocarbons used for such purposes, a pure carbureted-hydrogen gas, without using fire, water, or heat of any description, substantially as shown and described.

103,995.—Spooling-Machine.—George W. Daugherty, Wilmington, Del.

Claim.—1. The spool-holder C, provided with a shoulder, U, in combination with a stand D, having a beveled lug, T, for the purpose of enabling the spool-holder to be thrown at rest, substantially as and for the purposes mentioned.

2. The curved thread-guide E, constructed and operating substantially as and for the purposes aforesaid.

3. The adjustable segmental rack H, in combination with the traveling bobbin-rail K, as and for the purposes described.

4. The combination with the spool-holder C and stand D, the thread-guide E, and springed bobbin-finger F, of the quadrant or adjustable segmental rack H, cog-wheel traversing bobbin-rail K, and mangle L, constructed, arranged, and working substantially as and for the purposes hereinbefore set forth.

103,996.—Spindle for Spinning-Machine. George W. Daugherty, Wilmington, Del.

Claim.—The arrangement, with the spindle and chambered whirl, of the bolster C, when all are constructed substantially as and for the purposes hereinbefore shown and described.

103,997.—Laundry-Iron Heater.—Robert Diven, New York, N. Y.

Claim.—1. The arrangement of the reversely inclined iron-heating surfaces H I and top J, relatively to each other, and the furnace or furnaces A of the heater, substantially as specified.

2. The combination of the division-plate E with the furnaces A A, the smoke-pipe F, and the damper G, essentially as shown and described.

103,998.—Combined Roaster and Broiler.—Thomas Drake, Cincinnati, Ohio.

Claim.—The convertible coffee-roaster and meat-broiler, substantially as set forth.

103,999.—Manufacture of Frosted Plush, Paper, &c.—Henry V. Edmond, Norwich, Conn.

Claim.—1. The method of preparing and frosting

woolen, cotton, or other material, substantially as herein described.

2. The method of shading the material to be frosted by spraying thereon different colors of the solution at the same operation, by which the material is prepared to be frosted, as herein described.

3. The use of glycerine and gelatine or their equivalents, in the solution for the preparation of the fabric to be frosted, as herein described.

4. As a new article of manufacture, woolen, cotton, or other material, prepared and frosted, with or without colors, substantially as herein described.

104,000. — Horse-Collar. — Joseph Englaender, Sedalia, Mo., assignor to himself and Eugene Lungstras, same place.

Claim.—The parts A of the collar joined by plate H, combined with staples F, plates G, and straps I, substantially as set forth.

104,001. — Dovetailing-Machine.—Harry Hubbard Evarts, Chicago, Ill.

Claim.—1. The oscillating plate W with its lever R, and the frame P with its lever Y, the whole constructed, combined, and operating together, in the manner and for the purpose substantially as herein shown and described.

2. The vertically-sliding plate *b*, in combination with and actuated by the lever Y and its connecting-rod, *a*, the frame P, slides Q Q, pulleys N O, and holding cutter-shaft *m*, by which means the cutter is carried up through the wood worked upon, to form dovetails, as herein fully described.

3. The laterally-sliding mandrel-frame P, slides Q Q, plate *b* and its connections, and levers R S, cam-joints T T, connecting-rod U, vibrating bar W and its connections, all arranged as specified, so as to produce the diagonal cutting necessary to form the dovetail-pins, as herein set forth.

4. The vibrating bar W, having slide *d*, on which run gibs 3, the gauge *f* and screw *g*, in combination with the frame P, levers and their connections R, S, T, T, and U, arranged and operating in the manner and for the purpose herein specified.

5. The plate *i*, with which the vibrating center of the bar W is connected, having the set-screws *k k*, which govern and determine the inclination of said bar, in combination with the adjusting-screw *h*, by which the plate *i* is raised or lowered to produce greater or lesser breadth for cutting, as herein clearly set forth.

6. The cutter, consisting of the two diagonally spreading edges *n n*, and the cutting-wings *p p*, projecting at or about right angles to the shaft *c*, with the cutting-edges being continuations of each other in curved form, with coves *o o*, when the same is constructed as herein shown and described.

104,002.—Paper-File.—Thomas C. Fahnestock, Cincinnati, Ohio.

Claim.—1. The drawing-key B, with its hinged prop-casing C, in combination with the sliding press-plate D, guide-bolts L, and springs K, all arranged and operating substantially in the manner and for the purpose specified.

2. In combination with the plate A and its perforations I, the hook-spring G and slotted open lug O, for holding the heel of the paper-points P, substantially in the manner and for the purpose set forth.

104,003. — Stump-Extractor. — Enoch Farnsworth, Sabbath Rest, Pa.

Claim.—1. The chains C D, attached to and arranged to operate upon the lever-support A, as shown and described.

2. The combination, with the chains C D, of the tackling E F *f f*, and roller G, all the parts operating together, as shown and specified.

104,004.—Tailing-Elevator for Separators.—Arthur B. Farquhar, York, Pa.

Claim.—The arrangement of the trough A and helix B with trough H, helix B, screen F, and spout D, as herein described and for the purposes set forth.

104,005.—Wagon-Axle.—Charles W. Fillmore, Marengo, and Thomas M. Jones, Chicago, Ill.

Claim.—The axle A, sections a^1 or a^2, thimble B, sand-board C, and bolster D, when constructed and arranged substantially as and for the purpose set forth.

104,006.—Coloring and Drying Paper.—Cyrenius C. Fitzgerald, New York, N. Y.

Claim.—1. Drying colored paper by bringing it in contact with one or more heated surfaces, substantially as herein set forth.

2. The method herein described of coloring and drying paper by passing it under rollers or cylinders within the coloring solution, then between other rollers to become partially dried, and, lastly, over and under steam-heated cylinders, to be perfectly dried, substantially as herein set forth.

104,007.—Treating Marble to Preserve it.—Cyrenius C. Fitzgerald, New York, N. Y., assignor to the Fletcher Marble Company, same place.

Claim.—The above-described process of rendering marble impervious to stains, substantially as set forth.

104,008.—Producing Mosaics upon Marble.—Cyrenius C. Fitzgerald, New York, N. Y., assignor to the Fletcher Marble Company, same place.

Claim.—The within-described method of producing mosaic on marble or other carbonaceous stone, substantially as set forth.

104,009.—Vapor-Burner.—David R. Fletcher, Covington, Ky., assignor to himself and Samuel T. Harrison, of same place.

Claim.—The gas-generating burner A, herein described, constructed with circulating ports *b c d e f g h i i'*, and inwardly-flaring sides *a' a'* for the flame aperture, substantially as and for the purpose set forth.

104,010.—Tea and Coffee-Service.—Ira Yeamans, Brooklyn, N. Y.

Claim.—1. A revolving tea and coffee-service, having its several vessels arranged on a horizontal turn-table, G, in eccentric relation to the axis of the latter, and said vessels or certain of them being suspended by trunnions to swing vertically, substantially as specified.

2. The combination of the swinging pots or vessels A, B, and C, with the stationary vessels D, E, and F, the turn-table G, the base K, center supporting-stem I, and socket J, essentially as shown and described.

104,011.—Bee-Hive.—Thomas H. Forster, Indianapolis, Ind.

Claim.—1. The combination and arrangement of the doubled-cased hive, made in hexagonal or other suitable form, in which the internal case is furnished with comb-frames, and arranged to be revolved, substantially as and for the purpose set forth.

2. The construction and arrangement of the bee and moth-entrances, substantially as and for the purpose set forth.

104,012. — Hydrant.—Jacob Fricker and Americus Warden, Cincinnati, Ohio.

Claim.—1. In the described connection with the valve D, revolving nut E, and square valve-stem G, threaded at the end to fit the nut E, the plate F, having a square aperture to fit the rod G, operating as and for the purpose described.

2. In combination with the stock A, having a main valve-seat at its lower end, of the construction described, and valve-stem G, the triple-disk valve D, the upper disk formed with a projecting lip, to operate the waste-valve by direct contact, in the manner described and for the purpose specified.

104,013.—EYELET.—Thomas Garrick, Providence, R. I.

Claim.—The iron eyelet, substantially as described, as a new article of manufacture.

104,014.—SETTING-UP AND TENSION COMBS FOR KNITTING-MACHINES.—William Gaskill, Cincinnati, Ohio.

Claim.—1. The outer heel-comb I, composed of the central perforated plate K M *m m'*, separable and adjustable as described, and two adjustable wings or series of hooks, *J j L J' j' L'*, substantially as described.

2. In combination with the above, the comb G *g g'*, the whole so constructed that the same weight can be made available for both combs, substantially as shown and set forth.

104,015.—THILL-COUPLING.—John H. Gee, Cortland, N. Y., assignor to George T. Chapman, New York City.

Claim.—As an improved article of manufacture, a shaft shackle composed of the parts A B, having the semicircular grooves H, the one part being provided with a curved hook-like projection, and the other part with a slot or opening to receive the hook, the two parts being connected together, when placed about the bolt of the clip, by the said hooked and slotted projections, and by a bolt or screw, all substantially as specified.

104,016.—FRUIT-BOX.—Lewis L. Gilliland, Dayton, Ohio.

Claim.—The cover, having the central or end portions of its top removed, provided with side-strips C C fitting over the sides of the box, upon which it is locked by a bar, A, attached to the box by staples B B, through which it slides to overlap the side-straps of the cover, substantially as shown and described.

104,017.—EMBROIDERING ATTACHMENT FOR SEWING-MACHINES.—Harry C. Goodrich, Chicago, Ill.

Claim.—The plate E, when provided with the slits *e f*, in combination with part G, the part F having the slots *g h*, and the bar H, all constructed and operating substantially as specified.

104,018, antedated May 27, 1870.—ENVELOPE-OPENER.—John P. Gruger, Philadelphia, Pa., assignor to himself and Frederick Rodrigo, same place.

Claim.—The combination and arrangement of the covering plates or side pieces A A' *a a'*, and blade B, with its duplicate cutting-edge, and stem *b*, made in the manner shown and for the purpose specified.

104,019.—WATER-SUPPLYING APPARATUS.—John C. Hagan, Nashville, Tenn.

Claim. — The valves F, I, and M, and air-chamber K, in combination with the pipe B and hydrant D, when constructed and operating as herein shown and described.

104,020.—SPINDLE FOR SAFE-LOCK.—Robert Haile, Cincinnati, Ohio, assignor to Charles Diebold and Jacob Kienzle, same place.

Claim.—A tapering spindle, having one or more spiral grooves with cutting-edges, substantially as and for the purpose set forth.

104,021.—COOKING-STOVE.—William Hailes, Albany, N. Y.

Claim.—1. The arrangement of the warming-closet door F', at one end of the stove, in combination with the fire-chamber, ash-pit, oven, and reservoir-chamber, arranged as described.

2. The flue *g*, extended beneath the warming-closet and ash-pit, in a stove constructed as described.

3. In a cook-stove, substantially as described, the combination of the air-heating chamber, having the inlet d^1 and outlet d^2, with the single damper, which opens and closes both of said inlets, substantially as described.

104,022. — CORSET-SPRING. — Joseph Hanauer and Nicholas Sartor, New York, N. Y.

Claim.—The main springs *a a*, provided with secondary removable springs, *b b*, held in place by and movable within eyes, C C, formed by the clasps or fastenings *d d*, the whole constructed and operating together substantially as herein shown and described.

104,023. — HARNESS-SADDLE. — Emery E. Hardy, Joliet, Ill.

Claim.—1. The saddle-seat B, provided with the projection on its under side, said projection having a flat surface, with the lug *i* projecting therefrom, and a hole for the screw *e* formed therein, all as herein shown and described.

2. The saddle-band metallic loop E, provided with prongs *f*, in combination with plates *g*, when constructed and arranged as described.

104,024.—RAILWAY CAR-COUPLING.—Daniel Hart, Romulus, N. Y., assignor to himself and Jesse Yerkes, same place.

Claim.—1. The device for holding the coupling-pin in an elevated position and for automatically releasing it, consisting of spring F, bar D, hangers *d*, pieces *f*, and levers J, with their cross-piece *j*, substantially as and for the purpose set forth.

2. The coupling-pin, consisting of the pin proper L, the piece M with its notch *p* and shoulder *r*, elevating-pin N, and springs, constructed and operating in connection with the bar *i*, and its attachment, substantially as described.

104,025.—FAUCET.—Irus W. Harvey, Norwich, Conn.

Claim.—1. The screw-threaded follower D, perforated to receive studs *s s* on the faucet, and acted upon by a spring, *i*, in combination with a valve, *g*, and a barrel-plug, substantially as described.

2. The screw-plug D, acting also as a follower, with wings *v v* fitted within a barrel-plug, substantially as described.

3. The combination, with the barrel-plug, of follower D, spring *i*, stem E, valve *g*, and spring *j*, substantially as described.

104,026.—WATER-WHEEL.—William Haslup, Sidney, Ohio.

Claim.—The water-wheel B within the case A, said wheel having a dome-formed concavity beneath and a more superficial depression above, and buckets ascending vertically about half their length, then curving rearward and downward, as shown, in combination with the annular series of chutes C C between the upper and lower plates D D, the said chutes flaring in straight lines outwardly, and fitting in segments so as to form a register with the intermediate gate, and moved by the pinion and ratchet E G, all substantially as shown and described.

104,027.—RUBBER DOOR-SPRING.—Joel B. Hayden, Schaghticoke, N. Y.

Claim.—In combination with the rubber spring A, the plates B B', for fastening the spring to the door at one end, and the flanged plate C and plate F, for fastening it to the jamb of the door-frame at the other end, substantially as described.

104,028. — HAND SEED-PLANTER. — John Heberling, Mount Pleasant, Ohio.

Claim. — The perforated reciprocating bar D, working on the top of the metallic bottom C, in

combination with the leather guides O and perforated metallic bottom C, when the perforations M are equal in diameter to the spaces between the perforations *i*, as shown and described.

104,029.—MACHINE FOR SHIRRING FABRICS.—Ansel Hecht, New York, N. Y.

Claim.—1. The combination with the roller D of the rollers E E and F F, arranged as described, and adapted to run at different surface velocities, substantially as and for the purpose herein set forth.

2. The combination of the loose ring or rings G with the rollers D, E E, and F F, essentially as specified.

3. The combination of the plates or springs C C with the rollers D, E E, and F F, substantially as described.

4. The adjustable yoke-levers H, controlled by spring pressure, substantially as described, in combination with the rollers E E and their pinions *m*, arranged to loosely enter the shaft *d*, which carries the operating-wheels of the rollers F F, essentially as specified.

5. The combination of the longitudinally adjustable and working-bars I, the springs *s*, and rollers F F, substantially as shown and described.

104,030.—SETTER, GAUGE, AND CASE FOR SEWING-MACHINE NEEDLES.—Eli E. Hendrick, Carbondale, Pa.

Claim.—1. The combination of a needle-setter and a hollow handle, substantially as described

2. The perforated holder B, furnished with a handle and provided with a spring setting and retaining nib, *s*, all constructed substantially as and for the purpose described.

3. The gauge *c*, in combination with a perforated needle-holder, B, substantially as described.

4. The combination of a setting and retaining-nib or point, *s*, with a gauge, *c*, which is pivoted to the perforated holder B, substantially as described.

104,031.—ANIMAL-TRAP.—Noah F. Hersh, Round Hill, assignor to himself and A. B. Lerew, York Sulphur Springs, Pa.

Claim.—The combination of the box A with opening B, revolving trap-doors D E G, springs *a a*, latches N N, springs *b b*, levers O O, central bar P, and hook R, all constructed and arranged to operate substantially in the manner and for the purposes herein set forth.

104,032. — SPRING CLOSING-CAP FOR OILCUPS AND INKSTANDS.—Harrison H. Heskett, Le Roy, Ill.

Claim.—The combination of the spring *b*, cap C, and the wedge *d*, all constructed and operating substantially as and for the purposes described.

104,033.—NUT-LOCK.—Daniel Hoffman, Noblestown, and William Johnston, Havelock, Pa.

Claim.—The nuts A, formed with the flanges *a*, in combination with the notched plate or bar B, as shown and described.

104,034.—MANUFACTURE OF A NON-HYGROSCOPIC PULVERULENT ACID PHOSPHATE.—Eben N. Horsford, Cambridge, Mass.

Claim. — A non-hygroscopic pulverulent compound, for use in making bread and other farinaceous food, composed of a mixture of an acid phosphate and cream tartar, substantially as set forth.

104,035.—HORSE-COLLAR.—William Kayes, Boston, Mass., assignor to himself, Charles Irving, and James B. Forsyth, same place.

Claim.—A horse-collar, made from one or more pieces of cork, and which, after being cut and trimmed into proper shape, has molded about it a water-proof covering of rubber or other water-proof material, as herein set forth.

Also, an iron or other metallic stiffening, when covered by and concealed within the roll of the collar, substantially as and for the purpose set forth.

104,036.—TRUSS-FRAME BRIDGE.—Charles Kellogg, Athens, Pa.

Claim.—1. The within described box-like combination plates, having external ribs *i i*, and being otherwise adapted to the upper or lower chord-beams and diagonals of a bridge, substantially as set forth.

2. The intermediate plate F, having on one side ribs adapted to the end of the post, and at the opposite side projections adapted to the open end of the above-mentioned combination plates, as described.

104,037. — GLOBE-VALVE. — Norman King, Etna, Pa., assignor to himself and Daniel Homire, same place.

Claim.—The valve-rod C, as described, with the valve E and nut D, in combination with section A, section B, with stuffing-box B^2, gland U, washer R, and packing-ring T, when constructed and operating substantially as described and for the purpose set forth.

104,038.—SEAL-LOCK.—George L. Kitson, Joshua F. Laning, and Joseph Bennor, Philadelphia, Pa., assignors for one-half their right to Cornelius A. Wolborn.

Claim.—1. The swinging locking-dog E, having the catch *o* projecting from its side, and arranged to protrude through an opening in the case and engage with the catch *h* of the seal-cover, substantially as described.

2. The locking-dog E, arranged, in relation to the hasp and the seal-cover, so that either the hasp or the cover may be shut and locked automatically by the single dog or bolt E, without unlocking the one previously shut, substantially as described.

104,039, antedated June 3, 1870.—JOINTED SPRING GUARD.—Urias B. Kline, Reamstown, Pa.

Claim.—The combined jointed stay or guard A B C D, with its foot-piece E F, applied in the manner and for the purpose specified.

104,040.—METHOD OF FORMING CARRIAGE-STEP.—Wilson W. Knowles, Plantsville, Conn.

Claim.—1. The hereinbefore-described method of forming an open-work carriage-step from a solid bar of iron without welding, substantially as and for the purpose shown.

2. The series of dies C and D and E and F for forming a carriage-step, constructed substantially as shown and described.

104,041. — MOVABLE STORE-SHELVING.—George Koch and William Koch, Franklin, Pa.

Claim.—The movable store-shelving herein described, arranged with hinges, for connecting the sections, or separately, with cover, and provided with casters B, capable of moving in any direction, and bolts *c*, operating in connection with the strip D, substantially as shown and described.

104,042. — CULTIVATING-HOOK. — J. Fred. Leitch, Oxford, N. Y.

Claim.—The elliptically curved cultivating-hook herein described, so attached to its handle that the prolongation of the latter shall be oblique to the axis of the curve, provided with knife-edges, from heel to point, and having both surfaces tapering from the center toward each edge, substantially as herein shown and described.

104,043.—LETTER-BOX.—Edwin T. Marsh, Rochester, N. Y.

Claim.—The mail-box herein described, designed to be attached to doors or partitions, and provided with the shifting cover E, inclined plane H, flanch *a*, and glazed opening *c*, when constructed and operated as and for the purposes herein specified.

104,044, antedated May 30, 1870.—ADJUSTABLE HANGER FOR SHAFTING.—Volney W. Mason, Providence, R. I.

Claim.—A hanger-bearing, B, when constructed and relatively arranged with the stem D, cap C, nuts E E, spherical socket S, as described, and for the purposes specified.

104,045. — THILL-COUPLING. — Henry Z. Mast, Fork Meeting House, Md.

Claim.—1. The disk E provided with the spring F and pivoted to the ear B, when constructed and arranged substantially as described and shown, and for the purpose set forth.

2. In thill-couplings, the combination of the disk E, the ears B and B', and an ordinary bolt, C, upon which the shackle-eye D is pivoted, when the several parts are constructed substantially as described and shown, and arranged to operate as and for the purpose set forth.

104,046.—SOCKET-PIPE MACHINERY.—Frederick M. Mattice, Cleveland, Ohio.

Claim.—1. The combination of the drying-board C, provided with the core D and the ring *l l*, with the opening P in the die plate provided with a suitable core, the ring B, and the lever E, when constructed, arranged, and operating as and for the purpose set forth.

2. The carriage G, provided with the endless belt J and with the trunnions K, in combination with the frame H, provided with the rollers I, when constructed, arranged, and operating as set forth.

3. The combination of the ring B, provided with ears *a* having pins attached to them, and the drying-board C having the core D attached to it, when arranged for the purpose of retaining the pipe-socket in shape and preserving the same from injury.

104,047. — RUBBING-MACHINE. — John McAdams, Brooklyn, N. Y.

Claim.—1. The combination of the movable drop F with the roller A, and cam D, and the movable tongue E of the pen-lifter, substantially as specified.

2. The combination of the adjustable cam *b*, or adjustable center pin carrying said cam, with the movable drop F, the cam D, and movable tongue E of the roller A, essentially as herein set forth.

104,048. — SPRING BED-BOTTOM.—William McArthur, Philadelphia, Pa., assignor to himself and James Akin Smith, same place.

Claim.—1. A bed-bottom, consisting of a series of slats, H, each resting on vertical conical springs, and bearing, at each end, against horizontal springs J, as described.

2. The combination and arrangement of the curved bars D, slats H, springs F and A, and frame A, substantially as described.

104,049. — MEAT-CHOPPER. — Arthur McCarter, Salem, Ohio.

Claim.—1. The three-edged knives K K, attached to the arms I I, which project from the head J, placed on the upper end of the oscillating arm D, substantially as herein set forth.

2. The arrangement of the bed A, standards C C, meat-block E, and hopper G, substantially as shown and described.

3. The arrangement of the slotted arm D, stud *a*, balance-wheel P, shafts *a d*, pinion *b*, cog-wheel N, and crank O, all substantially as and for the purposes herein set forth.

4. The arrangement of the shaft *i*, cog-wheel *n*, ratchet-wheel *m*, pawl *g*, roller *h*, spring *k*, and cam *f*, all as described, for giving the meat-block an intermittent rotary motion, substantially as herein set forth.

104,050.—FAUCET.—William McKay, Newburyport, Mass., assignor to himself and Charles E. Bayley.

Claim.—The combination of the tubular key B, provided with the cylindrical body *f*, one or more lateral passages, *i*, the screw *e*, and the prismatic head *d*, with the body C, as having the cylindrical chamber *k*, the opposite female screws *l s*, and one or more lateral passages, *n*, all the parts being constructed and arranged substantially as described.

Also, the combination of the above with the main faucet, as constructed, with the key-receiving socket *c* and the male screw *a*, arranged with such socket, and for the coupling with the screw *s* of the tap C, as set forth.

104,051.—HANDLE OF SHEET-METAL SPOONS, FORKS, &c.—Henry C. Milligan, Brooklyn, N. Y.

Claim.—A handle for sheet-metal spoons, forks, &c., corrugated in lines oblique to its length and overlapping each other, so that a transverse section will cut two corrugations, as set forth.

104,052.—TUBING AND FILTERING ARRANGEMENT FOR WELLS.—Mads C. Monson, Chicago, Ill.

Claim.—1. The cylinder or tube A, arranged as described, the bars C C, wire W, metallic sheeting D, and plates B and F, all combined, arranged, and operating substantially as herein set forth, and for the purposes described.

2. In combination with a perforated well-tubing, the plates B and F, when constructed and arranged substantially as herein described, forming, in connection with the walls of the well, a chamber about the tube, for holding filtering material, as set forth.

104,053.—CAR-WHEEL.—Hiram W. Moore, Jersey City, N. J.

Claim.—The improvement upon my described car-wheel, consisting of the flanges C and D, constructed and applied as described.

104,054.—PHOTOGRAPHIC-PLATE HOLDER.—John Wesley Moore, Bellefonte, Pa.

Claim.—The application of the absorbent to photographic-plate holders, in the manner herein set forth.

104,055. — MACHINE FOR CUTTING AND DRESSING STONE. — Archibald Munro, Arbroath, and William B. Adamson, Glasgow, North Britain.

Claim.—1. A tool for dressing stone, consisting of a solid or hollow cone, disk, or plate, secured to the edge of a permanent or detachable projection on a plate-disk or holder, and at right angles, or thereabout, to the side of the said projection.

2. The combination of said tool, a clamp, and a screw or other device for pressing the clamp against the tool.

3. The said tool, adapted to a recess in a holder, in combination with a permanent or detachable stem, extending into the holder, and retaining the tool in its position.

104,056.—MANUFACTURE OF RUBBER-COATED CARRIAGE-TRIMMINGS. — John W. Munson, Bridgeport, Conn.

Claim.—As a new article of manufacture, carriage-trimmings, coated wholly or in part with India-rubber or similar gums, prepared and applied substantially in the manner herein set forth.

104,057.—RAILWAY RAIL-CHAIR AND JOINT.—John M. Orr, Leesburg, Va.

Claim.—1. The joint-bar F, provided with the shoulders A, or their equivalents, to hold the same in the chair, substantially as described.

2. The joint-bar F, provided with the shoulders A and longitudinal groove *c*, in combination with the chair T, having its lip provided with the inwardly-projecting rib *n*, when constructed and arranged to operate in connection with the rail R, as and for the purpose set forth.

104,058.—MACHINE FOR UNTWISTING AND SEPARATING HAIR-ROPE.—Joseph Paradis and William H. Drew, Brooklyn, N. Y.

Claim.—1. The means herein specified for untwisting hair-rope, consisting of the holding-rollers *r r* in the revolving frame *e* that carries the reel of the rope, in combination with the drawing-rollers *l l*, substantially as specified, so that the hair shall be delivered from these rollers *l* in an untwisted condition, as set forth.

2. In combination with the foregoing, the friction-wheel *b*, pulley *f*, and eccentric, as and for the purposes specified.

3. The combination, with mechanism for untwisting hair-rope, of a fan-blower for creating and directing a current of air upon the untwisted hair as delivered from the feeding or drawing-rollers, to open and separate the same, the blower being arranged in such relation with the rollers that it does not act as a beater, substantially as set forth.

104,059.—FARE-RECORDER FOR CARS, &c.—Oscar S. Peas, Xenia, Ohio.

Claim.—1 The combination of the top and bottom tape or paper with the ink-cloth between, all arranged to operate substantially as and for the purposes set forth.

2. The spool B, provided on one side with miter-wheel *a*, and upon the other with ratchet-wheel *b*, in combination with spring-pawl *g*, shaft D, and miter-pinion *f*, all operating substantially as described.

3. The combination of spools B, C, and G, rollers H and I, shaft D, the two tapes or paper strips, and ink-cloth *e*, all operating substantially as set forth.

4. The spool B, having miter-wheel *a*, provided with pins *i i*, in combination with the spring alarm *m*, substantially as and for the purposes herein set forth.

104,060.—ORGAN-BELLOWS.—Joseph R. Perry, Wilkesbarre, Pa.

Claim.—1. The vibrating valve-board E, provided with the chamber D, and combined with the board B, which board forms the bottom of the reed-chamber, when all these parts are arranged to operate substantially as described.

2. The valve-chamber N, on the exhaust-board, combined with the suspended valve-chamber D, as constructed, for the purposes set forth.

104,061.—TOOL FOR CUTTING OFF BOLTS, RODS, &c. — Henry Peters, Davenport, Iowa.

Claim. — The arrangement, relatively to one another and to the handle *a*, cam-lever *b*, and rigid arms *f*, of the arm *d*, spring *e*, and cutters *h*, the arm *d* being, in effect, a lever of the second order, the cutters being located on the handle and lever respectively, between the fulcrum and the point at which the power is applied, and the constant tendency of the spring being to separate the movable cutter from the stationary cutter.

104,062.—MACHINE FOR PITCHING LAGER-BEER AND OTHER CASKS.—Henry A. Rattermann, Cincinnati, Ohio.

Claim.—The double rotary motion, as adapted to the use of this machine.

Also, the combination of the wheels A, B, C, and D, the shafts G and H, and the rollers E, to effect this motion.

Also, the arms L, for the purpose of making the machine adaptable to all sizes of casks, barrels, or vessels.

Also, the plates I and K, either fastened to the vessel or attached to the shafts G and H.

Also, the adaptation of a double or triple pulley, for the purpose of regulating the speed of the machine.

Also, the air-funnel O, and, conclusively, the frame M, all of which is claimed substantially as and for the purpose hereinbefore set forth.

104,063. — LATHE-CHUCK — John Rich, Painesville, Ohio.

Claim.—The combination of the plates A and B, bolts C, recessed nuts D, and springs L, as described and for the purpose specified.

104,064.—DOOR-HANGER.—Samuel P. Robinson, Canterbury, Connecticut.

Claim.—The combination of the beveled truck *c*, with the frame *a*, substantially as constructed, and for the purpose specified.

104,065.—FENCE. — Benning Rowell, Byersville, New York.

Claim.—The combination of the rails *a*, slats *b*, side pieces *c*, cross-bars *c' c''*, and connecting-rods *d*, all constructed and arranged in the manner and for the purpose set forth.

104,066. — SCREW-COLLAR FOR LAMPS.—William H. Russell, Brooklyn, New York.

Claim.—The lamp-collar herein shown, having the short-threaded tube *c* to receive the burner, the spiral grooved tube *b* to fit the neck, and the flange *a* to secure the packing, all arranged as described and for the purpose set forth.

104,067. — HARVESTER. — Jacob Seibel, Manlius, Illinois.

Claim.—The jointed rakes O O', pivoted to the harvester-frame C, and so arranged upon an inclined harvester-platform D *d* as to sweep around its front corners, and, meeting at the front, to carry the grain to the binder's stand at the rear, substantially as and for the purpose specified.

104,068.—HEAD-BLOCK FOR SAW-MILLS.—George Selden and H. O. Kelsey, Erie, Pa., assignors to George Selden.

Claim.—1. The trip U, in combination with the pawls R R' R'' R''', and the gig-pawl S, when constructed and operated as and for the purposes set forth.

2. The lever T and trip T', in combination with the check-pawls V V' V'' V''', when constructed and operated as and for the purposes set forth.

3. The independent knee A, provided with loop C and rack D, in combination with the knee B, pinion I, ratchet F, and lever G, with its pawl H, when constructed and operating in the manner and for the purpose specified.

104,069.—BENCH-HOOK. — Henry J. Skinner, Dunkirk, N. Y.

Claim.—The stop E, constructed as described, in combination with spring G, tube A, and adjusting-wheel H, all arranged as described, and for the purpose set forth.

104,070.—GRATE AND BACK FOR COOKING STOVES.—James B. Slusser and William H. Meech, Roanoke, Ind.

Claim.—1. The fire-box back A, constructed with the projecting portion A^1, substantially as and for the purpose set forth.

2. In combination with the back A A^1, the dampers A^2 A^3, arranged substantially as and for the purpose set forth.

3. The combination of a back, A, adjustable grate B, and reversible legs C C^1 C^2, substantially as and for the purpose set forth.

104,071.—GRATER.—James M. Smith, Seymour, Conn.

Claim.—Arranging within a hinged case a chamber for containing a nutmeg or other article to be abraded, and a rasping-disk, with the appliances for operating and controlling the disk and the article on which it acts, substantially as herein described and represented, and for the purpose set forth.

104,072.—MACHINE FOR CLEANING CAST-IRON PIPE.—William Smith, Allegheny City, Pa.

Claim.—The herein-described machine, composed of the frame A, clamping-plate A^2, tools R^1

R^2 R^3, springs G^1 G^2 G^3, and shaft F^1 F, in combination with its operative mechanism, substantially as described.

104,073. — ALARM FOR SAFES. — William Spear, Cape Elizabeth, Me.

Claim.—1. The use of compressed air, or other gases or fluids, in a compartment having a movable top, which is capable of being held at any point by a ratchet and pawl, to regulate, by its weight, the density of the air within said chamber, the said chamber being intended to contain a safe, or articles of value, as described.

2. The sprocket-wheel *i*, the valve *j*, the communicating tube *f*, and the signalizing device at the watch-room, to produce the regularly or irregularly recurring signals, as described.

3. The diaphragm *k*, with the valve *l*, or the described equivalent therefor, to prevent the escape of condensed air when the chamber is open, as described.

4. The movable top *a*, and the pawl and teeth *m n*, in combination with the tubes *f* and valve *p*, as a fire-alarm, substantially as described.

5. The improved safe, or safe-containing apartment, as described, having the top *a*, the sprocket-wheel *i*, the valve *j* and the communicating tube *f*, and the signalizing device at the watch-room, by means of which one or more safe or safes are placed in communication with a head office or watch-room, to which place intelligence is intermittingly conveyed of their safety, and information to the contrary the moment that any or all are in danger, substantially as herein described.

104,074. — SAW FOR SAWING FELLIES. — George Steck, Hughesville, Pa.

Claim.—1. A dish-saw, provided with notches *b* in its periphery, at regular intervals, dividing the teeth into sections, when the teeth are set as though upon a plane saw, substantially as described, and for the purpose of cutting curved pieces of wood with straight sides.

2. The notches *b*, when provided with cutting-edges *c*, in the manner described, and for the purpose of removing from the fellies the marks of the saw-teeth.

104,075.—BROILER.—William C. Stiver and John S. Williams, Brooklyn, N. Y.

Claim.—The grate C, constructed as shown, with a series of grooved bars radiating from the center to a circumferentially-grooved bar, having feet *a* and spout D, in combination with the pan A, inclined inward at its lower part and provided with an opening for the spout, all substantially as set forth.

104,076.—GAUGE ATTACHMENT FOR TINSMITHS' SHEARS.—Orson W. Stow, Plantsville, Conn.

Claim.—The combination of the gauge A, plate or table B, and adjustable gauge C, the whole constructed and arranged so as to be attached, by clamping mechanism, to an ordinary tinsmith's shears, substantially as described.

104,077. — SAWING - MACHINE. — Jacob Straysbaugh, Jr., Tiffin, Ohio.

Claim.—The arrangement of the shafts C F H, cog-wheels B G, crank and fly-wheels D R, pinions *a b*, saw I, crank K, pitman L, pendulum M, saw P, cord *c*, and post S, all substantially as shown and described.

104,078.—BLOW-PIPE.—James R. Streett, Washington, D. C., assignor to James Vermillion, same place.

Claim.—1. The arrangement and combination of the stop-cock C with the branch pipe G and bag B, substantially as set forth.

2. In combination with the air-bag, the revolving tip, in order to adjust the tip in relation to the bag, to suit the work, substantially as set forth.

104,079. — SAWING - MACHINE. — Monroe Sweny, Warren, Ohio.

Claim.—1. The pivot J, in combination with guide E, slide F, pitman H, crank I, and saw G, substantially as and for the purpose specified.

2. The arrangement of levers K and C, frame E, slide F, saw G, pitman H, crank I, pivot J, wheels N O, guide M, buck B and frame A, the whole constructed and operating substantially as and for the purpose specified.

104,080.—CRANK-WRIST FOR HARVESTING-MACHINES.—J. Oscar Taber, Salem, Ohio.

Claim.—1. The crank-wrist B', and wrist-pin or bolt C, constructed with an annular chamber or reservoir between them for the reception of oil, for the purpose set forth.

2. The notched or perforated washer E, in combination with the crank-wrist, for the purpose set forth.

3. The combination of the crank-wrist B', pin or bolt C, and washers and thumb-nut C^2, forming the oil-chamber, as described, with the crank-wheel or its equivalent, for the purpose set forth.

104,081.—SCAFFOLD-BRACKET.—Joseph M. Taylor, Dublin, Ind.

Claim.—The three-legged bracket A, in combination with the adjustable bar B, provided with clutches C C, and their ends toothed, all substantially as and for the purposes herein set forth.

104,082.—BEDSTRAD-FASTENING.—John C. Turner, Newark, N. J.

Claim.—1. The fastening-hook, formed upon a plate, which backs and supports the same, and by means of which it may be secured to the side rail or other part of the bedstead, substantially as shown and set forth.

2. The wedge-shaped or inclined fastening-hook, its supporting-plate, and the semicircular or curved holding-rib, cast in one piece of metal, substantially as and for the purposes set forth.

3. The combination, with the side rail, and the hook and supporting-plate fastened to said rail, of the post, slotted to receive said hook and plate, and the pin extending partly across said slot, substantially as and for the purposes set forth.

104,083.—BAKER'S OVEN.—Joseph Vale and Charles L. Vale, Chicago, Ill.

Claim.—The shelves K, chains I, and wheels H, when the shelves are suspended on the chains, the axis of their suspension being at the periphery of the wheels, and all are constructed and operating in an oven substantially as and for the purposes specified and shown.

104,084. — HEATING-STOVE. — Nicholas S. Vedder, Troy, N. Y.

Claim.—1. The combination of the fire-chamber A, front descending column-flues B B', horizontal flues G G', rear ascending column-flues C C', and exit-chamber E, when the bottom plate of the said fire-chamber forms the outside bottom plate of the stove, and the flues G G' extend across and project below the said bottom plate, as shown and described.

2. The combination of the fire-chamber A, front descending column-flues B B', communicating at their bottom with rear ascending column-flues C C', and the exit-chamber E, when said exit-chamber is separated from the upper part of the fire-chamber by a hinged partition-plate, H, alone, by which the whole space or partition between the fire-chamber and exit-chamber is closed and opened, as described and shown.

3. The combination of the fire-chamber A, front descending column-flues B B', horizontal flues G G' extending across, and projecting below the outside and only bottom plate of the fire-chamber and stove, rear ascending column-flues C C', and exit-chamber E, separated laterally from the fire-chamber wholly by a hinged partition plate, H, as described.

104,085.—MACHINE FOR HUSKING CORN.—Ralph Warriner, James H. Baker, and George B. Slocum, Saratoga Springs, N. Y.

Claim.—The combination, in the machine herein described, of the fluted roller D, adjustable yielding rollers E G, breaking-bar H, fluted rollers K K, eccentrically operating brush M, side brushes P P, and hopper J, provided with tapering piece L, all constructed substantially as described, and arranged to operate as and for the purpose set forth.

104,086.—BRIDGE-GATE.—Hubert Wermerskirchen, Chicago, Ill.

Claim.—1. One or more gates, mounted on a central shaft opposite the end of a swinging or rotating bridge, and arranged to be opened and closed by the turning of the bridge, substantially as described.

2. The gate C, mounted on upright shafts *b*, having gear-wheels *e* attached, in combination with the pinions *e f*, and wheel *d*, with the locking-lever *g*, when arranged to be operated by the bridge, substantially as set forth.

3. The slotted wheel D, arranged in the abutment, to operate in combination with the swinging bridge B, and impart motion to the gates, substantially as described.

104,087.—CANE GUN.—William H. Werner, Nazareth, Pa.

Claim.—The extension breech C, provided with a vertical slot in which the lock is mounted, and with the hammer, notch, or cavity *f*, and coupling-groove *m*, in combination with the sliding stock or case B, constructed as described, and with the barrel A, to constitute a cane gun, substantially as herein specified.

Also, the catch *e*, for holding the extension breech in a bent form, and serving also as a gun-sight, but inclosed within the outline of the extension when the latter is straightened, as specified.

104,088.—SEED-PLANTER.—John E. White, Clinton, Ill.

Claim.—The vibrating-bars G, seed-tubes F, hoppers D, seed-slides E, connecting-rod E^1, levers E^2, and hinged frame C, all combined, arranged, and operating substantially as described.

104,089.—EARTH-URINAL.—John G. White, Cambridge, Mass.

Claim.—A dry-earth urinal, opening through one of the vertical walls of a case, *a*, and having a source of supply of dry earth or other absorbent to the urinal-chamber, and provision for discharge of the absorbent from said chamber, into a suitable receptacle beneath it.

Also, the combination, with a urinal-chamber, *d*, located between the hopper *i*, above it, and a receptacle, *a'*, beneath it, of a suitable valvular mechanism, for controlling the supply and discharge of the absorbent.

Also, in combination with a dry-earth closet or urinal, a system of flap-valves, each dropping to discharge the absorbent, and being raised to close its passage, one or more being always closed.

Also, in combination with the urinal-chamber and the hopper and conductor, the valves *g*, *k*, and *l*, arranged as shown, and operated by a mechanism which closes valve *k*, when valves *g* and *l* are opened, and automatically closes valves *g* and *l*, when valve *k* is opened.

Also, in combination with the hopper and its conductor, a stirrer or agitator, *x*, operated by the pull mechanism, substantially as described.

104,090.—REVOLVING STEAM-GAUGE COCK. Daniel Williams and Edward Joseph, Gallipolis, Ohio.

Claim.—1. The combination of the stem J, provided with projection *c*, the plate B with its recess *b*, and the nut *i*, when constructed and operating substantially in the manner and for the purposes described.

2. The valve-rod G, when constructed and operating substantially in the manner and for the purposes set forth.

3. The combination of the plate B, the stem J, the revolving dip-pipe M, valve-rod G with its valve *g*, indicator D, and levers E and F, constructed and operating substantially in the manner and for the purposes described.

104,091.—MANUFACTURE OF IRON.—John De Witt Williams, Philadelphia, Pa., assignor to himself and John Wilson Butler, same place.

Claim.—The treatment of iron during the process of boiling or puddling, with a composition consisting of litharge, salt, and lime, combined substantially in the manner described.

104,092.—DUSTING-BRUSH.—Loren R. Witherell and Amasa B. Crandall, Galesburg, Ill.

Claim.—A duster or brush, with ring D, washer F, and screw E, in combination with handle B, ferrule C, and fibrous material A, constructed in the manner described, and for the purpose specified.

104,093.—MACHINERY FOR MOVING COAL OR OTHER MINERALS.—John Eastburn Wootton, Reading, Pa.

Claim.—1. The combination of the two parallel tracks P P, an endless rope passing forward at the center of one track and returning at the center of the other, and a platform extending beyond the ends of both tracks, and beyond sheaves which conduct the said rope below the platform, as described.

2. The said platform, arranged, in respect to the outer ends of the tracks, as described, when adjustable as set forth, and combined with a horizontal drum turning below the said platform.

104,094.—CONDITION-POWDER FOR HORSES AND CATTLE.—John H. Woolrich, Woburn, Mass.

Claim.—A powder composed of the several ingredients possessing medicinal, absorbing, and flavoring qualities, substantially as and for the purpose described.

REISSUES.

4,010.—Division A.—APPARATUS FOR EVAPORATING THE MOISTURE FROM ANIMAL AND VEGETABLE SUBSTANCES.—Charles Alden, Newburg, for himself and Alden Fruit-preserving Company, New York, N. Y., assignees of Charles Alden.—Patent No. 100,835, dated March 15, 1870.

Claim.—1. The arrangement of a series of platforms, one above the other, in a trunk or chamber supplied with an artificial current or currents of heated rarefied air, passing over, through, and around the substances placed on the platforms, substantially as described.

2. The arrangement of a series of platforms, receiving a rising and falling motion in a trunk or chamber supplied with a current or currents of hot or cold air, substantially in the manner shown and described.

3. The arrangement of an air-chamber on one or more sides of the trunk, said air-chambers being provided with nozzles, to throw currents of air over or between the platforms, substantially as set forth.

4. The arrangement of devices capable of supporting the platforms during their rise and fall, and of depositing the same automatically at the bottom of the trunk, substantially as described.

5. The arrangement of a conveyer, substantially as described, in combination with the platforms and the supporting fingers, so as to remove said platforms from the bottom of the trunk.

4,011.—Division B.—PROCESS FOR EVAPORATING THE MOISTURE FROM ANIMAL AND VEGETABLE SUBSTANCES.—Charles Alden, Newburg, for himself and Alden Fruit-preserving Company, New York, N. Y., assignees of Charles Alden.—Patent No. 100,835, dated March 15, 1870.

Claim.—The process of evaporating the moisture from vegetable and animal substances by exposing the same, first to a comparatively low temperature, and to currents of rarefied air, of little force, and then advancing them gradually toward a higher temperature, and to currents of air of an increased force and rarefication, as specified.

4,012.—Division A.—FIRE-ALARM SIGNAL AND APPARATUS.—Alexander Allen, Rochester, N. Y.—Patent No. 90,803, dated June 1, 1869.

Claim.—1. The interposition of an alarm-signal between any two successive box-signals in sounding a fire-alarm on a fire-alarm telegraph, for the purpose of preventing mistakes in getting the number of the station or box giving the alarm, substantially as is herein specified.

2. The system of signals for fire-alarm telegraphs herein shown, composed of a series of rapid alarm-signals, and a series of box-signals, when the same are so used as that an alarm-signal is interposed between any two successive box-signals, substantially as is herein specified.

3. The arrangement of a series of pins or notches upon a circuit-wheel, used in combination with a pivoted lever for the purpose of breaking the circuit in a magnetic fire-alarm telegraph, in such a manner that the revolutions of said circuit-wheel shall cause two or more box-signals, and one or more alarm-signals, an alarm-signal being interposed between any two successive box-signals, substantially as is herein specified.

4. An automatic fire-alarm apparatus for fire-alarm telegraphs, when so constructed and arranged as that, when acting to give an alarm of fire, it shall first give an alarm-signal, then a box-signal, then repeat alarm-signal, then repeat box-signal, and so on, substantially as is herein specified.

4,013.—Division B.—FIRE-ALARM SIGNAL AND APPARATUS.—Alexander Allen, Rochester, N. Y.—Patent No. 90,804, dated June 1, 1869.

Claim.—1. The combination of the circuit-wheel H, shaft *e*, pinion G, vibrating gear-sector D, driving-shaft *b*, mechanical motor E, and winding-lever B, said gear-sector meshing directly into the pinion G, substantially as and for the purpose specified.

2. Limiting the rotation of the main driving-shaft of an automatic fire-alarm apparatus, in either or both directions, by means of fixed stops acting in combination with the gear-sector on said shaft, for the purpose of limiting the length of the fire-alarm given by said apparatus, substantially as is herein set forth.

3. The combination of the spring E, or its equivalent, shaft *b*, gear-sector D, shaft *e* with pinion G, ratchet-wheel I, and circuit-wheel H secured thereon, gear-wheel J, with pawl T and spring U secured thereon, gear-train K L M N O, and shaft *f* with regulator W thereon, the several parts being arranged and operating as and for the purpose specified.

4. The lever or key Q, having the sliding rod *u* arranged thereon, when used in combination with the circuit-wheel H, provided with the pins or notches *h k l*, the several parts being arranged substantially as is herein specified.

5. The combination of the standard P, having one end of the main circuit attached thereto, lever or key Q, having the other end of the main circuit attached thereto, and with the sliding rod *u* arranged therein, circuit-wheel H, provided with pins or notches *h k l*, shaft *e*, pinion G, geared sector D, shaft *b*, and spring E, or its equivalent, the several parts being arranged and operating as and for the purpose specified.

4,014.—TAP FOR OIL-VESSELS.—Matthew Andrew, Melbourne, Australia.—Patent No. 94,050, dated August 24, 1869.

Claim.—1. The combination of a faucet and a seal, arranged substantially as and for the purpose described.

2. The combination of a capsule-tap with a can or vessel for containing oil or other liquids, substantially as described.

3. A capsule-tap, consisting of a cap or cover, *b*, the adjustable tube *c*, and tube or socket *d*, provided with cork or other suitable lining or packing, and with holes arranged to be opened and closed by the adjustment of the tube *c* combined with a securing plate, *e*, substantially as and for the purpose described.

4,015.—PISTON-ROD ADJUSTER.—Douglas Bly, Shambourg, Pa.—Patent No. 78,045, dated May 19, 1868.

Claim.—1. An adjustable clamp or coupling, having an axis, journal, or journals, *d d*, for so connecting with the working-beam as to conform to the vertical position of the pump-rod during the oscillations of the beam, as set forth.

2. The combination of the axis or journal of an adjustable pump-rod coupling with a working-beam, having an opening or slot, D, in the end for the passage or adjustment of the rod, as and for the purposes set forth.

3. The combination of a pump-rod or connecting sucker-rod with an adjustable clamp, substantially as set forth.

4. The movable cap or bearing E, with one end resting upon the journal *d d*, and the other upon the beam, and intermediately bolted thereto, substantially as set forth.

4,016. — SLEEVE-BUTTON AND STUD.—Barnes Clayton, Philadelphia, Pa.—Patent No. 62,008, dated February 12, 1867; antedated February 2, 1867.

Claim.—The fastening, consisting of the case C, stem 2, 3, and 5, spring 4, in combination with a head, A, substantially as and for the purpose hereinbefore set forth.

4,017.—Division B.—PITMAN-CONNECTION FOR HARVESTER.—J. W. Doty, Lockport, N. Y.—Patent No. 59,192, dated October 30, 1866.

Claim.—The combination of the forked or pronged pitman-head D, secured to the ears or lugs *f f* by a screw-bolt, *j*, taper, conical, or spherical wrist-pin A, and box B, the whole arranged substantially in the manner and for the purpose set forth.

4,018.—LOCK.—Hall's Safe and Lock Company, Cincinnati, Ohio, assignee of Joseph L. Hall.—Patent No. 38,384, dated May 5, 1863.

Claim.—1. The combination of two or more independent nests of disk-tumblers, each nest containing two or more tumblers, with a bolt having a corresponding number of stumps arranged to operate in connection with said nests of tumblers, all constructed and arranged substantially as described.

2. The provision of the sliding check-piece or dog F, operated in advance of the main bolt by the same key or other device which moves the latter, in combination with one or more sets of tumblers, substantially as and for the purpose set forth.

3. In the described combination with the fast tumblers Q, the provision of the sliding check-piece or dog F, operated in advance of the main bolt by the same bit, key, or other instrument which moves the said bolt, the whole being combined and operating as and for the purposes substantially as set forth.

4. The arrangement of hollow withdrawable bob G, containing the operating-stem N, and supporting the series of alternate loose tumblers I and fast washers J, the whole being confined to said bob by the annular cap M, in the manner represented.

5. The combination of cap T, shiftable stem N, and fast tumblers Q, to facilitate numerous and ready changes of combination, as explained.

6. The fixed washers J, gated, *j*, in line with the aperture *e* in the bob G, to afford a fixed guide for the trier, as described.

4,019.—CURTAIN-KNOB.—Calvin Z. Kroh, Tiffin, Ohio.—Patent No. 49,634, dated August 29, 1865.

Claim.—The angular enlargement or nut *c*, located between the neck *b* and a screw-stem, *c*, substantially as set forth.

4,020.—DEODORIZING PETROLEUM.—Thomas Restieaux, Boston, Mass.—Patent No. 63,749, dated April 9, 1867.

Claim.—The application of quicksilver to petroleum and any of the products of petroleum, as herein described, using for that purpose the aforesaid solution, or its equivalent, which will produce the intended effect.

4,021.—DEVICE FOR SHEARING AND CLIPPING HORSES AND OTHER ANIMALS.—Roswell T. Smith, William Earl, Joseph K. Priest, and John G. Blunt, Nashua, N. H., assignees of Roswell T. Smith and Joseph K. Priest.—Patent No. 72,103, dated December 10, 1867.

Claim.—1. Revolving cutter or cutters O, in combination with a cutter-plate, substantially as described.

2. The open cutter-plate P, substantially as described.

3. The shield N, in combination with the cylinder C covering shaft M, substantially as described, and for the purposes set forth.

4. Chambering the lower cutter-plate of a sheep-shearing machine, so that the cutting-blades only have contact with the said plate, and a passage for extraneous matters toward the center of the machine is formed, substantially as described.

4,022.—FAUCET.—Edward A. Sterry, Norwich, Conn.—Patent No. 13,047, dated June 12, 1855; extended seven years.

Claim.—The arrangement of one or more grooves and guides in the construction of a compression faucet or stop-cock, by means of which the valve can be governed while rising and falling, and prevented from rotating or turning upon its axis.

4,023.—DYE FOR COLORING WOOL AND OTHER FIBROUS MATERIAL.—Albert Knight and George W. Talbot, Providence, R. I., assignees of George W. Talbot.—Patent No. 99,496, dated February 1, 1870.

Claim.—An improved dye for coloring, produced by the combination of tannic-acid, of the character of that obtained from domestic barks, woods, or plants hereinbefore mentioned, with dyes obtained from woods, such as fustic, cam-wood, madder, nut-galls, sumach, hypernic, Brazil-wood, weld, bar-wood, log-wood, and red sanders.

4,024.—LINING FOR FIRE-PLACE.—Charles Truesdale and William Resor & Co., Cincinnati, Ohio, assignees of Charles Truesdale.—Patent No. 91,689, dated June 22, 1869.

Claim.—1. A lining for the fire-chamber of grates, stoves, &c., composed of a metallic frame adapted to fit the walls of said chamber, and inclosing one or more blocks of soapstone, fire-tile, or other refractory substance.

2. Such a lining, when removable, as set forth.

3. Providing the fire-chamber of a stove or grate with a lining consisting of a metallic frame, inclosing one or more blocks of soapstone, fire-tile, or other refractory substance, the same being provided with suitable air-inlets, as set forth.

4. The metallic frame A B C, having one or more openings D and protuberances *b*, when used in the described connection with removable block or blocks E, as and for the purposes set forth.

5. The combination, substantially as described, of the metallic frame A B C, one or more rearwardly-flaring openings D, protuberances *b*, tapering block or blocks E, and one or more binders F, or their equivalents, for the object stated.

6. Projecting the block or blocks E in front of the exposed face of the metallic frame A B C, as herein set forth.

DESIGNS.

4,095.—SEAL OR BANNER.—Fred Walton Bacon, New Haven, Conn.

Claim.—The design for badge, banner, or seal of the order of Knights of Pythias herein set forth, the same being made of any metals or materials, plain or in colors.

4,096.—SPOON.—Bennet Jerald, Meriden, Conn., assignor to Charles Parker, same place.

Claim.—The design for spoon, as herein described, and illustrated in the accompanying drawings.

4,097.—DOOR-KNOB.—Ludwig Kreuzinger, Cambridge, assignor to the Metallic Compression Casting Company, Boston, Mass., assignor to Russell & Erwin Manufacturing Company, New Britain, Conn.

Claim.—The design for door-knob, substantially as above set forth.

4,098.—DOOR-KNOB.—Ludwig Kreuzinger, Cambridge, assignor to the Metallic Compression Casting Company, Boston, Mass., assignor to Russell & Erwin Manufacturing Company, New Britain, Conn.

Claim.—The design for a door-knob, substantially as above set forth.

4,099.—DOOR-KNOB.—Ludwig Kreuzinger, Cambridge, assignor to the Metallic Compression Casting Company, Boston, Mass., assignor to Russell & Erwin Manufacturing Company, New Britain, Conn.

Claim.—The design for a door-knob, substantially as above set forth.

4,100.—DOOR-KNOB.—Ludwig Kreuzinger, Cambridge, assignor to the Metallic Compression Casting Company, Boston, Mass., assignor to Russell & Erwin Manufacturing Company, New Britain, Conn.

Claim.—The design for a door-knob, substantially as above set forth.

4,101.—DOOR-KNOB ROSE.—Ludwig Kreuzinger, Cambridge, assignor to the Metallic Compression Casting Company, Boston, Mass., assignor to Russell & Erwin Manufacturing Company, New Britain, Conn.

Claim.—The design for a door-knob rose, substantially as above set forth.

4,102.—DOOR-KNOB ROSE.—Ludwig Kreuzinger, Cambridge, assignor to the Metallic Compression Casting Company, Boston, Mass., assignor to Russell & Erwin Manufacturing Company, New Britain, Conn.

Claim.—The design for a door-knob rose, substantially as above set forth.

4,103.—Door-knob Rose.—Ludwig Kreuzinger, Cambridge, assignor to the Metallic Compression Casting Company, Boston, Mass., assignor to Russell & Erwin Manufacturing Company, New Britain, Conn.

Claim.—The design for door-knob rose, substantially as above set forth.

4,104.—Escutcheon.—Ludwig Kreuzinger, Cambridge, assignor to the Metallic Compression Casting Company, Boston, Mass., assignor to Russell & Erwin Manufacturing Company, New Britain, Conn.

Claim.—The design for an escutcheon, substantially as above set forth.

4,105.—Escutcheon.—Ludwig Kreuzinger, Cambridge, assignor to the Metallic Compression Casting Company, Boston, Mass., assignor to Russell & Erwin Manufacturing Company, New Britain, Conn.

Claim.—The design for an escutcheon, substantially as above set forth.

4,106.—Escutcheon.—Ludwig Kreuzinger, Cambridge, assignor to the Metallic Compression Casting Company, Boston, Mass., assignor to Russell & Erwin Manufacturing Company, New Britain, Conn.

Claim.—The design for an escutcheon, substantially as above set forth.

4,107.—Door-Knob.—Charles Kunze, Cambridge, assignor to the Metallic Compression Casting Company, Boston, Mass., assignor to Russell & Erwin Manufacturing Company, New Britain, Conn.

Claim.—The design for a door-knob, substantially as above set forth.

4,108.—Door-Knob.—Joseph Lucien Leger, Somerville, assignor to the Metallic Compression Casting Company, Boston, Mass., assignor to Russell & Erwin Manufacturing Company, New Britain, Conn.

Claim.—The design for a door-knob, substantially as above set forth.

4,109.—Bell-pull Knob.—Joseph A. Ruff, Cambridge, assignor to the Metallic Compression Casting Company, Boston, Mass., assignor to Russell & Erwin Manufacturing Company, New Britain, Conn.

Claim.—The design for a bell-pull knob, substantially as above set forth.

4,110.—Bell-pull Knob.—Joseph A. Ruff, Cambridge, assignor to the Metallic Compression Casting Company, Boston, Mass., assignor to Russell & Erwin Manufacturing Company, New Britain, Conn.

Claim.—The design for a bell-pull knob, substantially as above set forth.

4,111.—Bell-pull Back-Plate.—Joseph A. Ruff, Cambridge, assignor to the Metallic Compression Casting Company, Boston, Mass., assignor to Russell & Erwin Manufacturing Company, New Britain, Conn.

Claim.—The design for a bell-pull back-plate, substantially as above set forth.

4,112.—Bell-pull Back-Plate.—Joseph A. Ruff, Cambridge, assignor to the Metallic Compression Casting Company, Boston, Mass., assignor to Russell & Erwin Manufacturing Company, New Britain, Conn.

Claim.—The design for a bell-pull back-plate, substantially as above set forth.

4,113.—Door-Knob.—Joseph A. Ruff, Cambridge, assignor to the Metallic Compression Casting Company, Boston, Mass., assignor to Russell & Erwin Manufacturing Company, New Britain, Conn.

Claim.—The design for a door-knob, substantially as above set forth.

4,114.—Door-Knob.—Joseph A. Ruff, Cambridge, assignor to the Metallic Compression Casting Company, Boston, Mass., assignor to Russell & Erwin Manufacturing Company, New Britain, Conn.

Claim.—The design for a door-knob, substantially as above set forth.

4,115.—Door-Knob.—Joseph A. Ruff, Cambridge, assignor to the Metallic Compression Casting Company, Boston, Mass., assignor to Russell & Erwin Manufacturing Company, New Britain, Conn.

Claim.—The design for a door-knob, substantially as above set forth.

4,116.—Door-Knob.—Joseph A. Ruff, Cambridge, assignor to the Metallic Compression Casting Company, Boston, Mass., assignor to Russell & Erwin Manufacturing Company, New Britain, Conn.

Claim.—The design for a door-knob, substantially as above set forth.

4,117.—Door-Knob.—Joseph A. Ruff, Cambridge, assignor to the Metallic Compression Casting Company, Boston, Mass., assignor to Russell & Erwin Manufacturing Company, New Britain, Conn.

Claim.—The design for a door-knob, substantially as above set forth.

4,118.—Door-Knob.—Joseph A. Ruff, Cambridge, assignor to the Metallic Compression Casting Company, Boston, Mass., assignor to Russell & Erwin Manufacturing Company, New Britain, Conn.

Claim.—The design for a door-knob, substantially as above set forth.

4,119.—Door-knob Rose.—Joseph A. Ruff, Cambridge, assignor to the Metallic Compression Casting Company, Boston, Mass., assignor to Russell & Erwin Manufacturing Company, New Britain, Conn.

Claim.—The design for a door-knob rose, substantially as above set forth.

4,120.—Door-Butt.—Joseph A. Ruff, Cambridge, assignor to the Metallic Compression Casting Company, Boston, Mass., assignor to Russell & Erwin Manufacturing Company, New Britain, Conn.

Claim.—The design for door-butts, substantially as above set forth.

4,121.—Escutcheon.—Joseph A. Ruff, Cambridge, assignor to the Metallic Compression Casting Company, Boston, Mass., assignor to Russell & Erwin Manufacturing Company, New Britain, Conn.

Claim.—The design for an escutcheon, substantially as above set forth.

4,122.—Escutcheon.—Joseph A. Ruff, Cambridge, assignor to the Metallic Compression Casting Company, Boston, Mass., assignor to Russell & Erwin Manufacturing Company, New Britain, Conn.

Claim.—The design for an escutcheon, substantially as above set forth.

4,123.—Door-Latch.—Joseph A. Ruff, Cambridge, assignor to the Metallic Compression Casting Company, Boston, Mass., assignor to Russell & Erwin Manufacturing Company, New Britain, Conn.

Claim.—The design for a door-latch, substantially as above set forth.

4,124.—Shutter-Knob.—Joseph A. Ruff, Cambridge, assignor to the Metallic Compression Casting Company, Boston, Mass., assignor to Russell & Erwin Manufacturing Company, New Britain, Conn.

Claim.—The design for a shutter-knob, substantially as above set forth.

4,125.—Shutter-Knob.—Joseph A. Ruff, Cambridge, assignor to the Metallic Compression Casting Company, Boston, Mass., assignor to Russell & Erwin Manufacturing Company, New Britain, Conn.

Claim.—The design for a shutter-knob, substantially as above set forth.

4,126.—Shutter-Knob.—Joseph A. Ruff, Cambridge, assignor to the Metallic Compression Casting Company, Boston, Mass., assignor to Russell & Erwin Manufacturing Company, New Britain, Conn.

Claim.—The design for a shutter-knob, substantially as above set forth.

4,127.—Shutter-Bar.—Joseph A. Ruff, Cambridge, assignor to the Metallic Compression Casting Company, Boston, Mass., assignor to Russell & Erwin Manufacturing Company, New Britain, Conn.

Claim.—The design for a shutter-bar, substantially as above set forth.

4,128.—Sash-Lift.—Joseph A. Ruff, Cambridge, assignor to the Metallic Compression Casting Company, Boston, Mass., assignor to Russell & Erwin Manufacturing Company, New Britain, Conn.

Claim.—The design for a sash-lift, substantially as above set forth.

4,129.—Bell-pull Knob.—John Joseph Charles Smith, Somerville, assignor to the Metallic Compression Casting Company, Boston, Mass., assignor to Russell & Erwin Manufacturing Company, New Britain, Conn.

Claim.—The design for a bell-pull knob, substantially as above set forth.

4,130.—Bell-pull Knob.—John Joseph Charles Smith, Somerville, assignor to the Metallic Compression Casting Company, Boston, Mass., assignor to Russell & Erwin Manufacturing Company, New Britain, Conn.

Claim.—The design for a bell-pull knob, substantially as above set forth.

4,131.—Door-Knob.—John Joseph Charles Smith, Somerville, assignor to the Metallic Compression Casting Company, Boston, Mass., assignor to Russell & Erwin Manufacturing Company, New Britain, Conn.

Claim.—The design for a door-knob, substantially as above set footh.

4,132.—Door-Knob.—John Joseph Charles Smith, Somerville, assignor to the Metallic Compression Casting Company, Boston, Mass., assignor to Russell & Erwin Manufacturing Company, New Britain, Conn.

Claim.—The design for a door-knob, substantially as above set forth.

4,133.—Door-Knob.—John Joseph Charles Smith, Somerville, assignor to the Metallic Compression Casting Company, Boston, Mass., assignor to Russell & Erwin Manufacturing Company, New Britain, Conn.

Claim.—The design for a door-knob, substantially as above set forth.

4,134.—Door-Knob.—John Joseph Charles Smith, Somerville, assignor to the Metallic Compression Casting Company, Boston, Mass., assignor to Russell & Erwin Manufacturing Company, New Britain, Conn.

Claim.—The design for a door-knob, substantially as above set forth.

4,135.—Door-Knob.—John Joseph Charles Smith, Somerville, assignor to the Metallic Compression Casting Company, Boston, Mass., assignor to Russell & Erwin Manufacturing Company, New Britain, Conn.

Claim.—The design for a door-knob, substantially as above set forth.

4,136.—Door-Knob.—John Joseph Charles Smith, Somerville, assignor to the Metallic Compression Casting Company, Boston, Mass., assignor to Russell & Erwin Manufacturing Company, New Britain, Conn.

Claim.—The design for a door-knob, substantially as above set forth.

4,137.—Door-Knob.—John Joseph Charles Smith, Somerville, assignor to the Metallic Compression Casting Company, Boston, Mass., assignor to Russell & Erwin Manufacturing Company, New Britain, Conn.

Claim.—The design for a door-knob, substantially as above set forth.

4,138.—Door-Knob.—John Joseph Charles Smith, Somerville, assignor to the Metallic Compression Casting Company, Boston, Mass., assignor to Russell & Erwin Manufacturing Company, New Britain, Conn.

Claim.—The design for a door-knob, substantially as above set forth.

4,139.—Floor-cloth Pattern.—John T. Webster, New York, N. Y., assignor to Page, Wilder & Co., Hallowell, Me.

Claim.—The design or pattern for floor oil-cloth or other fabrics, as herein set forth.

4,140.—FLOOR-CLOTH PATTERN.—John T. Webster, New York, N. Y., assignor to Page, Wilder & Co., Hallowell, Me.

Claim.—The design or pattern for floor oil-cloth other fabrics, herein set forth.

4,141.—GRINDING-MILL STAND OR FRAME.—John Gulick Baker, Philadelphia, Pa.

Claim.—1. The design for the stand or frame of a grinding-mill, substantially as described, and as represented in and by the accompanying drawing.

2. The combination with the said stand or frame of the shelf or bracket J.

4,142.—HAND-STAMP.—Samuel J. Hoggson, New Haven, Conn.

Claim.—The base for a hand-stamp, of the shape or form substantially as herein described.

4,143.—THUMB OF GLOVE.—Edward Hulbert, William F. Steele, and Henry C. Day, Gloversville, N. Y.

Claim.—The design for the thumb of a glove or mitten, as herein represented and described.

4,144.—TILE.—William H. Humphrey, Lansingburg, N. Y.

Claim.—The design for the tile, as described and shown in the accompanying drawings.

4,145.—BAND-SAW FRAME.—John Richards, Philadelphia, Pa.

Claim.—The design for a band-saw frame, as shown.

4,146.—COLLAR-BOX.—George K. Snow, Watertown, Mass.

Claim.—As a new and original design, a paper-collar box made to represent the appearance of a tea-chest.

4,147.—CIDER, WINE AND OTHER PRESSES. Hermon Thomas, Philadelphia, Pa.

Claim.—The design for a press, as shown.

EXTENSIONS.

LYSANDER SPOONER, Boston, Mass.—Letters Patent No. 15,021, dated June 3, 1856.

"Improvement in Elastic Bottoms for Chairs and other Articles."

Claim.—In the construction of an elastic rest or support, the employment of a series of elastic coils, B B, substantially in the manner and for the purposes described.

HARVEY MINER and HENRY M. STEVENS, of New York, N. Y., and MARY SAUNDERS, of Hastings, N. Y, (executrix of WM. H. SAUNDERS, deceased.)—Letters Patent No. 14,985, dated May 27, 1856.

"Improved Coupling for Vehicles."

Claim.—A ring of vulcanized rubber or some other yielding and more or less elastic material, applied substantially as herein specified, in combination with a divided eye and a bolt or pin fixed in the clips, either immovably or in such manner that it can be taken out and replaced, the whole being applied to a vehicle and acting substantially in the manner and for the purposes herein set forth.

DANIEL DODGE, of Keeseville, N. Y.—Letters Patent No. 15,054, dated June 3, 1856.

"Improvement in Nail-Machines."

Claim.—The use of the roller F, the anvil D, and the hammers G G, constructed and operating substantially in the manner and for the purposes herein described, either in combination with the spring L, or without it.

WILLIAM C. MARTIN, of Westville, Ind., administrator of JACOB J. MANN, deceased, and HENRY F. MANN, of Pittsburg, Pa.—Letters Patent No. 15,044, dated June 3, 1856.

"Improvement in Reaping-Machines."

Claim.—The combination of the bar or plate H, or of other equivalent device at the back of the apron, with the strip e beneath the apron and the bar or plate G upon the finger-bar, under which the said strip e and over which the apron extends, or with other equivalent device, substantially as and for the purpose above set forth and described.

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PATENTS.

104,095.—HANDLE FOR CROSS-CUT SAW.—Emanuel Andrews, Williamsport, Pa.

Claim.—The ferrule B, hexagonal in it supper inner portion, where it is provided with a hexagonal nut, C, and cylindrical in its lower inner part, when constructed as described and shown, and for the purpose set forth.

104,096.—WASHING-MACHINE.—Israel Baker, Tomah, Wis.

Claim.—The washing-machine formed by the combination of grooved ends A, bent board or boards B, bolts D, rubber E, spring F, and movable centrally-pivoted rubber G I J K, all constructed and arranged as shown and described.

104,097.—HORSESHOE.—Sanford J. Baker, Madison Centre, Me.

Claim.—The improved horseshoe, composed of the two parts A B, beveled at I, as described, jointed to the toe-calk plate C by the pivots D E, and provided with the spreading-screw G and nut H, all substantially as specified.

104,098.—CAR-COUPLING.—William Rondeau Baker, Trempealeau, Wis.

Claim.—1. The detachable clip C, provided with ears N N, embracing the sides of the draw-head A, with the support H, provided with a series of corrugations, h h, when the support is journaled within the draw-head to the ears N N, the whole combined and operating in connection with the spring M, coupling-pin L, and link P, substantially as herein shown and described.

2. The spring O, secured to the detachable clip C, when combined and operating in connection with the coupling-pin L, link P, and support H, provided with a series of corrugations, cavity G, and spring M, substantially as herein shown and described.

104,099.—SPARK-ARRESTER.—William Ballard, Caroline, N. Y.

Claim.—The combination of the wind-mill e, the arms or grinders d, the upper and lower sieves c, the shaft g, the supports h, the stays i, the bands or supports j, the bolts l, and the bars m, substantially as and for the purpose hereinbefore set forth.

104,100.—BREECH-LOADING FIRE-ARM.—Kiel V. Barnekov, Cornwall, N. Y.

Claim.—The breech-loading fire-arm, consisting of barrel A, breech-block E with flange F and slot G^1 G^2 G^3, extractor M M, hammer H, with lap K and pin I, link L, and spring S S, trigger Q and spring U, and side pieces D D, all combined and constructed as shown in the drawings, and as specified.

104,101.—HAWSE-PIPE STOPPER.—Orin B. Bearse, Hyannis, Mass.

Claim.—The within-described stopper, consisting essentially of the two blocks A A, which surround and hold the chain, in combination with an elastic packing, d, and a screw-clamp, or equivalent device, for holding the stopper against the hawse-pipe, substantially as and for the purpose set forth.

104,102.—ELEVATING APPARATUS.—Plimpton Ross Berry, Youngstown, Ohio.

Claim.—1. The combination, with the vertical guides A, made in sections, as described, of the platform D, wheels F or G, hoisting-rope E, and guide-wheel H, when the wheels F or G are arranged on cross-bars or beams, arranged for attachment to the top of any section of the vertical guides, substantially as specified.

2. The combination, with the vertical guides and the platform, of the holding-bars I, oscillating supports L K, lever M, connecting-rods P, and spring Q, substantially as specified.

104,103.—PRESSES FOR COTTON, &c.—William I. Blackman, Columbus, Miss.

Claim.—An improved press, formed by the combination of the blocks B and C, lever D, uprights E, standards F, ropes or chains G and K, pulleys H d^1 I and L d^2 M, drum or shaft J, and sweep or lever N, the double-lever pawl O, and ratchet-wheel P, with the platform A; each of said parts being constructed, arranged, and operating as shown and described, whereby the lever is raised or lowered according to the direction of the rotation of the drum.

104,104.—SOFT SOAP OR WASHING-FLUID.—John Bolinder, Brooklyn, N. Y.

Claim.—An improved washing-fluid or soft soap, formed of the ingredients, and in the proportion and manner substantially as herein shown and described.

104,105.—APPARATUS FOR FEEDING CATTLE ON RAILWAY-TRUCKS.—William James Boneer, London, England.

Claim.—The arrangement of levers b, hinged or jointed to vertical standards or uprights a, two or more of such levers b supporting at one of their ends troughs and racks, or either, and at their other ends balance-weights d, so adjusted that, when the troughs are empty, these weights will carry the troughs and racks in the direction of the arc of a circle away from and clear of the line of trucks, but, when the troughs and racks are filling or filled, will permit their descent until they assume a position alongside and close to the cattle-trucks.

104,106.—HAME-TUG FOR HAMES.—Nathan Botsford, Somerset, N. Y.

Claim.—1. A metallic hames-tug, A, made with a curve, G J, a straight extension, J I, in line with the pivot-hole F, and a countersink, A', to receive the trace, substantially as shown and described, for the purpose set forth.

2. The double set of loops D, applied to the tug, as and for the purpose specified.

3. The combination of the slotted plates B B and angular tongues K K, with each other and with the metallic hames-tug, constructed, arranged, and operating substantially as described.

4. A metallic hames-tug, with a curve, G J, and loops D D D D L E, and the buckles herein described, all constructed and arranged to operate substantially as set forth.

104,107.—MILLSTONE-DRESS.—Daniel Bowman, Johnson City, Tenn.

Claim.—A millstone, provided with furrows a, when these furrows are themselves channeled, as shown at c d, substantially in the manner and for the purpose described.

104,108.—PROJECTILE FOR ORDNANCE.—John G. Butler, Fort Leavenworth, Kansas.

Claim.—1. The lifting-studs A', having projections fitting in under-cut cavities in the rear end of the projectile, and the band B', with projections *u s h i* fitting in corresponding annular groove at the front thereof, substantially as shown and described, and for the purpose described.

2. The split studs D, substantially as shown and described.

104,109, anted ated June 10, 1870.—FOUNTAIN PEN.—Albert S. Carleton, Providence, R. I.

Claim.—A stylus for writing, composed of the tube A, formed in two parts, C D, the first being an air-chamber, and the second an ink-reservoir, the auxiliary tube e, and the needle-valve *f g*, all constructed, operated, and fitted together in the manner described.

104,110.—TRUSS-BRIDGE.—Milo S. Cartter and Hosea B. Cartter, St. Louis, Mo.

Claim.—The lower or tension-chord F composed of the bars G and G', provided with the solid hooked heads *g*, and connected together by means of the interlocking of said heads, the bolts H, and the packing-blocks L, substantially as shown and described.

Also, the angle-block K, constructed in the manner shown and described, and combined with the plate or clamp M and the interlocked chord-bars, as to receive and cover the joint, substantially as set forth.

Also, the friction-seat O, constructed with the laterally-projecting bearing *q*, adapted to the wall-plates P, in combination with the shoe N, substantially as and for the purpose shown.

Also, the metallic tension-chord F, constructed of sections joined together by means of solid interlocking heads and transversely-binding bolts, in combination with the shoe N, the end posts B, the main and counter-braces C and D, respectively, the tension-rods E, and the upper chords A, substantially as shown and described, the whole forming an improvement upon the "Howe truss-bridge."

104,111.—APPARATUS FOR MAKING TUBING.—James Cassidy, East Boston, Mass., assignor to himself and Harvey K. Flagler, same place.

Claim.—1. The bar A, provided with the many-sided head B, and combined with the blocks R R', yoke P, and ball C, in the manner and for the purpose specified.

2. The combination and arrangement of friction-rollers M J', lever K, and piece L, substantially as described.

104,112.—RICE-SCREEN.—William C. Chapman, Charleston, S. C.

Claim.—1. The combination of the screen-cylinder, consisting of the spiral cross-wires A and longitudinal ribs B, placed at short intervals apart and fastened by tie-wires C, with the hopper D and D', constructed and arranged as herein shown and described, for the purposes set forth.

2. The arrangement of the screen-cylinder herein described, grain-inlet J, and rice-outlet J', hopper D and D', with spout E, all constructed substantially as herein shown, and for the purpose set forth.

104,113.—SNOW-PLOW.—Thomas C. Churchman, Sacramento, Cal.

Claim.—A snow-plow, consisting of the apron A, the vertical cylinders B, and the fenders D, the whole combined and operated in the manner set forth.

104,114.—MACHINE FOR FORMING ELLIPTIC SPRINGS.—James B. Cleveland and Henry C. Guilderleive, Newark, N. J.

Claim.—The combination of the adjustable screw jacks 1 2 3 4 5 6 7, adjustable pressure-bars *x x' x'*,

levers L L, wheels W W, and blocks M M', adjustable nuts *n n*, head pieces H H, clamping bars F F F', and set-screws *o o*, all constructed, arranged, and operating in the manner and for the purpose specified.

104,115.—Oil-Cup and Bearing for Spindles.—Eugene Convers, Oswego, N. Y.

Claim.—1. The combination of the movable cap and collar *b c*, fig. 2, constructed substantially as described and for the purposes set forth.

2. The shaft, with hole in the end, and corresponding pivot fixed in the oil-box or step *a*, fig. 1, as described, and for the purposes set forth.

3. The combination of sliding cap *c*, the spindle *f*, having a collar *b*, with lugs *e*, and the oil-cup *g*, the cap revolving with the spindle, and not in contact with the oil-cup, in the manner and for the purposes substantially as shown and described.

104,116.—Folding School-Desk.—Eugene Convers, Oswego, N. Y.

Claim.—The combination of the bar *a*, provided with the notches *c* and spring *b*, with cams *d*, on the arms of the writing-table, all constructed as herein described, for the purposes specified.

104,117.—Self-Protector.—Daniel P. Cook, Hartford, Conn.

Claim.—1. The pouch *c*, made substantially as described, for the purpose set forth.

2. The combination of the upper band *a*, the connecting-stripe *c*, the lower band *d*, and the pouch *e*, the whole being constructed, arranged, and used substantially as and for the purpose set forth.

104,118, antedated June 6, 1870.—Broom and Whisk.—Eli P. Cooley, New York, N. Y.

Claim.—The introduction into the head of the broom of separate pieces or sections, interspersed between the spears of broom-corn, or other material, at the portion of the said broom where the parts are held together, as and for the purposes specified.

104,119.—Pulley.—George B. Cowles, Bridgeport, Conn.

Claim.—1. The pulley-frame *a* and axle *c* entire, and constructed as specified and shown.

2. The sheave *b*, with its broken flanges *d d d*, in combination with frame *a* and axle *c*, for the purpose specified and shown.

104,120.—Butter-Extractor.—Thomas Curtis, Holly, Mich.

Claim.—The combination and arrangement of the cylinder A, graduate piston-rod C, valve G, and scale E, as and for the purposes herein specified.

104,121, antedated May 17, 1870.—Machine for Finishing Staves.—Amos Cutter, Boston, Mass.

Claim.—1. The disk-wheels C C, having the carriers *e*, in combination with the rigid unyielding guide-gauges C' C', the crosing, chamfering, and cutting-off devices *f*, *f'*, and *f''*, when they are attached to and adjusted by the sliding frames E E, constructed to operate in the manner described.

2. The inclined feed-table B, and feeding-frame D, in combination with the disk-wheels C C, having the carriers *e*, and the rigid unyielding guide-gauges C' C', in the manner and for the purpose described.

3. The adjustable unyielding shaft *d* and disk-wheels C C, having the carriers *e*, in combination with the rigid unyielding guide-gauges C' C', and the crosing, chamfering, and cutting-off devices *f*, *f'*, and *f''*, in the manner and for the purpose described.

4. The sliding frames E E, with their adjusting and holding devices, and carrying the crosing, chamfering, and cutting-off tools *f*, *f'*, and *f''*, and guide-gauges C' C', in combination with the graduated scales A' A', for the purpose described.

104,122, antedated May 27, 1870.—Paper-File.—Augustus Day, Detroit, Mich.

Claim.—The shoulders *a a'*, in combination with the wire *b*, the shaft A, the handle B, and cap C, when constructed and operating as above described.

104,123.—Vegetable Washer.—Richard Derham, Bermondsey, England.

Claim.—The horizontal shaft C, provided with a series of brushes, arranged within a revolving cask, and operating in connection with a series of brushes on the inner circumference of the cask, substantially as shown and described.

104,124.—Horse Hay-Fork.—William E. Derrick, Jordan, N. Y., assignor to himself and George B. Garrison, same place.

Claim.—1. The combination of the curved tines A B, swinging bar C, and head or box D, said box being pivoted or flexibly secured to the bar C, substantially as and for the purpose herein described.

2. The tines A B, swinging bar C, and lock G F H *a*, all arranged and operating as herein shown and for the purpose specified.

104,125.—Hair-Brush or Comb.—Thomas Divine, Charleston, S. C.

Claim.—The arrangement and combination, with a brush or comb, of a receptacle to contain hair-oil or hair-invigorator, as shown at A, with the stopper *a* constructed with its recess *b*, opening *c*, and handle *d*, arranged as shown and described, and for the purpose set forth.

104,126.—Hydrocarbon-vapor Machine for Illuminating Purposes.—Bailey B. Douglas, Newark, N. J.

Claim.—1. The carbureting-wheel, consisting of two or more tiers of transverse troughs, arranged alternately to each other, and open inwardly, and provided with suitable fibrous material, and operating as set forth.

2. The tube *d*, constructed as described, and projecting into the carbureting-wheel, to operate substantially as and for the purpose described.

3. The mode of attaching the main shaft *g* to the air-wheel, by means of the two flanges shown in figs. 5 and 6, substantially as and for the purpose herein set forth.

4. The mode and manner of attaching the air-chamber to the inside of the water-tank *a*, as shown by figs. 2 and 9, substantially as and for the purpose herein set forth.

5. The whole combination and arrangement, substantially as and for the purposes herein set forth.

104,127.—Churn-Dasher.—Philip Edgerton, Rutland, Vt.

Claim.—A churn-dasher, formed of sections B^1 B^2 B^3, C^1 C^2 C^3, D^1 D^2 D^3, held apart by intermediate pins C^4 D^4, and all retained firmly in place by a bar, E^1, fastened above the highest section, and having pins E^2 bearing upon the said section, all as shown and described.

104,128.—Faucet.—Asa Eggleston, Fall River, Mass.

Claim.—The teeth or cogs on the slide E and handle A, in combination with the roller or wheel K, and the grooves in which the said slide E moves, substantially and for the purpose hereinbefore set forth.

104,129.—Liquid-Measure.—Theodore W. Ellis, Macon, Ga.

Claim.—1. The combination of a swiveled adjustable arm or pipe C with the end or mouth of the short arm of the siphon B, and with the measure A, substantially as herein shown and described and for the purpose set forth.

2. The combination of the pivoted rod D and graduated gauge or scale of slope E *e'* with the swiveled arm or pipe C, siphon B, and measure A, substantially as herein shown and described, and for the purpose set forth.

104,130.—Separating and Refining Metals.—Christian S. Eyster, Denver, Colorado Territory.

Claim.—1. The mode of separating molten alloys of metals of different specific gravities, by causing them to revolve in a heated revolving chamber, to form, on gradual cooling, an ingot in which the metals are arranged in bands of more or less purity, according to their different densities, substantially as set forth.

2. The chamber A with a removable head, suspended upon axles C attached to the heads, and arranged to revolve within a furnace, substantially as and for the purpose set forth.

104,131.—Horse Hay-Rake.—William H. Fay, Camden, N. J.

Claim.—1. The arrangement, on the same shaft, D, of the teeth F, working loosely and independently thereon, and the fingers H, secured adjustably to said shaft by set-screws I, as herein shown and described.

2. The arrangement of the fingers H, sleeve C, and crank J, with the shaft D, teeth F, frame A, and wheels E, substantially as herein shown and described, and for the purpose set forth.

3. The arrangement of the rod or bar Q, eye-bolts or keepers R, and pawl S, with the teeth F, fingers H, shaft D, frame A, wheels E, notched sleeve C, and crank J, substantially as herein shown and described, and for the purpose set forth.

104,132.—Wood-Box.—Frank Ficht, Dyckesville, Wis.

Claim.—An improved wood-box, formed by the combination of the outer box A, cover *a'*, zinc-lined drawer B, grate C, and inner box D, with each other, substantially as herein shown and described, and for the purposes set forth.

104,133.—Bridle-Bit.—Milton J. Firey, Mansfield, Ohio.

Claim.—1. In combination with a bridle-bit, the slotted slides C C jointed to the rings B B, and operating substantially as and for the purposes described.

2. In combination with the slides C C the links D D, substantially as described and for the purposes set forth.

104,134.—Bridle-Bit.—Milton J. Firey, Mansfield, Ohio.

Claim.—1. The combination, with a bridle-bit, of the slides E E, links G G, and the bow B, when the same are arranged to operate substantially as and for the purposes described.

2. The rubber covering C on the bow B of the bit, substantially as and for the purposes described.

104,135.—Carriage-Spring.—Joseph S. Foster, Salem, Mass.

Claim.—The combination of the springs A and B and the rods C and D, constructed and arranged substantially as described.

104,136.—Combined Grate-Front and Oven.—Joseph W. Gillespie and William Hughes, Alliance, Ohio.

Claim.—The grate-front A, combined with the oven B, when the two parts are so connected as to form but a single article of manufacture, substantially as described.

104,137.—Loom-Temple.—Albert H. Gilman, Boston, Mass.

Claim.—1. The combination, with the plate and trough, of the movable casing *b*, having the shaft *c* rigidly connected therewith, to carry the roller *a*, the free end of the shaft being adapted to enter a hole in the end piece which unites the trough with the plate.

2. In combination with a loom-temple, as described, the adjustable screw *y* at the end of the trough *t'*, to accommodate it to the various thicknesses of cloth, as set forth.

3. The sliding covering-shank *l*, having the lip *p*, and provided with holes *r*, combined with the stand *o*, having holes to receive a pin, *g*, so that the temple-casing may be held back when desired.

4. The combination and arrangement of the parts *t u v w x*, with a loom-temple, as described, to form a clutch, as set forth.

104,138.—Treating Grain to Obtain Extractive Matter for Coloring and Flavoring Spirits.—Samuel H. Gilman, Galveston, Texas.

Claim.—Boiling roasted and ground cereals and beans in sirup, for the purpose and in the manner described.

104,139.—Lubricator.—Darwin Alanson Greene, New York, N. Y.

Claim.—1. The cup-shaped cover A^1, always open to receive oil, when arranged as represented, relatively to the means below for transferring the oil into the steam-chest against pressure, by the aid of the cock and passages, as specified.

2. The hollow ping B, having the orifices or vents *d* b^1 b^2 b^3, arranged relatively to each other and to the passages in the casting A, as and for the purposes herein set forth.

104,140.—Shovel.—George W. Gregory, New York, N. Y.

Claim.—1. A shovel, having at its upper end an upturned lip, a grooved handle, and a ferrule, when constructed and combined substantially as described.

2. A ferrule, having a projecting piece at its forward end, which may be bent down to partially close the end of the ferrule, substantially as described.

104,141.—Portable Self-Elevator.—Herman L. Hall, Buffalo, N. Y.

Claim.—The combination and arrangement of the timber A, upon the carriage B C c^1 c^2, the platform D, the windlass E, with stop *j* and brake *k*, and the notched stake L, all parts being constructed and operating substantially as described and for the purposes set forth.

104,142.—Adjustable Shed.—Francis L. Hall, Oneida, N. Y.

Claim.—1. The water-trough C, secured to the alternate lower ends of hinged sectional leaves, substantially as herein shown and described.

2. The flanges *b b* secured to the edges of contiguous sections of leaves for the purpose of producing water-proof joints, as specified.

104,143.—Bedstead.—Thomas Q. Hall, Indianapolis, Ind.

Claim.—The supplementary extension and detachable bedstead, composed of the parts D E F G, in combination with the principal bedstead, all constructed and arranged substantially as set forth.

104,144.—Washing-Machine.—Gustavus Hamel, De Soto, Mo.

Claim.—1. Forming wash-boards for washing by passing spring wires through the ends of rounds, and through rubber blocks interposed between the said rounds, substantially as herein shown and described.

2. The combination of the revolving board or plank I, wash-boards J, webbing K, roller L, and pin or pins M, with each other, substantially as herein shown and described, and for the purposes set forth.

3. The combination of the detachable wash-board G, with the tub or box A, and with the revolving wash-boards I J K L M, substantially as herein shown and described and for the purpose set forth.

4. An improved washing-machine, formed by the combination of the box or tub A B C, detachable wash-board G, detachable inclined board H, revolving wash-boards I J K L M, fly-wheel N, crank O, ratchet-wheel P, and pawl Q, with each other, substantially as herein shown and described and for the purpose set forth.

104,145.—FIRE-KINDLING.—Joseph L. Hannum and Samuel H. Stebbins, Berea, Ohio.

Claim.—The herein-described compound, consisting of the specified ingredients or their equivalents, substantially as and for the purpose specified.

104,146.—LINIMENT.—Otway P. Hare, Petersburg, Va.

Claim.—The liniment composed of tinctures, fluid-extract, pure oils, &c., mixed in the proportions, as and for the purposes hereinbefore described.

104,147.—DOVETAILING-MACHINE.—Elander Heath, San Francisco, Cal.

Claim.—1. In combination with an adjustable sawing-table, C, the rigid sliding frame, consisting of the oblique guide-pieces J and K, connected by the bars D', substantially as described.

2. In combination with an adjustable sawing-table, C', the rigid frame, consisting of the side pieces D, the cross-piece H, and the cross-piece G, provided with the guide-piece I, substantially as described.

3. The combination, with the guide-pieces J and K, of the adjustable sliding frame, holding the guides *m* and *o*, substantially as and for the purpose set forth.

104,148.—STAMP-CANCELLER.—Eli E. Hendrick, Carbondale, Pa.

Claim.—Providing any description of printing apparatus with a platen having a cutting, perforating, or scarifying surface, substantially as set forth.

104,149.—CENTRIFUGAL MACHINE.—Samuel S. Hepworth, Cold Spring, N. Y.

Claim.—In a centrifugal machine, a shaft, which carries a basket, and which is connected at or near its lower end with a flexible support adapted to permit the shaft and other parts of the machine, when in motion, to yield to gyratory movement, in combination with an elastic connection between the upper portion of the machine and the supporting standards or frame-work, substantially as and for the purposes set forth.

104,150.—TOY HOOP.—Philipp Hessemer, Washington, D. C.

Claim.—1. The combination of the hoop *a*, spokes *b*, and tags *d e f*, when the latter are arranged upon the spokes, substantially in the manner described, and for the purpose set forth.

2. The combination of the hoop *a*, spokes *b*, tags *d e f*, the bells *h i k*, when the latter are arranged to operate as supplementary weights, substantially as described.

104,151, antedated May 30, 1870.—METHOD OF MOUNTING CROQUET-BOARDS.—Henry R. Heyl, Philadelphia, Pa.

Claim.—The arrangement of the uprights A A, pivots E E, braces B B, with their adjusting thumb-screws *c*, and pivots *g g*, as shown, for the purpose described.

104,152.—PAPER-RULING MACHINE.—William O. Hickok, Harrisburg, Pa.

Claim.—The cylindrical elastic strip E, and the groove D, when combined together and arranged in relation to the jaws *a b* of the pen-clamp of a paper-ruling machine, substantially as and for the purpose hereinbefore set forth.

104,153.—DITCHING-MACHINE.—Mahlon C. Higgins and Gilbert B. Higgins, Flemington, N. J.

Claim.—A ditching-machine, composed of the three ratchet-wheels A A A, fixed upon the shaft *b*, the internal gearing D and C, by which the movement of the main wheels A is imparted to the arms containing the shovel-buckets *e*, the double lever E, regulating the height of the wheel D, and buckets *e* operating in guides *a a*; also, the lever K, graduating the depth of plow J, and rendered stationary by small pins in standard L, the guide or supporting-wheels G, and platform M, when arranged as herein described.

104,154.—COTTON-CHOPPER.—Rufus C. Holt, Morehouse Parish, La.

Claim.—The arrangement of the adjustable standards F F' F'' F''' F'''', brace-rods H, cutters G G' G'' G''' G'''', frames A B C, bounds J, tongue I, handles K, and wheels D D', when these several parts are constructed, united, and operate as herein described, for the purpose set forth.

104,155.—STANDARD FOR DROP-LIGHT.—John Horton, New York, N. Y.

Claim.—1. A gas-standard or pedestal for a drop or reading-light, constructed in such manner, by means of a swivel collar or otherwise, as will prevent the flexible tube attached thereto from twisting, when the position of said standard or pedestal is moved, substantially in the manner and for the purposes hereinbefore described.

2. A gas-standard or pedestal, constructed with the swivel collar *a*, connection *b*, and channel *d*, in combination with a flexible tube, substantially in the manner and for the purposes hereinbefore described.

3. Attaching to a flexible tube or its connections a swivel collar, substantially as and for the purposes herein described and set forth.

104,156.—RAILWAY SWITCH.—Julius R. Howell, Atlanta, Ga.

Claim.—The combination of the pivoted rail A', the pivoted guide-bar D, the connection E and the bar F, substantially as shown and for the purpose set forth.

Also, in combination with the rail A' and guide-bar D, constructed and arranged as shown, the rails A'' and A''', rigidly secured to the ties at their inner ends and operated at their outer ends, substantially as and for the purpose specified.

Also, the stirrup-bar H, constructed as shown, and connected to the rails A'' and A''', and to the ties, in the manner and for the purpose specified.

Also, the combination of the rack-bars T and U, the pinions I and M, and the shaft K, with the rails A', A'' and A''', and the guide and stirrup-bars D and H, substantially as and for the purpose set forth.

104,157.—COTTON-SEED PLANTER.—Edward J. Hudson, Golconda, Ill.

Claim.—The separator *a'*, in combination with the double shovels *c c* and roller *d*, in the manner and for the purpose described.

104,158.—STOVE-ILLUMINATOR.—George G. Hunt, Bristol, Ill.

Claim.—1. The described window-frames, inclosing an air-space between and in said frames and the walls of a combustion-chamber, when applied to a stove for the purposes and in the manner set forth and described.

2. Fastening the said frames on the walls of the combustion-chamber of a stove by means of the dovetail, as described.

3. The combination of the frame F, the space A, the combustion-chamber C, and apertures K, and mica M, when constructed in the manner described.

104,159.—LEMON-SQUEEZER.—James L. Jensen, Brooklyn, N. Y.

Claim.—The annular flange B, below the top of the cup, and the open circular recess in handle, combined with the independent annular ring D, detachably fastened thereto, as and for the purpose described.

104,160.—SPRING SCALE.—John Jochum, Brooklyn, N. Y.

Claim.—The collared spindle A B, washer D, and pin E, combined with an elastic doubled finger C, each constructed and relatively arranged as and for the purpose described.

104,161.—SCHOOL-FURNITURE.—Joseph McGinnis Johnson, Chillicothe, Ohio.

Claim.—Supporting school-desks and seats, so that their height may be easily adjusted by means of the standard *a*, provided with a rack, and the vertical elevating-screw *b*, supported in the base or pedestal *c*, substantially in the manner as herein specified.

104,162, antedated June 3, 1870.—ROAD-SCRAPER.—Daniel B. Jones, Wood Station, Ohio.

Claim.—In the described connection with a road-scraping machine mounted on wheels and embodying a swiveling scraper, D, the wheel G, pawl F, lever E, notched plates I *i*, and lever H *h*, the whole being arranged substantially in the manner and for the purpose specified.

104,163.—NAIL FOR PICTURES, &c.—Hubert L. Judd, Brooklyn, N. Y.

Claim.—A solid head cast with the nail, and having a central projection that passes through the ornamental covering, and is of sufficient strength for driving the nail, as specified.

104,164.—TASSEL-HOOK.—Hubert L. Judd, Brooklyn, N. Y.

Claim.—The plate *a*, lips *b*, arm *c*, and block *d*, in combination with the spike *i*, for the purposes and as set forth.

104,165.—DIE FOR FORGING VISE-BOXES.—Christian Konold, Pittsburg, Pa.

Claim.—The series of dies having the various grooves and depressions therein shown and described, for the purpose of forging and swaging vise-boxes, substantially as set forth.

104,166.—PLOW.—Matthew Laflin and Enos Slocson, Chicago, Ill., assignors to Matthew Laflin.

Claim.—1. The metal frame A, having the hollow or space B' therein, for the purpose substantially as described.

2. The mode of bedding the mold-board B in the metal frame A, as herein described and for the purpose set forth.

104,167.—STEAM-GENERATOR.—T. S. La Franco, Elmira, N. Y.

Claim.—1. The superheater-cap C, combined with a vertical boiler having a partition, *c*, to separate the smoke-passage from the steam-chamber.

2. The elbow-pipes F, having inner ones, *f*, and being arranged to project from side of boiler into the fire-box.

3. The combination of cylindrical fire-box with boiler, having cap C and pipes D E F.

104,168.—OIL-PUMP.—Levi S. Lapham, Providence, R. I., assignor to Mary S. Brown, same place.

Claim.—The combination of one or more valves, as *i i*, and the valve *r*, together with the passage *s*, arranged substantially as and for the purpose herein set forth.

104,169.—PAPER-BAG MACHINE.—Hervey Law, Chatham, N. J.

Claim.—1. The folders *h h'*, constructed and operated substantially as described.

2. The fingers *g* and *g'*, in combination with the folders *h* and *h'*, constructed and operated substantially as described.

3. The paster *i*, constructed and operated substantially as described.

4. The second folders *l* and *m*, in combination with the paster *i*, substantially as described.

104,170.—HOBBY-HORSE.—John Liming, Philadelphia, Pa.

Claim.—The arrangement of the spiral spring C, platform A, and seat E, in relation to the frame B, substantially as and for the purposes hereinbefore set forth.

104,171.—CARPET-CLEANING MACHINE.—Hermann Henry Lindhorst, St. Louis, Mo.

Claim.—The arrangement of the beaters F F', in combination with the brushes L and M, guide-rollers K and E, connecting-shaft *n*, cam-shaft H, and cams *h*, with springs *g*, arranged with connecting-belts, pulleys *c*, to give motion, as shown and described, for the purpose set forth.

104,172.—ANIMAL-TRAP.—William D. Lindsley, Eudora, Kansas.

Claim.—The animal-trap formed by the combination of the compartments B and C, drop-doors D and M, pan E, wheel G, trip-rods J, and rods H, I, P, and O, arranged substantially as shown and described.

104,173.—SCREEN.—Charles Lockwood, Haverstraw, N. Y.

Claim.—1. The combination of two half-round bars D, with each of the cross-bars C, through holes in which the wires or rods B pass, substantially as herein shown and described, and for the purposes set forth.

2. The combination of the continuous wires or rods E with the ends of the half-round bars D, perforated bars C, and frame A, substantially as herein shown and described, and for the purpose set forth.

104,174.—EGG-BEATER.—Thomas Marsh and James Berney, Pawtucket, R. I.

Claim.—1. The combination, in an egg-beater, of the gear-wheel B, pinions *b b*, and beaters *d d*, when the parts are constructed to operate in the manner described.

2. The combination of the gear-wheels B C *b'''* and *b b* with the beaters *d d*, constructed and arranged to operate in the manner described.

3. The egg-beater, constructed as above described.

104,175, antedated June 9, 1870.—TASSEL.—Charles J. McAlister, Chicago, Ill.

Claim.—The combination of the glass sections A and the standard or support B, substantially as and for the purpose hereinbefore set forth.

104,176.—SOFA AND BEDSTEAD.—Charles J. McAlister, Chicago, Ill.

Claim.—1. The springs K and the bent supports O, when constructed and operating substantially as and for the purposes set forth.

2. The combination of the jointed extension pieces F, frames A and B, the rigid frames C and D, with the springs K and bent supports O, substantially as and for the purpose specified and shown.

104,177.—"FOUR-HIGH ROLLS" FOR ROLLING METAL.—George F. McCleane, Pittsburg, Pa.

Claim.—The arrangement hereinbefore described of the pair of working-rolls *c c'* and the pair of supporting-rolls *d d'*, the former being of less diameter than the latter, and located in a vertical plane somewhat in advance of the supporting-rolls, substantially as and for the purpose set forth.

104,178.—Steam-boiler Blow-off Pipe. John C. McLaughlin, Pittsburg, Pa.

Claim.—In combination with a steam-boiler, the blow-off pipe H, when the same is constructed and arranged therein substantially as shown and described, and for the purposes set forth.

104,179.—Crucible-Stand for Fusing Metals.—James C. McManus, Providence, R. I.

Claim.—1. A hollow stand, substantially as and for the purpose herein set forth.

2. A stand with apertures in the sides, substantially as and for the purpose herein set forth.

104,180.—Milk-Cooler.—James W. McMillan, Granger, Ohio.

Claim.—A milk-cooler, when constructed with eccentric water and milk-channels B C, with inlets and outlets thereto, in the manner substantially as described, and for the purpose set forth.

104,181.—Percolator for Druggists and others.—Albert Merrell, Cincinnati, Ohio.

Claim.—The oval vessels A B, one a percolator and the other a receiver, having arched covers, with air-tight cocks, perforated septum, tubular couplings, and graduated tube T, all connected, constructed, and combined together, as and for the purpose described.

104,182.—Bedstead.—James C. Merritt, West Point, N. Y.

Claim.—Doweling or dovetailing the side rails to the posts in recesses E, and holding those rails in place by the end rails, substantially as shown and described.

104,183.—Double-pointed Tack.—Purches Miles, New York, N. Y.

Claim.—A double-pointed tack, made of wire cut off diagonally, to form sharp penetrating points and bent up, and the diagonally-cut points bent to stand in the same line, as set forth, the same forming a new article of manufacture.

104,184.—Machine for Making Double-pointed Tacks.—Purches Miles, New York, N. Y.

Claim.—1. The shears *b f*, and gauge *h*, in combination with the bending-punch and dies, all arranged and operating substantially as and for the purposes set forth.

2. The dies *o o*, formed with oblique faces and sustained by and sliding in the block *m*, in combination with the punch *g* and shear for separating the blank with an inclined or diagonal cut, as specified.

104,185.—Horse and Cattle-Poke.—Warren Miller, Granger, Ohio.

Claim.—The cattle-poke, composed of a yoke, B, cross-head A, stale C, guard *e*, and springs and prickers *d*, when the yoke is adjustable, and the stale is so arranged as to allow the animal's head to reach the ground, all constructed, arranged, and operating substantially as described.

104,186.—Machine for Making Harrow-Teeth.—James Morgan, Pittsburg, Pa.

Claim.—1. The pressing and pointing dies, provided with V-grooves, terminating in a point, and tapered on the pointed ends at *d*, for cutting and flattening the point of the blank, and made in two parts, all substantially as specified.

2. The combination, with the pressing and pointing dies, of the fin-cutter, substantially as specified.

104,187.—Feed-water Heating Apparatus.—John F. Morse, Oshkosh, Wis.

Claim.—1. The water-conductors or heaters B and B', substantially as specified.

2. The equalizing-pipe H, substantially as specified.

104,188.—Steam-Generator.—Joseph Nason and David Saunders, New York, assignors to Joseph Nason and H. R. Worthington, Irvington, N. Y.

Claim.—1. The water-wall or feeder A, having interior passages adapted to convey water to and from the tubes D D, with strong connections between such passages, giving strength to endure pressure, in combination with tubes, free to expand and contract, connected substantially in the manner and for the purposes herein set forth.

2. The tubes D D^1 D^2, arranged on opposite sides of the feeder A, that is to say, those tubes which are designed to inclose the fire-place and receive the radiant heat of the fire, fixed into the front side, and those tubes which are to be acted upon by the gaseous products of the fire, into the back side of the feeder, as specified.

3. In combination with a cast-iron boiler, substantially of the character herein specified, the internal circulating pipes *d d*, arranged in the horizontal pipes D D, and adapted to serve, relatively to the other parts and connections, as herein set forth.

4. The combination of the feeder and tubes with the drum or receptacle L, adapted for joint operation, as specified.

5. The entire apparatus, as shown, consisting of the cast-iron boiler, herein described, composed of pipes of small diameter, united to a common chamber, A, with liberty to expand and change their directions within wide limits, the separating vessel L, and the thin internal tubes, or their equivalents, *d*, C^1, and C^2, for facilitating the circulation in every part, all combined and arranged as specified.

104,189, antedated May 20, 1870.—Churn-Dasher.—Lewis T. Newell, Geneva, Ohio.

Claim.—1. A dash, A, constructed with wings B, furnished with beveled or sloping upper surfaces *b*, substantially as and for the purpose set forth.

2. The air-chamber *c*, when formed in the under side of the wings of the main dash A, substantially as and for the purpose set forth.

3. The supplementary dashers C, constructed and arranged substantially as and for the purpose set forth.

104,190.—Manufacture of Paste.—George G. Noah, Boston, Mass.

Claim.—The formation of a paste made with the chloride of zinc, sulphate of zinc, acetate of zinc, or with the chloride of copper, sulphate of copper, combined with the bichloride of mercury, oil of cloves, alum, and wheat flour, in substantially the proportions described.

104,191.—Churn.—John H. Ormsby and Robert S. Harton, Holden, Mo.

Claim.—The combination of the reciprocating rod A with the wheel or disk B, the swivel-ball F, the cylinder K, and the rod T, combined so as to produce the vertical and horizontal movement, substantially as and for the purpose hereinbefore set forth.

104,192.—Vegetable-Cutter and Scraper. Alexander W. Pagett, Springfield, Ohio.

Claim.—The side plates A A, notched, grooved, and slotted, as shown, combined with sliding table O, curved lever R, crushing plate U, stand W, arms V, and pin *x*, all constructed and arranged as and for the purpose set forth.

104,193.—Metallic Cap for Tin Cans.—George H. Perkins, Brooklyn, N. Y.

Claim.—A single sheet-metal cap, A and A', in combination with a ring, B, secured to the under side of the sheet-metal throat-piece or cap A, to hold the spigot without leakage of the contents of the can, all arranged substantially as described and shown in the drawing.

104,194.—Manufacturing Carriage-Spring Heads.—Walter R. Petrie, Westville, Conn.

Claim.—1. The method of uniting the spring-head to the spring, herein described, that is, by pressing the projections upon the head into the body of the spring while hot, thus forming a weld, as described.

2. The spring described, consisting of the ears with projections united to the spring by pressure and welding, as and for the purpose set forth.

104,195.—Alarm Attachment for Locks and Bolts.—Charles E. Pierce, New York, N. Y.

Claim.—The lever, when arranged in a recess on a keeper, nose-piece or plate, so as to be operated by the end of the bolt before the latter is withdrawn, in the manner above described.

104,196.—Sheet-Metal-Pipe Forming and Threading-Machine.—M. K. Pierce, Calahan's Ranch, Cal.

Claim.—1. The combination of the bed A, plates C with oblique grooves and projections, and cylinder D with grooves and projections fitting those in the plates C, all arranged for operation substantially as specified.

2. The combination with the bed A, plates C, spirally-grooved cylinder D and the toothed racks H I, pinions E, and friction-rollers, substantially as specified.

3. The combination, with the spirally-grooved cylinder D, and toothed racks I, of the guide-beams K, and pressing-frame N, substantially as specified.

4. The combination, with the frame N of the sliding plates T^1, adjusting screws S, blocks T, arms T^2, lifting and oscillating rod O, and lever P, substantially as specified.

5. The combination, with the spirally-grooved cylinder D of the lifting bars G^2, beam H^2, bars H^1, and lever H^3, all substantially as specified.

6. The combination, with the rack-bars I and adjustable frame N, of the vertically-adjustable frame M^1, driving-shaft M, and pinions L, all substantially as specified.

7. The combination, with the bed A, plate C, and spirally-grooved roller D, of the punches D^3, substantially as specified.

8. The cylinder D, provided with the projecting axles G^1 G^2, punch-holes D^3, clamping-bar D^1, and clamping-screws, all substantially as specified.

104,197, antedated June 1, 1870.—Device for Raising and Lowering Gas-Fixtures.—Joseph F. Pond, Cleveland, Ohio.

Claim.—1. The combination of the revolving drum or cylinder A, secured to shaft *b*, flexible tube *h*, spring *d*, ratchet *e*, brake *f*, pawl *l*, spring *c*, and swing-joint *g*, secured in box *i*, when arranged to operate in the manner and for the purposes set forth.

2. The friction-washer *r*, and rubber gasket *p*, when applied to swing-joints and keys for gas-fixtures to prevent friction on the key or joint, and more effectually prevent the escape of gas, as and for the purposes specified.

104,198.—Vessel for Packing Butter and other Articles.—William Pratt, New York, N. Y.

Claim.—1. A new article of manufacture, to wit: A box or case, made of plaster of Paris, for packing such articles of merchandise as are liable to be spoiled by exposure to high temperatures.

2. The mixing of small quantities of fusible gum resin with the plaster used in making the same.

3. Making vessels for holding articles of merchandise impermeable to their contents to the external air and moisture, by dusting them with any of the fusible gum resins, finely pulverized, and exposing the same to a sufficient degree of heat to liquify them, and thus form a continuous proof coating, all made and operating substantially as described, or their equivalents.

104,199.—Turbine Wheel.—Matthias Rapp, Rapp's Mill, Va.

Claim.—The water-wheel W, having the concavo-convex buckets L, and provided upon its periphery with the blocks F, in combination with the casing A, substantially as and for the uses and purposes described and shown.

104,200.—Heel for Boots and Shoes.—Joseph Read, Philadelphia, Pa.

Claim.—A metallic heel for a boot or shoe, consisting of the hollow metallic body A and support or guard *a'' a'''*, in combination with the adjustable metallic cap B and central screw E, constructed, arranged, and applied substantially as hereinbefore described and set forth.

104,201.—Caster for Billiard-Tables and Furniture.—Willian Reagan, New York, N. Y.

Claim.—The roller B C, pivot D G, set-screw H, spindle F N O, face-plate I, and jam-nut M, all arranged and operating substantially as and for the purposes described and set forth.

104,202.—Comb.—James Clarence Reed, New York, N. Y.

Claim.—The within described "improvement in combs," as a new article of manufacture, having the teeth B standing nearly at right angles with the body, and the whole adapted to serve in connection with a hair-brush, substantially as and for the purposes herein set forth.

104,203.—Inking-Apparatus for Printing-Presses.—Israel L. G. Rice, Cambridge, Mass.

Claim.—1. The cam C, the rack E, and pin D, and the movable stands H H, with their spindles I and gears J, when combined together substantially in the manner and for the purposes herein set forth.

2. The belts or aprons X X, the rollers T^1 T^2 T^3, the washers y^1 y^2, when combined together substantially as, in the manner, and for the purposes herein set forth.

104,204, antedated June 2, 1870.—Apparatus for Cure of Spermatorrhœa.—Israel L. G. Rice, Cambridge, Mass.

Claim.—A vessel made of hollow walls to contain water, B, with a receptacle for the penis and testicles, A, with an inlet-tube, C, and loops D, substantially as and for the purpose herein set forth.

104,205.—Mold for Glass Lamps.—Daniel C. Ripley, Birmingham, Pa.

Claim.—A lamp-mold having two or more cavities, *f f'*, communicating with each other, either directly, or through an interposed central cavity, in which to blow two or more lamp-bowls by distinct though simultaneous operations, substantially as described.

104,206.—Try-Square and Bevel.—Isaiah J. Robinson, St. Johnsbury, Vt.

Claim.—The device described, consisting of the blade A, body B, bar C, and thumb-screw D, when combined as described for the purpose set forth.

104,207.—CONSTRUCTION OF CANE-SEAT CHAIR.—Charles M. Rohr, Portland, Oregon.

Claim.—The double elliptic curve C S and the angularly-pierced holes C D and C E, arranged as herein described, for the purpose specified.

104,208.—WHEEL FOR VEHICLES.—John D. Ross, Truckee, Cal.

Claim.—Constructing a wheel for vehicles with a secondary arch or rim, when placed between and attached to the spokes, substantially as and for the purpose herein described.

104,209.—REFRIGERATOR.—Benedict Sauter, Danbury, Conn.

Claim.—The clock-work C, bellows D, having valve g, and aperture A, chamber F, with inlets k, in combination with the metal-lined cooling-chamber B, with apertures e in the bottom, and exit apertures i near the top, constructed and arranged to operate in the manner and for the purposes described.

104,210.—GATE.—E. B. Scattergood, St. Johns, Mich., assignor to William H. Watts, same place.

Claim.—The suspension bar E nearest to post B, with the attachments of the bars E E to the beam D, consisting of eyes and bolt through said beam D. Also, the roller T and band s, with its connections to segment of a circle, J, and the rounded surface of the post B.

104,211.—BREECH-LOADING FIRE-ARM.—George W. Schofield, United States Army.

Claim.—1. A hammer, tumbler, and locking-brace made in one piece, of the shape and construction shown, moving on a single pivot in rear and operating in conjunction with a swinging breech-block, so that the piece can be loaded when at half or less than full-cock, or the breech-piece locked against the end of barrel and the piece safely carried at quarter-cock, arranged and operated substantially as shown and described.

2. The breech-block E, and the hammer and tumbler D in their improved and modified relations to and with each other, substantially as herein shown and described.

104,212.—GRATE AND FIRE-POT FOR HEATING-STOVE.—Philip Jacob Schopp, Louisville, Ky.

Claim.—The combination of the fire-pot C with the depending flange a, flanges c and d, grate D, cone E, base A, and brackets B, substantially as and for the purpose hereinbefore set forth.

104,213.—DRAIN-TILE.—Francis E. Scott, Centreville, Ind.

Claim.—The improved drain-tile herein shown, consisting of the three concave sections 1 2 3, provided at their respective locking-edges with the grooves or channels formed as shown at b and c, and adapted and combined together in the manner and for the purposes herein set forth.

104,214.—ATTACHING SPONGE-HOLDER TO TABLES, &c.—Cornelius S. See, New Brunswick, N. J.

Claim.—As a new article of manufacture a, chalk-holder, combining the cup C, having shank B thereon, with the slotted plate A, perforated for two screws, as shown and described.

104,215.—PILE-DRIVER.—Thomas Shaw, Philadelphia, Pa.

Claim.—In a pile-driver, the employment of an air-chamber, in the manner and for the purpose described.

104,216.—EYE-GLASS HOLDER.—Gerard Sickles, Boston, Mass.

Claim.—The device described, consisting substantially of the plate A, with its journaled piece C, or its equivalent, the spring F, the projection D, and clamp d, all arranged and operating as and for the purpose set forth.

104,217.—ELECTRIC FUSE-HEAD.—Henry Julius Smith, Boston, Mass.

Claim.—1. A fuse-head having plates or wires extending from the magazine or chamber to the outside, of such length and in such manner that communication between them, and communication between the exposed ends of the battery-wires to which they are attached, is prevented by the interposition of the body of the fuse-head, or by the interposition of a wedge, substantially as described.

2. A fuse-head, having plates or wires provided with eyes, substantially as described, for the purpose described.

104,218.—ROOT-CUTTER.—John F. Smith and Harrison Underwood, Westmoreland, N. Y.

Claim.—1. The combination of the long knife A and the frame B B, substantially as described, and for the purposes hereinbefore set forth.

2. The combination of the long knife A and one or more short knives, C C, substantially as described, and for the purposes hereinbefore set forth.

3. The placing of one or more guards, D D D, substantially as described, and for the purposes hereinbefore mentioned.

104,219.—METALLURGIC FURNACE FOR IRON AND STEEL.—John Y. Smith, Pittsburg, Pa.

Claim.—1. The combination of the combustion-chamber, a crucible or crucibles, and a tweer or system of tweers, so arranged, in relation to each other, that the blast shall form a vortex in the combustion-chamber, around the crucible or crucibles, substantially as set forth.

2. In combination with a combustion-chamber, a tweer or system of tweers, and a hopper or hoppers, or pipe or pipes, for introducing pulverized or gaseous combustible matter, so arranged that a vortex of flame shall be formed by the action of the blast within the combustion-chamber, upon the ignition of the combustible, substantially as set forth.

3. A metallurgic furnace, combining in its construction a combustion-chamber and a crucible, so constructed and arranged that a continuous heat may be maintained, and the crucible charged and emptied without the contents of the crucible being allowed to come in contact with the gaseous products of combustion, substantially as set forth.

4. The combination of the combustion-chamber C, the crucible B, and the diaphragm C′, substantially as set forth.

5. The combination of the combustion-chamber, tweers, crucible, and diaphragm, and the adjustable openings I and F, for regulating the escape of the gases, substantially as set forth.

6. The arrangement of the combustion-chamber, diaphragm, crucible, annular chamber H, and retorts K, substantially as set forth.

7. The arrangement above the crucible and diaphragm C′, and within the annular chamber H, of a hot-air chamber, L, through which the crucible may be charged and a new crucible introduced, substantially as set forth.

8. A crucible resting upon a bed of pulverized silex, to permit of its expansion, substantially as set forth.

9. The combination of the retorts and crucible and intermediate chamber, so arranged, in relation to the heating-chamber or chambers, that the charge shall not be exposed to contact with the gaseous products of combustion, either in the retorts or crucible, or in its passage from the former to the latter, substantially as set forth.

10. The combination of the hopper, the tweer, and the pipe E², arranged substantially as set forth.

11. In combination with the crucible and retorts, an intermediately-placed door or valve, for first receiving and then discharging the charge into the crucible, substantially as set forth.

12. A crucible-furnace constructed in two parts, and having the upper section suspended so as to relieve the lower section from its weight, substantially as set forth.

13. In combination with the crucible, an adjustable feed, for regulating the temperature in the combustion-chamber around the crucible, and the chamber above the crucible with an adjustable damper, for regulating the temperature above the crucible, substantially as set forth.

104,220, antedated June 3, 1870.—PROCESS FOR PURIFYING AND REDUCING MAGNETIC ORES OF IRON.—John Y. Smith, Pittsburg, Pa.

Claim.—1. The process for reducing such ores by first separating the magnetic ores from foreign impurities, by the action of a magnetic machine, and subsequently smelting said ores so separated in a crucible-furnace, substantially as set forth.

2. Such a process, consisting in first separating the magnetic ores from foreign substances by the action of a magnetic machine, and afterward treating said ores in a furnace, in which they may be medicated, roasted, and reduced, without coming into contact with the gaseous products of combustion evolved in heating the furnace, substantially as set forth.

104,221, antedated June 3, 1870.—MAGNETIC MACHINE FOR CLEANING AND SEPARATING ORES OF IRON.—John Y. Smith, Pittsburg, Pa.

Claim.—1. The revolving apron and magnet-cylinder, in combination, but only when so actuated as to revolve in the same direction, at different speeds, substantially as set forth.

2. The combination and arrangement of the magnets and revolving apron, substantially in the manner set forth, so that the revolving apron shall be interposed between the magnets and the pulverized material subjected to the action of the magnets.

3. The magnets and revolving apron, when combined and arranged to discharge first the non-magnetic particles in the pulverulent substance treated, and to retain the magnetic particles against the apron until they have been carried below and beyond the magnets, when they will be delivered separately, substantially in the manner set forth.

4. The combination of the magnets and apron with jets or streams of air, steam, or water, for sweeping away the non-magnetic particles mingled with the magnetic particles, while the latter are held against the apron by the attraction of the magnets, substantially as set forth.

5. The combination of the apron with magnets, bent or arranged so as to oppose their sides or edges to act upon the magnetic particles, substantially as set forth.

6. The arrangement of two magnetic machines to operate upon the materials passing between them, substantially as shown in figs. 1 and 2.

7. The arrangement of two or more magnetic machines above one another, to act successively upon the materials submitted to their action, substantially as shown and set forth.

8. The combination of a magnetic machine for taking up the particles of magnetic iron, and an apparatus for separating particles of gold mingled with the non-magnetic substances discharged with the residuum, substantially as set forth.

9. The arrangement, in combination with the magnets, of a hopper and a pipe or trough, or pipes or troughs, for discharging the pulverized material, in combination with water from the hopper, for subjection to the action of the magnets, substantially as set forth.

10. The combination, with the magnets and receiving apron, of the whipper H H′, substantially as and for the purpose set forth.

104,222.—ANIMAL-SHEARING MACHINE.—Roswell T. Smith, Joseph K. Priest, and William Earl, Nashua, N. H.

Claim.—1. Making the guard F adjustable about the shaft N of a revolving sheep-shearing or animal-clipping blade, substantially as and for the purpose described.

2. A cutter-plate, H, constructed with beveled cutters h h and ridge n, substantially as described.

3. A cutter-guard G, constructed with teeth of different lengths, substantially as described.

4. In a sheep-shearing or animal clipping machine, the revolving cutter-plate H, in combination with a toothed cutter-guard G, which has teeth gradually increasing in length, when the blades h of the cutter-plate, are shorter than the teeth of the cutter-guard, substantially as and for the purpose described.

5. The guard-plate G, made thicker on one side than on the other, substantially as described.

6. The adjustable arm D⁴, carrying the guard-plate G, substantially as described.

7. So applying the cutter-plate H to its driving-shaft that this plate is allowed to rock and accommodate itself to the guard G, on which it is held by said shaft, substantially as described.

104,223.—BREECH-LOADING FIRE-ARM.—William Soper, Reading, England.

Claim.—1. The combination of the breech-block, the cock or hammer, and the extracting devices, together, and with the rod i and side lever o, for operating the same, substantially in the manner set forth, so that the breech is opened, the piece cocked, and the cartridge-shell extracted by one movement of the hand, without changing the position of the piece.

2. The peculiar combination and arrangement of the tumbler and cock or hammer, and the operating side lever o, substantially as described, for the purpose set forth.

3. Connecting the breech-block and tumbler together by means of the rod i, and the pins and slots which allow the said block and tumbler to move freely in their respective planes while the said rod works in a closely-fitting guide, substantially as and for the purpose set forth.

4. The combination with the firing-pin p and the connecting-rod i, of the small withdrawing-lever p¹, operating substantially as and for the purpose set forth.

5. The combination of the extractor with the lever s and the cock or hammer l, constructed as described, whereby the said lever has its motion accelerated from the beginning to the end of its throw, substantially as and for the purposes set forth.

6. The combination of the triggers u and v with each other and with the tumbler h and hammer l, substantially as described and for the purpose set forth.

104,224.—VALVE-GEAR OF STEAM-ENGINE.—David G. Starkey, New York, N. Y.

Claim.—1. A connection between the pitman or connecting-rod and the valve, substantially as set forth, so that the lateral movement of the said connecting-rod imparts a movement to the valve, as specified.

2. The cylindrical valve i, containing the steam and exhaust-ways, in combination with the arm m, link n, and pitman, arranged and acting substantially as set forth.

3. The arrangement of the connecting-rods d d f, cross-heads e e, and crank g, in the manner specified, in combination with the piston-rod passing through both heads of the cylinder, as and for the purposes specified.

104,225.—HEATING-STOVE.—John F. Still, West Farms, N. Y.

Claim.—The combination with the cylinder A and case C, of the perforated heating-plates E, the perforated bottom plate I, heating and draught-regulating plate F, and regulating-plates H L, and the water-reservoir, all substantially as specified.

104,226, antedated June 3, 1870.—CATARACT MECHANISM FOR STEAM-ENGINES.—John Storer, New York, N. Y.

Claim.—1. The mechanism, herein described, for

operating the equilibrium or exhaust-valve of a steam-cylinder, consisting of a plunger which operates in a cylinder, and is provided with a valve which is lifted from its seat when the plunger has reached the desired point in its descent, substantially as set forth.

2. The combination of the cistern D, cylinder C, plunger A, and valves *a b d*, substantially as herein shown and described.

104,227. — CLOTHES-DRIER. — Leroy M. Streeter, Oshkosh, Wis.

Claim.—1. The combination of the vertical shaft G, stay-rods E, head-block D, stay-block F, sliding disk C, arms A, braces B, pulley *a*, and belt or cord *b*, constructed and arranged to operate substantially as described, for the purpose hereinbefore specified.

2. The stay-rods E, in combination with the head-block D, stay-block F, and sliding block C, constructed as specified, for the purpose stated.

104,228. — WINDOW-GUARD. — William K. Thomas, Brooklyn, N. Y., assignor to himself and W. E. Hill, same place.

Claim.—1. The within-described window-guard, composed of parallel bars *m* attached to the window-sash and rising and sinking through the corresponding series of close-fitting holes when the window is opened and closed, substantially as and for the purposes herein set forth.

2. The thimbles or coamings D, arranged relatively to the parallel bars *m*, and to the window-casing and movable sash therein, substantially in the manner and for the purposes herein set forth.

104,229.—TAG FOR SHOE-STRING.—James Twamley, New York, N. Y.

Claim.—A shoe-tag, or tip, provided with one or more barbed securing-points, substantially in the manner and for the purpose set forth.

104,230.— SAW-BUCK.—Peter Tyler, Ypsilanti, Mich.

Claim.—The combination and arrangement of the lever A, the upright bars B, the clasp C, and spiral spring D, when constructed and operating as and for the purpose set forth.

104,231.—EMERY POLISHING-WHEELS, &c.—Wendell P. Van Kleeck, Charlestown, Mass.

Claim.—The production of concrete emery-wheels for grinding and polishing purposes, using for that purpose the within-named concretion of earth or any other substantially the same, in the manner set forth and described.

104,232.—CARPET FABRIC.—William Wallace, Philadelphia, Pa., assignor to himself and Charles McAllister, same place.

Claim.—The carpet fabric herein described, in which adjoining warps are raised in couples for the introduction of a thick filling, and such couples are afterward divided for the passage of a fine weft between them.

104,233.—HAY-GATHERER.—Charles Waste, Galesburg, Ill.

Claim.—1. The combination of the head A, slats B B, and gate F, all constructed, arranged, and operating as described, so that, while the same is drawn forward, resting upon the ground, the hay deposited thereon is, by the action of the ground or stubble, pressed to the rear, and discharged from the carrier, in the manner specified.

2. The gate F, constructed as herein described, and held in position by means of the rods G G and cords D D, connecting the same with the frame C and lever H, so that, while the carrier is being loaded, an inclined position is given to said gate, in the manner and for the purpose herein specified.

3. The combination of the head A, slats B B, &c., and gate F, with the lever H and cords D D, constructed and arranged as described, so that the lower side of the gate F can be automatically released, and brought back to its original position, by means of the lever H and cords D D, substantially in the manner and for the purpose herein specified.

4. The combination and arrangement of the frame C and elevator I, pivoted centrally upon the axle M, in the manner and for the purpose herein specified.

5. The combination of an adjustable elevator with the frame C (both pivoted upon the same axle) and the hay-carrier A, B B, &c., and F, substantially in the manner and for the purpose set forth.

104,234.—DIE FOR CUTTING SCREW-THREADS ON BOLTS.—James E. Weaver, Tompersonville, Pa.

Claim.—The combination and arrangement of the stock A, dies *f*, nuts *g* and D, and ring *e*, constructed, arranged, and operating substantially as herein described and for the purpose set forth.

104,235.—DISH-WASHER.—Glory Ann Wells, Luzerne, N. Y.

Claim.—The combination of the basket *c* and vessel A, constructed, operating, and arranged substantially as and for the purposes set forth.

104,236, antedated May 9, 1870.—TYPE-DISTRIBUTING MACHINE.—Charles S. Westcott, Elizabeth, N. J., and Alexander K. Rider, New York, N. Y.

Claim.—1. The inclined vibrating table, combined, arranged, and operating substantially as described, and for the purpose specified.

2. The combination, with the inclined vibrating table, of the hinged plates *c c*, constructed, arranged, and operating substantially as described and specified.

3. The combination, with the vibrating table and hinged plates *c c*, of the matrix-plates F F, constructed substantially as described and for the purpose specified.

4. The construction, form, and arrangement of the guides *d e*, for automatically feeding the type forward, substantially as described and specified.

5. The combination, with the inclined vibrating table, of the inclined receivers H, for receiving and delivering the distributed type, substantially as described and specified.

6. Distributing type by means of matrices arranged to receive the corresponding letters, figures, and characters as they are mechanically presented to the matrices, substantially as described and specified.

104,237.—COMBINED IRON AND STEEL BAR. Ellridge Wheeler, Hudson, Mass.

Claim.—1. The improved fagot hereinbefore described.

2. As an article of manufacture, the improved bar represented in fig. 2 of drawing, consisting of a core of iron inclosed by a tube or layer of steel, and the latter in turn inclosed by a thin shell of iron.

3. The combination of two rolls B B, one of which has a plain groove, while the other has a collar, *g*, with annular projections *f* on one side, and annular groove *h* on the other, all as shown and described.

104,238. — MANUFACTURE OF RAILS FOR RAILROADS.—Ellridge Wheeler, Boston, Mass.

Claim.—A railroad rail, composed of an interior core of iron and a seamless outer shell of steel, covering every part of said core except the base.

104,239.—CARRIAGE-SPRING GUARD.—Orson Harvey Wheeler, Hamlin, Mich.

Claim.—The stationary bars E I, knee-joint H, and adjustable brace N K S, when combined with and constructed and arranged with respect to reach L, center-piece A, and elliptic spring B C, as set forth and for the purpose specified.

104,240. — HORSE-POWER.—Seth Wheeler, Albany, N. Y.

Claim.—1. The central shaft *d* and beveled gears *u v*, in combination with the three gears *g* and pinions *q*, and their shafts *f* that revolve in the bearings *i o* of the frame *a l*, substantially as specified.

2. The master-wheel *r*, formed with an inward circular flange, bearing upon and against the circular hubs *t* of the pinions *q*, substantially as and for the purposes specified.

3. A circular bearing around the shafts *f f f*, against which the circular portion of the master-wheel bears, substantially as and for the purposes specified.

4. The lower journal-boxes *i* for the shafts *f*, containing oil-receptacles in their upper surfaces, and movable metallic plates or washers for supporting and adjusting the shafts *f* vertically, as set forth.

5. The journal-boxes for the vertical shafts of the triple-geared horse-power, made separately from the frame and introduced into and combined with sockets formed in the frame, and to which they are secured, substantially as and for the purposes set forth.

6. The screws *t'*, applied to adjust the shaft *d* of the bevel-wheel *u*, in combination with the pinion *v* and triple gears, as and for the purposes specified.

7. The bevel-wheel *u* upon and revolving with the shaft *d*, in combination with the triple-gear power, the pinion *v*, and an adjustment applied endwise of the shaft *d*, as and for the purposes specified.

8. The oil-receptacles encircling the lower portion of the journal-boxes *o o*, and revolving with the shafts, substantially as and for the purposes set forth.

9. The journal-box *s*, with a cavity for absorbent material, in combination with the shaft *w*, gears *u v*, pinions *q*, and gears *g*, as and for the purposes specified.

10. The arrangement of the shaft *w*, gears *u v*, pinions *q*, and gears *g*, with their shafts and supporting frames, in the manner specified, so that the shaft *w* shall pass away from the machine at an inclination, for the purposes specified.

104,241.—COLORING PHOTOGRAPHS.—Robert Winter, San Francisco, Cal.

Claim.—The preparation of photographs on albumen paper to receive oil and water-colors, by a coating of collodion, substantially in the manner specified.

104,242.—STOVE-GRATE.—Andrew Winterburn, Albany, N. Y.

Claim.—1. A grate for a cooking-stove, cooking-range, or furnace, consisting of the several bars D, formed with journals *f f*, rolling in bearings *e e*, and provided with crank ends *i*, in combination with the connecting-rod H, when all are constructed and arranged to operate substantially in the manner set forth, for the purpose specified.

2. The combination of the lip *g* and crank ends *i*, with the grate-bar D, substantially as and for the purpose set forth.

104,243.—CHAIR-SEAT.—Benjamin F. Wright, Charlestown, Mass.

Claim.—A seat or bottom for a chair, lounge, or bedstead, formed of strips of rawhide or uncurried leather, substantially as above described.

104,244. — BUNG. — Joseph F. Applegate, New Albany, Ind.

Claim.—The combination of the ring A, bung C, and plug I, all constructed and arranged substantially as and for the purposes herein set forth.

104,245.—METALLIC CONNECTIONS FOR MOSQUITO-NET FRAME.—Uel W. Armstrong and Ira Keeney, of Evansville, Ind., assignors to U. W. Armstrong.

Claim.—The slotted ferrule D, combined with the catches E, each constructed as shown and described, and for the purpose specified.

104,246.—STEAM-RADIATOR.—Albert C. Baker, Westfield, Mass., assignor to himself and George L. Laflin, same place.

Claim.—1. The construction of a steam-radiator, as described, of alternate layers of castings, having pipes A A, provided with flanges *a a*, meshing within each other, all arranged substantially as shown.

2. The combination of pipes A A with flanges *a a*, with the end B, having partition L, as shown and described.

104,247.—SEWING-MACHINE. — Walker B. Bartram, Danbury, Conn.

Claim.—1. The cup-shaped rotary shuttle-carrier, having the projecting guard-plate and shoulder and fixed stud, for driving the shuttle, in combination with the rotary shuttle, all being constructed substantially as described, and operating as set forth.

2. The cup-shaped rotary shuttle-carrier, having the projecting guard-plate and shoulder and fixed stud, in combination with the rotary shuttle and the stationary notched guard, when constructed and arranged to operate substantially as described and set forth.

3. The cup-shaped rotary shuttle-carrier, having the projecting guard-plate and shoulder and fixed stud, for driving the shuttle, in combination with the rotary shuttle and eye-pointed needle, when constructed substantially as described, and operating as set forth.

4. The cup-shaped rotary shuttle-carrier, having the projecting guard-plate and shoulder and fixed stud, in combination with the rotary shuttle, the stationary notched guard, and eye-pointed needle, when constructed substantially as described and operating as set forth.

104,248.—SHIFTING CARRIAGE OR BUGGY SEAT.—Sylvester W. Beach, South Bend, Ind.

Claim.—1. The arrangement, under the back seat of a vehicle, of the bent bars *a a*, friction-rollers *b*, hollow posts *d d*, and spring bolts *e e*, with levers *g g*, all operating in combination with the grooved side bars B B, substantially as and for the purposes herein set forth.

2. The semicircular side irons *m m*, hinged, as described, to the seat E, and provided with sockets *i i*, substantially as and for the purposes herein set forth.

3. The back I, provided with jointed rods *p p* and hinged side rails *n n*, and used in combination with the side irons *m m* and cross-bars *r r*, on either side of the seat E, substantially as and for the purposes herein set forth.

104,249. — MACHINE FOR GRADUATING SQUARES, &c.—Charles S. Bement, Southington, Conn.

Claim.—1. The combination of the arms *o*, provided with set-screws o^1, adjusting-cams o^2, with the stock *h* for regulating the depth of cut of the graver.

2. The pattern-wheels m^1, with the arms for lifting the graver, in combination with the stock *h*, side cam m^7, arms m^6, pawl m^5, ratchet-wheel m^4, and gears m^3, substantially as and for the purpose set forth.

3. The nuts *h h*, in combination with the clasp-bands h^1, and screw-shaft *f* for taking up or compensating for loss of motion, substantially as set forth.

4. The combination of the racks h^3, pinions h^2, pawl and ratchets h^4 f^2, upon the shaft *f*, with the connecting-arm *i'* and crank-plate *i*, substantially as set forth.

5. The clamping device for holding the work, the fixed jaw *n*, oscillating jaws n^1, clamping-jaw or follower n^2, with the screw n^3, substantially as and for the purpose set forth.

104,250.—CIGAR-Punch.—Samuel J. Bestor, Hartford, Conn., assignor to Hamilton W. Conklin, same place.

Claim.—1. A device for puncturing cigars, consisting of a cylindrical case or cup, provided with spring puncturing-pins, operated by means of studs, as described.

2. The specific device described, consisting of the cup A, disk B, plates *c*, pins *c'*, studs *c²*, guide-rod *d*, and spring *e*, when the parts are combined and arranged as described, for the purpose set forth.

104,251.—POTATO-DIGGER.—Daniel Bibbee and William Rand, Letart Falls, Ohio.

Claim.—An improved potato-digger, formed by the combination of the drive-wheels A, axle B, frame C, roller D, adjustable plow-plate or scoop H, weed-cutters S, carrier or separator Y, clod-crushing rollers A', receiving-box B', and weed-carrier C', with each other, said parts being constructed and operating substantially as herein shown and described, and for the purpose set forth.

104,252.—SPRING HINGE.—James Bidwell, San Francisco, Cal., assignor to himself and James McMechan, same place.

Claim.—1. In combination with the hollow slotted knuckles *g*, the loose flanged bushing or thimble D provided with a recess, *i*, substantially as and for the purpose set forth.

2. The combination, with the elements of the above claim, of the knuckles *b* and bars *d*, constructed and arranged to operate substantially as described.

104,253.—GAS-MACHINE.—William W. Binny, Auburn, N. Y., assignor to S. N. Bierce, New York City.

Claim.—Extending the outlet-opening V about twelve to fifteen degrees further around the shaft, from the float J than the inlet-opening, substantially as above described.

104,254.—DUMPING-CAR.—Theodore Bootsmann, Tompkinsville, N. Y.

Claim.—1. The revolving steps *d*, in combination with an arm extending from the hinged bag of a dumping-car, substantially as described and for the purposes set forth.

2. The safety-rollers, hinged to the trucks of a dumping-car, and serving to retain the car, in combination with a center rail, *p*, on the track, particularly during the act of dumping, substantially as set forth.

104,255.—PORTABLE WRITING-DESK.—William Bothe, Williamsburg, N. Y., assignor to Culbert & Co., New York City.

Claim.—The improved desk, consisting of the parts A and B, beveled on the edges of the sides *b'*, and the flaps D D having their adjacent edges similarly beveled, said parts being connected by the double hinges F, as shown and described.

104,256.—PIANO-FORTE.—William Bourne, Boston, Mass., assignor to himself and Nathaniel Cummings, same place.

Claim.—The upper damper-levers L, constructed, arranged, and operating as herein set forth, in combination with the damper-pads *d*, secured directly to the upper ends of the damper-lifters *c c*, and operating by a positive connection with the key, substantially as described.

104,257.—MACHINE FOR SETTING BUTTON OR LACING-HOOK.—Horace C. Bradford, Providence, R. I.

Claim.—1. In combination with the hopper of an automatic button-hook-setting machine, the separator C, provided with an inclined edge, the inclined chute composed of bottom rail J and side rail K, and the swinging assorter G, operating substantially as described, for separating the hooks from a mass in the hopper, and presenting the same with prongs upright to the conveying mechanism.

2. In combination with the separating mechanism of an automatic button-hook-setting machine, the railway M, endless belt L, with fingers *h*, steadying-arm N, and presenting-nippers O by means of which the button-hooks are taken from the chute of the separating mechanism, conveyed, and delivered to the holding-nippers Q, substantially as described.

3. In combination with the series of forcing, turning, and clinching-dies Nos. 1, 2, and 3, the series of holding-nippers Q, so arranged as to receive and present a button-hook to the alternate action of the dies, substantially as shown and described.

4. The combination of the railway M with the endless belt L, provided with fingers *h*, substantially as shown and described.

5. The improved button-hook-setting machine herein described, consisting essentially of the four distinct and separate organisms or series of mechanism, as follows: first, the separating mechanism; second, the conveying and delivering mechanism; third, the presenting mechanism; and, fourth, the forcing, turning, and clinching mechanism, arranged to operate in conjunction with each other for the several and final purposes specified.

104,258.—STOVE-GRATE.—Lewis Bridge, Philadelphia, Pa., assignor to David Stuart and Richard Peterson, same place.

Claim.—A grate for wood-burning stoves, consisting of a ribbed plate, B, perforated or non-perforated, and short bars *a*, projecting from the usual plate A, all substantially as set forth.

104,259.—PREPARATION OF COLORING-MATTER FROM MADDER FOR DYEING.—Thomas Bristow, Cranston, R. I., assignor to Amasa Sprague, same place.

Claim.—The method, herein described, of treating the waste product or residuum resulting in the manufacture of oleimarine, in the manner and for the purpose set forth.

104,260.—NEEDLE-SETTER AND THREADER.—Russell W. Brown, Providence, R. I.

Claim.—The combination of the piece A, spring B, lever C, pivoted arm D, and screw E, the whole constructed and arranged in the manner described.

104,261.—EGG-CARRIER.—Abner H. Bryant, Chicago, Ill.

Claim.—1. In combination with the strip A, having the sloping notches *c* in the edges, the strip B, having the slots *d*, when folded and arranged to form the rectangular tapering pockets Z, for transporting eggs, as specified.

2. In combination with the strip A, having the sloping notches *c* in the edges, and separating-tongues *e*, the strip B, having the slots *d*, and tongues *e*, when folded and arranged to form the rectangular tapering pockets Z, for transporting eggs, as specified.

104,262.—GRINDING ATTACHMENT FOR CARDING-MACHINE.—Andrew J. Burke, Mansfield, Conn., assignor to himself and Joseph B. Merrow, same place.

Claim.—The application to carding-machines of a reversing attachment, consisting of a countershaft and one or more pulleys adapted for connection either to the floor below the shaft of the card-cylinder, or to the frame thereof, or other support at the side of the machine, and to have motion imparted to it by the contact of the main belt, when running on the loose pulley of said cylinder, or by a crossed belt working on a pulley temporarily attached to the said loose pulley, and connected with the fixed pulley of the carding-machine, or with the top cards, by belts, substantially as specified.

104,263.—SAFE-DEPOSIT BOX.—William H. Butler, New York, N. Y., assignor to Valentine & Butler Safe and Lock Company, same place.

Claim.—1. The tie-bars *g g g'*, &c., combined and connected with the top and side plates of the box, substantially as described.

2. The bar *g'*, as combined and arranged as to act as a tie-rod, to secure together the top and side plates of the box, and also as a striking-piece for the door, substantially as described.

3. The inner plate S, combined with the bars *g g g'*, and arranged substantially as and for the purpose specified.

104,264.—BOLT-HOLDER.—Spicer R. Butterfield, Rome, N. Y., assignor to himself and Sylvester J. Taylor, same place.

Claim.—The two-pronged claw A, furnished with a swiveled nut, B, and a pointed screw-shaft, C, substantially as described and represented.

104,265.—HIGH AND LOW-WATER INDICATOR.—William Butterfield, Madison, Wis., assignor to himself and William H. Worden, same place.

Claim.—1. The combination of the pivoted toothed bar O and pinions Q Q' with the rotary valve H, and index-finger of the register, for the purpose specified.

2. The combination of the floats C C, pivoted arms D D, and connecting-rods J J, with the case A, and slotted valve H, as herein shown and described, for the purpose specified.

3. The shell A, constructed with the boss F, for the valves and ports, and with the annular space for the reception of the spherical floats, substantially as described and shown, for the purpose specified.

4. The arrangement, with relation to the case A, of the ports U V, valve-chamber R, and valves H T, as herein shown and described.

104,266.—WASHING AND COOKING BOILER.—Nathan T. Case and Emma J. Case, Des Moines, Iowa.

Claim.—1. The boiler A, constructed as described, with projection B at one end and pivoted bale E at the other, the projection B having a catch, G, substantially as and for the purposes herein set forth.

2. The stove-plate A, having a recess longitudinally across its center, and provided with pins *a a* and *b b*, substantially as and for the purposes herein set forth.

3. The combination of the inside vessel I with grate-bottom J, partition K, cut-off N, and lever P, substantially as and for the purposes herein set forth.

4. The lid L, constructed as described, so as to form an air-chamber with passage *i*, and having a hinged lid, M, at one end, substantially as and for the purposes herein set forth.

5. The combination of the boiler A, projection B, catch G, bale E, vessel I, partition K, grate bottom J, cut-off N, lever P, double lid L, and hinged lid M, all constructed and arranged to operate substantially as and for the purposes herein set forth.

104,267.—CHURN.—Henry Caslow, York, assignor to Jacob G. Myers, Siddonstown, Pa.

Claim.—The churn herein described, having sectional top B, lifter H, hooks *m m*, pin *s*, and dasher provided with the perforated paddles G G horizontally inclined toward each other, when constructed and arranged to operate as and for the purposes herein.

104,268.—BRICK-MACHINE.—Joseph L. Chapman, Philadelphia, Pa., assignor to himself and James Bice Stuart, same place.

Claim.—The combination of the plunger K and levers L L, constructed and arranged substantially as described, and operated by means of the springs P P and crank-shaft F, provided with pins or cams *b b*, as above set forth.

104,269.—COAL-STOVE.—De Witt C. Clark and Henry W. Cady, Sioux City, Iowa.

Claim.—1. The damper E in the lining B of the stove, arranged to operate substantially as set forth.

2. In combination with the chamber C and H, the partition I, by which the two chambers are separated, arranged substantially as described.

104,270.—EARTH-CLOSET.—Lewis G. Clock, Manchester, N. H.

Claim.—The discharger E and its operative mechanism, viz., the tooth *h*, the slider *f*, the pawl *g*, and ratchet *e*, combined with the hopper C, the platform D, the seat A, and its cover B, the whole being substantially as and to operate as specified.

104,271.—GAS-BURNER.—Theodore Clough, Dobb's Ferry, N. Y.

Claim.—The bat-wing burner, perforated at the base, in combination with the surrounding tube, substantially as described.

Also, in combination with the bat-wing burner, perforated at the base and surrounding tube, the tubular valve for regulating the supply of external gas to the burner, substantially as described.

104,272.—STOVE-COVER, DISH, AND KETTLE-LIFTER.—Cyrus Cole, Havana, N. Y.

Claim.—As a new article of manufacture, the lifter, consisting of the casting with the hooks, as described, the wire *b*, and the handle *a*, all constructed as specified.

104,273.—COMBINED STOVE-LID AND COVER.—Thomas J. Coulston, Royer's Ford, assignor to Enos S. Shantz and Oliver B. Keely, Springville, Pa.

Claim.—1. The combination of the lid A, cover B, and screw-bolt C, substantially as and for the purpose hereinbefore set forth.

2. The combination with the said combined lid, cover, and screw-bolt, the hooked stud *b''*, substantially as and for the purpose hereinbefore set forth.

104,274.—HEATING-STOVE.—Thomas J. Coulston, Royer's Ford, assignor to Enos S. Shantz and Oliver B. Keely, Springville, Pa.

Claim.—The adjustable slides C C, in combination with the rings *a''* and *a'''*, and the radial end-closing plates 9 and 10, the said parts being arranged to operate substantially as and for the purpose hereinbefore set forth.

104,275, antedated June 6, 1870.—REVERSIBLE CAP AND SPOUT FOR OIL-CAN.—Edward T. Covell, Brooklyn, N. Y.

Claim.—The combination, in one device, substantially as herein set forth, of a cap, to cover, close, or seal an oil-can, or other vessel, and a spout or conduit to facilitate the discharge of its contents, when the combined cap and spout are made to fit interchangeably upon the same nozzle or opening in the vessel, substantially as herein described.

104,276.—COMPOSITION FOR TANNING.—George W. Crabtree and John G. Stoakes, Chocoville, Arkansas.

Claim.—The combination of the ingredients mentioned, in the proportions and manner substantially as specified, for the purpose set forth.

104,277.—SPRING FOR VEHICLES.—Benjamin P. Crandall, Jr., Williamsburg, N. Y.

Claim.—1. The spring G, formed with a twist, *b*, an eye, *c*, substantially as herein shown and described, for the purpose set forth.

2. The springs G G, constructed as herein shown and described, supporting the body of a vehicle, and supported upon the journals of the axles, whose

bearings they form, substantially as described, for the purpose set forth.

104,278.—MACHINE FOR MAKING NEEDLES.—Chauncy O. Crosby, New Haven, Conn.

Claim.—1. The V-shape pointing-dies *f f'*, combined with a carrier having automatic carrying movement, so as to present the blanks to the said dies for operation, substantially in the manner set forth.

2. In combination with the two carriers D and I, each having an intermittent progressive movement, the transferring device, consisting of the slide H and transverse slide H^2, with two jaws, A and A^1, constructed and arranged to operate substantially as set forth.

3. In combination with a carrier, I, having an intermittent progressive movement, the adjuster *n*, operating as described, to govern the projections of the blanks from the said carrier.

4. In combination with a carrier having an intermittent progressive movement, the U-shaped dies in fig. 10, arranged and operating so as to turn around the head, substantially as set forth.

5. In combination with the subject-matter of the fourth clause of claims, the grooving and eye-punching dies, substantially as described.

6. In combination with the subject-matter of the fourth clause of claims, the eye-punching and countersinking-dies, substantially as described.

7. In combination with a carrier having an intermittent progressive movement, the wheel P, the axis of which is at right angles to the axis of the said carrier, constructed and operating so as to receive the needles from the said carrier, and transfer the said blanks to the pointing mechanism of a needle-machine.

8. In combination with the pointing apparatus, constructed and operating to carry and revolve the needles, substantially such as described, the wheel P, constructed and operating to present the needles to the said pointing apparatus.

9. In the carrying-plate T of the pointing apparatus, the notches *t'*, when inclined in the direction of the movement of the said plate, substantially as and for the purpose specified.

10. In combination with the carrier of the pointing apparatus, constructed as described, the arrangement of the mills U so as to revolve toward the said carrier, substantially in the manner and for the purpose specified.

104,279.—LUBRICATOR.—Daniel Currie, St. Louis, Mo., assignor to himself, Hiram K. Hazlett, and Samuel L. Fisher.

Claim.—1. The combination of the cup A, piston C, and tube G, with a steam-chest, as and for the purpose specified and shown.

2. The combination of the cup A, piston C, tubes G, *h*, and *a*, and cock N, as and for the purpose specified.

3. The combination of the cup A, piston C, tubes G, *h*, and *a*, and cock N, with the lever D, spring *o*, and rod B, as and for the purpose shown and specified.

104,280.—CORN-PLANTER.—Nathan C. Davis, Worthington, Ohio., assignor to I. N. Hobill, same place.

Claim.—1. The combination of the shovel B, the retainer D', and the slide or rake D, constructed and operating as shown and described.

2. The combination and arrangement of the slide D, rods F F^1 F^2, shaft F^3, and handle G, for operating the slide and retainer, constructed and operating as shown and described.

104,281.—MANUFACTURE OF PAPER.—Levi Dodge, Waterford, N. Y.

Claim.—1. The use or employment in cylinder paper machinery, having one or more cylinders and the usual wet felt or endless felt-band, of an apron of wire-cloth, or the equivalent thereof, passing over two or more rolls, in combination with one or more compressing-rollers, the wet felt being carried over one of the latter, under the arrangement substantially as herein described, so that the pulp shall be compressed while underneath it, substantially as herein set forth.

2. The arrangement of machinery, for operation substantially as herein shown and set forth.

104,282.—MANUFACTURE OF PAPER.—Levi Dodge, Waterford, N. Y.

Claim.—1. The method, herein described, of drying paper made by machinery independently of the "making" operation.

2. The intermediate reeling of the paper between the "making" and the drying operations, as set forth.

3. The apparatus or machinery substantially as shown and described, for operation as herein set forth.

104,283.—MILLSTONE-BALANCE AND COOLER.—William B. Dolson, Waterloo, Iowa.

Claim.—The millstone-balance and meal-cooler C, constructed and arranged as herein described, in combination with the screw-rods *m n*, formed with hooks *g g*, hooks *a b*, and screw-taps *c c*, for fastening the same to the hoop or band of the stone, substantially as described.

104,284.—CONVEYING LIQUID.—Thomas Donnelly, Pittsburg, and James H. Anchors, and Allen Anchors, Bear Creek Station, Pa.

Claim.—The frame *b*, provided with the rollers *e*, hangers *d*, and sockets *c*, and combined with the cable *a*, pipe *h*, and abutments A, in the manner and for the purpose specified.

104,285.—COMPOUND FOR POLISHING AND CLEANING MARBLE.—Peter Doyle and Frederick P. Colton, Hartford, Conn.

Claim.—A cleansing mixture made of the ingredients named, in about the proportions specified.

104,286.—VENTILATING ATTACHMENT FOR STOVES.—William M. Eames, Ashtabula, Ohio.

Claim.—The means herein described for introducing external air into an apartment or room, through an air-tube connecting with a drum or chamber, with the partitions E^3 E^4, for the distribution of the air over its heated surface, attached to the body of a stove, and having registers or outlets, substantially as shown and described, and for the purpose specified.

104,287.—GATE-LATCH.—E. Edward Earll, Brooklyn, and J. B. Hunter, New York, N. Y.

Claim.—The wheel C and segment A, when arranged directly below the latch, so that the wheel and latching device combine to prevent the gate from being raised and opened, as herein shown and described.

104,288.—CRIB AND CRADLE.—William H. Earnest, Parkersburg, West Va., assignor for one-half his right to Jacob Fromer, same place.

Claim.—The combination of the crib A B C, stand D, keepers *a a*, pins *b b*, stops *d d*, and wire *e*, all constructed and arranged to operate substantially in the manner and for the purposes herein set forth.

104,289, patented in England August 6, 1868.—PUMP.—Edmund Edwards, Westminster, England.

Claim.—The combination of the annular flexible diaphragm, the short tube and the ring, clamping the inner edge of the said diaphragm between them, and forming a seat for the discharge-valve; all these parts being constructed to operate in combination, as set forth.

Also, the combination of the discharge-valve, the short tube on which it rests, and the cup-shaped ring which surrounds it, in such manner that the valve is always kept covered by water; all these parts being constructed to operate in combination, as set forth.

Also, the combination of the annular flexible diaphragm, the clamping-ring and short tube, the disk-formed discharge-valve, and the radial arms which form the cage for the said discharge-valve; all these parts being constructed to operate in combination, as set forth.

Also, the combination of the annular flexible diaphragm, the discharge-valve, the clamping-ring and short tube, the pivoted curved connecting-link, and the lever-arm; all these parts being constructed to operate in combination as set forth.

Also, the combination of the pump-barrel, the lever-arm, the pivoted curved link and its guiding projection, with the cage of the discharge-valve and the flexible diaphragm; all these parts being constructed to operate in combination, as hereinbefore set forth.

Also, the combination of the conical valve-seat, with a puppet-valve constructed with its periphery grooved, and with a ring of India rubber in said groove, as before set forth.

104,290.—HARVESTER.—John H. Elward, Polo, Ill.

Claim.—1. The adjustable longitudinal bars or supports K', in combination with the binders' platform, substantially as described.

2. The binders' platform K, in combination with a box or receptacle for the shattered grain, supported upon said platform, and the curved or inclined shield J, covering the outer face of the driving-wheel, and conducting the shattered grain into the receptacle or box, substantially as set forth.

3. The yielding or spring-carrying wheel L, arranged outside of and in a transverse line with the tread of the driving-wheel, in combination with the binders' platform K, substantially as and for the purpose set forth.

4. The arrangement of the longitudinally-adjustable bars or reel-supports M M', in combination with the overhung reel for adjusting the angle of relation of the reel to the line of the cutters, as set forth.

5. The adjustable drivers' seat, mounted on the bars H H', substantially as described, for giving both a lateral and longitudinal adjustment to said seat, as set forth.

104,291.—LIME-KILN.—Thomas Ennett, Rockford, Ill.

Claim.—1. In the kiln herein described, the spaces *b*, extending from the grates to the bottom of the kiln, for the double purpose of withdrawing the ashes, &c., and for cooling the burnt lime.

2. The arrangement of the cupola A, with curved sides from the grate to the bottom, inclined grates, pillar *c*, air-space *b*, and doors *d b* b^1 b^2, all constructed substantially as herein described, and for the purpose specified.

104,292.—DIE FOR FORGING EARS FOR CARRIAGE-SPRING HEAD.—John Evans, New Haven, Conn.

Claim.—The die A, having the recess B, pin G, and guide C, and the follower E, having the recess F, with vertical grooved projections *a a*, and slot H in the part D, as and for the purpose set forth.

104,293.—ANIMAL-TRAP.—Edwin Bronnso Everitt, West Meriden, Conn.

Claim.—The box A, constructed as described, in combination with the movable cover F, bait-rod K, and spring I, arranged to operate substantially as described.

104,294.—HINGE.—Gottlieb Friderich Fischer and Alexander Whelan, Washington, D. C., assignors to themselves and Joseph Kelley, same place.

Claim.—1. The arrangement of the grooves E having parallel sides, and G, on the interior of the knuckles, of the fixed and movable leaves of the hinge, in combination with a spline, F, formed on the pintle C, the parts being entirely inclosed within the knuckles, as herein shown, and for the purpose described.

2. The combination in a hinge of a locking and unlocking device, consisting of a cylindrical pintle, C, with its spline F and weight D, having a vertical and a swiveling movement, the interior grooves E having parallel sides, and G, the annular seat H, and the stop N, all constructed, arranged, operating, and forming part of the knuckles of the hinge, as herein shown and described.

104,295.—TRUSS-FRAME BRIDGE.—John Foreman, Pottstown, Pa.

Claim.—The box B, consisting of the upper and lower plates *a a'*, vertical plates *b b' d d'*, and recessed projections *m m'*, all constructed and arranged as described.

104,296.—EARTH-CLOSET.—John A. French, Milwaukee, Wis., assignor to himself and Riverious P. Elmore, same place.

Claim.—1. Hopper B, cup C, shaft D, weights E E, levers F F, shaft U, and seat N, operated substantially as described.

2. Seat N, rods G, levers H, pins I, slides K, ways L, projection M, rollers Q, and fulcrum T, operating substantially as described.

104,297.—BAG-FILLER FOR FANNING-MILL.—Jacob C. Gephart, Dowagiac, Mich.

Claim.—1. The combined bag-holder and elevator herein shown, consisting of spout *c*, in combination with concave rollers *b b*, apron *f*, and plano-convex slats *a*, substantially as and for the purpose herein set forth.

2. The plano-convex slats *a*, in combination with the apron *f*, substantially as and for the purpose set forth.

104,298.—PLATE-LIFTER.—Edwin Gibbs, Richland Centre, Wis.

Claim.—The combination of the hinged arms A B and stud C with the wire rods D D, bent as shown, crossing over and connected to the arms furthest from the side at which they are hooked, to grasp the plate, all as set forth.

104,299.—WINDOW.—Erastus W. Giddings, Johnstown, Pa.

Claim.—In combination with the adjustable strip A, provided with studs *b b*, the slotted holding-plates *d d*, and eccentrics *e e*, as specified.

104,300.—INKSTAND.—Franklin T. Grimes, Liberty, Mo.

Claim.—An inkstand consisting essentially of the reservoir *a* and partitions *c*, the latter being so arranged as to divide the former into separate compartments, substantially as and for the purpose described.

104,301.—PNEUMATIC LIQUID-ELEVATOR.—John P. Gruber, New York, N. Y.

Claim.—1. The combination of the vessels A A^1, two-way cocks *b b'*, passages G G' N B', inlet air passages *s s'*, and valved outlet air-chambers or passages D D', substantially as and for the purpose herein described.

2. The combination of the floats and valves F F' *f f'* with the vessels A A^1, cocks *b b'*, passages *s s'*, valved outlet air-passages D D', and pipe A^2 C, substantially as described.

3. The arrangement of the two-way cocks *b b'*, links *c c'*, rod T, pipes B' N, and inlet-valves *s s'*, applied to chambers A A^1, which are provided with air-outlet passages, substantially as and for the purpose described.

104,302.—SEED-SOWER.—William D. Guseman, James A. Davis, and H. D. McGeorge, Morgantown, West Va.

Claim.—The seeding-box herein described, constructed with a curved bottom, C, with apertures therein, as shown, together with the sliding bar D, curved at its bottom, the circular recesses *a*, and removable slide L, when arranged to operate substantially as and for the purpose specified.

104,303.—CORN-PLANTER.—Emery E. Hardy and Napoleon Dubrul, Joliet, Ill.

Claim.—1. In a corn-planting machine, constructed substantially as described, the combination of the hubs A', shaft B, and axle-bearings H, with the support C, cams F, and reciprocating rod or bar, E, for operating the seed-slides, substantially as specified.

2. The adjustable cams F, in combination with the bar E and wheels A, substantially as and for the purposes specified.

3. The combination of the cams F, bar E, plate K, and openings M and L, when constructed and applied substantially as described.

4. The adjustable plate K, provided with the slide *c* and set-screws *a* and *d*, substantially as specified.

5. The adjustable band Y, in combination with the beam D and the tube N, when constructed and operating substantially as described.

6. The tube N, when provided with the shoe Z, in combination with the socket O and set-screw *e*, substantially as specified.

7. The wings Q, when attached by a hinged shaft, in combination with a rake or roller, S, and located in rear of a furrow-opener, substantially as described.

104,304.—CHURN.—Francis M. Harris, Winnamac, Ind.

Claim.—1. The hollow cylinder E, provided with the tube *a*, for the insertion of a tempering fluid and wings F F, and connected to the shaft C, to operate substantially as set forth.

2. The combination and arrangement of the churn A, slides B B, shaft C, cylinder E, and fans F F, all substantially as and for the purposes herein set forth.

104,305, antedated June 3, 1870.—RAILWAY SWITCH.—N. F. Hawkins, Chicot county, Arkansas.

Claim.—1. The lever E, cord or chain F, weight F', pulleys *f f*, and switch-rail C, when they are so combined and arranged as to operate substantially as and for the purpose described.

2. The bar H, arm L, spring K', and lever K, when the same are so combined and arranged as to operate substantially as and for the purpose described.

104,306.—RAILWAY CAR-COUPLING.—Alexis Hebert, Malone, N. Y.

Claim.—The coupling-hooks *a a*, the notched arm *b*, and bell-crank *b'*, and the cranked rock-shaft B, combined for operation substantially as herein described.

104,307.—MEDICATED STEAM-BATH APPARATUS.—Louis Heine and Charles Scholfield, Philadelphia, Pa.

Claim.—The independent lounge H, adapted for use in combination with the vapor-bath, and for continued use apart therefrom, having legs, bearing-arms, and adaptations as a steam-case, including foot-piece K, and side pieces combining therewith, all in combination with the crescent cylinder B, steam-chest or box E, steam-pipe A, and cover N, as set forth, and for the purposes described.

104,308.—REIN-HOLDER.—Jacob Herkimer, San Francisco, Cal.

Claim.—1. An elastic eccentric roller, combined with a bed-plate or bar parallel to its axis, and with a suitable standard for the support of said axis, substantially as and for the purpose herein set forth.

2. In combination with the eccentric roller D, the guard *b*, for limiting the revolution of said roller and insuring its action, substantially as specified.

3. The guard *g*, combined with the elastic eccentric roller D, and its parallel bed-plate or bar B, substantially in the manner and for the purpose herein set forth.

104,309.—METAL SLEIGH-RUNNER.—Daniel Holdiman, Waterloo, Iowa.

Claim.—The combination of a spring-steel shoe with a metal sleigh-runner, the spring-steel shoe being sprung into place and secured to the runner by means of a dovetail at each end, and intermediate bolts, substantially as and for the purpose described.

104,310.—BED-BOTTOM.—Enoch Hopkins, Newaygo, Mich.

Claim.—The upright pieces D D, slats C C E E, pins G G, springs H H, and cross-bar B, all constructed and arranged in combination with bed A, as and for the purpose described.

104,311.—MANUFACTURE OF BEVERAGES FOR MEDICINAL AND OTHER PURPOSES.—Eben Norton Horsford, Cambridge, Mass.

Claim.—The preparation of medicinal beverages or refreshing drinks, composed of the liquid acid phosphate diluted with water in the proportions as set forth, combined, or not, with other flavoring substances, and charged with carbonic-acid or nitrous-oxide gas or other gas or mixture of gases in bottles or other closed vessels or apparatus.

104,312.—MACHINE FOR MAKING PAPER TUBES.—Conrad Hotz, Zurich, Switzerland, assignor to Paul Corbet, and Lesieux.

Claim.—The mechanism herein described for cutting the paper, presenting it to the spindles, severing it and rolling it into tubes, and discharging it from the spindles, when arranged and operating as set forth.

104,313.—HAY-SHELF OR RACK FOR WAGONS.—John A. Hughes, Tindall, Mo.

Claim.—1. The planks A A, provided with recess and dovetailed grooves, as described, and with L-shaped gains *d d*, and staples *b b*, substantially as and for the purposes herein set forth.

2. The cross-bars B B, provided with posts C C, braces *a a*, and posts D D, all substantially as and for the purposes herein set forth.

3. The fenders E E, constructed either straight or curved, and inserted in the grooves, and staples on the outer sides of the planks A A, substantially as shown and described.

4. The combination of the planks A A, cross-bars B B, posts C C and D D, fenders E E, and loops or clevises G G, all constructed and arranged as described, so that they can readily be put together and taken apart, substantially as and for the purposes herein set forth.

104,314.—SASH-HOLDER.—Robert B. Hugunin, Cleveland, Ohio.

Claim.—1. In combination with a sash-holder, plate, and roller, the concave or convexed surfaced pivot B, and the corresponding surface on the under side of plate, by which it is removably connected, substantially as and for the purposes herein described.

2. In combination with said removably connected pivoted or hinged end, the use of the spring on the opposite end, substantially as and for the purpose described.

104,315.—CLAMPING-MACHINE.—James H. Humes, East Saginaw, Mich., assignor to himself, R. M. Thompson, and L. H. Griffin, same place.

Claim.—The combination with a table, A, having the raised frames B, of the adjustable clamping-bars C, slides D, operating shafts I, arm H K, rock-shaft M, and operating lever, all arranged for operation substantially as specified.

104,316.—HINGE.—George S. Hurford, Canton, Ohio, assignor to himself and William H. Hart.

Claim.—The pins B, provided with flanges, and used in combination with the jaws C C, of one portion of the hinge provided with grooves *c c*, as and for the purpose set forth.

104,317.—RATCHET-DRILL.—Simon Ingersoll, Brooklyn, N. Y., assignor to Samuel C. Ingersoll, Stamford, Conn.

Claim.—Constructing the shaft A and ratchet-wheel B in one piece, and constructing the handle E and the pawl in one piece, and constructing in said pawl a series of teeth, as shown at F, to engage with a corresponding series of the teeth on the ratchet-wheel, all as herein shown and described.

104,318.—LANTERN.—John H. Irwin, New York, N. Y.

Claim.—1. The annular chamber or fresh-air inlets F, arranged with a deflecting-plate or plates, (or their equivalents,) in the manner substantially as shown and described.

2. The top of the chimney or outlet for the products of combustion, arranged with a deflecting-plate or plates G, or their equivalents, separated from said chimney by an annular space, in combination with a lamp or lantern, substantially as shown and described.

3. The deflecting-plates D G H I, arranged relatively to each other, substantially in the manner and to secure the effect set forth.

4. The annular chamber F, combined with the feeding-tubes E E, substantially as specified and shown.

104,319.—EARTH-CLOSET.—George B. Jewett, Salem, Mass.

Claim.—The combination of the rotary drum or discharger C, the movable carriage or hod-carrier G, and mechanism for operating them, in manner as described, by the seat-cover D, with the hopper A, and the chute F.

Also, in combination therewith, the apron E, arranged with the hopper A and the rotary discharger C, as and for the purpose as specified.

Also, in the earth-closet, constructed substantially in the manner and to operate as set forth, the chute, as provided with the perforations arranged in its lower part, such part being for the better distribution or diffusion of the earth upon the excremental and urinal deposits in the hod.

104,320.—GATE-LATCH.—Job Johnson and Simon Ingersoll, Brooklyn, N. Y., assignors to Job Johnson.

Claim.—The gate-latch *d*, made with a flange, 2, projecting from one side, to strengthen the same, and form fulcrums upon which the latch swings at either end of said flange, in combination with the plate *c*, receiving and sustaining the said latch, as specified.

104,321.—DOOR-SILL.—Joseph Johnston and Edmund O. Marlow, Brodhead, Wis.

Claim.—The combination of the grooved sill A and movable strip B, provided with oblique grooves, into which is inserted the bulged rubber C, all as shown and described.

104,322.—OILER FOR LOOSE PULLEYS.—Charles A. King, Springfield, Mass.

Claim.—1. The combination of the regulating-screw *i* with the duct *o* and oiling-duct *o'*, all constructed and operating substantially as described.

2. The combination of the strainer *f'* with the regulating-screw *i* and ducts *o* and *o'*, all constructed substantially as described, and operating to furnish a delivery of clean oil to the bearing, as set forth.

104,323.—FURNACE AND CONDENSER FOR REDUCING CINNABAR AND OTHER VOLATILE ORES.—Richard F. Knox and Joseph Osborn, San Francisco, Cal.

Claim.—1. Placing the fire-place C and draught-opening D in opposite sides of the body of the furnace, so as to draw the heat through the passing ore, substantially as herein described.

2. Contracting the chamber B at the bottom, in combination with one or more inclined planes, F, substantially as and for the purpose above described.

3. An automatically-feeding furnace, in which the ore is carried by the superincumbent weight in position to be acted upon by the heat, substantially as and for the purpose herein specified.

4. The condensing-tanks K, with their sides and ends extended upward, so as to form a water-containing pan, *a*, from which the sides may be overflowed, substantially as and for the purpose above described.

104,324.—VIOLIN.—Thomas P. Knox, Boston, Mass.

Claim.—The combination, with a violin, of an auxiliary or duplicate set of strings, and one or more forks, or their equivalent, arranged within the body of the violin, substantially as and for the purposes specified.

104,325.—CONCRETE PAVEMENT.—Gabriel Leverich and Albert H. Emery, New York, N. Y.

Claim.—1. The process herein described for preparing tar for use in the manufacture of pavements; that is to say, distilling off the water and the greater portion of the oils contained in the crude tar, by means of steam introduced into the mass in small jets, whether used alone or in combination with external heat, as set forth.

2. The pavement composed of sand, mixed with gravel or broken stone, combined with tar residuum, prepared as set forth.

104,326.—STEAM AND GAS-PIPE HOOK.—Charles B. Long, Worcester, Mass., assignor to himself and Jonathan Luther, same place.

Claim.—The hooks C, made substantially as herein described, as a new article of manufacture and merchandize.

104,327.—MANUFACTURE OF FERTILIZERS FROM FISH, &c.—Orazio Lugo, Baltimore, Md.

Claim.—1. The treatment and utilization of the fish liquor or extract herein mentioned, with the above-described chemical agents, substantially in the manner and for the purpose described.

2. The concentration of the said liquors by the application of heat, either with or without the use of currents of air or other gases, or in vacuum, in the manner and for the purpose described.

3. The mixing or addition of the fish extract or liquor, when treated with the above-described chemical agents, either with or without concentration, with the fish scraps, phosphatic materials, bones, loam, or other suitable basis for a fertilizer.

4. The treatment of fish scraps or pomace previous to desiccation, with the above-described chemical agents, for the purpose set forth.

5. As a new article of manufacture, the highly nitrogenized product, made by evaporating to dryness the fish liquors, when chemically treated as above described.

104,328.—LET-OFF MECHANISM FOR LOOM.—James Magee, Usquepaugh, assignor to himself, Stephen A. Applin, same place, and Elisha C. Clark, Kingston, R. I.

Claim.—The loose friction-drum, mounted upon the shaft of and connected with the beam, by means substantially as described, and for the purposes set forth.

104,329.—WARPING-MACHINE.—Colin Mather and William Rossetter, Salford, England.

Claim.—1. The rod s', spring u', reciprocating bar f^1, in combination with the spring m, swivel d^2, and catch a^3.

2. The knuckle-jointed finger g^2 on the spring m, in combination with the catch a^3, provided with double inclines c^2, and the weighted arm e^2, and spring buffer e^3 p^3 and arm q^2 r^2.

104,330.—BRICK-MACHINE.—Henry Mauthe, New York, N. Y., assignor to Julien Larru, same place.

Claim.—1. The combination of the clay-hopper T, sand-hoppers V V, pressing-rolls S S, cutting-block K, and table L, substantially as set forth.

2. The combination of the cutting-block K with the intermittently-moving and self reversing platform B, the table L, and intermittently operating rolls S S, arranged to operate substantially as described.

104,331.—HARVESTER.—Leander J. McCormick, William R. Baker, and Lambert Erpelding, Chicago, Ill., assignors to C. H. McCormick & Brother, same place.

Claim.—1. The box *e*, arranged as set forth, to serve as a bearing both for the caank-shaft and for the slide which supports the main axle, thus allowing the main axle to pass the crank-shaft, to adjust the height of cut.

2. The combination of the sprocket-wheel on the reel-shaft with the clutch mechanism, for driving the rake directly from the sprocket-wheel instead of from the reel-shaft, all these parts being constructed and operating substantially as set forth.

3. The combination of the reel, the rake, the reching-lever, and the shifting-guides, all these parts being constructed and operating substantially as set forth, to enable the driver to throw the rake into gear, relatively to the reel-beaters, at the proper moment.

4. The combination of the continuously-rotating reel, the rake turning loosely on the reel-shaft, the spring elbow-lever on the rake-collar, the pins on the sprocket-wheel, and the shifting-guides, all these parts being constructed and operating substantially as hereinbefore set forth, for the purpose of automatically regulating the size of the gavels.

104,332.—COAL-CAR.—Thomas McCrory, Fayette City, Penn.

Claim.—In a wicket-bottom slack or dust inclined coal car, the combination of the curved lever d d^1 on the end of the axis of a rotating bottom, B, with and operated by a curved or cam cleat, C, on the side of a railroad, substantially as and for the purpose described.

104,333.—DRIER.—Peter Mickel, Milford, N. Y.

Claim.—The openings *f f*, formed in the flue J in combination with the trays B B, supported upon the ledges E E of the casing A, provided with the spaces D on its sides, and a deflecting-plate, arranged above the open bottom and below the trays, for the purpose specified.

2. The two-part trays B B', substantially as and for the purpose described.

3. The tray B, formed with an extension, *a*, at one end, and an opening, *b*, at the other end, substantially as and for the purpose described.

4. The flue J and openings *f f*, in combination with the trays, substantially as and for the purpose described.

5. The ledges E and casing, locked together as at *c d*, substantially as and for the purpose described.

104,334.—CULTIVATOR.—Samuel H. Mitchell, El Paso, Ill.

Claim.—1. In combination with the bent axles D D, herein described, the adjustable scalloped plates *y y* and eye-bolts *z z*, whereby the plow-beams are attached in such a manner as to have a double vertical adjustment, as specified.

2. In combination with the clamp *s* and connecting-rods *r r*, the eye-bolts *x'* and the excavated slotted thimbles *t t*, provided with the spikes or points *t t*, whereby they are prevented from turning on the wood of the plow-beams, as specified.

104,335.—AUGER.—Christian Monson, Moscow, Wis.

Claim.—A boring-tool, having the parts x x^1 x^2 constructed of different sizes, and having a tapering form, as shown and described.

104,336.—FIRE-KINDLER.—Austin S. Morse and Edwin A. Jefferies, Fort Wayne, Ind.

Claim—The manufacture of the compound described, having said proportions, to be used for the purposes set forth.

104,337.—BORING-MACHINE.—William Morstatt, New York, N. Y.

Claim.—1. The arrangement, on the side of the fixed or stationary spindle F', of a spindle, F, consisting of two parts, *m* and *w*, connected by a universal joint, *n*, and supported in movable bearings or frames, substantially in the manner and for the purpose described.

2. The sliding-block J, supporting the forward part *w* of the spindle F, and the frame H, turning on a center-pin, *v*, supporting the after part *m* of said spindle, arranged and operating in the manner substantially as and for the purpose hereinbefore set forth.

3. In combination with the above, the sliding frame N, with its table M, constructed, arranged, and operating in the manner and for the purpose substantially as specified.

104,338.—RATTAN-CUTTER.—John Murphy, Green Point, N. Y., assignor to himself and Joseph F. Tobin, New York City.

Claim.—The cutter A, provided with the cutting-ribs *a*, constructed as shown and described.

104,339.—BAGGAGE-CHECK.—George F. Newcomb, New Haven, Conn.

Claim.—In combination with the plate *a*, check B, and strap A, the direction-plate D, the whole being constructed and arranged so as to operate substantially as set forth.

104,340.—EXTENSION-TABLE SLIDE.—Henry Olds, Syracuse, N. Y.

Claim.—1. In combination with the slide-bars A, having tongues *s*, grooves *a*, and stops *e*, the metal slide B, having separating stemmed flanches *c c*, and alternate shallow and deep recesses *n n'*, when constructed and arranged as herein shown and for the purpose specified.

2. The metal slide B, provided with connecting flanches *c c*, separating stem or wall *d*, and alternate shallow and deep recesses or grooves *n n'*, substantially as shown and described.

3 The slide-bar A, provided with the inclined planes *z z*, when constructed and arranged to operate in connection with a metal connecting-slide, as and for the purposes herein shown and described.

104,341.—PIANO.—Charles F. Oliver, Lynn, assignor to Nathaniel Cummings, Boston, Mass.

Claim.—A piano-action rail, constructed of two or more plates or bars of metal, A and C, firmly secured together, with a packing of leather, or rubber, or other elastic material, D, interposed between them, substantially as described.

104,342.—STRAW-CUTTER.—Nelson O'Neil, Purchase Line, assignor to himself and Edward O'Neil, Jr., Mitchell's Landing, Pa.

Claim.—1. The adjustable hook N, in combination with the cutter-lever of a straw-cutter, substantially as and for the purposes described.

2. The cross or pawl-lever I, in combination with the hook N and pawls K L, arranged and operating substantially as and for the purposes herein shown and described.

104,343.—PURIFYING ALCOHOL AND SPIRITS.—Charles Channcy Parsons, New York, N. Y.

Claim.—The method of purifying alcohol and other spirits by vaporizing the same, and passing the vapors through, or otherwise subjecting them to the action of melted paraffine, or the equivalent thereof, previous to condensation, substantially as set forth.

104,344.—SASH-FASTENER.—Howard Perkins, Mansfield, assignor to himself, Thomas E. Grover, of same place, and John B. Hartwell, of Walpole, Mass.

Claim.—The upright fastener D, with its knob J and hinges E E attached to the window-frame A, and opening and closing in the groove C between the side strips of the frame A, so that the sash B can be securely fastened or raised when required, as herein described and set forth.

104,345.—PRINTING-TELEGRAPH INSTRUMENT.—William P. Phelps, Brooklyn, N. Y., and William J. Philips, Philadelphia, Pa.

Claim.—1. The key *q*, in combination with the type-wheel *e*, inking-roller *f*, movable dial *s*, index *r*, friction-roller *k*, and the mechanism for moving the type-wheel *e*, all substantially as set forth, the whole constituting an apparatus whereby either the receiving or sending operator is, or both are, enabled, at will, to print messages or receive them by the eye from the dial.

2. The movable dial *s*, in combination with the type-wheel *e* and the index *r* in the manner and for the purpose substantially as set forth.

104,346.—KNITTING-MACHINE.—David C. Philip, Philmont, and Clark Tompkins and Ira Tompkins, Troy, N. Y., assignors to Clark Tompkins, same place.

Claim.—1. The combination of a finger suited to bear against the knitted fabric near the needles, in a circular knitting-machine, and catch into a hole in the fabric, and thereupon move, with means substantially as herein described, or their equivalent, for automatically resetting the finger against the fabric, substantially as herein set forth.

2. The combination of a finger suited to bear against the knitted fabric near the needles, in a circular knitting machine, and catch into a hole in the fabric, and thereupon move a bell-striking device or alarm mechanism, and means substantially as herein set forth, or their equivalent, for automatically resetting the finger against the fabric, substantially as herein described.

104,347.—MALT-DRIER.—William L. Phillips, Normal, Illinois.

Claim.—The method herein described of drying malt, by heated air being caused to go down through the malt, and be drawn out by a fan, pump, or other suitable means, substantially as herein set forth.

2. The floors of a malt-drier, when constructed as described, with an air-chamber, substantially as and for the purposes herein set forth.

3. The fan or pump B, when used for drying malt or other articles, substantially as described.

4. The use of the box or chamber C in a dry-room, for exhausting the air, substantially as described.

104,348.—JOINT FOR CEMENT PIPES.—D. Goffe Phipps, New Haven, Conn., assignor to himself, Mortimer M. Camp, and Ellsworth I. Foote, same place.

Claim.—The sleeve for cement pipe-joints, consisting of the two cylinders C D, contracted at their extreme ends so as to bear upon the pipe, and, at their meeting ends, to sit one within the other, so as to close the continuous mass of cement around the meeting ends of the pipe, in the manner and for the purpose specified.

104,349.—HAY-BINDER POLE FOR WAGON.—Daniel Potter, Peoria, Ill.

Claim.—The apparatus herein described for binding loaded hay, consisting of the standard B, pole D, cord or chain E, shaft G, crank P, ratchets N, and pawl S, when constructed and arranged substantially as specified.

104,350.—TREADLE MOVEMENT.—Orlando B. Potter, New York, N. Y.

Claim.—The combination of the frame and the shaft of the treadle-motion, with both a treadle (for the foot of the operator) and with a hand-lever, substantially as above set forth.

103,351.—EVAPORATOR AND STILL.—Mark H. Powers, Pike County, Ind.

Claim.—An evaporator, constructed and arranged with a steam-tight cover, B, and removable partitions *b*, substantially as described.

104,352.—WATER-VESSEL FOR STEAM FIRE-PROOF SAFES.—George W. Putnam, Billerica, Mass.

Claim.—1. The water-vessel A, with or without the chambers *c c*, in combination with the pipes *b b* and *h h*, chambers *g*, and steam-discharge pipes *i i*, constructed and operating substantially as and for the purpose set forth.

2. The water-vessel A, in combination with the pipes *b b* and the pipes *h h*, either double or single, operating substantially as and for the purpose described.

3. The water-vessel A, in combination with suitable conducting-pipes, as constructed, and a chamber, *g*, at each end, substantially as and for the purpose described.

104,353.—CLOD-CRUSHER AND PULVERIZER.—Comfort T. Ramsey, Farmer Centre, Ohio.

Claim.—The combination and arrangement of the toothed roller D and the overlapping planks A A', substantially as shown and described.

104,354.—BRICK-MACHINE.—Seth Rigby, 3d, Newcastle, Pa.

Claim.—1. The regulator s^1, in combination with the plunger *v*, box *s*, and die y^1, said parts being constructed and arranged to operate as described.

2. The plungers *l*, sliding in guide-ways *m*, in combination with the plunger *v* sliding in the guide-way *o'*, and with the plunger *v* sliding in and out of the plunger *o*, substantially in the manner and for the purpose specified.

3. The combination of the dies A D, standard E, provided with the arm E^1 and the lever H, when the latter is operated by a cam, *d*, in such manner as to hold the die A down and throw the die D up, substantially as explained.

4. The hinged plate *w*, in combination with knife y^4, regulator s^1, plunger *v*, box *s*, and die y^1, said parts being constructed and arranged to operate as described.

104,355.—RAILWAY GATE.—John B. Rittenhouse and Joseph Collins, Locust Lane, Pa.

Claim.—The bars *b c*, jointed together at their ends, and pivoted at their opposite extremities to ties, in combination with the connecting-rods *i*, swinging gates C, and springs *k*, substantially in the manner described, and for the purpose set forth.

104,356.—COMPOUND TO INCREASE THE FRICTION BETWEEN BELTS AND PULLEYS.—Louis F. Robertson, New York, N. Y.

Claim.—A compound intended to increase the

adhesion of belts to pulleys, and made of the ingredients herein specified, and mixed together substantially in the manner and about in the proportion set forth.

104,357.—FIRE-ALARM TELEGRAPH APPARATUS.—Edwin Rogers, Boston, Mass.

Claim.—In combination with several circuits converging at one point, circuit-breaking and closing-wheels, or equivalent devices, one for each circuit, operated by weights, springs, or equivalent mechanism, to break each circuit from the one first broken, and to mechanically close each circuit, though the one first broken may remain open.

104,358.—SOFA-BED.—James J. Russ, Worcester, Mass.

Claim.—1. The combination, with frame A and seat C, of the double hinge bars D, arranged substantially as and for the purposes set forth.

2. The combination, with the double hinged seat C and frame A, of the ratcheted supporting-bars H and pins e, substantially as and for the purposes set forth.

3. The combination, with the frame A, inclined guide-bars I, and slides K, of the hinged bed-sections F and G, substantially as and for the purposes set forth.

4. The combination and relative arrangement, with frame A, of seat C, double hinge-bars D, ratcheted supporting-bars H, inclined guide-rods or bars I, and hinged bed-sections F and G, substantially as and for the purposes set forth.

104,359.—HINGE FOR BLINDS.—Dewitt C. Sage, Middletown, Conn.

Claim.—The latch C and the spring A, inserted into a socket, d, formed in the leaf A', in combination with the cam-faced tooth g, formed on the eye B, substantially as described.

104,360.—WALL AND FLOOR FOR BUILDINGS.—John J. Schillinger, New York, N. Y.

Claim.—A wall or floor for buildings, composed of a layer of felt or tar-paper, a layer of lathe, and a layer of artificial stone, with or without an interior layer of boards, substantially as shown and described.

104,361.—BLACKING-BRUSH AND CASE.—John Schwab, Bridgeport, assignor to himself and Phillip Roller, New Haven, Conn.

Claim.—The combination of the two brushes C and D, arranged in the holder B and within the case A, the whole constructed and operating substantially as set forth.

104,362.—HYDRAULIC AIR-COMPRESSING APPARATUS.—William Denham Seal, Washington, D. C., assignor to himself and Edmund Sayre, same place.

Claim.—1. The combination of the air-compressing vessel with a hollow air-tight float, having a communication with the air-space of the vessel, and a valve closing such communication to retain the compressed air in the float, substantially as set forth.

2. The combination of an air-compressing vessel, a casing inclosing devices for tripping the water-waste valve, and a float encircling the casing, substantially as set forth.

3. The combination of the air-compressing vessel with a float, which opens the water-waste valve by a direct lift, and closes said valve by acting on tripping devices independent of the lifting devices, substantially as set forth.

4. The combination of the float, the valve-rod, and the bent lever F, all constructed for joint operation, as set forth.

5. The combination of the air-compressing vessel, the float, the tripping device for the air-escape valve, and the water-waste-valve rod, whereby the pressure is automatically relieved just before opening the water waste valve, substantially as set forth.

6. The combination of the valve-rod, its catch-lever F, and the air-escape valve, whereby the air-valve is held open to act as an air-supply valve, until the water-waste valve is closed, substantially as set forth.

7. The combination of the compression-chamber and the air-valve which is automatically opened by the float, to relieve the pressure by permitting the compressed air to escape from the vessel, remains open to admit air to the cylinder as the water falls, and closes simultaneously with the water-waste valve, as set forth.

8. The combination of the annular float, the tripping-lever F, and the weighted arm, which serves both as a rest for the float and a counterpoise to keep the lever in proper position, as set forth.

9. The combination of the air-compressing vessel, the water-inlet valve, and the pressure-gauge for closing the valve when the proper degree of pressure is attained, substantially as set forth.

104,363.—MEAT-CUTTER.—Henry Seib, New York, N. Y.

Claim.—1. The combination of the revolving table D, carrying three sets of cutters, one for slicing pork or meat, one for dividing the slices into strips, and one for cutting the strips into squares or cubes, respectively, with stationary hoppers arranged above the table, substantially as described.

2. The arrangement and combination, in the movable table D, of the cutters W, the knife-cylinders J, running in conjunction with the grooved rollers P, and the bottom cutters X, substantially as described, so that they move around with the table, and derive their motions around their own axes from the movement of the table, as set forth.

104,364.—CUTTING APPARATUS FOR MOWING-MACHINE.—Henry F. Shaw, West Roxbury, assignor to James A. Woodbury, Boston, Mass.

Claim.—The combination of the double crank D D', the pitmen H and E, the lever L, and balance P, with the cutter-bar K, operating as described and for the purpose set forth.

104,365.—HORSE HAY-FORK.—Amos Shellenberger, Versailles, Ohio, assignor to himself and Joseph Z. Ligier, same place.

Claim.—1. The cross-head D, carrying the spiral fork B, and sliding upon the tines C C, its downward motion being checked by the lugged or shouldered dog H and cord F, substantially as herein set forth.

2. In combination with the sliding cross-head D, the catch I, spring e, and trip-rope L, substantially as and for the purposes herein set forth.

3. The combination and arrangement of the frame A, tines C C, cross-head D, screw B, ratchet G, dog H, and catch I, with their cords F L N, all substantially as and for the purposes herein set forth.

104,366.—LAMP-BURNER.—George L. Smith, Bridgeport, Conn., assignor to Bridgeport Brass Company, same place.

Claim.—In an Argand burner, substantially such as described, the combination, with the partition-plate, dividing the air which enters the burner into the inner and outer currents, and a chimney-gallery or holder placed over or above said plate, as set forth, of a foraminous diaphragm, arranged to support the chimney, so that the air passing between the chimney and wick-tube shall be diffused throughout the space included between said chimney and tube, substantially as and for the purposes specified.

104,367.—CRANK-MOTION FOR ENGINE.—John Smith and Godfrey Joitho, Newark, N. J.

Claim.—1. The sleeve C, cam D, and crank B, in combination with the shaft A and toothed wheels F G, all arranged to operate substantially as herein shown and described.

2. The block b d, on the toothed wheel F, in combination with the pin a, crank B, and connecting-rod E, all arranged as set forth.

104,368.—LOG-MEASURING SCALE.—Luther Smith, Lowell, Mass., assignor to himself and James A. Pevey, same place.

Claim.—The combination of the graduated slide B, having the caliper-arm A, with the log-rule a, provided with the fixed caliper-arm b, constructed and arranged substantially as and for the purpose herein specified.

104,369.—INTERFERING-PAD FOR HORSES.—William Somerville, Buffalo, N. Y.

Claim.—1. The interfering-pad or cushion C, with its catches or hooks h h, combined with the lugs or plates a a, substantially as herein shown and described.

2. The catches or hooks h h, imbedded within the pad or cushion during the process or construction, substantially as herein shown and described.

104,370.—LATCH FOR CUPBOARD.—William E. Sparks, New Haven, Conn., assignor to Sargent & Co., same place.

Claim.—In combination with the latch B and its plate A, the plate C, having a rotary adjustment, so as to set the said latch into either a right or left-hand position, by means of the pivot a, fixed upon the said adjustable plate.

104,371.—WATCH.—Henry Stauffer, Ponte-Martel, Switzerland, assignor to Nordmann Brothers, New York City.

Claim.—1. The combination, with the spindle of the "dead second," and the shaft of the wheel C, of the star-wheel d, and the wheel e, arranged to cause the "dead second" to beat seconds, and in unison with the quarter-second hand, all substantially as specified.

2. The combination, with the wheel e on the spindle, of the dead second, and the star-wheel of the spring pawl g, or equivalent, substantially as specified.

104,372.—LAMP.—Leonard Sterling and T. W. Willson, New York, N. Y.

Claim.—The combination of the supplementary fluid-chamber D, containing the wick b, with the siphon C and reservoir A, all arranged for operation, substantially as shown and described.

104,373.—HAY-RACK FOR WAGON.—John W. Stevens and John P. Bacome, Westville, Ohio.

Claim.—The method of attaching the cross-bars of a hay-rack or ladder to the beams thereof, substantially as and for the purpose set forth.

104,374.—PUMPING APPARATUS.—David Stoner, Canton, Ohio.

Claim.—The combination of the vibrating water-lever P R, consisting of the counter-weight box P and water-box R, with curved bottom T, arm M, rod L, rock-lever J J, tension-wire G, rock-lever E E, link D, and pump-lever B, with back-weight C, the several parts being arranged and operating in the manner and for the purpose specified.

104,375.—RAILWAY TRACK-CLEARER.—Robert R. Taylor, Reading, Pa., assignor to himself, Jeremiah H. Boone, Jonathan M. Heller, and C. B. Bertolette.

Claim.—A clearer, H, containing a wheel, f, and connected to a car so as to have a vertical movement independent of the latter, in combination with the spring d, or its eqivalent, for the purpose described.

104,376.—FIRE-PLACE HEATER.—John M. Thatcher, Bergen, N. J.

Claim.—1. A base-burning fire-place stove in which are combined the following elements, namely: a cylinder or body projecting outward from the mantel or frame, a fuel-magazine or feeder within the cylinder, and an opening through which the said magazine can be fed from above.

2. A fire place stove or heater in which the magazine is extended to the feed-opening of the outer casing.

3. In combination with a fire-place heater, a feeder or magazine projecting above the top of the heater, substantially as described.

104,377.—CHECK-REIN ATTACHMENT.—Albert Thayer and William A. Hastings, Thorndike, Mass.

Claim.—An improved check-rein attachment, consisting of the line C, having the swell or protuberance B, or its equivalent, attached to the check-rein, in combination with the water-hook A, all constructed and operating substantially as herein described.

104,378.—SEWING-MACHINE COVER.—William P. Uhlinger and Justus Doering, Philadelphia, Pa.

Claim.—The folding top for sewing-machines herein described, having hinged leaf B, with supporting rib a, carrying the folding box-cover, to which the back C is rigidly attached by braces E, and the ends F hinged to the back by the plate-hinges z, all constructed and arranged to operate in the manner and for the purposes shown and described.

104,379, antedated June 3, 1870.—GAME.—Nicholas J. Vander Weyde, New York, N. Y.

Claim.—1. The shape of the board, as specified.

2. The moves of the pieces on the board, as described.

104,380.—MACHINE FOR MAKING ROOFING FELTING.—Edward Van Orden, New York, N. Y.

Claim.—1. The combination, with the trough C and adjustable cylinder F, of the fixed surface J, roller K, and spindles O and R, when the same shall be constructed and operate substantially as and for the purpose specified.

2. The combination, with the subject matter of the first clause of claim, of the pressure-rollers L and L^2, regulating screws M, and cylinder T, when the same shall be constructed and operate substantially as and for the purposes set forth.

104,381.—MACHINE FOR MAKING NETTING.—Aloha Vivarttas, New York, N. Y., assignor to himself and John W. Keene, Newark, N. J.

Claim.—1. The machine, constructed substantially as described, and operating to form netting of the description known as the diagonal mesh and fisherman's bend, and by a single passage of the shuttle.

2. The shuttles H H, in combination with their supports or carriages H^1 H^2, when constructed and operating in the manner and for the purposes herein described.

3. The arrangement and combination of the cam J^7, its arm or lever J^6, rack J^5, segment J^4, and shaft J^3, with the straight-edges J^1 J^2, in the manner and for the purpose herein described.

4. The sliding carriage L^1, with its straight-edge, in combination with the movable clamping-bar L^2, the latter being operated by cams L^3 and L^4, as and for the purpose set forth.

5. The weighted rocking frame M and rollers M^1 and M^2, arranged upon a shaft, to the end of which is attached a pulley, operated by means of the pulley M^3 and a belt connecting the two pulleys, in the manner and for the purpose herein shown and described.

6. The arrangement and combination of the bar

D and its forks D' with the sliding bars E and F, when the bars E and F have formed upon them projections, in the manner and for the purpose herein described.

104,382, antedated June 4, 1870.—Paper or Paper-and-Cloth Neck-Tie.—Rudolph L. Walter, Washington, D. C.

Claim.—As a new article of manufacture, an imitation neck-tie, formed of a single piece, and consisting of the body A and folding-band C, provided with a button-hole for attachment to the collar-button, as shown and described.

104,383.—Process for Cleaning and Polishing Copper.—Charles C. Warren and James B. Baldy, Toledo, Ohio.

Claim.—The herein-described process of cleaning and polishing raw coffee-beans, by agitating the packages or bags within which they are contained, as specified.

104,384.—Grist-Mill.—Charles T. Weston, Sidney Broadbent, and Willard B. Culver, Scranton, Pa.

Claim.—1. The taper-formed socket D and the removable yoke-ring E, fitted therein, in combination with the driver C and self-adjusting ring or bearing-plate F of the rotating stone of a grist-mill, substantially as herein described.

2. In combination with the taper shell D, straight-edge bars b, and weights I, or their equivalent, the detachable and removable mandrel H and disks f, for balancing the running stone circumferentially, in the manner described.

104,385.—Ironing-Table and Bureau.—Margaret White, Saratoga Springs, N. Y.

Claim.—The combination of the shell A, wings B B, drawers or shelves D D, boards E G, top H, and drawers or slides I I, all constructed and arranged substantially as and for the purposes herein set forth.

104,386.—Harvester.—William N. Whiteley, Springfield, Ohio.

Claim.—1. The main frame A, surrounding the main wheel B, in connection with the gearing and bearings attached, constructed, and arranged, substantially as shown.

2. A foot-board, t, and a receiving and binding-table, u, hinged to the frame T, as set forth, in combination with a holding device, to sustain said foot-board and table, in the manner described, when raised up or folded for transportation.

3. The foot-board t, supported in a horizontal position by the apron-frame T, and provided with the posts v, and a receiving and binding-table, u, arranged to be supported at its outer edge by resting upon the tops of said posts, as and to the effect set forth.

4. The elastic compresser, supported, by its connection through the arm a, to the rear side of the machine only, substantially as and for the purpose described.

104,387. — Breech-loading Fire-Arm.—James M. Whittemore, Augusta, Me.

Claim.—1. The hammer H, the locking-piece L, the extractor E, with the feather spring D M or spiral spring S, all combined, substantially as and for the purposes specified.

2. The extractor E, hinged to the hammer H, (with the feather or spiral spring,) substantially as and for the purposes specified.

104,388. — Cast-iron Turn-Table for Railway.—Andrew Jackson Wight and William Lewis Meeker, Newark, N. J.

Claim.—1. Connecting the parts a a a a, composing the sides of the turn-table, by means of the oval straps or bands b, of wrought-iron, fitted over lugs or projections c, cast on the outer surfaces of the parts a, in combination with the central casting B, constructed as shown, with the two vertical plates d d, and the horizontal plate e, all cast in one piece, together with the bolts C D, for securing the castings a to the center-piece B, and securing the former at the proper distance apart, substantially as shown and described.

2. The keys f, passing through lugs h at the inner sides of the parts a, in combination with the projections g; also, at the inner sides of the parts a, and fitting in recesses in the vertical plates d d of the central casting B, for the purpose of retaining said parts a in proper position, as set forth.

104,389.—Oil-Cabinet.—Moses H. Wiley, East Boston, assignor to himself, Thomas Miller, and John H. B. Laug, Boston, Mass.

Claim.—1. An oil-cabinet, substantially as described, the same consisting of a reservoir or tank, C, and a compartment or sink, D, provided with a pump, a stand or can-supporter, O, and "tell-tale," constructed as specified, all combined, arranged, and operating together in manner and for the purpose hereinbefore specified.

2. An oil-cabinet, consisting of a reservoir or tank, C, and a compartment or sink, D, provided with a pump, a can-supporter, O, and waste-receiving orifice G, all constructed, combined, and arranged together in manner and for the purpose hereinbefore set forth.

3. The combination of the adjustable stand or can supporter O with the discharge-pipe or nozzle of the pump, substantially as and for the purpose hereinbefore specified.

4. The combination and arrangement of the stand O and the centralizer Q with the discharge or nozzle of the pump in manner and for the purpose set forth.

5. Providing the piston of a pump with means or devices as described, (viz., a rod, g, handle A, check-chain R, and weight or gravitating power,) whereby the fluid contained within the tank or holder may not only be drawn and accurately measured, but be automatically discharged into a can or receptacle, in manner as specified.

6. The nozzle-clearer and its shield, when constructed as described, and applied to the cover of the case, as set forth.

7. The combination of the nozzle-supporting shelf p with the nozzle-clearer and its shield, substantially as and for the purpose set forth.

104,390.—Tool for Making Bottles.—James Wilson, New York, N. Y., assignor to Elizabeth Matthews, John Matthews, Jr., and George Matthews, same place.

Claim.—1. Spring punches E, arranged to work in guides, and limited by stops, which govern their movements toward each other, substantially as and for the purpose described.

2. The combination of the punches E with the formers and ring for forming the head and neck of a bottle, substantially as described.

104,391.—Card-Cabinet.—Arthur T. Woodward, New York, N. Y.

Claim.—The album or book, having hollow leaves B B fitted with racks C, springs b b, followers c c, and stops d d, to the latter, as shown and described, as a new article of manufacture.

104,392.—Milk-Cooler.—David F. Woodward, Jasper, N. Y.

Claim.—The within-described milk-cooler, consisting of the pan A, with central and side tubes B B, connected at their lower ends, all as shown and described.

104,393.—Musical Staff.—Horton Wright, Akron, Ohio, assignor to himself and O. D. Childs.

Claim.—An improved staff for music, formed substantially as herein shown and described, that is to say, in groups of three and two lines, with wide spaces above each group, as and for the purpose set forth.

104,394.— Lock for Fire-Arms. — Alfred Young, Philadelphia, Pa.

Claim.—The combination and arrangement of the screw-stop G, with its spring-arm f, and the lock-plate A, with its teats g g, substantially as herein set forth.

104,395.—Sash-Holder.— John F. Zacharias, Leesburg, Va.

Claim.— 1. The projection D, arms A A, and handle G, formed in one piece, in combination with the open face-plate B and the bearings F, formed in one piece, operating together, in connection with the spring C, substantially as and for the purpose described.

2. The arms A A, mounted on the bearings F, cast or formed with the face-plate B, the elastic feet E, and spring C, combined and operating substantially as described.

104,396.—Cotton-Scraper.—James Lytch, Laurinburg, N. C.

Claim.—The arrangement of the fixed central guide-plate E, so as to project below the cutting-edge of the share A, to steady and hold the latter in the soil, in connection with the auxiliary scraper F, in the manner and for the purpose herein shown and specified.

104,397.—Core-Bar for Casting Pipe.—John Enright, Louisville, Ky., assignor to himself, William Wall, and Thomas Enright, same place.

Claim.—1. The prongs d of the central bar e, in combination with the prongs b b of the plates a, when constructed and operating substantially in the manner described.

2. The equalizers f, combined with the collar e and plates a, in the manner and for the purpose specified.

3. The bar e, combined with the slotted shackle n, and lever s, in the manner and for the object specified.

REISSUES.

4,025.—Vegetable and Fruit-Peeler.—Ellicott D. Averell and Joseph Malan, Brooklyn, N. Y. — Patent No. 100,583, dated March 8, 1870.

Claim.—1. The combination of the hinged or pivoted vanes D D', arranged spirally on or around the revolving shaft C, in combination with the grater-like cylinder A, made to revolve in a reverse direction to said shaft, substantially as specified.

2. The hinged or pivoted vanes D D', constructed to form graters, in combination with the grater-like cylinder A, essentially as described.

3. The arrangement of the hopper or inlet-opening E and outlet-opening F in the ends of the case B, with the inlets and outlets G H in the end of the cylinder A, for operation in connection with the hinged or pivoted vanes D D', and said cylinder A, substantially as specified.

4,026.—Oven.—Hosea Ball, New York, N. Y.—Patent No. 15,753, dated September 23, 1856; reissue No. 3,666, dated October 12, 1869.

Claim.—1. One or more swinging bread-holders, suspended from the arms or end plates of a rotating reel, in combination with a furnace so arranged and connected that the products of combustion will pass into or through the chamber within which the bread-holders move.

2. In combination with a rotating reel and swinging bread-holders, a flue on one or more sides of the chamber in which the reel rotates, communicating with said chamber through apertures in the wall between them.

3. In combination with a swinging bread-holder, revolving in an oven, a discharging-chute and tripping device, by which the bread is delivered from its platform and into the chute, substantially as and for the purposes described.

4,027.— Steam-Gauge Cock. — Oscar T. Earle, Norwalk, Conn., assignee of Albert Bisbee.—Patent No. 13,563, dated September 18, 1855; extended seven years.

Claim.—1. A piece of vulcanized rubber, combined with metal, so as to be protected by metal on all sides, except the bearing surface, and forming one of the surfaces which, when in close contact, close the passage through the stop-cock.

2. In combination with a piece of vulcanized rubber, protected as described, an annular metallic surface, the two, when in close contact, closing the aperture or passage through the stop-cock, substantially in the manner described.

4,028.—Bedstead-Fastening.— James L. Haven & Co., Cincinnati, Ohio, assignees of John Lemman.—Patent No. 58,437, dated October 2, 1866.

Claim.—1. A metallic fastening, constructed as herein described and set forth, for the purpose substantially as described and specified.

2. Inserting in a bedstead-post a segment of circle, B, in a mortise with beveled sides and lower end for the purpose of securing it to the post A without any other fastening, substantially as described and set forth,

4,029.—Tool for Manufacturing Paper Bags.—Edwin J. Howlett, Philadelphia, Pa., assignee of himself and Susan Kirk. Patent No. 63,342, dated February 26, 1867; reissue No. 3,718, dated November 9, 1869.

Claim.—1. The construction of the board A, blade B, and adjustable strip D, the whole being arranged substantially in the manner described.

2. The combination of the board A, strip a, and blade B.

3. The combination of a board, A, with a blade, B, secured substantially as described.

4. The combination of the board A, the guide-plate E, and adjustable strip D.

4,030.— Recovering Gold and Silver from Waste Solutions. — Jehyleman Shaw, Bridgeport, Conn.—Patent No. 35,842, dated July 8, 1862; reissue No. 1,651, dated April 5, 1864; reissue No. 3,506, dated June 15, 1869.

Claim.—The use of the means herein described for recovering gold and silver from spent photographic solutions and washings, substantially as set forth.

1,031.—Imitation-Hair for Ladies' Head-Dress.—Louise F. Shaw, New York, N. Y.—Patent No. 95,275, dated October 26, 1869.

Claim.—The imitation human hair, made of glazed threads united together at one end, and adapted to use as a head-dress, substantially as specified.

4,032.—Metallic Can-Bottom.—Henry W. Shepard, Maunsville, and Robert Seaman, New York, N. Y., assignees of Henry W. Shepard.— Patent No. 98,526, dated January 4, 1870.

Claim.—As a new article of manufacture, the can-bottom A, when constructed in one piece, consisting of the curved surface A^1, and vertical annular rim A^2, substantially as described.

4,033.—FASTENING FOR NECK-TIE.—Dennis H. Tierney, Forrestville, Conn.—Patent No. 84,974, dated December 15, 1868.

Claim.—The elastic loop B, rigidly secured at its base, and its free or doubled end passing through a guiding loop or eye, in such manner as to admit of extension and retraction beyond the amount due to the protruding loop or button-hole, substantially as herein set forth.

4,034.—STATIONERY FURNITURE.—Charles H. Wight, Baltimore, Md.—Patent No. 98,453, dated December 28, 1869.

Claim.—1. The mucilage-bottle W, so arranged upon frame or stand A that it can be swung in or out of view substantially as described.

2. The arrangement upon stand A of letter-scale E, sponge-cup C, pen-rack K, thermometer F, calender B, swinging mucilage-bottle W, stamp-safe G, and ink-stand, substantially as and for the purpose set forth.

4,035.—OIL-CABINET.—Moses H. Wiley, Thomas Miller, and John H. B. Lahg, East Boston, Mass, assignees of Moses H. Wiley.—Patent No. 101,070, dated March 22, 1870.

Claim.—1. An oil-cabinet, substantially as described, the same consisting of a tank or holder, with an upper case, sink, or inclosure, and provided with a pump, and a vent-tube or waste-receiving orifice, combined and arranged together in manner, and for the purpose or object hereinbefore set forth.

2. The combination of the tank C, the compartments E E', pump G J K, and pipes O F, constructed, arranged, and operating together, in manner and for the purpose or object as set forth.

DESIGNS.

4,148.—LAMP-BURNER.—Joseph Bell Alexander, Washington, D. C.

Claim.—The form and configuration composing a design for a lamp-burner, substantially as described and set forth.

4,149.—SPOOL-STAND.—Robert G. Clemons, Nashua, N. H.

Claim.—The design for a spool-stand, with ornamental shelf or receiver, as shown.

4,150.—CARRIAGE-STEP.—John W. Curtis, Franklin A. Briggs, and Milton O. Cox, Coldwater, Mich.

Claim.—The design for a carriage-step, as shown.

4,151.—BOX FOR THE TOPS OF BUREAUS.—Cheney Kilburn, Philadelphia, Pa., assignor to Kilburn & Gates, same place.

Claim.—1. A box for the tops of bureaus, formed on an oval or elliptical curve, substantially as described and as represented in and by the accompanying drawing.

2. The design for the molding or finish on the edge of the said box and lid, substantially as shown in fig. 3 of the drawing.

4,152.—PRINTING-TYPE.—Andrew Little, New York, N. Y.

Claim.—The design for printing-type, as shown.

4,153.—TRANSPARENT SHIELD.—Israel C. Mayo, Gloucester, Mass.

Claim.—The above-described new design for a lantern-burner shield.

4,154.—TRADE-MARK.—Stephen P. M. Tasker, Philadelphia, Pa., assignor to Morris, Tasker & Co., same place.

Claim.—The design for a trade-mark, as described and shown.

4,155.—SPOON-HANDLE.—Robert Wallace, Wallingford, Conn.

Claim.—The design for spoon-handle, as herein shown and described.

ISSUE OF JUNE 21.

PATENTS.

104,398.—FOLDING DENTAL CHAIR.—Charles M. Adams, Canton, Miss.

Claim.—The combination of a folding or portable chair with an adjustable back, with a head-rest and foot-rest, substantially as herein described and set forth.

104,399, antedated June 11, 1870.—CULTIVATOR.—Joseph Adams, Manteno, Ill.

Claim.—1. The crank-screws G and nuts F, to which the forward ends of the plow-beams are jointed, in combination with the frame-work of a cultivator, substantially as herein shown and described, and for the purpose set forth.

2. The right-and-left screw C, provided with a lever or handle, D, in combination with the adjacent ends of the axles B, substantially as herein shown and described, and for the purpose set forth.

3. An improved cultivator, formed by the combination of the wheels A, axles B, right-and-left screw, C, provided with a handle or lever, D, plow-beams E, jointed to the nuts F, and swiveled crank-screws G *g'*, with each other, and with the branched tongue M, substantially as herein shown and described.

104,400.—LUBRICATOR.—David Adamson, Bremen, Germany.

Claim.—1. The combination, with the cup A, of the passage or passages *b*, and the piston G, sliding on the tube D, substantially as and for the purpose described.

2. The pipe D and passage *a*, provided in the cup A, to operate in conjunction with the piston G and steam-passage *b*, as set forth.

3. The pipe D, secured at its lower end in the screw-shank B, and perforated bottom *d*, and extended up to or near top of the cup, and provided with a funnel-shaped mouth, to receive the valve E, as shown and described.

104,401.—POTATO-DIGGER.—James Albaugh, Lyons, N. Y.

Claim.—A hand potato-digger, consisting of the bar A, the tange B, the rods C, the curved bar D, the handles E, the shaft G, and the single wheel H, all constructed and arranged substantially as and for the purpose specified.

104,402.—SAFETY-CAP FOR CANS.—Horace Clifton Alexander, New York, N. Y.

Claim.—A fastening device for cans, formed of two sheet-metal disks upset and shaped to form caps, the one fitting over the other, the flanges of the inner being turned over at two points to form lips *a'* and the flange of the outer cut away at corresponding points to permit its entrance under the lips and the interlocking of the two, as shown and described.

104,403.—ROTARY PUMP.—William B. Allyn, Boston, Mass.

Claim.—1. The cylinder-piston G, and hubs D D, operating in combination, substantially as and for the purposes described.

2. The combination of the double-cylinder piston G, with the casing A, arranged and operating as described.

3. The abutment J, in combination with the piston G, arranged and operating substantially as and for the purposes described.

104,404, antedated December 21, 1869.—AUGER-BIT.—Albert L. Andrews, Bristol, Conn.

Claim.—A jointed auger or bit, in which the pod and head are connected to each other by means of a single dovetail tenon and slot running transversely through the axial line of the auger, substantially as described.

104,405.—VIOLIN-HOLDER.—Isaiah H. Arey, Boscawen, N. H.

Claim.—1. The cup A, made widest at the left-hand end, and concave on its upper side, substantially as herein shown and described, and for the purpose set forth.

2. The combination of the adjustable foot C with the cup A and standard B, substantially as herein shown and described, and for the purpose set forth.

3. The standard B, constructed substantially as shown and described.

104,406.—ANIMAL-TRAP.—Samuel Arnold, Silver Springs, Tenn.

Claim.—The pulleys E and L, pan D, wires F, plate G, and cork K, arranged and operating in combination with the cage B, substantially as and for the purposes described.

104,407.—HARVESTER.—Almon P. Ayers, Chicago, Ill.

Claim.—1. The combination of the shaft J, the gears J' and M, shaft L, chain-wheels K and L', chain *a*, double-racked bar N, and transverse bar N', for reciprocating the rake-head O, substantially as described and set forth.

2. In combination with the transverse bar N', the rake-head O, provided with crank-arm *d*, the inclined plane P', guide P, cam-latch *e*, and open platform I, arranged and operating in relation to each other, substantially as and for the purpose set forth.

3. The combination of the elevator Q, crank *m*, elevator-rod Q', cam W, apron I, binding-rack U, and gavel-holders V, as and for the purpose set forth.

4. The combination of the elevator-rods Q', the transverse bar N', the lifting-levers S, sector S', strap A, bar *h'*, spring latch *j*, loop *k*, and guides *s*, arranged and operating in the manner and for the purpose set forth.

5. The arrangement upon the binding-platform of a harvester of the binding-rope, the spools X, the pulley *n*, the spring *p*, with the shears *o* operated by the treadle *o'*, when the several parts are constructed as described, as and for the purpose set forth.

104,408.—WEANING-BIT.—Isaac L. Baker, Prairie City, Kansas.

Claim.—The weaning-bit, formed of tubular metal piece A, having slits *c* in the sides D D, extending out to the ends, to prevent suction, as set forth.

104,409.—THREE-WHEELED CARRIAGE.—Charles H. Barrows, Willimantic, Conn.

Claim.—1. The combination of the screw-threaded axle G, nuts *b c*, arms *d*, and curved bar H, with the reach I and bifurcated post F, substantially as shown and described.

2. The combination of the body A and its hinged portion E, the swiveled bifurcated post F, axle G *d*, curved bars A, reach I, axle D, frame C, and springs B, all constructed and arranged substantially as shown and described.

104,410.—JIG-SAW.—Thomas Blandin, Charlestown, Mass.

Claim.—The arrangement of levers O, S, and J, pitmen P T, connecting-rods R, U, and X, substantially as described.

104,411.—CAR-STARTER.—Robert Bogardus, New York, N. Y.

Claim.—1. The disk D, when arranged to slide upon the bars or wires *a a* and pulley E, in combination with the cranked shaft K and spring *n*, arranged to operate substantially as described.

2. The projection H, having the roller *m*, cam L, springs J J, substantially as and for the purpose described.

3. The cam L and springs J, when arranged in combination with the chain C, hook P, and roller *m*, as and for the purpose set forth.

104,412.—SOLDERING-IRON.—Jabez A. Bostwick, New York, N. Y.

Claim.—The hollow soldering-iron A, having a handle, B, and beveled rim *a a*, in combination with the rod C, substantially as herein described and set forth.

104,413.—NOZZLE AND SEALING-CAP FOR SHEET-METAL CANS.—Jabez A. Bostwick, New York, N. Y.

Claim.—The combination of an extended flanged nozzle, formed substantially as herein described, with a metallic vessel, by means of an outer sealing and fastening-cap and rim, secured to the vessel over and upon the outer end of the nozzle, substantially as and for the purpose herein set forth.

104,414.—APPARATUS FOR FILLING OIL-CANS.—Jabez A. Bostwick, New York, N. Y.

Claim.—1. The combination, with a measuring-vessel, F, of a tank, A, interposed between said vessel and the main reservoir, when said tank is provided with an automatic float-actuated valve, C, to determine its contents, and so placed relatively to the measuring-vessel as that the surface of the liquid in the two vessels, when full, shall be upon the same level, and the supply to the measure will be consequently checked, when it is filled, by the simple operation of the valve in the tank, all substantially as herein set forth.

2. An overflow-pan or receptacle, R, in combination with the top of a measuring-vessel, F, when said measuring-vessel is connected to and supplied from a separate tank or reservoir, substantially as herein set forth.

104,415.—PAPER-FILE.—William Boyrer, New York, N. Y.

Claim.—The removable spring holders B, secured in the pockets *b* of the cover, for the purpose of holding the cord C, and flattening the back of the cover, as set forth.

104,416.—INSTRUMENT FOR GIVING FLUID MEDICINES TO ANIMALS.—Henry Adolph Brandes, Newark, N. J., (Francis H. I. Bosch, executor.)

Claim.—The combining of a hollow bit with a projecting tongue with orifices and a funnel for giving medicines, all as described.

104,417.—TUNING-PIN FOR PIANOS.—Julius M. Brunig, New York, N. Y.

Claim.—1. The screws B, provided with the concave threaded portions, to fit snugly against the edges of the worm-wheels, as set forth.

2. The frame A, so constructed with a projecting lip *c* that it will serve to support two wheels, D, substantially as herein shown and described.

3. The arbor C, made conical near each wheel D, to crowd the cord against the wheel, as specified.

104,418.—TREE-PROTECTOR.—Sterne Brunson, Benton Harbor, Mich.

Claim.—The conical or inclined tree-protector, constructed as described, with the points G and yielding ties C, and adapted to fit around a tree just above the ground, with its lower edge imbedded in the soil, as herein set forth, for the purpose specified.

104,419. — CLOTHES-LINE HOLDER AND STRETCHER. — Nathaniel E. Buffington, North Providence, assignor to himself, John Rich, and Lysander Flagg, Smithville, R. I.

Claim.—The crank-shaft A, provided with ratchet *c*, and journaled in cars *a a*, in combination with the pawl *d*, line *g*, bracket D, and pin *f*, with the friction-roller C, all constructed and arranged as and for the purpose specified.

104,420.—DOOR-KNOB.—George W. Cady, Providence, R. I.

Claim.—The improved knob, as made with its head *c* and body *d* in two parts, as described, and with the head to extend into and encompass the body, and to screw upon a sleeve, A, applied and fastened to the spindle E, in manner and by means as set forth, the part or body *d* of the knob being screwed to or fastened upon the rose or part D connected with the door, as explained.

Also, the arrangement of one or more extension-pieces *m*, with the spindle E, the sleeve A and its confining-screw *i*, and the knob-head *c*, and body *d*, constructed and applied together, substantially in manner as hereinbefore explained.

104,421.—APPARATUS FOR AGITATING AND COOLING BARRELS AND CASKS DURING THE PROCESS OF PITCHING.—David Cammerer, Cincinnati, Ohio.

Claim.—1. The barrel-rolling apparatus, consisting of the connected shafts B B, which contain the projecting pins *c c*, substantially as and for the purpose herein shown and described.

2. The combination of the air-blowing with the barrel-rolling apparatus, substantially as herein shown and described.

3. The swivel-coupling H, arranged on the elastic air-tubes G, and on the rolling barrels or casks, as set forth.

104,422.—DEVICE FOR ROASTING AND BAKING.—John J. Carroll, Washington, D. C.

Claim.—The cooking-vessel herein described, consisting of pan *b*, rack *f*, and cover *c*, with its depressed or concave top *e*, all combined and arranged as and for the purpose set forth.

104,423.—SULKY-HARROW, &c.—James A. Casey, Mayesville, Ky.

Claim.—1. The bars or frame E, wheels F, and detachable pivoted bows G^1 G^2 G^3, provided with harrow-teeth, cultivator-teeth, cutters or plows, in combination with the sulky A B C D, substantially as herein shown and described, and for the purpose set forth.

2. The combination of the chain H, bent lever I, and slotted guide-bar J, with the bows G^1 G^2 G^3, pivoted bars E, and sulky A B C D, substantially as herein shown and described, and for the purpose set forth.

104,424.—MACHINE FOR FELTING HATS.—Angelo Cattaneo, Newark, N. J., assignor to himself and Henry Lefort, same place.

Claim.—1. The revolving cylinder of yielding slats, in combination with the adjustable suspended oscillating shell of slats and the water-box, substantially as and for the purposes specified.

2. The chute or trough *p'*, to return the bats, arranged in relation to the aforesaid cylinder and shell, in the manner and for the purposes specified.

104,425.—CABLE-STOPPER.—Ethan R. Cheney, Boston, Mass., and John J. Emery, Owl's Head, Me.

Claim.—1. The elastic cushion B, in combination with the movable part A, the springs F, and the standards or stops, substantially as described.

2. The arrangement and combination of the stay-rod J with the elastic chain-stopper, guides, and supports D X G E, substantially as described.

104,426.—PIPE-TONGS.—Edward B. Clark, Philadelphia, Pa.

Claim.—A pair of adjustable pipe-tongs, having the two parts united by the eccentric bolt E with a notched head and spring, as described and shown.

104,427.—INCLOSED TAIL-RACE OF WATER-WHEEL.—William A. Cobb, Orange, Mass.

Claim.—1. The method of preventing the retarding influence of "back" or high water upon water-wheels, substantially as herein described.

2. A casing for water-wheel, provided with one pipe for the deliverance of the water that drives the wheel, back into the stream whence it comes, and another pipe for the deliverance of such water either into or away from such stream at a point where floods have no effect, and furnished with gates, to open or close the pipes as may be required, to enable the wheel-water to flow out or prevent the stream-water from flowing in.

104,428.—WATER-WHEEL.—Alpheus C. Corpe, Stafford, Conn.

Claim.—The combination of two sets of buckets *a b*, with the space H between them, constructed and arranged as set forth.

104,429.—SLED-BRAKE.—John E. Coutant, Rondout, N. Y.

Claim.—The slotted and tenoned tongue G *g'*, plate H, and cross-bar I, combined with rods J and brakes K L, all relatively constructed and arranged upon the sled, as shown and described, and for the purpose specified.

104,430.—NOZZLE AND CAP FOR OIL-CANS.—Edward T. Covell, Brooklyn, N. Y.

Claim.—The within-described closed-top nozzles and screw-caps for oil-cans and other vessels, formed substantially as herein set forth, as a new article of manufacture.

104,431, antedated June 6, 1870.—SOLDERING-MACHINE.—Edward T. Covell, Brooklyn, N. Y.

Claim.—An overhanging support or supporting frame, as hereinbefore described, for suspending the body of a metallic vessel to be soldered, when combined with and projecting over a solder-pan to contain molten solder, as herein set forth.

104,432.—VIAL FOR FILTERING COLLODION.—Daniel H. Cross, Bennington, Vt.

Claim.—The stopper *b*, having a funnel-shaped opening, *c*, for collodion to be drained off the plate into the vial *a*, in combination with the filtering and pouring-tube *d* and cap *e*, substantially as and for the purposes set forth.

104,433.—METHOD OF COVERING WHIPS.—Velenus W. Crowsen, Westfield, Mass., assignor to himself and Stephen Massey, same place.

Claim.—A whip-stock covered with raw gutta-percha, substantially in the manner described.

104,434.—MANUFACTURE OF WHITE LEAD.—James Cuddy, Pittsburg, and George S. Selden, Philadelphia, Pa.

Claim.—1. The intermittent revolving of a white-lead chamber, constructed and operated substantially as and for the purposes as described.

2. The intermittent revolving of a horizontal cylinder crate or crates within a stationary chamber, constructed and operated substantially as and for the purposes as described.

3. The intermittent or periodical agitation of the metallic lead, as and for the purposes substantially as described.

4. The employment of movable crates or baskets, as and for the purposes substantially as described.

5. The wetting or moistening the metallic lead with vinegar, as and for the purposes substantially as described.

104,435.—FARM-GATE.—John Dickason, Vevay, Ind.

Claim.—1. A gate, A, having its bottom longer than its top, and having the brace-bars I, ratchet-bar E, and clamping bolt or pin K, constructed and arranged, in connection with said gate, as herein described.

2. The latch-bar O, in combination with the latch-post *c*, when constructed and arranged, with reference to the position of the gate-latch L, substantially in the manner and for the purpose shown and described.

104,436. — GAUGE-KNIFE FOR CUTTING LEATHER.—Charles T. Durham, James Wood, and Theodore Hair, Norristown, Pa.

Claim.—The combination of the adjustable knife B, having a tightening-handle, E, adjustable guide F, and slotted stock A, the several parts being constructed and arranged for joint operation, substantially in the manner and for the purpose set forth.

104,437. — VISE. — Jacob Edson, Boston, Mass.

Claim.—1. The jaw-carrier B, as constructed, with a female-screw section, E, cast in one piece with the rest of the carrier, and formed and chill-hardened by being formed against a screw chill-plate, and with supporting flanges *a a*, in combination with the jaw-carrier A, as formed with shoulders, or equivalents, to rest on such flanges and to operate with the said carrier B and the screw-spindle, as specified.

2. The combination of the elastic rings *c c* with the handle H, (made with grooves *d d* to receive and hold such rings,) and screw-spindle F, substantially as set forth.

3. The combination of the jaw-carriers A and B, screw-spindle F, and oil-reservoir *r*, the latter being arranged to receive the screw of the spindle, in manner and for the purpose as described.

4. The combination and arrangement of the head *l*, (formed with the passage *s* arranged in it as described,) with the jaw-carriers A and B, the screw-spindle F, and oil-reservoir *r*, the latter being arranged to receive the screw of the spindle, in manner and for the purpose as specified.

5. The combination of the socketed jaw-carrier A, the spindle shoulder *g*, the groove *u*, (to hold plumbago,) and the oil-passage *v*, the whole being constructed and arranged substantially as described, for the purpose set forth.

104,438, antedated June 11, 1870. — MACHINE FOR CANNING FRUIT.—John H. Ellis, Peoria, Ill.

Claim.—The apparatus, herein described, for canning fruit, having frame A, pump B, table C, together with the block *n*, staple *e*, tube *g*, and cup A, when constructed and arranged substantially as specified.

104,439.—APPARATUS FOR TOWING CANAL-BOATS.—Albert H. Emery and Gabriel Leverich, New York, N. Y.

Claim.—1. The combination and arrangement of the suspending-rods 6 7 5 6 7 with the suspended rails 2 2 or cables 26 26, when suspended over a canal, as and for the purposes set forth.

2. The combination and arrangement of the suspending-rods 6 7 6 7 with the suspended rail 2 or cable 26, when suspended over a canal, as and for the purposes set forth.

3. The combination and arrangement, in each span or section of the suspended rail 2, of a short heavy rail, 2', joined at each of its extremities to a long light rail, 2, substantially as and for the purpose set forth.

4. The combination and arrangement of two sets of the suspending-rods, 6 7, 6 7, and 6 7, 6 7, with the rail 2, under tension, for the purpose set forth.

5. The combination and arrangement of two sets of the suspending-rods, 6 7 5 6 7 and 6 7 5 6 7, and rails 2 2, or cables 26 26, with the rails or cables under tension, as and for the purposes set forth.

6. The combination and arrangement of the rails 2 2, lugs 13, 13, 13, 13, bolt 12b, nuts 11, 11, 11, 11, and springs 14, 14, 14, 14, as and for the purposes set forth.

7. The combination and arrangement of the cable 26, band 30, rivets 41, and supporting-rods 6, 7, 5, as and for the purposes set forth.

8. The combination and arrangement of the rail 2, lugs 1 1, supporting-rods 5 6 7, and bolts or rivets 4 4, as and for the purpose set forth.

9. The combination and arrangement of the rails 2 2, lugs 13 13, springs 8 8, bolts 12, nuts 10 10, 11 11, and suspending-rods 5 6 7, as and for the purpose set forth.

10. The combination and arrangement of the rail 2, lug 50, bolt 51, and rods 5 6 7, as and for the purposes set forth.

11. The combination and arrangement of the band 30, post 18, supporting-rods 5 6 7, fixing-rods 21 21 21, screw and nut 17 16, saddle 15, cable 26, and rod or cable 22, as and for the purposes set forth.

104,440. — DIE FOR FORGING EARS FOR CARRIAGE-SPRING HEADS.—John Evans, New Haven, Conn.

Claim.—The improved die A and follower B, the former having the recess C, longitudinal groove *a*, transverse groove *d*, and perforation *e*, and the latter having the projecting end D and the pin E, as and for the purpose set forth.

104,441.—SHIELD FOR PADLOCKS.—Charles C. Gale, Indianapolis, Ind.

Claim.—A shield, B, made substantially as described, entirely covering the lock-case, and secured by the staple through which the shackle passes, whereby the key-hole, when the lock is secured, is rendered wholly inaccessible until the shield is broken and destroyed, as herein set forth.

104,442.—MACHINE FOR FORMING EYELET-STOCK. — Thomas Garrick, Providence, R. I.

Claim.—The rolls B C, provided with the elevations and depressions, of the form substantially as described, said rolls being so arranged that the elevations on one shall fit into the depressions on the other, for the purpose of slitting the sheets of metal into strips, as set forth.

104,443.—MACHINE FOR FEEDING STOCK TO EYELET-MACHINE. — Thomas Garrick, Providence, R. I.

Claim.—The roll B, provided with the recesses *n* and the teeth *o*, in combination with the roll C, provided with the teeth *a*, arranged to operate substantially as described.

104,444.—HAND-STAMP.—Jeremiah C. Gaston, Cincinnati, Ohio.

Claim.—1. The combination of the rod or stem D, passing through the handle A, in combination with the two heads of the stamp, substantially in the manner and for the purpose set forth.

2. A cam, E, or its equivalent, in combination with a head or heads of a stamp for holding a canceler, type, letters, or figures, substantially as set forth.

104,445. — CARD-CLOTHING. — Artemas W. Gates, New York, N. Y.

Claim.—1. The central fabric B of the nature described, faced with a layer of soft fiber, A, as indicated, and having a firm fabric, D, attached to the back by means of a thin layer of gum, substantially as specified, and for the purposes set forth.

2. The above-described compound fabric, set with wire, for the purpose of card-clothing.

104,446.—PREPARATION OF MINERAL BATH TO IMITATE MINERAL WATERS. — Otto Gavron, New York, N. Y.

Claim.—The saponified mineral bath herein described.

104,447. — LATCH FOR GATES.—William R. Goodrich, Whitestown, N. Y.

Claim.—1. A gate-fastening, formed of the latches D D, grooved as shown, and the outer and inner plates B C, having ribs b b^1 c c^1, respectively, thereon, each constructed and arranged with respect to the others, as shown and described.

2. Forming the plate C, when used with a single drop-latch D, with ribs c^2 upon both sides, and with a stop, c^3, substantially as herein shown and described, and for the purpose set forth.

104,448. — WEATHER-STRIP FOR DOORS.—Jerome M. Gray, Hamilton, N. Y.

Claim.—1. In combination with a door, the felt or cloth, or other material D, adjustable rod G, and springs H, arranged substantially as and for the purposes herein shown and described.

2. The rebated piece E, in combination with the felt D, rod G, and springs H, substantially as and for the purposes described.

104,449.—BOLT FOR DOORS AND SHUTTERS. George B. Green, Philadelphia, Pa.

Claim.—The combination of slotted bolt B, studs D D, and ornamental plates C C′, all constructed and brought together to form the whole or device shown and described, and for the purpose specified.

104,450. — RAIN-WATER CONDUCTOR AND FILTER.—James C. Hall, Battle Creek, Mich.

Claim.—1. The arrangement and combination of the two draw compartments B and C with the casings A and D, when said casings communicate with each other and with the cistern, and are provided with supply and waste-pipes F G, and when the compartments are fitted and provided to strain and filter the water that passes through, substantially in the manner and for the purpose specified.

2. In combination with the parts mentioned in the first clause of the claim, the lever J, carrying the valve L, and operated as described, when arranged as shown, with relation to the casing A, drawer B, valve-seat a, compartment D, induction and overflow pipes F G, all as and for the purpose set forth.

104,451. — MECHANICAL MOVEMENT.—William Hammill, Parma, Mich.

Claim.—The combination of the vibrating frame A, pendulum C, weighted arm E, springs and transmitting gears, when arranged substantially as specified.

104,452. — MILKING-STOOL. — George W. Haviland, Fort Dodge, Iowa.

Claim.—The stool described, consisting of the part A, holder B, and guard C, when combined as described, for the purpose set forth.

104,453. — INSTRUMENT FOR REMOVING TWINE AND WIRE FROM BOTTLES.—John T. Haviland, San Francisco, Cal.

Claim.—1. A wire-cutter, consisting of curved arms A, with handles B and blades D, when the parts are constructed and arranged as described, for the purpose set forth.

2. In combination with the above, the plate E, with serrated edged blade, as described, for the purpose set forth.

104,454.—MACHINE FOR BOARDING LEATHER.—Joseph Warson Hildreth, Boston, Mass.

Claim.—The combination, with the leather-supporting bed or tablet, of the reciprocating boarding-tool carriage, supported by and moving in or upon a curved guide or way, d, substantially as and for the purposes set forth.

104,455. — SIDE-SADDLE TREE. — William Hill, New York, N. Y.

Claim.—1. The seat C, the bars A A, and the horn-piece B, constructed, arranged, and combined substantially as and for the purposes described.

2. The wing D of the seat of a side-saddle tree, when terminating before it reaches the horn of the saddle, substantially as shown and described.

3. In combination with a side-saddle tree, the horn-piece B, when constructed with the straps g and h, by means of which the front ends of the bars A A are connected together and supported, substantially as described.

104,456. — SIDE-SADDLE. — William Hill, New York, N. Y.

Claim.—The combination of what is called the "seat-piece," "spring-piece," and "jockey" of a side-saddle, when said parts are constructed of a single piece of leather, substantially as shown and described.

104,457.—AUGER. — Richard H. Hopkins, Hinsdale, N. H.

Claim.—The auger, constructed as described, with double concave tapering and spiral cutting-blades, the boring-point c, and the cutting-edges b b'.

104,458.—MITER MACHINE.—James R. Howell, Buffalo, N. Y.

Claim.—1. The arrangement, as herein described and shown, of the bed A, planing-head E g, adjustable guides C C, lever-segment H H′, and return-spring J.

2. The arrangement, with the reciprocating-head E and adjustable guides C, of the rigid posts m m, in the manner and for the purpose hereinbefore set forth.

104,459.—PISTON PACKING.—John Hughes, Saxton, Pa.

Claim.— 1. In combination with the packing-spring F, the core C, with the rim D, and the block E, working thereon, arranged substantially as and for the purposes described.

2. The springs F, in combination with the block E, rim D, and bolt G, arranged and operating substantially as and for the purposes described.

104,460.—GRAIN-LIFTER FOR HARVESTER.—William M. Jackson, Woodland, Cal.

Claim.—1. The arms B′, transverse shaft C′, and links D′, in combination with vertical arm E^1 and graduating bar E^2, all adjusted together as set forth, to operate fingers F and shoes G, in the manner described.

2. The combination with stocks A′ and unyielding fingers F, of elastic arms B′, as and for the purpose specified.

104,461.—COOKING-STOVE. — Sherman S. Jewett and Francis H. Root, Buffalo, N. Y.

Claim.—The extension F of the boiler-flue, provided with a damper, G, at its rear, when constructed and arranged with the diving-flues C C and projecting upon-flue D′, in the manner and for the purpose hereinbefore set forth.

104,462.— CAR-COUPLING. — William John Johnson, New Orleans, La.

Claim.—The parts B B′, when the same are constructed as herein described in all their parts, and are arranged for conjoint operation, as specified, for the purpose set forth.

104,463.—METALLIC BRACKET.— Albert D. Judd, New Haven, Conn.

Claim.—The crotch-plate c, with the arms d, in combination with the lugs A upon the bracket, as and for the purpose specified.

104,464.—METALLIC BRACKET.—Albert D. Judd and Edward M. Judd, New Haven, Conn.

Claim.—1. The metallic bracket c, and back-plate a, connected by the hinges c d, socket b, and pintle c, in combination with the removable shelf, as set forth.

2. The hook-plates A, to be screwed to the wall or support, in combination with the back-plate a, cross-piece a', and shelf d, the ends of the plates h entering mortises in the shelf d, as and for the purposes specified.

104,465. — SPRING BOLT FOR WINDOWS.—Morton Judd, New Haven, Conn.

Claim.—The window-bolt c, made with the collars 3, 4, and 5, for the purposes specified, and the head 2 of said bolt sliding in the socket d, as projected by the spring e, as set forth.

104,466.—THERMOMETER.—John Kendall, New Lebanon, N. Y.

Claim.—1. As a new and improved article of manufacture, thermometers with the removable band E, substantially as and for the purposes described.

2. In combination with the scale A and band E, the flanges C C, substantially as shown and described.

104,467. — SAW-SET. — Moritz Theodore Klahre, Bloody Run, Pa.

Claim.—An improved saw-set, consisting of the frame or box A, dies or heads C D, whether straight or curved, springs E, adjustable plate F, adjusting-screw H, spring I, platform K, bars L, stops M, pivoted bars N, and stops O, constructed and arranged in relation to each other, substantially as herein shown and described, and for the purpose set forth.

104,468.—Suspended.

104,469.—ROTARY PUMP.—August Leuchtweiss, Cincinnati, Ohio.

Claim.—The paddle-wheel B, recessed wheel D, case A, and packing-block C, in combination with each other, to constitute a rotary pump, as set forth.

104,470. — BLEACHING DARK SOAP AND "FOOTS."—Oscar Loew, New York, N. Y., assignor to John M. Pendleton, same place.

Claim.—The process for bleaching of soda and potash soaps and "foots," by treating them with the chlorides or hypochlorites of any of the alkaline oxides, substantially as described.

104,471. — ARTIFICIAL FUEL. — Emile F. Loiseau and Charles F. Requin, Nashville, Tenn.

Claim.—The lump of artificial fuel, inclosed wholly or partly in a protecting covering, substantially as herein shown and described.

104,472. — ADJUSTABLE SCHOOL-DESK.—Charles H. Loomis, New Philadelphia, Ohio.

Claim.—1. The pedestal B, pieces D and E, adjusting-bar C, the top G, and screws F, in combination, and arranged substantially as and for the purposes herein shown and described.

2. In combination with the above, the recess K, clasp L, and drawer J, substantially as and for the purposes described.

104,473.—HEAD-REST.— Baxter Lyon and Charles M. Curtis, Springfield, Mass.

Claim.—1. In a head-rest, a clasp, c, having a central opening made therein, or perforated, and jointed, at a, to the frame A, in combination with the thumb-screw g, small clasp b, and spring wire e, all constructed as herein described.

2. In combination with a head-rest constructed as described, the friction-joint F, having a conical seat, i, and a corresponding conical bearing, i', fitting therein, the same being held firmly together by means of the thumb-screw g, operating in the threaded hole h, as herein described and for the purpose specified.

3. The bars n', pivoted to a frame, D′, having attached thereto the cloth D, or other suitable material, said bars being secured in a socket or block, m', having radial holes n, and made adjustable by means of the joint m and socket l, as herein described, for the purpose specified.

4. An improved head-rest, consisting of the clamp A, the jointed rod d, the block m', pivoted to the socket l, and the head-piece D, having the bars n' attached to the frame D′, all constructed substantially as described.

104,474.—SHIP'S PORT.— Charles E. Marshall, Chicago, Ill.

Claim.—A vessel's port, in two parts or sections, fitted to the port-hole, the one in the outer side of the hull and the other to the inner side, and constructed of layers of metallic plates with rubber or other suitable packing interposed, substantially as and for the purposes set forth.

104,475.—BREAST-STRAP FASTENING FOR HARNESS.—John H. Martin, Columbus, Ohio.

Claim.—A breast-strap hook for hames, constructed and applied to an eye, C, as herein set forth.

104,476.—MACHINE FOR BORING POSTS AND POINTING RAILS.—Rudolph Martin and Matthew Harner, Taneytown, Md.

Claim.—1. The combination of the laterally-sliding guide-frame C, roller E, and connecting-rods c, with the longitudinally-sliding beam D, provided with holders l, as set forth.

2. The combination of the timber A, adjustable foot-piece d, post f, sill k, and guide-frame C, in the manner and for the purpose set forth.

104,477.—PAPER-BOX MACHINE. — Charles A. Maxfield, New York, N. Y.

Claim.—1. The combination, with the "former" e, of the folders g', for folding the flaps upon the "former," substantially as described and specified.

2. The combination, with the former, provided with a die, of the embossing-roller k, for embossing the boxes as they are formed, substantially as described and specified.

3. The receivers r, arranged to receive successively the boxes from the former, and hold them until dry, or sufficiently set to retain their form, substantially as described and specified.

4. The combination, with the receivers r, of the bar t, or equivalent device, for automatically discharging the boxes from the receivers, substantially as described and specified.

104,478.—JOURNAL-BEARING FOR CALENDAR-ROLLS.—William McAdams, Newton, Mass.

Claim.—The peculiarly-shaped pasteboard g a d, bent and arranged as described, in combination with the rod or shaft, used either with or without the lid m, the whole being constructed as and for the purposes hereinbefore set forth.

104,479.—DEVICE FOR MOLDING AND CASTING PIPE.—John McClelland, Washington, D. C.

Claim.—1. The combination of the rollers H with the keys or feathers I and shaft B, substantially as described.

2. The combination of the friction-rollers H, keys or feathers I, shaft B, propeller-hub C with its

distributing-pins E, packing-blades M, gear-wheels F, chain L, flask A, and section D, substantially in the manner herein set forth.

3. The construction and arrangement of the plate-piece K, friction-rollers H, with their hangers secured to the gear-wheel F, substantially as described.

4. The arrangement of the flask A, shaft B, lower portion of the flask, D, gear-wheels F, shaft G, rollers H, plate K, chain L and columns J, substantially in the manner herein made known.

104,480.—HAY-GATHERER AND CARRIER.—Galen Meaders, Jeffersonville, Ind., assignor to himself and Rosel Weissinger, Louisville, Ky.

Claim.—The platform A, provided with wheels, and steering or guiding-bar D, and fastening-rope E, constructed, combined, arranged, and operating substantially as and for the purposes herein shown and described.

104,481.—LAMP.—Rufus Spaulding Merrill, Hyde Park, assignor to himself, W. B. Merrill, and Joshua Merrill, Boston, Mass.

Claim.—1. The combination, with the oil-reservoir, of a tubular socket fixed to the top of and opening into the same, so as to hold the shade-rest and allow air to enter the reservoir, as set forth.

2. Securing the shade-rest socket to the top of the oil-reservoir by means of a holding-plate or disk fitting the inner end of the socket and applied and fixed to the under side of the top of the reservoir, as and for the purposes set forth.

3. The combination, with the fountain, of a cast-metal socket, constructed to receive the end of the supply-pipe, and secured to the bottom of the fountain by means of a screw-nut and solder, substantially as shown and set forth.

4. The combination, with the fountain and cast-metal socket attached to the bottom of the same, of the cast-metal connection or supply-pipe, and the cast-metal socket-piece for holding the drip-cup and the various parts of the burner, the said cast-metal parts being united with one another by a screw-joint and solder, as shown and set forth.

5. The formation of the recess or depression in the bottom of the fountain for receiving the end of the socket and the screw-nut which holds the same, and for stiffening transversely the bottom of the fountain, as shown and set forth.

104,482. — HARVESTER. — Jesse C. Miles, Bloomington, Wis.

Claim.—The arrangement, with the beam A and the caster-wheel, of the hook D, arm E, hooked lever F, and catch-bar K, substantially as specified.

104,483. — HARVESTER-RAKE. — William Washington Miller, Zionsville, Ind.

Claim.—The arrangement, with the platform A, of plate W, rods E F, rake G H I, bands K F, spring V, shaft M, and lever Q, substantially as shown and described.

104,484.—DOUBLE-LEVER MASTER-WHEEL.—David E. Mitchell, Rural Dale, Ohio.

Claim.—A double-lever wheel, consisting of the tread-wheels C C′, secured together by the connecting bars or joists *i i*, and located upon the shaft B, having its bearings in journal-boxes fastened to the movable frame A and drum D, as constructed as to leave a space of sufficient depth between the inner sides of the said wheels C C′ as to retain its belt in position while in motion, in combination with the brake F, constructed as specified, and operated by the lever *m*, all arranged and operating substantially as described.

104,485.—SLEEPING-CAR.—George F. Morse, Portland, Me.

Claim.—The hammock *e e*, suspended to cross-bars, and free to swing laterally, with the seat *e f* placed longitudinally below, and capable of adjustment from seat to couch, all constructed and arranged as set forth.

104,486.—VENTILATING-WINDOW FOR RAILROAD CARS.—Michael C. Murphy, Boston, Mass.

Claim.—1. The ventilating-sashes C, provided with sloping bottoms and apertures thereat, to allow of the escape of dust and cinders.

2. The combination, with sashes C, having apertures between them at the bottom thereof, of the chamber F, provided with sloping lower surface, to discharge the dust and cinders.

3. The combination, with a series of ventilating-sashes, C, of a glass window, G, located as described, for regulating the current of air admitted.

104,487.—GRAIN-BINDER.—William B. Oglesby, Ridge Prairie, Ill.

Claim.—1. The combination of the jaws E F, twister P M, tucker W T X, plate D, cam-rod *a b*, and toothed racks Q Y, when arranged as shown and described.

2. The compresser-arms I, arranged to be operated by the jaws F, as shown and described.

3. The arrangement of the discharger *d*, with reference to the jaws E F and platform A, as and for the purpose specified.

104,488.—PAIL-EAR.—Joel A. Otis, Rutland, N. Y.

Claim. — The pail-ear *b*, constructed with the branches *c c*, as described.

104,489. — HARVESTER. — John G. Perry, Kingston, R. I.

Claim.—In a two-wheel mower or harvester, the combination of the main axle G, the stationary disks *w*, shaft *v*, pinions b^3, and gear-rings a^3, substantially as described and for the purposes set forth.

Also, the hubs *x*, constructed as described, in combination with the gear-rings, as and for the purposes set forth.

Also, in combination with the main wheels and gear-rings, the ratchets and pawls arranged substantially as and for the purposes set forth.

104,490. — HARVESTER. — John G. Perry, Kingston, R. I.

Claim.—In combination with the gear-ring *u*, rigidly fixed to the axle, the cutter-driving mechanism supported upon the bearing or hanger-plate, suspended from the axle A, substantially as shown and described.

Also, in combination with the elements of the preceding, the eccentric b^3 and lever c^3, for throwing the machine in and out of gear, substantially as set forth.

104,491.—EVAPORATING CANE-JUICE.—Simeon A. Pochè, Parish of St. James, La.

Claim.—The introduction of transverse tubes or pipes in cane-juice-evaporating kettles, in the manner and for the purpose herein described, whatever may be the shape or form of the kettles, when the same are inserted in and constitute a part of a steam-boiler, and the steam generated in the latter is the heating agent to produce the evaporation and reduction of the cane-juice to sugar.

104,492.—MACHINE FOR GRINDING ROLLERS.—J. Morton Poole, Wilmington, Delaware, assignor to himself, William T. Porter, and Thomas S. Poole, same place.

Claim.—The manner of reducing the surface of a cylindrical object by means of one or more grinding or reducing devices, moving parallel to a vertical plane passing through the axis of said object, but inclined to a plane passing horizontally through its axis, substantially as described.

104,493. — COMBINED STOVE-DOOR AND HEARTH.—John A. Price, Scranton, Pa.

Claim.—The combination of a hinged stove-door, *a*, and hearth *b*, substantially in the manner described and for the purpose set forth.

104,494.—CONCENTRATING THE JUICE OF TOMATOES. — Christopher T. Provost, New York, N. Y.

Claim.—1. The herein-described process of concentrating tomatoes, as set forth.

2. The concentrated tomato-juice, prepared substantially as herein specified.

104,495, antedated June 11, 1870.—CLOTHES-LINE REEL.—David D. Pugh, Brooklyn, N. Y.

Claim.—The arrangement of the handle *k*, in combination with box *d e*, reel *a*, and crank *c*, as constructed and shown, for the purpose described.

104,496.—QUARTZ-CRUSHER.—Jesse Quaintance, Bucyrus, Ohio.

Claim.—1. The tubes *e e* and hood *d*, arranged with relation to the crushers E E, shafts F, and arms H H, as and for the purpose specified.

2. The scraper J, constructed as shown, arranged loose on the shaft B, and connected with the fixed arms I of the same by means of the chains *b b*, as and for the purpose specified.

3. The weight-pan L *e*, crushers E E, shafts F H, scraper J, arms I, bed D *a*, all combined, constructed, and arranged to operate as shown and described.

104,497.—GRIDIRON FOR STOVE AND RANGE.—Josiah M. Read, Boston, Mass.

Claim.—The combination, with the two fingers D D, of the curved arm or bracket E, which, projecting beneath the stove-plate, prevents the opposite end of the gridiron from sinking, substantially as described.

104,498.—CULTIVATOR AND ROLLER COMBINED.—Linas G. Reed and Erastus E. Reed, Stark county, Ill.

Claim.—The arrangement of the tongue A, bars B, C, and H, inner supports *a a′ a′ a*, with one or more bearings *u*, frames *e e*, with bolt-holes, *f*, equalizing-bar *g*, oscillating bars *h h*, with adjustable draft-hooks *k k*, and slotted axles J J, with bolt-holes V, all substantially in the manner and for the purposes as set forth.

104,499.—POCKET OR "CHARM" LETTER-SCALE.—George S. Rice, New York, N. Y., assignor to Vulcanite Jewelry Company.

Claim.—A pocket or charm letter-scale, composed of a slotted casing, an index or pointer, and a heart-shaped letter-holding spring suspended from a spring within the casing, said parts being arranged for joint operation, substantially as shown and described.

104,500.—TURBINE WATER-WHEEL.—Benjamin F. Sampson, West Brookfield, Mass.

Claim.—The wheel B, as constructed with the two series of curved floats *b c*, the flat ring *d*, the two close heads *e f*, and the double tapering deflector C, arranged as described.

104,501.—STEAM-RADIATOR.—Sidney Sanders, Springfield, Mass.

Claim.—The radiator A, provided with apertures E E, partition F, and reverberating flue H, substantially as specified.

104,502.—BREECH-LOADING FIRE-ARM.—Edward L. Sargent, Watertown, N. Y.

Claim.—The combination of the cocking device with the rotating cam-piece by means of the sliding bar, when the latter is so connected with the cam-piece as to be directly operated in all its movements thereby, substantially as described.

104,503.—THRASHING-MACHINE.—William Schnebly, Hackensack, N. J.

Claim.—1. In the thrashing-machine herein described, the beaters 2 2 2 and 3 3 3, provided at their lower ends with a spring coil, in combination with the oscillating shafts *o s* and *o s′*, as herein shown and for the purposes set forth.

2. The combination of the arms *a a* with the oscillating shafts *o s o s′*, and crank-pin D, fly-wheel F W and rods *c c*, as herein described and for the purpose set forth.

3. The arrangement of the endless belts B B, provided with rake-heads *m m*, in combination with the spring coil beaters and shafts *o s o s′*, all constructed and operating as herein shown and described, for the purposes set forth.

104,504.—SPRING BED-BOTTOM.—David A. Scott, Cincinnati, Ohio, assignor to Allen C. Richards, same place.

Claim.—The reversible slats F, projecting between and beyond the arms D of the lifter-springs, and secured to the stirrup thereof by the lugs G, arranged and constructed as described and for the purposes set forth.

104,505.—TWINE-HOLDER.—James Spencer Smith, Middletown, Conn.

Claim.—1. The self-shutting twine-holder herein described, having its two parts, A and B, adapted to maintain their proper position by gravity, substantially as and for the purposes herein set forth.

2. In connection with the above, the recess A′ in the hemispherical shell A, and the projection B′ on the smaller hemispherical shell B, when the parts are hinged together in a line through their centers C D, and adapted to operate in the manner herein set forth.

104,506, antedated June 15, 1870.—MEAT-CUTTER.—John E. Smith, Buffalo, N. Y.

Claim.—The engine A, piston-rod B provided with the feather D, collar E, nut F, and rubber spring G, in combination with the parts K and K′ and cross-head C, the whole being constructed and arranged substantially as and for the purposes described.

104,507.—METHOD OF MAKING FILES.—Thomas S. Smith, Cincinnati, Ohio.

Claim.—The manner of making files from planed sheet-metal, substantially in the manner and for the purpose specified.

104,508.—SEED-STRIPPER.—Major Joseph W. Stivers, North Middletown, Ky.

Claim.—1. A connecting crank-bar, N, having the curved slot *n′*, combined with a fixed guide-pin, R, to carry the scraper and cleaner over the seed in its forward movement, as set forth.

2. The combination of concave strippers F, scraper P, connecting-bars N, and spring plate S T, by whose co-operating instrumentality the seed is stripped and delivered to the receiving-box.

3. The vibrating guard-bar U, pivoted as described, bent at right angles to its length on each end, and brought in front of the teeth, to prevent them from stripping weeds and other grasses of their seeds.

4. The combination of rack and pinion V W, catch Y, guard U, fingers F, and body E, all constructed and relatively arranged as and for the purpose specified.

104,509.—BOLT AND RIVET-TRIMMER.—Mathias Theisen, Waukon, Iowa.

Claim.—In combination with the jaw and handle A B, and the lever-handle C, the pivoted lever D, pivoted links F G, fixed cutter *m*, and sliding chisel H, substantially as described, for the purpose specified.

104,510.—STEAM HEATER.—Samuel D. Tillman, Jersey City, N. J.

Claim.—1. The pipes B extending up and down, and the bent or inclined plates D, when so constructed and arranged that the plates completely encircle the pipes and deflect the rising current of heated air, which tends to flow along the pipe, and cause it to make way constantly for fresh, cold air to be heated, and in turn to be immediately removed, as herein set forth.

2. The within-described heater and condenser, composed of a collection of such pipes and inclined plates, arranged in the form of a hollow cylinder or inclosure, with means for supplying steam or other heating fluid thereto, as herein set forth.

104,511.—Steam-Generator.—Samuel D. Tillman, Jersey City, N. J.

Claim.—The within described steam-boiler, composed of the pipes B, cross-plates, D, and boiler-shell G H M, combined and arranged to serve relatively to each other and to the fluids circulating therein, substantially as herein set forth.

104,512.—Propelling Vessels.—Samuel D. Tillman, Jersey City, N. J.

Claim.—The series of propellers D, arranged, as represented, relatively to each other and to the hull of the vessel, the propellers filling the entire space, and acting on the water across the whole breadth of the vessel, in combination with any suitable steering means, and provision for allowing the access of the water to the propellers in the entire series, substantially as specified.

Also, the series of balanced rudders B B, when operated simultaneously, as shown, and arranged each in the rear of a separate propeller, D D, and stern-post A^2 A^3, as and for the purpose herein set forth and described.

104,513.—Metallic Pavement.—Samuel D. Tillman, Jersey City, N. J.

Claim.—1. The blocks A with extended wings A^3, and corresponding recesses matched and interlocked, as represented, so as to transfer a load on the edges to points near the center, and thus prevent tilting, as set forth.

2. The alternating arrangement of the elevations and depressions on the upper surface, so that, while there are continuously extended depressions lengthwise of the road which are adapted to partially or entirely receive the rounded tire of a wheel, the spaces between are divided into series of separate elevations, *a*, to afford a hold for the feet of the horses, but, by their alternating arrangement, support the wheel continuously, as herein set forth.

3. The wood blocks B, partially inclosed in the cellular iron part A A^1, and serving to support the latter with a slight elasticity, in combination, as shown, with the smooth and hard bed or foundation C, all substantially as and for the purposes herein set forth.

104,514.—Composition Roll for Clothes-Wringers.—William Henry Towers, Boston, Mass.

Claim.—A roll for clothes-wringers, composed of a suitable shaft, and an outer jacket or body, of a textile or fibrous material, or felt, such body being saturated or treated with an impervious compound, and the whole being produced as and for the purpose explained.

104,515.—Seeder and Cultivator Combined.—James T. Trowbridge, Akron, Ohio.

Claim.—1. The combination of the lever X, ratchet-bar Y, rod W, arm V, and standard U, with the cross-bar T, seed-box C, axle B, cross-bar E, and pivoted plow-beams O, substantially as herein shown and described, and for the purpose set forth.

2. The loops Z, in combination with the plow-beams O, cross-bar T, standard U, arm V, rod W, and lever X, substantially as herein shown and described, and for the purpose set forth.

3. The combination of the recessed and slotted blocks or plates S and cross-pins *r* with the slotted rear parts of the plow-beams O, and with the extended upper ends of the cultivator-teeth or plows R, substantially as herein shown and described, and for the purpose set forth.

104,516.—Shield for Gas-Burners.—Hiram J. Wattles, Rockford, Ill.

Claim.—1. A shield for gas-burners, when constructed of non-combustible material which will not materially interfere with the diffusion of the light, and so arranged as to completely inclose the burner on every side, as described.

2. The specific device described, consisting of the shield A, standards *a a*, and clamp C, when constructed as described.

104,517.—Child's Chair.—Abraham Henry Wehser, San Francisco, Cal.

Claim.—The chair A, with depository D, door E, pins H, when combined with the rockers J, provided with catches and springs I, as described, for the purpose set forth.

104,518.—Potato-Digger.—Daniel B. Westfall, Lyons, N. Y.

Claim.—The hereinbefore described potato-digger, consisting of the frame, formed of the side pieces A and A′, and the diagonal braces B and B′, the pivoted arms D, the plate E, the spring catch F, the handles G, the share H, provided with the tines I, the traction-wheels K, the gears L M and N, and the shaft O, provided with the radial rods P, all constructed and arranged to operate substantially as and for the purpose specified.

Also, the means employed for adjusting the height of the frame and share, consisting of the pivoted frame D, the perforated plate E, and the spring catch F, substantially as and for the purpose set forth.

104,519.—Mortar-Mixer.—Seth Wetmore, Wellsborough, Pa.

Claim.—1. The improved mixing-bed A, having the circular rim B, made in sections, and formed of upright staves, surrounded by bands *b*, as shown and described.

2. The bands *b*, having projections *c*, to fit into corresponding apertures in the bed, combined with straps *d*, to retain the staves firmly in position.

3. The combination of the toothed sweep E with the mixing-sweep D, each constructed, relatively arranged, and operated as set forth.

4. A series of rollers, G, and spring chambers J J, having an interval between them, combined with oblique scrapers H and inclined shovels I, all constructed and relatively arranged as and for the purpose specified.

104,520.—Glue or Cement.—Nelson S. Whipple, Detroit, Mich.

Claim.—An improved glue prepared of the ingredients, and in the manner substantially as herein set forth and described.

104,521.—Bee-Hive.—Nathaniel F. White, Mount Pleasant, Iowa.

Claim.—In combination with the bee-palace A, the hives C, honey-boxes I, entrance-tubes D, with the perforated shutters D′, and the air-valves E, with the removable cleats and frames F and G, the whole arranged substantially as and for the purposes herein shown and described.

104,522.—Steam-Generator.—S. Lloyd Wiegand, Philadelphia, Pa.

Claim.—1. Steam-generating tubes, provided with helical guides of uniform or varying pitch, when formed with a central channel, E.

2. The combination of the tubes suspended in the furnace, with the tanks formed into intercommunicating compartments, so as to produce a circulation of currents in the tanks.

3. The flues formed between the tanks, distributing the effect of the draught over the entire grate, in combination with the suspended tubes supplied with water through internal guides from the upper vessel, and placed in the furnace, as described.

4. The feed-inlet in the compartment supplying water to the guides, located near to the steam-outlet and remote from the rising current from the lower compartment.

5. In boilers formed of tubes suspended from tanks formed in compartments intercommunicating with each other, so locating the steam-outlet as to draw the steam from the upper chamber, at a point remote from the rising current or currents discharged from the lower compartment into the upper compartment.

104,523.—Refrigerating-Attachment for Wells.—John L. Wiley, Vermont, Ill.

Claim.—1. The arrangement, with the crib and cord, of the cover L, to operate as specified.

2. The ways B, crib H I, and chamber K, cover L, cord F, balance-weight G, crank-shaft C, and guide-pulleys E E, all combined and arranged as and for the purpose specified.

104,524.—Preparing Gold for Dentists' Use.—Richard S. Williams, New York, N. Y.

Claim.—1. The method of preparing dentists' gold for plugging, by taking gold sheets formed by rolling or beating, and removing the external surface thereof in a solvent, whereby a pure crystal surface will be formed, and all difficulty of producing cohesion between sections of the same entirely overcome.

2. As an article of manufacture, gold-foil or sheets for dentists' use, having the surface, formed by rolling or beating, entirely removed by a solvent, in the manner described, and for the purpose specified.

104,525.—Lamp for Burning Candles.—Thomas Scott Williams and Freeman Augustus Taber, Boston, Mass.

Claim.—In combination with the circumscribing wall *f*, before mentioned, the sunken annular trough *g*, for the purposes stated.

104,526.—Mercurial-Expansion Engine.—Charles G. Wilson, Brooklyn, N. Y.

Claim.—1. Imparting motion to machinery by means of the expansion and contraction of mercury, or equivalent heat-conducting liquid or compound, substantially as herein shown and described, and for the purpose set forth.

2. The combination of the crank-shaft A *a′*, pistons B, tubes C, rubber bags I, hollow cross-heads F, coils G, and trough H, with each other, substantially as herein shown and described, and for the purpose set forth.

104,527.—Apparatus for Bending and Upsetting Tire.—John T. Woodward, Bowling Green, Ky.

Claim.—1. The combination of the vertically-adjustable roller, with the two side rollers, the slides B, and right-and-left screw E, arranged and operating as a tire-bending machine, substantially as described.

2. The combination of the right and left-hand screw E, slides B, upright A A, serrated jaws C C, and screws with crank extensions for clamping the tire, arranged and operating as tire-upsetting machine, substantially as described.

3. The combination of the cog-wheels K K K, slides L, and gauge M, substantially as shown and described.

104,528.—Paddle-Wheel.—Lemuel W. Wright, Brooklyn, N. Y.

Claim.—1. A paddle-wheel made of ranges of buckets, arranged as alternate right and left-hand screw-thread sections, and positioned in the manner and for the purposes set forth.

2. A paddle-wheel in which the buckets are arranged as aforesaid, and the outer edges of the buckets project, in the manner and for the purposes set forth.

104,529.—Horse Hay-Fork.—John S. Yinger, Manchester, Pa.

Claim.—1. The arrangement, with the plates C and the upper ends of the shanks, of the tines A and B, of the hooked lever G, trip-lever K, connecting-rod I, bracket H, and eye-plate J, as shown and described.

2. An improved horse hay-fork, formed by the combination of the tines A B, plates C, concave roller D, ring F, hooked lever G *g′*, bracket H, connecting-rods or bars I, eye-plate J, trip-lever K, and pulleys M N with each other, said parts being constructed and operating substantially as herein shown and described, and for the purpose set forth.

104,530.—Fare-Box for Omnibusses, &c.—William H. Young, Chicago, Ill.

Claim.—A money-box for omnibusses and other similar vehicles, consisting of an elongated box, B, which is provided with a flange, C, for fastening to the seat A, with an incased rod, F, for operating the valve T, with a glass, E, at its top, and glasses I in its sides, for the convenience of seeing money put in either of the openings D H, as and for the purpose set forth.

104,531.—Gas Heater.—Amos Adams, Sturgis, Mich.

Claim.—The combination of the stove A, legs C C, pipes B D, burner E, supports G G, and perforated plates or grates H I, all substantially as and for the purposes herein set forth.

104,532.—Mode of Uniting Edges of Knitted Goods.—Satterlee Arnold, Claverack, N. Y.

Claim.—1. The combination of the cut edges of knit cloth, with substantially such an overseaming machine stitch as is hereinbefore described.

2. As new articles of manufacture, garments made of knit cloth, having seams formed by sewing the cut edges of the fabric together by means of substantially such an overseaming machine stitch as is hereinbefore described.

104,533.—Steam-Generator.—William Arthur Newport, Ky.

Claim.—1. The arrangement of drum or drums G and pipes H I J, when arranged below the boiler and inside of the flue, substantially as and for the purpose set forth.

2. In the described combination with the elements of the preceding claim, the pipes L, conducting steam from the drums G to the steam-space of the boiler.

104,534.—Channel for Boots and Shoes.—Robert Ashe, Boston, Mass.

Claim.—The groove *a a a*, when constructed and arranged as herein described and for the purposes set forth.

104,535.—Apparatus for Indicating the Position of Elevators.—William Stuart Auchincloss, New York, N. Y.

Claim.—The indicator-rod or cord C, carrying or operating one or more indices *d*, in combination with the car or platform B of an elevator, substantially in the manner and for the purpose herein shown and described.

104,536.—Grain-Measuring Attachment to Thrashing-Machines.—Benjamin Baker, Addison, Mich.

Claim.—1. The hopper C, reciprocated on the cleats *a* by the rock-shaft E, lever E′, and rocker-arms *e*, connected to its slides C′, as and for the purpose set forth.

2. The grain-drawers D D′, having their fronts pivoted as described, and provided with bale *f*, strip *d*, and bolt *e*, as and for the purpose set forth.

3. The construction and arrangement of the hopper C, drawers D D′, rock-shaft E, lever E′, tappet A, actuating lever F′, and counter F, with re-

lation to each other and a thrashing-machine, in the manner and for the purposes specified.

104,537.—GRINDING-MILL. — John Gulick Baker, Philadelphia, Pa.

Claim.—1. A grinding-mill, supported on a column or frame, in the base of which is a horizontal fly or balance-wheel on a shaft secured to the bur or grinder, all substantially as set forth.

2. The column A, having a flat face, *e*, at the top, in combination with a bur, F, secured to the column above the face *e*, as described.

3. The combination of the vertical shaft H, recessed face-plate *e*, and bur, with its annular projection *e'* extending downward into the said recess.

4. The combination of the said face-plate *e*, scraper E, revolving in contact with the face-plate, and spout *k*.

5. The combination of the frame or column A of a grinding-mill, and a plate or shelf, K, arranged, in respect to the discharging-spout K', substantially as described.

6. The lever J, for supporting the shaft J, dished, as described, in combination with devices, substantially as set forth, for elevating and depressing the said lever.

104,538.—SPRING BED-BOTTOM. — William W. Bartlett, Portland, Me.

Claim.—The arrangement and combination of the elastic-eyed staples or band-supporters F F, constructed as described, with the cross-bands D D, the conico-helical springs A, their support-bars B, and slats E, the whole being substantially as described.

104,539. — DRAWING-KNIFE. — Charles C. Barton, Rochester, N. Y.

Claim.—The blade A, made with the plane extended portions *b b*, in combination with the handles and hinged bearings C C, when the latter have the shoulders or stops *g g* cast upon them, substantially as and for the purposes set forth.

104,540.—EDGE-IRON FOR SHOEMAKERS.—Emanuel D. Beales, Gallipolis, Ohio, assignor to himself and John Dages, same place.

Claim.—An adjustable rotary edge-iron, consisting of roller A, provided with flanges *a* and ribs or partitions *b*, arranged substantially as and for the purpose set forth.

104,541.—VISE.— Jonas D. Beck, Liberty, Pa.

Claim.—1. As an improvement upon the laterally-adjustable jaw of my vise patented October 26, 1869, the automatic laterally-adjustable jaw M, provided with the circular shoulder *m*, located near the pivot of said jaw, and secured to its pivot-bolt by the safety-key *e*, substantially as shown and described.

2. The automatic vertically-adjustable clamp K, having pin *a'*, in combination with the jaw G, having rubber clamp *c'*, and the guard-plate I, when constructed and arranged to operate substantially as and for the purposes herein set forth.

3. The combination of the extension bar D, guard I, nut *n*, with its safety-pins *b b*, worm H, bed-plate B, and keys *g* and *b'' b''*, when constructed and arranged to operate substantially as specified.

4. In combination with a bench-vise, the clamping-plate B, having journal *a*, clamping-bar C, bolt *c* connecting the two, and operating cam E, when constructed and arranged to operate as herein described and shown.

5. The adjustable turning-block P, having a toothed cavity and internal pin *r'*, in combination with the worm H, provided with cogged flanch A, channel *s*, and notched flanch at its end, when constructed and arranged to operate as and for the purposes herein substantially shown and described.

6. The adjustable prop R, having foot Y, with roller *t'*, rotating on an elastic journal, *r'*, and block F, provided with cam-shaft *r'*, when constructed and arranged to operate substantially as specified.

7. The improved vise herein described, arranged to hold the work over or at the side of the bench, and pivoted thereto in such a manner as to take any angular position with regard to the edge of the bench, substantially as specified.

104,542.—BILLIARD-CUSHION.—John Berlien, Chicago, Ill.

Claim.—The combination of the steel spring D and the rubber cushion E, when constructed and arranged substantially as set forth.

104,543.—CAR-COUPLING.— Abraham Beucus and Tennes Beucus, Waupun, Wis.

Claim.—1. The combination of the vertical rod *f*, provided with a suitable locking device, and the rotating coupling-rod D, when said parts are connected by the arms *c* and *e*, and link *d*, all arranged as herein described.

2. The rod *f*, provided with the pin *j*, in combination with the notched plate *h*, for locking the coupling in position, as set forth.

3. The supplemental head H, constructed as herein described, so as to be attached to or removed from the end of the coupling-bolt D, substantially as and for the purpose set forth.

4. In combination with a chambered draw-head, provided with fixed bolt *p* and slot *s*, the inner sliding head L, having a shouldered pin, *k*, attached, constructed substantially as herein described, and for the purpose set forth.

104,544.— CANE-MILL. — Leopold Biddle, Knoxville, Iowa.

Claim.—The improved cane-mill above described, consisting of the flanged collars E H, rods I I, with guides O, in combination with the rollers G and K K, when said parts are constructed, arranged, and operated as herein described, and for the purposes set forth.

104,545. — HORSE HAY-RAKE. — Lewis S. Bortree, Grand Rapids, Mich.

Claim.—1. The combination of the slotted rake-head E and movable rake-teeth I, with the cross-shaft *a*, with studs *m* securing the coil-springs *n*, and curved flat springs *k* whose ends bear upon the teeth I, all substantially as set forth.

2. The combination of the slotted rake-head E, metal-bound teeth I, elbows *f*, set-screws *g*, shaft *a*, with springs *n* and *k* and levers H G, with the frame A, all as set forth.

104,546.— LIFE-PRESERVER. — Thomas B. Boyd, St. Louis, Mo.

Claim.—The combination of the parts A, C, and B, formed, arranged, and fastened substantially as and for the purpose set forth.

104,547.—DETACHING-HOOK.—John Bozorth, Camden, N. J.

Claim.—1. The latch *d*, operating by gravity, in combination with the hook A, so that the hook will detach itself from the draw-chain on being relieved from strain, in the manner herein described.

2. The combination of the hook A, latch *d*, and casting B, either with or without the locking-link P, operating substantially as herein described.

104,548.—LOG-LOADER AND PILER.—James G. Brady, Forest Hill, Mich.

Claim.—The combination of the sled A, standards B, beam C, shaft D, geared drum E, hoist-rope L, geared winch F, ratchet *a*, pawl *b*, derrick-beam F', derrick G, sleeve H, blocks I I', grapnels K, and rope J, arranged and operating as and for the purpose set forth.

104,549.—SOAP.—Leonard Brockett, West Haven, assignor to himself and David I. Stillson, Ansonia, Conn.

Claim.—The soap, composed of the ingredients, in the proportions, and in the manner substantially as herein set forth.

104,550.—BOILER AND WASHER.—Edwin C. Brooks, Norwich, N. Y.

Claim.—The hereinbefore described washing device, consisting of the boiler A, B, C, and D, containing the cylinder, composed of the plates E and F, connected together by means of the bars G and G', and pivoted to or upon said boiler by means of the journals H and L, the bearing I, and the disks K and M, substantially as and for the purpose specified.

Also, the disks K and M, provided with the projections *k* and *m*, respectively, and secured to or upon the boiler and cylinder by means of the bolt L, the nut N, and the spiral spring *n*, substantially as shown and for the purpose specified.

104,551.—COMBINED WOOD AND CONCRETE PAVEMENT.—J. Warren Brown, Washington, D. C.

Claim.—1. The composition for the concrete foundation, compounded substantially as set forth.

2. The treating of the wood, to prevent its decay, by using the composition specified therefor, substantially as enumerated.

104,552.—CLOTHES-DRIER. — William H. Buell, Union City, Mich.

Claim.—The arrangement and combination with each other, and with the grooved and cleated board A, of the clothes-bars *a*, and the folding bracket-rods B, provided with staples *s*, or equivalent slots, all constructed, arranged, supported, and operated substantially as and for the purpose set forth.

104,553.—METAL ROOFING.—Thomas Carter, Niles, Ohio.

Claim.—The tongue B, in combination with the sheet A, in the manner substantially as described, and for the purpose set forth.

104,554.—PRINTING-INK.—George W. Casilear, Washington, D. C.

Claim.—The combination of "patent drier" with glycerine and boiled molasses, or their equivalents, to produce a vehicle for making soluble or fugitive printing-ink, substantially as set forth and described.

104,555.—GATE.—John D. Chambers, Williamsport, Ind.

Claim.—The combination of the slotted uprights A A, edgewise-placed rails B B, held in place by the oblique braces and the top and bottom square rails C C, with the L-shaped hooks D D, and crosswise rivets *a*, all as set forth.

104,556.—GATE. — John David Chambers, Williamsport, Ind.

Claim.—The arrangement of the gate A with angular latch C D, cords *a a*, T-shaped lever E, cord or wire *b*, levers H H pivoted to the beveled tops of the posts I I, and the top cord or wire *d*, all as set forth.

104,557.—DRAFT AND HOLD-BACK ATTACHMENT.—William H. Chamberlin, Medina, N. Y.

Claim.—1. The draft and hold-back attachment extending across the thills, as herein described, constructed either or both of flexible straps of leather, or equivalent material, substantially as set forth.

2. The combination, with the thills A A, of the straps B C, arranged as described, and operating in the manner and for the purposes specified.

3. The strap B, yoke D, and swing-arms E E, arranged to form the draft attachment, and operating in connection with the adjusting-holes *c c c*, in the manner and for the purpose specified.

104,558, antedated June 13, 1870.—LAMP-SHADE SUPPORTER.—Ernst Eustach Conrad, Philadelphia, Pa., assignor to Henry Coulter and Barton H. Jones, same place.

Claim.—1. A shade-holder, having an arm or arms for supporting a shade, one or more of the said arms being composed of two wires, forming continuations of or attached to a central hoop, and provided with a sliding ferrule, all substantially as described.

2. A shade-holder, made of wire, bent as described, and as illustrated in figs. 1, 2, and 3, of the drawing.

3. A shade-holder, made of two wires, bent, adapted, and secured to each other, as shown by fig. 4.

4. The shade-holder, composed of the wire ring D, its projections *b*, the arm B, and central hoop A, as described, and as illustrated by fig. 5.

104,559.—FRUIT-DRIER.—Newton C. Cooley, Wyoming, Del.

Claim.—The combination of the case A, hot-air flues *a b*, partitions *c*, valves *d*, placed both above and below each partition, ledges *e*, and sliding screens *h*, all constructed and arranged to operate as described.

504,560.—SOLE-EDGE-FINISHING MACHINE FOR BOOTS AND SHOES.—Louis Coté, St. Hyacinth, Province of Quebec, Canada.

Claim.—The last-holding jack, made up of the plate *a*, mounted so as to turn on or with a center-pin, *h*, and so as to slide thereon, and provided with the last-pin *b*, and toe-rest *c*, arranged so as to be adjustable relatively to each other.

Also, the combination, with a rotating jack, of a plate, shaped to conform to the various curvatures of a sole, and arranged to rotate with the jack and to be forced toward and withdrawn from the jack, and adapted for use as a guide to tools for removing superfluous leather from the sole-edge, substantially as described.

Also, the combination, with a sole-plate arranged as described, of a heel tread-plate, substantially as and for the purpose specified.

Also, the means for causing the last-holding jack and the clamping-guide to approach toward and to recede from each other, consisting of the combination of pivoted arms *f f' g g'*, radius-bars *o o*, spring *n*, and treadle, arranged substantially as described.

Also, the trunnions *e* and *i*, or either of them, pivoted to holders and adjustably attached thereunto, so that they can be arranged to fit lasts of varying height from the balls of the sole and heel to the neck of the last.

104,561. — THREAD-CUTTER FOR SEWING-MACHINE.—John Crowe, Guelph, Canada.

Claim.—The knife B, constructed and arranged as set forth, in the concavity C of a sewing-machine plate, for the purpose specified.

104,562.—ASPHALTUM OR CONCRETE PAVEMENT.—Austin G. Day, Seymour, Conn.

Claim.—1. The above-described hard compound for pavement and other purposes, consisting of hydrocarbons, combined with metallic ores or oxides and sulphur, prepared substantially in the manner set forth.

2. The material for pavement and other purposes, consisting of hydrocarbons, in combination with metallic ores or oxides and with sulphur and acid, either with or without oils, substantially as described.

3. The material for pavement and other purposes, consisting of the above-described hard compound, composed and prepared as stated, and either with or without acid or oils, in combination with stone, sand, or other silicious substances, substantially as set forth.

104,563.—STREET AND STATION-INDICATOR FOR RAILROAD CARS.—Edward L. Dean, Newburg, Ohio.

Claim.—The lever *b*, attached directly to the car-axle, and combined with the index-operating mechanism, substantially as and for the purpose described.

104,564.—BUCKLE.—Thomas Duncan, Brookville, Md.

Claim.—1. The buckle, consisting of the plate, the loop, and the endwise-moving turning-stud, all these parts being constructed, as set forth, for joint operation.

2. The construction, as set forth, of the endwise-moving turning-stud, with a locking-stop on its shank fitting a corresponding recess on the plate.

104,565.—TATTING-SHUTTLE.—Beneville L. Detherolf, Tamaqua, Pa.

Claim.—1. The head C, provided with the hard-metal bushing E, and rubber *x*, in the aperture on its inner end, substantially as and for the purposes set forth.

2. The within-described tatting-shuttle, composed of the body A, with point D, head C, with bushing E, and rubber *x*, screwed to the body for securing the bobbin, all substantially as set forth.

104,566, antedated June 17, 1870.—PASSENGER-REGISTER FOR HORSE-CARS.—Eugene L. Fitch, West Eau Clair, Wis., assignor to himself and Carlos Clough, same place.

Claim.—1. The step E, constructed as described, in two sections, hinged together, one of said sections being hinged to the edge of the car-platform, and provided with a lever, *d*, so that both sections may be raised or lowered at will, substantially as herein set forth.

2. The levers *d d*, wires *e e*, and pulleys *f f*, upon the brake-iron, all arranged as described, to enable the driver to control the position of the hinged steps at the opposite end of the car, substantially as herein set forth.

3. The pivoted pawls *g g*, spring *h*, wires *m m*, and T-shaped lever *n*, all arranged as described, to operate the steps on either side of the car, substantially as set forth.

4. The combination of the hinged steps E E, the devices above mentioned for operating the same, the slides *p p*, levers *o o*, wires *s s*, and a registering apparatus within the car, constructed substantially as described and for the purposes set forth.

104,567.—HOISTING-APPARATUS.—Oliver H. Flook, Middletown, Md.

Claim.—1. The herein-described apparatus for hoisting and suspending, substantially as shown, for the purposes set forth.

2. The combination of the armed standard B, with the swivel D and lever E pivoted at right angles to the swivel, substantially as and for the purposes described.

3. The combination of movable platform A, armed standard B, swivel D, and lever E, when arranged to operate substantially as herein described.

104,568.—STOP-VALVE.—James Flower, Detroit, Mich.

Claim.—1. The cage G to receive the valves A and screw C, and provided with recesses to hold the equalising-bars *g*, when arranged and operating substantially as herein set forth.

2. The valves A, when inclosed in the cage G, and operated by the screw C and equalising-bars *g*, as herein specified.

3. The construction of a stop-valve wherein the case A, cap B, screw C, ring D, nut E, seats F, cage G, water-ways *a*, valves A, equalising-bars *g*, and conical seat *m*, are constructed and arranged substantially as and for the purpose herein described.

104,569.—WAGON-STEP.—Morton C. Floyd, Bloomfield, Iowa.

Claim.—The combination of the bars A A with hooks G G, steps B B^1 B^2, braces C C, bar D, and pin E, all constructed and arranged to operate substantially as and for the purposes herein set forth.

104,570. — ANIMAL-TRAP. — Francis Fox, Meadville, Pa.

Claim.—The combination of the cylinder A, ball C C, catch D, and wires G and H, when constructed and arranged to operate as herein described, for the purposes specified.

104,571.—GRAIN-SEPARATOR.—Abram Gaar, Richmond, Ind.

Claim.—The combination and arrangement, in a grain-separator, constructed substantially as described, of the removable sections C and hanging posts D and E, as and for the purpose specified.

104,572.—PADLOCK.—Edward L. Gaylord, Terryville, Conn.

Claim.—1. The combination of the flat spring *m*, coiled around the pin *n*, with the shackle provided with the recess *l* and notch *o*, and with the tumblers *d*, in the manner and for the purpose specified.

2. The combination of the tumblers *d e* with the springs *h i i*, in the manner and for the objects specified.

104,573.—APPARATUS FOR UTILIZING THE EXHAUST STEAM OF STEAM-ENGINES.—Henry Gerner, New York, N. Y.

Claim.—The arrangement of a receiver, into which the exhaust steam from a steam-engine is driven by the action of a jet of live steam and water taken from a steam-generator, and from which receiver steam is taken to drive the engine, while the water accumulating in the bottom part thereof is pumped back into the steam-generator, all substantially in the manner and for the purpose herein shown and described.

104,574.—FRUIT-JAR.—Thomas P. Gibbons, Philadelphia, Pa.

Claim.—1. The collar *c*, provided with the flange *d*, in combination with the flange *b* on the head of the jar, substantially in the manner and for the purpose described.

2. The collar *c*, provided with the slots *e*, in combination with the bar *f*, substantially in the manner and for the object specified.

3. The cover A, provided with the diametrical groove *i* and the ears *k*, substantially in the manner and to the end set forth.

104,575, antedated June 11, 1870.—BEER-FUNNEL.—William Golden, Flint, Mich.

Claim.—The funnel A, provided with extension-pipe or nozzle B, and with outlet or drip-pipe C and apron D, and operating substantially as herein described.

104,576.—SUCKER-ROD JOINT.—Adam Good, Jr., Titusville, Pa.

Claim.—1. In combination with the clamping-jaws C, for securing the connecting rod B to its hollow joint-pin A, an expansible locking-tube, E, inserted within the end of said connecting-rod, in the manner and for the purpose substantially as hereinbefore described.

2. An expansible locking-tube, E, in combination with the hollow metallic joint-pin A and its connecting-rod B, constructed substantially as hereinbefore described.

3. In combination with an expansible locking-tube, E, for the joint-pins of sucker-rods, an expanding screw-core, F, constructed and arranged substantially as hereinbefore described.

4. The locking-tube E of the connecting-rod of the joint-pin, split and made sectional, and provided with griping-ribs *g*, in combination with a conical expanding-core, F, as herein shown and described.

5. The expansible locking-tube E, constructed with an annular and a square shoulder, *c h*, in combination with the interior shoulder *c* of the hollow pin, having a square opening, *j*, for the purpose of both locking the tube when driven into its rod, and forming a stop thereto when so driven, in the manner and for the purpose substantially as hereinbefore described.

6. The combination of the clamping-jaws C, the hollow metallic pin A, the connecting-rod B, the expansible locking-tube E, and the expanding screw-core F, the whole constructed, arranged, and operating in the manner and for the purpose substantially as hereinbefore described.

104,577.—COMBINED RULE, LEVEL, CLINOMETER, &c.—Ebenezer A. Goodes, Philadelphia, Pa., assignor to "Philadelphia Patent and Novelty Company," same place.

Claim.—A rule-joint, which allows the arms to play around the circle, the outer portion of the joint having a graduated scale, and the interior a spirit-bulb upon it, substantially as herein shown and described.

104,578. — MACHINE FOR ROUNDING AND DRESSING IRREGULAR AND REGULAR FORMS.—Henry A. Gore, Goshen, Ind.

Claim.—1. The arrangement, upon a table, A, of the vertical mandrels D F, with their saws C E and gauges G J, the several parts constructed and operating as and for the purpose specified.

2. The combination of the irregularly-shaped oblique saws herein described, with the adjustable gauge G, substantially as and for the purpose specified.

3. The gauge G, constructed with a tongue, *l*, in combination with a pattern constructed substantially as before described.

104,579.—WATER-WHEEL.—William Greenwell, Ripley, Ill.

Claim.—The within-described water-wheel bucket, its upper surface being straight from its upper or outer end to the point where it is curved downward, substantially as and for the purpose set forth.

104,580.—CAR-TRUCK.—George H. Griggs, Worcester, Mass.

Claim.—1. In railroad car-trucks, the within-described arrangement of springs E′ E′ on one or both sides of the swing-beam B, whereby a constant and strong friction is maintained, to retard, without preventing the swinging motion of the beam, relatively to the truck, and thereby rapidly arrest the lateral swinging of the car, as herein specified.

2. The within-described construction of the springs E′, holding-plate G G^1, and shoe H H^1, as and for the purposes herein set forth.

3. The single bolt *g′*, arranged as represented relatively to the central bosses G^2, of two holding-plates and two springs on the forward and rear faces of the swing-beam B, as and for the purposes set forth.

104,581.—HEATING-STOVE.—John Grosius Cincinnati, Ohio.

Claim.—1. The combination of the annular flue K, the orifice L, communicating with said annular flue at or near the front of the stove, the discharge-flue J, at back, and the series of oblique pipes M M, all as shown and described.

2. The combination and arrangement of the annular flue K, front orifice L, rear flue J, open neck E, removable central pan F, and register H, all substantially as represented, for the purposes set forth.

3. The combination of the perforated foot-rest N, register O P, stove C, and upper register H, when constructed and arranged as herein specified.

104,582.—MACHINE FOR CUTTING BEVELS ON THE TENONS OF SPOKES.—Albert F. Gue, Eastmanville, Mich.

Claim.—The spoke-beveling machine, constructed substantially as described, wherein the bed A, frame B, slides C, sash D, lever E, guides H J L N, knife I, and scale M, are arranged and operate substantially as and for the purposes herein specified.

104,583.—BUGGY-SEAT.—Christian Haas, Chicago, Ill.

Claim.—1. The movable seat G, with slides L L, adjustable blocks J J, plates H H, and bolts *h h*, in combination with cross-piece F, constructed substantially as described, and operating as and for the purposes set forth.

2. The seat B, as described, in combination with the seat G, when used as an adjustable seat for buggies and carriages, operating as and for the purposes set forth.

104,584. — GRINDING LEDGER AND FLY-BLADES, PLANER-KNIVES, &c.—Charles Hardy, Biddeford, Me.

Claim.—1. The improved devices for securing, adjusting, and grinding planer-knives, as hereinbefore described, consisting of the grinder *t*, tubular shaft *x*, and shaft *b′*, in combination with the plate *c*, with slots *i*, bolts *n*, carriage *e*, thumb-screws *d*, slotted guide *m*, and lever *k*, as shown and set forth.

2. The construction of the guide *x a′*, figs. 3 and 4, and the ring *c′* on the stock *x*, as set forth.

104,585.—BLOWER.—Dexter D. Hardy and Ed E. Wood, Cincinnati, Ohio, assignors to Philander H. Roots and Francis M. Roots, Connersville, Ind.

Claim.—1. The abutments C C′, having five or more pistons and five or more recesses with curved projections *n n′*, made so as not to come in contact with each other, when constructed and arranged to operate substantially as and for the purpose set forth.

2. A blower-case, consisting of the upper and lower parts A and G, united at the plane of the axes of the shafts F, when constructed and arranged to operate in combination with internal co-acting abutments, substantially as herein described.

104,586.—DEVICE FOR FORMING CHANNELS IN RIVERS.—Aaron Word Harlan, Croton, Iowa.

Claim.—1. The channel-improvement raft, formed substantially as set forth, of long timbers, forming a long base, and two, or any number, of transverse elevated parts, with their surface sloping as from the current thereon, and covering but a portion of the surface of the long raft, and arranged for the use set forth.

2. The system of rafts made and arranged substantially as set forth, for river improvement.

104,587.—APPARATUS FOR TREATING DISEASES BY MEANS OF GALVANISM.—John B. Hatting, New York, N. Y., assignor to himself and Stephen Sherlock, same place.

Claim.—1. An insulated plate or rest, C, constructed and arranged for the reception of the patient, connected to one pole of a battery, and surrounded by a fluid containing mineral, or other matter, in solution, in combination with plates I I connected to the other pole of the battery, the whole being arranged within a tub, A, as set forth.

2. The exterior casings for the reception of the plates I I, arranged in respect to and communicating with the tub A, as specified.

3. The combination and arrangement of the perforated tub A, casings *a a*, plates C and I, insulated material *e*, and connecting-wires *s t*, as set forth.

4. The plates I I, provided with sockets *i*, for the reception of insulating plugs *n n*, as described.

104,588.—Cooling and Producing Ice.—Cornelius E. Haynes, Boston, Mass.

Claim.—1. In an apparatus for artificially producing ice or cold air, the employment, in combination with the generator or generators thereof, of one or more tanks or reservoirs, substantially as is shown at J, in the accompanying drawing, as a safeguard or reserve in case of failure or accident to the said generator.

2. In an apparatus for artifically producing ice or cold air, the employment of one or more generators as auxiliaries to the primary generator, for the purpose of obtaining a more perfect evaporation of the fluid to be vaporized, and also for preventing effervescence from the primary generator from passing into the condensing-tank of the apparatus.

3. In combination with the generators A or G, the employment of the pump D, in connection with the tanks or receivers E and F, or their equivalents, and the remainder of the apparatus, whereby not only a continuous circulation and evaporation of the fluid are obtained and maintained, but the necessary pressure throughout the apparatus is secured.

104,589.—Bottom for Wash-Boilers and Similar Vessels.—George H. Hazelton, Philadelphia, Pa.

Claim.—The new manufacture herein described, a bottom for wash-boilers and similar vessels, formed by stamping or pressing in dies a sheet of metal, and then covering it with a coat of tin, substantially as described.

104,590.—Sewing-Machine.—Hans Peter Henriksen, Copenhagen, Denmark, assignor to Charles Edward Brosser, Paris, France.

Claim.—1. The arm A, constructed as described, in combination with the lever E, cam D, sliding pin *b*, and guide *a*, as set forth.

2. The combination of the needle, shuttle, and arm, operating as above described, and clamps G G′, which clasp the fabric and carry it, laterally, while the needle is at the limit of its outward motion, and after the needle has penetrated the fabric, release the same and move back to their first position.

3. The arm U, its needle *f*, and pin *e*, in combination with the lever I, its arms *i i′*, and springs *u u″*, arranged as described.

4. The plate L, its arms *m n*, and recess *s*, arranged on the case W, and operating with the arm A and needle *f*, as described.

5. The combination of the clamps G G′, sliding plate U, set-screws *i i*, and lever P, as specified.

6. The combination of the subject-matter of the fifth claim, with the arm O, and cam N, as set forth.

7. The arrangement and combination of the frame W, shuttle-carrier T, and its shuttle S, sliding arm U, needle *f*, sliding-clamps G G′, and arm A, all substantially as described.

104,591.—Corn-Planter and Fertilizer.—Andrew L. Holcomb, Hopewell, N. J.

Claim.—1. The combination of the hoppers A B, brushes O P, stirrer *c*, with the slides *a*, *b*, and *f*, dropping-box R, lever L, and rods K, substantially as described, and for the purpose set forth.

2. The marker M N, frame C, rollers G, chains and lever A, rock-shaft *g*, when arranged and constructed as herein set forth, for the purposes described.

104,592.—Lining Bessemer Converters.—Alexander L. Holley, Brooklyn, N. Y.

Claim.—The combination with a Bessemer converter of a sectional lining in removable shells, substantially as and for the purposes set forth.

104,593.—Duplex Pressure-Gauge.—Philo B. Hovey, New London, Conn.

Claim.—Placing within one inclosing-case of a steam-gauge the mechanism of two steam-gauges, when the same are connected to one common supply-pipe and register from a common center upon the same dial, by means of a combination and arrangement substantially as herein described.

104,594, antedated June 11, 1870.—Dredging-Machine.—D. S. Howard, Lyons' Falls, N. Y.

Claim.—1. The within described arrangement of the bars H H′, and cylinder-shaft G, the latter revolving in bearings at the end of the shaft H′, and the two shafts being jointed together, as specified.

2. The hollow cylinder I, with its spiral blade or blades arranged on its face, substantially as described.

3. The hollow drums or cylinders I, operating as described, and provided with cocks, for the purpose set forth.

4. The chains E and E′, when composed of long and short links *e* and *e′*, and intervening washers, *e″*.

5. The buckets F, with their loose bottoms or valves *p*, arranged to open slightly when a load is to be discharged, as herein described.

6. The adjustable tank or counterbalance N, attached to an extension of the frame at the rear of the dredge, substantially as herein set forth.

7. The carriage K, with its spout L, in combination with the chute M, as described.

104,595.—Motive-Power Apparatus.—Abram Jackson, Lebanon, Tenn.

Claim.—1. The arrangement of the lever L, bar M, arms F and H, weighted box I, and arm K, with its hook *b*, all substantially as shown and described.

2. The arrangement of the lever L, screw-rod N, bars O and P, shoe *d*, lever *c*, trigger *f*, and pin *h*, all substantially as shown and described.

3. In combination with the subject-matter of first and second clauses, the wheel E, provided with projections *e e*, and pins *m m*, all substantially as and for the purposes herein set forth.

4. The combination of a series of wheels on a common axle, with a series of groups consisting of levers, bars, arms, &c., when all are constructed, arranged, and combined, as shown and described, for the purpose of increasing the rotary motion contributed to said axle, substantially as herein set forth.

104,596.—Boot-Crimper.—Samuel W. Jamison, Newark, N. J.

Claim.—1. The combination with the boot-form of the corrugated sliding block, the oscillating jaws pivoted to said block, and the levers, whereby the block and jaws are actuated, when the said block and jaws, and mechanism for operating the same, are mounted upon and make part of the form, substantially as shown and described.

2. The combination with the form and the corrugated block, mounted and sliding in the form, of the spring, interposed between the said form and block, substantially as and for the purposes set forth.

3. An apparatus for stretching the uppers of boots and shoes, composed of the pivoted or rotary form, the sliding block mounted upon said form, the oscillating jaws, pivoted to said block, and the levers, rack, pinion, and handle, for operating said jaws and block, said parts being arranged for joint operation, as shown and set forth.

104,597.—Clothes-line Holder.—Carl A. Kalck, Philadelphia, Pa.

Claim.—As a new article of manufacture, the clothes-line holder, consisting of the conical pintle B and pin A, with its extended head B′ cast in one piece, and the grooved roller C D E, combined and operating together as herein shown and described.

104,598.—Lock.—William M. Keefer, Chicago, Ill., assignor to himself and James Harding, same place.

Claim.—The combination of the spring catch G, tubular key-bolts C, catch-plate F, and needle-key H, as and for the purpose specified.

104,599.—Machine for Shaving Heels of Boots and Shoes.—Arza B. Keith, North Bridgewater, and Timothy K. Reed, East Bridgewater, Mass., assignors to Arza B. Keith.

Claim.—A heel-cutting machine, having the following elements in combination, viz: A jack (or last and boot and shoe-support) arranged to hold a boot or shoe, with a heel fixed thereto properly under the action of the cutter, and a curved edged knife arranged to cut at the same time all around the curvilinear boundary of the heel, nearly at right angles to the tread of the heel.

Also, in such a machine, provided with an expanding curvilinear-edged knife, the arrangement of caliper-arms *n n*, so as to bear upon the sole or the counter or clasps around the counter, and in vicinity of the breast of the heel, when projections from the knife bear upon said arms and govern the degree of the expansion of the knife.

Also, the combination of the caliper-arms *n n* with adjustable supports, by which the degree of expansion of the knife may be varied.

Also, the caliper-arms *n n*, constructed with short arms or projections, and combined with the projections *o o* from the cutter, by which said arms are held open, for the purpose specified.

Also, the combination with a jack-supporting table, adjustable toward and from the cutter, of a jack adapted to hold and support a boot or shoe having a rough heel fixed thereto, so as to present it to the action of the cutter arranged to cut entirely around the curvilinear boundary of the heel in a direction substantially at right angles to the tread.

Also, the combination, with a curved edged knife arranged to shape the curvilinear boundary of a heel fixed upon a boot or shoe, by a cut directed substantially at right angles to the tread of the heel, of clamping-jaws arranged to close and open, to seize and hold a boot or shoe around the counter, whether provided or not with a ledge or projection entering the crease between the counter and the sole.

104,600.—Water-Wheel.—James C. Kelly, Groveland, N. Y.

Claim.—The combination, with the water-wheel B, of the wheels or rims E G, overlying the same, and provided with the elevated chutes *o*, thereby serving the double purpose of chute-wheels and gates, substantially as described.

Also, the combination, with the box *l* and step *k*, of the screw *m*, gear-wheels I K, and shaft *n*, arranged as described, and operating in the manner and for the purpose specified.

104,601.—Hank for Sails.—George Kirtland, Westbrook, Conn.

Claim.—The hank or ring, constructed as described, so as to receive and inclose the sheave B at one end, with a recess or horns D at the other end.

104,602.—Faucet.—John Knoche, Cincinnati, Ohio, assignor to himself and Henry Varwig, same place.

Claim.—1. Providing a beer or other faucet with a sliding air-duct or tube, F, whose outer end is furnished with an external valve, J, that has an independent or simultaneous movement with the plug B, for the object stated.

2. The sliding air-duct F, provided with an external cock, J, and an internal valve, *f* H, for the purpose set forth.

3. The combination, substantially as herein described, of the faucet A A′ *a a′*, plug B, stuffing-box D E, sliding air-tube F, and its accessories *f* H G *g* J O, and actuating devices K, L, and N, for the object explained.

104,603.—Paddle-Wheel.—William F. Knowlton, St. Cloud, Minn., assignor to himself and William T. Clark, same place.

Claim.—The shaft A arms A¹ A¹, blades B′ B′, and cog-wheels C *c c*, when the whole is so combined and arranged as to operate substantially as described.

104,604.—Pump.—Robert M. Lafferty, Three Rivers, Mich., assignor to himself and Edward P. Smith, same place.

Claim.—1. The flexible sheet-metal lining C, provided with flanges *d* and lips *b*, constructed, arranged, and operating substantially as and for the purpose set forth.

2. The piston C, provided with the curved openings *d*, and with the cup-leather *e* and valve D, which is provided with the grooves *e*, when each of said parts is constructed as described, shown, and set forth, and arranged to operate as and for the purposes above named.

3. In combination with the piston C, provided as above described with the curved openings *d*, the cup-leather *e* and valve D, with its grooves *e*, the plug E, with concave upper face openings *f*, cup-leather D′, with its grooves *e′*, all constructed and arranged to operate as and for the purposes set forth.

4. The combination and arrangement of the pump-barrel A, flexible lining B, piston C, plug E, and valves D D′, when constructed, arranged, and operating substantially as described, and for the purpose specified.

104,605.—Water-Elevator.—James F. Latimer, Detroit, Mich.

Claim.—The water-elevator described and shown, consisting of the drum B, provided with a suitable crank, the rope D, the pulley E, the bucket F, provided with valve *a a′*, the spout I, pivoted upon shaft J, the disk K, pitman L, treadle M, stationary spout H, and cross-bars G, when the several parts are constructed and arranged as shown and described, and for the purposes set forth.

104,606.—Clamp.—John J. Lebeau, Cincinnati, Ohio.

Claim.—The relative arrangement of the jaws B and C, projecting from the extremities of their respective shanks D and E, in combination with the cam-disks K L, pivoted to a bridge at the back of one shank, and engaging with a rack, M, at back of the other, when constructed substantially as and for the purposes specified.

104,607.—Corpse-Preserver.—Edwin F. Lenox and Charles Eckhart, Trenton, N. J.

Claim.—The hinged boards G, H, and K, when constructed and arranged substantially as herein described, in combination with the ice-chest A, for the purpose specified.

104,608.—Motive-Power for Sewing-Machines.—Edward J. Leyburn, Lexington, Va.

Claim.—1. The driving-wheel D, applied on the shaft *i*, about which the seat-frame B vibrates, substantially as and for the purpose described.

2. The table C, applied to an arm, B′, of the vibrating seat-frame B, and arranged to receive upon it mechanism which is driven from a wheel, D, whose axis is concentric to the axis of motion of the seat-frame and table, substantially as described.

3. The treadle T, applied to the fixed stand A of a rocking seat, in combination with the connecting-rod K, lever L, pitman P, and wheel D, substantially as described.

4. The auxiliary rod J, pivoted below to the stand A, and adapted for being connected above, either to the lever L or to the fulcrum-pin *b*, substantially as and for the purposes described.

5. The combination of an oscillating treadle T, and a rocking seat, in a machine which operates substantially as described.

6. The adjustable foot-stand t, applied to treadle T, and combined with a rocking seat and driving mechanism, substantially as described.

104,609.—PICTURE-KNOB.—Henry C. Luther, Providence, R. I., and Celius E. Richards, North Attleborough, Mass.

Claim.—The improvement in the construction of picture-nails, which consists in the combination of the ornamental cap F with the head A of the nail, when the flanged rim of the former is inserted in the groove a of the latter, substantially as herein described.

104,610.—MOTIVE POWER FOR SEWING-MACHINES.—George W. Manson, Jersey City, N. J., assignor to himself, Charles M. Vanderveost, and Richard B. Westbrook.

Claim.—The herein described combination and arrangement of the spring, the train of toothed wheels and pulleys for communicating the power to the sewing or other machine, the brake and its operating treadle, and the stop or locking button, said parts being constructed substantially as shown and set forth.

104,611.—BROILER.—Benjamin Marshall, Marietta, Ohio.

Claim.—1. A broiler formed of a continuous sheet of metals, having its highest point at its center, as described.

2. The broiler A, with reservoir a, as described.

3. The broiler A and chamber B, when combined as described, for the purpose set forth.

4. The broiler A, chamber B, and cover C, with valve c, when combined as described, for the purpose set forth.

104,612, antedated June 9, 1870.—TUCK CREASING MECHANISM FOR SEWING-MACHINES.—Charles F. Martine, Boston, Mass.

Claim.—1. The combination, with the crossing-edge L, of the elastic cushion C, socket E, and needle-bar D, when arranged as and for the purpose described.

2. The combination of elastic cushion C, needle-bar D, creaser L, gauge G, plate K, clamps a a, and the plate of a sewing-machine, all constructed, arranged, and operating substantially in the manner herein described.

104,613.—SAW-HANGING.—Sylvester G. Mason, Rochester, N. Y.

Claim.—1. The wedge-shaped sliding jaws b and inclined guides, in combination with the follower d and spring f, for the purpose herein set forth.

2. The lever f, in combination with the follower d and jaws b, for the purposes specified.

104,614.—APPARATUS FOR COOLING BUILDINGS AND MAKING ICE.—William S. Mason, Raleigh, N. C.

Claim.—1. The tubular receiver, herein described, with fuses and boxes I and L, as set forth.

2. The automatic temperature regulator herein described, so arranged that, whenever the temperature in the chamber in which the regulator is situate rises above a given degree, cold air is let in until the temperature is reduced to the required degree, as set forth.

3. The combination of a series of bars, &c., and levers, arranged so as, by their contraction and expansion, to regulate the admission of cold air into a chamber or apartment, as described.

4. The arrangement of the water-flues in the reservoir, in combination with the pump and delivery-tubes, as described.

5. The combination of the receiver or reservoir with automatic regulator, as described.

104,615.—DRAIN-TILE MACHINE.—Frederick M. Mattice, Cleveland, Ohio.

Claim.—1. The puddling-tub described, consisting of the cylinders D and E, in combination with the wing J and shaft G, when the several parts are constructed substantially as described and shown, and arranged to operate as and for the purpose set forth.

2. The combination of the shaft G, the cams K and L, the pinion M, the friction-wheel Q, the rack O, the frame N, and the plunger-head P, when constructed and arranged substantially as described, and for the purpose set forth.

3. The scraper-valve S, in combination with the valve R and and the plunger-head P, when constructed, arranged, and operating as and for the purpose set forth.

4. The pivoted scraper-valve T, constructed as described and shown, and arranged to operate as and for the purpose set forth.

5. The wing J, constructed as described and shown, and arranged to operate as and for the purpose set forth.

6. The combination of the wing J, the scraper-valve T, and the scraper-valve S, when constructed as described, and arranged to operate as and for the purpose set forth.

7. The arrangement of the dies d, in the plate U, in two or more horizontal series of ranks, in combination with the pivoted scraper-valve T and wing J, when the several parts are constructed substantially as described and shown, and as and for the purpose set forth.

8. The arrangement of the carriage W, provided with the close rollers 1 and the riders 2, and the adjustable frame 3, in connection with the frame V, when the several parts are constructed substantially as described and shown, and as and for the purpose set forth.

104,616.—STEAM-PUMP.—James R. Maxwell and Ezra Cope, Cincinnati, Ohio.

Claim.—1. In connection with the valve G g g', and valve J, the latter operating by suitable connection with the engine, the supplemental cylinder I, ports i i' i'' i''', passages M N N', and piston O P P' a a', combined and operating substantially in the manner and for the purpose specified.

2. The manner of packing the shaft Q by the hub s of the hand-lever S, as and for the purpose described.

3. The seat b, having a perforated central guide-stem, c d, cast in connection with it, in the described combination, with the valve b' constructed with a hollow socket, e, as and for the purpose specified.

4. The water-cylinder B and cap T, when constructed with chambers 1 2 3 4, which are all exposed by the removal of the cap, and when connected with the suction-pipe, pump-cylinder, and discharge-pipe, substantially in the manner described.

5. The piston f f' f'', constructed substantially in the manner and for the purpose specified.

6. In combination with the pistons of the cylinders A B, the provision of the set-screw h, as and for the purpose specified.

104,617.—MIRROR AND PICTURE-FRAME.—William McConnell, Clarksville, N. J.

Claim.—The molding B of a frame, when the inside section or half a is carried forward around the corner, in a line or curve parallel with the inside lines of the frame, while the outer section or half b is carried forward in a straight line to the corner, where it is made to form a right angle, arc, ellipse, or other curve, the two sections or halves a and b being afterward reunited so as to form a continuous molding, as herein shown and described, and for the purpose set forth.

104,618.—HARVESTER.—Leander J. McCormick and William R. Baker, Chicago, Ill., assignors to C. H. McCormick & Bro., same place.

Claim.—1. The combination of the spring which counterpoises the cutting apparatus with the lifting lever, substantially as set forth.

2. The combination of the spring, the lever, and its swinging catch, substantially as set forth.

3. The combination of the tongue-plate, its studs, the strap, and the double-tree, all these parts being constructed to operate as set forth, to adjust the line of draft.

104,619.—HARDENING MAGNESIAN LIMESTONE.—John McMurtry, Mt. Sterling, Ky.

Claim.—1. The within-described process of preparing magnesian limestone, substantially for the purposes herein set forth.

2. As a new article of manufacture, magnesian limestone prepared substantially in the manner and for the purposes herein set forth.

104,620.—MOLDERS' RAMMER.—Edmund H. Meigs, East Berlin, Conn., assignor to the Roys & Wilcox Company, same place.

Claim.—The hollow metal butt A, and pean B, or either, cast as described, and fitted to the handle by a neck, b, and screw, c, essentially as shown and described.

104,621.—PAPER-FOLDING MACHINE.—William Mendhain, Philadelphia, Pa., assignor to Edwin Chambers and Cyrus Chambers, Jr., same place.

Claim.—In a paper-folding machine in which an inset and outset are folded together, the conveying-tapes e, supporting the inset continuously to the stop, combined with the outset conveying-tapes d, the separating-bars f, and covering-bars m, all constructed substantially as and for the purpose described.

104,622.—METHOD OF FASTENING LEADS.—John Merlett, Bound Brook, N. J.

Claim.—The combination of the tongue C, constructed with a broad-shouldered end, and the slide B, provided with an eye, b, arranged substantially as described, for the reception of said tongue.

104,623.—LAMP.—Rufus Spaulding Merrill, Hyde Park, assignor to himself, W. B. Merrill, and Joshua Merrill, Boston, Mass.

Claim.—1. The combination, with the oil-fountain of an Argand burner, of a sheet-metal tube, so inserted in the top of the fountain as to project both below and above said top, the part projecting above the fountain being so arranged as to surround the wick-tube and support the removable part of the burner, substantially as herein shown and set forth, while the part projecting below the top shall not extend much below the ordinary level of the oil, that is, only so far as to admit of its being soldered, or otherwise secured to the top.

2. In combination with the burner-supporting tube, claimed in the preceding clause, the recess or depression formed on the top of the fountain, substantially as and for the purposes herein set forth.

3. The combination, with the wick-tube and burner, of an air-cone or cylinder, having a flaring top, or upper end, substantially as and for the purposes shown and set forth.

104,624.—LAMP-BURNER.—Rufus Spaulding Merrill, Hyde Park, assignor to himself, W. B. Merrill, and Joshua Merrill, Boston, Mass.

Claim.—In an Argand burner, in which the chimney-holding device is removable, the combination with external chimney-springs, of an annular perforated plate and a sleeve fitting the wick-tube, or a tube encircling the wick-tube, the said plate extending transversely from the base of the springs, or from under the chimney-seat to the said sleeve, and when the external chimney springs and the transverse annular perforated plate are formed of one piece of metal, substantially as herein shown and set forth.

Also, the combination, with the foraminous base and chimney-springs, of a chimney-seat ring or ledge, arranged within the space inclosed by the springs, and above the foraminous base, as and for the purposes shown and set forth.

Also, the employment, in combination with the chimney-springs and foraminous base, of a raised chimney-seat ring, constructed with ridges or projections, substantially as described, for the purposes stated.

104,625.—LAMP-BURNER.—Rufus Spaulding Merrill, Hyde Park, assignor to himself, W. B. Merrill, and Joshua Merrill, Boston, Mass.

Claim.—1. In an Argand or other like round-wick burner, the employment of a cap or flange, arranged near the top of the wick-tube, substantially in the manner described, so as to deflect and change the direction of the current of air passing upward around the wick-tube, and cause it to impinge at an angle upon the flame, as set forth.

2. The combination, with an Argand burner, of an air-deflecting shield or cap below the flame, through which cap a portion of the air will pass in a divided state to the flame, as shown and set forth.

3. The combination, with an Argand burner, of a deflector or cap below the flame, constructed substantially as herein described, so as to cause the air to pass up around it in a continuous sheet, at varying distances from the wick-tube, as set forth.

4. The combination, with the sleeve connected with the chimney-seat and gallery, of the deflecting cap, supported upon a shoulder or offset formed on said sleeve, substantially as shown and set forth.

104,626.—SPRING SULKY.—Edward Milner, Marquette, Mich.

Claim.—1. The forked spindle D, spindle-guide H, and seat O, when arranged as herein set forth.

2. In combination with the above-named parts, the spring A, axle B, curved risers G, and shaft-frame F, when arranged and operating substantially as and for the purposes herein set forth.

104,627.—CHURN-POWER.—George Threlkeld Montague, Keokuk, Iowa.

Claim.—The arrangement of the base-board A, resting upon the floor and receiving the churn, with the uprights C and D, and the head F, the moving parts H, L, P, and S, and overhanging the position of the churn on board A, substantially as set forth, to form a churn-power.

104,628.—BOLSTER-PLATE.—Thomas Morgan, Marquette, Mich.

Claim.—The flanged bolster-plate A, with downward flanges a, and provided with stakes, B, with strengthening-flanges, b, cast in one piece, in connection with and secured to a suitable bolster, when constructed as described, and for the purposes set forth.

104,629.—PROCESS AND COMPOSITION FOR WATER-PROOFING LEATHER, &c.—William Morris, Philadelphia, Pa.

Claim.—The "preparatory compound," prepared substantially as hereinbefore described, and for the purposes set forth.

Also, the "perfecting compound," prepared substantially as hereinbefore described and for the purposes set forth.

Also, the process hereinabove described, of rendering articles water-proof, both in its distinctive parts, and as a whole, as set forth.

104,630.—BUTTON-HOLE SEWING-MACHINE.—Isidor Nasch, Berlin, Prussia.

Claim.—1. The vibrating arm a, with its spring s, combined and operating in connection with the spool l and needles a b, substantially as described.

2. The vibrating arm a and its spring s, in combination with the gimp-spool l, substantially as described.

3. The vibrating hinged thread-carrying arm a, in combination with the cam a^1 on the head of the machine, and the two needles, substantially as described.

104,631.—DITCHING-MACHINE.—L. D. Noble, Cerro Gordo, Ill.

Claim.—A ditching-machine, combining, in its construction, a plow, C, elevating-apron D, conveying-apron F, carrying-wheels G, and a single driving-wheel, B, when such driving-wheel is arranged directly in rear of the plow, running upon the hard ground at the bottom of the furrow made by such plow, substantially as set forth.

104,632.—PORTABLE APPARATUS FOR CURING MEATS, AND FOR OTHER PURPOSES.—Horatio J. Noyes and Samuel C. Talcott, Ashtabula, Ohio.

Claim.—1. The herein-described apparatus, consisting of sections A B, bands or hoops C D, detachable bottom H, and top F, cross I, and revolving radial arms J, all constructed, arranged, and combined substantially in the manner as described and for the purpose set forth.

2. The door N, when constructed of a panel, O, frame P, and corner-piece b, substantially in the manner as described and for the purpose set forth.

3. The annular flange C, in combination with the top F and sections A B, or either of them, as and for the purpose substantially as set forth.

104,633.—BED-SPRING.—August W. Obermann, Chicago, Ill.

Claim.—An improved bed-spring, consisting of the conically-coiled wire A, the enlarged rectangular base B, and the spring arm G, all arranged substantially as described.

104,634.—RUNNING-GEAR FOR CARRIAGES.—Thomas O'Brien, Quincy, Mich.

Claim.—1. The pivot-clip D, for connecting the reach C with the front axle, as described.

2. The construction and arrangement of the pivot-clip D, circle E, circle-iron E', and boxes a, crotch G, crotch-irons G', and boxes b, perches H, and clips c d, truck-plates f f', and bolt e, with the spring-bars K J, springs I, axles A B, reach C, and clip F, substantially as described, for the purposes specified.

104,635.—ARGAND OIL-BURNER.—George Kellogg Osborn, New York, N. Y.

Claim.—1. The pin P and the tube T, when worked together and constructed substantially as and for the purpose herein set forth and described.

2. A stop-cock, which, as a ratchet, moves the wick and acts as a stop-cock at the same time.

3. The combination of the circular float F, spring K, and pin P, with the pin-tube T, cap I, wick-tubes U U, and oil-chamber C, when all are arranged to operate as herein described and shown.

104,636.—REVOLVING FIRE-ARM.—William I. Page, Boston, Mass., assignor to himself and Charles E. Robinson, same place.

Claim.—1. The combination of a chambered cylinder, mounted upon a spring-arbor, in manner as described, with the safety-pivot or bolt b, constructed, arranged, and applied thereto, and so as to operate therewith, as and for the purpose set forth.

2. The relative arrangement of the several parts of the lock, substantially as described and represented.

104,637.—LATH-MACHINE.—Samuel M. Palmer and George E. Palmer, Sandy Hill, N. Y.

Claim.—1. The arbor A, bolting-saws C, and lath-saws B, in combination with the feed-rollers H, H', and E, press-rollers F and F', bearing-roll L, and the guides D, when constructed substantially as and for the purposes specified.

2. The press-rollers F and F', in connection with the adjustable frame J and guide-rods I I I I and K K, in the manner and for the purposes described.

104,638.—MANUFACTURE OF USEFUL AND ORNAMENTAL FABRICS FROM VEGETABLE AND ANIMAL FIBERS.—Eugene Pavy, Paris, France.

Claim.—1. A felted fabric, produced from animal or vegetable fibers, (either or both combined,) said fibers having been treated and prepared substantially in the manner herein set forth.

2. Submitting the fiber to what I have called the second washing, in caustic alkali, after having treated the same with gaseous chlorine, substantially as described.

104,639.—SAW-GUMMING AND SHARPENING MACHINE.—Ebenezer W. Phelps, Elizabeth, N. J.

Claim.—1. The shaft E of the emery-wheel D, made capable of longitudinal adjustment, substantially as specified, and whereby provision is made for lateral adjustment of said wheel, relatively to the frame C, which carries it, as and for the purposes described.

2. The frame C, arranged to swing laterally on a center, as at d, in combination with its pivoted attachment, as at a a, to provide for its up or down adjustment, substantially as specified.

104,640.—WATCH-CHAIN LOCK.—Simon Pinover, New York, N. Y., assignor to Kaufmann Brothers, same place.

Claim.—The new and improved article of manufacture herein described, consisting of the padlock-case A, provided with the chain-eye B, stationary outer tube H, having cap K, and containing the spiral spring I, the tube F, provided with the cap N, and slotted on one side to receive the hook E of the hasp D, and on the other to receive the stud-pin M, all constructed and arranged as and for the purpose described.

104,641.—COMBINED PUMP AND SIPHON.—William Pitman, New York, N. Y.

Claim.—1. The plunger-rod d, carrying the plug c, and operating in combination with the barrel A and siphon-pipes C D, substantially as and for the purpose described.

2. The siphon-pipes C D, the stop-cock e, valves a b, barrel A, plunger B, and plug c, combined and operating together to form an improved pump and siphon, as described.

104,642, antedated June 11, 1870.—APPARATUS FOR CARBURETING AIR.—Reuben H. Plass, New York, N. Y.

Claim.—1. The arrangement of the air-supplying chamber C, hydrocarbon-chamber or reservoir D, and carbureting-chamber E, as herein shown and described.

2. The arrangement of the passages P R S and cock Q, in combination with the air or gas-supply chamber C and carbureting-chamber E, whereby the air or gas may be caused to traverse the entire length of the channels in the latter, or only a portion thereof, as shown and described.

3. The arrangement of the pressure-regulating chamber H within the hydrocarbon-reservoir D, and with relation to the carbureting-chambers E and air-supply chamber C, as shown and described.

104,643.—METAL SOLE FOR BOOTS AND SHOES.—James Punderford, New Haven, Conn.

Claim.—As an article of manufacture, the metal sole A, provided with the flange a, and so as to be secured to the sole of the boot or shoe, substantially as described, and with or without the heel or shank.

104,644.—TROWEL.—Franklin Reed, Canton, Mass.

Claim.—The bolster B, extending above the shank d, and covering the end of the handle C, in combination with the handle C and shank d, provided with a dowel-pin, f, when constructed and arranged with reference to a trowel, substantially as and for the purpose set forth.

104,645.—LATHE FOR MAKING AWL-HANDLES.—Franklin Reed, Canton, Mass.

Claim.—A machine for making awl-handles, consisting of a tenon-cutter, D, and a boring-bit, e, with their driving apparatus, in combination with a grasping mechanism, H, for holding the blank, the whole constructed, arranged, and operating substantially as and for the purpose set forth.

104,646.—HARNESS-HOOK.—Michael Reilly, Covington, Ky.

Claim.—The cap or plate A A B and hook C D, formed and adapted to operate as set forth.

104,647.—MACHINE FOR ROLLING METALLIC ROOFING-PLATES.—George A. Reynolds, Rochester, N. Y.

Claim.—1. In a machine for rolling metallic roofing-plates, a series or train of rollers having the dies forming a part and fixture of the rollers themselves, and graduated as described, and the whole so arranged as to produce the double effect of rolling the plate and forming the seaming bends at one operation, as specified.

2. The arrangement of the series of rollers D E and dies $k\ l\ k^2\ l^2\ k^3\ l^3$, and finishing-dies $m\ n$ at one end, and the dies $g\ h\ g^1\ h^1\ g^2\ h^2$ at the other, as described.

104,648.—PAINT FOR ROOFS.—Thomas C. Rice, Worcester, Mass.

Claim.—A paint composed of the materials and in the proportions substantially as above described.

104,649.—OIL-WELL REAMER.—John Rigg, Joshua E. Hall, and Carnot F. Fenton, Cleveland, Ohio.

Claim.—1. The levers D D, as arranged in combination with the adjusting-screw E and legs A, B, in the manner as and for the purpose set forth.

2. The cutters I, constructed as described and arranged, in combination with the pivoted legs A B and links J, operating conjointly as and for the purposes substantially as set forth.

3. The arrangement of the links F F, nut G, with its screw E, pivoted levers D, in combination with the pivoted legs A B, links J, and springs L, operating conjointly as and for the purpose substantially as described.

4. The combination of the reamer and shield M, substantially as and for the purpose specified.

104,650.—STEAM WATER-ELEVATOR.—Charles Rogers, Allegheny City, Pa.

Claim.—1. In the main pipe of a steam water-elevator, the water-chamber b, in combination with the double convex diaphragm C, provided with the curved guide-plates D on its upper surface, the spiral jets a arranged to give a centrifugal movement to the water, and the steam-chamber H enveloped with brimstone or other non-conducting substance, as specified.

2. The steam water-elevator herein described, wherein the elevation of the water is effected by the centrifugal movement thereof, produced by the action of jets of steam in a water-chamber b, substantially as specified.

104,651.—RAILWAY-CAR SIGNAL.—William M. Russell, Cincinnati, and Oscar S. Pease, Xenia, Ohio.

Claim.—1. The cog-wheel B', spindle B, crank-wheel C, crank-arms $C^1\ C^1$, and blinds or blinkers $C^2\ C^2$, with or without their handles $C^3\ C^3$, when the whole is so arranged as to operate substantially as described.

2. The cog-wheel B', spindle B, crank-wheel C, pawls d d, double crank-lever L, slotted lever F', lever k, and blinds or blinkers f f, when the whole is so arranged as to operate substantially as described.

104,652.—MANUFACTURE OF FELT HATS.—George H. Scribner, Natick, Mass.

Claim.—The above-described method of ornamenting a hat-body, or article of like character, such involving the employment of a grooved or recessed block and a grinder or abrading material, in manner substantially as specified.

Also, as a new article of manufacture, a hat-body, figured, or otherwise ornamented, by removing portions of its surface, as herein set forth.

104,653.—REED-ORGAN.—George W. Scribner, Detroit, Mich.

Claim.—1. The tube D, provided with two or more metallic reeds B, with mouths d, and with tuning-slides E F, constructed, and arranged as described and shown, and for the purposes set forth.

2. The reed organ above described and shown, consisting of the chest A, tubes B, provided with mouths d and tuning-slides E and F, and key-board C, and suitable bellows, when the several parts are constructed and arranged as and for the purpose set forth.

104,654.—CLOTHES-PIN.—Irving W. Searles, Tiffin, Ohio.

Claim.—As a new article of manufacture, the within-described clothes-pin, consisting of the curved arms A A, pivoted near the center, and with the springs B B above the pivot, and provided with the elongated bars C C, one on each jaw, all as shown and set forth.

104,655.—KILN FOR CALCINING ORES, LIMESTONE, &c.—Charles William Siemens, Westminster, England.

Claim.—The arrangement and combination of the cone B, its hood E, and the system of air and gas-flues C D F G, with the kiln, constructed substantially as specified, the whole being to operate as and for the purposes as explained.

104,656.—SPECTACLES.—Colin Cree St. Clair, Detroit, Mich.

Claim.—1. In spectacles, the ear-hooks D, as and for the purpose set forth.

2. The bridge-piece A, having its ends turned outward from the body thereof, so as to throw the glass-frames away from the wearer's eyes, substantially as described.

104,657.—UTERINE-SUPPORTER.—Benjamin F. Stephenson, Springfield, Ill.

Claim.—1. The uterine-supporter, formed by the thin open annular air-cushion A, in combination with its inflating-tube D, and flexible bifurcated supporting-stem C, substantially as herein described.

2. An open annular air-cushion, A, supported at two points only, so as to admit of universal flexion, for the purpose herein described.

3. The supporting branches B B, provided with stiffening-springs a', in connection with a central stem, C, also fitted with a stiffening-spring, a, in such manner as to admit of a universal yielding motion at the junction of the stem with its branches, substantially as described.

104,658.—SHOEMAKERS' TOOL.—Camille St. Germain, Oxford, Mass.

Claim.—A tool, composed of a series of burnishing-shoulders, B, a plain bead, C, a beading-wheel, E, and handle, A, said parts being constructed and arranged in relation to each other, substantially as shown and described.

104,659, antedated June 9, 1870.—STOP-MOTION FOR STEAM-ENGINES.—John Storer, Peekskill, N. Y.

Claim.—1. The regulating spring piston E, in combination with the blast-pipe A and its valve B, substantially as shown and described.

2. The regulating spring piston E, in combination with the pipe A and throttle-valve F, in the steam-pipe G of a steam-engine, substantially as set forth.

104,660.—NEEDLE FOR SEWING-MACHINE.—Edwin Strain, Newton, Mass.

Claim.—A sewing-machine needle grooved only on one side, such groove extending to or beyond the eye, and being sufficiently deep to protect the thread, and with the eye on that side of the needle not provided with a groove countersunk or beveled all around its edge, substantially as and for the purpose set forth.

104,661.—COW-TAIL HOLDER.—George Tanner, Freetown, N. Y.

Claim.—The toothed and curved pieces or parts a a, when made substantially as described, in combination with the thumb-screw c, for the uses and purposes set forth.

104,662.—BREAD-MAKING APPARATUS.—Jacobus Arnoldus Hendreekus To Gantvoort, Waupun, Wis.

Claim.—1. The case A, provided with oven B, slides G I, openings *b b*, hollow cover J, with perforations in its bottom, all arranged substantially in the manner and for the purpose set forth.

2. A bread-making apparatus, consisting of case A, oven B, fire-place C, doors E E, slides G G, I I, K K, and trough H, arranged as described and for the purpose set forth.

104,663.—FAUCET.—Robert Tilly, Brooklyn, N. Y.

Claim.—1. The combination of the cylinder F, piston G, valve D, and rod *a*, arranged within the shell of the faucet, as and operating for the purpose herein shown and specified.

2. In combination with the parts F G, and D, the self-closing valve H, arranged as and for the purpose set forth.

104,664.—CORN-PLANTER.—Benjamin F. Tomb, Tiffin, Ohio.

Claim.—1. A corn-planter, so constructed as to have the dropping-boxes under the axle-tree, all as shown and described.

2. The hopper J, divided into two compartments, provided with slide *f*, all arranged and operating substantially as and for the purposes herein set forth.

3. The plows O O, attached to the platform I, and made adjustable by means of the pins or bolts *d d*, constructed and arranged substantially as herein set forth.

4. The combination and arrangement of the bars H H with roller *a*, platform I, plows N and O O, hopper J, chain K, shaft L, and lever M, all substantially as shown and described.

5. The arrangement of the slide *f*, arm P, shaft R, and rod S with the hopper J, substantially as and for the purposes herein set forth.

104,665.—COMPOSITION BRONZE PAINT.—Arthur Towne, Auburn, Me.

Claim.—As a new article of manufacture, a bronze or gilding-compound, consisting of balsam fir, turpentine, and any metallic brousing or gilding-powder, whether said compound is made in a liquid or paste state, substantially as set forth.

104,666.—BOLT FOR SAFE-DOORS.—Hiram B. Tripp, Boston, Mass.

Claim.—1. The lever K, pivoted to bolt M, in combination with the stem H and the lock-handle, the bolt-handle, and their locking-tumblers, substantially as and for the purpose described.

2. The armed lever K, formed with tail-piece *i* and hinged part B^2, in combination with the slide Y^2 and stem H, substantially as and for the purpose described.

3. The stem H, provided with nuts I C^3, in combination with the hinged part B^2 of the lever K and with the lever Z^2, both playing on the stem between the nuts, and operating, in combination with the slide Y^2, substantially as described.

4. The slide Y^2, having at one end the tongue-piece *h*, and moving on the rest W^2, in combination with the lever K, formed with tail-piece *i*, and with the pivoted lever Z^2 hinged at the other end, substantially as and for the purpose described.

104,667.—ANIMAL-TETHER.—James W. Upson, Tallmadge, Ohio.

Claim.—1. The stay C, wheel B, lever D, and pawl N, as arranged in combination with the case A, in the manner as and for the purpose set forth.

2. The swivel and pointed sweep H, pivoted ball F, and pivoted ring, E, in combination with the counterbalance G, as and for the purpose specified.

3. The rod L, bow *e*, in combination with the halter A', substantially as described, and for the purpose set forth.

104,668.—PEGGING-MACHINE.—Charles Varney, East Bromfield, Mass.

Claim.—The edge-rest, as made or composed of the two parts B and C, applied so as to enable the part B to be adjustable and fixed to the part C, substantially in manner and for the purpose as set forth.

Also, the combination and arrangement of the slider F and stop-screw *i* with the presser-foot and the adjustable edge-rest, substantially as specified.

Also, the presser-foot, as provided with the removable bearing-plate P, connected with the rest of the foot, substantially in manner as described.

Also, the slotted slider F and its supporting-groove *g*, arranged and combined, as explained, with the presser-foot A, the screw or pin D, and the edge-rest, composed of the parts B and C, the whole being applied together, so as to operate as set forth.

104,669.—HAY-TEDDER.—Horace Warren, Leicester, Mass.

Claim.—1. The combination and arrangement, with the main axle and crank-shafts placed vertically, or nearly so, above said axle, of the spreading-fork levers, connected, at their upper ends, with the crank-shafts, and hinged at a point intermediate between their two ends, to supporting arms, which, in turn, are hinged to the main axle, substantially as shown and described.

2. In combination with the main axle, crank-shafts, spreading-fork levers, and their hinged supporting arms, arranged as hereinbefore specified, the thills or shafts, when arranged so that their rear ends, or brackets, or straps, for supporting the same, shall be hinged to the rear side of the main axle, substantially as shown and described.

3. In a machine for spreading hay, the arrangement of the spreading-forks and mechanism for adjusting, operating, and supporting the same upon the main axle, which carries the driving-wheels, substantially in the manner shown and described.

4. The combination, with the crank-shafts, and their supporting standards, of the adjustable bearings *c*, and system of levers for operating the same, constructed and arranged upon the main axle, as herein shown and described.

5. The combination, with the fork-levers F, of the plates *i*, the pin *m*, passing through the lower end of said lever and plates, and the forks *w*, coiled around the projecting end of the pin, and having their hook ends held between the said lever and plates, in the manner shown and described.

104,670.—CAR-COUPLER.—Paul Weatherbee, Port Washington, Ohio.

Claim.—The coupling-jack herein described, consisting of a fulcrum or post, A, and a lever, A', supporting a catch, C, spring H, and short lever E, provided with a dog, F, and arranged to have a horizontal as well as a vertical movement about its fulcrum D, as and for the purposes herein substantially shown and described.

104,671.—COAL-SIFTER.—Allen P. Webb, Charlestown, Mass.

Claim.—The combination of the cylindrical sifter *b*, having slides *c*, lips *h*, and crank *f*, with the box *a*, made as described, and having the cover *e* and drawer *d*, to operate as herein set forth.

104,672.—LATCH OR FASTENING FOR DOORS.—Jonathan R. Webber, Morris, Ill.

Claim.—The circular fastener C, pivoted to the frame at F, and provided with a curved slot, G, and knob *b*, said slot being long enough to allow the fastener to stay at either side of the pivot E by its own gravity, as and for the purpose set forth.

104,673.—STREET-CAR STARTER.—Hilyard Welch, Schuylerville, N. Y., assignor to Amos M. Salisbury, same place.

Claim.—The arrangement under the car-seat, of the wheel D, pawl G, lever E, cord or chain *b*, standard H, and pulley *d*, in combination with the rock-shaft I, with lever *e* and bail *f*, all constructed to operate as set forth.

104,674.—SKIPPING-HOOP.—Edward Whitehead, Cincinnati, Ohio.

Claim.—1. The hoop A, when provided with sliding sleeves, *a a'*, and perforations, *a''*, operating substantially in the manner and for the purpose specified.

2. In combination with the hoop A, *a a'*, *a''*, the handle C *e*, or its modifications, fig. 3 or 4, constructed and operating substantially in the manner and for the purpose specified.

104,675.—WATER-METER.—George B. Wiggin, South New Market, N. H., assignor to Orville Peckham, trustee, assignor to George B. Wiggin and John W. Hoard.

Claim.—The improvement in water-meters which resides in the construction of the apparatus with alternating lifting-pistons B and B', fitted to proper cylinders, provided with induction and eduction-passages *c c'*, which are alternately connected to the receiving-chamber E and with the passage *g* leading to the discharge-orifice by means of a main sliding-valve, F, whose movements are controlled by the supplemental valves G G', the combination of alternating pistons, main valve, and supplemental valves, being substantially as described.

104,676.—FRUIT-JAR.—Benjamin B. Wilcox, New Haven, Conn.

Claim.—In combination with a spring clamp constructed with the single bends *f*, arms C, and ends A, the cover B, provided with notches *d d'*, two or more in number, each two to receive the ends *f* of the spring, to retain the said spring in position, substantially as described.

104,677.—MEDICINE FOR CURE OF DISEASES IN CATTLE.—Elijah A. Wilder, Dennysville, Me.

Claim.—The above composition as my invention, to be used for the purpose as explained.

104,678.—CAR-COUPLING.—Russel F. Wolcott, Claremont, N. H., assignor to Austin C. Chase, same place.

Claim.—The combination and arrangement of the jaw-piece *b*, its spring *a*, and shackle-lifter *e*, with the catch *c*, lever *g*, and its connecting-link *f*, as shown and described.

104,679.—CAR-COUPLING.—John C. Wrenshall, Baltimore, Md.

Claim.—The combination, with the bumper and cheek-pieces in the same, of the slotted coupling-pin and the transverse pin from which it is suspended, said parts being arranged for joint operation, as herein shown and set forth.

104,680.—PROCESS AND APPARATUS FOR PRESERVING FRUITS, VEGETABLES, &c.—John C. Wrenshall, Baltimore, Md.

Claim.—1. The process herein described of preserving fruit, or other vegetable or animal substances, by treating the same with steam in a vacuum and corking or sealing the jar or vessel in which said substance is contained while the vacuum is maintained, substantially as set forth.

2. The preparation of fruit for "conserves," substantially in the manner herein set forth.

3. The use, within the vacuum-chamber, of an apparatus for preserving animal and vegetable substances, of a follower or sliding head for corking the can or other vessel placed within the vacuum-chamber, actuated from the exterior of the said chamber by means of a treadle and connecting-rods, or the equivalent of the same, substantially in the manner and for the purposes described.

4. The follower or head for corking the jar or other vessel, when made adjustable, or otherwise constructed, as herein described, so as to conform to the height of the jar or vessel placed within the vacuum-chamber.

5. The combination of the sliding and counterpoised cylinder with the table or frame, and the packing upon said table for making a tight joint with the lower end of the cylinder, when the latter rests upon the table and is in communication with the air-exhaust, substantially as shown and set forth.

6. An apparatus for preserving animal and vegetable substances, organized and operating substantially as herein shown and described.

104,681.—RE-SAWING MACHINE.—James York, Jr., Monroe, Michigan.

Claim.—The combination and arrangement of the adjustable circular frame F, the slot *c*, the brace E, the screw *g*, the mandrel G, the saw H, the frame C, and the table D, when constructed and operating as and for the purposes aforesaid.

104,682.—BREECH-LOADING FIRE-ARM.—Lewis V. Young, St. Louis, Mo.

Claim.—1. The trigger-guard lever F, lever *d*, cartridge-ejector E, and breech-piece T, in combination with the barrel A, all arranged and constructed, for joint operation, as and for the purpose specified and shown.

2. The combination of the trigger-guard lever F, arm R, lever *d*, cartridge-ejector E, and breech-piece T, with the swinging barrel A, all arranged and constructed, for joint operation, as and for the purpose shown and specified.

103,098.—STOVE-GRATE.—Reuben Solliday, Allentown, Pa.—Dated May 17, 1870.

Claim.—1. The removable grate-base, consisting of the entire bottom, exclusive of the surrounding frame, when constructed with flanged sides, in combination with the correspondingly flanged base-bars of the said frame, as and for the purpose specified.

2. The combination of the flanged sliding base and vertical extension thereof, as shown in fig. 3, for the purpose set forth.

REISSUES.

4,036.—CORN-SHELLER.—John Bowles, Augusta, Ga., for himself, and Samuel P. Ross, of Pittsburg, Pa., assignee of John Bowles.—Patent No. 89,550, dated May 4, 1869.

Claim.—The arrangement of the arms A and A', one attached to the handle D, and the other provided with a projecting thumb-piece, *a'*, the cob-jaws B, and the hinge or joint E, located between the

handle and the jaws, the said parts being constructed and combined to operate in connection with a suitable spring, substantially as herein described.

4,037. — SHOE. — Charles Buffum, Lynn, Mass., assignee of Joseph B. Johnson.—Patent No. 46,299, dated February 7, 1865.

Claim.—The arrangement of the false sole B and the sewing i, by which the outer sole C and the upper A are united, the said sewing, under such arrangement, being carried around and outside of the periphery of, but not through, the said false sole.

Also, a shoe made without a welt to connect the outer sole to the upper, by lapping the outer sole directly on the upper, and supporting the circuit of laps of the latter on a sustaining body or surface, and connecting the said laps and the sole by sewing going entirely through them, and around that part of the said surface which may give support to the inner edge or part of the laps of the upper.

Also, a shoe made without a welt to connect the outer sole to the upper, and without a permanent inner sole, or one fastened by sewing to the upper, the said process consisting not merely in lasting the laps of the upper over and upon a support-piece or plate laid upon the sole of the last, and less in length and breadth relatively thereto, and temporarily fixed to such sole so as to be capable of being detached therefrom by pulling the last out of the upper, after being so lasted, the lasting threads not going through the said support piece, but simply across it, but in next laying a sole upon the laps and support-piece, and extracting the last from the upper and the support-piece, and, finally, uniting the sole and upper by stitches or fastenings passing through the sole and laps of the upper, and outside the edge of the lap-supporter, as set forth.

Also, the combination of the lasting-plate with the last, by means which will enable the two to be easily separated when the said plate is connected with the sole, and the last is being withdrawn from the upper.

4,038.—Division A.—EXCAVATING-MACHINE. Oliver S. Chapman, Canton, Mass.—Patent No. 63,857, dated April 16, 1867.

Claim.—1. The shovel E provided with the doors F″ and *f*, arranged to operate as herein described.

2. The combination of the laterally-adjustable hub *h*, provided with the inclines *c′* and the rock-shafts *c*, for tightening the friction bands *b*, substantially as and for the purposes set forth.

3. The combination of the bands *e*, rock-shafts *c*, provided with the arms or levers *d′*, and the block W, when arranged to operate as and for the purpose set forth.

4. Constructing the wheels with a notched flange, as represented in fig. 1, for the purpose herein set forth.

5. An excavating-machine, having its platform or supporting-frame provided with two sets of wheels, the one set for operation on the temporary track where the machine is to be used, and the other set, of larger diameter, for conveying the machine from place to place, on ordinary railways, substantially as described.

6. The compound gear-wheel, consisting of the movable portion F, having the slots therein, and the disk F′, with projections to fit into said slots, with the rubber or other yielding material interposed, the whole being arranged for joint operation, substantially as shown and described.

7. The combination of the clutch-wheel I, constructed and arranged as described, with the endless chain H″ and sprocket-wheels *w* and *w′*, as set forth.

8. The combination of the wrought-iron plates C′, having the flanges *c″* formed thereon, and the cast-iron cheek-pieces E bolted thereto, with the crane G, substantially as herein shown and described.

4,039. — Division B. — EXCAVATING-MACHINE. — Oliver S. Chapman, Canton, Mass.—Patent No. 63,857, dated April 16, 1867.

Claim.—1. The ribbed metallic post B, constructed substantially as herein described, to adapt it for use in an excavating machine, as set forth.

2. In combination with said post, the socket B′ and collar B″, when arranged to hold said post in position, substantially as described.

3. The combination of the stirrup S, plate P, and key *l*, with the bar A, for securing the brace to the frame, as set forth.

4,040.—LIQUID-METER.—Jose F. De Navarro, New York, N. Y., assignee, by mesne assignments, of Franz Wagner.—Patent No. 99,206, dated January 25, 1870.

Claim.—1. The arrangement of the rotating valve or valves D or D D′, connected, through a suitable rod or rods *b* or *b b′*, with a reciprocating piston or pistons B or B B′, and operating in the manner and for the purpose substantially as described.

2. The rotating valve or valves D or D D′, with its or their respective chambers *r r′* or *r r′* and *s s′*, in combination with the passage-ways *n*, *m*, and *v*, or *n n′ m m′*, and *v v′*, and communicating, through the passages *p* and *w*, or *p p′* and *w w′*, with the ends of the cylinder or cylinders A or A A′, the whole being arranged substantially as and for the purpose set forth.

4,041.—SIDE-SADDLE.—John T. Gathright, Louisville, Ky., assignee of himself and John C. Freeman.—Patent No. 94,737, dated September 14, 1869.

Claim.—1. The seat B B C, pressed into the form shown, in one or more pieces of wood, and fastened upon the side-bars A A, in the manner described, substantially as and for the purpose set forth.

2. The off horn F, front G, off spring D, near spring E, made of one or more pieces of wood, cut and pressed, in the manner described, in the form shown, in combination with the seat proper, composed of B B and C, substantially as above set forth.

3. The entire wooden shell, composed of arms B B C, off horn F, off spring D, near spring E, front G, in two or more pieces of wood, cut and compressed into the form shown, substantially in the manner and for the purpose described.

4. The near horn H, inserted as described, in combination with the described wooden shell, in two or more pieces, substantially as described.

5. The described wooden shell, in two or more pieces, pressed into the form shown, and braced as described, in combination with the side-bars A A, substantially as described.

4,042.—GRATE.—James Old, Pittsburg, Pa. Patent No. 87,790, dated March 16, 1869.

Claim.—1. A tilting damper-plate, *c*, with agitators *c′* on its upper face, which extend up and operate between the bars *b*, in combination with a lever, *m*, and head *e*, so connected, by a wrist and slot, with such damper-plate, as to lock it open or shut, or vibrate it at pleasure, substantially as and for the purposes above set forth.

2. A lifting-bar, *e*, pivoted between the rear part of a fire-grate and the back wall of the fire-space, for regulating the combustion in the rear part of the fire, constructed and operating substantially as and for the purpose hereinbefore set forth.

3. A dust and air-flue, *f*, extending up from the ash-pit *g* back of the rear tile *d*, and opening by a throat, *i*, into the upper part of the fire-space, under a covering-tile or plate *h*, such covering-plate extending forward over the fire-space, so as to bring the hot air from the flue *f* into close contact with the smoke and gases of combustion, and effect their more perfect ignition, substantially as described.

4,043.—GLOBE STEAM-VALVE.—The Rock Valve Manufacturing Company, Ludlow, Vt., assignee of Edward A. Rock.—Patent No. 74,144, dated February 4, 1868.

Claim.—1. An elastic sheet of metal, bent into a circular shape, but having the ends apart to admit of expansion, and to form a close-seated valve, as described.

2. The combination of the wedge *m*, shell A, and valve G, substantially as herein shown and described.

3. The combination of the ring G and wedge *m*, substantially as herein set forth.

DESIGNS.

4,156.—TRADE-MARK.—William A. Burke, Lowell, Mass., assignor to "the proprietors of the Tremont Mills."

Claim.—The design for a trade-mark, as described and shown.

4,157.—STOCKING FABRIC.—Thomas Dolan, Philadelphia, Pa.

Claim.—The design for a stocking fabric, substantially as described, and as represented in and by the accompanying drawing.

4,158.—"BEDOUIN," OR ARAB.—Thomas Dolan, Philadelphia, Pa.

Claim.—The design or configuration of an "Arab" or "Bedouin," produced by sewing it together on the lines A B, B C, so as to cause it to fit the body without cutting, and, at the same time, form a hood-piece, substantially as described.

4,159. — BUILDING-FRONT. — John Fraser, Frank Furness, and George W. Hewitt, Philadelphia, Pa.

Claim.—The design for a buiding-front, as shown.

4,160.—SASH-FASTENER.—William Gorman, New Britain, Conn.

Claim.—The design for a sash-fastener, substantially as shown and described.

4,161.—ORGAN.—Emmons Hamlin, Winchester, assignor to "Mason & Hamlin Organ Company," Boston, Mass.

Claim.—The new design or form for a cabinet or parlor organ, substantially as shown and described.

4,162.—FRAME FOR A PRINTING-PRESS.—John Henry, Millburn, N. J.

Claim.—The design of a frame for a printing-press, substantially as shown and described.

4,163.—WIRE BROILER.—William J. Johnson, Newton, and Henry A. Hildreth, Lowell, Mass.

Claim.—The design for a wire broiler, as shown and described.

4,164. — "BASCHLIK."—Martin Landenberger, Philadelphia, Pa.

Claim.—The design for ladies' "baschlik," as shown and described.

4,165.—SHAPE OF A HOOD.—Martin Landenberger, Philadelphia, Pa.

Claim.—The design for shape of hood, as shown.

4,166.—TABLE-CASTER.—Cyrus H. Latham, Lowell, Mass.

Claim.—The design for a table-caster, substantially as described, and illustrated in the accompanying photographs.

4,167, antedated May 26, 1870.—PLATES AND FEET OF THE "DEXTER" COOKING-STOVE.—John Martino and John Currie, Philadelphia, Pa., assignors to Charles Noble & Company, same place.

Claim.—The design for the plates and feet of the "Dexter" cook-stove, substantially as described, and as represented in and by the accompanying drawings.

4,168. — DOG-MUZZLE. — Fred. J. Meyers, Covington, Ky.

Claim.—The design for dog-muzzle herein described and represented.

4,169. — BREAST-COLLAR FOR HARNESS.—William R. Olmsted, Fayette, N. Y.

Claim.—The design for a breast-collar as herein described and represented.

4,170.—BOTTLE.—Oliver H. P. Rose, East Greenwich, R. I.

Claim.—The design for a bottle, as represented in the drawings, and described, for the purpose specified.

4,171. — COOKING-STOVE. — Garrettson Smith and Henry Brown, Philadelphia, Pa., assignors to C. S. Francis, Henry Francis, H. L. Buckwalter, J. A. Buckwalter, and John Sheeler.

Claim.—The design for a cooking-stove, as shown.

4,172. — HEATING-STOVE. — Garrettson Smith and Henry Brown, Philadelphia, Pa., assignors to C. S. Francis, Henry Francis, H. L. Buckwalter, J. A. Buckwalter, and John Sheeler.

Claim.—The design for a heating-stove, as shown.

4,173. — RING AND BUCKLE. — James E. Strode, Hillsborough, Ill.

Claim.—The design for ring and buckle, united, as shown.

EXTENSIONS.

CHARLES T. EAMES, of Milford, Mass.—Letters Patent No. 14,951, dated May 27, 1856; reissue No. 1,292, dated March 25, 1862; reissue No. 2,466, dated January 29, 1867.

"Improvement in Boot-Trees."

Claim.—1. The combination of the rod D, constructed substantially as described, directly with the front B, for the purpose specified.

2. The arrangement together of the rod D, the lever H, and its spring, and the front B, substantially as described.

3. A boot-tree constructed in two parts A and B, when such parts are combined by means of a rod, cam, and incline, substantially as and for the purpose specified.

4. The use in a boot-tree of a single cam and incline, when the cam is attached to the lower end of stretching-rod, and transverse upon the inclined plane located in the back at or near its lower end, and operating substantially as described.

ADELIA E. BALL and EDWIN P. BALL, of Chicopee, Mass., administrators of WILLIAM BALL, deceased.—Letters Patent No. 14,944, dated May 27, 1856.

"Improvement in Operating Steam Stamps."

Claim.—Stopping the operation of the stamps whenever the piston is allowed to descend to a certain point by the neglect to feed the material to the mortar in time, as set forth.

WILLIAM CLEMSON, of Middletown, N. Y.—Letters Patent No. 14,950, dated May 27, 1856.

"Improvement in Grinding Circular Saws."

Claim.—1. The combination of the roll E with the grindstone B, operating in the manner substantially as herein set forth.

2. The use of the flat pivot for the purpose of enabling the stone to operate upon the entire surface of the saw.

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PATENTS.

104,683.—BELT-BUCKLE.—Israel Alexander, San Francisco, Cal.

Claim.—The shield A and rim-pieces C and D, when united by the rod B, as described.

104,684.—ANIMAL TRAP.—Charles Angle, Hazel Green, Mich.

Claim.—1. The combination of the arms A A', collars C and C', braces B and B', collar a, cylindrical tube T, and rod S, provided with the hook H, all constructed and arranged to operate as herein described, and for the purpose specified.

2. In combination with the above, the ring R', for the purpose specified.

104,685.—QUILTING-FRAME.—John Angus and John P. Angus, Mindenville, N. Y.

Claim.—The combination of the ordinary roller C of a quilting-frame, with the stretching-bar H, constructed and arranged to deliver the lining, as shown and described.

104,686. — MANUFACTURE OF IRON AND STEEL.—George Frederick Ansell, Bernard street, Russell Square, England.

Claim.—The use of bisulphate of potash or soda, or of a combination of these substances, for the oxidation and removal of the impurities of and from iron and steel, as herein described.

104,687.—LAPPET LOOM.—William Aspinall, Philadelphia, Pa.

Claim.—1. The revolving and sliding wheel A, attached to and moving with the lay b, substantially as and for the purpose herein set forth.

2. The levers f f' on the movable studs e e^1, in combination with the revolving and sliding wheel A, substantially as and for the purpose set forth.

3. The combination of the spiral spring s with the studs e and e^1 and revolving and sliding wheel A, substantially as and for the purpose specified.

4. The pattern-rings i i, with the revolving and sliding wheel A^1, when constructed and arranged as described.

5. The combination of the levers f f, spiral springs r r^1, links n n^1, and needle slides o o^1, with the revolving and sliding wheel A, substantially as and for the purpose specified.

6. The construction and arrangement of the gears u u', cam w, and lever y, in combination with the revolving and sliding wheel A, all constructed and arranged substantially as and for the purpose specified.

7. The tension device, constructed and operating substantially as herein described.

104,688.—PUMP.—Anson Balding, Wheeling, West Va.

Claim.—1. The barrel A, in combination with the filter d and disk d', as and for the purpose described.

2. The combination of the piston-head C with the packing-stripe i, when the latter are clamped between the disks c c and ring A, in the manner and for the purpose specified.

104,689.—HAY AND COTTON-PRESS.—Richard Ball, Petersburg, Va.

Claim.—1. The right and left screw-rods D, combined with nuts a, fixed to a bed, b, nuts c, swinging in arms c, and perforated plates f, resting upon the follower, all relatively arranged as and for the purpose specified.

2. The right and left screw-rods D, having square middle g, combined with loose collars E, and supports A, all constructed and relatively arranged on a press, as shown and described.

3. The combination of pawl-plates F i and loose collars E, both resting upon a support, h, and surrounding the square middle of right and left screws, to rotate the latter and actuate a press, in the manner described.

104,690.—SLEIGH-BELL.—William E. Barton, East Hampton, Conn.

Claim.—As a new article of manufacture, the improved sleigh-bell herein described, having a permanent lathe-center, d, and a saw-kerf throat or slit, e, for the purposes set forth.

104,691.—RAILROAD-CAR SPITTOON.—William James Beach, Nashville, Tenn.

Claim.—A railroad-car spittoon, provided with a swinging door, D, spring E, lever F, and rod G, all arranged to operate as set forth.

104,692. — STUMP-EXTRACTOR. — Candidus Bilharz, Pittsylvania Court House, Va.

Claim.—The semi-spherical yoke D, supported by the perforated plate A, so that it may rock upon the same, as set forth, for the purpose of making the elevating apparatus yielding, as specified.

104,693. — CORN-HUSKING MACHINE. — Thomas J. Burgess, Rondout, N. Y.

Claim.—1. The inclined arrangement of the rollers C D with reference to the parallel and horizontal position of the rasping or roughened cylinders B, and the opening E, in the frame A, whereby the ears, after leaving the cylinders, and being deprived of husks and silk, are caused to fall parallel with the axes of said rollers, and move automatically along them to the discharge-opening, substantially as herein shown and described.

2. The combination of the rollers D, furnished with circumferential series of teeth, the roller C, having peripherical grooves, the two roughened or rasping cylinders B, and the frame A, substantially as and for the purpose herein set forth.

104,694.—LIME-SPREADER.—W. C. Burnett, Burns' Mills, Pa.

Claim.—The combination of the bottoms a b c, and endless apron D, when constructed and operating as herein shown and described.

104,695.—HARVESTER.—James Birch and Addison Crosby, Westfield, N. Y., and Thomas Birch, Meadville, Pa.

Claim.—1. The angle-iron, skeleton, main truss-frame, constructed substantially as described.

2. The socket c^2 and perforated lugs c^x on the main truss-frame, in combination with the inner arms of the coupling-frame or drag-bar, constructed and applied thereto substantially as described.

3. The arrangement of the triple-speed driving-gearing on the main axle E and shafts J J^1 J^2, placed at right angles to said axle, and in the described relation to the main frame.

4. The loose sleeve b and adjustable bevel-wheel H on the main axle, in combination with the adjustable double bevel-pinions A h' on shaft J, substantially as described.

5. The casing for inclosing the gearing made of wire-gauze or perforated sheet-metal, constructed and applied substantially as and for the purpose set forth.

6. The driver's seat, made of wire-gauze, or other pliable or yielding material, when suspended from the C-shaped spring standards M, substantially as and for the purpose described.

7. The compound lifting-lever, in combination with sheaves R and T, or equivalent devices, substantially as described, for raising the inner, outer, or both ends of the cutting apparatus, at the option of the attendant.

8. The combination of the compound lifting-lever S, sheaves R and T, and foot-latch or pawl w, substantially as described.

9. The forked coupling-plate or frame D, with its opposing pivots, in combination with the sockets e e^1 and cap-piece e^2, for uniting the shoe with the coupling-arm or fork D, as described.

10. The taper-washer, in combination with the track-clearer, for changing the angle of said track-clearer to the path of the machine, as described.

11. The adjustable standard X and hook-plate Z, in combination with the tongue-plate, for giving the desired vertical and lateral adjustment to the tongue, as described.

104,696. — STEAM HEATER. — George W. Blake, New York, N. Y.

Claim.—The arrangement of the inlet and outlet-chambers B C and pipes, with a communication, H, between the said chambers, for operation substantially as herein described.

104,697.—WATER-WHEEL.—Oliver J. Bollinger, York, Pa.

Claim.—The upper and under plates, curved beyond the gates, as at b h, for the purpose of making a flaring and rounded inlet for the water, as and for the purpose described.

Also, in combination with the crown-plate and its flange h, the deck-plate and its flange k, for rounding off the junction of said plates, as and for the purpose described.

Also, in combination with the series of gates and their studs m, (said gates being arranged between the stationary plates and the studs m projecting through the upper plate of the two,) the movable deck-plate G and its cams r, for opening said gates, substantially as described and represented.

104,698.—BAG-HOLDER.—Edwin Boynton, Palmyra, Wis.

Claim.—The portable bag-holder, constructed as described, of the hopper A, removable legs B, and removable adjustable legs D, substantially as herein described, for the purpose specified.

104,699.—BIRD-CAGE.—Thomas H. Bradley, St. Louis, Mo.

Claim.—The combination of the swing and forked stop, all as and for the purpose described.

104,700.—PREPARATION OF WHEAT FOR FOOD.—William S. Brewster, Chicago, Ill.

Claim.—As an improved product for dietetic purposes, jammed or crushed wheat, in which the bran and flour are both retained for consumption, as herein described, for the purpose specified.

104,701.—STAMP-CANCELER.—Franklin W. Brooks, New York, N. Y.

Claim.—1. The combination of the toothed cap-plate C with annular plate A, and spring catches, E E, arranged to operate substantially as set forth, for the purpose stated.

2. The central toothed plate B, applied within the annular plate A, and secured from turning, substantially in the manner set forth.

104,702.—SNAP-HOOK.—George A. Brown, Kalamazoo, Mich,

Claim.—The lever c, projection b, and the cross-bars a, f, e, and d, when constructed and arranged, without a spring, substantially as herein set forth and described.

104,703.—COMBINED HEARTH, GRATE, AND FENDER.—George Buchanan, Washington, Pa.

Claim.—1. A vertically-adjustable fender, composed of the sections A, B, and C, when arranged to slide within each other, as specified.

2. The adjustable fender herein described, composed of the outer section A and vertically-sliding sections B and C, connected by the studs a and slots b, and provided with the springs m and covering lip L, substantially as and for the purposes specified.

104,704.—CAR-COUPLING.—Samuel P. Carll and Amos Shute, Richmond, Ind.

Claim.—1. The coupling-bar B B, provided with barbed heads, and constructed and arranged to couple by lateral and be uncoupled by vertical movement, as set forth.

2. In combination with the above, the chain E and levers I J, &c., when arranged so as to operate as set forth.

3. The spring O, in combination with the stirrup M, springs P and P', and coupling-bar A, when the several parts are constructed and arranged substantially as described.

104,705. — OFF-BEARING APPARATUS FOR BRICK-MACHINES.—Cyrus Chambers, Jr., Philadelphia, Pa.

Claim.—1. The off-bearing or regulating belt or apron of a brick-machine, provided with the projections or buttons f f on its inner side, and working over rollers having grooves or depressions in their surfaces, for the passage or reception of said buttons, as and for the purpose described.

2. The combination and arrangement of the hinged frames A and G, with their respective belts D and L, and self-adjusting rollers H, constructed and operating as stated.

104,706.—DEVICE FOR TENDERING OR CHOPPING MEAT.—Fred. W. Codding, West Rutland, Mass.

Claim.—The improved meat-tenderer and chopper herein described, composed of the knives A to x A w x, (two or more,) stock B z y v u, handle C t, leads D, and screw or screws E, constructed and arranged substantially as shown, for the purposes set forth.

104,707, antedated June 13, 1870.—STREET-SWEEPING MACHINE.—Alexander A. Consalvi, New York, N. Y.

Claim.—The combination of the eccentrically-pivoted and semicircular receiver K, the pan J, adapted to be raised and lowered, and the rotary sweeper F E, all connected with a windlass, R, by chains X Y Z, when said parts are arranged as shown, and are constructed to operate substantially as herein described.

104,708.—WASHING-MACHINE.—Gideon W. Cottingham, Marshall, Texas.

Claim.—The globular case b, provided with the slots c, and combined with the boiler a and furnace A, in the manner and for the purpose described.

104,709.—LAMP-BURNER.—Robert R. Crosby, Boston, Mass.

Claim.—As an improved manufacture, the burner as described, as having the wick-holder, or such and the wick-elevator, and the case thereto, combined with the foraminous dished slider, and such slider supported on and by posts C C, so as to play vertically thereon, connecting the chimney-holder and its deflector with the cap-screw for fixing the burner to a lamp-reservoir, the whole being as represented.

Also, the arrangement of the spring latch with the wick-tube, the screw-cap, and the foraminous cup, applied together and to operate as explained.

104,710. — CHURNING APPARATUS.—James P. Curtis, Wytheville, Va.

Claim.—1. An improved churning apparatus formed by the combination of the chair N, rockers

M, short connecting-bars or rods L, levers J, connecting-rods or bars I, sliding blocks C, arms D, dasher-handles E, and semicircular dashers H, with each other and with the platform A, upright board or frame B, cover F, and churn G, substantially as herein shown and described, and for the purpose set forth.

2. The combination of the projections or teeth O, and sockets or recesses P, with the rockers M of the chair N, by means of which the churn is operated, substantially as herein shown and described, and for the purpose set forth.

104,711.—MUSTACHE-SHIELD FOR CUPS.—George P. Cutler, Lawrence, Mass.

Claim.—A mustache-shield, A, provided with a spring holder or clasp, B, substantially as and for the purpose herein specified.

104,712.—KNOB-LATCH.—John Davis, Terre Haute, Ind.

Claim.—1. The spring pieces *n n*, provided with catches *i i*, and attached to the spindle G, substantially for the purposes herein set forth.

2. The combination of the spindle G, tumblers D D', latch B, bolt C, and bolt *f*, all constructed and arranged as described, to operate substantially in the manner and for the purposes herein set forth.

104,713.—METALLIC ROOFING.—John Boon Davis, Cleveland, Ohio.

Claim.—The arrangement of the metallic roofing of plate, having side-laps E F, reversely to each other, laps C D, also in reverse, with the double-lopped corners at *e'*, in combination with the hooked clamp K, as substantially set forth.

104,714.—SEAT FOR VEHICLES.—Porcius Festus Dean, Watsonville, Cal.

Claim.—The seat-frames C C, made open on their upper sides, and connected with the seat-supporting crank-irons G G, as shown and described, for the purpose specified.

104,715.—BALANCE SLIDE-VALVE.—William Dillon, Wheeling, West Va.

Claim.—The arrangement of the rods E E, vertically adjustable guide-rod D, and the transverse and stay-plates, with the valve A, dome B, and spring disk C, all as shown and described, for the purpose specified.

104,716.—APPARATUS FOR CARBURETING AIR.—Antoine Ernest Dupas, Paris, France, and Arthur Barbarin, New Orleans, La.

Claim.—1. The revolving float, composed of a disk, D, perforated in the manner herein described, a rectangular hollow or tube-like rim, G, and a stem, E, when in other respects constructed and operated as herein described, for the purpose set forth.

2. The perforated disk D, provided with the rim G and graduated stem E, in combination with the casing I, when the latter is provided with a glass disk, as herein described and for the purpose set forth.

104,717.—WINDOW-BLIND.—Stephan Eich, East Toledo, Ohio.

Claim.—The spring clamps E, arranged on side of the frame A of the blind, and bearing on the wires F of the movable frame C D, all as shown and described.

104,718.—END-FASTENER FOR CAR-SPRINGS.—George Elliot, St. Louis, Mo.

Claim.—The cap B, fastener C, and spring A, combined substantially as set forth.

104,719.—COMPOUND FOR STUFFING AND TANNING HIDES.—Elihu England, Mossy Creek, Tenn.

Claim.—The composition herein described, to be used as stuffing prior to, and as a preparation for tanning, in the process described in my patent of March 29, 1870.

104,720.—CLOTHES-PIN.—George K. Farrington, Alcatraz Island, Cal.

Claim.—In a clothes-pin, of substantially the described construction, the detachable roller B, as described, for the purpose set forth.

104,721.—LINIMENT FOR TREATING NEURALGIA, &c.—George L. Fearis, Connersville, Ind.

Claim.—A liniment, composed of the ingredients and compounded in about the proportions herein specified.

104,722.—WASH-BOILER.—Benjamin G. Fitzhugh, Frederick, Md.

Claim.—In combination with the boiler A, the pipes B and dasher E, when arranged to operate substantially as herein described.

104,723.—GAS-BURNER.—Charles S. Ford, Philadelphia, Pa., assignor to himself and Charles Young, same place.

Claim.—The combination and arrangement of the adjustable hollow valve C, with the pillar A, having a series of perforations, *d*, of different sizes, in the same horizontal plane, the said valve having a single perforation, *h*, of greater size than the largest perforation *d*, substantially as described.

104,724.—BOW FOR CARRIAGE-TOPS.—Joinville F. Fowler, Alliance, Ohio.

Claim.—The steel bows A, either with or without the wood tops B, substantially as and for the purposes described.

104,725.—WASHING-MACHINE.—Samuel C. Frink, Indianapolis, Ind.

Claim.—1. The construction of the tubes N N, which serve as journals, and for the introduction of water into the cylinder M, in combination with diaphragm A', as shown and described.

2. The revolving cylinder M, when constructed with its openings D D, in combination with conducting-tubes N N and G G, and diaphragm A, and boiler A, as shown and described.

3. In combination with the above, the wood perforated button X, constructed with the covering of cloth, in the manner shown and described.

104,726.—WATER-WHEEL.—Olney Fuller, Bennington, Vt.

Claim.—The stationary head *g* and cylinder *h*, with the openings *i*, supported by the frame *d*, and central column *e*, in combination with the ring-gate *o*, made and adjusted as specified, and the wheel *l n*, sustained by the disk *k* and shaft *f*, and revolving outside of and below the head *g*, as set forth.

104,727.—MEDICAL COMPOUND.—George C. Furber, Yreka, Cal.

Claim.—The above-mentioned medical compound, composed and prepared substantially as and for the purposes herein described.

104,728.—GRAIN-CLEANER AND SEPARATOR.—William Gardner, Catalpa, Ky.

Claim.—1. The grain-separator, consisting of the belt C, fixed slotted plate D, and reciprocating perforated plate E, the belt carrying a series of boxes, *d*, with perforated bottoms, as set forth.

2. The lever H and cam *f*, combined with the belt C, for the purpose of imparting intermittent rotary motion to the same, as set forth.

104,729.—CORN-PLOW.—Marcellus B. Goff, Delavan, Wis.

Claim.—The guide-iron E, having a standard provided with flange *a* and elongated slot *b*, and having a base or runner made with a rounded front, *f*, substantially as described.

104,730.—COFFIN-FASTENING.—William Hamilton, Allegheny City, Pa.

Claim.—1. Providing the body A with plate C, furnished with openings D, and in combination therewith providing the lid B with thumb-screws *f*, substantially as herein described, and for the purpose set forth.

2. In combination with the above, providing the lid with conformed projections *m*, and the top edge of the sides of the body A with corresponding cavities *n*, as herein described.

104,731.—ELEVATOR.—William Hamilton, Allegheny City, Pa.

Claim.—1. Constructing the rack *m* with grooves *o'*, made in sections, and pivoted together, substantially as herein described, and for the purpose set forth.

2. The use of the pivoted racks R, in combination with the endless screws D, substantially as herein described, and for the purpose set forth.

3. The combination and arrangement of the levers *x t u v* and spring *w* with the pivoted rack R, as herein described, and for the purpose set forth.

4. Providing the two upper sections of the rack *m* with blank spaces *n*, arranged with relation to the endless screws D, so that the teeth of said section of the rack shall become unshipped from the threads of said screws, substantially as herein described, and for the purpose set forth.

5. The arrangement of the beveled wheels *e f g h i* J K and endless screws D, constructed, arranged, and operating, with relation to the racks *m*, substantially as herein described.

104,732.—NEEDLE-SHARPENER.—Edgar K. Haynes, Boston, Mass.

Claim.—The device herein described for sharpening needles, substantially as set forth.

104,733, antedated June 23, 1870.—SHANK-LASTER AND PUNCH.—Frederick Henderson, Marietta, assignor to himself and George H. Bell, Portsmouth, Ohio.

Claim.—1. The swinging flap a^2, when combined with a punch, as described, for the purpose set forth.

2. The tool described, consisting of the handles, jaws, and punch, when combined and arranged as described, for the purpose set forth.

104,734.—DEPILATING AND TANNING HIDES AND SKINS.—John Henry, New York, N. Y.

Claim.—1. The submission of the hides or skins while undergoing the process of depilation to such agitation and kneading in boxes or cylinders, substantially as described.

2. The composition above mentioned, for the purpose of depilation.

3. The tanning composition above-described, substantially as set forth.

104,735.—ASH-SIFTER.—Lewis G. Hoffman, Albany, N. Y.

Claim.—The arrangement of the sifter B, with the slide E, handle C, and guide C', in combination with box A, by which the sieve may be turned, and its contents discharged, as shown and described.

104,736.—DUMPING-MACHINE.—George W. Hough and William S. Hough, Galva, Ill.

Claim.—1. The combination and arrangement of the platform E, inclines F F', and planks or drops G G, when pivoted at their ends, and operating in slots in the floor C, substantially as described, and for the purpose set forth.

2. The weighted lever S, gear-wheel R, pinion P, cords L L, bar I, and blocks J, combined and operating with the devices of the first claim, in the manner as described, and for the purpose set forth.

104,737.—BURIAL-CASE.—Ralph Hunt, Milford, N. J., assignor to Daniel M. Sprogle, Annapolis, Md.

Claim.—A coffin-vault or receptacle, made of cement and in sections or parts of small size, for convenience of transportation, said parts being suitably grooved for being joined with cement, all as and for the purpose described.

104,738.—CAR-BRAKE.—Reuben Hurd, Morrison, Ill.

Claim.—The combination of the rod or screw D, nuts D^1 D^1, links D^2 D^2, levers E E, and wedges F F, substantially as and for the purpose set forth.

104,739.—APPARATUS AND PROCESS FOR THE MANUFACTURE OF SOAPS.—Moses Hyde, and Francis Hyde, Baltimore, Md.

Claim.—1. The continuous process of soap-making, substantially as herein set forth.

2. An apparatus for making soap, consisting of reservoirs and conductors for supplying the necessary ingredients, a mixing-vessel, an appliance for stirring and mixing the ingredients therein, and a suitable discharge-pipe or aperture.

3. The deflecting-disks, for directing the ingredients toward and from the center of the cylinder, alternately, in a soap-making apparatus, substantially as described.

4. The peculiarly-constructed stirrers represented in figs. 4, 5, 6, 7, 8, or any combination of them, to be used upon a rotating shaft in a mixing-cylinder, for the purpose stated.

5. The steam-jacket and steam and water-pipes, each in combination with a mechanical soap-making apparatus, substantially as set forth.

104,740.—IRONING-MACHINE.—William Jones, Oshkosh, Wis.

Claim.—The arrangement of the carrying-apron C, (and its rolls M N,) to deliver the clothes after being smoothed, in combination with table B, guide-rollers I J, curved plate L, and hollow roller D, provided with springs K, and connected with a steam apparatus, all as shown and described.

104,741.—TANNING.—James Kidder, Urbana, Ohio, assignor to himself and James F. Shumate.

Claim.—The process for tanning leather, substantially as herein described.

104,742.—APPARATUS FOR ELEVATING BEER.—Albert H. Ladner and Thomas F. Fenlin, Philadelphia, Pa.

Claim.—1. The duplex keys G and G', connected together by means of the rod H, when arranged and operating in relation to the cocks F and F', substantially in the manner and for the purpose set forth.

2. The combination of the air-vessel A, water-vessel B, pipes C D K and K', cock F and F', valve L, and float M, all constructed, arranged, and operating in relation to each other, substantially in the manner and for the purpose specified.

104,743.—TABLE-CASTER.—Cyrus H. Latham, Lowell, Mass., assignor to Woods, Sherwood & Co., same place.

Claim.—The caster herein described, consisting of the handle, cups, and legs, of twisted wire, combined and arranged substantially in the manner described and specified.

104,744.—ENGRAVING-MACHINE.—John D. Luthrop, New York, N. Y., assignor, by mesne assignments, to Lippiatt, Maltby & Morse, same place.

Claim.—1. In machines for engraving and chasing, the arrangement of the tool-stock Q, tool-slide Z, to operate with the spindle D upon the work, substantially as and for the purpose herein shown.

2. The employment of a stationary pattern-die, in combination with the revolving tracing-pin *g*, substantially as and for the purpose herein stated.

3. The use of the flat-faced chilled cast-iron dies, in combination with the slide-rest and transferring-mechanism, substantially as and for the purpose herein described.

4. The arrangement and combination of the roset-die with the pattern-die, tracing-pin *g* and tracing-roller *h*, operating upon the lever *p*, substantially as and for the purpose herein shown.

5. The employment of the apron-lever 19, in combination with the slide-rest and transferring-mechanism, substantially as and for the purpose herein shown.

6. The combination of the vertical tool-stock, suspended between the centers R and S, with the sliding bolt, when relatively arranged and operating substantially as and for the purpose herein shown.

7. The construction and arrangement of the mandrel E, pattern-die *x*, and revolving disk *i*, operating and arranged for the changing of the dies, substantially as herein stated.

8. The arrangement of the pattern-die, the tracing-pin *g*, in combination with the feed-screw *l* and lever *p*, substantially as and for the purpose herein shown.

9. The combination and arrangement of the lever *p*, the screw *t*, lever *r*, tracing-roller *h*, and lever *o* and tracing-pin, substantially as and for the purpose herein stated.

10. The combination of the variable-feeding device of the slide-rest with the variable-feeding device of the tracing-pin, when the latter operates substantially as and for the purpose herein shown.

11. The combination of the sliding pin 23, the segment or bell-hanged lever 22, and positive connecting device, with the tool-slide, substantially as and for the purpose herein stated.

12. The device herein shown for changing from direct to reverse action, and *vice versa*, of the pattern-die upon the tool-slide 2, substantially as and for the purpose herein described.

13. The arrangement of the feed-screw *l*, the feed-lever *z*, the gear 3, and reversible pawl 5, in combination with the inclined T-faced piece *w*, substantially as and for the purpose herein shown.

14. The combination and arrangement of parts as a whole, substantially as and for the purpose herein stated.

104,745.—Lantern.—Lemuel W. Leary, Norfolk, Va.

Claim.—The combination of the brackets B and wire ring *f* with the top or base A and guard-wires D of a lantern, constructed and operating substantially as set forth.

104,746.—Rotary Steam-Valve.—George Leckenby, Westown, Mo.

Claim.—1. The oscillating valve and steam-chamber B, having three apertures in its periphery, in combination with a hollow shaft, C, moving with it, and connected with the central aperture thereof, so as to alternately exhaust the steam from each end of the piston, as shown and described.

2. The combination of the steam-inlet F, sleeve G, case A, and valve-chamber B, with a hollow shaft, C, discharging the exhaust steam at the side, in the manner set forth.

104,747.—Sheet-metal Can.—Joseph Le Comte and George H. Perkins, Brooklyn, N. Y.

Claim.—The expanded sides 8 8, in combination with the horizontal seams 1 2 3 4, and flutes F, as shown in the drawing, all arranged and operating in the manner and for the purpose set forth.

104,748, antedated June 9, 1870.—Flat or Sad-Iron.—Luther Lincoln, Norton, Mass.

Claim.—A flat or sad-iron, made with the bottom of its body cast against a chill-plate, and subsequently polished by means as set forth.

104,749.—Door-Lock.—Joseph Linder, Seneca Falls, N. Y.

Claim.—1. The lock provided with double bolts, B C, and with the slide D and lever E, for moving the bolt C, as set forth.

2. The double-acting tumblers F G, arranged in combination with the bolts B and C, bar D, and lever E, as specified.

104,750.—Car-Coupling.—John A. Mason, Keokuk, Iowa.

Claim.—1. The construction, upon the coupling end of a draw-bar, of a hook, *c*, having a lateral flange, *f*, formed on it, in combination with a rear reduced portion, *b*, substantially as described.

2. The jointed device *h h'*, arranged between and connected to the shaft C and the draw-bar B, whereby the use of springs may be dispensed with, and yet the uncoupling and coupling of the cars may be effected by turning the shaft C, all in the manner described.

3. The laterally-inclined stirrup *n*, laterally and vertically movable draw-bar B, and a flanged coupling-hook, constructed and combined substantially as described.

104,751.—Lathe.—Francis B. Mattson, Rockford, Ill., assignor to himself and William P. Dennis.

Claim.—1. The arrangement of the rollers G G, shaft E, and standard C, when constructed as shown and described, and for the purpose specified.

2. A back-rest for turning-lathes, composed of the slotted base A, socket B, standard C, socket D, shaft E, wings F F, adjustable rollers G G, lever H, and spring I, when combined, arranged, and operating as described, for the purpose set forth.

104,752.—Still for Spirits.—Elijah Melton, Flemingsburg, Ky.

Claim.—The series of chambers A A' A'', placed on a gradient of successive steps, in the manner and for the purpose described.

104,753.—Carpenters' Plane.—Charles G. Miller, Brattleborough, Vt.

Claim.—1. The stocks A and H, combined with the gauge E, the three being constructed and relatively arranged as and for the purpose described.

2. A detachable stock H, consisting of inclined plate *j* and horizontal plate *i*, flanged at *m*, all as and for the purpose described.

104,754.—Cultivator-Plow.—James G. Miner, Nashville, Tenn.

Claim.—A cultivator-plow formed in one piece, with wings widening from front to rear to form an acute angle, and having a steel share, formed of a turned-up ledge, converging toward the center and lying flat upon the ground, whereby a very small frictional resistance is attained, the share is made a self-sharpener, and the entire space between the rows cut out at a single passage.

104,755.—Punching-Machine.—Charles S. Moseley, Elgin, Ill.

Claim.—The combination of the annular holder F and bar *i*, and the die A and bar *b*, with the bifurcated piston or punch H, as and for the purposes set forth.

104,756.—Safety-Pinion for Watches.—Charles S. Moseley, Elgin, Ill.

Claim.—The loose pinion B, when a portion of the opening through the same is enlarged, beveled, and milled or corrugated, as described, in combination with the nut *c*, when one end is beveled and milled or corrugated, as described, substantially as and for the purposes specified.

104,757.—Dredging-Machine.—Ralph Robert Osgood, Troy, N. Y.

Claim.—1. In combination with the dipper-handle and scoop, the traveling sheave and chain, the sheave moving on suitable ways, so as to be always above, or nearly above, the scoop, which it supports, as set forth.

2. The wheels *f* and *g*, hung loose upon their respective shafts, which are connected with the shaft F, to revolve the same in opposite directions, when the wheels *f g* are locked by clutches, as set forth, for the purpose specified.

104,758.—Medical Compound.—Edward Myers, Davis, Ill.

Claim.—The medical compound, consisting of the ingredients, in the proportions, and for the purpose set forth.

104,759.—Boiler-tube Plug.—Robert Louther Neill, Paterson, N. J.

Claim.—As an article of manufacture, an improved boiler-plug, consisting of screw A *a*, loosely-fitted metal disk B, and the elongated plate C *b b*, all combined with packing rubber disk *c* and intervening wooden disk *d*, all relatively arranged as set forth.

104,760, antedated June 16, 1870.—Case for Scissors.—David B. Page, Henry, Ill.

Claim.—The metallic case A, the pin B, and spring C, combined and arranged substantially as shown, and for the purpose and use herein set forth.

104,761.—Clothes-Drier.—Asahel H. Patch, Hamilton, Mass.

Claim.—The beam A, posts B B, the bar C, cords D D, suspending guides or brackets E E and F, and stud-pin H, all arranged as and for the purpose specified.

104,762.—Street-Railway Car-Truck.—Joseph R. Perry, Daniel W. Perry, and James Perry, Wilkesbarre, Pa.

Claim.—The combination of a laterally moving truck, consisting mainly of a pair of wheels, mounted on a single or divided axle and a frame, with trucks of the construction of the truck B, or of the construction of the truck A on one side, and of the construction of the truck B on the other side, for the purpose of extending the base on which the car rests, and of increasing the number of bearing points, and of providing a flexible and easy running gear, substantially as described.

104,763.—Cultivator.—John Wesley Philp, Humboldt, Tenn.

Claim.—The arrangement of the frame A D, the arms E, set-screws *g*, keepers F, draft-bar B, handles H *h'* I, cultivator-teeth K, harrow-teeth J, and crossed or inclined teeth, all constructed substantially as shown and described.

104,764.—Tea-Pot.—Nathaniel Plympton, Boston, Mass.

Claim.—As a new or improved manufacture, an earthenware tea-pot, having its bottom notched or grooved, substantially as described.

104,765.—Refrigerator Railroad Car.—Joseph D. Potts, Philadelphia, and Benjamin P. Lamason, Milton, Pa., assignors to Empire Transportation Company.

Claim.—1. The ventilator E, constructed with the openings *h* and I, substantially as and for the purpose set forth.

2. The ice-box D, with the apron *e*, arranged substantially as and for the purpose described.

3. In combination with the above, the inside doors A, B, and C, constructed substantially as herein described.

104,766.—Bottle-Stopper.—Henry C. Pratt, Boston, Mass.

Claim.—The stopper, composed of the plug or cork A, and interior screw-threaded cylinder B, adapted to screw upon the neck C, substantially as herein set forth.

104,767.—Window-shade Rack.—Joshua Pusey, Philadelphia, Pa.

Claim.—The combination of the guide, fig. 1, provided with the recesses X, or their equivalent, with the pawl, fig. 2, working in said recesses, and the movable toothed rack, fig. 3, arranged, constructed, and operating substantially as and for the purpose herein described and set forth.

104,768.—Automatic Fan.—David Ramler, Union Deposit, Pa.

Claim.—The combination and arrangement of the fan-arms E E, sleeve G, adjustable sleeve H, connecting-rods I I, and shaft C, with devices for giving motion to the same, substantially as herein described, and for the purpose specified.

104,769.—Punch.—Isaac P. Richards, Whitinsville, Mass.

Claim.—Constructing a punch separable from the holding-stock, with a hole through its axis, and with a removable teat, *c*, inserted in said hole, substantially as described, for the purposes specified.

104,770.—Band Sawing-Machine.—John Richards and William H. Thorne, Philadelphia, Pa.

Claim.—1. The combination of the movable bracket *c*, with the table and lower wheel of a band sawing-machine, operating substantially as described.

2. The rotating cylindrical back-support *i*, in combination with a band-saw, arranged and operating substantially as specified.

3. The combination of the counterbalance with the stem *p* and saw-guide, shown in fig. 3, when operating in the manner herein specified.

4. The saw-support *n*, when constructed and operating substantially as herein described.

5. The pivoted saw-table and radial fastening-bolts, in combination with the convex piece *w* and its corresponding matrix, operating substantially in the manner shown.

104,771.—Stove and Furniture-Leg.—Henry R. Robbins, Baltimore, Md.

Claim.—1. The bottom *a* of any article of furniture, provided with the chamber *d*, in combination with the pin *c*, the grooved lugs *b*, and the grooved head *e*, in the manner and for the purpose substantially as described.

2. The head *e* provided with the recess *f*, and beveled end *h*, substantially as and for the object specified.

104,772.—Steam Heater.—John J. Roeper, Philadelphia, Pa.

Claim.—A section, A B, in one piece of cast-iron, the said section consisting of a series of intercommunicating flues, *a' a''*, and suitable flanged openings, for affording free intercommunication with other like sections, when connected together, substantially as and for the purpose hereinbefore described and specified.

104,773.—Harvester-Cutter.—Francis E. Rogers, Paw Paw, Ill.

Claim.—The chain-sections G, links I, pins K, and cutters A, all combined and arranged substantially as specified.

104,774, antedated June 16, 1870.—Invalid Bedstead.—Albert J. Russell, Baltimore, Md., assignor to himself and Walter W. Rowles, same place.

Claim.—1. The forked end pieces A''', flank pieces A'', cross-bars *c*, and set-screws *b*, combined and arranged substantially as and to the end specified.

2. The leg A', made in two parts, the upper portion having the lower spreading end *h'*, and the lower portion having a groove in its upper end, shaped to receive said spreading end *h'*, substantially as and for the result stated.

104,775. — BREECH-LOADING FIRE-ARM.—Sven Rydbeck, Red Wing, Minn.

Claim. — 1. In combination with the sliding breech-piece D, provided with the firing-pin *b*, and having its upper and forward corner beveled, the extractor *z*, having the under portion of its rear end correspondingly beveled, and the combined hammer and tumbler H, arranged to strike upwardly against the end *e* of the firing-pin, substantially as shown and described.

2. In combination with the guard-lever E, the friction-spring P, having lug *r*, as specified.

3. In combination with the sliding breech-piece D, combined hammer and tumbler H, extractor *z*, and friction-bar P, the guard-lever E, having the lugs *m* and *k*, when constructed and arranged to operate in the manner and for the purposes shown and described.

104,776. — IRONING-MACHINE. — Alvah C. Sawyer, Canton, N. Y.

Claim.—The combination of the pivoted treadle-lever R N, jointed arm L S, goose O, with its ball-and-socket joint, when combined and arranged in the manner as shown and described.

104,777.—MOLD FOR CAR-WHEELS.—John K. Sox, Pittston, Pa.

Claim.—1. The above-described mold, provided with the compress for holding and upsetting the steel band re-enforce or tread of the wheel, while the body of the wheel is cast against and thus welded to the inner surface of the steel band, substantially as set forth.

2. The mold, provided with the recess therein for receiving the molten iron outside of the steel band, substantially in the manner and for the purposes set forth.

104,778. — WOOD PAVEMENT. — Joseph J. Schroyer, Springfield, Ill.

Claim.—1. The method of constructing two paving-blocks out of one piece of wood, as described and shown.

2. The arrangement of the blocks A, the sleepers C, and the strips D and E, when the several parts are constructed as described and shown, and secured together as and for the purpose set forth.

104,779. — KNIFE FOR CUTTING SHEAF-BANDS.—Henry Sears and Edmund B. Sears, Rockford, Ill.

Claim.—A knife, having a handle with spring back and hinged blade with serrated edge, as described.

104,780.—MUFF.—Raphael Moritz Seldis, New York, N. Y.

Claim.—The muff provided with a pocket-flap, B, which is formed by incisions through the covering of the muff, as set forth.

104,781.—APPARATUS FOR BLEACHING PAPER-STOCK.—Francis Sheldon, Fitchburg, Mass., assignor to the Union Machine Company, same place.

Claim.—The elevator, as composed of the foraminous platform, and the tubular stand-pipe.

Also, the arrangement and combination of the adjustable deflector with the stand-pipe, and the foraminous platform.

Also, the combination and arrangement of the foraminous platform, the stand-pipe, and the deflector, with the kier or cistern, and its steam-induction pipe, the stand-pipe and platform having mechanism for moving them relatively to the deflector, and the whole being substantially as and for the purpose and to operate as specified.

104,782.—EXCAVATOR.—Benjamin Slusser, Sidney, Ohio.

Claim.—The scraper *m*, when mounted in the same sliding boxes, A, in which are placed the journals of the roller *b*, in the manner described, and for the purpose of keeping the scrapers in the same relative position to the rollers.

104,783. — MILL-GEARING. — Harlow M. Smith, Peoria, Ill.

Claim.—The concave bridge-tree A, with arms D bolted to the Hurst frame E, for supporting mill-spindles or other gearing, in combination with the interior gear-wheel B, having either a spur or bevel-gear, H, on its interior circumference, and constructed with concavo or dished arms, substantially as described.

104,784.—GRAIN-FANNING AND SEPARATING-MACHINE.—James I. Smith and William H. Nicodemus, Frederick, Md.

Claim.—1. The long double riddle G, fig. 6, with the openings *s s s s* across the middle, and having a bottom or lining, said lining being slotted across the center *s s*, and furnished with the double adjustable pipes u^1 and u^2.

2. The arrangement of the long riddle G, in connection with the riddles H, I, and K, all lined, the lining in the lower riddles I and K being slotted at *s s*.

3. The inner tail-board riddle L, slotted at L^1, and furnished with bottom L^2, fig. 7ª and 7ᵇ, constructed and arranged substantially as shown and described.

4. The inner tail-board M, furnished with chute *m*, and attached to shoe by hooks *n*, constructed and arranged substantially as shown and described.

5. The tail-board N, with slotted arms *p p*, constructed and arranged substantially as and for the purposes set forth.

6. The eccentric *k*, made adjustable on the fan-shaft by means of the screws *v v*, slots v^2 v^2 in frame *r r*, constructed and arranged substantially as shown and described.

7. The weighing and bagging device W, consisting of the scale Y, the square revolver X, the indicator Z, the cut-off *t*, with the spring wire and catch *w*.

8. The combination and arrangement of the fan C, with its adjustable eccentric R, in connection with the shaker-bar S, the riddles E F G H I K, the double and adjustable pipes u^1, u^2, and u^3, the screen L, the tail-boards M and N, with the chutes *m* and *l*, all arranged, constructed, and operated substantially in the manner hereinbefore fully set forth and described.

104,785.—MANUFACTURE OF STEEL-HEADED HORSESHOE NAIL.—John Henry Smith, Allegheny City, Pa.

Claim.—A new article of manufacture, viz., a wrought-iron horseshoe nail, the head of which is converted into steel, substantially as herein described.

104,786.—PUMP.—Peter M. Snell and Oscar Snell, Williamsburg, Ohio.

Claim.—A force-pump lever, having a movable fulcrum connected with the valve that controls the cylinder-ports in the manner described, and for the purpose of giving the requisite motion to the same.

104,787. — BROOM-HOLDER. — Charles P. Snow, Freeport, Ill., assignor to Sterne F. Aspinwall, same place.

Claim.—The frame A, provided with flanges B, and spring C, when constructed and arranged to operate substantially as described and for the purpose specified.

104,788. — FRUIT-DRIER. — George Miller Sternberg, Fort Riley, Kansas.

Claim.—The drying-chamber C, having a draught-funnel, A, trays D, and tubes *e*, and surrounded by a hot-water cistern, B, substantially as and for the purpose hereinbefore set forth.

104,789.—FEED-WATER HEATER AND FILTER.—Edwin R. Stilwell, Dayton, Ohio.

Claim.—1. The combination, with the feed-water heater and purifier, of the outside filtering device B, constructed with a mud-trap below, and with a water-discharging pipe above the filtering material, substantially in the manner and for the purpose described.

2. The construction shown and described of the shelves *h h* within the case A, for the purpose set forth.

104,790, antedated June 16, 1870.—FLOOR-CLAMP.—Oliver Taff, Whitestone, N. Y.

Claim.—A floor-clamp, consisting of the dog A, and bearing-plate, B, pivoted together, in combination with the wedge C, substantially as herein shown and described.

104,791. — MEDICAL COMPOUND.—William C. Tait, Alexandria, La.

Claim. — The above-described compound, substantially as and for the purposes specified.

104,792, antedated June 18, 1870.—STEEL CAR-WHEEL.—John Blake Tarr, Fairhaven, Mass.

Claim.—A steel car-wheel, having that portion of its circumference or rim which is exposed to wear hardened, by the process substantially as described.

104,793.—BRIDLE-BIT.—Henry C. Thompson, Mount Sterling, Ky.

Claim.—1. The bit *a*, provided with the slot *e*, in combination with the bit *b* passing through such slot, and the straps *c*, as and for the purpose described.

2. The combination of the bits *a b* and straps *c* with the cheek-pieces *i* and bridle-rein rings *d*, in the manner and for the purpose specified.

104,794.–BOTTLE-STOPPER.–Nathan Thompson, Brooklyn, N. Y.

Claim.—A bottle-stopper composed of a cap, C, and core B, of wood, or other solid material, and an annular collar, D, of flexible material, the latter being inserted in the cap on its under side, and the core with its wedge-like head inserted from its upper side, as set forth, whether said cap be metal bound or not.

104,795.—POTTERY MACHINE.—Samuel R. Thompson, Portsmouth, N. H.

Claim. — 1. The plunger F, provided with self-acting valve H', in combination with matrix B, weight G, and cam R, with its depression U, substantially as described.

2. The arms V V, provided with right and left screws, in combination with joints C and cams S', substantially as described.

104,796.—MANUFACTURE OF SOAP.—Joseph Treat, New York, N. Y.

Claim.—The application and use of the residuum of the distillation of the oil designated by me the "Patent Refined Resine," or commonly called "white rosin-oil," or "French rosin-oil," in the process of making soap, as hereinbefore substantially described.

104,797. — BORING MACHINE. — William Tucker, Fiskedale, Mass.

Claim.—1. In combination with the crank-shaft H, bit-shaft F, and bit-shaft gear G, of a portable boring-machine, substantially as herein referred to, the two driving-gears J J' adapted to operate as described, for the purpose set forth.

2. The combination of the pair of driving-gears J J', mounted loosely in a common shaft, H, the central feed stock K *k*, spring clutch-pins L L', and beveled ings *f*, all constructed and arranged to operate substantially as set forth, for the purpose shown.

3. The combination, with the driving-gears J J', and the clutch-pins L L', of the reversing handle *l'* and sockets *j'*, formed and arranged substantially as represented and described, for the purpose set forth.

104,798, antedated June 6, 1870.—INSTRUMENT FOR TESTING OILS.—Peter H. Vander Weyde, New York, N. Y.

Claim.—1. The vaporizing of hydrocarbon oils or fluids in a transparent close chamber, having its only vent sealed by water, in such manner that the vapors of such fluids will be isolated, held, and exhibited, and the temperature of "flashing point" shown, as described.

2. Chamber A, or its equivalent, in combination with vessel B, with its thermometer, as described, and for the purposes mentioned.

3. An outer vessel or jacket, D, in combination with chamber A and vessel B, for the purposes mentioned.

104,799.—MACHINE FOR HULLING COTTON-SEED, &c.—Andrew J. Vandegrift, Covington, Ky.

Claim.—1. The hinged wires K and stationary pieces L, in combination with the sieves J, arranged to operate substantially as described.

2. The combination of a series of sieves so arranged that the material which passes through any one sieve shall not fall on any other sieve, substantially as set forth.

3. In combination with the cotton-seed huller, constructed substantially as described, the separator, when constructed as set forth, and arranged in relation to the huller, substantially as herein shown and described.

104,800.—CHURN.—Stroud Van Meter, Henderson, Ill.

Claim.—The upright B and guard L, as constructed, in combination with churn M, lid I, guide H, dasher G, pinion E, wheels C and F, and crank D, the whole arranged to operate substantially as and for the purpose specified.

104,801.–HEATING-STOVE.–Charles E. Warring, Poughkeepsie, N. Y.

Claim.—A detachable base-burning magazine attachment for cylinder and other heating-stoves, consisting of the magazine A, extension B, and either the telescopic extension D, or not, arranged and applied to the said stoves, substantially as specified.

104,802.—HOT-AIR REGISTER.—Alfred Watson, Jersey City, N. J.

Claim.—1. The projections a^2 cast solid upon the inner surface of the end of the frame A, to hold the pivots of the slats B in place, substantially as herein shown and described.

2. The projections a^4, cast solid upon the inner surface of the end of the frame A, to hold the slide C down upon the pivots of the slats B, substantially as herein shown and described.

3. The slide C, cast solid, with an upwardly-projecting arm, c^1, and with laterally-projecting pins c^2, in combination with the curved slots cast in the lugs b^1 cast solid upon the ends of the slats B, and with the slot d^1, in the grate D, substantially as herein shown and described, and for the purpose set forth.

4. The lock a^4 d^2, one or more, in combination with the frame A and grate D of a register, substantially as herein shown and described, and for the purpose set forth.

5. An improved register, constructed, arranged, and operating substantially in the manner herein shown and described, and for the purpose set forth, as a new article of manufacture.

104,803, antedated June 23, 1870.—EXTENSION LADDER. — Thomas Watson and Charles Perry, Brooklyn, N. Y.

Claim.—1. The combination of the double system of guys with the members of the ladder, all operating substantially as described.

2. The combination of the double system of guys with the inclined bars *b b* and *c c*, substantially as described.

3. The combination of the double system of guys with the members of the ladder and inclined bars *b b* and *c c*, operating substantially as described.

4. The arrangement of ways and clip pieces on and between the members of the ladder, substantially as described.

5. The inclined connecting-bars *b b* and *h h*, at the front portion of the rear truck, and the bars *c c* and *g g*, in combination with the members of the ladder, substantially as described.

6. The arrangement of the reel on the front truck, as described.

7. The arrangement of the members of the ladder, relatively to the base and rear truck, and to the axle thereof, as described.

104,804.—TWEER.—Peter L. Weimer, Lebanon, Pa.

Claim.—The improved tweer herein described, composed of the chamber-walls A A^1 and partitions P, cast in one piece, and so that, when the head or butt B, with inlet and outlet-passages in it, is applied, the tweer will be complete, and there will alternately be at the nose and butt of the tweer, within the walls A A^2, a passage for the circulation of the water through every part of the chamber, substantially in the manner described.

104,805. — LUBRICATING JOURNAL-BEARINGS.—Isaac P. Wendell, Philadelphia, Pa., assignor to himself and Stephen P. M. Tasker, same place.

Claim.—The oil-box D, having side oil-chambers G G and perforated vertical partitions *e e*, between which felt or other fibrous or porous material F is held, the said box having a concave surface, *a*, and being held up by means of a spring, E, all in the manner and for the purpose set forth.

104,806. — HARNESS. — Lewis Whitehead, Nunda, N. Y.

Claim.—The neck-straps B B, constructed as described, with their ends stitched to the breast-collar and passing through the connecting-pad A, and having their adjustment on top of the back, substantially as and for the purposes herein set forth.

104,807.—COOKING-STOVE.—Joseph B. Wilkinson, Troy, N. Y.

Claim.—1. For a diving-flue cooking-stove, a pipe-collar, or its equivalent, resting on the top oven-plate, and extending up through the top plate of the stove, to receive a stove-pipe, substantially in manner and for the purpose described and set forth.

2. The extending of the top sheet-flue of a cooking-stove over the rear vertical flues and around the pipe-collar, for the purpose of heating a water-reservoir, substantially as described and set forth.

3. A damper located in the pipe-collar between the top oven-plate and top plate of the stove, for the purpose of forcing the heated air, products of combustion, &c., against the walls of a water-reservoir, so as to heat the same, when using a direct draught from the fire-pot to the exit-pipe, substantially in manner as described and set forth.

104,808.—REED FOR LOOMS.—John H. Williams, Pleasant Hill, Ohio.

Claim.—The reed, provided with the knives D, when constructed as described, and operating to cut the edges of the slats being woven.

104,809.—MOSQUITO-SCREEN FRAME.—Walter W. Wooley, New York, N. Y.

Claim.—The frame A, composed of the sides, grooved to receive the net or material C, and the tongues or stay-rods D D, and united by the mitre-joints G G, fastened with the staples *F F*, substantially as herein specified.

104,810.—WASH-BOILER. — Harrison Yost, Dayton, Ohio, assignor to himself and Henry Yost, same place.

Claim.—The partitions B, the perforated bottom E, and the curved plates D, constructed and arranged with reference to the interior of a wash-boiler, substantially as and for the purpose specified.

104,811.—FAUCET. — Emil Young, Cleveland, Ohio.

Claim.—The valve C, lever *d*, plate *e*, and spring *f*, when constructed and arranged in combination with the faucet A, having a chamber, B, as shown and described, and for the purpose set forth.

104,812.—EMERY-SOAP FOR POLISHING AND CLEANSING.—Dexter D. W. Abbott, Boston, Mass., assignor to himself and Henry W. Peabody & Co., same place.

Claim.—As a new article of manufacture, the abrasive soap formed with the abrading powder described.

104,813. — FLOCK-GRINDER. — Robert Aldrich, Forestdale, R. I., assignor to himself and E. D. Wilcox, Millville, Mass.

Claim.—1. The grinding-cone and shell C D, provided with grooves, in which the knives are, in pairs, secured by wedge-shaped blocks, substantially as herein shown and described.

2. The studs *e*, applied to the cone C, in combination with the screws *g*, for the purpose of holding and adjusting the knives, as set forth.

104,814.—REFRIGERATOR FOR CONDENSING VAPORS FROM FERMENTING-VATS IN BREWERIES, &c. — Lawrence Augster, Newark, N. J.

Claim.—The auxiliary gutter R, metallic floor L, and inverted hollow pyramids M, when used in combination with the ice-chamber E G H, gutters O, and fermenting vat N, substantially as and for the purposes described and set forth.

104,815. — METHOD FOR SECURING THE SEATS AND BACKS OF CHAIRS, SOFAS, &c.—Lucas Baker, Templeton, Mass.

Claim.—The combination of the narrow, grooved frame A, and the tightly folded edge *a f* of the seat or covering *a b*, the latter being inserted in said groove, and retained therein without the use of any fixed retaining wedge, strip, or frame, substantially in the manner as above specified.

104,816, antedated June 16, 1870.—FARE-BOX FOR PASSENGER CARS.—Henry Baranger, St. Louis, Mo., assignor to himself and James P. Bradley, same place.

Claim.—1. The shelf *b*, its edges b^1, and opening b^2, in combination with the door B, substantially as set forth.

2. The door B, lever *f*, in combination with the parts F G and h H, and the rotating blades D, spring K and prong *k*, arranged substantially as set forth.

104,817.—MACHINE FOR PACKING FLOUR, &c. — William Bashor, Johnson City, Tenn.

Claim.—1. The combination and arrangement in a machine for packing flour and like material, of the conical differential rollers K K′, and revolving shaft G, substantially as described, and for the purpose set forth.

2. The band-wheel H, provided with the shoulders h, and an angular opening through its center, in combination with the vertically sliding shaft G and arms M, when said parts are constructed and arranged to operate substantially as described, in the manner and for the purpose specified and shown.

3. The machine for packing flour and like material herein shown, consisting of the frame A B, cross-beams C, sliding standards D, arms M, wheel H, shaft G, case F, and plate P, constructed, combined, and arranged for operation, substantially as described.

104,818, patented in England, December 14, 1867.—MACHINE FOR SCOURING AND WASHING FABRICS.—William Bates and Frederick Bates, Sowerby Bridge, near Halifax, England.

Claim.—1. The arrangement, relatively to the chambers E F and rear squeezing-rollers C D, of the perforated water-pipes J J^1 J^2, essentially as herein set forth.

2. The combination with the chambers E F and flock-box M′, of the valve L, arranged to control openings *m* and *n*, substantially as and for the purpose herein set forth.

3. The combination with the chambers E F and squeezing-rollers A B and C D, of the fulling-trough M and presser or pressers, the whole being constructed and arranged for operation substantially as shown and described.

104,819, patented in England, March 16, 1866.—FULLING-MILL. — William Bates and Frederick Bates, Sowerby Bridge, near Halifax, England.

Claim.—The combination of the compressing-rollers B C and spreading or widening rollers G H, with their fulling-troughs E I, provided with flaps F and J, all arranged substantially as and for the purpose set forth.

104,820. — STEAM-GENERATOR. — William Baxter, Newark, N. J., assignor to William D. Russell and Peter T. Speer, same place.

Claim.—1. The use of a removable outer casing or "summer jacket," composed of two or more sections hinged together, substantially in the manner and for the purposes shown and described.

2. The formation of a series of draught-openings or perforations in that part of the "summer-jacket" surrounding the smoke-pipe, substantially as and for the purposes described.

104,821.—LUBRICATING JOURNAL.—Charles Bean, Providence, R. I.

Claim.—The journal lubricator herein described, consisting of the bent tube A, containing the capillary B, and provided with strainer C, arranged as described, for conveying the oil from the drip-pan, and delivering it, freed from all impurities, to the bearings, substantially as set forth.

104,822.—SPOON-MOLD.—Luther Boardman and Norman S. Boardman, East Haddam, Conn.

Claim.—The spoon-mold A, provided with the removable section B, substantially as and for the purpose herein shown and described.

104,823.—DOOR-KEY.—James Brady, Branford, Conn., assignor to the Branford Lock Works, same place.

Claim.—The key A, formed from a single piece of sheet metal, combined with a rectangular tube, B, and a spring latch, *a*, within the key, the whole constructed and arranged in the manner specified.

104,824.—HOLLOW METALLIC RIM OR FELLY.—S. R. Bryant, Waterford, Pa.

Claim.—The rims and tire, in combination, and the mode of attachment, or their equivalents, as and for the purposes set forth.

104,825. — FLUTING-MACHINE. — Mary P. Carpenter, San Francisco, Cal.

Claim.—1. The adjustable rod *e*, nut *n*, the springs *l m*, and the adjustable screws *p p*, when combined with the lid, and arranged and operated as described.

2. The cylinders *a a′*, the shafts *b b′*, the feather and groove *t*, the furnace *c* and furnace-top *d*, the shields *e e* and linings *f f*, the sliding plates *q q* and the grooves *r r*, rod *o*, nut *n*, springs *l m* and screws *p p*, combined substantially as described.

104,826.—RUBBER ROLLER FOR WRINGERS, &c.—Dexter H. Chamberlain, West Roxbury, Mass.

Claim.—A roll, &c., of India rubber, or equivalent material, secured to its shaft by a fastening which is susceptible of movement by pressure on the rubber, through the medium of rods playing in openings in the head plates, substantially as described.

104,827.—RAKE ATTACHMENT FOR REAPERS.—Melvin C. Chamberlin, Plain View, Minn.

Claim.—1. The shaft C, with crank D, pins or arms *i i*, bar E, ratchet-wheel *g*, and lever-pawl *h*, all constructed and arranged to operate substantially as and for the purposes herein set forth.

2. The arrangement of the bar A, bed-plate H H, posts or standards G G and I I, and the shouldered bar J, for the purpose of supporting the rake and attaching it to a reaper or a vehicle, substantially as herein set forth.

3. The combination and arrangement of the beam A, standards B B, rod *a*, rake *b f*, shaft C, bar E, bed-plate H, posts or standards G G and I I, and bar J, all substantially as and for the purposes herein set forth.

104,828.—METHOD OF LASTING BOOTS AND SHOES.—William Chambers, Lynn, Mass.

Claim.—The method of lasting herein described, by means of the series of irregular stitches B in the sole A, and the row of loops D in the upper C, connected by lacings *c*, and operating in the manner and for the purpose set forth.

104,829. — TEA-POT HANDLE. — Lucas C. Clark, Plantsville, Conn.

Claim.—As a new article of manufacture, the herein-described handle for tea pots and similar vessels, consisting of the cast-metal handle A, and the swaged or struck-up cup-shaped connections B B, secured to said handle by rivets, substantially as described.

104,830.—MACHINE FOR GRINDING SAW-TEETH.—William Clemson, Middletown, N. Y.

Claim.—1. The sliding adjustable plate C′, having stop-gauge *c″* and guide *c*, constructed in the manner and for the purpose described.

2. The sliding adjustable plate C′, having stop-gauge *c″* and guide *c*, in combination with the adjustable table C, in the manner and for the purpose described.

3. The adjustable table C, having sliding plate C′, stops *c″* and *c* arranged thereon, in combination with the grinding-wheel B, in the manner described.

104,831.—RUBBER ERASER.—Mack Delorimer Converse, London, Ohio, and Frank Atwill Bates, Boston, Mass.

Claim.—The ring-shaped rubber eraser herein described.

104,832.—BEE-PROTECTOR.—Jeremiah Cory, Holden, Mo.

Claim.—The combination of a vibrating roost or perch for fowls, with the slides or doors of one or more bee-hives, when so constructed and arranged that the weight of the fowls upon the roost shall operate to close the hives, and their removal from the roost shall open the hives, substantially as herein described.

104,833.—MUSIC-NOTE BLOCK.—Charles J. Costello, Kingston, and John Costello, New York, N. Y.

Claim.—The series of blocks, marked or printed with musical characters and differently colored on their several faces and numbered, so that the corresponding faces of like color, in the whole series, arranged as set forth, shall respectively constitute representations of elementary music lessons, substantially as herein specified.

104,834.—BROOM.—Edward M. Crandal, Marshalltown, Iowa.

Claim.—A broom, surrounded by one or more bands of India rubber, or other elastic material, and stitched to hold them in position, substantially as described.

104,835.—DENTAL PIN.—Peter Crane, Jr., (Robert McKinley, Administrator,) Philadelphia, Pa.

Claim.—The pin, formed by twisting a single wire of angular shape, so as to form threads, combined with artificial teeth, in the manner described, for the purpose of connecting artificial teeth with a base.

104,836.—FIRE-PLACE GRATE.—James A. Crawford, Newcastle, Pa.

Claim.—The fire-brick B, provided with the front grooves *b*, and the interior passages *b'*, arranged in the manner and for the purpose specified.

104,837.—HOSE-COUPLING.—Charles H. Cushman, Alexandria, Va.

Claim.—1. The clamping-rings C, of the form shown in fig. 2, so as to lock the parts together by turning through a semi-circumference, as set forth and described.

2. The packing-rings, inserted as shown in fig. 5, clamped between the cone on the end of part A and the bevel of ring B, as set forth.

104,838.—KEY-HOLE ESCUTCHEON.—Simeon W. Drowne, Norwich, Conn.

Claim.—The key-hole escutcheon, as made or provided with the fastening-spurs, or with such and the guides, the whole being substantially as described.

104,839.—FRUIT-JAR.—Timothy Earle, Valley Falls, R. I.

Claim.—The compound spring bail D, with its ring springs Nos. 1 and 2, arranged to bear with a vertical and lateral inward pressure, in combination with the recessed lugs E in the sides of the jar, substantially as shown and described.

104,840.—BREAST-PIN.—Theodor G. Eiswald, Providence, R. I.

Claim.—1. The combination of the slotted spherical socket C with the circular-headed pin-tongue B, arranged to operate as a fastening, substantially as described.

2. The compound hooks D, with their edges in relation with each other, substantially as shown and described, in combination with the tongue of a breast-pin, ear-ring, or other similar article.

104,841.—CORK PRESSER.—James Ewing, New York, N. Y.

Claim.—The within-described cork-pressing device, constructed and operating substantially as set forth.

104,842.—HOT-AIR FURNACE.—Michel G. Fagan, Troy, N. Y., assignor to himself and Albert C. Corse, same place.

Claim.—The means employed for rendering the heater convertible at will into a surface or a base-burner, consisting of the drum K, provided with the open top plate *k*, for the reception of, and in combination with, the interchangeable cover P and magazine R, substantially as shown and described.

Also, the magazine R, constructed as shown, and combined with the drum or combustion-chamber K, in the manner and for the purpose specified.

Also, the combination of the drums K and M with the magazine R, substantially as shown and for the purpose described.

Also, the hereinbefore described furnace, consisting of the fire-pot A, the ash-pit B, the drum K, provided with the pipes L, the drum M, the pipes N, and the cover P, or magazine R, all inclosed within or by the casing D, substantially as and for the purpose specified.

104,843.—DRY-DOCK.—Gilbert H. Ferris, Brooklyn, N. Y.

Claim.—1. The construction and arrangement of a caisson or floating dock, having formed upon its bottom side the ribs or steps 1 2 3, &c., in the manner and for the purpose herein set forth.

2. The combination of piles or frame-work A and B with a caisson or floating dock, in the manner and for the purpose herein set forth.

3. The arrangement and construction of guide-piles and frame-work, in such a manner that a caisson or floating dock, upon which vessels can be placed, may be raised or lowered within and upon them by the effect of tides, in the manner and for the purpose herein described.

104,844.—STOVE-GRATE.—Lyman Gleason, Milford, Mass.

Claim.—In combination with the fire-pot or chamber of a stove or furnace, a course of fire-bricks or fire-pot linings *f*, each made with a swelling face, *g*, and with a vertical groove or depression extending along such face, substantially as described.

104,845.—TRACTION-ENGINE.—Thomas F. Hall, Omaha, Nebraska.

Claim.—The endless traction-belt B fitted around the frame A, and combined with the shaft C and driving-chain D, substantially as herein shown and described.

104,846.—CORN-HARVESTER.—George B. Hamlin, Willimantic, Conn.

Claim.—1. The combination of the cutting-edge, sliding guard, and spring latch, with the fingers of a corn-harvester, substantially as shown and described, for the purposes specified.

2. The combination of the latch E, guard D, and cutting-blade C, substantially as shown and described.

104,847.—SAW-FRAME.—William Hankin, Williamsburg, N. Y., assignor to himself and William Henry Hankin.

Claim.—The rigid double-forked brace D, formed in one piece, having convex shoulders at *b*, and tenons at *a*, to allow the frame to rock on the same, as set forth.

104,848.—SAFETY DUMPING-CAGE FOR MINES.—William Z. Hatcher, Plymouth, Pa., assignor to himself and William L. Lance, same place.

Claim.—1. The combination of the cage B, tilting platform D, its rollers *h h'*, the guides *b b*, and the inclined guide-rails *i i* and slots *w w*, substantially as specified.

2. The combination of the cam-shaped jaws *m m* and the cranked rods G G, connected to the hoisting-rope, and operating the jaws, substantially as described.

3. A weighted or spring lever, E, or equivalent device, connected to the platform of the tilting frame, and arranged for retaining a car thereon, substantially as described.

4. Anti-friction pulleys *k k*, or their equivalents, connected to the aforesaid tilting frame, and adapted to the guides *b b*, in combination with inclined slots *w w* in the guides and inclined rails *i i*.

104,849.—ROCK-DRILL.—William Z. Hatcher and William L. Lance, Plymouth, Pa.

Claim.—1. The rod F, adjustable on the frame D, and having at the end an adjustable rod *i*, substantially as specified.

2. The combination of the adjustable rod F with the swivel-block *e*, as set forth.

3. The arrangement of the frame A, yoke B, set-screw *j*, and frame D, hung within the yoke, as specified.

4. The drill, the edge of which between the points *x y* is straight, and is curved in two directions between the points *y* and *u*, substantially as described.

5. The drill-rod wheel, with teeth having pointed ends, in combination with the permanent rib L and yielding arms M and N.

104,850, antedated June 17, 1870.—TOBACCO-PIPE MACHINE.—John H. Hollely, Brooklyn, N. Y.

Claim.—The combination of the hopper-tube A, mold C, and feed-wheel or cylinder B, moved with an intermittent motion, and provided with pellet-chambers, arranged so as to have one over the mold and one under the hopper-tube at the close of each intermittent movement, substantially as specified.

Also, the bed-plate P, beneath the feed-wheel, and projecting over the mold, being provided with a perforation centrally beneath, and fitting the plunger, substantially as and for the purpose herein set forth.

Also, the mold C, formed of halves, which have an adjustable reciprocating movement toward and from each other to open and close the mold, substantially as herein specified.

Also, the adjustable seat or step Q, beneath the closed mold, in combination therewith, for the purpose set forth.

Also, the weighted lever cam-seat *n*, arranged in combination with the cam L, plunger D, and mold C C, in the manner and for the purpose herein specified.

Also, an air-supplying, tubular, or equivalent passage, in the lower end of the plunger I, provided with a self-acting valve, substantially as and for the purpose herein specified.

Also, the piercing-wire U, for punching the pipe-stems while still held in the mold, operated by an adjustable reciprocating device, E, substantially as herein set forth.

Also, the piercing-wire U, set free at the close of each punching operation, when afterward employed to lift the pipes from the mold, operated in the manner substantially as set forth.

Also, the device F, for oiling the mold between the operations of molding, constructed and operated substantially as herein specified.

104,851.—FOLDING CHAIR.—Francis M. Holmes, Boston, Mass.

Claim.—The improved folding chair, as made with the shorter levers B B', and longer levers A A', seat-support bar *e*, projections *f f*, pivoted bar *d*, seat C, one or more hooks, *n n*, and bearing-rung *i*, when all the parts are constructed and arranged to operate as hereinbefore described.

104,852.—HARVESTER.—William B. Johns, Georgetown, D. C., and William J. Read, Cumberland, Md.

Claim.—In combination with the main frame of a harvesting-machine, and the shafts in rear of it, to which the team is hitched for propelling the machine, the swivel joint at *a*, and the guiding and controlling-lever C, by which the machine may be allowed to conform to the inequalities of the ground, but still be under the control of the operator, substantially as described.

Also, in combination with the guards *j*, and the cutting apparatus *m*, the pivoted gathering-fingers *n*, and the studs *o o*, for reciprocating them, substantially as described and represented.

104,853.—PAPER-COLLAR BOX.—Salomon Kaufmann, New York, N. Y., assignor to Metropolitan Collar Company, same place.

Claim.—The paper-collar box of the character specified, with a mirror or looking-glass inserted in the cover, as a new article of manufacture.

104,854.—MACHINE FOR DISTRIBUTING FERTILIZERS.—John F. Keller, Hagerstown, Md.

Claim.—The stirrers C C, when so arranged as to move in opposite directions during a portion of their oscillation, substantially as and for the purpose set forth.

2. The combination of the stirrers C C, segmental pinions D' D', with their spindles D D, and reciprocating racks F F, all arranged to operate substantially in the manner set forth.

104,855.—DEEP-WELL PUMP.—Henry K. Kenyon, Steubenville, Ohio, assignor to himself and Jarecki, Metz & Co.

Claim.—1. The working-barrel, having exterior recessed chambers formed by partitions extending from the exterior of the working-barrel to the outer casing, and suitable open and valved ports, in combination with the outer casing, substantially as hereinbefore described.

2. The flanged partitions, inlaid with strips of wood for forming chambers in the space between the working-barrel and outer casing, substantially as described.

3. The working pump-barrel, closed at one end with a stationary, and at the other end with a removable head, and communicating, by ports and valves, with exterior chambers or passages, substantially as and for the purposes hereinbefore described.

4. The adjustable recessed stuffing-box forming the upper head of the working-barrel, in combination with the working-barrel and outer chambered casing having apertures for the exit of the fluid, constructed and arranged substantially as described, for the purposes hereinbefore set forth.

5. The combination of the working-barrel, closed at both ends, and furnished with ports and valves, the solid or valveless piston, and the exterior chambered casing, constructed and arranged substantially as described, so as to lift and force both on the up-stroke and down-stroke of the piston.

6. Wood-packing for pump-chambers, so arranged as to form air and water-tight joints, substantially as hereinbefore described.

104,856, antedated June 16, 1870.—STEM-WINDING AND HAND-SETTING WATCH.—Charles L. Kidder and Florentine A. Jones, Boston, Mass.; said Kidder assigns his right to said Jones.

Claim.—1. The combination of ring R, having screw or pin S, pendant B, and cylinder *c*, or equivalent cylinder, substantially as shown.

2. The ring R, provided with the pin S, and combined with the slotted cylinder *c*, spindle *d*, spring *h*, and toothed wheels *m k a b*, in the manner described, and for the purpose of winding watches.

3. The ring R, provided with the pin S, and combined with the slotted cylinder *c*, spindle *d*, spring *h*, and toothed wheels *m k i*, in the manner described, and for the purpose of setting watch-hands.

104,857.—LANTERN-GUARD.—Joseph Kintz, West Meriden, Conn.

Claim.—1. The combination with the tube C, of the vertical bars B, entering said tube, and continued horizontally to form arms S, which lie in the tube, substantially as and for the purpose described.

2. The tube C, constituting the top of the guard-frame, and inclosing the arms of bars B, and formed with lugs E, in combination with the cap F, and its socket G, as and for the purpose described.

3. The guards H, inclosing the horizontal wires I, and having projecting ears J, which are formed in pairs, for retaining the guards, and supporting the vertical bars B, as set forth.

4. The frame-work of a lantern, consisting of the inclosing-tube C, vertical bars B, inclosed arms S, inclosed wires I, inclosing guard H, and ears J, substantially as described.

104,858.—Securing Veneer to Wood.—William H. Knight, Boston Highlands, Mass.

Claim.—1. The mode herein described of applying and securing veneers, the same consisting in expanding the wood to receive the veneer, in combination with contracting the veneer, substantially as described, for the purpose specified.

2. In veneering piano-forte cases, &c., applying and securing the veneer first to a comparatively thin piece of wood, substantially as described, and then applying and securing such combined strip to the case.

104,859.—Call-Bell and Slop-Bowl.—Nathan Lawrence, Taunton, Mass.

Claim.—The combination of a slop-bowl and call-bell, in the manner described.

104,860.—Railway Switch.—George W. Lee and John A. Lafontaine, Barlow county, and Asa L. Harris, Atlanta, Ga.

Claim.—The rail C, pivoted to the circumferential plate *f* by means of the circular plate I provided with flanges *d d* which grasp the rail, this rail having relation to the rails A B and D D, and all operated by the crank-rod E, as set forth.

104,861.—Water-Proof Sweat-Band for Hats and Caps.—Philipp Freedrich Lenhart, Brooklyn, N. Y.

Claim.—1. A sweat-band, made water-proof on the outer and left porous on the inner side, substantially as herein set forth.

2. The herein-described method of preparing a composition for covering sweat-bands to make them water-proof, as set forth.

104,862.—Compound for Printers' Ink.—Henry Loewenberg, New York, N. Y.

Claim.—The compound for printers' ink, made by adding to the ingredients composing ordinary or soluble printers' ink, prussiate of potash, as herein described, and about in the proportions specified.

104,863.—Moving Carriage-Top.—Orson E. Mallory, Batavia, N. Y.

Claim.—1. A wagon or carriage-top, made to slide horizontally forward and backward over the seat, substantially in the manner herein described.

2. The combination of the frame D E, rod G, links H, cushions *i*, and lever I, substantially as and for the purpose set forth.

104,864.—Carpet-Fastening.—Johan Jakob Märki, Chicago, Ill., assignor to himself and William H. Lotz, same place.

Claim.—The tapering socket B, constructed in an angular form, so that it may be firmly held in the floor, and yet removed without inconvenience, in combination with the nail A, as herein shown and described.

104,865.—Construction of Prison Walls.—Edwin May, Indianapolis, Ind.

Claim.—1. An inside wall, formed of iron plates, hard seasoned wood, and plastering, the plastering being kept in place by laths, B, substantially as herein described.

2. An inside wall, formed of a core of hard seasoned wood, A, both surfaces of which are completely covered with iron laths, B, so that the plastering D is separated from the wood by a nearly continuous surface of iron, substantially as and for the purpose set forth.

104,866.—Apparatus for Cleaning Cesspools, Vaults, Privies, &c.—William C. McCarthy, Pittsburg, Pa.

Claim.—1. The tank A, provided with cocks *e n*, having caps *d* and elastic packing *f*, pipe S, cock C, and nozzles *o o*, having caps or screws and elastic packing, all substantially as and for the purposes herein set forth.

2. The pipe K, provided with bell-shaped mouth L at its lower end, and at its upper end with head H and cap J, all substantially as and for the purposes herein set forth.

104,867, antedated June 17, 1870.—Bridge.—David McCurdy, Ottawa, Ohio.

Claim.—1. The arrangement of the arch A, rods B B, chords C, bolts *a a*, clamps *b b*, nuts *d d* and *e*, and jam-nuts *f*, all substantially as shown and described.

2. The block E and timber G, bolted to the arch A, substantially as and for the purposes herein set forth.

3. A bridge, when its parts are constructed, arranged and combined substantially as herein shown and described.

4. The combination in a bridge of the two parallel chords C C, notched clamps *b b*, nuts *d d*, and vertical tie-rods B B, all substantially as set forth.

104,868, antedated June 17, 1870.—Bridge.—David McCurdy, Ottawa, Ohio.

Claim.—1. The combination of the arched T-shaped rail A, fish-pieces B B, and bolts C, all substantially as set forth.

2. The combination of the stirrups D, rail A, and chord or chords E, all substantially as set forth.

3. In combination with T-rail A, having notches *a a*, bars or fish-plates B B and bolts C C, the loops or stirrups D, chords E, and shoes G, all constructed and arranged as described, substantially as and for the purposes herein set forth.

104,869, antedated June 17, 1870.—Bridge.—David McCurdy, Ottawa, Ohio.

Claim.—1. The arrangement of the clamps *a a*, rods *b b*, and nuts *d d*, substantially as shown and described.

2. In combination with the clamps *a a*, rods *b b*, and nuts *d d*, the clamps *e e*, rods *i i*, diagonal cross-ties G, and nuts *f f*, all constructed as described, so as to transfer the tensile strength of the chord D upward, substantially as herein set forth.

3. The combination and arrangement of the bars A A, blocks B B, cross-ties C C, shoes E E, chords D D, and the clamps and rods herein mentioned, for transferring the tensile strength of the chords upward, and with or without the cross-ties G, substantially as herein set forth.

104,870.—Mortar-Mill.—John McIntyre, Syracuse, N. Y.

Claim.—1. The combination of mill A, provided with stirrers or blades 1 2, and stationary rods *m*, with the conveyers *f* and E, and tanks B and C, all constructed and arranged as and for the purposes set forth.

2. The rocking trough-screen G and pulverizer *c*, in combination with the rods *k*, *k*, and K, all constructed and arranged as and for the purpose set forth.

3. The arrangement of the tanks B and C, pump D, screen G, conveyers E and F, and mill A, with knives 1, 2, *m*, when all these parts are constructed and operated as and for the purpose herein shown and described.

4. The arrangement of the cylinder A of the fixed bars *m*, and the single inclined arms 2 2, alternating with the double inclined arms 1, all constructed and operating as and for the purposes set forth.

104,871.—Sewing-Machine.—Thomas L. Melone, Mount Gilead, Ohio.

Claim.—1. The spring-post and ring I, mounted upon the front end of the rock-bar H, which is operated by means of the cam *a* on the driving or crank-wheel G, substantially as and for the purposes herein set forth.

2. The perforated post K, mounted upon the front end of the rock-bar J, which is operated by means of the cam *b*, on the driving or crank-wheel G, substantially as and for the purposes herein set forth.

3. The feed-foot L, constructed as described, having its fulcrum placed to one side of the center of motion of the spring-post and ring I, and operating in combination with said spring-post and ring, substantially as and for the purposes herein set forth.

4. The presser-foot B, constructed as described, and operating in combination with the feed-foot L and perforated post K, substantially in the manner and for the purposes herein set forth.

5. The reversible handle *f*, and spring, *g*, arranged as described, in combination with the feed-foot L and presser-foot P, to operate substantially as and for the purposes herein set forth.

6. The arrangement upon the needle-bar N, of the collar *d*, with hole for the thread, and hub, M, carrying the presser-foot, feed-foot, and reversible handle, substantially as herein set forth.

7. The shuttle C′, constructed as described, its face-plate being grooved and hinged at the rear end, and provided with screw *a*, bobbin *y*, wire guide *z*, spring bearing *a′*, and slot *b′*, all substantially as and for the purposes herein set forth.

8. In combination with the shuttle C′, constructed as described, the shuttle-carrier B′, and presser-bar E′, operating within the shuttle-race D′, which is provided with grooves *t v* and tongue *w*, substantially as and for the purposes herein set forth.

9. In combination with the feet L P and posts I K, the adjustable cross or face-plate R, constructed and arranged to operate substantially as and for the purposes herein set forth.

104,872.—Wire-Cutter.—Edgar Murray, New York, N. Y., assignor to Henry Gerecke, Carlstadt, N. J.

Claim.—The improved tool herein described, consisting of the piece constituting the handle and head *a d*, the piece constituting the handle and head *b l*, and the cutters *c h*, said cutters being located in recesses in the head *d*, the bifurcated head *l* embracing the head *d*, and pivoted thereto and to the cutter *h*, all as shown and described.

104,873.—Manufacture of Steel.—Charles Motier Nes, York, Pa.

Claim.—1. The method herein described of reworking Bessemer steel into cast-steel, by melting the same and excluding air or oxygen from it, and preventing the escape of its carbon during the said melting operation, substantially as set forth.

2. The reworking of ingots and other suitable pieces of Bessemer steel, by puddling the same with titanic ores or other ores, substantially as herein specified.

3. The reworking or welding of rails and other pieces of Bessemer steel, by heating the same in a furnace under a bath of titanic or suitable ore and cinder, substantially as and for the purposes set forth.

4. The manufacture of cast-steel by inclosing the Bessemer steel or wrought-iron and pig, or other metal from which the cast steel is to be produced, in a refractory air-tight shell or casing, substantially as herein described, and then heating the same in a cupola, or other suitable furnace, so that the metal shall be melted within the shell or casing by which it is inclosed, substantially as set forth.

5. The application of electricity, in combination with the processes herein described, substantially in the manner set forth.

104,874.—Tongue-Holder for Dentists.—Francis M. Osborn, Port Chester, N. Y.

Claim.—1. An improved tongue-holder, having the deep wedge-shaped slot B on the under side, to admit the roots of the tongue, and the parts C, to fit under the said tongue, to prevent the cup from being forced up, all as set forth.

2. The combination, with the tongue-holding cup or the handle, of the projections F, substantially as specified.

3. The combination, with the projections, of an India-rubber or other cushion, substantially as specified.

104,875.—Hitching-Post.—Josiah Oathoudt, Minneapolis, Minn.

Claim.—The arrangement, under the plate B, of the socket C, pin *d*, lever D′, pin *e*, and spring E, all constructed and operating substantially as and for the purposes herein set forth.

104,876.—Equalizing-Bar for Railway Car-Trucks.—Addison Overbagh, Scranton, Pa.

Claim.—1. The combination of the journal-boxes C C, bar D¹, fulcrum-spring E, and spring *i*, substantially as and for the purposes herein set forth.

2. The combination of the journal-box C, bar D¹, fulcrum-spring E, and joint *a*, all substantially as and for the purposes herein set forth.

3. The bars D D, having one of their ends resting upon the inclosed journal-boxes C C, extending parallel to each other under the truck-beam, and under the springs E E, and hinged at their other ends to a bar, *a*, passing up through the truck-beam, and through the springs *b b*, all substantially as set forth.

104,877.—Umbrella.—Thomas B. Penicks, Philadelphia, Pa., and Joseph Heffly, Washington, D. C.

Claim.—In combination with the runner D, having the spring catch F provided with the pin *a*, the groove B with socket *c* in the handle, constructed substantially as and for the purpose set forth.

104,878.—Machine for Cutting Fat, &c.—Adolph Pfaff, Baltimore, Md.

Claim.—1. The series of revolving knives C and revolving block E, with projecting points *p* and grooves *c*, in combination with shafts B and D, frame A, and crank R, constructed and arranged as shown and described.

2. The series of knives I, in combination with cutting-block J and *j*, with its cleaner M, as shown and described.

3. In combination with the above, the revolving S-formed knife S, the conducting-trough O, in combination with the devices for imparting motion, all as shown and described.

104,879.—Composition Amalgam for Filling Teeth.—Luke A. Plumb, Boston, Mass.

Claim.—My new composition or amalgam, made of the combination of nickle and other ingredients, as hereinbefore explained.

104,880.—Faucet.—Alvin Davis Puffer, Boston, Mass.

Claim.—The combination of the multitubular pipe A with the channeled enlargement *e* and the gate *d*, under the arrangement and for operation as herein shown and set forth.

104,881.—Soda-Fountain.—Alvin Davis Puffer, Boston, Mass.

Claim.—1. The combination, with the inner faces of the conjoined slabs of a polygonal stone structure, of an endless or continuous metallic strap, *b*, produced and applied as hereinbefore explained.

2. The molding which constitutes the cornice or base of the structure, secured in place by means of a metallic escutcheon or ornament, and a bolt or screw, whereby I secure results hereinbefore previously alluded to.

3. The combination, with the slabs and inner metallic strap which binds said slabs together, of the corner-bead or strip *g*, applied to the exterior of said slabs, and united with the said inner strap, substantially as shown and set forth.

104,882.—Sorghum-Stripper. — David A. Reid, Wayne township, Ind.

Claim.—Combining the circling springs H and plates D with the boards A and B, arranged and operated as above described, for the purposes set forth.

104,883. — Harvester Attachment for Raking and Binding Grain.—Hiram A. Reid, Beaver Dam, Wis.

Claim.—1. The combination of the ribs m m m and their terminal elevations l l l, with the rake-teeth a a a a, and the gripers N N, all constructed, combined, and operated substantially in the manner and for the purposes described.

2. The truck B B, in combination with the sweep E, the curved slot or cam I, wheel H, and crank-pin k, (and with or without the lever G and connecting-arm n n,) all substantially as described, and for the several purposes indicated.

3. The rake-beam C C, in combination with the truck B B, and the wheel-way cap or fender P P, substantially as described.

4. The combination of the rake-beam C C, and roller h, with the snap-latch f, and the bearing R R, for the purposes and in the manner substantially as set forth.

5. The combination of the rock-shaft D D F with the rake-beam C C, and with the rake-teeth a a a a, and the roller i, substantially as described.

6. The combination of the rock-shaft D D F, and roller i, with the cam Q and cam-tongue e, substantially as set forth and for the purposes explained.

7. The combination of the gripers N N with the rake-beam C C, the shaft D D F, and the rake-teeth a a a a, operating substantially in the manner and for the purposes set forth.

8. The combination of the spring t and the set-screw k, or an equivalent device, with the truck B B and the rake-beam C C, for the purposes and in the manner substantially as described.

104,884.—Shaft-Coupling.—Peter W. Reinshagen, Cincinnati, Ohio, assignor to himself and John H. Buckman.

Claim.—In connection with the notched shaft ends C C', e e', the key-seated shaft D d, provided with projecting pins d' d', and loose key or feather E, constructed and combined substantially in the manner and for the purpose described.

104,885.—Coal-Scuttle.—Henry S. Reynolds, New York, N. Y.

Claim.—1. A bottom for a sheet-metal vessel, said bottom being struck up and provided with a resting-rim, c, and a confining-flange, d, substantially as described, as a new article of manufacture.

2. The combination of the recessed body A, and recessed base-rim C, with the rim c and flange d of the bottom B, substantially in the manner herein set forth.

104,886.—Scrubber and Cleaner.—William G. Rhodehamel, Piqua, Ohio.

Claim.—The combination of the head B, the rubber c, sponge A, and handle D, as shown and described, for the purpose set forth.

104,887.—Machine for Making Composition Roofing.—Israel L. G. Rice, Cambridge, Mass.

Claim.—1. The hopper D, sieve M, and scraper E, arranged between the receptacle C and the pressure-rollers F^1 F^2, substantially as shown and described.

2. The rollers B S T, receptacle C, bed B, hopper D, sieve M, scraper E, and pressure-rollers F^1 F^2, when combined, substantially as herein shown and described, and for the purpose specified.

3. The combination with the above-named parts, of the drum N, endless belts O, drum P, rollers V^1 V^2, and knife X, as shown and described.

104,888.—Steam Road-Vehicle.—Ira A. Sabin, Locust Lane, Pa.

Claim.—1. The arrangement, on the side of the bed L, of the cam-lever y and the ratchet-bar Z, substantially as and for the purposes herein set forth.

2. The arrangement of the cog-wheels B A' C', standards D', segmental racks G N S T, shaft M, lever O, ratchet P, shaft U, levers V W, and ratchet-bar X, with their various parts, all constructed and operating substantially as set forth.

104,889. — Stove-Pipe Damper. — David Sanders, Milwaukee, Wis., assignor to himself and J. D. Pierce, same place.

Claim.—1. A damper with flat, straight surface A, when made with holes D, cups E, and lugs F, substantially as described.

2. A damper, when made with holes D, cup E, and tongues G, substantially as described.

104,890.—Shelving for Stores.—William Edmond Scott, Knoxville, Tenn.

Claim.—The combination of the shelving sections A with guide m, shelves d, counter a, drawers b b, and rollers B, said shelves being provided with the doors C, with rollers h h, all constructed, arranged, and used substantially as set forth.

104,891.—Horse Hay-Fork.—George W. Shade, Shippensburg, Pa.

Claim.—The combination and arrangement of the stem A, the spear B, the grapple C, and the trip-lever D, all constructed substantially as and for the purpose described.

104,892.—Sash-Holder.—Nathan Y. Shaw, Greenville, N. Y.

Claim.—The vibrating lever C, provided with the projections e and handle I, said spring being pivoted centrally between the points e, and having the spring b, arranged to operate as described.

104,893.—Cotton-Seed Sower. — Joseph Shearer, Timberville, Ill.

Claim.—1. The arrangement of the wheels B B, axle C, uprights D D, and circular braces E E, for the purpose of adjusting the wheels, substantially as herein set forth.

2. In combination with the foregoing, the roller T, provided with journals and operating within the diagonally-placed slotted braces S S upon the rear of the frame, all substantially as set forth.

3. The scraper V, provided with wings W, and suspended under the rear part of the seed-box M of a cotton-seed sower, by means of the springs X, substantially as set forth.

4. The combination of the frame A, adjustable wheels B B, adjustable gauge-wheel I, seed-box M with its internal arrangement, self-adjusting roller T, yielding rake or scraper V, adjustable furrow-plow Z, and plows B' B', all constructed and arranged substantially as and for the purposes herein set forth.

104,894.—Scale for Laying Out Shoe-Patterns. — William Sheill, Dayton, Ohio.

Claim.—The within-described pattern, with its graduated scales, and its curve, substantially as and for the purpose set forth.

104,895.—Feed Attachment for Thrashing-Machines.—Daniel F. Slane, Chillicothe, Ohio.

Claim.—1. The combination and arrangement of the crank f, on the knife-cylinder E, connecting-arm g, crank h, bevel-wheels G H, and cranks i m, for giving the bar I an "oscillating dip" motion, substantially as herein set forth.

2. The arrangement, with the frame A, of the adjustable cylinders D D, provided with buckets a a, belt C, with slats r r, cylinder E with cutters d d, and bar I with teeth k k, all constructed and operating substantially as set forth.

104,896.—Animal Trap.—Elonzo Sprague and George C. Belt, Bridgeton, Ind.

Claim.—The combination of the two treadles D

D, in the open passage b, with the gates E E and F, and with the bait-holder B, all arranged substantially as herein shown and described.

104,897.—Car-Brake.—Joseph Steger, New York, N. Y.

Claim.—1. The pendent lever D, carrying a shaft, b, with a friction-roller, d, and another shaft, c, with winding-rollers, i j, both shafts b and c being situated below the fulcrum of said pendent lever, in combination with the brakes of a railroad car, all constructed and operating substantially in the manner herein shown and described.

2. The multiplying lever f, carrying rollers f^1 f^2, in combination with the brake-rope g and pendent lever D, carrying friction-roller d, substantially as set forth.

104,898.—Lamp-Shade Holder.—Cornelius St. John, New York, N. Y., assignor to himself and James E. Underhill.

Claim.—1. The holder A B E F, constructed and operating substantially as herein shown and described, and for the purpose set forth.

2. The combination of the loop G with the ring D of the shade C, and with the holder A B E F, substantially as herein shown and described, and for the purpose set forth.

104,899.—Lifting-Handle for Coffins, &c.—Thomas M. Taylor, New York, N. Y., assignor to the Meriden Britannia Company, Meriden, Conn.

Claim.—The plate A, having trunnion seats a a formed therein, combined with the lever C and covering-plate D, the latter serving to hold the lever and trunnions, and at the same time affording a bearing against which the lever presses in lifting, substantially as described.

104,900.—Device for Operating Awnings.—Andrew Thalhofer, South Bend, Ind.

Claim.—The combination of the frame B C D, roller E, with awning c and pulleys b b, cords e e, pulleys d d, shafts G I, wheels g, h, i, k, and m, crank H, and board J, all constructed and arranged to operate substantially in the manner and for the purposes herein set forth.

104,901.—Axle-Nut and Axle.—Chauncey Thomas, Boston, Mass.

Claim.—A nut and axle, in which the nut is kept from rotation (when screwed upon the axle) by a hinged latch or key, which enters slots in the nut and axle, substantially as described.

Also, a nut, having a latch or key hinged or jointed to it, substantially as shown and described.

Also, in combination with the nut, a latch or key, having provisions for holding it down to the nut, or standing out therefrom, substantially as described.

104,902.—Iron Bridge.—Lucius E. Truesdell, Warren, Mass.

Claim.—1. Fastening the end of the tie a of an iron bridge to the block A, either of the upper or lower chord, in the manner described; that is to say, by corrugating its end and using, in connection therewith, wedge-shaped corrugated keys c and c', which are made to take into a correspondingly-shaped opening in the block A, as described, for the purposes set forth.

2. The combination of the wrought-iron band H with the block A, as described, for the purposes set forth.

3. The combination of the band s, fig. 14, and clamps d and d', with the corrugated ends of the chords, for the purposes set forth.

104,903. — Tassel-Hook. — Elisha Turner, Wolcottville, Conn.

Claim.—1. A tassel-hook, made of an open frame, and a projecting arm extending in front of the opening and cast in one piece, the open portion of the frame being behind the hook, for the purposes specified, the whole forming a new article of manufacture.

2. The ornamental center or panel d, combined with the open-work frame and projecting arm aforesaid, forming a tassel-hook, as set forth.

104,904. — Method of Manufacturing Axle-Nuts.—Samuel Vaustone, Providence, R. I.

Claim.—The process herein described of forming axle-nuts, consisting in the rolling of the iron into suitable tubes and the subsequent cutting and pressing of the same into nuts, substantially as described.

104,905.—Wrought-Iron Coupling-Pipe. Samuel Vaustone, Providence, R. I.

Claim.—A wrought-iron coupling-pipe, made with ridges or grooves, substantially as described.

104,906.—School-Desk Seat.—Addison S. Vose, Des Moines, Iowa.

Claim.—The combination of the frames A A, arms D D, folding portion E of the seat, and its fixed portion F, such fixed portion being bolted firmly to the frames A A, for the purpose of giving additional strength thereto, and the springs upon which the arms D D rest, when the parts are so arranged as to permit a section or portion of the seat to be folded up against the fixed portion, substantially as and for the purpose set forth.

104,907.—Railway Car-Spring.—Richard Vose, New York, N. Y.

Claim.—1. A series of concavo-convex steel disks, put together in pairs, with their concave surfaces together, and with a disk of rubber interposed between the several pairs, the whole combined and arranged substantially as and for the purposes specified.

2. A series of concavo-convex steel disks and rubber disks, arranged as specified, when placed and held within a metal case, substantially as and for the purposes specified.

104,908.—Manufacture of Cast Pipe-Elbows.—John G. Weaver, Jr., Cincinnati, Ohio.

Claim.—The green sand-core and mold of the same material, as and for the purpose described.

104,909. — Combined Piston-Head and Valve. — George Weinman, Columbia, Ohio.

Claim.—The valve G, upon the outside of the piston-head, acting substantially as described, and for the purposes set forth.

104,910.—Breaking-Machine.—James Davenport Whelpley, Boston, Mass.

Claim.—1. The combination of the revolving cutting-block A with the perforated revolving charging-cylinder H, constructed substantially as herein described, and for the purposes set forth.

2. The combination of block A with revolving cylinder H, provided with shelves or buckets h h, attached to the two heads, substantially as shown, and for the purposes set forth.

3. The arrangement of cylinder H, having buckets h h, neck g g supported on rollers L L, and block A, all as herein described, and for the purpose set forth.

4. The cutting-block A, provided with adjustable cutters a a, by means of slot and screws, substantially as herein shown, and for the purpose set forth.

104,911. — Window for Coal-Stove.—Alexander White, Genesco, Ill.

Claim.—1. The plate a, extending below the mica, and so formed as to leave a passage between it and the shell of the stove or mica plate, thus pro-

ducing a strong draught and heating the current of air before it reaches the perforated plate, substantially as described.

2. In combination with the plate a, the perforated opening b^3 and mica b, all arranged and operating substantially as and for the purpose set forth.

104,912. — CARTRIDGE.—Nathaniel Gilbert Whitmore, Mansfield, Mass., assignor to himself and Alfred A. Reed, Jr., Providence, R. I.

Claim.—1. A cartridge-case, having an end or base provided with a priming or cap-holding cavity extending partially through it from its periphery, and accessible from the peripherical exterior of the case, in combination with firing-apertures through the faces of said base, and in communication with the charge in the shell, substantially as specified.

2. The combination of the radially-disposed cap-clearing aperture *e* with the priming or cap-holding cavity *f* in the base B, both accessible from the peripherical exterior of the case, and in communication with each other and with the firing-apertures, through the faces of said base, essentially as shown and described.

3. The base B, formed of a ring, *c*, an intermediate piece, *d*, having a cavity or space, *f*, in it, and a perforated disk, *e*, substantially as specified.

4. The case A, extended to form a rear chamber, *b*, and provided with a lateral opening, A, also, if desired, with an oppositely-arranged aperture, *s*, for communication with the interior of a base, B, arranged to fit within the rear chamber *b*, essentially as described.

104,913.— PIPE-WRENCH.—James A. Wilcox, Rocky Hill, assignor to himself and Walter S. Wilcox, Hartford, Conn.

Claim.—1. The arms I formed upon the jaw B, so as to operate upon the slide G in the manner described.

2. In combination with the adjustable jaw B, and fixed jaw on the bar A, the slide G arranged upon the fixed spindle *f*, and so as to bear upon the said jaw B, substantially as described.

104,914. — IMPERMEATOR FOR STEAM-ENGINES.—Henry Wilson, Stockton-on-Tees, Great Britain.

Claim.—A steam-engine impermeator, arranged substantially as described, so that, as the steam flowing in and out from the steam-pipe or steam-chest with which it is connected becomes condensed, it shall raise the lubricating fluid, and cause it to gradually and regularly feed into the engine with the steam, and also so that the condensing-surface may be varied, in the manner heretofore set forth.

Also, the arrangement within the impermeator of pipes or openings of different heights, connected with the pipe which conveys the steam into the impermeator, and takes the oil or other lubricating matter away, which pipes or openings determine the height at which the lubricating fluid shall stand in the impermeator, and thus the extent of condensing-surface and the rapidity of condensation and of feed of the lubricating fluid.

Also, the arrangement of a plug-cock or other similar mechanism, in combination with said pipes or openings, as described above, and for the purposes set forth, to wit., the arrangement by which any one of the said pipes or openings may be put in connection with the pipe B, at the will of the operator, so that the steam may be admitted and the lubricating material fed out thereby.

Also, the rose, as described, in combination with a lubricator working by condensation, for the purposes described, that is, for the better distribution of the oil furnished by the lubricator, when the same is applied to grease the steam.

104,915. — TOOL FOR DRIVING GLAZIERS' POINTS.—Alfred Woodworth and Edwin W. Warren, Cambridge, N. Y.

Claim.—The combination of the cutting or clipping instrument and the holding instrument, constructed and operating as and for the purposes herein set forth.

Claim.—The combination on stock A, provided with a chamber, D, of a spring-actuated driver, F G, retracting-pawl L M, and spring-actuated catch-pin N, all arranged for operation substantially as specified.

104,916.—PRESERVING WOOD.—Archibald B. Tripler, New Orleans, La.

Claim.—1. Ties, bed-sills, or other articles to be preserved from decay, made in sections or slabs, and secured together, substantially as herein described.

2. In a tie or bed-sill made in sections or slabs, the intervention of partitions or division-walls of antiseptic or preservative agents between their adjacent sides, substantially as herein described.

3. The method herein described of preserving timber from decay.

104,917. — PRESERVING WOOD FOR RAILROAD TIES AND FOR OTHER PURPOSES.—Archibald B. Tripler, New Orleans, La.

Claim.—1. The use of chloride of arsenic, or arsenic and chloride of sodium combined, in a dry or semi-liquid form, for impregnating wood in separate and distinct strata, as herein described.

2. Railroad ties or other timber, bored with a central hole or holes extending from one end to the other, filled from both ends, so as to form a continuous interior strata of antiseptic or preservative agents, and sealed at both ends, in such manner as to cause it to permeate the timber in continuous longitudinal lines and transverse veins from its center to its sides, as herein described.

3. Timber impregnated with separate and distinct strata of preservative agents, submitted to a bath of coal-tar and powdered charcoal, substantially as herein described.

4. Carbonizing wood by immersing it in a solution of coal-tar and powdered charcoal, either hot or cold, substantially as described.

5. Coating wood or other fibrous material with a composition of asphaltum or mineral pitch, sulphur, arsenic, coal-tar, and powdered charcoal, when compounded in or about the proportions as herein described, for the purpose of rendering its surface impervious to atmospheric decomposition or the penetration of moisture, substantially as herein described.

6. The process herein described for preserving timber.

104,918. — WIND-WHEEL.—Charles H. St. Clair, New Orleans, La.

Claim.—1. The inclosing-rim N, with its oblique buckets or wings P, in combination with the wind-wings F, substantially as herein shown, and for the purposes specified.

2. The arrangement of the auxiliary oblique buckets P, at the outer ends of the wings F, in such manner as to form, in connection with the flaring rim N, a continuation at the side and end of each wing F, as herein shown, and for the purposes specified.

3. The base B, having an upper and a lower annular flange, *a* and *b*, and the supporting-rollers of the carrying-plate K, arranged between these flanges, supporting the carrying-plate upon the lower, and locking it in position by the upper flange, as herein shown and described.

4. The combination of a wind-wheel, constructed as described, with the centering and carrying-plate K, the wind-vane I, the double-flanged base B, and the supporting and locking-rollers, the several parts being constructed, arranged, and operating as herein shown and described.

104,919.—STRAWBERRY-HULLER.—Julia W. D. Patten, Washington, D. C.

Claim.—The combination of the cutting or clipping instrument and the holding instrument, constructed and operating as and for the purposes herein set forth.

REISSUES.

4,044.—SPIDER ARCH FOR BURNING BAGASSE.—John Amick, Ascension parish, La.—Patent No. 101,968, dated April 19, 1870.

Claim.—The spider arch for burning bagasse, when composed of the parts B and D, as herein described, for the purpose set forth.

4,045.—NON-CORROSIVE VALVE-SEAT.—Edward H. Ashcroft, Lynn, Mass.—Patent No. 81,576, dated September 1, 1868.

Claim.—1. An alloy of nickel and copper, substantially as and for the purpose set forth.

2. An alloy of aluminium and copper, substantially as and for the purpose set forth.

3. An alloy of silver and copper, substantially as and for the purpose set forth.

4. An alloy of gold and copper, substantially as and for the purpose set forth.

5. Combinations of the above with each other, which yield a non-corrosive alloy, for the purpose set forth.

6. Aluminium alone, for the construction of valves or valve-seats, for the purpose set forth,

4,046.—CORN-MARKER, PLANTER, AND CULTIVATOR.—Elias Barto, Tiffin, Ohio.—Patent No. 89,843, dated May 11, 1869.

Claim.—1. In a corn-marker, planter, and cultivator, the hinged beam C, adjustably arranged upon the axle, and hopper, having cut-off slide or valve, all constructed and operating as described.

2. A corn-marker, planter, and cultivator, having hinged beams C, adjustably arranged upon the axle, adjustable side blades *b b*, and hopper, all constructed, combined, and operating for the use and purpose as described.

4,047.—COTTON-GIN.—John C. Du Bois, Millerton, Cal., assignee of John Du Bois.—Patent No. 20,051, dated April 27, 1858.

Claim.—The flange *b*, on the face of the rib *a*, constructed, arranged, and operated in the manner described, for the purpose hereinbefore specified.

4,048.—PREVENTING THE CORROSION OF IRON EXPOSED TO WATER OR DAMPNESS. Cornelius Godfrey, New York, and Reuben Lighthall, Brooklyn, N. Y., assignees of Reuben Lighthall.—Patent No. 97,657, dated December 7, 1869.

Claim.—The combination with or application to iron surfaces or bodies exposed to the action of fresh or salt water or moisture, of a metal or metals, or alloy, in the manner and for the purpose substantially as herein set forth.

4,049.—WATER-INDICATOR FOR BOILERS.—John D. Lynde, Philadelphia, Pa.—Patent No. 74,389, dated February 11, 1868.

Claim.—1. The combination of the valve and stem F, spiral spring H, case B, valve-seat I, and lever G, constructed substantially as described, so that the valve may be tipped on its seat, as herein set forth.

2. The arrangement of the lever G, valve-stem F, spring H, valve M, pipe N, with reference to the float B, whistle L, and case A, whereby to sound an alarm when the water is too low in the boiler, and to ascertain the condition of the water at other times, substantially as described.

4,050.—APPARATUS FOR FILLING BOTTLES. Henry W. Putnam, Bennington, Vt.—Patent No. 33,602, dated October 29, 1861.

Claim.—1. A pump, to supply, by its movement, a measured quantity of one liquid into a bottle to be charged, in combination with a valve or cock to supply the other liquid to such bottle, substantially as specified.

2. The pump A, piston G, and valves, in combination with the plate W and water-ways R R′ Y′, substantially as and for the purposes specified.

4,051. — VINEGAR APPARATUS.—Abner D. Strong, Ashtabula, Ohio.—Patent No. 97,987, dated December 14, 1869.

Claim.—1. A vinegar apparatus, constructed with slanting shelves B, provided with marginal grooves or channels C C′, pins a, and case A, in the manner substantially as described, and for the purpose set forth.

2. The combination of the shelves B, provided with pins, the air-passages and case A, arranged substantially as and for the purpose specified.

4,052. — Division A.—FERTILIZER. — Dirk Adrenan Ter Hoeven, Philadelphia, Pa.—Patent No. 79,160, dated June 23, 1868.

Claim.—A fertilizer, composed of horns, hoofs, or other animal matter of an equivalent character, prepared in the manner herein described.

4,053.—Division B.—MANUFACTURE OF FERTILIZERS. — Dirk Adrenan Ter Hoeven, Philadelphia, Pa. — Patent No. 79,160, dated June 23, 1868.

Claim.—The conversion into a valuable fertilizer, of horns, hoofs, and other animal matter of equivalent character, by steaming, drying and crushing or grinding, as a whole operation, substantially as described.

4,054. — FAUCET. — William H. Trissler, Cleveland, Ohio. — Patent No. 102,624, dated May 3, 1870.

Claim.—1. The shield or shell B, covering the shank A of a wood faucet, substantially as and for the purpose set forth.

2. The shell F, investing the wooden key E, constructed and arranged substantially as and for the purpose set forth.

3. The herein-described faucet, consisting of a wooden body, A, shield B, key E, and shell F, constructed and combined in the manner and for the purpose substantially set forth.

4,055.—Division A.—OVEN.—Joseph Vale, Beloit, Wis.—Patent No. 79,615, dated July 7, 1868; reissue 3,796, dated January 11, 1870.

Claim.—1. The rotating disk or hearth H, supported by the shaft H′, and revolved in any suitable manner, as and for the purpose specified.

2. The crown-plate or disk E, in combination with the fire-grates C C, covers *d d*, flues *b b*, regulating-damper *g*, flue or chimney *a a*, and ash-boxes D D, when the whole are constructed and arranged substantially as herein set forth, and described to operate as specified.

4,056.—Division B.—OVEN.—Joseph Vale, Beloit, Wis.—Patent No. 79,615, dated July 7, 1868; reissue No. 3,769, dated January 11, 1870.

Claim.—The combination, in a bake-oven, of a horizontal rotary hearth and a furnace, when constructed and arranged so as to operate substantially as set forth.

DESIGNS.

4,174.—PAPER BOX.—Jacob C. Bauer, New York, N. Y.

Claim.—The design for a paper box herein shown and described.

4,175.—ORNAMENTATION OF DISHES.—Edwin Bennett, Baltimore, Md.

Claim.—The ornamental design for a rice or vegetable dish, as shown and specified.

4,176.—CARPET-PATTERN.—Hugh Christie, Morrisania, N. Y., assignor to Israel Foster, Philadelphia, Pa.

Claim.—The design for a carpet-pattern, substantially as described, and as represented in and by the accompanying drawing.

4,177.—CARPET-PATTERN.—Hugh Christie, Morrisania, N. Y., assignor to Israel Foster, Philadelphia, Pa.

Claim.—The design for a carpet-pattern, substantially as described, and as represented in and by the accompanying drawing.

4,178. — TRADE-MARK. — Henry Fletcher, Providence, R. I., assignor to Fletcher Manufacturing Company, same place.

Claim.—The design for a trade-mark label, substantially as herein shown and described.

4,179.—FUR COLLAR.—John H. Kappelhoff and Samuel Rauh, New York, N. Y.

Claim.—1. The design for a fur collar, having points *d e*, and intervening incisions *e*, as shown and described.

2. The ogee-shaped edge of the breast-flaps, as shown and described.

3. The false flaps *f* on the breast-flaps, formed as shown and described.

4,180.—CARPET-PATTERN.—William Kerr, Philadelphia, Pa., assignor to Israel Foster, same place.

Claim.—The design for a carpet-pattern, substantially as described and represented in and by the accompanying drawing.

4,181.—CARPET-PATTERN.—William Kerr, Philadelphia, Pa., assignor to Israel Foster, same place.

Claim.—The design for a carpet-pattern, substantially as described and as represented in and by the accompanying drawing.

4,182.—TRADE-MARK.—Martin Landenberger, Philadelphia, Pa.

Claim.—The design for a trade-mark, as described and shown.

4,183.—COOKING-STOVE.—Peter Low, Cleveland, Ohio.

Claim.—The design for stove, as shown.

4,184.—GATE.—Samuel Macferran and Elhanan Omensetter, Philadelphia, Pa., assignors to Samuel Macferran.

Claim.—The design for an iron gate, as shown and described.

4,185.—SASH-HOLDER.— John H. Martin, Salem, N. Y.

Claim.—The design for a window-sash fastener and supporter, as shown, to wit: with a flange surrounding it, two notches at opposite ends and sides, and a diagonal slot within the same.

4,186.—TRADE-MARK.—Martin Landenberger, Philadelphia, Pa.

Claim.—The design for trade-mark, as described and shown.

4,187.—STATUETTE.—Nicholas Müller, New York, N. Y.

Claim.—The design for a statuette, as herein shown and described.

4,188.—PAIR OF STATUETTES. — Nicholas Müller, New York, N. Y.

Claim.—The design for a pair of statuettes, singly and combined, as herein shown and described.

4,189.—IRON RAILING.—Elhanan Omensetter, Philadelphia, Pa., assignor to Samuel Macferran, same place.

Claim.—The design for iron railing, as shown.

4,190.—IRON RAILING.—Elhanan Omensetter, Philadelphia, Pa., assignor to Samuel Macferran, same place.

Claim.—The design for iron railing, as shown.

4,191.—IRON RAILING.—Elhanan Omensetter, Philadelphia, Pa., assignor to Samuel Macferran, same place.

Claim.—The design for iron railing, as shown.

4,192.—IRON RAILING.—Elhanan Omensetter, Philadelphia, Pa., assignor to Samuel Macferran, same place.

Claim.—The design for iron railing, as shown.

4,193.—IRON RAILING.—Elhanan Omensetter, Philadelphia, Pa., assignor to Samuel Macferran, same place.

Claim.—The design for iron railing, as shown.

4,194.—IRON RAILING.—Elhanan Omensetter, Philadelphia, Pa., assignor to Samuel Macferran, same place.

Claim.—The design for iron railing, as shown.

4,195.—IRON RAILING.—Elhanan Omensetter, Philadelphia, Pa., assignor to Samuel Macferran, same place.

Claim.—The design for iron railing, as shown.

4,196. — RAILING. — Elhanan Omensetter, Philadelphia, Pa., assignor to Samuel Macferran, same place.

Claim.—The design for iron railing, as shown.

4,197.—MOLD-BOARD.—James T. Wilson, Rochester, N. Y.

Claim.—The design for the outward configuration and form of a plow-share, as herein shown and described.

EXTENSIONS.

MARY ANN MCCOMB, of Memphis, Tenn., administratrix of DAVID MCCOMB, deceased.—Letters Patent No. 15,142, dated June 17, 1856.

"Improvement in Non-Elastic Bands for Bales of Cotton and other Fibrous Materials."

Claim.—The combination of the link or slide, with the hooked ends of the hoops for the purpose of securing them from opening with the expansive force of the bale.

Also, the peculiar formation of the link as exhibited in figs. 2 and 3, which forms a secure means of keeping the hooked ends of the hook together, and has a guard which keeps it to its place, is easy of application in putting on, and may be removed at pleasure without mutilation.

JAMES IVES, of Mount Carmel, Conn.—Letters Patent No. 15,077, dated June 10, 1856.

"Improved Mode of Attaching Pads to Saddle-Trees."

Claim.—The peculiar construction of hinge joint herein described and shown for connecting the pad to the tree, substantially as set forth.

EDWARD MAYNARD, of Washington, D. C. Letters Patent No. 15,141, dated June 17, 1856.

"Improvement in Cartridges."

Claim.—My improved cartridge for breech-loading fire-arms, composed of a hard-metal cylindrical case charged with powder and combined with a projectile of such a shape that whether the case receive a large or small charge of powder the said projectile is self-retained in contact with the powder, in such a position that its point must be coincident with the axis of said case, and a perfectly tight joint formed between said projectile and case, by filling the grooves in the former with greasy matter, substantially as herein set forth.

ISSUE OF JULY 5.

PATENTS.

104,920.—WARPING-MACHINE. — Levi Abbott, Lewiston, Me., assignor to the Lewiston Machine Company, same place.

Claim.—1. The cam G, provided with the spiral groove and slanting recess *v*, substantially as herein shown and described.

2. The combination of the measure-roller A and cam G, with the levers H J, rocker C, and drop-wires *a*, all arranged to operate substantially as herein shown and described.

104,921. — SELF-FEEDING FOUNTAIN.—Edward Amende, Paris, Ky.

Claim.—1. The combination of the water-vessels B C, air-vessels D, basin A, discharge-pipes G G', return-pipes D L, air-escape pipes P, air-supply pipes N Q, and air-pump E, all substantially as specified.

2. The combination of the clamp-cocks with the water-return pipe and air-escape pipe of one water-vessel and the air-supply pipe and water-discharge pipe of the other, substantially as specified.

104,922.–HAY AND COTTON-PRESS.–Charles J. Beasley, Petersburg, Va.

Claim.—1. The combination with the press-case and follower, of the arms A F, cords K, winding-drums, and the guiding-pulleys for the cords, all arranged and operating substantially as specified.

2. The combination, with the drum-shaft and belt-tightening lever, of the rod V, arranged to be acted on, for releasing the belt, by one set of the arms A F, all substantially as specified.

104,923. — INSTEP-STRETCHER FOR BOOTS AND SHOES.—Moses Belding, Hartford, Conn.

Claim.—An instep-stretcher, consisting of the pieces *a* and *b*, hinged together at the toe, cam *d*, and connecting-rod *e*, with the screw-rod *f* working in the nut *a*, all constructed, arranged, and operated in the manner and for the purpose set forth.

104,924.—MILK-CAN BOTTOMS, &c.—Thomas M. Bell, New York, N. Y.

Claim.—The hoop C, with its edge turned inward, to form a groove to receive the edge of the body A, and the turned-down edge of the bottom or head B, in combination with the said body and bottom or head, substantially as herein shown and described, and for the purpose set forth.

104,925. — HEATING-STOVE. — George A. Blake and William B. Taylor, Calais, Me.

Claim.—The arrangement and combination of one or more air-passages *d* with the air-duct C, and the stove A, its register valve or valves, and escape-flue *e*, the whole being substantially as and to operate as hereinbefore explained.

Also, in connection therewith, the elbow, as arranged, and combined with the escape-flue of the stove, and with the air-duct C, as explained.

104,926.—SEED-SOWER AND CULTIVATOR.—George Bradley, Rockford, Ill.

Claim.—1. The combination of the fixed shield *g*, sliding shield *g'*, and leather *g''*, arranged to operate in the manner and for the purpose substantially as described.

2. The combination of the grooved roller F with the shields *g* and *g'*, when constructed and arranged to operate substantially as described.

3. The combination of the pivoted hand-lever *b*, connecting-rod *b'''*, cultivator-frame *d*, with the eye *d'* and staple *d'''*, for the purpose substantially as described.

4. The combination of the harrow O O and O' O' with the guide G, chains *c'*, links *c''*, pulleys *c*, and hand-lever A, when constructed and arranged to operate substantially as described.

5. The harrow, seed-sower, and cultivator herein described, when arranged with relation to and used with the wheeled sulky, in the manner and for the purpose set forth.

104,927. — HARVESTER-RAKE. — Collins B. Brown, Springfield, Mo.

Claim.—1. The arrangement of the rake-arm L and rake-head M with reference to the platform A, provided with the groove *a'*, as shown and described, for the purpose specified.

2. The combination of the spur-gears D E, shaft F, gear-wheels H I, shaft U, gear-wheels T V, arm J P, guide O, link K, and rake L M, with the drive-wheel C and the platform A, provided with groove *a'*, substantially as shown and described.

104,928. — CIRCUIT-CHANGER. — Watkins Leigh Burton, Richmond, Va.

Claim.—A cylinder, C, carrying studs or projections, so arranged as to change an electric circuit from one to another of a series of conductors, substantially as set forth.

104,929.—METHOD OF GRAINING.—John J. Callow, Cleveland, Ohio.

Claim.—The method above described of graining wood, namely, by first painting the color of the wood to be imitated on the door, panel, or other article to be grained; second, immediately thereafter covering the same with a pattern-plate perforated all over at short intervals; third, rubbing the said plate with a rubber cloth; these several steps being taken in the order specified, and the grained surface then being finished off in the usual manner.

104,930, antedated May 4, 1870.—MINNOW PROPELLER. — William D. Chapman, Theresa, N. Y.

Claim.—A minnow propeller, constructed of two corresponding concave plates of sheet metal, A and A', secured together, so as to leave between a longitudinal opening, *a*, and to receive and contain a metal tube, B, for inclosing a double lock-swivel, C, substantially as shown and for the purpose specified.

104,931. — MACHINE FOR FORGING THE HEADS OF WRENCHES.—Aury Gates Coes, Worcester, Mass.

Claim.—1. The combination, with the drop-hammer and side dies, of an upright anvil-block, vibrating upon a ball-and-socket joint, the socket being formed in the base of the block, substantially as and for the purposes stated.

2. The combination, in a machine such as described, of the upright vibratory anvil-block, with the toggle-joint and lever, constructed and arranged to operate said block as shown and set forth.

3. The combination with the vibratory anvil-block, when arranged and operating in connection with the drop-hammer and side dies, as described, of the lateral adjusting-screws *z*, arranged in the machine to support and guide the block upon the sides, as shown and set forth.

4. The combination with the drop-hammer and side dies of the socketed anvil-block, semi-spherical bearings *c d*, and adjustable plate *e*, substantially in the manner and for the purposes described.

104,932.—FIFTH-WHEEL FOR CARRIAGES.—William A. Collins, Bloomfield, N. J.

Claim.—The fifth-wheel for carriages, made with the metal bar *b*, forming the bolster, and the arm *f*, for connecting to the perch, in the manner and for the purposes set forth.

104,933.—COVER FOR PAILS, FIRKINS, &c.—Theodore F. Conklin, Fond du Lac, Wis.

Claim.—In the construction of the close-fitting cover A, with projecting edge-groove C and slots D and *d*, in combination with ear E, with its lugs B and pail H, all arranged as shown and described.

104,934, antedated June 29, 1870.—AUTOMATIC WATER-ELEVATING APPARATUS.—Hugh H. Craigie, New York, N. Y.

Claim.—1. The vessels *a* and *c*, and pistons *b* and *d*, connected and acting together, substantially as specified, in combination with the pipe *m*, for drawing water at will from the vessel *a*, substantially as and for the purposes set forth.

2. A self-acting cut-off between the supply and the vessel *a*, to operate, when water is drawn at will out of said vessel *a*, substantially as and for the purposes set forth.

3. The sliding cylinder *i* and heads 2 and 3, combined with the inlet water-way *g*, vessel *a*, and pipes *m* and *p*, as and for the purposes specified.

4. The sliding cylinder *i*, forming a cut-off between the inlet-pipe *p f* and the vessel *a*, in combination with the pipes *m* and *k*, and vessels *a c* and pistons *b d*, substantially as and for the purposes specified.

104,935.—BUNG.—David M. Cumings, Newburyport, Mass.

Claim.—The combination of the bush A, having the flange B, with packing D, cover E, and cam or cranked lever F, when the said lever is fitted in the angular slots C in the wall of the bush, all substantially as specified.

104,936.—COTTON AND HAY-PRESS.—James G. Cummings, Columbus, Miss.

Claim.—1. In combination with the frame of a press for pressing cotton or hay, the double track M M′, the rails of which form a junction beneath the follower of the press, for the purpose of allowing two car-boxes to be used alternately, as described.

2. In combination with the box E, provided with the movable panels G and H, cleats T T′, apertures R, frame F, bars P, bars I, clamps K, and trucks L, the follower O, provided with the grooves S, when constructed and operating together, as described.

104,937.—COMPOSITION FOR PHOTOGRAPHIC PURPOSES.—Thomas Cummings, Lancaster, Pa.

Claim.—The use of finely-pulverized glass, or its equivalent, in combination with varnish, when applied for photographic purposes, substantially in the manner and for the purpose specified.

104,938. — SPRING BED-BOTTOM. — Lewis Cutler, Springfield, Mass.

Claim.—The combination of the tapering spring A, the loop B, and the strap C, the slot D, and the frame, having the adjustable legs E E, as described, and for the purposes set forth.

104,939.—MANUFACTURE OF IRON BY THE ELLERSHAUSEN PROCESS.—Henry Davies, Newport, Ky.

Claim.—1. A tilting ladle, constructed and arranged for delivering a uniform quantity of metal, when tilted at a uniform rate of speed, substantially in the manner herein shown and described.

2. The combination with a rotating or other receiving table, of the ore-hopper and feeding-wheel and the tilting ladle, arranged for operating relatively to each other, substantially as specified.

3. The arrangement of the ladle for adjustment along its axis, substantially as specified.

104,940. — MEAT-CHOPPER. — James H. De Poe, Boonton, N. J.

Claim.—1. The combination and arrangement of the meat-holder R, platform C, cutter, cutter-arm, and driving-gear, substantially as specified.

2. The arrangement, with the bent cutter-arm pivoted to the platform C, and connected to the crank-shaft, as described, of the pawl-arm L, substantially as specified.

3. Operating the cutter, and the pawl for turning the meat-holder, by one and the same crank, substantially in the manner herein described.

4. The combination, with the meat-holder and the cutter, of the guard Y, arranged substantially as specified.

104,941.—PAVEMENT.—Andrew Dilger, St. Louis, Mo.

Claim.—1. The foundation II III of a street-pavement, said foundation being formed in horizontal strata, as described, and whose vertical transverse section is horizontal upon its lower side and convex upon its upper side, so as to rest upon a transversely horizontal sub-foundation, and to give the proper arched form to the superincumbent layer or layers, substantially as described.

2. In combination with the foundation II III IV, the upper stratum of pavement, V, formed and constructed substantially as described.

3. The pavement I II III IV V VI, constructed substantially as described.

104,942. — STREET-PAVEMENT. — Andrew Dilger, St. Louis, Mo.

Claim.—The composite pavement herein described, produced by combining the flat sub-foundation I, the stone foundation II III, flat at bottom and cambered at top, and the successive layers IV V VI VII, of pitch, and either gravel or broken stone, which may be set in mortar or cement, all substantially as specified.

104,943. — TABLE FOR DOVETAILING-MACHINE. — Joseph Dill, Grand Rapids, Mich.

Claim.—1. The machine-table, constructed of two pieces connected to each other by curved pieces, so as to leave a central opening, S, when provided with slots *d*, rests R R^1 R^2 R^3, and gauges G G′ *g g′*, all combined, arranged, and operating substantially as herein described.

2. The dovetailed gauges G G′ *g g′*, arranged to operate substantially as herein described.

104,944.—SLAT FOR BEDSTEADS.—Alonzo S. Drisko and Oramander H. Drisko, Boston, Mass.

Claim.—A pair of slats, A B, connected by diagonal braces C D with a series of springs, E, applied thereto in the manner and for the purpose described.

104,945.—JAR FOR WELL-DRILLS.—William W. Eastman and Francis B. Marden, Meadville, Pa.

Claim.—The jar-mechanism as constructed, consisting of the socket A, the sliding jar or plunger B, the packing *f f* in the recess, the sleeve D, and sheath or casing E, all combined and arranged to operate in the manner herein described, and for the purpose specified.

104,946.—GRINDING-MILL.—Samuel T. Eck, Taneytown, Md.

Claim.—The combination with the stones and curb of a grain-mill, of wheel B and scraper F, arranged and operating together, as set forth.

104,947.—HAY-UNLOADER.—Henry H. Enminger, Buffalo, N. Y.

Claim.—1. The combination and arrangement of the scantlings A A, ropes B B, and sections of canvas C C C C, the sections being connected in the center to retain the load, and disconnected to discharge the same, said parts forming a device for handling hay or straw in bulk, substantially as herein described.

2. In combination with the above, a locking device, composed of two levers D D, the slotted bar E, knuckle-jointed bar F, rope G, and ring *h*, together with the link *i* and rings *j j*, substantially as described and for the purposes set forth.

104,948.—STEAM-HAMMER.—Oscar C. Ferris and Frederick B. Miles, Philadelphia, Pa.

Claim.—1. The arrangement of the hammer and anvil in relation to the hammer-frame, substantially as described, that is to say, so that the lateral faces of said hammer and anvil shall lie in planes oblique to the plane of the face of the hammer-frame.

2. A slide-valve, operated downwardly by gravity, combined with the incline *f* on the side of hammer A, and loosely pivoted lever E, having its curved end *d* in constant contact with the hammer-face, whereby the slide-valve is first raised to the height required, and then, in its fall, retarded, to prevent the steam-induction inlet from being opened before the hammer has reached the point desired, all as shown and described.

104,949.—LET-OFF MECHANISM FOR LOOMS.—Lewis N. Fletcher and Ira M. Page, Lowell, Mass.

Claim.—1. The combination, substantially as described, of the friction-disk A and friction-wheel *f*, the shaft *d*, worm E, gear G, bevel-gears N and P, shaft *g*, and worm R, with the gear U of the yarn-beam, all arranged and operating in the manner and for the purpose set forth.

2. The hinged stand B, in combination with the shaft *d* and friction-wheel *f* and with the disk A, as described.

3. The adjustable screw-bar D, in combination with the hinged stand B, in the manner and for the purpose specified.

4. The combination, substantially as described, of the disk A, wheel *f*, forked guide *n*, rack D^1, gears C^1 and C^2, rack K', and friction-pad E^1, or its equivalent, with the yarn-beam, all arranged and operating in the manner and for the purpose specified.

5. The forked guide *n*, in combination with the rack D^1 and friction-wheel *f*, and with the gear C^2, shaft *S*, gear C^3, vertical rack K', and pad E^1, all arranged and operating substantially in the manner and for the purpose set forth.

6. The combination, substantially as described, of the stand I, barrel bearing H, and curved arm L, which serve as supports for the gears P and G and their shaft, for one end of the shaft J, and for a step for the inclined shaft *g*, as set forth.

7. The combination, substantially as described, of the rear stand C, having a shaft-supporting arm, *h*, and guides for the rack-bars D^1 and K', and a step for the shaft *d*, as set forth.

8. The combination with the shipper D^4 of the rod E^3, the bell-crank E^4, the lever E^7, the rod E^8, and the lever E^9, with the necked gear N, and the stop *g′*, all combined, arranged, and operating substantially in the manner described, to release the let-off and allow the unwinding action of the yarn-beam to cease, and to return such parts to action or operation.

9. The combination of the shipper D^4, the rod E^3, bell-crank E^4, lever E^7, rod E^8, lever E^9, shaft 9, splined and sliding gear F, toothed rim *e*, stop *g′*, worm R, gear U, the friction-pad E^1 and rack K', and its connections, all arranged and operating substantially as described, for the purpose of regulating or controlling and stopping and restoring the unwinding action of the yarn-beam.

10. The shipper D^4 and rod E^3, combined with the bell-crank lever E^4, the lever E^7, the connecting-rod E^8, and the clutch-lever E^9, arranged and operating as set forth.

11. In connection with the disk A and wheel *f*, as described, the combination of two branches or sets of operating devices, one set consisting of the worm E, gear G, bevel-gears N and P, shaft *g*, and worm R, with the gear U of the yarn-beam, and the other set of devices consisting of the forked guide *n*, rack D^1, gears C^1 and C^2, rack K', and friction-pad E^1, acting against the body of warp on the beam, all arranged and operating substantially in the manner set forth.

104,950.—WATER-METER.—Willard M. Fuller, New York, N. Y.

Claim.—1. The combination of the wings M, springs N P, with the case A B, cylinder C, and segment H, substantially as set forth.

2. The combination and arrangement of the case A B, cylinder C, plates or flanges D, wings M, and segment H, with the pipes J and K, substantially as and for the purposes specified.

3. The flexible packing *e*, when located in a separate recess in the journal-bearings at the end of the shaft, substantially as and for the purposes described.

104,951.—MACHINE FOR PRINTING LABELS ON SPOOLS.—Gardiner Hall, Jr., South Willington, Conn.

Claim.—1. The spool-printing machine, consisting of one or more printing-rollers, C, and of a spool-guide or holder, on which the spools are held fast and moved between said printing-rolls, as set forth.

2. The reciprocating spool-supports *d h* and bell-crank G *e*, combined with inclined planes E J, located respectively as described, and for the purpose specified.

3. The adjustable supports *d*, secured to the carrier F, and provided with the self-acting discharge-levers *h*, substantially as herein shown and described.

4. The combination of the pin *g* and lever *h*, with fixed incline H and stop *i*, to first release and then throw out the spool, in the manner described.

104,952.—TRUSS.—E. B. Harding, Northampton, Mass.

Claim.—The spring C, for a truss, when made with greater curvature, and prolongations of the lower bar, for producing an upward pressure, all arranged and applied in the manner and for the purpose set forth.

104,953.—HARVESTER-DROPPER.—David S. Harner, Xenia, Ohio, assignor to himself and William T. Carey, same place.

Claim.—1. The described arrangement of swinging dropper N *n n′*, whose shaft O *o* is confined below in a fixed step and above in an L-formed slot, said dropper being operated by the cords *u* and *v*.

2. In combination with a dropper constructed and operated as above specified, the elevated guard K′ and the finger-bar.

3. In combination with the laterally swinging dropper N *n n′*, the vertical swinging cut-off R *r* S, both being operated simultaneously from the rock-shaft T, in the manner substantially as set forth.

104,954.—FRUIT-CORING KNIFE.—Alford L. Harris, Kent, Ohio.

Claim.—As a new and improved article of manufacture, the fruit-corer A, constructed substantially as described, and for the purposes set forth.

104,955.—STEERING APPARATUS.—Charles M. Hayden, South Thomaston, Me.

Claim.—The combination, in a vessel, of the double sector-wheel D, the pinions E L, and the

bevel-wheels G and J, and shaft I, arranged and operating substantially as and for the purposes herein shown and described.

104,956. — HEDGE-TRIMMER.— William E. Horne, Decatur, Ill.

Claim.—The combination of the knives B B B on disk C, with the shafts D and G, pivot-coupling I, and the flange journal, adjustable by means of the bolt (having nut F) passing through the slot in the standard E, substantially as and for the purpose herein set forth.

104,957. — METHOD OF ROLLING METAL BARS.—James Horner, New York, N. Y., assignor to himself and John Cox, Pompton, N. J.

Claim.—The method herein described of manufacturing scaleless round bars of metal ready for the market, without cold rolling, that is to say, taking the bar as it comes from the reducing-rolls, and, without reheating, rolling it out successively between plain rolls, with nothing to confine it laterally, in order to reduce it to a flat shape, then edgewise in an oval groove, to impart to it an oval shape, and then in a cylindrical groove, to give it the finished round shape.

104,958.—BORING-TOOL.—Albert G. Hotchkiss, Wolcottville, Conn.

Claim.—The improved tool herein described, consisting of the cutter-head *a e*, stock *b*, and smooth cylindrical center-pin *e f*, substantially as and for the purposes set forth.

104,959. — FILTER-SUPPORTER.— Frank C. Hughes, Frankfort, Ky.

Claim.—As an article of manufacture, a filter-supporter, formed of the large flanged ring *b*, small conical ring *c*, and the series of broad blades *a*, all arranged as and for the purpose described.

104,960.—PAD FOR HORSES' FEET.—Jonathan Johnson, Lowell, Mass.

Claim.—1. The toe-band A, and the elastic or spring connections D and F, in combination with the pad B, substantially as and for the purpose described.

2. The protecting plates a^2, in combination with the toe-band A and the pad B, in the manner and for the purpose set forth.

104,961. — PERMUTATION LOCK.—William Kock, Cincinnati, Ohio.

Claim.—1. The combination of spindle E, cam F, box G, disk H, bushings J, and pins *l m n o p*, with the tumblers, when all are constructed and arranged as and for the purpose specified.

2. The subject matter of first clause, in combination with the locking-lever L, having tongue, *s*, thereon, and the bolt M, all constructed and arranged as set forth.

3. The slotted tooth-bar O, and ratchet-disk H, in combination with lever L and spring P, all arranged and operated to shoot the bolt at the time and in the manner described.

4. The arrangement, in the slots of a series of tumblers, of adjustable pins, *m n o p*, as and for the purpose specified.

104,962.—HOT-AIR FURNACE.—Benjamine S. Koll, Pittsburg, Pa.

Claim.—1. A bearing-plate or ring F, arranged on ledges *d*, inside the casing of a hot-air furnace, with devices, substantially as described, for preventing its rotation, as a support for a vibrating grating.

2. In combination with the bearing-plate of last claim, a series of friction-rollers, *f*, arranged therein, substantially as described.

3. The dumping-grate E', hung on a toggle or hook, e^4, in combination with the surrounding vibrating basket-grating E, arranged substantially as described.

4. The lever f^4, pivoted to an arm, f^5, of the bearing-plate F, in combination with the dumping-grate E', arranged and operative, substantially as set forth.

5. A cone-shaped top, A^1, for a furnace, arranged with a smoke-flue leading horizontally from at or near its center, substantially as described with reference to fig. 2

6. A series of horizontal air-tubes, a^1 a^2, arranged around the base of the cone A^2, and leading into the warm-air chamber *b*, when combined with an annular smoke-flue, b^1, all placed directly over the fire-chamber A, and surrounded by the outer warm-air chamber C, substantially as described.

7. A perforated plate or diaphragm, *c*, arranged under the throat of the smoke-pipe b^2 and in the annular ascending smoke-flue, and extending around about one-half the circumference of the annular flue, substantially as described.

8. A spring, *n*, operating the damper-slide, when used in connection with an indicator, the adjustment of which shall show the adjustment of the damper, substantially as described.

9. A ratchet-wheel, pulley, and pawl, connected to and in combination with the sliding damper of a furnace, arranged substantially as described.

10. In connection with a warm-air furnace, an indicating device consisting of two plates *p p'*, having apertures *o o'*, the one furnished with a screw-shaft, or its equivalent, and so arranged that the damper-openings shall be shown by the indicator-openings, substantially as described.

104,963. — PHOTOGRAPHIC REFLECTOR.— William Kurtz, New York, N. Y.

Claim.—1. The improved counter-reflector herein described.

2. The photographic reflector, consisting of the open frame A and the inner shields C D E, all arranged as set forth.

3. The combination of the swiveled shields F F with the open frame A, substantially as and for the purposes herein shown and described.

104,964.—PLOW.—John Lane, Chicago, Ill., assignor to himself, Charles H. Hapgood, William B. Young, and G. H. Laughton, same place.

Claim.—1. A plow-standard, which consists of a flat bar, stiffened and strengthed by a projecting angle-piece or rib, when made in one piece and arranged substantially as shown.

2. The upright A and bar B or lug C, welded together above the mold-board, substantially as shown, and for the purpose set forth.

3. The crooked coupling-bar B, welded to the upright of a plow-standard, and bolted to the mold-board and share, substantially as shown.

104,965.—FOLDING CHAIR.—Martin Lechler, New York, N. Y.

Claim.—1. The combination of the frames A D with the connecting-frames E, which serve as legs for the extension bed, substantially as herein shown and described.

2. In combination with the above, the slide bolts G, connected, by the links *g*, with the lever *f*, for locking the legs, substantially as herein shown and described.

104,966.—SPIKE-EXTRACTOR.—Louis Lehman, Buffalo, assignor to Daniel W. Fish, Brooklyn, N. Y.

Claim.—1. The combination, with the bar A, of the lever B and fulcrum-post C, substantially as and for the purpose hereinbefore set forth.

2. The combination and arrangement of the jointed bars D D', lever E, and connecting-arm F, with the bent lever B, post C, and bar A, substantially as hereinbefore set forth.

3. The arrangement, with the bar A and post C, and bent lever B, of the pins *e* and notches *c*, as and for the purpose hereinbefore set forth.

104,967. — HAND-STAMP. — Louis Lehman, Buffalo, assignor to Daniel W. Fish, Brooklyn, N. Y.

Claim.—1. The combination, with the dating-wheel or wheels N, of the coiled spring *q* and spring stop and escapement R, substantially as and for the purpose hereinbefore set forth.

2. The stop and escapement-levers R and springs r^2, arranged with fulcrum-pin *s* and cross bearing-bar *t*, substantially as and for the purpose hereinbefore set forth.

3. The combination and arrangement of the dating-wheels N N^1 N^2 and escapement-levers R, in the common reciprocating frame I *m*, substantially as hereinbefore described.

104,968.—CHURNING APPARATUS. — James Letort, Wytheville, Va.

Claim.—The adjustable device D E F G H, for securing the churn-body to the recessed stand A, said device being constructed and operating substantially as herein shown and described, and for the purpose set forth.

104,969, antedated June 2, 1870.—TUBULAR ARCHED BRIDGE.— Winfield Scott Levake, Cleveland, Ohio.

Claim.—A tubular arch, constructed of the grooved arch-plates A B and center plate C, substantially as described, and for the purpose set forth.

104,970.—CLAMP FOR MAKING WHIPS.—Justus P. Luther and Solon K. Buck, Berlin, Wis.

Claim.—An implement for making leather whip-stocks, consisting of the arrangement herein specified, of the wedge-pieces B B', longitudinal bars A A', upright clamp-blocks *c c* and *c' c'*, and transverse bolts D D', when constructed and operating as described and shown.

104,971.—LAMP-BURNER.—George R. Lyon, Waterbury, Conn.

Claim.—The burner described, consisting of the base A, tubes B and C, radiator E, perforated plates F and G, when the parts are constructed and arranged as described, for the purpose set forth.

104,972.—CHURN.—Cyrus A. Maltby, Roland, Ill.

Claim.—The perforated cylinder B with its flange *b'* and stay-ring C, in combination with the cylindrical body A of the churn, substantially as herein shown and described, and for the purpose set forth.

104,973.—LIFTING-MACHINE.—Charles Holbrook Mann, Orange, N. J.

Claim.—1. The combination of the levers A B H, platform E, handles G, and straps D *d*, all arranged to operate as set forth.

2. The slides F, connecting the levers A B, and made adjustable, for the purpose of regulating the power, as specified.

104,974.—SASH-HOLDER.—Alfred C. Manning, Norwich, Conn.

Claim.—1. The face-plate A, with its bolt openings, in combination with the plate B, when the two plates have the groove *b b* on their contiguous faces as bearings for the shaft D and trunnions *g*, substantially as described.

2. In combination with the above, the back-plate C, when the three parts are secured together by a single screw, as described.

3. In combination with the plates A and B, constructed as described in the first claim, the shaft E, operating simultaneously the bolts D and D', as described.

104,975.—MITER-BOX AND MITER-SAW.— Daniel McAllaster, Malden, Mass.

Claim.—Two or more pairs of standards, A' B C, rising from the base A, and provided with slots *e* and steps *f*, the whole constructed, arranged, and operating substantially as and for the purpose set forth.

Also, the guide-plate or "fence" I, revolved around a pair of standards, G, substantially as and for the purpose described.

Also, a hollow or solid-back saw, D, provided with a groove, 7, on one or both sides, in combination with a pair of standards, as and for the purpose specified.

104,976.—WATER-ELEVATOR.—Moses S. McSwain, Pole Grove, Wis.

Claim.—The two-armed lever F, arranged within a well-curb, substantially as and for the purpose herein shown and described.

104,977.—MECHANICAL MOVEMENT.—Elijah Melton, Flemingsburg, Ky.

Claim.—The wheel A, pinions *b c c'*, connecting-rods *d d' d''*, and lever D, combined and arranged substantially as described.

104,978. — HARVESTER. — Henry Mewes, Binghampton, N. Y., assignor to John W. Cutler, same place.

Claim.—In combination with a harvester-cutter, divided to form two independent sections, and arranged upon the finger-bar, as set forth, the supplementary cutter *d*, arranged to operate between the sections, substantially as described.

Also, in combination with a cutter divided in two sections, and provided with a supplemental cutter, *d*, as set forth, the fingers e^1 and e^2, constructed and arranged as described.

Also, the jointed connecting-rod *s*, in combination with the section R and pitman V, substantially as and for the purpose set forth.

Also, the shifting drivers H and I, mounted upon the same sleeve, and provided with the notched slot *p*, in combination with the stop-pin *q*, substantially as shown.

Also, the automatic reversing-clutch *v*, provided with notches facing in opposite directions, and engaging with the pin *r*, substantially as and for the purpose set forth.

104,979.—STEAM-GENERATOR. — Joseph A. Miller, New York, N. Y.

Claim.—1. A series of curved pockets, B, closed below and open above to a common water-space, as set forth.

2. A boiler, having the outer sides *a a* extending up to form roof *b*, and inner sides *c c*, extending nearly up to the water-line, in combination with a series of chambers or pockets, B B, formed of continuous sheet metal, and the spaces *e e* arranged alternately between the latter, all as shown and described.

3. The plates D D, arranged transversely in the boiler, in combination with the pendent chamber B, as specified.

4. The combination of the pockets B, spaces *e*, and tubes C, constructed and arranged as and for the purpose specified.

5. The combination of scumming plates D, to precipitate the impurities, with the spaces and holes for the collection and discharge thereof, all as shown and described.

104,980. — DREDGING-MACHINE. — Gove Mitchell, Philadelphia, Pa.

Claim.—1. The sprocket-wheel E, with its disk fixed to the shaft, and interior adjustable sections, constructed substantially as and for the purpose set forth.

2. The construction and arrangement of the knives or cutters G G, upon the lower sprocket-wheel or its shaft, substantially as and for the purpose set forth.

3. The combination of the buckets F, provided with elongated apertures in their flanges, and the rods or bolts which confine them to the chains, or equivalent driving mechanism, substantially as and for the purpose set forth.

4. The combination and arrangement of the shaft D^6, wheels D^8 D^4, screws D, the nut or nuts through which such screws pass, and the sliding frame C C, for raising and lowering the elevators, substantially as set forth.

104,981.—SUBMARINE PLOW.—Amos Morrison and Rufus E. Rose, New Orleans, La.

Claim.—The arrangement of the double plow-share B, formed on the lower portion of the bow of the boat, of the inclined tubes C C, having funnel-shaped mouths, and provided with the screws D D, all as herein shown and described.

104,982. — GRINDING-REST FOR TWIST DRILLS. — Stephen A. Morse, Newark, N. J.

Claim.—1. The guide E, set obliquely to the face of the stone, and provided with the lip *g* and arm *h*, as set forth.

2. The adjustable arm *i*, arranged on the guide E, substantially as and for the purpose herein shown and described.

3. The combination of the oblique guide E and arm *i* with the shank *e*, holder D, and frame A, all arranged as set forth.

104,983. — COMBINED CART, WHEELBARROW, AND TURNIP-DRILL.—Albert M. Newland, Olivet, Mich.

Claim.—1. The combination of the side bars A, cross-bars B, standards C, curved braces D, adjustable wheels E, and axle F, with each other, said parts being constructed and arranged substantially as herein shown and described and for the purposes set forth.

2. The axle F, bent upward at its center, and provided with the notches, whereby the wheels E may be adjustably secured on said axle, and thus arranged together or apart, as shown and described, for the purposes specified.

3. The combination of the pivoted bars I, hollow shoes J, hoppers L, and spring levers M *m'*, with each other, and with the frame A B C D, wheels E, and axle F, substantially as herein shown and described and for the purpose set forth.

104,984.—TAP FOR AND MODE OF CUTTING DIES.—William Newsham, Philadelphia, Pa., assignor to Morris, Tasker & Co., same place.

Claim. — The device, consisting, essentially, of threaded body or tap B, removable cutters D, and central shaft E, and the method of using the same to cut the threads of screw-cutting dies, as described and shown.

104,985.—MACHINE FOR CUTTING DIES.—William Newsham, Philadelphia, Pa., assignor to Morris, Tasker & Co., same place.

Claim.—The combination of the eccentric shaft K, reciprocating bed-plate B, gear-wheel D, and pinion D', the several parts being constructed, arranged, and operating in relation to the tap H, substantially in the manner and for the purpose above described.

104,986.—EJECTOR.—Joseph Nixon, Pittsburg, Pa.

Claim.—A hydropult or ejector, consisting of an open or hollow chamber, *a*, closed at the discharging end by a diaphragm, *b*, except at the discharging-orifice *b'*, a short distance below the injection side of which orifice is presented the discharging-orifice of a steam-pipe, all constructed and arranged substantially as shown and described.

104,987. — FILTER. — Joseph Nixon, Pittsburg, Pa.

Claim.—1. A series of tanks, *a a'*, arranged over a steamboat-boiler, side by side, communicating by holes *g*, arranged out of line, each tanks having bottoms *a''*, inclined to a depression, *a'''*, substantially as described.

2. The subject-matter of the foregoing claim, in combination with the force-pumps *b b*, elevating pipes *b' b'*, and discharge-pipes *b''*, substantially as and for the purposes set forth.

3. The subject-matter of the first claim, in combination with the pipes *c* and mud-drum *f*, arranged substantially as set forth.

4. A series of feed-water-heating pipes, *k*, arranged in the condensers *i i'*, in combination with the filter-tanks *a a'*, arranged substantially as described.

5. The elements of the second claim, in combination with cock *r* and pipe *p*, substantially as described.

104,988.—ARBOR FOR TURNING CLOTHES-PINS.—Benjamin Brooks Ockington and Andrew J. Ockington, Stratford, N. H.

Claim.—The arrangement of the longitudinally slotted arbor A, provided with journals B C, the roughing-cutters D, ring N, sliding bar L having projections M, pivoted stock F having notch K, knife E, and spring I, all constructed and operating as shown and described.

104,989.—METHOD OF HANGING WINDOW-SHADES.—Hiram W. Olney, Pittsburg, Pa.

Claim.—The cornice A, attached to the window-casing by the rings B and hooks C, and having the curtain-roller attached to the inside of the cornice, when constructed and arranged as herein shown and described, for the purpose specified.

104,990.—FOLDING STEREOSCOPE.—Edwin K. Page, Havana, N. Y.

Claim.—1. The employment, in combination with a stereoscope lens, of a lazy-tongs extension frame, for the support of the pictures, substantially in the manner specified.

2. The combination, with the frame B, of the slotted bar K, provided with the holding-springs N, substantially as specified.

3. A stereoscope, provided with the eye-shades, arranged to fold down upon one side, and the central dividing screens, to fold on the other side, inclosing the same in a case, all substantially as specified.

104,991.—PRESS FOR PRESSING COTTON OR HAY.—Uriah Page, Ringgold, La.

Claim.—The combination of the rack D, pinion E, and friction-roll G, with the long slotted sectional bearings H, as and for the purpose described.

104,992, antedated June 23, 1870.—SEED-SOWER. — William Painter, Baltimore, Md.

Claim.—1. An endless-chain agitator and conveyer, substantially as described, and for the purposes set forth.

2. In combination with an endless-chain conveyer, substantially as described, the hoods *F* and gates K, or their equivalents.

3. In combination with an endless-chain agitator or conveyer, the oblique-tapering discharge-holes J.

4. In combination with an endless-chain agitator and oblique-tapering discharge-holes, the oblique-edged slide-valves M attached to a connecting-rod, L, common to them all, substantially as described.

104,993.—HAY AND MANURE-FORK.—Rolla A. Peet, Caledonia township, Mich.

Claim.—1. A fork having the tines constructed as above described, and secured in the manner above set forth.

2. The combination of the part G, fig. 2, with the tines and ring *c*, when arranged and constructed substantially as described.

3. The tine M, constructed with a double shoulder, as shown, when arranged with the ring *c* and part G, fig. 2, as described.

104,994.—ARTIFICIAL LEG.—Luther F. Pingree, Portland, Me.

Claim.—1. The bisected socket *a b* and lateral joints *c*, as described.

2. The bisected socket *a b*, having the metallic binding *g* and dowels *f*, as described.

3. The bisected socket *a b*, having the lateral and vertical joints *c c d*, as described.

4. Extending one-half of the bisected socket below the joint, as herein described, for the purpose specified.

5. The combination of the metal strips at the toe and heel of the foot with the elastic straps or muscles, secured as described.

104,995.—LATHE-CENTER.—Henry K. Porter, Boston, Mass.

Claim.—The center A, having a truncated conical extremity, an axial passage, terminating in the center of the face of said extremity, and a transverse passage, communicating with said axial passage and with an external reservoir, substantially as and for the purpose set forth.

104,996.—LIBRARY SHEARS.—Louis Prang, Boston, Mass.

Claim.—1. A library shears, formed by the combination of paper-knife C and eraser D with the blades A B, and handles *a' b'*, as shown and described, and for the purpose set forth.

2. An improved library shears, formed by the combination of the paper-knife C, eraser D, paper or letter-folder E, and seal F, with the blades A B and handles *a' b'*, substantially as herein shown and described, and for the purpose set forth.

104,997. — METALLIC LATH, AND BILLETS FROM WHICH THE SAME MAY BE PRODUCED.—Jacob Reese, Pittsburg, Pa.

Claim.—1. As an improved article of manufacture, a rolled-iron lath, consisting of a thin strap, *a*, strengthened by one or more ribs, *a'*, made substantially as described.

2. The billet *b a a'*, of the form shown and described, as and for the purposes set forth.

104,998. — SAWING-MACHINE. — Frederick Rhoad, Liberty Centre, Ohio.

Claim.—1. The combination with the carriage C, of the feed-roll E, lever G, and cord H, all arranged for operation substantially as specified.

2. The combination with the carriage C of the levers K L, connected thereto and together, and arranged for operation substantially as specified.

104,999.—PEGGING-JACK.—Hubert Ricard, Haverhill, Mass., assignor to himself and George F. Eaton, same place.

Claim.—1. My improved pegging-jack, consisting of the plates A B C D, the lever G, and the toe-supporter K, all constructed, combined, and arranged together, in manner and so as to operate as set forth.

2. As a means of jacking the last, the lever G, the cam-plate C, and top-plate D, all constructed, combined and arranged, in manner and so as to operate as set forth.

3. The combined spring latch and coupler, in combination with the top plate D, the cam-plate C, and the hinge-plate B, when all the said parts are constructed and arranged in manner as described, and so as to operate as and for the purposes specified.

4. The mode of connecting or pivoting the plates C and D to the hinge-plate B, viz., by means of the spindle O, the washer *d*, and the screw *f*, constructed, combined, and arranged together in manner as described.

105,000.—COTTON-SEED PLANTER.—Jordan Riggsbee, Chapel Hill, N. C.

Claim.—1. An improved cotton-seed planter, formed by the combination of the wheel A, axle B, thills C, band and pulleys D E F, or equivalent gearing, shaft G, dropping-cylinder H, hopper I, adjustable slide K, flexible conductor-spout L, hinged or jointed plow-standard M *m'*, plow N, draft-chains Q, adjusting-cord O, and coverer R, with each other, said parts being constructed and arranged substantially as herein shown and described, and for the purpose set forth.

2. The combination of the seed-box or reservoir V with the thills C, hopper I, and seed-dropping device, substantially as herein shown and described, and for the purpose set forth.

3. The combination of the detachable rollers S T with the axle B, coverer R, opening-plow N, hinged or jointed plow-standard M, and seed-dropping device, substantially as herein shown and described, and for the purpose set forth.

105,001, antedated June 30, 1870.—PENMAN'S HAND-SUPPORT.—Daniel A. Sanborn, Brooklyn, N. Y.

Claim.—An improved chirographical supporter, having a projecting lip, A, to support the palm of the hand, and the raised ledge B, to form a rest for the edge thereof, each being constructed and adapted for use in the manner specified.

105,002.—SUPPLEMENTARY PEDAL ATTACHMENT FOR PIANO-FORTES. — Gustav A. Scott and William B. Frisbee, San Francisco, Cal.

Claim.—The improved pedal attachment, consisting of the pedal C hinged to the projection D, and the curved arm F, and provided with their springs E and *e*, in combination with the foot-stool A B, substantially as set forth.

105,003. — RING FOR SECURING HOSE TO COUPLINGS.—August Schrader, New-York, N. Y.

Claim. — The clamping-ring provided with the grooves *a*, and projecting ears *b*, as set forth.

105,004.—CHAIN-LINK.—Willard C. Short, Providence, R. I.

Claim.—The improved chain-link, consisting of the curved ends A and A', and the connecting-tubes B and B', fastened to each other, substantially as described.

105,005.—FARE-BOX FOR VEHICLES.—John B. Slawson, New York, N. Y.

Claim.—1. The combination of the plates K N, moved at the same time in reverse directions, as and for the purpose specified.

2. The combination of racks, pinion, spring, and driver's strap, when all arranged as and for the purpose specified.

105,006.—COTTON-SEED PLANTER.—Bartemus Smith, Hood Swamp, N. C.

Claim.—The cylindrical seed-box B, with heads B', plow C, harrow D, coverer F, attached to pivoted arms F', cord or chain F², and frame A, all combined and arranged as described.

105,007.—MACHINE FOR TURNING CRANK-PINS.—Horace S. Smith and William D. Whitmore, Bloomington, Ill.

Claim.—The reversible feed-slide R, constructed as described, in combination with gear-frame P, rotating frame H L, rod V, star-wheel T, carriage W, shaft D, wheel *d*, standard E, rest F, gear-wheel M, as arranged with the other parts for turning crank-pins, as set forth.

105,008.—CONSTRUCTION OF DENTAL IMPRESSION-MOLDS. — William Cameron Smith, Warrensburg, Mo.

Claim.—The dental cast, when formed of thin successive layers of plaster, substantially as described.

105,009.—WELL-FILTER.—James P. Spaulding, Williamsport, Pa.

Claim.—The combination, with the water-chamber A and perforated bottom B, the filtering-tubes *c c c* of the disk F, and the conductor D, substantially as and for the purposes herein set forth.

105,010.—APPARATUS FOR SAVING MERCURY FROM THE WASHINGS OF GOLD AND SILVER ORES.—Wells Spicer, Summit county, Colorado Territory.

Claim.—The metallic sluice-tub A, containing in its center a permanent galvanic battery, L, the zinc plates of which, M M, are in metallic connection with the movable polar agitators K K, &c., substantially as described and for the purpose set forth.

Also, in connection with the above-described apparatus, the saving and securing of waste mercury when in solution, flowered, or amalgamated with precious metals, substantially as and for the purpose shown.

105,011.—MEDICAL COMPOUD FOR THE CURE OF FEVER AND AGUE.—Oscar Max Spiller, M. D., Akron, Ohio.

Claim.—The improvement of an ether of such ingredients or their substitutes, prepared substantially as and for the purpose herein before set forth.

105,012.—APPARATUS FOR GENERATING AND BURNING GAS.—William Stewart, Steubenville, Ohio.

Claim.—The cylinder A, with the cup and hole G, so arranged as to cause the gas-jet to impinge on the double plate B, the cavity between the two plates and cylinder being connected, and both acting as gas-generators.

105,013.—CORPSE-PRESERVER.—James C. Taylor, Trenton, N. J.

Claim.—1. In combination with the inserted ice-box, the rubber encircling the bottom, at a short distance below it, and secured in that position in any suitable way, all as and for the purpose described.

2. In combination with the inserted ice-receptacle, the double bolts, working in a series of openings, to adjust the box vertically.

3. In combination with the cooling-board, the head-rest, adjustable vertically, and providing a rest for the back of the head and an adjustable support for the chin.

4. In combination with the cooling-board, the foot-rest, with openings for adjusting straps.

105,014.—PRINTERS' INK.—Marshall Turly and Benjamin F. Thomas, Council Bluffs, Iowa.

Claim.—1. The above-described process of preparing the fluid body of ink, which consists in volatilising, by heat, the gaseous products of pitch or rosin, burning the same at the end of a long tube, and passing the liquid portion of said resin or pitch through the flame, as set forth.

2. As an article of manufacture, printers' ink formed from pitch and charcoal, in the manner described.

105,015.—PIPE-CLEANSING APPARATUS.—Jan Van Slooten, Caleb S. Hunt, and William McCulloch, New Orleans, La.

Claim.—1. Apparatus for cleaning pipes or mains, consisting, first, of a piston adapted to rake the inner periphery thereof; secondly, a head to inclose the end or part of the pipe from which the matter is to be driven; and, thirdly, of an opening into or near such head for the influx of water under pressure; all substantially as described.

2. In combination with the subject of the foregoing first clause of claim, a tell-tale, which may be so made as to be instrumental in returning the plunger to its starting point whenever desired.

105,016.—SPIKE-EXTRACTOR.—Walter Ward, Mount Holly, N. J.

Claim.—The spike-extractor, consisting of the cross-bar A beveled block B, and levers C D, arranged to operate substantially as and for the purposes set forth.

105,017.—HOT-AIR FURNACE.—Edward Webster, Hartford, Conn.

Claim.—1. The three cupolas E, F, and G, arranged above the fire-chamber, for the purpose of forming the air and smoke-passages *e* and *f*, substantially as herein shown and described.

2. The ring D, containing the alternate vertical and horizontal apertures *b d* and the trough *c*, for supporting and supplying the cupolas E, F, and G, as set forth.

105,018.—ANIMAL TETHER.—Thomas Northrup Wheeler, Blue Earth City, Minn.

Claim.—The combination with the stake A of the horizontally-revolving block C, blocks E F, poles I N, cord M, and spring L, arranged and operating substantially as specified.

105,019.—DISTILLING PINE WOOD.—Thomas W. Wheeler, New Berne, N. C., assignor to himself and E. W. Carpenter, same place.

Claim.—1. The apparatus consisting of the retort A, with pipe E, for the introduction of steam, the cylindrical projection *a*, tube *b*, covered cylindrical tube *c*, with cold-water cistern F, and the pipes *f*, *h*, and *i*, with the connecting-tube for condensing, when arranged substantially as herein described, and for the purpose set forth.

2. The process, substantially as herein described, of distilling from pine wood, turpentine, heavy oil, and tar-residuum, separately and at the same time, in the manner set forth.

105,020.—CANDLE-LAMP.—Thomas Scott Williams and Freeman Augustus Taber, Boston, Mass.

Claim.—In a candle-lamp, the combination with the deflector or cone *a*, and candle-cup *b*, of the slotted plate or shield *f*, interposed between said parts, substantially in the manner and for the purposes set forth.

105,021.—WELL-AUGER.—John Wilson and George H. Baisly, Hamilton, Mo.

Claim.—The combination, with the shank of a well-auger or the operating-rod, of a bucket, B, and radial cutter A, substantially as specified,

105,022.—STOP-MOTION SPRING FOR BRAIDING-MACHINES.—Gilman K. Winchester, Providence, R. I.

Claim.—A double-fulcrumed lever, combined with a spring, in such a manner that the fulcrums of the lever shall be on each side of the point where the spring makes connection with the lever, all combined with the stop-motion of a braiding-machine, in such a manner as to always bring the stop-motion back to the same center or place of rest after being thrown therefrom.

105,023.—SAWING-MACHINE.—John A. Wood, Far Rockaway, N. Y.

Claim.—1. The combination of the tables I and P and the inclined planes T and U in a machine for sawing, arranged and operating substantially as described.

2. The loose friction-roll O, placed in a vertically-adjustable table, P, combined with a fluted roll, N, all relatively arranged in a sawing-machine, to form an improved feeding device, adapted to different thicknesses of wood.

105,024, antedated June 30, 1870.—STONE-TRUCK.—Jackson Wright and Green Wright, Morrisania, N. Y.

Claim.—1. The combination of the roll A and truck-body D, when used with either front wheels or front roll, the parts being arranged and constructed as and for the purpose herein set forth.

2. The combination of the yoke K, double tongue I, and front roll H, when used for a truck, in the manner shown and described.

3. The arrangement of the journal-boxes C projecting inwardly at the ends of the rolls, as shown.

105,025.—DOOR-SPRING.—Warren Allen, Oswego, N. Y.

Claim.—The single double-armed lever, formed in one piece, one arm of which serves as an axis for the coiled spring arranged within a case, the other forming a journal for the wheel, provided with a rubber band, which operates directly upon the surface of the door, all arranged and operating as herein described.

105,026.—REVERSIBLE LATCH.—William H. Andrews, New Haven, Conn., assignor to Burton Mallory, same place.

Claim.—The combination of the latch-bolt C, with its spindle *a*, with the yoke or connection E, and nut I, the said nut arranged upon the spindle of the latch-bolt, and so as to be operated through an aperture in the case, to throw out or draw in the latch-bolt, as the case may be, without opening the case, in the manner substantially as herein set forth.

105,027.—VALVE.—Henry Belfield, Philadelphia, Pa.

Claim.—1. The combination in a straight-way valve of a casing, A, having a permanent branch, D', and detachable branch D, with a valve-seat at its inner end, inclined ribs *f f*, and a valve, E, having a vertical motion on a spindle, B, and which, on being depressed, is caused to bear directly on the said ribs, and against the end of the detachable branch D, all as set forth.

2. The valve E, having a vertical face, *b*, and inclined at the rear, in combination with a vertical seat, *a*, inclined lugs *f*, vertical rotating spindle B, and nut *d*, sliding on the valve and receiving the spindle B, all as set forth.

105,028.—BED-BOTTOM.—Van Bell, Seville, Ohio.

Claim.—The interwoven slats A B, rails C, cleats D, and central strip F, when arranged and combined substantially as described, and for the purpose specified.

105,029.—TUNING-SCALE.—Morris L. Bennett, Waverly, N. Y.

Claim.—The arrangement and combination of the reed-pipes F, of the shape described, in a cylindrical case, (the reeds being tuned to represent an octave of the musical scale,) together with the plates B and A, with the mouth-piece *a'*, so as to allow the mouth-piece to be brought in connection with any desired reed or tone, substantially as herein described.

105,030.—HEEL-PRESS.—Horace H. Bigelow, Worcester, Mass.

Claim.—1. The combination of the follower F with the die E, substantially as and for the purposes set forth.

2. The combination with the forming-die, of the head-plate *c*, substantially as and for the purposes set forth.

3. The combination, with the head-plate *c* and sleeve *b*, of the discharging-pin *e*, substantially as and for the purposes set forth.

4. The combination, with the sleeve *b* and discharging-pin *e*, of the discharging-punch H, provided with a spring center, *f*, substantially as and for the purposes set forth.

5. The combination, with discharging-pin *e*, of the spring center *f*, substantially as and for the purposes set forth.

6. The combination, in a machine for forming pressed heels for boots and shoes, of the following elements, viz: a die for pressing the heel into proper form, provided with holes for the passage of the heel-perforating awls, nails, and nail drivers, a series of perforating awls, and a series of nail-drivers, substantially as and for the purposes set forth.

7. The combination, with die E, and follower-block F, of the elevating disk *n*, substantially as and for the purposes set forth.

8. The combination, with the disk *n* and bearing *t*, of the slide 4, and pins 5, substantially as and for the purposes set forth.

9. The combination, with the disk *n*, and receiving-table W, of the slide W^1, and fork W^2, substantially as and for the purposes set forth.

10. The combination, with the disk *n* and follower-block F, of the screw *s* and fork W^2, substantially as and for the purposes set forth.

11. The combination, with the fork W^2, of the stop-pin or stud s^1, substantially as shown and described.

12. The combination, with the bed or table A, and cylinder D, of a forming-die, E, and follower-block F, substantially as and for the purposes herein set forth.

13. The flanged head *i* on the pintle-bolt G, substantially as and for the purposes set forth.

14. The combination, with the cylinder D, of the stop dog 12 and the mechanism for rotating the cylinder, substantially as shown and for the purposes set forth.

15. The combination, with the table A and cylindrical receptacle Y^2, of the bed piece Y, spring Y^4, plate Z, and adjusting-screw Y^3, substantially as and for the purposes set forth.

16. The combination of the stop dog 12, the bell-crank lever S^2, the guard-lever Z, and the spur 14, substantially as described.

17. The combination, with the ratchet-wheel K^1, arm O, and swinging stud S, of the dog P, trip-lever P^1, spring Q, finger R, and guard-pin *k*, substantially as and for the purposes set forth.

18. The nail-holding device, composed of the parts 16, 17, 18, 19, and 20, substantially as shown and described.

19. The combination of the arms 20 of the nail-holder, with the studs 1 on the forming-dies, substantially as shown and for the purposes stated.

20. A machine for forming compressed heels for boots and shoes, the mechanism of which is constructed and arranged substantially as described, so that the heel is compressed on all sides, and held under continued pressure during the operation of perforating the heel and driving the nails, for the purposes set forth.

105,031.—RIVET.—Alexander Boyd, Boston, Mass.

Claim.—As a new article of manufacture, the improved rivet, constructed as above described.

105,032.—SAW-FRAME.—Eben Moody Boynton, West Newbury, Mass.

Claim.—1. A rigid frame for buck or similar saws, consisting of the side pieces B C, cross-pieces D E, and braces F G, when constructed and arranged substantially as herein described.

2. The combination of the rigid saw-frame A with saw-blade H, tang I, and thumb-nut J, when constructed and arranged substantially as herein described.

105,033.—MACHINE FOR MAKING NUTS.—Benjamin H. Bradley, New York, N. Y.

Claim.—The plunger E, punch *b*, and cutter *c*, rigidly connected together, in combination with the guides *a a'*, stop *d*, cutter *c'*, and die *h*, all arranged for operation substantially as herein set forth.

105,034.—FLOUR-BOLT KNOCKER.—Joseph Washington Bradly, Rocheport, Mo.

Claim.—1. The weights *o*, sliding upon ways P upon the back of the knockers, when arranged to operate as described.

2. The knockers, provided with the hinges F and slotted hammer G, in combination with the wire H and button I, all constructed, arranged, and operating as described.

105,035.—DOUBLE-ACTING PUMP.—Martin Braun, Cape Vincent, N. Y.

Claim.—In a force-pump, the combination of a

hollow plunger, D, with a lift tubular valve, F, having a lift-valve, e, therein, when constructed and arranged to operate substantially as herein described.

105,036.—Steam-Packing.—William Brown, Hoboken, N. J.

Claim.—The combination of the wall of the packing-cavity with a wire rope, so as to operate in the manner hereinbefore set forth.

105,037. — Bee-Hive. — David S. Burget, Martinsburg Borough, Pa.

Claim.—The herein-described bee-hive, consisting of the upright case or body A, having the door c, with the slides e, the removable chambered top a, and the boxes B, provided with slats or frames, said boxes being so arranged as to permit a lateral passage of the bees between them, all substantially as described.

105,038.—Apparatus for Treating Oils. Thomas H. Barridge, St. Louis, Mo.

Claim.—1. The decolorizer, fig. 2, consisting of the pan B, partitions E, transverse distributing-pipe P, and wire-gauze F, substantially as described and for the purpose specified.

2. The decolorant generator C, as constructed and arranged in relation to and in combination with the decolorizer, fig. 2, to co-operate therewith, in the manner as described and for the purpose set forth.

3. The reducer, fig. 5, consisting of a cylinder, D, tubular shaft M, radial tubular arms N, and faucets E S, all arranged to operate in the manner as described and for the purpose specified.

105,039.—Earth-Closet.—Robert A. Cannell, New Orleans, La., assignor to William R. C. Clark, same place.

Claim.—Operating the swinging hopper of an earth-closet by means of a rock-arm, composed of the parts C and D, when these parts are united by a pivot connection, and C is provided with the stop-pins a and b, and is secured to the cover A, as herein described, for the purpose set forth.

105,040 —Signaling Apparatus for Cars. Charles Carr, Boston, Mass.

Claim.—The combination of the rod a, straps b b, or equivalent connections to the bells, and the strap d, constructed to be attached to and detached from the straps b b, or their equivalent connections, all arranged and operating as and for the purpose set forth.

105,041.—Device for Curling and Dressing Hair. — Paul Ceredo, Düsseldorf, Prussia, assignor to himself and Thomas Ferguson Miller, Montreal, Canada.

Claim.—The combination of the wire a, with hemp b wound around it, giving any desired form, and with a suitable cover or envelope, c, with or without embroidered ends d, all working together substantially in the manner and for the purpose described.

105,042.—Electric Battery.—Théophile Chutaux, Paris, France.

Claim.—1. The division, in electric batteries, of the jar or cell containing the exciting liquid, into two compartments, communicating with one another by an aperture near the bottom of the jar, as has been described and shown in the drawing.

2. The combination, in electric batteries, of a vessel containing exciting liquid in reserve, with the jar or cell in which is the liquid acting on the elements, and with the contrivances used for immersing or withdrawing the zinc from the exciting liquid, so as to operate or arrest the action of the battery, as desired, and to cause the impoverished portion of the liquid to flow off, as has been described, set forth, and shown.

105,043.—Electric Battery.—Théophile Chutaux, Paris, France.

Claim.—1. The arrangement of the cells one above the other on a horizontal or vertical frame, as described and set forth.

2. The combination of zinc and iron in electric batteries, the iron in the upper half of the cells, and the zinc in the lower half of the same, as described and set forth.

105,044.—File.—John Hosmer Clark, Washington, D. C.

Claim.—The combination of the reversible base and end blocks C and D, provided with corresponding duplex angular inner faces, and the series of cutting-plates mounted upon the bar B, held securely in position by suitable compression devices, all arranged to admit of the alternate changing of the safe and cutting-surfaces without the removal of the plates from the bar, as and for the purposes specified.

105,045. — Earth-Closet.—William Robert Colton Clark, New Orleans, La.

Claim.—The combination of a tube, composed of two sections, B B′, that are united by a knuckle-joint, C, and provided with a gate, E, having an extended curved arm, F, which is operated in one direction by a spring, G, and in the other by pressure from the cross-bar, to which the cover of the seat of the closet is hinged, with the rods I and J, when all parts are connected, arranged, and operate substantially as herein described, for the purpose set forth.

105,046. — Railroad-Car Ventilator.—William Conard, Burlington, N. J.

Claim.—1. The arrangement, with the frame A, of the glass-sash B, blind-sash C, separating-piece E, hinged and operated as described, and the projecting molding D, all as shown and described.

2. The ventilator G, constructed as described, with drops a a, slides d d, and levers f f, all substantially as and for the purposes herein set forth.

105,047, antedated June 30, 1870.—Fender for Plows and Cultivators.—Joseph C. Curryer and William F. Curryer, Thorntown, Ind.

Claim.—1. In combination with a fender, the rear vertical rod F, constructed substantially as and for the purposes hereinbefore set forth.

2. In combination with the vertical rod F and the plow-beam, the horizontal adjustable rod H, staple G, and wedge A, all arranged and operating substantially in the manner and for the purpose set forth.

3. A fender or screen, adaptable to plows or cultivators of varied patterns and dimensions, and capable of adjustment, by and through the means hereinbefore described.

105,048.—Mouse-Trap.—Anthony G. Davis and Henry S. Frost, Watertown, Conn., assignors to Davis & Woolson, same place.

Claim.—1. The combination of a slotted lever with the spring bow of a mouse-trap, when the bow is provided with a suitable projection for the purpose of guiding the lever to the bait-hook, as described.

2. In combination with the slotted lever, the specific construction of the loop on the spring, as set forth.

3. The combination of the ring b′ with the coiled ends of the springs, as described.

4. The trap described, consisting of the block-springs, bows with projection a, choking-straps, bait-hooks and ring, when combined and arranged as described.

105,049.—Former for Bending and Gluing the Cases of Grand Pianos.—David Decker, New York, N. Y.

Claim.—The former, consisting of two pieces, A and B, having the curved portions of their faces a a, and with straight lapping portions, a b, substantially as herein shown and described, for the purpose set forth.

105,050. — Hay-Knife.—Casper Dittman, Upper Leacock township, Pa., assignor to himself and Graybill B. Swope, same place.

Claim.—The formation of the widened base B S of the stem with its central keel or guide-ridge R, in combination with the cutting-blade K, arranged and constructed in the manner and for the purpose specified.

105,051. — Coffee-Pot.—Johnson Dodge, New Orleans, La.

Claim.—1. In a steam coffee-maker, consisting of the vessels A, B, and b, constructed and arranged substantially as herein described, the float j, with its indicating-stem k, when arranged therein as shown and described, and for the purpose set forth.

2. In combination with the exterior vessel A, and the interior vessel b, the funnel-mouthed cock h, applied to the water-chamber between these vessels, substantially as and for the purpose set forth.

105,052.—Stamp-Canceler. — H. William Dopp, Buffalo, N. Y., assignor to himself and James E. Thomson, same place.

Claim.—For the purpose of producing a canceling-stamp, that will cut or punch characters out and through a paper stamp, check, or other document, without the application of corresponding female dies and punches, the soft metal, pasteboard, or other suitable strip of material, in combination with male dies or punches, automatically fed forward, substantially as described, and as and for the purposes set forth.

105,053.—Earth-Closet.—James Addison Drake, New Orleans, La., assignor to William R. C. Clark, same place.

Claim.—The chute B, in combination with a sliding skeleton box, C, when both these parts are constructed and united as herein described, and the said box C is operated by the means and in the mode specified, for the purpose set forth.

105,054.—Machine for Attaching Ornaments to Chain-Links.—Virgil Draper, Attleborough, Mass., assignor to Oscar M. Draper, same place.

Claim.—The improvement in the devices for attaching ornaments to chain-links, which consists of the movable mortised link holders E E′, compressing-dies d d, bed-die a, and plunger F, all in combination and operating to swage and attach the ornament to the chain-link, substantially as described.

105,055.—Tread-Power.—Joseph H. Dull, Mansfield, Ohio, assignor to Blymyer, Day & Co., same place.

Claim.—1. A tread-power, having two or more planet-wheels, I, secured to its driving-shaft, and arranged to operate substantially as described.

2. The combination of the shaft B with the planet-wheels, mounted on arms rigidly attached thereto, the stationary rack E and the pinion H mounted loosely thereon, all constructed and arranged to operate substantially as described.

3. The adjustable segmental track T, arranged to operate substantially as set forth.

105,056.—Pump.—James B. Eads, St. Louis, Mo.

Claim.—The specific device shown and described, with flaring bottom and inclined sides, as described, for the purpose set forth.

105,057. — Egg-Beater.—Timothy Earle, Smithfield, R. I.

Claim.—The beaters D and E, mounted upon suspension rods C and C′, operated by the driving-gear B and pinion F, when all are constructed and arranged to operate as set forth.

105,058. — Breech-Loading Fire-Arm.—Alfred B. Ely, Newton, and Edward C. Clay, Malden, Mass.

Claim.—1. The receiver, constructed and arranged substantially in the manner described, in combination with the solid plug or breech-block arranged and operating within the receiver, substantially as set forth.

2. The combination above claimed, in connection with the barrel of a gun, substantially as described.

3. The plug C, spring-bolt E, and lever d g, in combination, when constructed and arranged substantially as and for the purposes described.

105,059.—Cornet and other Wind Instruments. — Wilhelm Charles Fietz Boston, Mass.

Claim.—1. The valves B, provided with the transverse channels C and the oblique channels D, substantially as described.

2. The music-holder described, consisting substantially of the arms J, pivoted pieces K L, and springs M N, as and for the purpose set forth.

105,060. — Telegraphic Printing Apparatus.—Theodore M. Foote and Charles A. Randall, Brooklyn, E. D., N. Y.

Claim.—1. A compound helix, consisting of three pairs of electro-magnets, C^1 C^1 C^2 C^2 C^3 C^3, arranged in relation to each other as described, and having a switch-bar, F, passing through the core of the middle pair C^2 C^2, substantially as set forth.

2. The double pallet a, oscillating between the teeth of the ratchet-wheels e f, on the type-wheel shaft a, in combination with the magnets B B′, substantially as and for the purpose described.

3. The oscillating anchor y and pins w x, in combination with the type-wheel shaft, and with the printing-lever, or any part connected to the same, substantially as and for the purpose set forth.

4. A paper-feeding mechanism, composed of elastic rollers or an oscillating foot acting on one elastic roller, and operated from the printing-lever of telegraphic printing apparatus, as herein described.

5. The mechanism, substantially as herein described, for moving the type-wheel first when the main circuit is closed, and then when the main circuit is opened, consisting of a pair of magnets B′ B′, which are thrown in the circuit of the local battery when the main circuit is closed, and another pair of magnets, B B, which are thrown in the circuit of the local battery when the main circuit is opened, as set forth.

6. The combination of the printing-lever with the unison mechanism and type-wheel shaft, substantially as described, whereby the type-wheel shaft, after having been arrested by the unison mechanism, is liberated by the action of the printing-lever, or any part connected to the same.

105,061.—Mode of Securing Glass Vessels to Metal Bases.—Alonzo French, Philadelphia, Pa.

Claim.—A glass vessel, above or within the closed base of which is formed a screw-thread, for the purpose specified.

105,062. — Hay-Press. — Franklin Frey, Liberty, Ill., assignor for three-fourths to A. H. Butts, Jr., Wm. H. Meacham, and Charles J. Karney.

Claim.—1. In combination with the inclined plane h, the grooved horizontal pulley K, provided with lugs w n, and the radial arm L, to which the beater-rope is attached, when constructed and arranged to operate as specified.

2. In combination with the radial arm L, and horizontal driving-pulley of a beater-press, the shifter *l*, when constructed and arranged to operate as specified.

3. In combination with the pressing-levers B E, the pendent arms *d d*, oblique pulleys *e e*, and rotating collar *s*, notched to receive the key *t*, pivoted to the rotating-shaft E of a beater-press, as specified.

4. The double lever E, consisting of two levers, having their long arms rigidly connected together at the ends, in combination with the pendent arms *d d* and beater D, having uprights *c c*, substantially as shown and described.

5. The beveled pressing-chamber G, as specified.

6. The tie-rods *u*, when constructed and arranged to operate as and for the purpose set forth and shown.

105,063.—LAMP.—George P. Fuller, Humphrey, N. Y.

Claim.—The combination of the oil-chamber A, tubes B and C, the latter having an opening, *b*, cones E and E', and perforated plate G, all arranged and operating substantially in the manner and for the purpose set forth.

105,064. — STAVE-JOINTER. — Robert W. George, Boston, Mass.

Claim.—1. The combination of the clamp L L^1 L^2 L^3 with the sliding saw-frame C C', and saws D D^1, operating as described, and for the purpose set forth.

2. The combination of the pin N with the lever M and clamp-frame L^2 L^4 L^5, substantially as described, and for the purpose set forth.

105,065.—WHIFFLETREE. — Arthur Greenman, Esek Kendall, N. Y.

Claim.—The flexible or spring connections C C, combined with the "svener" A and whiffletrees B B, in the manner and for the purpose specified.

105,066.—GRAIN AND SEED-SIEVE.—Nathan S. Greenwood, Dorset, Ill.

Claim.—The series of sieves B and fingers *d*, when arranged and operating as and for the purposes specified and shown.

105,067.—GATE.—Isaac H. Gustin, Middletown, Ind.

Claim.—The arrangement of the vertical roller P, in combination with the weighted rope M, round which it passes, and the swinging arm K of the gate, to which it is attached, substantially as herein shown and described.

105,068.—COMBINED BOOT AND SHOE FOR HORSES.—Henry G. Haedrich and Edward M. Haedrich, Philadelphia, Pa.

Claim.—1. The top B, provided with two concave overlapping parts at the heel, substantially as and for the purposes herein set forth.

2. The combination of the shoe A, top B, strip C, and straps D E, all constructed and arranged substantially as shown and described, and for the purposes specified.

105,069. — FOLDING-BEDSTEAD. — John C. Hall and Allan C. Richards, Cincinnati, Ohio.

Claim.—1. The combination of the frame A I I' H with the bed-frame C and gudgeons E, when the said parts are constructed and arranged as herein shown and described, for the purposes specified.

2. In a folding-bedstead, substantially as shown and described, the sliding extension F, as and for the purpose set forth.

3. The combination of the hinged and falling cornice E, and hinged legs D, when said parts are constructed and arranged as specified, so that the legs will be concealed by the falling of the cornice, in the erect position of the bed-frame.

4. The combination, with the frame C, and supporting bar H, of the hinged and folding head-board G, substantially as shown and described.

105,070.—COTTON-GIN.—Samuel Z. Hall, Ossining, assignor to himself, Starkes W. Lewis, Sing Sing, N. Y., and Elias B. Brown, Stonington, Conn.

Claim.—1. The small loading-roller *d*, in combination with the carrying-rollers D D, of larger diameter, in the feeding-hopper of a cotton-gin, when constructed and arranged to operate as specified.

2. The feeding-cylinder E, when constructed of alternate tooth-bars, F, and thin slats, G, in the manner specified.

3. In combination with the slotted lever *l*, bearing the adjustable pawls P and P', the ratchet-wheels *w'*, attached to the two front rollers d and D, when constructed and arranged to vary the speed of revolution, as specified.

4. The adjustable breast M, arranged to move downward and backward around the saws by means of the slots *r*, hinged bar *n*, and radial arms *v*, pivoted to centers *s'* below and in rear of the saw-shaft, as specified.

105,071.—APPARATUS FOR SIGNALING THE DIRECTION OF MOTION OF MARINE-ENGINES.—Andrew R. Harris, St. Louis, Mo.

Claim.—1. The shaft A, arranged with pinion having teeth *a*, in combination with the levers C C', D D', substantially as and for the purpose set forth.

2. The levers C C', D D', in combination with the tablet F', arranged with spring F and indicating devices *f f'*, substantially as set forth.

105,072. — NECK-TIE HOLDER. — William Henry Hart, Jr., and Hiram H. Thayer, Philadelphia, Pa.

Claim.—1. The manufacture of shields for neckties by cutting them from a strip composed of paste-board or other material, and fabrics pasted onto and round the edges of the same, and of such a size that the shields cut from the said strips shall have one or more selvage-edges, as specified.

2. The shield, with its openings A *h'* and loop, extending through said openings, and knotted at the front of the shield, as specified.

105,073. — MEDICAL COMPOUND. — John Brightman Haskins, Brooklyn, N. Y.

Claim.—The manufacture or preparation of a medical compound, which I denominate golden-leaf extract, of the ingredients, in the proportions, and for the purposes set forth.

105,074.—CHURN-DASHER.—George Heliker and Abram Burlew, Greenwich, Ohio.

Claim.—The concave disk *b*, provided with the inclined flanges *c*, slots *d*, and orifices *e*, in the manner and for the object specified.

105,075.—REVERSIBLE LATCH.—Charles F. Herrick, Independence, Iowa.

Claim.—1. The reversible slotted plate C, in combination with the cone-shaped pendulum D *a*, provided on its inner side with the hook *b*, substantially as and for the purpose herein set forth.

2. The reversible slotted plate C, cone-shaped pendulum D *a*, provided on its inner side with hook *b*, in combination with plate G and button or knob E, all constructed and arranged substantially as herein set forth.

105,076.—AWNING-FRAME.—Henry Hilliard, Brooklyn, N. Y.

Claim.—1. The awning-bow *b*, sockets *c*, necks *d*, eyes *e*, made in the manner and for the purposes set forth.

2. The screw-sockets *n*, for connecting the lower ends of the slide rods, in combination with the traveler A *l*, socket *c d e*, and bow *b*, as and for the purposes specified.

105,077.—SETTING CLOCK-DIALS.—George Hills, Plainville, Conn.

Claim.—The combination of the flat dial *a* and separate molded rim *d e b*, when constructed and connected as herein specified.

105,078.—STEAM-ENGINE.—John C. Headley, Lawrence, Mass.

Claim.—A steam-engine, having its cylinder so constructed and located that the hot volatile products of combustion will pass in direct contact with the cylinder casting around and partially jacketing it, in moving from the flue-ends to the chimney-outlet.

Also, the arrangement of pipes, for heating the feed-water, within the smoke-box, between the flue-outlets and the smoke-jacket of the cylinder, substantially as described.

Also, a steam-gauge, so connected by pipes *n* and *o*, and means for controlling the flow of steam through said pipes, with the steam in the boiler, and with the steam in the pipe between the automatic regulator-valve and the steam-cylinder, that, with the single gauge, can be tested, at will, the pressure of the steam in either space.

105,079. — FOLDING-CHAIR. — Francis M. Holmes, Boston, Mass.

Claim.—A folding-chair, as made with its seat C hinged to a rung, *c*, rigidly fastened to the two shorter levers B B', and as having two other seat-supporting rungs, *e f*, arranged and applied to the longer levers, as described.

105,080.—RIDING-SADDLE.—George Horter, New Orleans, La., assignor to Horter, Petersen & Fenner, same place.

Claim.—A saddle-skirt, made of a split foundation and a covering of muslin, drill, duck, hogskin, or other equivalent material, substantially as described.

105,081.—BRIDLE FOR HARNESS.—George Horter, New Orleans, La., assignor to Horter, Petersen & Fenner, same place.

Claim.—1. A blinder-bridle having the cheek-pieces A, brow-band D, nose-strap E, and throat-latch F made of webbing, and all constructed as and for the purpose specified.

2. In a plantation-bridle, a blinder made with a foundation of trunk-board, pasteboard, split, or felt, and a covering of enamel cloth or leather, substantially as described.

105,082.—MACHINE FOR FULLING CLOTH.—Rodney Hunt, Orange, Mass., assignor to Hunt Waite, & Flint, same place.

Claim.—The new or improved machine, as set forth, that is, as constructed, with its main squeeze-rollers A B corrugated or fluted, as described, and with one or more pairs of rollers, F G, arranged with their axes at or about at right angles with those of the rollers A B, the whole being as represented and described.

105,083.—LANTERN.—John H. Irwin, New York, N. Y.

Claim.—A heating-chamber, G, formed by the chimney D and jacket H, or its equivalent, in combination with the feeding-tube or tubes I I, to conduct fresh air to the burner B, substantially as and for the purpose set forth.

105,084.—ADHESIVE COMPOUND FOR PREPARING PASTEBOARD.—Gustav L. Jaeger, New York, N. Y.

Claim.—An adhesive compound, made substantially in the manner herein described.

105,085.—TRUNK-HANDLE CAP.—William S. Jessup, Newark, N. J.

Claim.—As a new article of manufacture, a trunk-handle cap, formed of the sheet-metal part A, and the riveted spur *b*, substantially as and for the purposes herein set forth.

105,086, antedated June 30, 1870.—CLOTHES-RACK.—Josee Johnson, New York, N. Y.

Claim.—The combination of the arms A A, cross-bar B, one or more cords *a b d*, and with or without the loops *e f*, all constructed and arranged as described, to form a hanging clothes-rack, substantially as herein set forth.

105,087.—EMBROIDERING ATTACHMENT FOR SEWING-MACHINE. — William T. Johnston and Allen Johnston, Ottumwa, Iowa.

Claim.—1. The bar C, in combination with the rod G, provided at its lower end with the stud *e*, and at its upper end with the head H, the clamp I, and set-screws *i i*, by which the rod is connected with the needle-bar, all constructed and operating substantially as and for the purposes set forth.

2. The arrangement, upon the grooved plate A, of the post *a*, bar C with its pins *b d*, and the arms D E, all constructed and operating substantially in the manner and for the purposes herein set forth.

105,088.—DEVICE FOR PROPELLING STREET-CARS.—Solomon Jones and Bernard Terfloth, New Orleans, La.

Claim.—1. The application of the tensile force of an elastic-gum spring, E, to the propulsion of city railroad cars, when the said spring is arranged in the manner described and for the purposes set forth.

2. The combination of the plate B, on a skeleton-plate frame in lieu thereof, with the cross-frame C C', the power-pulley D, the wheel H, pinions *e f g*, wheels I I', shaft L, wheel M, pulley N, levers K K', 10, and *k*, pulleys O, P, R, and T, rollers 6, 7, and 8, and an elastic-gum spring, E, when these several parts are constructed, arranged, applied, and operate substantially as described, for the purpose set forth.

105,089. — COMPOUNDING CHINA-CLAY TO IMITATE MARBLE, MOTHER-OF-PEARL, &c.—Daniel Kaempfe and Carl List, Newhaus, Schwarzburg-Rudolstadt.

Claim.—The manufacture and preparation of a compound of China-clay, by which every kind of real marble and mother-of-pearl can be imitated, and that our process is adapted not only to the manufacture of fancy articles, but in fact to every possible purpose, useful and ornamental, for which the common China material may be used, all substantially as specified.

105,090.—CORN-PLANTER. — Daniel Keethler, Mount Oreb, Ohio.

Claim.—1. In the described combination, with the series of pendants *h* and the openings E in the hopper-bottom, the correspondingly-perforated slide F, having the inclined shoulders G, for the purposes explained.

2. The described arrangement of frame A, wrought-iron hangers or guards B, and hoppers C.

105,091.—PERMUTATION LOCK.—Willoughby F. Kistler, Chicago, Ill., assignor to Hall's Safe and Lock Company, Cincinnati, Ohio.

Claim.—1. In a burglar-proof lock, a hardened steel spindle, C, of uniform size, in combination with a conical-shaped nut, E, made of steel and hardened, constructed and arranged substantially as and for the purpose set forth.

2. In combination with the plates of the tumblers G, the steel pins *r*, constructed and arranged substantially as and for the purpose set forth.

3. In connection with a spindle, arranged independent of the arbor upon which the tumblers are mounted, a disk, *a*, having a slot, *c*, of uniform width, entering its periphery at an angle, and then

running concentric with the periphery, when constructed and arranged so that the pin *o* and the arm B, both of the arm N, shall enter the slot *e* and the gates of the tumblers respectively at the same time, in the manner substantially as herein shown and described, and for the purpose set forth.

105,092.—VENEER-CUTTER.—George Koch, New York, N. Y.

Claim.—A machine for cutting veneers, constructed and operating substantially as herein shown and described.

105,093, patented in Belgium January 20, 1868. — MAGAZINE FIRE-ARM. — Julius Kraffert, Berlin, Prussia.

Claim.—1. The vibrating cartridge-chamber *c*, turning near its rear end on a fixed pivot, *n*, and the breech *a*, bearing the charge-exploding needle or hammer, and secured on the forward vibratory end of the cartridge chamber, the said parts being arranged substantially as described, in combination with the fixed barrel, so that, by their simple vibratory movement, they are alternately brought close in line with the barrel, substantially as and for the purpose herein specified.

2. The combination of the spring lever *g*, attached to the breech *a*, the bow-shaped lever *i*, and trigger *s*, turning on a center, *s'*, attached to the cartridge-case *c*, and operating substantially as and for the purpose specified.

3. The lever A, with its projections B, friction-roller C, and arm or lever A, in combination with the needle-bar *f* and slotted lever B, operating the needle-bar *f* and breech *a*, and cartridge-case *c*, simultaneous, substantially as and for the purpose hereinbefore described.

105,094. — SEITER, BED, AND TABLE.—Charles F. Kramer, Mondovia, Wis.

Claim.—The arrangement and combination of the jointed levers J, L, and H, the spring-bolts N N, the movable head and foot-supports F, and the adjustable legs and braces V and W, when constructed and operating as herein described, and for the purposes set forth.

105,095.—PLAITED TRIMMINGS.—Frederic A. Kursheedt, New York, N. Y.

Claim.—A plaited trimming made of a fabric folded upon itself, so as to be doubled, its edges meeting at any desired point on one face of the article, and being covered by a tape, insertion, or other suitable material, substantially as set forth.

105,096.—AXLE-BOX.—John Joseph Lahaye and John Eastburn Wootten, Reading, Pa.

Claim.—1. The projection *m*, arranged on the lid B, for controlling the waste in the interior of the box, as set forth.

2. The arrangement of the flange *e*, flange *f*, opening *f'*, and body of waste in front of the flange *f*, as and for the purpose described.

3. An opening, *h*, in the bottom of the box, for receiving a portion of the said waste, when the latter is confined by a serrated flange, or its equivalent, substantially in the manner described.

4. The combination of the lid B, its inclined projection, *s*, guides *q' q'*, and the sliding cap *q*, with its packing, as set forth.

5. The set-screw *l*, having a head, *l'*, of the form described, in combination with the cover B.

105,097.—TOP-REST FOR CARRIAGES.—James Lewis, Marengo, Mich.

Claim.—1. The combination and arrangement of the joint-ears C, and the joint and swivel-post D, with each other, and with the bow-rest B, and the prop-irons of a carriage-seat rail, or with the arm A, when fitted on said irons, substantially in the manner herein described, and for the purpose of a double adjustment with the bows, as set forth.

2. The bow-rest B, provided with joint-ears C, in combination with a prop-iron arm, A, furnished with a joint-tenon, *d*, pivoted to said ears, for the purpose of enabling such rest to adjust itself to a true bearing with the back edge of the carriage-bow, substantially as specified.

105,098.—PROPELLING APPARATUS.—Edwin T. Ligon, Demopolis, Ala.

Claim.—A vessel, provided with a chamber in her bottom, and with pipes leading thereinto, and with helical-pumps, all combined and operating as described, for the purpose of forming an air stratum in the chamber, and discharging currents of air, or air and water, which may aid in the propulsion of the ship.

105,099.—PAPER-BAG MACHINE.—Nicholas Lorton and John S. Davison, Cranberry, N. J.

Claim.—1. The combination, in a paper-bag machine, of the sliding former-plate E, folding flaps D D', and a pasting device, R W, substantially as set forth.

2. The combination and arrangement of the treadle H, linked lever F, sliding former-plate E, pasting device R W, folding-flaps D D', and treadle N, to complete the pasting and folding with two movements, substantially as described.

3. The combination, substantially as described, of the paste-roller R, band S, treadle N, retracting spring T, and a stop or break, R', to produce a forward rotation only of said roller.

4. The combination, in a paper-bag machine, of a sliding former, E, and a flier, C', for the purpose set forth.

5. The arrangement, substantially as described, of the treadle H, presser W, former E, and flier C', to actuate said devices successively by a single movement of said treadle.

6. The arrangement, substantially as described, of the treadle N, flaps D D', and paste-roll R, to actuate said devices with a single movement of said treadle.

105,100.—CIRCULAR-SAW MILL.—James R. Luce, Stevens' Point, Wis.

Claim.—1. The combination of the parallel shafts G G', with tapering pulleys H H', and the diagonal shaft J with pulleys I I', all constructed and arranged to operate substantially as and for the purposes herein set forth.

2. The arrangement of the movable journal-boxes *b b*, set-screws *c c*, and springs *d d*, substantially as and for the purposes herein set forth.

3. In combination with the shaft J, rollers I I', journal-boxes *b b*, and springs *d d*, the lever K and grooved pulley L, substantially as and for the purposes herein set forth.

4. The arrangement of the lever O, with arm *f*, rod *g*, movable journal-box *a*, and spring *h*, all operating substantially as and for the purposes herein set forth.

5. The arrangement of the lever O, arm *m*, hook *k*, frame R, roller S, and spring P, all constructed and operating substantially as and for the purposes herein set forth.

105,101.—ICE-CHAMBER FOR REFRIGERATORS.—John H. Lynch, New York, N. Y.

Claim.—An ice-chamber for refrigerator, consisting of the corrugated drum A, agitator B, and ring *b*, constructed and operating substantially as and for the purpose described.

105,102.—PERMUTATION LOCK.—Neil Macneale, Cincinnati, Ohio.

Claim.—1. The rocking dog *d*, pivoted on the main bolt, and resting out of contact with the gated tumblers, and being provided with a yielding fence, E, in combination with the fixed stump F, and the rotary pin or tappet E, having a positive action on said rocking dog, as and for the purpose set forth.

2. In combination with the detent D E, pivoted to the main bolt and arranged as specified, and the fixed stump F, the rotating pin or tappet E, for the purpose designated.

3. In combination with the dog D and fence E, constructed and arranged to operate as specified in claim 1, and with the gated tumblers I, the guard-plate M, operating as and for the purposes specified.

4. The combination of the eccentric U, shaft V, spring-guard X, and sliding plate K, with the arbor J of the tumblers, substantially as and for the purposes set forth.

105,103.—PLOW.—James T. Mathis and George W. Harrison, Kosciusko, Miss.

Claim.—The combination and arrangement of the standard D, subsoiler E, with slot *d'* and bolt *d*, brace D', and arm *f*, as described.

105,104.—SPRING-CATCH BOLT.—Tyrus McCargar, Masonville, Iowa, assignor to himself and Simeon P. Peters, same place.

Claim.—The combination, with the bolt A, of the spring B, provided with a catch, C, when welded to the head of the bolt so as to be in one piece therewith, and extended along toward the opposite end of the same, substantially as and for the purpose herein set forth.

105,105. — LOCK FOR PIPE-COUPLINGS.—George A. McIlhenny, Washington, D. C.

Claim.—1. A joint shell for gas and similar pipes, consisting of the parts A and A', hinged together and provided with flanges *b*, in such a manner that it can be applied to the union or coupling-nuts of pipes after said nuts are on the pipe, substantially as described.

2. A joint shell or case, provided with a lock, substantially as described.

105,106.—HYDRANT.—Alexander McKenna, John McKenna, and Thomas McKenna, Pittsburg, Pa.

Claim.—Forming the rotary valve F in the shape of an inverted flat-bottomed cup, whose edges surround and overhang or extend below the face of its stationary concentric seat B, in combination with the movable discharge-pipe H and nozzle K, held in place by means of the pivot P, vertical screw *a*, and washer *n* in the cap L of the casing A, as shown and set forth.

Also, the movable ring V, nozzle K, right-angled slot T, and stationary cap L, furnished with screw *s* and washer *n*, in combination with the discharge-pipe H, rotary valve F, and its stationary seat B, when the several parts specified are constructed and made to operate with respect to each other, as shown and set forth.

105,107. — LOCOMOTIVE SMOKE-STACK. — William James Mehary, Philadelphia, Pa.

Claim.—1. A deflector for locomotive smoke-stack, rendered vertically adjustable upon guiding-rods *c*, and maintained in any position to which adjusted by means of pins or their equivalents, all substantially as herein described.

2. The within-described frame, for the support of the adjustable deflector, consisting of bars secured to the inner casing of the stack, and connected together at the top by a cross-piece, *b*.

3. The lifting bar *k*, or its equivalent, secured to the adjustable deflector, and adapted and arranged for attachment to the cross-piece *b*, substantially as described.

105,108. — SAW-FILING MACHINE.—Henry H. Mellen, Boonville, Ind.

Claim.—1. The horizontally-sliding frame carrying the file, in combination with the vertically-adjustable guides F F', bar K, springs M N, and spring frame L, all constructed and arranged substantially as and for the purpose set forth.

2. The saw-clamps P P, with rack *p*, in combination with the swivelling table O, standard R, lever T, stop U, pinion *e*, guide V, and ratchet-wheel, all constructed and operating substantially in the manner and for the purpose set forth.

3. The caster and groove underneath the slide G, for preventing the back cut of the file, constructed and operating substantially as and for the purposes set forth.

4. The guides F F', with their flat springs M N, frames E, slide G, and hangers H, carrying the file-bearings and file, arranged within and made removable from the frame proper, substantially in the manner and for the purposes set forth.

5. In combination with the above, the adjustable file-bearings *a a*, by means of which the file is adjusted longitudinally, or different faces presented to the work, substantially as and for the purposes specified.

105,109. — FRUIT-CAN. — John F. Merrill, Cincinnati, Ohio.

Claim.—The body B, having the circumferential crease or bead *b*, in combination with the rim A, constructed substantially as described, for the purpose set forth.

105,110.—STAVE-BENDER.—Joshua Merrill, Boston, Mass.

Claim.—The stave-bender herein described, consisting of the transversely ribbed bed-piece *a*, provided at one end with the holder *g*, and at the other with the cam *d*, arranged to bend, hold, set, and release a stave, substantially as set forth.

105,111.—CUTTING APPARATUS FOR HARVESTERS.—Henry Mewes, Binghamton, N. Y., assignor to John W. Cutler, same place.

Claim.—A transversely-divided cutter-bar, arranged and operated as described, so that the sections thereof shall move simultaneously in opposite directions.

105,112.—MACHINE FOR MAKING SHEET-LEAD.—James Millingar, Philadelphia, Pa., assignor to himself, Thomas Woods, and Benjamin F. Pine, same place.

Claim.—1. The combination of the wheel F, hot-metal reservoir spout H, rib *i*, and curved plate *f*, arranged as set forth.

2. The combination of the flanged wheel F and water-spout G, comprising the cooling device, with the hot-metal reservoir and spout H, all arranged and operating together as described.

105,113.—NEEDLE-WRAPPER.—Victor Milward, Ipsley, assignor to Henry Milward, Redditch, England.

Claim.—The improvement in wrappers for papering needles hereinbefore described and illustrated in the accompanying drawing, that is to say, combining with an ordinary needle-paper or wrapper a second and smaller piece of paper, attached by three of its sides to the said needle-paper or wrapper, as described and illustrated, so as to form a pocket for the reception of the needles, as set forth.

105,114.—PAPER-FILE.—Thomas E. Moore, Columbus, Ohio.

Claim.—1. The clamps B B, formed of the wires *b b' c c'*, coils *a a'*, hooks *d g*, and loops *e f*, and used for operation on both sides of the board A, substantially as set forth.

2. In combination with the wire clamps B B, as described and arranged upon the board A, the cover C, substantially as set forth.

105,115.—SAFETY-VALVE FOR DENTAL VULCANIZERS.—Francis R. Moorhead, Chandlersville, Ohio.

Claim.—1. In combination with a dental vulcanizing device or apparatus, a movable safety-valve, when constructed and arranged to operate substantially as herein described, and for the purpose set forth

2. The movable valve *a*, spring C, cross-bar D, and standards *b*, or their equivalents, in combination with a dental vulcanizer, when constructed and arranged to operate substantially as and for the purpose set forth.

105,116.—WATER-CLOSET BOX.—Alexander R. Murray, New York, N. Y.

Claim.—The box, having a mouth or opening, *a a b b*, of the form substantially as described, and a pin, B, arranged, relative to the said mouth, as and for the purpose herein set forth.

105,117, antedated June 28, 1870.—HORSE HAY-RAKE.—Lorenzo Myers, Ludlowville, N. Y.

Claim.—Rake-head, when raised or dumped by a friction-wheel, and a band or strap encircling the same, as herein specified and shown.

105,118. — TALLYING - REGISTER FOR FREIGHT. — Frederic Nicholson, Warsaw, N. Y., assignor to Peter Arndt and Richard M. Tunks, same place.

Claim.—1. The triangular hinged registering-lever D, projecting from a hollow skid or rail, A, and operating as described, in combination with the lever C and suitable clock-work thereto attached, for the purposes and substantially as herein set forth.

2. The combination and arrangement of the locking-lever G, opening-lever H, and lever I, with the registering-lever D, for the purposes and substantially as herein set forth.

105,119.—CUT-OFF VALVE-GEAR AND VALVE. George E. Noyes, Washington, D. C.

Claim.—1. The double-seated tubular valve, of equal diameter from the lower portion of the upper valve-seat to the upper portion of the lower seat, it being so arranged as to receive the steam upon its inner surface and discharge it through its lower end, substantially as and for the purpose set forth.

2. The combination of the tubular valve and its cup-shaped casing, having apertures for the discharge of the steam, substantially as and for the purpose set forth.

3. The combination of a wedge for operating the cut-off valve of a steam-engine, and a rod or bar which receives its movement from the eccentric or cam, when the parts are so arranged that the wedge has a positive motion with reference to such rod or bar during a portion of its movement, but a motion or movement independent of such rod or bar during the remainder of its movement, substantially as and for the purpose specified.

4. The combination and arrangement of the rod or bar C, the movable wedge C^1, trigger or dog C^4, hook or stop C^3, and adjustable stop D^4, substantially as and for the purpose set forth.

5. In combination with the parts enumerated in the fourth clause, the slotted arm D^2, or its equivalent, and the governor, substantially as and for the purpose set forth.

6. The arrangement of the valves B B, their rods B^2 B^2, rollers B^3 B^3, spring E, wedge C^2, and rod or bar C, as a consequence of which the movement of the rod or bar C is made to operate both the induction and eduction-valves, substantially as shown and described.

105,120.—SCROLL-SAW.—Marcus G. Ogden, Cincinnati, Ohio.

Claim.—1. The slides C C', when constructed with the chamfered holes *c c*, and combined with the saw D, pivoted levers B B', and connecting-rod or strap J *f*, substantially as set forth.

2. In connection with a scroll-saw embodying the pivoted levers B B', the tubular U-shaped frame A, inclosing the levers, in the manner and for the purpose described.

105,121.—COMBINED BEVEL, SQUARE, RULE, &c.—John D. Otstot, Springfield, Ohio.

Claim.—An instrument, in which is combined a level, bevel, rule, and square, when composed of four members, limbs, or pieces, hinged together, in the manner and for the purpose herein described and represented.

106,122.—ADJUSTABLE LINK FOR WATER-WHEEL GATES. — William A. Parmele, New Haven, Conn., assignor to himself and Philip P. Ahren, same place.

Claim.—The bar A, in combination with the knee B, for use in connection with the gates or valves of a water-wheel, substantially as shown and described, and for the purposes specified.

105,123.—SEWING-MACHINE.—Truman W. Pepper, New York, N. Y.

Claim.—1. The combination of the vibrating and adjustable cam P, formed with inclined and concentric surfaces, as described, the lever Q, with its teats *l l'*, the springs *s s'*, and the feed-bar K, hung so as to be capable of rocking, as well as a longitudinal movement, substantially as specified.

2. The combination of the wedge N and spring M, with the rocking bearing-block L and feed-bar K.

105,124.—HOOP-SKIRT.—Charles E. Pratt, Rahway, N. J., assignor to himself, M. Cohn & Co., New York City, and the West, Bradley, and Carey Manufacturing Company, same place.

Claim.—In a skeleton hoop-skirt, one or more bracing-hoops D, which extend from a point at or near the top of the skirt at the back to a point at or about the height of the knee of the wearer in front, substantially as and for the purpose set forth.

105,125. — PAPER FOR BONDS, DRAFTS, CHECKS, &c.—Robert Price, New York, N. Y.

Claim.—1. The within-described process of treating paper.

2. Printing-paper treated as herein described, for the purpose specified.

105,126.—EXTENSION LADDER.—Nathaniel Pullman, New Oregon, Iowa.

Claim.—1. The removable platform G, when constructed with the hooks *g*, and used in connection with the ladder F, having the pins *f f*, for the purpose set forth.

2. The ladders A and B, guides *b b*, bolt *c*, with rollers *c'*, ladder F with hooks *f f*, and removable platform G, when combined and arranged as described, for the purpose set forth.

105,127.—Suspended.

105,128.—TANK FOR HOLDING COMPRESSED AIR.—Franklin Roberts, New Orleans, La., assignor to New Orleans Pneumatic Propelling Company, same place.

Claim.—1. A paper tank, of which the ends are inclined or tapering, as herein described, when the same is lined with sheet India rubber, and enveloped with an external layer of marline, as herein described, for the purpose set forth.

2. The head B, when provided with an inclined or beveled periphery, and otherwise constructed as described, in combination with a band, D, a yoke, G, and a screw-bolt, F, when all the parts are used in connection with the tank herein described, for the purpose set forth.

105,129.—REVERSING-VALVE FOR STEAM-ENGINE.—Thomas Rodda, St. Louis, Mo.

Claim.—The valve A B B' C, arranged with its pipes D D' and E E', and operating in connection with the valve of a steam-engine, substantially as and for the purpose set forth.

106,130.—BRUSH.—Charles F. Ruset, Brooklyn, New York.

Claim.—A brush, composed of an outer band or cap, D, and inner ring or binding B, both of soft or plastic material capable of being hardened, a handle, A, made to project at its inner end within or through the cap, and bristles C, arranged in the form of a bunch, and supported externally and internally where the same are united with the handle, substantially as specified.

105,131. — DEVICE FOR MANUFACTURING BRUSHES.—Charles F. Ruset, Brooklyn, N. Y.

Claim.—The process, substantially as herein described, of making brushes by means of the divided box A, receiving within it the gutta-percha or plastic material of which the band or cap is to be formed, in combination with the follower B, carrying the handle G, and the wedge E, the whole being constructed and arranged for operation in relation to each other to unite the bristles with the cap, and the handle with them both, substantially as specified.

105,132. — MANUFACTURE OF ARTIFICIAL STONE.—Carl Schneffer, Elizabeth, N. J.

Claim.—A compound for artificial stone made of the ingredients herein specified, and afterward treated with a solution of silicate of potash, substantially as and for the purpose set forth.

105,133.—VAPOR-BURNER.—James Shay, Cincinnati, Ohio, assignor to himself and John Q. Jaynes, Hamilton, Ohio.

Claim.—1. A vapor-burner, having an open-mouthed conduit, A, with enlarged lips *c' c'*, and lateral flame-jets or perforations *e e* under the lips, substantially as set forth herein.

2. A vapor-burner, having a flame-jet, C, with enlarged lips *c' c'*, and perforations or small lateral flame-jets *e e*, in combination with the nipple B, arranged on the liquid-pipe E, substantially as herein set forth.

3. In combination with the above, the bowl D, constructed and arranged substantially as herein set forth.

105,134.—PLOW.—Thomas Sheehan, Dunkirk, N. Y.

Claim.—1. The arrangement, within an inclined toothed recess, of the plow-beam A, of the slotted toothed bar D and wheel E, said bar being adjusted substantially as and for the purposes herein set forth.

2. An eccentric roller, arranged substantially as described, for the purpose of imparting a rocking motion to the plow.

3. The combination of the eccentric roller M and adjustable spring-scraper N, arranged as described, and operating substantially as and for the purposes herein set forth.

105,135.—FOUNTAIN-BRUSH HOLDER.—William A. Shepard, Chicago, Ill.

Claim.—The water or liquid-supply tube, provided at one end with a pocket, to fit upon the brush-handle, and adapted to be connected at the other end with a faucet or other source of water supply, substantially as set forth.

105,136.—MACHINE FOR HULLING COTTON-SEED.—Edgar Collins Singer, New Orleans, La.

Claim.—The cylinder C, when provided with the beaters E and fans M and N, in combination with a concave bed, B, composed of strips *d*, and a bar, H, in a removable cover, F, when these several parts are constructed, arranged, and operate substantially as and for the purpose set forth.

105,137.—WINDOW-SASH AND FASTENER.—Elias Smith, Cedar Falls, Iowa.

Claim.—The upper sash of a window, provided with the springs *a*, tracks *e*, and angular groove *c*, in combination with the strips *f*, provided with slots *g*, and lower sash with its projecting strips *d*, when constructed and operating together as described.

105,138.—PAVEMENT.—Andrew Stevens and Louis A. Cauvet, New York, N. Y.

Claim.—A pavement consisting of a series of boxes or trays, B, provided with the recesses *n* and flanges *c*, and the dowel-pins *a*, with corresponding holes, *b*, said trays being arranged substantially as described, and filled with concrete blocks of wood, or other suitable material, as set forth.

105,139.—HARVESTER-RAKE.—Ole O. Storle, North Cape, Wis.

Claim.—Rake C, compresser D, rods E, joints F and G, all in combination, substantially as described.

105,140. — CIGAR-WRAPPING MACHINE.—George W. Tanner and Frank D. Bliss, Providence, R. I.

Claim.—1. The bed-rollers E, provided with stationary horn-shaped fingers F, in combination with the pressing-rollers G, mounted in a vertically-sliding frame, and each provided with a stationary horn-shaped finger, H, the whole operated by the shaft D and suitable gearing, substantially as shown and described.

2. The combination of the rollers of a cigar-wrapping machine with bearing-collars and stems K, the latter being provided with suitable spring devices, so set as to admit of the ready adjustment of the rollers relatively to each other, substantially as shown and described.

105,141.—HAY-SPREADER.—John F. Thomas and Daniel H. McLane, Ilion, N. Y.

Claim.—1. A hay-tedder, consisting of a rigid frame, A, mounted on wheels, and provided with pulleys T *l*, having mounted thereon endless belts or chains E, carrying bars D, which latter have arms I, secured to them in such a manner as to cause them to project backward in the line of their movement, substantially as described.

2. The arms I secured to the bars D, substantially in the manner described, so as to cause them to project backward in line with the path of their movement, whereby their ends are thrown suddenly backward and upward to scatter the grass, and are then drawn forward from under the grass, substantially as described.

105,142.—APPLICATION OF CARBOLIC ACID FOR PREVENTING DECAY AND MILDEW IN SAIL-CLOTH, CANVAS, AND OTHER FIBROUS AND TEXTILE MATERIALS.—William A. Torrey, Mont Clair, N. J.

Claim.—1. The process, herein described, for preventing decay and mildew in sail-cloth, awnings and other textile and fibrous materials and manufactures, such as herein above mentioned, said process consisting in the combination of carbolic acid with the article to be preserved, by means of solvents, substantially as set forth.

2. The solutions herein described, for preventing decay and mildew in textile and other materials, prepared by combining carbolic acid with alcohol, ether, benzine, naphtha, or other solvent, as set forth.

3. The composition, formed by combining carbolic acid in solution with paints, oils, varnishes, and other coating compounds and materials, substantially as herein set forth.

105,143.—FENCE.—David M. Tyler, Union township, Ind.

Claim.—The hereinbefore-described fence, consisting of the posts A, the rails B and D, and the wire-pickets E and F, secured together as shown, all constructed and arranged substantially as and for the purpose specified.

105,144. — BEE-FEEDER. — Charles Catlin Van Deusen, Sprout Brook, N. Y.

Claim.—An apparatus, in which the forces of atmospheric pressure and capillary attraction are

utilized, and the application of the above forces, for the purpose herein specified.

105,145. — MACHINE FOR FLUTING MOLDINGS. — Richard Van Riper, Brooklyn, N. Y.

Claim.—The combination of the levers D, made as described, with the rocker-frame H and adjustable cutter-stock K, all arranged and operating as hereinbefore set forth.

105,146. — SELF-ACTING LUBRICATOR FOR AXLE-BOXES.—Ernest Von Jeinsen, Omaha, Nebraska.

Claim.—1. The shells A B of an axle-box or lubricator, formed with grooves which receive absorbent strips of material, *a* and *b*, when combined and operating in connection with the wick *d* and spring *g*, substantially as described.

2. The countersunk hole *e* in the bottom of the shell B, receiving the end of a wick *d*, which is pressed upward against the absorbent material *b* by the spring *g*, which is held in position by the guiding-piece *f* in the oil-reservoir, and operating in connection with the spring *g*, substantially as described.

105,147.—AUTOMATIC LUBRICATOR.—Ernest Von Jeinsen, Omaha, Nebraska.

Claim.—The mud-box *b*, formed in the lower shell of the box B, located under and separated from the oil-reservoir *a* by a screen, *c*, when combined and operating in connection with the screen *c*, ducts *d*, and disk C, upon the shaft A, substantially as described.

105,148.—METAL-BACKED COMB.—Edward Edmonds Warner, Jacob William Walton, and Robert Vine, Philadelphia, Pa.

Claim. — A metal-backed comb, in which the metal back is secured to the comb by soft solder, or other soft metal or cement, within a space, *a*, of the back, and inclosing a projecting portion of, or extending into a recess in the comb, substantially as described.

105,149.—BABY-JUMPER.—Egbert L. Warner, Oxford, Conn.

Claim.—The baby-jumper herein described, consisting of the support A, cords C C, vertical spring D, with its adjusting strap F, and the rod E, with the auxiliary springs *a a*, operating in the manner specified.

105,150.—TAP FOR LIQUID PACKAGES.—Albin Warth, Stapleton, N. Y.

Claim.—The combination with cap *a*, spout *b*, seat *c*, and plate *d*, of the spring *f*, arranged within the package A, so as to press the cap *a* upon its seat, but not interfere with the free discharge of the liquid, substantially as and for the purpose described.

105,151.—NOZZLE FOR CAN AND CASK.—Abel L. Webster, Cleveland, Ohio.

Claim.—1. A ventilating nozzle for cans or casks, in which the cap, screwing down from above, is made to cover not only the spout, but the air-ducts, whereby we are enabled not only to fill but to draw the liquid from the same opening, substantially as set forth.

2. The combination of the spout B, cap E, air-chamber *c*, provided with ducts *d* D, substantially as shown and described.

105,152.— SEAM FOR CAN.—Abel L. Webster, Cleveland, Ohio.

Claim.—The jog or shoulder *e* along the edge *c* of the one plate B, in combination with the fold *b* along the edge *c* of the adjacent plate A, within which the edge *c* of the plate B fits, essentially as shown and described.

105,153.—CALIPER.—Andrew E. Whitmore, Boston, Mass.

Claim.—1. In a beam caliper, the combination of a beam and of two jaws, provided each with a stop-block or detent, when one of said jaws is adjusted by a series of grooves, or their equivalents, impressed or produced upon the bar, and the other actuated by a screw, a suitable scale being also impressed upon the bar, substantially as herein shown and set forth.

2. An improved beam caliper, as composed of the bar or beam *a*, the two jaws *m* and *n*, the screw *b*, index-plate *d*, and sleeve a^3, with its index-pointer *i*, the jaw *m* being operated by the screw *b*, and the position of the jaw *m* being determined and maintained by the channels or grooves *o o o*, &c., or their equivalents, the two jaws being provided with the stop-blocks or detents *p* and *q*, and the whole being organized and operating as explained.

3. In combination with the bar *a*, its grooves *o o*, or their equivalents, and the jaw *n*, a stop-block or detent for enabling the position of the jaw upon the beam to be varied and adjusted, as explained.

4. In a beam caliper, as above described, the mode herein shown of securing the screw *b* or its rod to the dial-plate and its hub, that is to say, by means of the collar upon such screw, (which enters a chamber of the dial-plate,) by means of the milled head or rosette and clamp, or set-nut *h*, the hub of the dial-plate being screwed to the rear end of the beam of the instrument, and the whole operating as explained.

105,154.— SIGNAL FOR RAILWAY.— Nelson Whitney, Bellingham, Mass.

Claim.—The apparatus, as described, to be applied to a railway, as and for the purpose as explained, such consisting of the head E, the two levers B F, the spring H, the connecting-rod I, the spring hammer L, and the bell M, all constructed and arranged in manner with respect to each other and with the track, substantially as explained.

105,155. — LOW-WATER INDICATOR.—Daniel Wiehl, Cincinnati, Ohio, assignor to himself, Peter W. Reinshagen, Andrew P. Lusk, and John H. Buckman.

Claim.—1. In connection with the float F, the provision and arrangement of break-water and guide plate or diaphragm G, operating as described, and for the purpose specified.

2. The spiral grooves *g*, in the described connection with the float *F f* and seat D, as described, and for the purpose stated.

105,156. — APPARATUS FOR CUTTING THE CASINGS OR TUBES OF OIL-WELLS.—Perley H. Lawrence, Petroleum Centre, Pa.

Claim.—The improved device herein described, consisting of the stock A and cutter *a*, the plug B, with its inclined groove *b*, the pipe C, and shoulder *c*, forming a step for the sliding plug B, the upper tubing D, and the connecting-tube or rod E, to extend to the top of the well, all constructed and arranged to operate substantially as set forth.

REISSUES.

4,057.—MACHINE FOR DRESSING MARBLE. Ralph P. Bailey, Niagara Falls, N. Y., for himself, and Platt D. Babbitt, assignee of Ralph P. Bailey.—Patent No. 65,990, dated June 25, 1867.

Claim.—1. A spring-blade or scraper, when attached to a head or stock, and applied to dressing or working stone, or other equivalent material, by scraping or abrading the surface thereof, substantially as hereinbefore set forth.

2. The combination of a series of spring-blades or scrapers, A, with the clamping-arms C, and head or stock A, for acting successively on the material to abrade it to the form of said blades, arranged and operating substantially as and for the purpose set forth.

3. The arm or holder C, when connected with the head A, or its equivalent, by means of pivot *d*, and the bearing-bolts *e e*, arranged to allow the blades to adjust themselves to the work when rotated in either direction, substantially as set forth.

4. The beveled inner faces *f f* of the clamp, arranged with the spring-scraper *h*, as and for the purpose hereinbefore set forth.

4,058.—LAMP-BURNER.—Abraham Burtis, and Mary A. Van Alen, Brooklyn, and William D. Ludlow, New York, N. Y., assignees of A. W. Browne.—Patent No. 74,793, dated February 25, 1868.

Claim.—1. An Argand burner, having an interior air-tube with a V-shaped lower portion, into which the air is admitted laterally, in combination with the exterior casing or wick-tube, substantially as specified.

2. A wick-tube constructed to receive the two thicknesses of wick at the ratchets or wick-raisers, and spread the same into a circular (or Argand) form at the flame, substantially as specified.

3. An Argand lamp-burner adapted to receiving two flat wicks, in combination with the wick-raisers, upon spindles or shafts outside of the wicks, and operating upon the wicks, substantially as set forth.

4. The cone D, connected, at or near its upper end, to the Argand burner, substantially as specified.

5. The double wick-raising wheels, made with penetrating points that interlock within or between the two thicknesses of wicks in the wick-tube of an Argand burner, substantially as specified.

6. The gauge G, in combination with the wick-tube C D, substantially as specified.

4,059.—COMPOSITION PAVEMENT.—Henry L. Cranford, Brooklyn, N. Y.—Patent No. 93,280, dated August 3, 1869.

Claim.—1. A pavement made of composition and stone, laid substantially as set forth.

2. The wedge-shape filling of composition introduced between the stones, combined with the composition foundation below the stones, substantially as set forth.

4,060.—TRAVELING-BAG.—Fredrick Fischbeck, Chicago, Ill.—Patent No. 86,742, dated February 9, 1869.

Claim.—1. A traveling-bag frame, having a flat bottom bar or piece for the attachment of the bottom part of the covering, substantially as and for the purpose described.

2. The provision, in a traveling-bag frame, of the continuous part B, substantially as and for the purpose set forth.

3. The continuous frame B′, formed with the bends *b′* in the bottom, near the ends, substantially as and for the purpose specified.

4. The metallic protector D, constructed and applied, substantially as and for the purpose set forth.

4,061.—COOKING-STOVE.—Sherman S. Jewett, Buffalo, N. Y., (assignee of Francis Ritchie,) assignor to Jewett and Root. Patent No. 91,968, dated June 29, 1869, antedated June 15, 1869.

Claim.—1. Constructing and arranging the baking-oven of a cooking-stove, so that the lower part of the rear portion of the baking-oven, or that furthest from the fire-chamber, shall extend backward beyond the upper portion, substantially as and for the purpose hereinbefore set forth.

2. The combination and arrangement of a water-reservoir over the backwardly-extended lower portion of a baking-oven, substantially as hereinbefore set forth.

3. The arrangement of a water-reservoir, supported over the rearwardly-extended lower portion of a baking-oven, so that the rear plate of the reservoir will be flush with or in substantially the same plane as the outer vertical rear plate of the stove, substantially as hereinbefore set forth.

4. The arrangement, with the rearward extension C and water-reservoir E, of the extension boiler-flue O, diving-flues P P, up-cast flue S, damper U, and exit-passage T, all substantially as hereinbefore shown and described.

4,062.—FARMERS' BOILER.—Allen N. Merrill, Batavia, Ill.—Patent No. 96,988, dated January 18, 1870.

Claim.—1. Providing the fire-pot C with the projections or supports 2, for the purpose of supporting the kettle, substantially as set forth.

2. The conical base B, conical fire-pot C, provided with projections 2, the fire-grate *c*, cone D, jacket E, and kettle H, when constructed and operating substantially as described and shown.

4,063.—COOKING-STOVE.—George H. Phillips, Troy, N. Y.—Patent No. 83,790, dated November 3, 1868.

Claim.—1. The curving or raising upward, outward, and over the rear end vertical flue or flues, of the rear end part of the top plate A, so as to form, at or above the upper end of such flues, a hot-air chamber or chambers, C, open at the rear side of the same, for the purpose of admitting the heat to and against a corresponding part or surface of the reservoir E exposed thereto, in the manner and by the means and for the purposes substantially as shown in the said drawings and as herein described and set forth.

2. The upward extension of the descending and ascending vertical flues or flue F within the rear end of said cooking-stove, so that the same shall be above the horizontal line or plane of the top plate A, and also above the said upper edge *a* of the rear end vertical plate G, and covered over at the immediate upper ends by means of the curved and upward extending plate B, or any equivalent of the same, in the manner and for the purposes substantially as herein described and set forth.

3. The employment, arrangement, and combination of the said curved and upward projecting plate B with the reservoir E, in the manner and by the means and for the purposes substantially as herein described and set forth, and substantially as shown and represented in and by the accompanying drawings.

4. The mode and manner, substantially as shown, and as herein described and set forth, for the receiving, and for the securing or fastening the said reservoir E to the top or covering-plate A of a cooking-stove, by means of the curved and upward projecting plate B, extending over the immediate rear diving or descending and ascending flue or flues within the rear of the oven, and next adjoining the rear end vertical plate G of the said cooking-stove, substantially as herein specified and set forth.

5. The arrangement and combination of the water-reservoir with the rear end of a cooking-stove, in such manner that all that part below the upper edge *a* of the rear end vertical plate G shall be brought against and in contact with such plate, while, at the same time, all that part of said reservoir which is above the horizontal line or plane of the top plate A shall be exposed to the direct action of the heat or escaping heated gases, after the same shall have passed the oven of such stove, so as thereby not to injure or retard the process of baking in said oven, by means of the cold or unheated water in said reservoir, as would be the case and result were there no intervening plate between the bottom H and the top plate A of said stove, in the manner and by the means substantially as herein described and set forth.

6. Connecting and combining the top or reservoir covering-plate L with the top and boiler-hole plate A, by means of the curved plate B, whereby and by the means of which the upper part or portion of such water-reservoir is raised or elevated upward and above an air line or horizontal plane of the upper surface of the said top plate A, substantially in the manner and for the purposes as herein described and set forth.

7. A boiler-hole or top plate, A, for a cooking-stove, having an upward curved and extending plate, B, arranged and combined therewith, so as

to receive and support, in any good, convenient, and substantial manner, the hot-water reservoir E, in combination with the descending and ascending flues in the rear vertical end of the cooking-stove, in the manner substantially as herein described and set forth.

4,064. — WINDMILL. — The United States Wind-Engine and Pump Company, Batavia, Ill., assignee of Daniel Halladay. Patent No. 11,629, dated August 29, 1854; extended seven years.

Claim.—1. The combination of the connecting-rods *f* and levers *h* with the sliding head G and spindles *b* of the wings or sails, for the purpose set forth.

2. The combination of the sliding head G, arranged to regulate the obliquity of the wings or sails and the lever H, with a governor of proper construction, for the purpose of giving the desired obliquity to the wings or sails, as set forth.

3. A sliding head, G, connected to the spindles *b* (of the wings or sails) by means of the connecting-rods *f* and levers *h*, in combination with the lever H and a governor of proper construction, for the purpose of giving the desired obliquity to the wings or sails, and thereby insuring an equal motion and power with a variable velocity of wind.

DESIGNS.

4,198.—BOOT AND SHOE-PATTERN.—Joseph M. Dutton, Rochester, N. Y.

Claim.—The design for patterns for boots and shoes, substantially as herein represented and set forth.

4,199.—PICTURE-FRAME.—Ezra W. Haven, Brandon, Vt.

Claim.—The design for a picture-frame, substantially as above set forth.

4,200.—TRUNK-CORNER CLAMP.—William S. Jessup, Newark, N. J.

Claim.—The design for a corner-clamp for trunks, substantially as shown and described.

4,201.—BOXES FOR TOPS OF BUREAUS.—Cheney Kilburn, Philadelphia, Pa., assignor to Kilburn & Gates, same place.

Claim.—1. The design for a box for the tops of bureaus, substantially as described, and as illustrated in and by the accompanying drawing.

2. The design for the molding or finish for the edge and lid of the box, substantially as represented in fig. 3 of the drawing.

4,202. — TRACE-SUPPORTING STUD.—Josiah Letchworth, Buffalo, N. Y.

Claim.—The design of a horse's head for the top of a trace-supporting stud, as hereinbefore shown and described.

4,203.—TYPE.—Andrew Little, New York, N. Y.

Claim.—The design for printing-type, as shown.

4,204—BOTTLE.—James Mackintire, New York, N. Y.

Claim.—The design for the neck of the bottle, consisting of the members *a*, *b*, and *c*, as shown.

4,205.—BOTTLE AND CUP.—James Mackintire, New York, N. Y.

Claim.—The design for a bottle and cup, as shown.

4,206.—BRACE FOR SCHOOL DESK.—James K. McCullough and Frank W. Smith, Burlington, Iowa.

Claim.—The design of a brace for a school desk, as herein described and shown, with any and all parts thereof.

4,207.—FLOOR-CLOTH PATTERN. — Charles T. Meyer, Newark, N. J., assignor to Edward C. Sampson, New York City.

Claim.—The design or pattern for floor oil-cloths, carpets, or other fabrics, shown and described.

4,208. — FLOOR-CLOTH PATTERN.—Charles T. Meyer, Newark, N. J., assignor to Edward C. Sampson, New York City.

Claim.—The design or pattern for floor oil-cloths, carpets, or other fabrics, shown and described.

4,209. — FLOOR-CLOTH PATTERN.—Charles T. Meyer, Newark, N. J., assignor to Edward C. Sampson, New York City.

Claim.—The design or pattern for floor oil-cloths, carpets, or other fabrics, herein set forth.

4,210. — FLOOR-CLOTH PATTERN. — Victor Meyer, Lansingburg, N. Y., assignor to Edward C. Sampson, New York City.

Claim.—The design or pattern for floor oil-cloths, carpets or other fabrics, shown and described.

4,211. — TEA-SERVICE. — William Parkin, Taunton, Mass., assignor to Henry G. Reed, George Brabrook, and Henry H. Fish, same place.

Claim.—The design for a tea-service, as herein shown and described.

4,212.—DRAWER-PULL.—Albert P. Seymour, Hecla Works, N. Y.

Claim.—The design for a drawer-pull, which design consists in a spherical angular front, composed of six sides, the upper three of which are concave, and the lower three convex, substantially as herein represented and described.

4,213.—TYPE.—Richard Smith, Philadelphia, Pa., assignor to Mackellar, Smiths & Jordan, same place.

Claim.—The design for printing-type, as shown.

EXTENSION.

EDWARD A. TUTTLE, of Brooklyn, N. Y.—Letters Patent No. 15,093, dated June 10, 1856; reissue No. 130, dated November 12, 1861.

Claim.—In single plate registers, operating the valves by a movement of the plate, in the manner herein shown and described, or in any other manner substantially the same.

Also, the construction of the valves and plates with pins or projections, arranged to operate together, substantially as herein shown and described, without the use of any intervening parts or pieces, as set forth.

ISSUE OF JULY 12.

PATENTS.

105,157.—SAFETY-CAP FOR CANS.—Horace C. Alexander, New York, N. Y.

Claim.—The ears or catches *a'*, formed by striking up the solid metal of the base flange of the part A of the can-cap, and pressing the projections thus formed downward and inward, substantially as herein shown and described, and for the purpose set forth.

105,158.—FAN-CASE FOR GRAIN AND SEED-SEPARATORS. — Charles L. Allen, Flat Rock, Mich., assignor to himself and William Shick, same place.

Claim.—Providing the fan-blower case A with grooves, *c*, *d*, and *d'*, and adjustable boards or slides C and D, when arranged and operating as herein described, and for the purpose set forth.

105,159.—MACHINE FOR DRESSING STONE. Alexander G. Anderson, Quincy, Ill., assignor to himself and A. W. Anderson.

Claim.—The reciprocating carriage B, combined with two revolving cutter-stocks, N O, of which the first has pointed tools P, and the last broad flat tools Q, arranged to act successively upon the stone, in the manner and for the purpose described.

105,160.—MANUFACTURE OF TOBACCO-PAPER.—Ramon Antigüedad, New York, N. Y.

Claim.—The toughened tobacco-paper herein described, formed of pure tobacco with the strength retained, with the addition of a neutral toughening material, prepared and combined in the manner and for the purposes herein set forth.

105,161.—AWL.—Samuel Babbitt, Brazil, Ind., assignor to himself and Joseph L. Hussey, same place.

Claim.—As an article of manufacture, a shoemaker's awl, consisting of needle B *a*, slide *b c*, and handle A, each constructed and relatively arranged as set forth.

105,162.—DOUBLE-ACTING FORCE-PUMP.—Allen Bagley, Ypsilanti, Mich.

Claim.—1. The combination of the valve E, provided with stem *a* and spiders *b*, and seat D, with the diaphragm F, secured to stem *d*, having sleeved upon it the disk-valve G, when the several parts are constructed substantially as described and shown, and arranged to operate as and for the purposes set forth.

2. In combination with the above-named parts, the barrels A, neck B, and discharge-pipe C, the crank-shaft J, the connecting-rods I, and the yoke H, when constructed substantially as described and shown, and arranged to operate as and for the purposes set forth.

105,163.—WATER-WHEEL.—Joseph Bâstion, Canton, N. Y.

Claim.—1. The buckets L, having curved overhanging hooks inclining forward in a line from the outer to the inner rim, to cause a reaction of the water under the hook, and to lessen the centrifugal force of the water against the outer rim, as set forth.

2. The buckets L, curved and arranged in a line, which, if extended, will always pass in front of the center of motion, combined with chutes N, constructed and arranged as shown and described.

105,164.—BIRD-CAGE.—Thomas H. Bradley, St. Louis, Mo.

Claim.—The bar, with brackets B B, and points C C, to support a swing in such a way as to facilitate its attachment to a cage, or its removal therefrom, substantially as specified.

105,165. — HORSE HAY-RAKE. — Alzirus Brown, Worcester, Mass.

Claim.—The relative arrangement of the rake-head D, the vertical piece G, horizontal arm I, connecting-bar H, treadles L M, and connections N, K, and J, as herein shown and specified.

105,166.—LATHE FOR TURNING WOOD.—John C. Brown, Washington, D. C.

Claim.—The arrangement of the pattern-wheel Y, lever *k*, collar A, bell-crank levers *g g*, links *f f*, cutter-blocks *e e*, and disk *a*, when constructed and operating in the manner and for the purpose specified.

105,167.—DAMPER.—Micajah C. Burleigh, Somersworth, N. H.

Claim.—The rotary bellx-cam G, the star H, their pivotal supports *a* I, and the arm F, as constructed and arranged with each other and the valve and seat, the whole being as and to operate in manner as set forth.

105,168.—MEDICAL COMPOUND.—Lucy J. Buttrill, Jackson, Ga.

Claim.—An improved anodyne cough-sirup, compounded of the ingredients, and prepared in the manner, substantially as herein described, and for the purposes set forth.

105,169.—APPARATUS FOR TANNING.—John Campion, Woburn Centre, Mass.

Claim.—1. The case A, perforated top B, and valved leather cover L, all constructed and relatively arranged in the casing D, as and for the purpose specified.

2. The escape-pipe E G and pump F, arranged with the case D, as shown and described.

3. The collapsible pressure-regulator H, weights I, and valve K, relatively arranged as and for the purpose specified.

105,170. — SUSPENSION GATE. — Edward Chadderdon, Howard, Mich., assignor for one-half to Albert Stineback.

Claim.—The combination, with the posts A, B, and C, of the cap H, chain F, clasp G, rod R, slide M, and pin E, substantially as and for the purpose hereinbefore set forth.

105,171.—LANTERN.—David Challinor, Birmingham, Pa.

Claim.—An elastic connection, *a*, rigid clamping or holding-piece *c*, in combination with a support, *b*, reflector *e*, and oil-cup *d*, all arranged for use substantially as set forth.

105,172. — COTTON-BALE TIE. — William Chambers, New Orleans, La.

Claim.—The combination of a cleft, C, in a cotton-bale tie or buckle, having two slots, B B', with two expanded bearing surfaces, D D', for the two ends of a metallic band, when the said bearing surfaces are produced in the manner herein described.

105,173. — PRUNING-SHEARS. — Athanasius B. Chapman, Clyde, Ohio.

Claim.—A pair of shears, when the two members A B thereof are connected to each other by a pivot, E, bolt F, slot I, and braces H G, substantially in the manner as described, and for the purpose set forth.

105,174.—MULEY-SAW HANGINGS.—Daniel Cilley, Osceola Mills, Pa.

Claim.—1. The saw-buckle A, slotted beneath the nut-recess J and plate H, for the purpose of varying the lateral range of the saw, as shown and described.

2. The combination of buckle A, key D, plates G H, and bolts I I, all relatively arranged, as and for the purpose specified.

105,175. — COFFEE-POLISHER. — Edward James Codd, Baltimore, Md.

Claim.—The arrangement, in the coffee-polisher herein shown, of the rotating-cylinder B, stationary sun-wheel F, and a series of two or more parallel shafts provided with beaters H or their equivalents, said shafts driven by the planet-wheels G, which mesh into the said sun-wheel, substantially as and for the purpose specified.

105,176. — SPAWNING-SCREEN. — Alfred S. Collins, Caledonia, N. Y.

Claim.—The use of a revolving screen, in combination with a fish-spawning box or bed, arranged to operate substantially as and for the purposes described.

105,177.—SAFETY HOISTING APPARATUS.—Charles W. Copeland, New York, N. Y.

Claim.—The application of a safety-rope, or rope

in addition to the drag-rope or motive-power, which may be connected with a brake or other means of regulating motion, substantially as described.

Also, the safety-cylinder, as described, in combination with an elevator or hoisting apparatus.

Also, a water or other fluid-cylinder as a regulator of the velocity of a moving body, whether the regulating-valve is operated by hand or automatically.

105,178, antedated June 30, 1870.—THILL-COUPLING.—Peter S. Crawford, Union, assignor to J. N. Whidden, Rockford, Ill.

Claim.—The specific device described, consisting of the clip-strap A, with ring *a*, thill-iron B with ears *b b* and projections b^1 b^1, and roller C, with depressions *c c*, the whole being combined and arranged as described, for the purpose set forth.

105,179.—CYLINDER STOVE.—John Currier and Abiel Pevey, Lowell, Mass.

Claim.—The combination of the water-heating chamber or boiler *d*, supply-tank or reservoir A, located above the said heating-chamber, so as to keep it fully filled with water, and the steam and water-circulating pipe or pipes *g n m*, open to the pressure of the atmosphere, and so as to continually and freely discharge its contents into the tank, or otherwise, substantially as and for the purpose herein specified.

105,180.—PROCESS AND APPARATUS FOR HARDENING FILES, &c.—Samuel Darling, Providence, R. I., assignor to Darling, Brown and Sharpe, same place.

Claim.—1. Properly heating the article, then immersing it in the hardening liquid, and treating two or more sides or faces thereof simultaneously to currents of such liquid driven against them at high velocity, substantially as described.

2. The combination of two or more water-driving wheels, D D′, with their cylinders B B′, and spouts *e e*, substantially as and for the purpose set forth.

105,181.—INJECTOR FOR STEAM-BOILERS.—Jean Pierre Florimond Datichy, Brooklyn, N. Y.

Claim.—1. The combination and arrangement of the supply-pipe C, air-escape I, pipe B, pipes J D, and pipe E, with the vessel A, substantially as and for the purpose specified.

2. The reservoir or vessel A, combined with the steam-pipe B and water-pipes J D E, all arranged to operate as set forth.

3. The connecting-pipe F, arranged between the pipes C and E, for the purpose of condensing the steam that may be in the pipe E, as set forth.

105,182.—APPARATUS FOR SPONGING CLOTH.—Isaac A. Davis, Philadelphia, Pa.

Claim.—The portable sponging-apparatus, consisting of the case A B and its cover C, the notched strips G G and adjustable rods H H, the water-escape opening F, and the steam-conducting pipe D, the said parts being constructed and arranged, in relation to each other and to any suitable external steam-generator, substantially as and for the purpose hereinbefore described and set forth.

105,183. — ICE-CUTTING MACHINE.—Abraham Deutschel, Cleveland, Ohio.

Claim.—The herein-described ice-cutter, consisting of the saw G, pulleys E D, driving-wheels B, guides H, and frame A, when combined and arranged to operate in the manner substantially as described, and for the purpose specified.

105,184.—MOWER AND REAPER SICKLE-SHARPENER. — Elihu Doud, Oshkosh, Wis.

Claim.—The sickle-sharpener, consisting of the stone A and shaft H, deflecting plate or board C, and rests or guides I I I I, constructed substantially as described.

105,185.—SNOW-PLOW.—Jasper N. Drake, Liberty, Mich.

Claim.—Securing a snow-plow to a truck-frame so that the plow may be reversed upon the truck-frame and operated in the opposite direction, substantially as described, shown, and set forth.

105,186.— MILLSTONE-DRESS.—William G. Dunniway and Harrison Osburn, New Cumberland, Ind.

Claim.—The leading furrows A, diagonal furrows B, and broad furrows E, combined and relatively arranged as and for the purpose described.

105,187. — KNITTING-MACHINE. — William Franz, Bucyrus, and William Pope, Crestline, Ohio.

Claim.—1. The combination, with the cylinder A, provided with the shoulder H, of the stationary guides D and E, and pivoted latches B and C, substantially as described.

2. The combination of the cam J, stationary cams K and L, automatic latches B and C, and stationary guides D and E, substantially as shown and described.

105,188.—BORING-MACHINE. — Joshua W. France, Peoria, Ill.

Claim.—1. The sliding bearings D′ D″, provided with the hooks H, springs *d*, in combination with the transverse rods *e* and catches *m* of rack G, substantially as and for the purpose set forth.

2. The arrangement of the sliding bearings D′ D″, hooks H H, springs *d d*, rods *e e*, rack G, with catches *m m*, sliding carriage E, right and left screws *f f*, winch and pinion *k*, and double augers *a a*, substantially as described.

105,189.—MACHINE FOR MAKING HORSE-SHOE-NAILS.—Peter N. Gallaer and Isaac C. Tate, New London, Conn.

Claim.—1. The combination and arrangement of the reciprocating rotary cutter and lifting-guide C, and its operative mechanism, with the anvil-die *a*, and with the planetary roller *b*, and the side dies *c c*, arranged and provided with operative mechanism, as explained.

2. The combination and arrangement of the reciprocating rotary cutter and lifter-guide C, and its operative mechanism, with the gripping-dies *d e*, the anvil-die *a*, the planetary roller *b*, and the side dies *c c*, provided with mechanism for operating them, as explained.

3. The combination and arrangement of the feed-rollers *f g*, and the gripping-dies *d e*, and their operative mechanisms, with the reciprocating rotary cutter and lifter-guide C, the anvil-die *a*, and the side dies *c c*, and planetary roller *b*, and their operative mechanisms, as set forth.

105,190.—GAS-MACHINE.—Joseph P. Gallagher, St. Louis, Mo.

Claim.—1. The carbureting-float herein described, constructed with perforated walls inclosing the main chamber for containing the purifying material, and air-tight compartments at each end, substantially as set forth.

2. In combination with the tank containing the hydrocarbon, the carbureting-float herein described, to be partially filled with charcoal and sulphate of zinc, or with charcoal alone, substantially as and for the purpose set forth.

105,191.—PESSARY.—William R. Gardner, Leonardsville, N. Y.

Claim.—Attaching the adjustable curved lip B to a stationary curved lip of similar form and construction, when combined and arranged in the manner and for the purpose substantially as herein described and set forth.

105,192.—SAD-IRON HANDLE.—Joel Gleason, Whitestone, N. Y.

Claim.—A ventilated grasp or handle, B, for sad-irons, in combination with a shield or protector, C, as and for the purposes hereinbefore described.

105,193.—WASHING-MACHINE.—Isaiah W. Graffam, New Bedford, Mass.

Claim.—1. The suspended swinging frame D, carrying the sliding rubber frame E E I, the set-screws F, and springs *e e*, substantially as and for the purpose set forth.

2. The handles G, pivoted, at one end, to extensions H of the frame D, and passing through openings in the sliding frame E, so as to leave the other end project freely beyond the rubber, for the two-fold operation of moving the rubber, and adjusting it to the inequalities of the clothes, substantially as described.

105,194. — BOILER-TUBE CLEANER. — John Green, Boston, Mass.

Claim.—The improved boiler-tube cleaner, consisting of the handle B, spring-shank C, provided with the curved scrapers D, having guard-ribs *a a*, and the anger A projecting beyond the scrapers, all as shown and described.

105,195.—BRIDGE.—Thomas Briggs Gregory, Champaign, Ill.

Claim.—The extension posts C E of a bridge, combined with the stretchers H and clamps D D′, as set forth.

105,196.—FRUIT-STRAINING APPARATUS.—Mary E. Grigsby, Putnamville, Ind.

Claim.—The arrangement of a series of sieves, A B C, of varying degrees of fineness, in connection with frame D, hooks *e*, and staples and loops *f* and *g*, as shown, for the purpose set forth.

105,197, antedated June 30, 1870.—COMBINED LATCH AND LOCK.—Theodor Hahn, New York, N. Y.

Claim.—1. The elbow-lever D, in combination with the sliding bolt B, nut C, tumbler E, and weight F, all constructed and operating substantially as described.

2. The recess *f* and slot *e*, in the elbow-lever D, in combination with the lip *h* of the tumbler, and with the weight and bolt, constructed and operating substantially as set forth.

105,198.—HORSE-DETACHING APPARATUS.—John C. Hancock, Charlestown, and Edward P. Richardson, Somerville, Mass.

Claim.—1. The combination of the lever A *a′*, tube I, rod J, plates K L, levers M, pins R, castings S, springs Q, levers N, levers T, springs W, pins U, rods V, springs X, and breeching-hooks Y, with each other and with the head-block of the forward axle, cross-bar P, thills G, and whiffletree H, substantially as herein shown and described, and for the purpose set forth.

2. The combination of the gear-wheel A′, shaft B′, clutch C′, bar D′, lever E′, brake-bar N′, gear-wheels F′ G′, shaft H′, gear-wheels J′ K′, shaft L′, and clutch M′, with each other and with the lever A and its connections, substantially as herein shown and described, and for the purpose set forth.

105,199.—ROD-COUPLING.—Francis J. Hanna, Petroleum Centre, Pa.

Claim.—Securing the socketed metallic rod-coupling sections A to the wooden rods, by means of the enlargements B of the sockets and the oval keys, all substantially as specified.

105,200.—SEEDING-MACHINE.—John D. Harrison, Middletown, Ohio.

Claim.—The geared bars B B′, journaled in frame A D C, in combination with the worm M′ and hinged drag-bars G, arranged and operating substantially as and for the purpose described.

105,201.—COMBINED HINGE AND RING FOR LOCKETS. — George Hartje, New York, N. Y.

Claim.—The combined hinge and ring C D E, constructed substantially as herein shown and described, in combination with the parts A B of a locket, as and for the purposes set forth.

105,202.—CLIP FOR HARNESS.—Joseph S. Hays, Williamsport, Pa., assignor to himself and Philip Miller, same place.

Claim.—1. A hames-clip, having a detachable loop, D, lapped upon the body C, and confined by the aid of a removable screw E passing through both, as herein specified.

2. The interlocking parts *c* and *d* on the eye or loop D, and the confining screw E, arranged as represented, relatively to each other and to the material A^1, A^2, &c., of the flexible portion of the trace, substantially as and for the purposes specified.

105,203.— FIRE-EXTINGUISHER. — Ludwig Herman, Detroit, Mich.

Claim.—1. The endless wire rope F, block G, hollow traveler H, provided with nozzle H′, the guide-frame E, and door D, in connection with the recess C and cornice B, arranged and operating substantially as and for the purposes herein set forth.

2. A fire-proof cornice, B, constructed in sections of sheet or cast metal, supported in brackets B′, and filled with non-conducting material, said cornice being provided with carrying-rollers *e* and return-tube *b*, as and for the purpose herein specified.

3. In connection with a cornice constructed substantially as described, the water-pipe I, as and for the purpose set forth.

105,204.—OSCILLATING ENGINE. — Thomas Hill, Vallejo, Cal.

Claim.—1. The slotted frame K, with its guides *m m*, moved by the eccentric E through the crank-arms H and J, substantially as herein described.

2. The yoke O, attached to the valve-stem, and operated by the arms N and *c′*, substantially as described.

3. The above-mentioned devices, when used for operating the valves by the combined oscillation of the cylinders and the action of the eccentric, substantially as described.

105,205.—GUARD FOR AX-HANDLES.—Lara B. Hoit, Cedar Falls, Iowa.

Claim.—As a new article of manufacture, the shield A, provided with the curvilinear projection *c* and apertures D, when constructed and operating as described.

105,206.—SASH-HOLDER.—Josiah Honsinger, Harrisburg, Pa., assignor to Benjamin Honsinger, same place.

Claim. — The specific arrangement of a three-cogged cam, D, within a case, C, flat spring S, lugs E, and lever L, in combination with a loose three-cogged rack, R, all arranged and operating in the manner and for the purpose specified.

105,207.—FEED-WATER HEATER FOR LOCOMOTIVES.—James S. Hooton, New Carlisle, Ind.

Claim.—The feed-water heater C, provided with alternate broad and narrow annular shelves D, openings E and F, escape-pipe G, induction-pipe H, eduction-pipe I, and drain-cock K, in connection with the smoke-stack of a locomotive-engine or portable boiler, when constructed as described, and operating as and for the purpose set forth.

105,208.—CRAB FOR HAND-HOLE PLATES.—James S. Hooton, New Carlisle, Ind.

Claim.—The construction of a hand-hole plate A, provided with a recess, *a*, as and for the purpose set forth.

105,209.—FEED-WATER FILTER.—James S. Hooton, New Carlisle, Ind.

Claim.—The case A, provided with grating B,

partition C, induction-pipe D, eduction-pipe E, strainer e, cocks F and G, and hand-holes a and b, the chambers being filled with a filtering material, and the whole arranged and operating in the manner and for the purpose specified.

105,210.—CLAPBOARD-GAUGE.—Emmet Horton, Dundee, N. Y.

Claim.—The stock, when made of the parts A and B, and the spikes C and D, when all are made and used as herein described, and for the purpose set forth.

105,211. — COTTON-HARVESTER. — Duncan Campbell Hubbard, Point Coupee Parish, La.

Claim.—The means herein described for harvesting cotton after the leaves are off the plants, by thrashing out the same, consisting of the receptacle A A' B, and wires C combined, substantially as described.

105,212.—CLASP FOR PAINT-BRUSH.—George W. Hupp, Elwood, Ind.

Claim.—The metal clasp, provided with slotted arms c, to be suspended from the handle of a brush by means of a bolt, d, substantially as herein shown and described.

105,213. — KINDLING-FAGOT.—Clement R. Jacobi, Green Point, N. Y.

Claim.—As an improved article of manufacture, kindling-fagots, made of cork shavings and coated with resinous substance, substantially as specified.

105,214. — STATION-INDICATOR. — Egbert Jamieson, Chicago, Ill.

Claim.—The rollers B B, double ratchet-wheels E E, pawls or catches G G, the levers F F, and springs H H, operating the rollers B B, and the apron or band D, the bell L, pins O O, stops or projections J J, on the wire I I, when all are constructed and arranged as herein described.

105,215.—VENTILATOR.—Henry S. Janes, Oshkosh, Wis.

Claim.—1. The ventilating-tube C, when inserted into a stove-pipe, substantially as and for the purposes set forth.

2. The regulating apparatus B, provided with a tube, B', when used in combination with the ventilating-tube C, as and for the purposes set forth.

105,216, antedated June 29, 1870.—TEMPLETS FOR PANELING-MACHINE.—Nicholas Jenkins, New York, N. Y.

Claim.—1. The clamps B', in combination with the changeable bars C C, and with means for attaching the bars at various positions upon the clamps B', so as to form various sizes of templets with the use of the same pieces, all substantially as and for the purposes herein set forth.

2. The changeable pieces G, in combination with an inclosing or main templet B E, and with means m for connecting and disconnecting, and changing the positions of the parts G within the main templet at will, as and for the purposes herein specified.

3. In combination, the sub-frames H, small changeable pieces G, and means m, adapted for ready insertion and removal within a main inclosing-frame, substantially in the manner and for the purposes herein set forth.

106,217. — WATER-CLOSET VALVULAR APPARATUS.—John Keane, New York, assignor to himself and George H. Brown, Milbrook, N. Y.

Claim.—1. In combination with an inlet-pipe, D, and outlet-pipe E, the valve C, constructed and arranged to operate within the chamber F, substantially as described, for the purpose specified.

2. The combination of the lever B, valve C, and tripping device Q O, substantially as herein shown and described.

3. The combination of the retarding cylinder H with the valve C, and lever for operating the latter, substantially as described.

4. The combination of the retarding cylinder H with the valve C, spring S, and lever B, provided with the socket T, and engaging with the tripping device Q O, each of said parts being constructed and all arranged as set forth.

105,218.—KALEIDOSCOPE.—Matthias Keller, Boston, Mass., assignor to himself, Stoughton B. Holden, and Luther L. Holden.

Claim.—The case A, provided with the kaleidoscopic reflectors D D', frames N and H, rack I, and pinion J, all arranged and operated substantially as described.

105,219.—SOLDERING-KIT.—Michael D. Kelly, Cadiz, Ky.

Claim.—The solder-kit, consisting of the bottle A and stand B, the latter provided with the revolving cover E, with receptacles or chambers for the solder, and with a circular opening for said bottle, all arranged substantially as shown and described.

105,220.—AUTOMATIC SLUICE-GATE.—Jacob Keplinger, Farmersville, Ohio.

Claim.—The combination of the gate I, float J, and lever H, connected, arranged, and operating in the sluice-way A B C D, in the manner and for the purpose substantially as described.

105,221. — FARM-FENCE. — Peter Kidney, Olmsted Falls, Ohio.

Claim.—The wedge or key G and yoke F, as arranged, in combination with the cleats D, substantially in the manner as described, and for the purpose set forth.

105,222.—FOLDING SEAT.—George W. King, Oswego, N. Y., assignor for one-third of his right to A. P. Grant.

Claim.—The combination of the center shaft or cylinder A, cap B, arms C, seat H, cap D, legs E, and adjustable thimble F, provided with projecting ends or shoulders, all constructed and arranged to operate as herein provided, and for the purpose specified.

105,223. — DRIVING-GEAR WHEEL FOR CARPET-SWEEPERS. — Alfred J. Knight, Brooklyn, N. Y.

Claim.—The rubber disks A A, spur-wheel B, and tube C, flanged at each end, combined with a carpet-sweeper, having its parts constructed and arranged as shown and described.

105,224.—FEVER AND AGUE MEDICINE.—Samuel Laighton, Newark, N. J.

Claim.—The compound for fever medicine herein described.

105,225.—CULTIVATOR.—Jonathan Lewis, Washington, D. C.

Claim.—The construction and arrangement of the plow-standards H H, beams G G', levers L, coupling-rods L', and cross-bars M, with the bangers F F', rod I, and adjusting-pins a a, all as and for the purpose specified.

105,226.—LEMON FRUIT SIRUP.—Schuyler W. Mahan, Adrian, Mich.

Claim.—The manufacture of a compound which I denominate lemon fruit sirup, composed of the several above-named ingredients, combined in the manner and proportions, and for the purposes herein set forth and described.

105,227.—RASPBERRY AND STRAWBERRY FRUIT SIRUP. — Schuyler W. Mahan, Adrian, Mich.

Claim.—The manufacture of a compound, which I call raspberry and strawberry fruit sirup, compounded of the several above-named ingredients, combined in the manner and proportions, and for the purposes herein set forth and described.

105,228.—CARRIAGE AND CAR-WHEELS AND AXLE-BOX.—James A. Maynard, Newtonville, Mass.

Claim.—An elastic packing, surrounding a carriage or other axle-box, said packing molded and vulcanized within an irregular chamber, as described, after the box is secured in place within the hub, substantially in the manner and for the purpose set forth.

Also, an axle-box, provided with projections d e, in combination with a molded and vulcanized elastic packing D, as described, and a wheel, A, provided with recesses 5 5, and having the interior of its hub made for its reception, substantially as and for the purpose set forth.

105,229. — COMBINED SEEDER, PLANTER, CULTIVATOR, AND HARROW.—Jones K. McClure, Cornersville, Miss.

Claim. — The combination of the cotton-seed dropper L, axle or shaft B, wheels C, frame A cross-bars D and E, furrowing-plows F G, and covering-plows H I J, with each other, substantially as herein shown and described, and for the purpose set forth.

105,230.—FLOOD-FENCE.—Daniel J. Miller, Indianapolis, assignor of one-half interest to Fielding Beeler, Marion county, Ind.

Claim.—The panels of the fence pivoted to the posts C, in combination with the braces E, posts D, vertical bar f, projection i, and wing h, all arranged and operating substantially as and for the purpose set forth.

105,231.—COMBINED FENDER AND FIRE-SCREEN.—Jacob Miller and William H. B. Flender, Washington, Pa.

Claim. — A combined fender and fire-screen, formed by the combination of the fender A a', pivoted end plates B b', and pivoted or hinged top plate C c', with each other, substantially as herein shown and described, and for the purpose set forth.

105,232.—WEATHER-STRIP.—William Miller, Chicopee, Mass.

Claim.—The combination, with the strips A B, of the wire springs a, studs b, and blocks c, all constructed and arranged substantially as specified.

105,233.—FRAME FOR SENSITIZING PHOTOGRAPHIC PAPER.—Luther V. Moulton, Muskegon, Mich.

Claim.—The frame A, made in two sections, B C, as herein specified, and employed for the purpose of applying solutions to photographic paper.

105,234.—FIRE-PLACE GRATE.—Emma Norman, New Orleans, La.

Claim.—The sliding grate-base, consisting of the entire bottom, when the same is provided with flanged sides and the stops b, in combination with the corresponding flanched base-bars of the grate-frame, as herein described, for the purpose set forth.

105,235.—SUCKER-ROD COUPLING.—Jacob Odell, Petroleum Centre, Pa.

Claim.—The improved sucker-rod coupling above described, consisting of internally-threaded sleeve D, combined with sections A B, threaded at their ends, one having square projection C, and the other a corresponding socket, while the former is provided, also, with wedge-shaped slot G, all as and for the purpose described.

105,236. — SHOE-STRING FASTENING. — Charles M. O'Hara, Bolivar, Tenn.

Claim.— A shoe-fastening formed of the two metal plates A B, the first forming a plane, while the latter springs away near the outer edge, and is provided with a wide notch, D, turned-up points E, and spur F, all constructed and combined for the purpose specified.

105,237.—PEN-RACK.—Mathew O'Reardon, New York, N. Y.

Claim.—1. An improved pen and pencil-holding device for attachment to an inkstand, formed by the combination of one or more short rubber tubes, B, and a rubber ring, A, with each other, substantially as herein shown and described, and for the purpose set forth.

2. The combination of the valves C with the short rubber tubes B and rubber ring A, whether said valves C be permanently or detachably secured to the said rubber tubes B, substantially as herein shown and described, and for the purpose set forth.

105,238.—APPARATUS FOR STAKING HORSE-POWERS.—Benjamin F. Osgood, Coloma, Mich.

Claim.—The swivel C, provided with eye a and loop b, in combination with the hook B and stake D, for the purpose of securing the bed A of a horse-power or equivalent purposes to the ground, as herein set forth.

105,239.—FARM-FENCE.—Thomas W. Owens, Granville, Ohio.

Claim.—The combinations of the posts A, with or without the caps G, connected together by the pieces B, transverse slots E, bottom-board C, and braces F, panels or boards D, inserted in the slots E from opposite sides of the posts A, and firmly secured thereto by means of the slots g and keys J, all constructed as herein described, for the purpose set forth.

105,240, patented in England, April 21, 1868.—MACHINE FOR TIGHTENING ROPES, &c.—Arthur Paget, Loughborough, England.

Claim.—1. A ratchet-pulley having a groove, the sides of which, when in use, shall take a bite on the rope, cord, or chain to be operated therein, in combination with a lever or levers, carrying a pawl in gear with the ratchet of the grooved pulley, arranged and operative substantially in the manner set forth.

2. The subject-matter of the foregoing claim, in combination with a fixed holding-pawl, or its equivalent, arranged with reference to the grooved ratchet-pulley, substantially as described.

3. The arrangement of cleats or apparatus for holding or making fast ropes, cords, strings, or other mechanical equivalents, wherein such cleats are held by one or more bolts or pins or other convenient fulcrum or fulcrums, in such manner as to act with shifting, variable, or differential leverage, and at variable angles upon the rope, substantially as described.

105,241.—BRICK-KILN.—Caleb A. Parker, New Orleans, La.

Claim.—Constructing brick-kilns so as to provide parallel flues, C, when the spaces between the same above the bricks to be burned are filled with a covering of two layers of bricks, laid as herein described, on which is placed a superstratum of sand, or its equivalent, for the purpose set forth.

105,242.—HARNESS-MAKERS' EDGING-TOOL. Francis M. Patterson and Henry P. Miller, Seymour, Ind.

Claim.—The angular knife A, in combination with the metallic frame B, provided with guides B', and the gauge-blocks C, provided with ribs D, when constructed and arranged as described, and for the purpose set forth.

105,243.—STEAM-GENERATOR.—Robert Patterson, Catskill, N. Y.

Claim.—1. Two or more successive steam-gener-

ators D, combined and arranged in the combustion-chamber A of a furnace, as and for the purpose described.

2. A steam-generator, D, formed of two cylindrical vessels, placed one within the other, so as to leave an annular chamber between them for the circulation of heat, and having a central chamber filled with charcoal or other absorbent, to hold the water while being vaporized, all as shown and described.

3. The combination with a furnace and combustion-chamber A B of two or more generators, D, reservoir G, water-chambers E F, and outlet-channel F', all constructed and connected as described, to successively generate, superheat, condense, and deliver the steam to a reservoir, in the manner set forth.

105,244, antedated July 1, 1870.—MACHINE FOR SHARPENING THE TEETH OF SAWS.—Harford J. Perkins, Williamsport, Pa., assignor to George S. Snyder, same place.

Claim.—1. The adjustable guide B, having rollers *e e e e e e* connected with the ratchets V V, and operating in relation to the grinding-wheel N, substantially as described and for the purposes specified.

2. The slotted post *w* and arm H, when arranged and operating in relation to the grinding-wheel N, substantially as described.

3. The adjustable double-hinge clamp D, arranged and operating in relation to the grinding-wheel N, substantially as described and for the purpose specified.

105,245.—SAD-IRON HEATER.—Ezekiel Phillips, Blackstone, Mass.

Claim.—The arrangement and combination of the base-plate F, the tube E, and the trough B, provided with the opening *d*.

Also, the combination of the base-plate F, the tube E, the perforated trough B, and the flue-plate C, the whole being constructed substantially in manner and for use, as and for the purposes as set forth.

Also, the combination and arrangement of the perforated trough B, the tube E, and the plate F, or sash and the flue-plate C with the fire-place of a cooking-range or stove, as explained.

105,246.—HOD-ELEVATOR.—Jesse Powers, Chicago, Ill.

Claim.—The endless traveling ladder *a b*, combined with a detachable hod, F, having hook *e* and shank *f* attached thereto, as and for the purpose specified.

105,247.—MANUFACTURE OF LEATHER.—William Pyle, Wilmington, Del.

Claim.—The process or method hereinbefore described of manufacturing buff leather in imitation of morocco by dyeing the leather after buffing, then applying the surface composition, and, finally graining wet and oiling, all in the order and manner set forth.

105,248.—SCAFFOLDING.—Alfred Ray and Benjamin Franklin Monson, Shelbina, Mo.

Claim.—A scaffold-support, consisting of the arm B, the clasp C, with points *c c*, in connection with the upright A, constructed and operated substantially as shown and described.

105,249.—RAKING ATTACHMENT FOR FURNACE.—John Rice, Owego, N. Y.

Claim.—1. The employment of a fulcrum or support for pokers and irons used in stirring furnace-fires, as set forth.

2. The arrangement of the sheave *c*, rod *i*, bar *n*, and eyes *e e*, when arranged in the manner and for the purpose herein set forth and described.

105,250.—SPOOL-MACHINE.—John F. C. Rider, South New Market, N. H., and Emerson P. Brownell, Providence, R. I.

Claim.—The engraved embossing-dies G and G' and compression mechanism, substantially as herein described, in combination with the sliding spindle and cutting-device of a spool-machine, as and for the purposes specified.

105,251.—DUMB-HORSE VELOCIPEDE.—Samuel D. Roberts and Montgomery Dingee, Brooklyn, N. Y.

Claim.—The bridle H H', levers I I', cords L L' with their branches M P, loops U U, and spring dog E *r r'* of a three-wheeled velocipede, all arranged and operating substantially as and for the purposes described and set forth.

105,252.—BATTERY-INSULATOR.—Orris W. Robertson, Milwaukee, Wis.

Claim.—1. A glass insulator, with body C and cap D, substantially as described.

2. Insulator C, cap D, curtain E, and projections F, substantially as described.

105,253.—FOLDING CHAIR.—Augusta M. Rodgers, Brooklyn, N. Y.

Claim.—A folding chair, consisting of seat A, slotted side pieces of back B, legs C, slotted legs D, and pivots E F, when constructed and arranged as herein described.

105,254.—REFINING SUGAR.—John Rogers and Lawrence Reid, Brooklyn, N. Y.

Claim.—1. Conducting the "blow-up" or defecating process in a vessel so constructed and operated as to boil the sirup or solution of sugar in vacuum, for the purposes set forth.

2. Treating sirups or solutions of sugar to be defecated with clear lime-water, or milk of lime, and a solution of superphosphate of lime, the whole being then subjected to the action of heat, or boiled, for the purposes described.

3. Treating sirups or solutions of sugar to be defecated with clear lime-water, or milk of lime, superphosphate of lime, and a coagulum of blood prepared in the manner described, the whole being then boiled or subjected to the action of heat, for the purposes set forth.

4. Treating sirups or solutions of sugar to be defecated before boiling with a coagulum of blood, prepared in the manner substantially as and for the purposes set forth.

5. Conducting the final separation of impurities and decoloration of the sirup or sugar solutions in a vacuum bone-black vat or filter, operated in the manner and for the purposes set forth.

6. Treating the defecated sirup or sugar solution with a solution of superphosphate of lime when used in connection with a bone-black vat or filter either with or without vacuum, whereby the operator is enabled to work the vat continuously for a number of charges without removing or reburning the black, and whereby a more thorough elimination of the lime and other impurities from the sirup, &c., is effected, as set forth.

7. The combination of the improved processes, as above described, for the purposes set forth.

105,255.—PRUNING-SHEARS.—John G. Rogers, Dowagiac, Mich.

Claim.—The shears, consisting of the blade C, with curved shank E, slot D, rod G, and lever H, and the blade B, shank, with pin L, shoulder F, and handle A, with saw J and spring K, constructed and arranged as described.

105,256.—LAMP-CHIMNEY CLEANER.—James Ryan, Brooklyn, N. Y.

Claim.—The construction of the brush A with wire and bristles, handle D, and the brush-cover of chamois-leather, or other similar material, as shown and described.

105,257.—CANDLESTICK.—Henry Ryder, New Bedford, Mass.

Claim.—The combination of the foraminous cap E with the candle-holder A, provided with a spring, as and for the purpose described.

Also, the combination of the deflector H with the foraminous cap E, and candle-holder A.

Also, the construction and arrangement of the air-conduit or tube G, surrounding the candle-holder A, with such holder and its foraminous cap E, to operate with a spring and candle, as explained.

Also, the combination of the air-tube G and deflector H with the candle-holder A and its foraminous cap E, the whole being substantially as and for the purpose or purposes as specified.

105,258.—FAUCET.—Julius Schaefer and Gustav Schock, New York, N. Y.

Claim.—The combination of the rotary disk-valve B, having a nozzle, *b*, and running in a pin, *c*, with the body A, of which the passage *o o* communicates with *o'*, pin *d* corresponding with *c*, substantially as and for the purpose hereinbefore set forth.

105,259.—COUPLING FOR TUMBLING-SHAFTS.—Silas C. Schofield, Chicago, Ill.

Claim.—1. The ring A, made with chambers or grooves S, for receiving the lugs or trunnions of the coupling-heads D and the movable blocks B, when constructed and operated substantially as and for the purposes specified.

2. The movable blocks B sliding in the grooves or chambers S, when arranged and operating substantially as and for the purposes specified.

3. The coupling-head D, when provided with the chamber *a* and slots *b*, substantially as and for the purposes specified and shown.

105,260.—RAILROAD-CAR STOVE.—John Q. C. Searle, Topeka, Kansas.

Claim.—1. The combination of a car or other vehicle, a stove, and a fuel-magazine extending to or through the top of the vehicle, for the purpose described.

2. The combination of a vehicle, a stove, and a tube, *b*, extending from the fire-pot or ash-pit through the bottom of the vehicle, and so constructed and arranged as to permit the free discharge through the same of the contents of the fire-pot.

3. A fire-pot arranged above or near the top of a casing, in combination with a fuel-magazine and with a series of external tubes or flues, arranged to conduct the products of combustion from the fire-pot outside of the said casing to the base of the stove.

4. The combination of a fire-pot, G, casing F, and outer perforated casing H, substantially as and for the purpose described.

5. The combination, with the said casings H and F, of tubes *b'*, arranged to admit air to the chamber F' between the two casings.

6. The combination, with a fire-pot and with a flue or flues for conducting the products of combustion downward from the fire-pot, of a plate, A, perforated in whole or in part, and arranged above the fire-pot, substantially as described.

7. A fuel-reservoir, perforated at its lower end, and above its junction with the stove or feeder, substantially as and for the purpose described.

8. A casing, *g*, consisting of perforated metal, and arranged above the fire-pot of a stove, for the purpose described.

9. The combination of a stove, a fuel-reservoir, a water-reservoir, and the devices described, or their equivalents, which will cause the discharge of the water on the jolting or tilting of the stove.

10. The combination of the stove, the dumping-grate, and the devices described, or their equivalents, which, on the jolting or tilting of the stove, will open the grate and discharge the contents of the fire-pot.

11. The curved grate L, arranged and operating substantially as described.

12. The combination of the curved grate L and the curved damper M, operating as specified.

13. The combination of a base-burning stove, a reservoir, and a plate, A, supporting the said reservoir.

105,261.—SAW.—Simon W. Shailer, Deep River, Conn.

Claim.—A saw, beveled as described, and provided with teeth of different lengths, A and B, when the shorter teeth are bent to range beyond the longer laterally, as and for the purposes hereinbefore described.

105,262.—CHURN.—Schuyler G. Shanks, Richmond, Ky.

Claim.—The churn-dasher herein described, consisting of central shaft A and triangular frames or beaters B B, having alternately their bases reversely placed with respect to each other, and their apices attached to the shaft A, as specified.

105,263.—ENDLESS-CHAIN HORSE-POWER LINK.—Gilbert L. Sheldon, Hartsville, Mass.

Claim.—A link for endless horse-power, having hook B, sockets C F, pin D D', and sectional gearing G, all relatively located and shaped as set forth.

105,264.—CAR-BRAKE.—Theophilus E. Sickels, Kennett's Square, Pa.

Claim.—The combination of an air-pump and an air-reservoir with a spring that applies the brakes when the air-pressure is released, substantially as described.

105,265.—HUB-BORING MACHINE.—Albert R. Silver, Salem, Ohio.

Claim.—1. In combination with a boring-shaft, having a spherical bearing, *g'*, in one of the scroll chuck-plates, and a sliding bearing in the other scroll chuck-plate, the detachable cap-ring plate *c*, ring-collar C', radial forked guide-arms D', and griping-jaws *b b'*, in the manner shown and described.

2. The ring-collar C', plate P, and removable plates P' P', constructed as described, in combination with the spherical enlargement *g'* of the nut, all substantially as set forth.

3. The nut F, provided with the spherical enlargement *g'*, substantially as described.

4. The spring bolt *r*, in combination with grooved spherical enlargement *g'* on the feed-nut, and a chuck, substantially as described.

5. In combination with the boring-shaft E, having a spherical bearing, *g'*, in one of the scroll chuck-plates, and a sliding bearing in the other scroll chuck-plate, the cap-ring A, collar D', radial forked guide-arms D, griping-jaws *a a'*, and ring-plate G, constructed with the oblong opening *n*, and scale S, slotted and centrally-perforated bearing and indicating-plate H *v*, and screw *j*, all arranged as herein shown and described.

105,266.—CARRIAGE-AXLE.—Alfred E. Smith, Bronxville, N. Y.

Claim.—1. A shoulder of an axle formed at the front part of the journal, either of an angular, concave, convex, or flat formation, in contradistinction to an axle formed or provided with a collar at the rear part of the journal, substantially as described, for the purpose set forth.

2. An axle without a shoulder or collar upon the rear part of the spindle, in combination with an axle-box having a diaphragm or ledge in the front end of the box, either of an angular, convex, concave, or flat formation, so as to prevent the said axle entering any further in the box than the shoulder at the root of the nib will allow, substantially as described.

3. An axle-nut carrying a metallic washer, when said washer is not an integral part of the nut, substantially as described, for the purpose set forth.

4. A carriage-axle so constructed that the journal part of the axle will be of a larger diameter

than the stock or square portion of the axle, without a collar at the rear end, substantially as herein shown and described, for the purpose set forth.

105,267. — MANUFACTURE OF IRON AND STEEL.—George Hand Smith, New York, N. Y.

Claim.—Charging the scraps or sponge or pig-iron in a vertical tube, (one or more,) provided with a movable bottom, and applying the heat through the walls of the tube, substantially as described, whereby the mass is heated without exposure to atmospheric air, or the gaseous products of combustion; and, as the particles become plastic, the mass is condensed by the weight of the charge, as set forth.

Also, the process, substantially as described, for deoxidising oxide ores, and, if required, carbonising the resulting metal, by charging the oxide ores or sponge with carbonaceous matter, in a vertical tube, (one or more,) having a movable bottom and a cut-off, and applying the heat through the walls of the tube or tubes, as set forth, in combination with the after treatment, to bring the condensed masses to a welding heat, substantially as described.

105,268.—PIPE-JOINT.—Hiram Smith, Norwalk, Ohio.

Claim.—The herein-described water-pipe joint, when constructed with joint B, and one or more joints, J, so as to operate conjointly, substantially in the manner as described and for the purpose set forth.

105,269, antedated June 28, 1870.—PACKING-CASE FOR PERFUMERY, &c.—Thomas P. Spencer, Jersey City, N. J.

Claim.—A packing-case for perfumery and other toilet-articles, formed by the combination of a box, A, provided with compartments B and openings D, with the cover E, provided with similar openings, arranged to operate substantially as shown and described.

105,270. — BRICK-PRESSING MACHINE.—Andrew J. Sprague, Toledo, Ohio.

Claim.—The combination of the frame A, shaft B, cams D F, mold-box E, connecting-rod G, bed H, yoke I, platen J, spider K, apron L, rollers M, and drum R, when constructed, arranged, and operating substantially as and for the purposes herein described, set forth, and shown.

105,271.—BORING-TOOL.—Thomas E. Stanley, Hazlehurst, Miss.

Claim.—The frame I, perforated ears H H, nuts L, threaded bars K, pressure screw N, spindle B, yoke Q, block R, two-rimmed wheel A C, adjustable wheel E, and bevel-gears U V, all relatively constructed and arranged on the main frame as set forth.

105,272.—ELECTRO-MAGNETIC APPARATUS FOR REGULATING VALVES AND DAMPERS. George Miller Sternberg, Fort Riley, Kansas.

Claim.—The single system of train-work, in combination with the wheels *g*, *f*, *d*″, and *d*‴, the levers *b*‴, and the lever *b*, operating in the manner and for the purpose substantially as described.

105,273. — ELECTRICAL THERMOSTAT. — George Miller Sternberg, Fort Riley, Kansas.

Claim.—1. A thermometer, constructed with a prolongation of its tube below the bulb *a*, in which is hermetically sealed the wire *c*, and with the dilation *b* and the adjustable wire *d*, substantially as and for the purpose hereinbefore set forth.

2. A thermometer, constructed with the dilations *b* and *b*′, and the hermetically sealed wires *c* and *d*, substantially as and for the purpose hereinbefore set forth.

105,274.—SUSPENSION PAPER-CLIPS.—William Stokes, New York, N. Y.

Claim.—An improved self-perforating show-card fastener and suspender-lock, consisting of the circular piece of sheet metal D, having inner part E, the slotted spring loop C, and lips B B, all constructed and adjusted together as and for the purpose specified.

106,275. — STEAM-GENERATOR.—George A. Stone, New York, N. Y.

Claim.—1. The suspending and securing in a boiler a steam-reservoir, substantially in the manner, by the means, and for the purpose described.

2. The transverse roller Y, or its equivalent, in combination with the longitudinal rollers Z, substantially as and for the purpose specified.

105,276.—HORSE-POWER.—Solomon Stoner, Canton, Ohio.

Claim.—The iron stakes Z Z Z Z, with heads *i* thereon, arranged in the staples *h* and against the sides of the side pieces G G, opposite to the direction of the propelling-power, as applied to the lever-wheel T, said side pieces G G having the lifting-notches *m* cut in their lower corners, substantially as and for the purpose specified.

105,277.—HYDRAULIC SEAL.—James H. Sutton, Honesdale, Pa.

Claim.—The sliding pipe S and elevating-rod R, as arranged in combination with the dip-pipe B, outside pipe or sheath F, and the hydraulic main A, for operating in the manner herein described.

105,278.—CAR-COUPLING.—Edward Davis Thompson, Lawrence, Kansas.

Claim.—1. The combination of the arrow-head *a* with the bars *h h* and the bumpers *t t*, constructed and arranged substantially as described, and for the purposes set forth.

2. The combination of the draw-bars *h h* with the supporting curved and inclined stirrup *i*, arranged substantially as described, and for the purposes set forth.

3. The combination of the stirrup *i* with the bumpers *t t* and the bars *h h* and heads *a a*, substantially as described, and for the purposes set forth.

4. The combination of the link or tongue *p*, constructed as described, with the arrow-head *a*, slotted as described, for the purposes set forth.

105,279.—FIRE-EXTINGUISHER.—Jacob Brill Van Dyne, Covington, Ky.

Claim.—1. The cartridge E, consisting of the box or case *b*, acid-bottles *c c*, stirrup F, shoes and stoppers *c*′ *c*′, tube *a*, and screw-plunger G, constructed and arranged as herein shown, and for the purpose described.

2. The arrangement by which the stoppers *c*′ *c*′ are retained in the throats of the acid-bottles *c*, by means of the elastic band or spring *d*, and expelled from them by the screw-plunger G, as herein shown, and for the purpose described.

105,280. — FIRE-ESCAPE. — Lorenz Wahle, Davenport, Iowa.

Claim. — 1. The inclined screw-shafts E E, geared together with the shaft D, and working the nuts G G′ in the slotted forked ends of the levers *f f*′, substantially as herein shown and described, for the purpose of extending or contracting the jointed frame F, as set forth.

2. The frame C, pivoted, at its under side, to the frame A, and provided with the bifurcated arm *l*, connected with the nut *m* on the vertical screw-shaft J, all arranged as shown and described.

3. The drum H, provided with the radial teeth or arms *i*, relatively arranged to the jointed frame F and ladder L, for the purpose specified.

105,281.—SAWING-MACHINE.—Lorenzo D. Webber, Deep River, Conn., assignor to himself and S. W. Shailer, same place.

Claim.—The combination of the slide A, provided with a straight-edge, B, with the belt-saw S.

106,282.—BRIDLE-BIT.—Benjamin F. Wheeler, Calais, Vt.

Claim.—The hollow cylinder B and spring A of the mouth-piece of the bit, the said cylinder and spring forming the mouth-piece, as aforesaid, the whole in combination as herein described, and for the purposes set forth.

105,283.—MANUFACTURE OF FERTILIZERS.—Exum Whitley, Murfreesborough, N. C., assignor to himself and Charles H. Foster, same place.

Claim.—1. A fertiliser compounded of the ashes of vegetable matters, and earth impregnated with the smoke and gases rising from the burning of such vegetable matters, substantially as set forth.

2. The process of burning vegetable matters under a covering of earth to impregnate the latter with the gaseous products of combustion rising from the former, to produce a fertiliser, substantially as set forth.

105,284.—KNEE-LEVER FOR MELODEON OR ORGAN-SWELL. — Orison C. Whitney, Meadville, Pa.

Claim.—The construction of the knee-lever H K, attached to the lever B by means of the hinge or joint S, when constructed as described, for the purposes set forth.

105,285. — COMBINED CULTIVATOR AND CORN-DRILL.—Camden L. Wilcox, Wayne township, Ohio.

Claim.—The arrangement, with a cultivator, constructed as described, of the detachable seeding apparatus, consisting of the seed-box E, agitator H′, and cylinder F, with the cups G, operating in the manner substantially as and for the purpose set forth.

105,286. — MECHANISM FOR OPERATING BOOMS OF VESSELS.—James M. Wise, Wilmington, N. C.

Claim.—1. The double ratchet-wheels R R, double pawls S S, connecting-rods T T, swinging lever U, single-armed lever V, and notched plate W, combined and operating substantially as described.

2. The drums B C D, springs N N, and crank-wheel K, combined and operating for hauling in the boom, substantially as described.

3. The drums B C D, springs N N, crank-wheel K, double ratchet-wheels R, double pawls S, and lever V, combined and operating substantially as described.

105,287.—FOLDING CARRIAGE-TOP.—Thomas H. Wood, New York, N. Y.

Claim.—1. The hinged frame B, arranged in front of the carriage-top, to fold down over the driver's seat, substantially as herein shown and described.

2. The driver's seat E, pivoted to swinging arms *b*, so that it can be applied to lock and release the hinged frame B of the carriage-top, as set forth.

105,288. — SLEEPING-CAR. — Jonah Woodruff, Philadelphia, Pa.

Claim.—1. A skeleton platform, B, when the same is hinged along its middle, so as to fold in half widths, as described, and one of its exterior sides covered so as to present an upholstered or finished panel when inserted in its appropriate recess A, substantially as and for the purposes hereinbefore set forth.

2. The detachable vertically sliding frames C C, in combination with the respective end frames *c*‴ of the seats, and with the respective sockets or staples *c*″ in the sides of the car, between the windows, as and for the purpose hereinbefore set forth.

3. The combination of the upholstered or cushioned backs and seats E E and the panel *c*′ with the floor of the car, when the said parts are hinged or articulated together, so that they can be readily folded together and opened as occasion may require, substantially as and for the purposes hereinbefore set forth.

4. The recesses G G, when constructed and arranged respectively in those portions of the floor or bottom of the car which are directly beneath each pair of abutting seats, as and for the purpose hereinbefore described and set forth.

105,289.—WATER-REGULATOR AND ALARM, William Wyatt, Nashville, Tenn.

Claim.—1. The float F and bell-crank E, arranged in combination with the sliding spring valve C, and steam-pipe A, as set forth.

2. The alarm-valve H and adjustable knob or screw *h*, in combination with the water-regulator, as specified.

105,290.—PIPE-COUPLING.—William Clare Allison, Philadelphia, Pa.

Claim.—The rods or tubes A A′, having tapering ends and tapering threads upon the same, in combination with a sleeve having tapering sockets and threads corresponding to those on the rods, as set forth.

105,291.—TIME-LOCK.—Corydon F. Atwood, Hancock, Wis., assignor to James F. Wiley and Vincent C. Price.

Claim.—1. The ring L, placed around the dial of a clock within the safe, and connected with a hand, *j*, which is moved by the hour-hand *h*, substantially as herein shown and described.

2. The combination of the safe-bolts with the levers D F, hook G, and lever M, all arranged to operate as set forth.

3. The ring L, turned by the hand of a clock, and connected with the catch-hook G, to release the same, as specified.

105,292.—WOOD PAVEMENT.—William W. Ballard, Elmira, N. Y.

Claim.—A wood pavement, formed of wedge-shaped blocks, constructed to interlock and support each other, substantially in the manner and for the purposes set forth.

105,293.—DOUGH-KNEADER.—John H. Barr and Jacob H. Smith, Roanoke, Ind.

Claim.—The beaters D *a*, adjustable bar H, and cams C, in combination with the shaft R, pinion *g*, disk M, bowl T, and spring G, when constructed and arranged to operate in the manner and for the purposes herein shown and described.

105,294. — CIRCULAR-SAW MILL.—Erasmus W. Beckett, McConnellsville, Ohio.

Claim.—The head-plate B, with a flanged top, in combination with the gib-formed slide H, roller R, and dog C, all constructed and operating substantially as and for the purpose set forth.

105,295.—GRATE-FENDER.—Samuel S. Bent, Port Chester, N. Y.

Claim.—The removable apron *e* of the fender, made to pass in beneath the grate, and support the ash-pan *c* and crown *d*, as and for the purposes set forth.

105,296.—BACK FOR FIRE-PLACE GRATE.—Samuel S. Bent, Port Chester, N. Y.

Claim.—A metal back for grates, coated with vitrified enamel, for the purposes specified, the same forming a new article of manufacture.

105,297.—FIRE-PLACE GRATE. — Samuel S. Bent, Port Chester, N. Y.

Claim.—1. The grate-frame *a*, made to sit flush, or nearly so, with the hearth, and support the swinging grate, in combination with the supporting finger *e* and pit *k*, as and for the purposes set forth.

2. The damper *p*, beneath the grate-frame *a*, and operated by an arm or rod above said frame and beneath the fender, combined with the air-inlet pipe *t* and pit *k*, as and for the purposes set forth.

105,298.—Mode of Securing Carriage-Wheels on their Axles.—Ira Bicknell, Cincinnati, Ohio.

Claim.—1. In the described combination with the recess C and the screw-threaded end B of the box, the screw-threaded collar A of the axle, for the purpose specified.

2. The groove D in the nut E, and upon the end of the axle, the plate or collar F, having the tongue formed thereon, and screw H, combined and arranged in the manner and for the purpose specified.

105,299.—Sash-Holder.—George W. Bishop, Saratoga Springs, N. Y.

Claim.—The arrangement of the latch H, spring K, and its perforated metallic case, with the dog *e* and band F, as herein described.

105,300.—Elastic Transfer Printing.—David W. Bowdoin, Salem, Mass.

Claim.—1. An elastic yielding transfer-surface or plate composed of the materials specified, or their equivalents, prepared as set forth, and used in the manner and for the purpose substantially as specified.

2. Forming a transfer-surface of an elastic yielding material, to be used for printing and decorating objects of regular or irregular outline.

3. The method of printing and transferring, by means of an elastic transfer-surface, substantially as set forth.

105,301.—Water-Wheel.—James Campbell, Rochester, N. Y.

Claim.—1. The cog-ring E, provided with the groove *m*, and offsets *m' m'*, when combined with the crank-arms *b b*, in such a manner as to set the gates in succession, one after another, as herein described.

2. The rollers *p*, caps *n*, and nuts *o*, for retaining the cog-ring in place and allowing its removal, as described.

3. The seats *i*, in the wall of the chute-chamber, concentric to the axes of the gates, when combined with the independently acting gates *g*, situated in the chutes and forming one side thereof, as herein described.

4. The combination with the spindle H, and hollow shaft G, of the key I, loose collar K, and screw-nut L, the whole so arranged as to produce a vertical adjustment of the wheel at the top of the spindle, as described.

5. The combination of the angular lips *f*, of the seats *i*, with the gates *g*, serving to produce a preponderance of water upon the front or rear end of the gates as open or closed, as described.

6. The chute-chamber B, located at a distance above the platform flange *a*, and projecting horizontally to form a dead space, *b*, beneath, as herein described.

105,302.—Saw-Mill.—Martin P. Campbell, Barrington, N. Y.

Claim.—1. The shaft C, with its pulleys D R S and clutch T, in combination with the lever E, armed rock-shaft G, bell-crank H, and carriage I, with its stops *a* and *b*, when constructed and arranged as shown and described.

2. The arrangement of the carriage I and grooved pulleys K N M J with belt O, when all the parts are constructed as set forth, and for the purpose specified.

3. The rack P, when constructed and arranged as herein shown, and for the purpose specified.

105,303.—Fence.—John Wesley Cherry, Carthage, Ill.

Claim.—The portable fence, made of separate panels, held at the ends by the triangular frame H I, having the cross-parts K L, with notches M N, and fork above the cross of H and I, all substantially as specified.

105,304.—Automatic Feeder and Indicator for Steam-Boilers.—Alfred D. Clark, Greenfield, Ohio.

Claim.—1. The combination of the vibrating vessel *e* with the oscillating pipe *d a A*, whose fulcrum is in the dome A, or other fixed part of the boiler, and which extends within the same, substantially in the manner and for the purpose described.

2. The combination of the vibrating lever B and arm *w* with the whistle-valve arm *x*, in the manner and for the purpose described.

105,305.—Gas Heater.—John E. Cone, Chicago, Ill.

Claim.—The heating-apparatus above described, consisting of the boiler A, the pipes F, G, and H, and the heater I, when constructed, arranged, and operating substantially as and for the purpose set forth.

105,306.—Cistern Influx-Regulator.—Andrew Jackson Conner, Louisville, Ky.

Claim.—1. A vibrating double spout, B, arranged centrally beneath a water-inlet pipe, C, and on a vertical support, R, so as to admit of being tipped to throw the water on either side thereof, in the manner set forth.

2. Vibrating the double spout B by means of the float E, chain F, weight I, float N, and rod O, as set forth, so that the rise of water in cylinder D will enable weight I to turn the spout toward reservoir J, while the rise of the water in said reservoir will then cause rod O to hold up the spout so as to throw the water into the waste-pipe G, all as shown and described.

105,307.—Fence.—S. Park Coon, Milwaukee, Wis., assignor to himself and David G. Power, same place.

Claim.—1. A fence composed of center piece A and pickets B, substantially as described.

2. Center piece A, pickets B, supporting pieces C, and length piece D, substantially as described.

105,308.—Hay-Loader.—Emmett Cooper, Theresa, N. Y.

Claim.—1. In a hay-loader, the two endless aprons N and G, mounted on separate frames J and C, and constructed and arranged to operate in the manner substantially as herein described.

2. In combination with the frames J and C and aprons N and G, mounted on separate running-gear, the chain P, or its equivalent, when arranged substantially as and for the purpose set forth.

3. In combination with the frames upon which the endless aprons are mounted, the bent reach P, when constructed and arranged substantially as herein described, and for the purpose set forth.

105,309.—Smoking-Pipe.—Edward Cottam, Wimbledon, England.

Claim.—The internally threaded rod *h*, carrying the movable disk *f*, with the threaded rod *e*, knob *g*, and collar *d*, the whole arranged and operating with reference to the stem *b* and vent *c*, at the upper part of the pipe-bowl *a*, as herein shown and described.

105,310.—Reservatory for Groceries, &c.—Oliver R. Cowgill, Pana, Ill.

Claim.—The reservatory herein described, consisting of the case A, with guard *e*, drawer L, and boxes B B pivoted below and in rear of the center, and provided with the bolts *s*, substantially as specified.

105,311.—Guard-Finger for Harvesters.—Addison Crosby, Westfield, N. Y.

Claim.—1. The body A of a harvester-guard finger, provided with wings or shoulders C C, and stamped or swaged from a single piece of metal, substantially as set forth.

2. The cap A' of a harvester-guard finger, stamped or swaged from a single piece of metal, substantially as set forth.

3. A harvester-guard finger, composed of the body A and cap A', made separately, as described, and combined substantially as set forth.

102,312.—Machine for Polishing Needles.—Chauncy O. Crosby, New Haven, Conn.

Claim.—1. The arrangement of the polishing-cylinder D obliquely across the table and underneath the band G, as described, for the purpose of grinding or polishing the needle throughout its entire length, as the latter is rolled along by the action of the band upon it.

2. In combination with the hopper and table, the slide *a*, covered or coated on its upper surface with leather or similar material, and constituting the bottom of the hopper, the spring plate *r*, and mechanism to impart to the slide *a* reciprocating movement, the said slide being designed to force the needles out one by one from the bottom of the hopper, by the friction of its covered surface against the needles, as set forth.

105,313.—Machine for Papering Needles.—Chauncy O. Crosby, New Haven, Conn.

Claim.—1. The cut-off *d*, in combination with the hopper D, jaws *a a*, and the follower *b*, arranged so as to operate substantially in the manner set forth.

2. The griping device *r s* and slide N, in combination with guide M' and cutters *t t*, substantially as described.

3. The combination of the slide L with its wings *f f*, slide L', and guide *i*, substantially as described.

4. The combination of the slide L with its wings *f f*, slide L', guide *i*, and lever *l*, operating together substantially as set forth.

5. The slide L, with its wings *f f*, slide L' and guide *i*, combined with the feeding device F, substantially as described.

6. In combination with the subject-matter of fifth clause, the take-up rolls G G, operating substantially as specified.

105,314.—Corn-Planter.—Thomas Dale, Russellville, Ky.

Claim.—1. The combination of the plow, the hopper, and the yoke, all these parts being constructed to operate as set forth.

2. The combination of the plow, the hopper, the yoke, and the adjustable coverer, all these parts being constructed to operate substantially as set forth.

3. The combination of the plow, the hopper, attached to the stock, the reciprocating slide, the elbow-lever, the operating-rod, and the spring, all these parts being constructed to operate substantially as set forth.

105,315.—Dust-Pan.—Francis L. Daniels, Boston, Mass.

Claim.—1. The construction of the dust-trough or receptacle in a dust-pan, with an acute-angled and outwardly-inclined spout formed at the rear and on one side of the trough, substantially in the manner shown and described.

2. A dust-pan, the body of which is composed of parts *a b c*, formed and combined as herein shown and set forth.

105,316.—Corn-Planter.—J. Addison Davis, Verona, Miss.

Claim.—1. The combination of the trench-opener, the conducting-tube, the hopper, the seed-slide, the spring, bearing against the slide, the pendulous lever, the supporting-wheel and its pins, all these parts being constructed to operate substantially as set forth.

2. The combination of the reciprocating seed-slide, the pendulous lever, and the adjusting-screw, as set forth.

3. The combination of the trench-opener and its shank, the conducting-tube, and the adjustable scraper, all these parts being constructed to operate as set forth.

105,317.—Ash-Pan for Locomotives.—Lon Hen Dee, Grand Junction, Iowa.

Claim.—In a locomotive ash-pan, the arrangement of the pivoted plates B, rods *d*, connecting-bar D, and the removable strips *c c'*, when constructed as and for the purposes herein shown and described.

105,318.—Blowing-Machine.—James Dougherty, Philadelphia, Pa.

Claim.—1. A hollow stationary cylinder, having inlet and outlet openings and cover-plates, in combination with an inner and smaller revolving cylinder, situated eccentrically as regards the outer cylinder, and carrying vanes caused to reciprocate radially by the action of plates or disks turning within the outer cylinder or casing eccentrically to the inner cylinder, substantially as described.

2. The combination of the said inner cylinder and its vanes with anti-friction disks H H, recessed to receive rollers or projections on the said vanes.

3. The vanes G, reciprocating in recesses in the inner cylinder B, and bearing against the latter through the medium of rollers *n p*, as specified.

105,319.—Treating Vitriolized Phosphates.—Alfred Duvall, Baltimore, Md.

Claim.—The process for treating or depositing vitriolized mixed phosphates, substantially as described in the foregoing specification, or any modification thereof involving the same general principles.

105,320.—Manufacture of Tools for Cutting, Grinding, and Polishing.—Asahel K. Eaton, Piermont, N. Y.

Claim.—Manufacturing tools, implements, or articles for cutting, grinding, or polishing metal, glass, ivory, bone, wood, or other hard or dense substance, of paper pulp, combined with alumina, sand, emery, peroxide of iron, or other suitable granulated substance, either separately or in combination, and worked and pressed in the desired shape, substantially as described.

105,321.—Seat for Vehicles.—William H. Elliott, Beardstown, Ill.

Claim.—1. The combination and arrangement, with the seat A, of the springs B B, arranged lengthwise of the box, as shown, blocks C D D, plates E E, and hooks *b b*, substantially as shown and specified.

2. The combination and arrangement of the seat A, intermediate strip F, blocks C D D, and springs B B, substantially as shown and described.

205,322.—Key.—Henry H. Elwell, South Norwalk, Conn.

Claim.—As an article of manufacture, a flat metal key-blank, having the spindle D cast thereon in the manner substantially as described.

105,323.—Machine for Sawing the Slot in Harvester Guard-Fingers.—Jerome Fassler, Springfield, Ohio.

Claim.—1. In combination with the circular saw and mechanism to rotate the same, the series of guard-finger holders arranged upon a table and at intervals around the periphery of the saw, and mechanism to force simultaneously all of the holders of said series, and with them the fingers held by them, up toward the edge of the saw, substantially as described.

2. In combination with the circular saw and mechanism to rotate the same, the series of guard-finger holders arranged at intervals around the periphery of said saw, and mechanism to revolve said series of holders around the saw, and simultaneously therewith to gradually force all the holders of said series toward, and the blanks held by them, severally, against the teeth of the saw, substantially as described.

3. In combination with the circular saw and mechanism to rotate the same, the series of guard-finger holders arranged upon a table and at intervals around the periphery of said saw, and mechanism to rotate said table, and to gradually force, simultaneously therewith, all of the holders of said

series, and with them the fingers held by them, up toward the edge of the saw, substantially as described.

4. The combination of the circular saw and mechanism to rotate the same, and the series of guard-finger holders, arranged at intervals around said saw, with the mechanism by means of which said guard-finger holders are first forced simultaneously toward the edge of the saw, and then successively released from the action of said mechanism, substantially as described.

5. In combination with the saw-rotating feed-table P, and the guard-finger holders, the spiral or scroll flange W, or its equivalent, as set forth.

6. In combination with the guard-finger holder U, the adjustable bar *m*, and friction-roller *k*, to regulate the depth of the cut and to reduce friction, as set forth.

7. The arrangement of gearing which communicates motion to the saw, and to the table P, substantially as described.

105,324.—POTATO-DIGGER.—Eugene Finch, Albion, N. Y.

Claim.—The potato-digger described, consisting of the frame A on wheels B B, scoop C with cutters *c c* and lever *b*, apron D, shaker E, shaft F with pinion G, pulley H, connecting-rod I, cog-wheel J, pulley K, and adjustable drilling-spout L, when the parts are arranged as described, for the purpose set forth.

105,325. — OX-YOKE. — James D. Foster, Montgomery, Ala.

Claim.—The parts B C, formed in the manner described, in combination with the chain *d*, eye-bolt *e*, and pin *g*, all arranged as and for the purpose set forth.

105,326.—COTTON-CULTIVATOR.—Luther M. Ganong, Friar's Point, Miss.

Claim.—1. The bar D, as constructed, in combination with scrapers E E or plows G G, arranged in the manner and for the purpose set forth.

2. A cultivator, consisting of slotted beam A, handles B B, standard C, bars D D', scrapers E E, plows G G, and thumb-screws *a a*, all constructed and arranged as shown and described.

105,327.—STOVE-PIPE SHELF.—Robert B. Gorton, Niantic, Conn.

Claim.—The shelves A B, secured at their inner ends by the serrated or toothed bars *a b*, and at their outer ends by the hook E, acting upon the inclined corrugated bars D D', formed by the slots *d d'*, substantially in the manner herein shown and described.

105,328. — BOTTLE-FILLING APPARATUS.—Charles Alexander Gregory, Poughkeepsie, N. Y.

Claim.—1. The tank *b*, cylinder *d*, and connecting-pipe c^2, in combination with the valve c^3, rod g^1, valve d^3, rod d^2, and lever d^1, all arranged in the manner and for the purpose described.

2. The combination of the lever d^1 and rods d^2 and g^1 with the bracket *g* and springs g^2 and A, substantially as and for the purpose specified.

3. The combination of the adjustable piston *e*, rod e^1, cap *f*, and scale f^2, all working together substantially as described.

4. The pointer f^3 and scale f^4, in combination with the piston *e*, rod e^2, set-screw e^3, and cylinder *d*, all working together in the manner and for the purpose specified.

5. The funnel-guide i^3 and guides i^2, by which the neck of the bottle is caused to enter the pipe i^3 h^4 *m*, in combination with the cylinder *d* and valve d^3, all arranged in the manner and for the purpose described.

6. The table *p*, provided with springs *q*, and fitted to slide vertically between the side pieces *a a* of the frame-work, in combination with the lifting apparatus *o* o^1 o^2 o^3, adjustable bar m^3, set-screws m^4, and slots m^1, all arranged as and for the purpose specified.

7. The combination of the table *p*, springs *q*, double eyes q^1, rods *r*, sockets r^1, cross-bar r^2, set-screws r^4, plates *s*, springs s^1, and collars s^2, substantially as described.

105,329.—MACHINE FOR SEWING BOOKS.—Luther Hall, Boston, assignor to Alfred B. Ely, Newton, Mass.

Claim.—1. An organized machine for sewing books by a continuous thread, comprising, substantially, a means of holding the paper to be sewed, a means of passing the thread down through the paper, a means of distending the thread underneath the paper, and a means of passing the thread up through the paper, when constructed and arranged to operate substantially as described.

2. The combination, in a sewing-machine, of an eye-pointed needle, a looper, and one or more hook-needles, provided with cast-offs, and operating together, substantially as and for the purposes described.

3. The cast-off, with devices for operating the same, when constructed substantially as and for the purposes set forth, the whole working in combination with the needle, in the manner described.

105,330. — SASH-BALANCE. — James C. M. Hamilton, Shaver's Creek, Pa.

Claim.—1. The eye screw-bolts *d*, in combination with the spiral screw *e*, nut *f*, and lug *e'*, of wheel *e*, constructed and arranged to operate in the manner and for the purpose described.

2. The dividing-wheel *e*, having the lugs *e'*, eye screw-bolts *d*, spring *s*, and nuts *f*, in combination with the winding-shaft C, either with or without hand-knob C', ratchet-wheel D, and pawl *h*, constructed and arranged to operate in the manner and for the purpose described.

105,331.—MASHING-MACHINE.—Arthur Harris, New York, N. Y.

Claim.—1. A mashing-machine, having a conical perforated cylinder, B, arranged within a cylindrical vessel, A, provided with a perforated hollow wall *a*, so as to leave a space between them, with downward inclining walls, substantially as herein described, for the purpose of allowing the water to be injected into and against the falling mash in opposite directions, as set forth.

2. In combination with the cylinder B, constructed and arranged as herein described, the conical cap D, mounted thereon, substantially as and for the purpose set forth.

3. The opening H, covered with glass or other transparent material, in the chute F, for the purpose of permitting the inspection of the interior during the discharge of the malt.

4. In combination with a mashing-machine, constructed as herein described, the slides I, having different sized openings for regulating the flow of the mash, as set forth.

5. The pipes E with their stop-cocks *d*, and connecting-pipes *f*, in combination with the vessel A and cylinder B, when constructed and arranged for operation substantially as herein described, and for the purpose set forth.

105,332.—CHURN-DASHER.—James M. Hill, Fairfield, Ill.

Claim.—The churn-dasher herein described, constructed with shaft A, paddles B, rotating cylinder C, and pins *c* and *v*, when arranged substantially as specified.

105,333.—APPARATUS FOR CATCHING CURCULIOS.—Marsena M. Hooton, Clinton county, assignor to himself and Mathias Stadtfeld, Chicago, Ill.

Claim.—1. A curculio-gatherer, consisting of the movable arms G, the circular supports E and F, with the fenders I attached, the shafts I, the extending and folding-cords *a* and *b*, links *g* with their check-cords h, and the receivers L, when constructed and arranged to operate substantially as herein described.

2. The combination and arrangement of a curculio-catcher and a barrow, constructed as herein described, so that the former may be tilted on the wheel of the latter, for the purpose of accommodating it to tree-heads of different heights, as set forth.

3. In combination with a curculio-gatherer, constructed substantially as described, the V-shaped vertical projection *i*, as a guide and support for a hand bumper, as set forth.

4. In combination with a curculio-gatherer, constructed substantially as described, the bumper K, when constructed with pins *j*, so as to be attached and removed, as set forth.

105,334.—REVERSIBLE KNOB-LATCH.—William A. Hopkins, New York, N. Y.

Claim.—The looking slot H, with its branch *i*, in the inner end of the latch D, in combination with the movable pin I, provided with a locking-lip, *h*, and the operating lever F, substantially as and for the purpose herein set forth.

105,335. — MACHINE FOR MAKING TUBES AND STRIPS OF INDIA RUBBER.—Burritt M. Hotchkiss, Naugatuck, Conn., assignor to Goodyear's India-rubber Glove Manufacturing Company, same place.

Claim.—1. The cylinder *a*, in combination with the screw *b*, wheel *d*, and bearing *e*, the parts being arranged as specified, so that the screw *b* can be removed endwise with facility, as set forth.

2. The removable cap *k* and die *i*, in combination with the screw *b*, cylinder *a*, and core *o*, as and for the purposes specified.

3. The die *i*, formed with a grooved interior surface, for imparting to the surface of the India rubber issuing from said die a ribbed appearance, as specified.

105,336.—WRENCH.—James J. Hull, Brooklyn, N. Y.

Claim.—An adjustable wrench, formed by the combination of the two bars A and B, double-threaded nut C, and band E, as described, and for the purpose set forth.

105,337.—PUMP.—James L. Hurlbutt, Norwalk, Ohio.

Claim.—1. The combination of the air-chamber, perforated tube h, and tube *j*, arranged and operating substantially as described.

2. The improved pump herein described, having its essential features, viz., the submerged chest B, cylinder C, plunger D, and lever F, the air-chamber H, and tubes *j* h, and the hand-lever and connecting-rod G *g*, all constructed and arranged substantially as described, with the stock A A', and operating as set forth.

105,338.—TREATING AND MOLDING PYROXYLINE.—John W. Hyatt, Jr., and Isaiah S. Hyatt, Albany, N. Y.

Claim.—1. Grinding pyroxyline into a pulp, as and for the purpose described.

2. The use of finely comminuted camphor-gum mixed with pyroxyline-pulp, and rendered a solvent thereof by the application of heat, substantially as described.

3. In conjunction with such use of camphor-gum, the employment of pressure and continuing the same until the mold and contents are cooled, substantially as described.

105,339.—LANTERN.—John H. Irwin, New York, N. Y.

Claim.—1. The globe E, constructed at its upper end with a shoulder, M, and neck, N, as and for the purpose set forth.

2. The globe E, constructed at its upper end as described, and at its lower end so as to surround the oil-pot, and rest upon the bottom plate A of the guard-frame, in the manner set forth.

3. The lantern-frame, consisting of the base-plate A, with ridges L L, guards B B, and top-plate C, arranged and united as described.

4. The combination of the hinged cover F, retaining spring collar H, and globe E, as set forth.

5. The arrangement of the globe E, with its upper end fashioned as described, the hinged cover F, provided with spring H, catch G, and bail or handle I, attached to the frame, as set forth.

105,340.—FUR COLLAR.—John H. Kappelhoff and Samuel Rauh, New York, N. Y.

Claim.—1. A fur collar, provided, at the junction between its back-flap and breast-flaps, with incisions *c*, as shown and described.

2. The protecting-flap *d*, in combination with the open breast-collar A, as set forth.

105,341. — DOUBLE-GRIPPING FLANGED DRUMS, PULLEYS, AND WHEELS. — William Kelsey, London, England, assignor for one-half his right to Henry Augustus Clark, Boston, Mass.

Claim.—1. Drums, pulleys, or wheels, having a loose internal wedge-shaped ring inserted between two loose flanges or disks, in the manner and for the purposes hereinbefore described.

2. Drums, pulleys, or wheels, having a loose internal wedge-shaped ring inserted between two flanges or disks, one of which is loose, and the other keyed or securely fastened to the shaft, in the manner and for the purposes hereinbefore described.

3. Drums, pulleys, or wheels, having an internal wedge-shaped ring keyed to the shaft between two loose flanges or disks, in the manner and for the purposes hereinbefore described.

4. Drums, pulleys, or wheels, having an internal wedge-shaped ring securely fastened to or cast upon one of the flanges or disks, either this flange or disk to which the wedge-ring is attached, or the other one to which it is not attached, being securely keyed to the shaft, in the manner and for the purposes hereinbefore described.

5. Drums, pulleys, or wheels, constructed as hereinbefore described, to be used in connection with wire or other ropes, bands, chains, bars, rods, or rails, for the purpose of transmitting power, as set forth.

6. The combination of a clip-pulley, constructed as hereinbefore described, with one or more wheels, having one or more properly formed flanges, the whole constituting an improved system of frictional gearing.

7. The above-described mechanism, arranged so as to be applicable to railroad-engine or car-wheels, in the manner and for the purposes set forth.

105,342.—PRESERVING EGGS.—John Knapp, Prattsburg, N. Y.

Claim.—The process of preserving eggs, herein described, the same consisting in placing the eggs in a vessel, and covering them with a dry powdered sulphate of lime, as described.

105,343. — HARVESTER. — Salem T. Lamb and William N. Whiteley, Springfield, Ohio.

Claim.—1. In combination with a circular sweeping rake and the internal gear-wheel V, the oscillating and vibrating frame T', connected with the rake-arm X and axis S' by the box R', substantially as shown and described.

2. In combination with the wheel V, which drives the harvester-rake, the ratchet *r'*, in connection with the stop-pawl S', fixed upon the frame for the purpose of preventing a backward movement of the rake, as described.

3. The plate J, which supports the master-wheel Q, in combination with the plate F and spring-latch for retaining said plate at any point desired, when these parts are constructed and united in the manner described.

4. The adjustable socket *r* and sleeve *s*, in combination with the adjusting-rod *q* and beam *n*, and the adjustable stirrup *v*, for the purpose set forth.

5. The master-wheel pinion-shifter *g*, arranged

to work through the hub of the circular plate F, substantially as shown and described.

105,344. — THRASHING-MACHINE. — George W. Lee, Homeworth, assignor to himself and C. Aultman, Canton, Ohio.

Claim.—1 In combination with the grooved concave sections D, the removable teeth c, when constructed as described, and arranged to operate relatively to the thrashing-cylinder, substantially as shown.

2. In combination with the grooved concave sections D, and removable teeth c, the flange d, and bar d', substantially as and for the purpose described.

105,345. — SAW-TEETH.—Caleb V. Littlepage, Austin, Texas.

Claim.—The planing-tooth for saws, provided with the beveled or rounded side or sides at the forward end a of the extension guard, substantially as and for the purpose described.

105,346.—CAN-OPENER.—William W. Lyman, Meriden, Conn.

Claim.—The handle A, provided at one end with the point a, and constructed so as to form a pivot, as described, and having combined therewith a rotary cutter, d, with its bearing c, the whole constructed and operating substantially as described.

105,347. — COFFEE-BOILER. — Edward B. Manning, Middletown, Conn., assignor to Manning, Bowman & Co., same place.

Claim.—As an article of manufacture, the vessel B, constructed from a single piece of metal, so as to be applied to the pot, and form a chamber beneath and around its base, substantially in the manner described.

105,348.—METALLIC CARTRIDGE. — Edwin Martin, Springfield, Mass.

Claim.—1. The metallic perforated base m, having the nipple e thereon, and one or more annular grooves, f, when secured within the recess r at the head of the cartridge-shell, as described.

2. The re-enforcement of graphite, pressed firmly in at the interior of the head of the cartridge-shell, for the purpose and in the manner substantially as described.

105,349.—SAW.—Gottlieb Maulick, Trenton, N. J.

Claim.—The combination of the forked tooth B, tapering projection on the saw-plate A, and spring E, all constructed and arranged substantially as described.

105,350. — GAS-RETORT. — Edwin D. McCracken, New York, N. Y., assignor to himself, Henry J. Newton, Henry B. Kirkland, and Joseph R. Husson, same place.

Claim.—The jacket B, covering the top, sides, and rear end of the retort, and communicating with the interior or body thereof, by means of an opening, a, arranged as herein described.

105,351.—MANUFACTURE OF ILLUMINATING-GAS.—Edwin D. McCracken, New York, N. Y., assignor to himself, Henry J. Newton, Henry B. Kirkland, and Joseph R. Husson, same place.

Claim.—1. The introduction or re-introduction of tar and condensed products into the retort, along and through the same pipe or channel with superheated steam employed to aid in its decomposition, substantially as herein described.

2. A chamber or vessel, E, arranged between and in communication with the hydraulic main and the rear part of the retort, substantially as herein described, whereby provision is made for the return or flow of the tar and condensed products from the hydraulic main to the retort.

3. The combination, with the chamber or vessel E above mentioned, of the superheated-steam pipe connecting with such vessel, substantially as herein described.

105,352.— CASK-GAUGING INSTRUMENT. — Edwin R. McKean, Nashville, Tenn.

Claim.—1. An instrument for gauging, in which is combined the straight rod, calipers, head-rod, bung-rod, and out-stick, substantially as shown and described.

2. The relative arrangement of the bung-rod, scale, and slide C, so that the measurement can be read without moving the instrument from the cask.

3. The caliper-slides B and C, provided with the arms D, or their equivalents, and with the lips r and m, in combination with an ordinary straight rod, A, so that, without any additional parts, the length, head-diameter, and bung-diameter of the cask may be taken.

4. The lips or projections o on the slides B and C, for the purpose of resting on the cask and keeping the rod in a level position.

105,353.—PEGGING-JACK.—David Mead and Ezra W. Watson, Danversport, Mass.

Claim.—The cushion B, composed of rubber, or similar elastic material, and made of a form to adapt it to fit snugly upon the toe-piece of a pegging-jack, substantially as described.

105,354. — PREPARING PAPER PULP FOR PACKING AND TRANSPORTATION.—William H. Merrick, Philadelphia, Pa.

Claim.—The draining or drying of paper pulp by subjecting it, while mixed with, and while the fibres are held in a subdivided state in suspension in water, to the action of a centrifugal machine, as set forth.

105,355.—APPLYING MEASUREMENT TO AND LAYING OUT GARMENTS.—Jonathan J. Miller, McAlevy's Fort, Pa.

Claim.—The lined, perforated, and numbered patterns, made substantially as hereinbefore set forth.

105,356.—ENVELOPE-OPENER.—Lebbeus A. Miller, Sewickleyville, Pa.

Claim.—The guide-plate g, in combination with side springs e e and blade c, arranged in a case, d, substantially as described.

105,357.—RAILWAY SPLICE AND NUT-LOCK. John Miner and Silas Merrick, New Brighton, Pa.

Claim.—The fish-plate herein described, having the raised portion or ledge z, and the beveled edge a, on opposite sides of the bolt-holes, as and for the purposes specified.

105,358.—CULTIVATOR.—Joseph B. Moody, Louisville, Ky.

Claim.—1. The arrangement of the bars G H v and w, arms D, handles B, beam A, and plows R, when the several parts are constructed as and for the purpose specified.

2. In a cultivator, the arrangement of the plates P and d, and clevis w, when constructed as shown and described.

105,359.—STONE-SAWING MACHINE.—George Morgan, Brooklyn, N. Y.

Claim.—1. The combination of the adjustable prop O with the pawl K, the revolving wrist-pin or connection d, and the ratchet-wheel N, essentially as and for the purpose herein set forth.

2. The combination of the sliding worm-wheel J, the screws I F, the worm-wheel E, the shaft G, the bevel-wheel S, and the reversing bevel-wheels Q Q', substantially as shown and described.

105,360.—FAUCET.—William Morgenstern, New York, N. Y.

Claim.—The eccentric wrist-pin e on the rotating plug B, and shoulder h above the spout a of a faucet, in combination with a rod, d, extending throughout the entire length of the tubular shank b, the valve c and valve-seat f, when arranged and operating substantially as described.

105,361. — MATERIAL FOR PACKING AND BEARING. — Eliza Dexter Murfey, New York, N. Y.

Claim.—1. A packing or bearing, consisting of a sheet of paper, or its equivalent, having a flocked surface, prepared as described, and impregnated with lubricating material.

2. The said sheet, prepared as described, and condensed under pressure.

3. A packing or bearing, consisting of a sheet, flocked as described, saturated with rubber, or its equivalent, and having a lubricating composition applied to and compressed on the surface of the same, as set forth.

4. The said sheet, prepared and perforated as described.

5. The said packing or bearing material, applied to a box or bearing, and polished as set forth.

6. The combination of the said packing or bearing and a layer of felt, or its equivalent, arranged beneath the same, as specified.

105,362.—DASH-RAIL FOR CARRIAGES.—Baxter B. Noyes and Oscar G. Stratton, Greenfield, Mass.

Claim.—The herein-described dash-rail for carriages, consisting of the rod A and the post B, constructed and united in the manner described, the whole constituting a new article of manufacture.

105,363. — BOBBIN-WINDER FOR SEWING-MACHINES. — Charles H. Pulmer, New York, N. Y.

Claim.—1. The combination, with the movable frame C and disk B, of the pressure-lever D, spring P, and cam trip-lever E, all constructed substantially as described, and operating to bring the wheel H into contact with the driving-wheel of a sewing-machine for winding, and to release them from contact with each other when the bobbin is full.

2. The combination with the movable frame C and disk B, of the adjusting set-screw V, which regulates the extent of horizontal rotary motion of the frame C, as described.

105,364.—DITCHING-MACHINE.—Joseph A. Parsons, Cleveland, Ohio.

Claim.—1. The excavator-wheel G, provided with flanges K, with the channel L, with the ears r, constructed substantially as described and shown, and arranged to operate as and for the purpose set forth.

2. The pivoted excavator N, provided with the lever O, constructed substantially as described and shown, and arranged to operate as and for the purpose set forth.

3. In combination with the excavator N, the adjustable plowshare Q, constructed substantially as described and shown, and arranged to operate as and for the purpose set forth.

4. In combination with the excavator N, the adjustable colter R, constructed substantially as described and shown, and arranged to operate as and for the purpose set forth.

5. The frame M, provided with the shield s and rib w, constructed substantially as described and shown, and arranged to operate as and for the purpose set forth.

6. In combination with the frame M, provided with the shield s and rib w, the slotted stud t, in connection with a suitable bolt, and the corresponding serrations of the offset plate s', and of the sides of the frame M, constructed as described, and arranged as and for the purpose set forth.

7. The combination of the excavator-wheel G and the adjustable frame M, provided with the flanges K, channel L, and ears r, constructed substantially as described and shown, and arranged as and for the purpose set forth.

8. The arrangement of the adjustable trimming-wheel S, rotating upon a proper slotted standard, constructed substantially as described and shown, and as and for the purposes set forth.

9. The arrangement of the adjustable trimming-colter P, constructed substantially as described and shown, and as and for the purposes set forth.

10. The combination of the excavator N with the trimming-wheel S, when constructed and arranged to operate as and for the purpose set forth.

11. The combination of the excavator N with the trimming-colter P, when constructed as described, and arranged to operate as and for the purpose set forth.

12. The arrangement of the axle A, the yoke a, and the standard f, when constructed substantially as described and shown, and as and for the purposes set forth.

13. The combination of the excavator-wheel G, the shaft c, the frame D, and the yokes E and F, when constructed as described and shown, and arranged to operate as and for the purposes set forth.

14. The arrangement of the traction-wheels B, the axle A, the yokes a and C, and the braces b, c, and d, when constructed as described, and as and for the purpose set forth.

15. The devices by which the draft is adjusted, consisting of the wings j and n, provided with holes about their rims, the bolts k and o, the clevis H, the straps m, and a proper tongue, J, when constructed and arranged as described and shown.

105,365.—CORN-PLANTER.—James M. Piper, Harrison City, Pa.

Claim.—1. The arrangement of the pulverizing-wheels Z, jointed frame A, vertical arches B, slotted seat-rest P, dropper-wheels C', crank c, slotted plate D, adjustable hoes L, furrowing-shoes H, provided with tongue-valves e and scattering-cones K, as and for the purposes specified.

2. The slotted plate D, the seed-dropper C', and furrower H, having tongue-valve e and scattering-cone K, when constructed and arranged to operate as and for the purposes specified.

105,366.—FARM-GATE.—John Pool, Elizabeth City, N. C.

Claim.—1. The hinged beam B, carrying the swinging-gate, substantially as and for the purpose described.

2. The latch N, so constructed that it may be operated by the hand-lever S, or the wheel-lever X, substantially as and for the purpose described.

3. The cross-bars V, levers U, levers W, and levers X, combined and operating with the latch N, substantially as and for the purpose described.

105,367. — GRAIN-BIN. — Fitch Raymond, Cleveland, Ohio, assignor for one-half to A. Miller, same place.

Claim.—In combination with the grain-bin, an air-chamber or cavity, constructed substantially as described, and arranged within or upon the walls, sides, or bottom of said bin, and provided with coverings of wire-gauze, perforated metal, or equivalents, and air-conduits, operating conjointly as and for the purpose hereinbefore described.

105,368. — CORPSE-PRESERVING CASE.—Alfred Graham Reed, Philadelphia, Pa.

Claim.—1. The casket A and its detachable top B, in combination with the two detachable boxes D D, curved at their lower ends, as described, and secured to the cover, so as to project below the same into the case, and so that they may be detached separately, by withdrawing them through the cover, all as specified.

2. The cover B, its flanges s s, and detachable boxes D D, in combination with blocks F F, for the purpose described.

105,369.—Burglar-Alarm.—William Reynolds, Manchester, N. H.

Claim.—The combination and arrangement of the post *d*, detached rod *f*, springs *g*, or their equivalents, and arm or rod *i*, with its operative parts, when constructed and operating substantially as shown and described.

105,370.—Reciprocating Saw-Mill.—Edward Rhodes, Philadelphia, Pa., assignor to himself and Henry Disston & Son, same place.

Claim.—The frame B, with its groove, adapted for the reception of the lower edge of a detachable saw-frame, E, having, at the upper end, projections *b b*, fitting slots in the said frame B, as specified.

105,371. — Railway-Track. — Stephen M. Richards, St. Louis, Mo., assignor to himself and Edgar R. Moffatt, same place.

Claim.—1. The ties A, mortises *a*, and rubber cushions B, combined with the steel spring C, substantially as set forth.

2. The steel spring C, fixed chair-piece D, and adjustable piece F, combined with the rail E, substantially as set forth.

105,372.—Wrench.—Jeremiah F. Ronan, Jr., Boston, Mass.

Claim.—The adjustable wrench herein described, consisting of the parts A and B, constructed, respectively, with the jaws A^1 A^2 and B^1 B^2, and the adjusting screw D, all arranged relatively to each other, substantially as set forth.

105,373. — Manufacture of Brushes.—Charles F. Ruset, Brooklyn, N. Y.

Claim. — The sectionally-constructed block or mold-bottom, having perforations *e e* through it, and made up of strips B B, arranged to intersect said perforations diametrically, in combination with the surrounding body of the mold, constructed to receive a follower, C, within it, substantially as specified.

105,374.—Furniture-Caster.—Joseph B. Sargent, New Haven, Conn.

Claim.—In furniture-casters, the yoke and socket constructed and combined with projections and recesses, substantially as described, to set the wheel in different fixed relative positions.

105,375. — Clothes-Wringer. — Louis Shmotzer, Chicago, Ill.

Claim.—A clothes-wringer, consisting of the stationary arms or frame A A, with the arms C C hinged thereto, independently of each other, at their rear ends, and having mounted therein, in front of their hinged ends, the rollers B and D, with elastics E about their free ends, the whole constructed and arranged to operate substantially as herein described.

105,376.—Pencil Attachment for Compass.—Charles Schott, Nashville, Tenn., assignor to himself and James H. Bruce, same place.

Claim.—An adjustable holder, composed of sectional elastic loops *c* and *d* and set-screw or pivot *f*, constructed substantially as described and for the purpose set forth.

105,377.—Coffin.—Isaac C. Shuler, Amsterdam, N. Y.

Claim.—As an article of manufacture, a coffin with imitation panels formed by metallic beading, as described.

105,378.—Carbureting Apparatus.—Warren A. Simonds, Boston, assignor to Joel M. Holden, Newton, Mass.

Claim.—1. Tank T, subdivided, by partitions *a* and *b*, into cells, such cells being connected by U-tubes, *c*, and provided with a filling and cleaning-tube, *f*, when such tank is buried in the earth at a distance from the building to be lighted, and below the reach of frost, substantially as and for the purpose described.

2. The arrangement of inlet-tube Q, a long pipe interposed between pump P and tank T, buried in the ground below the reach of frost, substantially as and for the purpose described.

3. The arrangement of drying-chamber N, filled with hygroscopic substance, between pump P and tank T, substantially as and for the purpose described.

105,379. — Liquid-Meter. — J. Plummer Smith, Buffalo, N. Y., assignor to himself and Henry Chandler, same place.

Claim.—1. The aperture *h'* and oscillating valve I, combined with the valve E, and actuated thereby through the jointed connection M L, or its equivalent, substantially as hereinbefore set forth.

2. The cam *s* and bearing *w'*, arranged and operating with the measuring-wheel Q, as and for the purpose hereinbefore set forth.

105,380, antedated January 26, 1870.—Method of Producing Price-current Sheets.—William Smith and Hiram D. Rogers, Cincinnati, Ohio, assignors to Hiram D. Rogers.

Claim.—As an improved process for producing price-current and analogous statements in manifold, the use of carbonized paper for producing the transient matter in connection with permanent printed matter, prepared in tabular form with reference to the said transient matter, all as hereinbefore explained.

105,381.—Apparatus for Distilling and Evaporating Extracts, Saline Solutions, &c.—Thomas Steers, Jr., Richmond, Va., assignor to John E. Mulford, same place.

Claim.—1. The apparatus herein described, having evaporator A, receiver F, condenser H, pipes E G A' A' K and Z, pumps B, worms C, suction-pipes *n*, jet *o*, shaft T, and rake L, when constructed and arranged substantially as and for the purpose specified.

2. The copper crown U, in combination with the receiver F, bridge *u*, water-cock W, and flanch *e*, when constructed and arranged substantially as and for the purpose described.

3. The suction-pipes *n*, when arranged in the dome of an evaporator, as described, and combined with the jet-pipe *o*, as and for the purpose specified.

105,382.—Press for Perforating Shoe-Tips.—Edwin B. Stimpson, New York, N. Y.

Claim.—The combination of the steel plate G with the flange C' of the plunger, and with the punch-holder E and its punches *e*, essentially as and for the purpose herein set forth.

105,383. — Permutation Lock.—William Streeter, Rochester, N. Y.

Claim.—The combination of the spring pins D, or equivalent, with the indented surface of the washers or other intermediate stationary bodies between the wheels, as described.

105,384.—Stove-Grate.—William Teamer, Evansville, Ind.

Claim.—1. The revolving grate or fire-basket H, arranged within a stove or range adjacent to the oven, so as to radiate heat toward the same, as described.

2. The combination of the revolving fire-box H, the oven F, upper flue *a*, and lower flue *b*, for the purpose specified.

3. The said fire-basket projecting beyond the front plate B, in combination with doors *x y*, arranged as described.

105,385.—Double-Tweer Forge-Fire.—George Thomas and William W. McLanahan, Milesburg, Pa.

Claim.—1. The improved double-tweer forge-fire herein described, having a level bottom, *g*, and the side plates B beveled at *c*, as and for the purposes specified.

2. The perpendicular side plate B, beveled at its upper and inner corner *c*, substantially in the manner and for the purposes specified.

105,386. — Seeding-Machine. — John H. Thomas and Phineas P. Mast, Springfield, Ohio.

Claim.—1. The curved spouts E, attached to the hopper-bottom, or to the seed-cups or shaft of a grain-drill, substantially as described.

2. The curved spouts E, so arranged as to receive the grain directly from the feeders or cups I, and scatter it broadcast in front of or between the drill-hoes, substantially as described.

105,387.—Securing Drill and Cultivator-Teeth.—John H. Thomas and Phineas P. Mast, Springfield, Ohio.

Claim.—The drill or cultivator-tooth A, having the groove *b* formed in its shank, for the reception of a pin, C, to secure it in place, substantially as described.

105,388. — Breech-loading Fire-Arm.—F. Alexander Thuer, East Hartford, assignor to the Colt's Patent Fire Arms Manufacturing Company, Hartford, Conn.

Claim.—The combination of the swinging barrel *a*, sliding spring ejector *m*, and the sliding bolt *u*, arranged and operating substantially in the manner and for the purpose specified.

105,389.—Seeding-Machine.—Don C. Turner, Madison, Wis.

Claim.—1. The sliding bottom D, provided with holes corresponding with those formed in the hopper B, and placed beneath said hopper in such a manner that, when moved toward the front of the machine, the seed from the hopper shall drop through the holes into the drill-spouts, and, when moved backward, shall fall directly in front of said spouts, substantially as herein shown and described.

2. In combination with the sliding perforated frame D, the broadcast spouts, plates, or guides, adapted to slide with the frame D, and constructed as herein shown and described, for the purpose specified.

3. In combination with the hopper B and frame A of the machine, the sliding perforated frame D, and sliding broadcast spouts, plates, or guides, constructed as herein shown and described, for the purpose specified.

105,390.—Manufacture of Vinegar and Acidifying Liquids.—Reuben D. Turner, New York, N. Y.

Claim.—1. The combination of the conductor I, scatterer J, and reverse conical disks K L, constructed and arranged within the receiver A, for operation in connection with the spray-tubes H, substantially as specified.

2. The combination of the heater N, and air-distributer M, with the reverse conical disks K L, scatterer J, conductor I, and spray-tubes H, within the receiver A, essentially as shown and described.

105,391.—Stone-channeling Machine.—George J. Wardwell, Rutland, Vt.

Claim.—1. A bifurcated or compound lever, the arms of which are suitably held together, and which is pivoted to and supported by the frame of the carriage, and connected, at its free ends, to the driving-power and gang of chisels, substantially as described.

2. Springs *r r'*, applied to the bifurcated lever, so as to operate substantially as described.

3. An adjusting clamp, applied to the compound lever, for connecting together the two arms thereof, and also admitting the adjustment of the springs *r r'*, substantially as described.

4. The swivel-stirrup *t*, applied to the wrist-pin *p*, as a means of connection between one of the arms of the compound lever and the said wrist-pin, substantially as described.

5. In a stone-channeling or cutting-machine, a lever-connection between the crank-shaft or face-plate and the cutters, when the lever is so connected to the crank-shaft, or to the face-plate, as to produce a variable up-and-down movement of the cutters, substantially as described.

105,392.—Grinding Apparatus.—William L. Washburn, New York, N. Y.

Claim.—1. The adjustable rest, consisting of the part E, provided with the V-shaped groove and slot, and having the part D hinged thereto by the set-screw *b*, all as herein described.

2. The spring-arm *a*, when constructed and arranged substantially as described, for holding the sponge C, as set forth.

105,393. — Stove-Door. — Elijah Weston, Buffalo, N. Y.

Claim.—The employment, in stoves and other heating apparatus, of the air-induction chamber, consisting of chamber *l*, in combination with the wire-gauze distributer *k*, and graduating damper *h*, substantially as set forth.

105,394.—Harvester.—William N. Whiteley, Springfield, Ohio.

Claim.—1. A harvester main frame, E, of one piece of wrought metal, in the form and manner substantially as shown, so as to surround the main wheel and connect with the cutting apparatus, as described.

2. The axle L, constructed and secured to the main frame E, substantially in the manner shown and for the purpose set forth.

3. A harvester main frame, E, constructed of one piece of wrought metal, substantially in the form shown and described, in connection with the arm A' A' of the tongue-frame, arranged outside of said main frame, and jointed thereto at points coincident with the axis of the main driving-wheel, as set forth.

4. The axle L, constructed to permit the long crank-shaft Q to pass the outer side of the wheel M, between said wheel and the outer support of said axle, in a line which will secure the intersection of the axes of said shaft and axle, substantially as set forth.

5. The finger-bar B, extending across the rear end of the main frame, and pivoted thereto by means of the long joint-rod F and sleeve F^w, substantially in the manner and for the purpose shown.

6. The raking mechanism of a harvester, located upon the finger-bar B, pivoted as described, in connection with a rigid controlling lever, J, whereby the points of the fingers may be depressed at the will of the attendant, without disturbing the proper relative positions of the cutting apparatus and rake.

105,395.—Harvester.—William N. Whiteley, Springfield, Ohio.

Claim.—1. A harvester-frame, constructed substantially as described, and combined with a continuous axle, which extends beneath said frame, and rests in the hubs of the main driving and grain-wheels, substantially as set forth.

2. The removable platforms I and *i*, arranged, in reference to the continuous axle A, substantially as described.

3. A tongue-joint, formed by the frame-pieces F K and shoe-lug E, arranged as described.

4. The reel *j*, rake *k*, and gather-board *a'*, moved in conjunction by means of a chain-wheel and bevel-gear wheel upon a sleeve, T, substantially as described.

5. In combination with the clutch-rod *b'*, the lever N' and P', constructed and operating substantially as described.

6. The rake-head *k* and arms *l l*, jointed to the arm *j'*, combined and arranged with the rod *m*, cranks *n n'*, and cam *p*, so that the rake will be driven out beyond the circumference of the reel, to discharge the gavel from the principal platform, and returned within the circumference of the reel, to act as a reeling beater and rake, substantially as described.

7. The crank-shaft *d'*, slotted pitman *b'*, and vibrating gather-board *a'*, arranged to operate substantially as described.

105,396.—HARVESTER-DROPPER.—William N. Whiteley, Springfield, Ohio.

Claim.—The lifting-standard A, constructed as described, forming a part of the hinge B, and a support for the inclined slat L, as set forth.

105,397.—FEED-WATER HEATER FOR STEAM-BOILERS.—Daniel Whitlock, Newark, N. J.

Claim.—1. The bed or base-plate A A' of steam-boiler, when said base-plate is made with water-space G, either with or without the partition H and supports *a a*, and having apertures for water-pipes *b* and *c*, flanges B B', which form the support for the outside jacket F, and fire-box D, lugs or flange C that support boiler E, and thereby forming the annular flues K and L, in the manner and for the purpose described.

2. The bed-plates of steam-boilers, when attached to the boiler E, boiler-jacket F, and fire-box D, in the manner above described, so that the products of combustion shall pass down flue L and impinge upon the top A' of the bed-plate, and rise in flue K, thereby heating the feed-water in space G, as herein described.

105,398.—MACHINE FOR SEAMING SHEET-METAL CANS.—William A. Wicks, Baltimore, Md.

Claim.—1. The jaws E, soldering-brush L, and roller S, when arranged, constructed, and operating as herein described, and for the purposes set forth.

2. The spring jaws E, side lever H, and treadle K, combined and operating as herein described.

3. The combination of the brush L, roller S, rack R, pivoted lever M, with spring semicircular toothed wheel U, when constructed, arranged, and operating as herein described and for the purposes set forth.

105,399.—HARVESTER.—Caleb W. Witt and Bennett F. Witt, Indianapolis, Ind., assignors to Bennett F. Witt.

Claim.—1. The arrangement of the chains C, the inclined strips G, chains D, and the clearers H in a harvester, substantially as described.

2. The chains D, provided with fingers *e*, arranged to pass between the chains C, and also between the strips G, as shown, for the purpose of insuring the lifting of the grain from the platform, as set forth.

105,400.—SHUTTER-WORKER.—Hermann Wolff, Milwaukee, Wis.

Claim.—Revolving pintle D, pieces E and F, in combination with crank G, and crank-pin I, substantially as described.

105,401.—PUMP.—Henry M. Wyeth, Newark, Ohio.

Claim.—The cylinder A, boxes *a*, rods *b c*, lever *d*, cap *e*, packing *f*, spout *h*, pipe *h*, and plug *i*, all combined and arranged to operate substantially as described.

105,402.—TUCK-MARKER FOR SEWING-MACHINE.—Nathaniel Jones, Chicago, Ill.

Claim.—1. The combination, with the presser-foot of a sewing-machine, of the supporting-plate A, tuck-marking plates I K, spring D^1 D^2, and temper-screw G, when constructed substantially as specified.

2. The combination, with the plate A, presser-foot, and the springs D^2, of the springs H, substantially as specified.

105,403.—WASHING-MACHINE.—William Vanscoyoc, Oxford, Ohio.

Claim.—In connection with a washing-machine constructed substantially as described, the fluted rubbing-roller M, side springs I I, and tightening screws L, as and for the purpose described.

REISSUES.

4,065.—SPECTACLES.—Louis Black, Detroit, Mich.—Patent No. 96,387, dated November 2, 1869.

Claim.—1. The bow A, open at both ends, but held at the inner by branches on the nose-piece B, as shown in fig. 3 of drawing.

2. The hinged clasp *f*, constructed as shown in figs. 5 and 6 of drawing, combined with a shank formed in two parts, as and for the purpose specified.

4,066.—CARPET-LINING.—George W. Chipman, Boston, Mass.—Patent No. 60,476, dated December 18, 1866.

Claim.—A carpet-lining composed of a lap of soft sheet fibrous material, surfaced or protected, not only upon its opposite sides, but also around its opposite edges.

4,067.—PROCESS OF EXTRACTING FATTY SUBSTANCES.—William Coffin, Glendale, N. J., assignee of Charles F. A. Simonin and Edward W. Coffin.—Patent No. 102,166, dated April 19, 1870.

Claim.—The above described process of extracting fatty substances by means of the vapor of the lighter hydrocarbons distilled from petroleum or coal, such as naphtha, benzine, benzole, or gasoline.

4,068.—SAW.—James Davis, for himself, and Ford W. Davis, assignee of James Davis, Philadelphia, Pa.—Patent No. 72,983, dated January 7, 1868.

Claim.—1. Making the saw-teeth on both the upper and lower portions of the saw, from the center of the saw outward, with a forward rake or set, substantially as described.

2. The projection D at the point of the saw-tooth, for the purpose set forth.

4,069.—MANUFACTURE OF STEEL.—William Fields, Wilmington, Del.—Patent No. 102,796, dated May 10, 1870.

Claim.—1. The employment of magnesia in the quantity specified, when used as and for the purposes described.

2. The process of treating iron during the puddling or boiling process for the purpose of converting it into steel, with a chemical compound composed of the ingredients hereinbefore first named, in the quantities specified, and prepared and used in the manner and form described, substantially as and for the purposes set forth, being the compound first used in the process.

3. The employment of silver in the quantity specified, substantially as and for the purposes hereinbefore set forth.

4. The employment of platinum in the quantity specified, substantially as and for the purposes hereinbefore mentioned.

5. The employment of rhodium in the quantity specified, substantially as and for the purposes hereinbefore described.

6. The employment of wolfram in the quantity described, substantially as and for the purposes set forth.

7. The employment of iridium, the quantity specified, substantially as and for the purposes hereinbefore mentioned.

8. The employment of osmium in the quantity specified, substantially as and for the purposes hereinbefore mentioned.

9. The employment of palladium in the quantity specified, substantially as and for the purposes described.

10. The employment of pulverized charcoal or carbon in the quantity specified, at the time of the above process mentioned, substantially as and for the purposes set forth, to wit: to recarbonize the iron, thereby converting it into steel.

11. The process of treating iron for the purpose of converting it into steel, during the puddling process, with a chemical compound, composed of the ingredients hereinbefore last mentioned, in the quantities specified, and prepared in the manner and form hereinbefore described, it being the compound used in the latter part of the process, together with the use of the carbon or pulverized charcoal, substantially as and for the purposes hereinbefore described.

12. The whole process of treating iron for the purposes aforesaid, as hereinbefore fully set forth and described, substantially as and for the purposes mentioned.

4,070.—MACHINE FOR COMPRESSING CARRIAGE-WHEELS.—Henry Killam, New Haven, Conn.—Patent No. 69,818, dated October 15, 1867.

Claim.—The combination and arrangement of the radial jaws, as described, so that an equal and simultaneous movement is given to all the jaws, substantially as set forth, and for the purpose specified.

4,071.—WHIP-SOCKET.—John O. Merriam and Edwin Chamberlin, Troy, N. Y., assignees of Charles B. Morehouse.—Patent No. 52,439, dated February 6, 1866.

Claim.—The whip-socket B, having permanently attached thereto the stationary jaw or clamp E, in combination with the detachable jaw or clamp G, whereby the said whip-socket may be fastened to and connected with the dash-board rod of a carriage or other vehicle, substantially in the manner and by the means herein described and set forth.

4,072.—MANUFACTURE OF GLUE.—Thomas P. Milligan and Thomas Higgins, Brooklyn, N. Y., assignees of Emerson Goddard.—Patent No. 44,528, dated October 4, 1864.

Claim.—The comminuted glue hereinbefore described, as a new article of manufacture.

4,073.—CAR-COUPLING.—Manuel Van Slyke and David Woolsey Wood, Rome, N. Y.—Patent No. 96,514, dated November 2, 1869.

Claim.—1. The bumper-head A, coupling-hook D, spring E, coupling-link C, bar J, lever G, and catch I, arranged as shown and described.

2. The combination of the double catch I with the bar J, lever G, and coupling-hook D, whereby the coupling-hook D may be held in an elevated position, or its undue elevation, by combined weight of said bar and lever, be prevented, all constructed as hereinbefore shown and described.

DESIGNS.

4,214.—DOOR-BELL.—William Allport, New Britain, Conn.

Claim.—The design for a bell, as shown and described.

4,215.—SLATE-FRAME.—John M. Coffin, Lehigh Township, Pa.

Claim.—The design for a school-slate frame, as shown.

4,216.—TRADE-MARK.—David M. Demarest, New York, N. Y., John J. Demarest, Jersey City, and Nicholas H. Joralemon, Hoboken, N. J.

Claim.—The design for a trade-mark, as described and shown.

4,217.—GLASS LAMP-SHADE.—Chretian Dorflinger, Texas, Pa.

Claim.—The design for the outward form or configuration of a glass lamp-shade, as represented in fig. 1 of the accompanying drawing.

Also, the combination of an outward curve or roll, with the upper rim of a lamp-shade, having otherwise the form represented in fig. 1, as is illustrated in fig. 2 of the accompanying drawing.

4,218.—HANDLE OF SPOONS, FORKS, LADLES, &c.—George W. Downing, New York, N. Y., assignor to the Redfield and Rice Manufacturing Company, same place.

Claim.—The design for the handles of spoons, forks, knives, ladles, &c., substantially as shown.

4,219.—FOUNTAIN.—John Hegarty, Jersey City, N. J.

Claim.—1. The design for the pedestal A of the fountain, as set forth.

2. The design for the top E, provided with the central flower F, as shown and described.

3. The design for the fountain-body, which is provided with the flowers and other ornaments in relief, as set forth.

4. The design for the hand-shaped handles D, formed on the figures that are put into the niche in the fountain, as set forth.

5. The design for the ornamental head or crown G of the fountain, as set forth.

4,220.—FRAME FOR MOWING-MACHINE.—William G. Kenyon, Wakefield, R. I.

Claim.—The configuration of the design for a mowing-machine frame, as shown in the drawings herein described.

4,221.—KNIT SKATING-CAP.—Martin Landenberger, Philadelphia, Pa.

Claim.—The design for a skating-cap, consisting of the striped and compactly fabricated band A, tuffed and loosely-knitted crown B, and closely-knitted tip portion C, all substantially as shown and described.

4,222.—FLOOR-CLOTH PATTERN.—Victor Meyer, Lansingburg, N. Y., and Charles T. Meyer, Newark, N. J., assignors to Edward C. Sampson, New York city.

Claim.—The design or pattern for floor oil-cloths, carpets, or other fabrics, herein set forth.

4,223.—PAPER-COLLAR BOX.—William H. Richardson, West Roxbury, Mass.

Claim.—As a new design, a box for paper collars, made to represent the appearance of a cigar-box.

4,224.—KITCHEN-BOILER.—William B. Scaife, Pittsburg, Pa.

Claim.—The design for a kitchen-boiler, herein described, substantially as shown in the accompanying drawings.

EXTENSIONS.

ISAAC A. DUNHAM, of North Bridgewater, Mass.—June 24, 1856.

"Improvement in Shoemaker's Edge Planes."

Claim.—My improved tool, having part of its molding-edge stationary and formed with a cutting edge, as specified, and the other part of said molding-edge made movable with respect to the first, as specified, and so that, while cutting with the tool, the molding surfaces of both parts may rest in contact with the material which is to be cut, my tool enabling me also to polish the reduced surface while a shaving is being removed.

WM. H. THOMPSON, of Boston, Mass., and EUSTIS P. MORGAN, of Biddeford, Me.—June 24, 1856.

"Improvement in Safety-Hatches for Warehouses."

Claim.—An elevator, having arms or guides attached to the traveling-car or platform, either above or below it, together with the sliding or hinged movable doors, which remain closed when the elevator is not in use, and are opened by the action of the car or suitable attachments to the same, as it passes upward or downward through the several stories of the building.

Additional Improvement, dated April 14, 1857.

Claim.—The opening and closing of vertical doors, attached to the tube or box of an elevator, by means of the action of the traversing-car or platform and its attachments, as herein fully set forth.

WM. T. CLOUGH, Newark, N. J.—July 1, 1856.

"Improvement in Concentrating Apparatus for Sulphuric Acid."

Claim.—The construction of a furnace so that the sulphuric acid will not affect or injure the lead or mineral tank, or pan, during the process of concentration, by means of a hot surface being placed above the liquor, substantially as described in the above specification.

ISSUE OF JULY 19.

PATENTS.

105,404.—EAVES-TROUGH HANGER.—J. P. Abbott, Cleveland, Ohio.

Claim.—The combination of the key *c*, hanger F, bar C, brace E, and trough A, constructed and arranged in relation to each other, and used conjointly, substantially as and for the purpose set forth.

105,405.—HOE.—Luna J. Aderhold, Wedowee, Ala.

Claim.—1. The bar B, constructed as described, and provided with lug *e*, screw-rod *g*, and head *i*, with an incline or bevel immediately in rear of said head, and used with a hoe-handle and hoe, all substantially as and for the purposes herein set forth.

2. A four-edged hoe-blade, provided with a central crucial slot, as shown and described.

3. The arrangement of the beam A, bar B, blade C, shield D, band *f*, and wedge E, all constructed as described, to operate substantially as and for the purposes herein set forth.

105,406.—RING FOR HARNESS.—Samuel Aldred, Avoca, Wis.

Claim.—A harness-ring, A, having studs *a* projecting from the inner surface, and formed of one single homogeneous piece of metal, as specified.

105,407.—CAR-COUPLING.—Richard N. Allen, Pittsford, Vt.

Claim.—The arrangement, with the bumper-head A, of the plate B and the ears or abutments *a'*, to receive the draft-strain (on plate B) applied through the link D and pin C, and thereby relieve the hinge, as shown and described.

105,408.—TOBACCO-PIPE.—John H. Anthony, Cambridge, Md.

Claim.—The combination of a pipe-bowl with the chamber *d*, paper-roll *e* within the chamber, and sponge *c*, in the bottom of the bowl below the chamber, as and for the purpose specified.

105,409.—SHUTTER-FASTENING.—Stephen D. Arnold, New Britain, Conn, assignor to P. & F. Corbin, same place.

Claim.—The socket *g* and stud *d*, between the bar *a* and plate *f*, for connecting said bar *a* and plate *f*, in combination with the plate *b* upon which the bar *a* swings, the parts being constructed so that the attaching plate *b* and *f* will be in line with each other, and the bar *a* stand out from the shutter, as and for the purposes specified.

105,410.—SUCKER-ROD CONNECTION.—George M. Beckus, Oil City, Pa.

Claim.—Fastening the sucker-rod C to the ferrule A by means of the springs D and grooves or notches B, substantially as shown and specified.

105,411.—IRON RUNNING-GEAR.—Albert Ball, Canton, Ohio.

Claim.—1. The combination of the axle-bar B, arch-piece A, and circular hound D, provided with flat tongue ends H H, said hound being secured by clamping-bolts *a a* between the axle-pieces A B, and the several parts being constructed and arranged as and for the purpose specified.

2. The combination of the axle A B, clips L L, tension-plate D with lips K, and elongated king-bolt F with jam-nuts *m' m n*, the several parts being arranged as and for the purpose specified.

3. The combination of the circular hound C, with flat ends H H, off-setted tongue-straps I I, tongue G, and pivot-bolt J, said tongue-straps extending along the tongue above and below the hound-ends H H, and the several parts being constructed and arranged as and for the purpose specified.

4. The front wagon-bolster herein described, the same consisting of the bolster-plate P, having the arms Q Q upturned at its ends, and the side plates M M, secured to the blocks N N, at their ends, and clamped to the arms Q Q by the bolts *b b*, the several parts being arranged substantially as and for the purpose specified.

5. The combination of the axle-bar W, arch-piece X, hound-pieces U U, tie-rods V V, ⊥-iron reach T, and reach collar Y, the several parts being constructed, arranged, and combined as and for the purpose specified.

6. The wrought-iron rear bolster *z*, provided with the edge flanges *w w*, and fitting on the arch piece X, to which it is secured by two or more clamping-bolts, substantially as and for the purpose specified.

7. The felly piece A, provided with the convex ends 1 2, in combination with the felly pieces *h' h'*, having their adjacent ends, 1 and 2, made in a corresponding concave form, substantially as and for the purpose specified.

8. The wheel herein described, the same consisting of the iron hub *f*, iron spokes *g g*, iron felly pieces A, (one to each spoke,) leather or rubber tire-seat *i*, and tire *k*, the several parts being arranged and united in the manner and for the purpose specified.

105,412.—MODE OF ATTACHING SLEIGH-BELLS.—William E. Barton, East Hampton, Conn.

Claim.—1. The coupling C, constructed with an eye or hook to receive the tongue, a neck, 1, to pass through an aperture in the bell, and a flange or projection, 2, to support the bell, substantially as set forth.

2. The flanged coupling C, in combination with a screw or rivet, D, for connecting the bell to the strap, in the manner described.

105,413.—COKE-OVEN.—Leonard Forbes Beckwith and Arthur Beckwith, New York, N. Y.

Claim.—1. The arrangement of the vertical and horizontal flues, the chambers and communications, substantially as and for the purpose herein set forth.

2. The tongued fire-bricks, constructed and applied substantially as herein described, to form the flues and brace the walls of the ovens.

105,414.—TOBACCO-BOX SHOW-CASE.—Adolph Bernstein, St. Louis, Mo.

Claim.—The case B *b'*, constructed substantially as herein shown and described, to adapt it for detachable attachment to the boxes or original packages from which plug-tobacco is retailed, for the purposes set forth.

105,415.—TRACE-FASTENING.—Charles W. Blakeslee, Watertown, Conn., assignor to himself and Joseph Peck, same place.

Claim.—The described lock, formed of the described parts, the main part A, with its slot *a*, recesses, shoulder *d* with its spindle *e*, the slide with its socket *g* and projection *h*, and the cover *i*, all constructed and arranged to operate as set forth.

105,416.—SHAWL-STRAP.—Gustavus B. Broad, Waterville, Me.

Claim.—1. The improved stiffening wire frame D for shawl-straps, formed of an outline wire and two intermediate longitudinal strips, of a size and shape corresponding to the strap, as shown in fig. 1 of drawing.

2. The wire loops E in a shawl-strap, combined with the loops F, for the purpose specified.

105,417.—CUTTERS FOR TONGUING AND GROOVING.—Caleb Brobst, Winamac, Ind.

Claim.—The cutter-heads C and C', composed of the cutters *a b a*, when all the parts are constructed and arranged in the manner shown and described, and for the purposes set forth.

105,418.—HAY-LOADER.—Addison Buck, Hebron, Ind.

Claim.—The combination and arrangement, with the carrier or apron D, and wheel or wheels A, provided with pin J, and fast on the axle B, of the revolving rake-shaft F, arms I, ratchet and pawl P Q, all operating as shown and described.

105,419.—LEATHER-SCOURING MACHINE.—David P. Burdon, New York, N. Y.

Claim.—1. The rotating scourer hung in a pendulum-frame, substantially as herein shown and described.

2. The scouring-stones, dovetailed in the supporting-cylinder, and held therein, substantially as herein shown and described.

3. The bed I, of a leather-dressing machine, made elastic and self-adjusting, substantially as herein shown and described.

4. The toggle-levers L L, combined with the pendulum-frame C and lever *f*, for the purpose of adjusting the frame and roller, substantially as described.

105,420.—WEATHER-STRIP.—William Henry Burghardt, Curtisville, Mass.

Claim.—1. Bar *a* and rubber strip *b*, combined with case B, straps *c c*, springs D D, lever E, *d d e*, slide strips F, and wedge *f*, all relatively constructed and arranged as and for the purpose described.

2. The three-armed lever E, *d d e*, rods F, and wedge *f*, all relatively constructed and arranged as and for the purpose described.

105,421.—MITER-BOX.—Horatio N. Butt, Mansfield, Ohio.

Claim.—1. The table B, traversing on the graduated arc K and the circular piece F F, and having the adjustable supports C connected to it, in the manner shown and described, and for the purpose specified.

2. The saw-guides D D', constructed as described, and having both vertical and horizontal adjustments, as set forth and shown.

105,422.—LOW-WATER INDICATOR.—Ralph R. Carpenter, Tippecanoe, Ohio.

Claim.—1. The T-shaped lever A *h'*, and spring *o*, combined with the rods *m*, nuts 3, expansion-tube *a*, and valve *g*, substantially as and for the purposes specified.

2. The valve *g*, accessible from the outside of the steam-passage of an alarm-whistle, substantially as and for the purposes set forth.

105,423.—METHOD OF FORMING STUMP-JOINTS FOR CARRIAGE-BOWS.—Albert P. Casey, Plantsville, Conn.

Claim.—The method of forging the stump-joint for carriage-bows, herein described, by subjecting a straight piece of iron, of the size of the finished stump of the joint, to the series of dies which offset and upset the iron into the required form, substantially as described.

105,424.—PAPER-FOLDING MACHINE.—Cyrus Chambers, Jr., Philadelphia, Pa.

Claim.—1. Placing by the side of a pair of folding-rollers an additional roller, *e*, a little above their level, for the purpose of raising the forward end of the sheet and carrying the paper clear of said rollers, as described.

2. The concave guide *i'*, attached to and operated by the drop-roller frame, as set forth.

3. The projection *l'* on the second stop *j'*, arranged and operating in the manner stated.

4. The projecting rim *m'* on the packing-box or trough, in combination with the sliding spring *p'* on the plunger W', as and for the purpose described.

5. The bell-clapper *c'* and bell *d'*, attached to the trough and operated by the sliding plunger, in the manner and for the purpose stated.

105,425.—MEDICAL COMPOUND FOR TREATING RHEUMATISM, &c.—Henry A. Chase, Tully, N. Y.

Claim.—A medicinal compound composed of the within ingredients, in about the proportions mentioned, for the purpose described.

105,426.—ANTI-FRICTION GEARING.—Thomas Chase, Washington, D. C.

Claim.—1. The anti-friction grooved plates A B D and spheres *b*, arranged to revolve freely and separately in the grooves of said plates, in combination with center journals *c*, all as arranged and operated with and upon shafts B', M, K, and S', substantially as described.

2. The passive wheels E, arranged to revolve upon the anti-friction spheres *b* in grooved plates A B D, in combination with horizontal shafts H H, provided with cone-wheels D D D, substantially as described.

3. The combination of a grooved plate, cone-wheel, and coupling-box, as shown in D, substantially in the manner and for the purposes as described.

4. The combination and arrangement of two or more sets of the anti-friction plates A D and spheres *b* with upright shafting, so as to avoid the use of spur-gearing, substantially as described.

5. The combination of two or more sets of the anti-friction plates and spheres, reversed, and so arranged and attached to a steamer-shaft, S', as to sustain forward and backward pressure, the weight of the shaft being sustained by passive wheels E, revolving upon the spheres *b* in plates A D, substantially as described and shown in the drawing.

6. The arrangement of one or more passive wheels, E', in combination with cone-wheel D, upon a perpendicular or horizontal shaft, so as to sustain lateral pressure, substantially as described.

7. Passive wheels E E, inverted, and with beveled disks at the bottom, and having anti-friction grooved plates A D and spheres *b* arranged to revolve freely and separately in the grooves of the plates arranged at the top of the wheels, in combination with a beveled railroad-axle, V, with or with-

cut cone-wheel D^1, and with or without wheels E^3 and E^4, substantially as described.

105,427.—GRAIN-METER.—Francis G. Cheeman, Lemont, Ill.

Claim.—The combination and arrangement of the levers *c d* and *f* and spring *e* with the pins or stops *a b* and cylinder C B, provided with buckets D, substantially as and for the purposes specified.

105,428.—PACKING TOBACCO-BOX.—William Cills, Philadelphia, Pa.

Claim.—1. The packing tobacco-box, made with grooves to receive and hold the ends, the upper end or head being arranged to slide, and having a portion forming the front attached to it, in combination with fenders and gauges E, all as shown and set forth.

2. The packing tobacco-box, with the upper portion made separate and adjustable by the screws *b b*, in combination with the sliding head, all as shown and set forth.

105,429.—GATE FOR RAILWAY CROSSINGS.—John H. Clark, Flemington, N. J.

Claim.—The uprights A A and D D, with the gates B B and the plates C C′ attached thereto, the wheels E E, with the slides F F and the levers G G and H H, with the arms *c c* and *d d*, and the rods *e*, *e*, and *f*, when constructed, arranged, and combined substantially as and for the purposes herein set forth.

105,430.—HOMINY-MILL.—Eden M. Coombes, Memphis, Ind.

Claim.—1. The combination of the circular pan B, provided with an inclined bottom and core E, shaft H, and horizontal reel I I, with double-edge knives *b b* and single-edge knives *d d*, all constructed to operate substantially in the manner set forth.

2. The combination of the double knives *b b* and single knives *d d*, all arranged on the reel I, substantially as shown and described.

3. The combination of the pan B, core E, door G, shaft H, arms I I, and knives *b b* and *d d*, all constructed and arranged as described, to operate substantially in the manner and for the purposes herein set forth.

105,431.—MANUFACTURE OF WHITE LEAD.—James Cuddy, Pittsburg, Pa.

Claim.—The apparatus above described for sprinkling the vinegar on the sheets of lead, in combination with the horizontal revolving shelves or tables, substantially as and for the purpose described.

105,432.—TENONING-MACHINE.—John J. Curnan, Lyons, Iowa.

Claim.—The arbor A, fitted with a driving pulley, D, and carrying an inclined or drunken saw at one end thereof, in combination with the detachable head or frame K, and with a set-screw, L, for adjustment, all the parts being constructed substantially as and for the purpose herein set forth.

105,433.—NEEDLE FOR SEWING-MACHINE.—Charles R. S. Curtis, Quincy, Ill.

Claim.—The sewing-machine needle herein described, having the large upper eye A, and the small lower eye B, connected by the slit C, as described, and for the purpose specified.

105,434.—ROOFING-COMPOSITION.—Horace L. Davis, Worcester, Mass., assignor to himself and Gustavus W. Ingalls, same place.

Claim.—The composition, made in manner and of the material as hereinbefore first explained.

105,435.—DROP-LIGHT GASALIERS.—Charles Deave, New York, N. Y., assignor to "the Archer and Pancoast Manufacturing Company," same place.

Claim.—1. The combination, with the drop-tube D and outer tube B, of friction-pads F, which are so attached as to provide for an independent movement of the drop-tube, substantially as herein described, whereby the said pads are caused to have their friction relieved when the drop-tube is pushed upward.

2. The combination of the collar *f*, or projection on the drop-tube, and the inclined surfaces of the friction-pads, substantially as herein described, whereby the weight of the drop-tube is caused to produce a wedge-like action on the said pads.

3. The spring *e*, connecting the friction-pads, substantially as and for the purpose herein described.

4. In combination with the branches connected with the lower part of the tube B, the ducts *g g*, arranged within or upon the sides of the said tube, substantially as and for the purpose herein described.

105,436. — STEERING APPARATUS.—David De Haven, New Orleans, La.

Claim.—The arrangement, as a whole, of the tiller-sheave E, under the main deck B, within and protected by the projecting stern-guard F, and the rudder D, protected beneath the said stern-guard, and overhanging the shoe C, when, also, it is arranged to turn forward against the sides of the steamboat, so as then to be protected by the said shoe, as and for the purpose herein specified.

105,437.—HULL OF VESSELS.—David De Haven, New Orleans, La.

Claim.—1. The trusses A A, provided with the right and reversed clamp-strakes C C, bolted thereto, substantially as described, the said trusses extending through the sides of the vessel, and longitudinally and transversely through partitions between water-tight compartments thereof, as herein specified.

2. The arrangement of the timbers G H, "jogged" together, and the knee I, secured thereto by the stirrup-clamps *i i* and keys, as and for the purpose herein set forth.

105,438.—ARRANGEMENT OF UPPER WORKS IN RIVER STEAMERS.—David De Haven, New Orleans, La.

Claim.—The arrangement of the upper works of a steamboat, in the form shown, having a series of round cabins, B B′ B″ B‴, extending fore-and-aft, connected with each other and with the promenades, by means of arches A A, and surrounded by the rooms *m m* Y Y, the said rotundas being provided with spiral stairways C C, for ingress and egress, and surmounted by glazed domes F F′ F″ F‴, in the manner and for the purposes set forth.

105,439. — WASHING-MACHINE. — Samuel Deveau, Syracuse, N. Y.

Claim.—1. The wheel A, made with a double periphery or series of chutes, *e*, *f*, *e*, *f*, in connection with the boiler B, for the purpose herein specified.

2. The furnace O, boiler B *b*, and wheel A A′, all constructed and operating as and for the purpose herein set forth.

105,440.—PENCIL-SHARPENER. — Moses W. Dillingham, Amsterdam, N. Y.

Claim. — The improved pencil-sharpener and lead-eraser, consisting of the parts A B, jointed together, as described, and the rubber eraser C, having the elastic button *d*, all constructed and relatively arranged as and for the purpose specified.

105,441.—HINGE FOR BLINDS.—Adolf Eckard, Washington, D. C.

Claim.—The combination of the latch C and right angle lever D, composed of one piece, and so arranged with the blind or shutter-hinges as to partially close the blind when lifted, substantially in the manner herein described.

105,442.—COLLAR.—Harriet Godfrey Emery and Margaret Cate Fuller, Boston, Mass.

Claim.—The duplex collar *d e*, when constructed as described, for the purpose set forth.

105,443.—HORSE-COLLAR.—Joseph Englaender, Sedalia, Mo., assignor to himself and Eugene Lungstras, same place.

Claim.—1. The collar-halves A A′, with leather lining, arranged with strap B, buckles *a a′*, and neck-padding C, when combined with the hame-plates D, arranged with adjustable ends *d* and holes d^1, substantially as set forth.

2. The staples E, breast-band F, and strap *f*, combined substantially as set forth.

105,444.—WASHING-MACHINE.—Martin P. Flanders, Jay, N. Y.

Claim.—1. The pivoted screw *c* on the lower end of spindle B, when attached to and in combination with a washing-machine, in the manner and for the purpose described.

2. The center spindle B, with swivel-pin *c*, in combination with the swivel-yoke C, lever D, uprights E E, heads or pressers F F, and vessel A, constructed and arranged to operate in the manner described.

105,445.—SWINGING STANCHION.—Walter C. Gifford, Jamestown, N. Y.

Claim.—The arrangement of the hinged scraper G upon the swinging stanchion, as and for the purpose described.

105,446.—PLOW.—Joseph S. Godfrey, Leslie, Mich., assignor to himself and Sears M. Loveridge, Pittsburg, Pa.

Claim.—The arrangement, substantially as described, of a concave-faced revolving disk mold-board, in connection with a plow, whereby it shall be caused to rotate by action of the mold from the furrow, without coming in contact with the bottom of the furrow, and without the necessary use of other appliances to impart to it a rotary motion.

105,447. — ELECTRO-MAGNETIC ALARM. — Thomas S. Hall, Stamford, assignor to Hall's Electric Railway-Switch and Draw-Bridge Signal Company, New Haven, Conn.

Claim. — The combination of the system of springs G G, transverse bar I, armature E, electro-magnet A A, with conducting-wires, all constructed and arranged as described.

105,448.—GRINDING-MILL.—Daniel Halladay, Batavia, Ill.

Claim.—The reversible spout I, arranged with a lid, G, which fits into notches J, in combination with the grinding-case B D, when arranged, with reference to the grinding-plates and other parts of the mill, as set forth.

105,449.—ELEVATOR.—David D. Hanson, Weare, N. H.

Claim.—The above-described elevator, provided with the shaft A, having end play, and operated by the lever C, ratchet B, pawl D, rod D′, and lever L, combined and operated substantially in the manner and for the purposes set forth.

105,450.—HYDRAULIC MOTOR.—James Harris, Boston, Mass.

Claim.—The hydraulic motor, constructed as described, viz., as composed of the yokes, the guides, the piston-rods, the double-cranked shaft, and the patented meter, as described or hereinbefore mentioned and represented, all the said parts being arranged and to operate together, as explained.

105,451.—GRAIN AND SEED-SEPARATOR.—Benson Hawkins, Sugar Creek, Ind.

Claim.—1. The pivoted chute C, composed of the inclined back C′, adjustable pivoted front piece D, and trash-sieve C″, constructed and arranged to operate in the manner and for the purpose herein described.

2. The combination of the sieve-box E, having sieves *e*, *e′*, *e″*, and *e‴*, and apertures *b* and *b′*, with the octagonal shaft G, pulley J, connecting-rod J′, crank-arm K, and rock-shaft K′, in the manner and for the purpose herein described.

3. The combination of the endless apron *j*, operating as described, with the sieve-box E and sieve *e*, when said sieve-box is constructed and operated in the manner substantially as herein set forth.

105,452. — SHOEMAKERS' EDGE-PLANE. — Arthur P. Hazard, North Bridgewater, Mass.

Claim.—The combination and arrangement of the screws *a a′*, and the slots *b b′*, with the cutter F, and the stock A, in manner and for the purpose or purposes as set forth.

105,453.—WASHING-MACHINE. — Benjamin Hockabout, Antioch, Cal.

Claim. — 1. Suspending the corrugated rollers from the ends of the springs *a*, said springs being secured upon wheels C, substantially as and for the purpose above described.

2. The wash-boards E, having spaces *e* between them, in combination with the perforated board F and spring *g*, as shown and described.

105,454. — KNITTING-MACHINE. — Joseph Hollen, Fostoria, Pa.

Claim.—1. The needle A, constructed substantially as herein shown and described, for the purpose set forth.

2. The spring tongue *c″*, in combination with the arm *c′* of the lifter C, substantially as and for the purpose hereinbefore set forth.

3. The vibrating lever H, constructed with the diamond-shaped end *h′*, in combination with the reversible cylinder E, having studs *e″* suitably arranged thereon, substantially as and for the purpose hereinbefore set forth.

105,455.—PRESS-DYEING.—John Holt, Lowell, Mass.

Claim.—1. The method substantially as described, of press-dyeing textile fabric in parallel stripes, by rolling or winding such fabric around one or more pulleys, arranged as described, and by packing and clamping, and immersing such fabric, substantially in the manner set forth.

2. A press-dyeing apparatus, as described, the same consisting of one or more covered pulleys A, and outer packings *c c′* and *c*, and clamping-hoops *d*, having ears *f* and screw-bolts *h*, all combined, arranged, and applied substantially in the manner and for the purpose specified.

3. The clamp D, or the equivalent thereof, when used in combination with the hoops *h* and with the blanket *c*, as set forth.

105,456.—PIPE-COUPLING.—Richard Hoskin, Dutch Flat, Cal.

Claim.—1. The section B, with its flange *b*, and flexible packing *d*, in combination with the socket A, substantially as and for the purpose above described.

2. The convex-sided wheels C, together with the pins *c*, constructed substantially as and for the purpose herein described.

105,457.—CONDENSER FOR MARINE ENGINES.—John Houpt, Springtown, Pa.

Claim.—1. The combination, with the primary condenser A, of the cold-water spray-valve $a^{\prime\prime\prime}$ and the hot-air valve a^3, constructed and arranged to operate substantially as and for the purpose hereinbefore set forth.

2. The combination of two like primary condensers A, with the respective ends of the steam-cylinder of an engine, and with one and the same secondary condenser, B, so as to operate in relation to

each other, substantially as and for the purpose hereinbefore set forth.

3. The combination, with the secondary condenser B, of the capacious vessel b', the intercommunicating pipe b'', the capacious inverted vessel E and pipes I I', the said parts being constructed and arranged to operate substantially as and for the purpose hereinbefore set forth.

4. The combination, with the secondary condenser B, of the adjustable overflow pipe f', and its cylinder F, the plunger G and its cylinder f', and valves f'' f''', and the overboard or waste-pipe f^4, the said parts being constructed and arranged to operate substantially as and for the purpose hereinbefore set forth.

5. The tertiary condenser, consisting of the drum K and condensing-cases C C, connected together by the detachable pipes L and l'' l', and arranged and supported upon trunnions c''', substantially as and for the purpose hereinbefore set forth.

6. In combination with the pipe L, the governor-valve P, arranged and operated substantially as and for the purpose hereinbefore set forth.

7. The open tubes 14 14, in the cases C C, in combination with the perforated plate c^4 and screw-nuts 15 and 16, at the upper ends of the said tubes, and the perforated plates c^5, elastic packing-plate c^6, and screw-bolts 17 17, at the lower ends of said tubes, substantially as and for the purpose hereinbefore set forth.

8. In combination with the respective upper ends or caps c'' c' of the cases C C, the inlet-valves n n, constructed and operating substantially as and for the purpose hereinbefore set forth.

9. In combination with the respective lower ends or bottoms c^1 c^2 of the cases C C, the outlet and the inlet valves o o, constructed and operating substantially as and for the purposes hereinbefore set forth.

10. The combination, with the lower ends of the cases C C, of the detachable fresh-water reservoir D, substantially as and for the purpose hereinbefore set forth.

11. The combination, with the drum K, of the inlet-valve p, constructed and operating substantially as and for the purpose hereinbefore set forth.

12. The combination of the drum K with the secondary condenser B, by means of the pipes I' and J, and the capacious inverted vessel E, arranged in relation to each other, substantially as and for the purpose hereinbefore set forth.

105,458.—Soap-cutting Machine.—Willis Humiston and Horace N. Humiston, Troy, N. Y.

Claim.—1. The cutting-table or carriage E, arranged and combined with the trimming-table B and drying-table or frame F, substantially in the manner and for the purposes herein described and set forth.

2. The slotted frame K, or its equivalent, in combination with the cutting and trimming-wires a a and b b, whereby said wires are made adjustable, substantially in the manner, by the means, and for the purposes hereinbefore described and set forth.

3. The die or stamp L, used in connection and in combination with the trimming-table B or cutting-table E, substantially in the manner and for the purposes hereinbefore specified and described.

4. The spur or cog-wheel h and lever M, in combination with and operating the stamp or die L, in the manner and for the purposes substantially as herein described and set forth.

5. The coiled spring N, or its equivalent, in combination with the arm or lever M and the die or stamp L, whereby greater force may be given to said stamp, if so desired, substantially in the manner and for the purpose herein specified and set forth.

6. The adjustable drying-board F, used in connection and in combination with the cutting-table or carriage E, substantially in the manner and for the purposes herein described and specified.

7. The adjustable cutting and trimming-wires a a and b b, in combination with the slotted frame K and the cutting and trimming-tables or carriages E and B, all arranged and operated substantially in the manner and for the purposes hereinbefore described and set forth.

105,459. — Alarm Ticket-Nippers for Coupon Tickets. — Isaac Hyde, Oakland, Cal.

Claim.—The alternating fingers e and f, and the rotating shaft d, with the arm F, substantially as and for the purpose herein described.

105,460. — Cultivator. — Moses Johnson, Three Rivers, Mich.

Claim.—The cultivator herein described, having cross-bar C, staples D, disks E, scrapers a and H, brace K, draw-bar N, and auxiliary handle P, when constructed and arranged to operate as and for the purposes specified, as an improvement upon my patent of August 3, 1860.

105,461.—High and Low-water Alarm.—George N. Jones, Chicago, Ill.

Claim.—1. The slide-valve tube O in a whistle M, open at its upper end, and orificed at p and q, as and for the purpose specified.

2. In combination with the aperture-sliding tube O, the lever D and float B, as and for the purpose set forth.

105,462.—Packing.—Leopold Katzenstein, New York, N. Y.

Claim.—The spring F, packing-plates C E, and central ring D, all cut, shaped, and adjusted together, substantially as and for the purpose specified.

105,463.—Machine for Making Printers' Leads.—Karl M. Klees, New York, N. Y.

Claim.—1. The rolls D E, hollow, ribbed, and grooved, as shown and described, combined with a vessel having slides b and apertures a, to supply the plastic metal thereto.

2. The hollow, ribbed, and grooved rolls D E, and the rotary cutters f g G G, all relatively arranged as set forth, combined with a suitable vessel to supply the plastic metal thereto.

105,464.—Apparatus for the Manufacture of Albumenized Paper.—Jakob Klein, Hesse Darmstadt, North German Confederation, assignor to Dreyfoos, Klein & Co., New York, N. Y.

Claim.—An apparatus for manufacturing and drying albumenized paper, arranged with drum A and bands B B, substantially as described.

105,465.—Piston for Steam-Pumps.—Lucius J. Knowles, Worcester, Mass.

Claim.—1. The combination, with the hub A and disks B C, of the adjustable packing-supporting rim, composed of sections G, substantially as and for the purposes stated.

2. The combination, with the recessed hub A and disks B C, of the rim-sections G, arms I, and adjusting-nuts J K, substantially as and for the purposes herein set forth.

3. A piston for steam-pumps, the parts of which are constructed and arranged in relation to each other, substantially as and for the purposes herein set forth.

105,466. — Piston-Packing. — Lucius J. Knowles, Worcester, Mass.

Claim.—A packing for the pistons of steam-pumps, composed of several layers of canvas or duck, joined together by sewing or stitching, substantially in the manner shown and described, and for the purposes stated.

105,467. — Hair-spring-testing Apparatus for Watches.—John Logan, Boston, Mass.

Claim.—An apparatus for determining the proper length of hair-springs for watches, the same consisting of two independent time-keeping spring-driven trains, one of which is adjusted to run at the standard rate, and the other of which has provision for easily and temporarily connecting with it balance-wheels with attached hair-springs, the lengths of which are to be determined, the two trains having each rapidly-moving indicating-hands designed to move isochronously, and exposed, so that they may be turned and set to the same starting point.

Also, in combination with the main driving-spring arbor h, the supplemental spring j, arranged substantially as and for the purpose specified.

Also, the arrangement, with the removable bridge b and the plate on which it rests, of adjustable screws in the same axial line, and provided with bearings or steps for the balance-wheel arbor.

105,468.—Parlor-Roulette.—Alexis Marais, St. Louis, Mo., assignor to himself and John O'Brien, same place.

Claim.—The rotating disk A, metal rim B, conoidal rim C, marked with numbers, and having serrations s, when combined and made to revolve around a plate, D, having screw-pivot d, to operate substantially as and for the purpose set forth.

105,469.—Saw for Making Stuffing for Upholstering. — George W. Marble, Charlestown, N. H., assignor to himself and Charles Way, same place.

Claim.—1. The circular saw A, having straight teeth a b, of unequal length, and the longer ones b made beveling on their edges, while the shorter ones a are filed or dressed straight, essentially as described, and for the purpose herein set forth.

2. A wood stuffing, produced by sawing up a board into a series of foraminated slices or cuts, by means of a saw dressed substantially as specified, as a new article of commerce.

105,470.—Car-Coupling.—Charles Markley, New York, N. Y.

Claim.—1. The combination and arrangement, as specified, of the jaws C C, pivoted to the draw-head B, toggles d d, plate D, lever F, spring g^3, slot g^1, and draw-head B, when constructed to operate as described.

2. The combination of the draw-head B, provided with the jaws C C, toggles d d, plate D, and lever F, with the link G, when said draw-head and link are connected at their rear ends and arranged in relation to each other, as set forth, and supported on a vertical pivot, for the purpose specified.

3. The combination, with the elements of the second claim, of the bolts I, arranged as and for the purpose specified.

105,471.—Churn.—James Mayhew, West Tisbury, Mass.

Claim.—1. The frame J, in combination with shaft H, and wire arms I, substantially as described.

2. The frame J, in combination with grooves C of churn A, substantially as described.

105,472. — Folding Chair. — George McAleer, Worcester, Mass.

Claim.—1. The links or bars H, or their equivalent, in combination with the movable back F and pivoted legs A and D, substantially as herein shown and described, and for the purpose set forth.

2. The combination of the round or bar I with the bars or links H and pivoted seat J, substantially as herein shown and described, and for the purpose set forth.

3. The combination of the legs A and D, movable back F, pivoted bars or links H, pivoted and sliding arms K, and seat J, with each other, whether the said seat be rigid or flexible, substantially as herein shown and described, and for the purposes set forth.

105,473.—Corn-Planter.—Joseph A. McClure, Mount Carroll, Ill.

Claim.—1. The combination of the seed-slide S, treadles B B, cords or chains c c, cams m m, shaft R, and driving-wheel D, all operating substantially as set forth.

2. The markers M M, attached to the treadles B B, substantially as and for the purpose described.

3. The upright handle h, lever L, and rock-shaft R, in combination with the furrow-openers r r, for adjusting the latter, substantially as specified.

105,474.—Combined Key-Ring and Door-Fastener.—Bryant H. Melendy, Manchester, N. H.

Claim.—1. The combination of the guide-brace or stay F, with the parts or pieces A and hook or claw B, substantially as herein shown and described, and for the purposes set forth.

2. The combination of the extensions 1 2 of the hook or claw B with the flanges a^4 of the parts or pieces A, substantially as herein shown and described and for the purpose set forth.

3. The flanged lip or head G of the spring arm E, in combination with the flanges a^3 of the parts or pieces A, and with the hook B, substantially as herein shown and described, and for the purpose set forth.

105,475.—Churn.—J. P. Meranda, Springfield, Ohio.

Claim.—The arrangement of the crank-shaft G, hub d', driving-wheels D, pinions E and F, shafts l and m, boxes g, arm k, set-screw p, supporting spring K, spring clutch H, shell A, and beaters B and C, operated as described, for the purpose hereinbefore specified.

105,476.—Wheel-Feed.—Joseph B. Merritt, Abington, Mass.

Claim.—The combination of the adjustable toggles K K K, the springs H H H, and the centerpiece C, arranged and operating as described, and for the purpose set forth.

105,477.—Hay-Elevator and Conveyer. Charles A. Miller, Marengo township, Mich.

Claim.—The combination and arrangement of the truck C and hoisting and conveying tackle with each other and with the track-way A A, provided with head-blocks B B', and automatic dogging-hooks m, said tackle being either provided or not with the cams i, and bulb b, and the several parts constructed, arranged, erected, and operated substantially as and for the purposes set forth.

105,478, patented in England, May 18, 1868. — Railway Car-Spring.—Joseph Mitchell, Sheffield, assignor to William Edward Newton, London, England.

Claim.—The cross-pin c, arranged with the plates composing the spring, and with the box b, as and for the purpose specified.

105,479.—Making Butter.—Adolphe Mot, Washington, D. C.

Claim.—1. The process of applying capillary attraction by means of dry, porous substances, to separate buttermilk from butter.

2. The application of a centrifugal machine with absorptive material, so as to separate butter from cream or milk, substantially as described.

105,480.—Ore-Separator.—David Nevin, Georgetown, Colorado Territory.

Claim.—1. The arrangement of the hinged and valved plunger B, the oscillating sieve D, shaft C, cam j, and rod f, to operate as shown and described.

2. The adjustable plates l, rod m, sluice-gates E, and screw-rods n, arranged in the sieve D, as shown and described.

105,481. — Straw-Cutter. — Harrison Ogborn, Richmond, Ind.

Claim.—1. The reversible arm A and adjustable

double-edged knife B, when made in the manner substantially as described, and used for the purposes indicated.

2. The reversible arm A and adjustable double-edged knife B, in combination with the flange F and guide-plate O D, when constructed and operated for the purpose and in the manner set forth.

105,482.—SHOE-FASTENER.—Julius E. Otto, Elmore, Ohio.

Claim.—The conical shell F and vibrating disk G, arranged in relation to the lacing, substantially as and for the purpose set forth.

105,483.—CLOTHES-LINE CLAMP.—Thomas W. Owens, Granville, Ohio.

Claim.—The bracket A, provided with the studs B, having circular groove *b* and V-shaped groove *c*, and stud or hub C, constructed as herein described, for the purpose specified.

105,484.—PRESERVING VARIOUS ARTICLES OF FOOD.—Henry L. Palmer, Stillwater, N. Y.

Claim.—The flexible and compressible capsule, for containing articles of food in a semi-fluid condition, which are therein hermetically inclosed, as described.

105,485. — PRESERVING VEGETABLE EXTRACTS.—Henry L. Palmer, Stillwater, N. Y.

Claim. — The hermetically-closed, flexible, and compressible capsule, for condensing vegetable extracts, as described.

105,486. — PATTERN FOR MEASURING THE BODY FOR GARMENTS.—Moses Palmer, Jr., Boston, Mass., and E. Willoughby Anderson, Washington, D. C.

Claim.—1. The adjustable vest or pattern, consisting of front and back portions, attached together by means of slots *c* and perforated clamp-screws *s*, and provided with the sliding plates *d*, to determine the curvatures of the neck-slope and arm-hole, substantially as specified.

2. A vest or pattern, consisting of front and back pieces, having their ends *b b b' b'* overlapped, so as to fix them in relative positions, determined by the shape and slope of the body, substantially as specified.

3. The centrally-perforated clamp-screw *s*, as specified.

105,487. — MACHINE FOR MILLING THE KNUCKLES OF BUTT-HINGES. — Emery Parker, New Britain, Conn., assignor to Russell & Erwin Manufacturing Company, same place.

Claim.—1. Constructing the back rest E with a dummy knuckle H, and suitable support *e*, substantially as described, for the purposes specified.

2. The adjustable front rest E', the adjustable bed-piece L, and the stationary back rest E, all in combination, substantially as described.

105,488.—MACHINE FOR CENTERING BUTTS. Emery Parker, New Britain, Conn., assignor to Russell & Erwin Manufacturing Company, same place.

Claim.—The improved machine for centering the holes for joint-pins of hinges, which consists of the following elements in combination: The drills A A, adjustable rests B B, and table D, with mechanism for adjusting it vertically, said table being provided with gauges E E', substantially as described.

105,489.—DOOR-BOLT.—Russell B. Prindle, Norwich, N. Y.

Claim.—As a new article of manufacture, the bolt A, provided with the wings B, having therein the slots C and D, the recess E, and the spring F, substantially as shown and described.

105,490.—MACHINE FOR MAKING HORSE-SHOE BLANKS.—Abram Reese and Jacob Reese, Pittsburg, Pa.

Claim.—1. The dies *a a'* and *c*, arranged on a pair of horizontal rolls, in combination with a collar *e* and vertical edging roll *d*, substantially as described.

2. The subject matter of the last claim, in combination with the creasers *s*, substantially as described.

3. The dies *a a'* and *c*, in combination with creasers *s*, cutters *s'*, and the roll *d*, arranged substantially as set forth.

105,491. — BUFFER-HEAD FOR CAR-COUPLINGS.—William Rickards, Jr., Franklin, Pa.

Claim.—1. The buffer, consisting of the head B, stationary collar *d*, increase *i*, shank *c*, and movable collar H, to divide the springs *m* and *n*, arranged and operating as described in the draw-head A, all as set forth.

2. The buffer-head, with its collar and springs, when made in cylindrical form, and fitted in a corresponding cavity in the draw-head, as set forth.

105,492. — MARINE-COMPASS.—Edward S. Ritchie, Brookline, Mass.

Claim.—In the compass-bowl as described, the cap-ring as provided with the lip and the elastic packing, as arranged around and against the periphery of the glass plate, and in a rebate extended around such, the whole being as described, in order that, when the cap-ring is screwed down, the packing-ring may be expanded by the lip, in manner and for the purpose as set forth.

Also, the compass bowl as made with the main and auxiliary rebates arranged in it, and with the glass plate, in manner as described, and as having the packing arranged in the main rebate and around and against the periphery of the glass, and forced therein by a lip formed on the cap-ring, as explained.

105,493. — ELECTRO-MAGNETIC GATE AND SIGNAL APPARATUS FOR RAILROADS.—William Robinson, Brooklyn, N. Y.

Claim.—1. The magnet J, forming a part of the circuit, so arranged, with reference to an armature and circuit-closer, as to continue the action of said circuit-closer, substantially as herein described.

2. The combination of the circuit-closer G with the circuit-breaker H and gate or signal, substantially as described, and whereby, on the opening of the circuit by the circuit-breaker, the circuit-closer is released and made to keep open the circuit till it is again closed automatically by the circuit-closer, essentially as herein set forth.

3. The lever *f* of the circuit-closer, so hung or arranged as to be thrown out of working position by a vehicle or train passing in the one direction and afterward returning to its normal position for control of the armature and circuit-closer by a vehicle or train moving in the opposite direction, substantially as herein set forth.

4. The combination of the levers *e f*, the spring *o*, the rod *n*, and the lever *m*, with the armature K of the circuit-closer.

5. The arrangement, relatively to the gate or signal B and its pivot *a*, of the weight C and projection or lever *b*, substantially as and for the purpose herein set forth.

6. The arrangement, relatively to the gate or signal B and its axis *a*, of the projection or lever *c*, with its link, chain, or cord *d*, and lever D, in connection with the armature E, substantially as and for the purpose or purposes herein described.

105,494, antedated July 8, 1870.—ELECTRO-MAGNETIC GATE-OPERATING APPARATUS. William Robinson, Brooklyn, N. Y.

Claim.—1. The combination of the levers *e e*

with the gate B and circuit-closer to a battery, arranged so as to operate the gate by the action of the passing vehicle, substantially as specified.

2. The combination, with a circuit closer, arranged for operation by the vehicle, while in motion, of clock-work for prolonging the action to said circuit-closer and operating to keep the armature of the magnets in prolonged hold on or control of the gate, substantially as specified.

3. The circuit-closer, or its stand or frame, or a portion thereof, hung or arranged so as to be shifted out of working position on and by a vehicle or train passing in the one direction, and afterward returning to its normal position for control of the circuit-closer by a vehicle or train passing in the opposite direction, essentially as herein set forth.

105,495.—OYSTER-TONGS.—Joseph W. Sands, Annapolis, Md.

Claim.—The hinge-socket F Q, through which the pole H of the tongs K K works, for the purpose of operating the same, and for unshipping the pole H, when not in use.

105,496.—HANGING MILL-STONES.—Charles Schneider, Galion, Ohio.

Claim.—1. The bed-plate E, surrounding the bottom of the runner D, and having a projecting boss or hub, *c*, in combination with the spindle F, with its flange *b*, secured to the said boss *c*, in the manner and for the purpose herein specified.

2. The springs G G and driving-pulley H, loose upon the spindle F, in combination with the bed-plate E of the runner D, substantially as and for the purpose herein set forth.

3. The construction and arrangement of the frame I, sliding boxes *e e e* and adjusting-screws *f f f*, in combination with the spindle F, secured rigidly to the runner D by its flange *b* and the bed-plate E, for the purpose herein specified.

4. In combination with the bed-plate E, boss *c*, and spindle flange *b*, arranged to form a stiff bearing for the runner, the balancing-pin *g*, when used substantially in the manner described, to put the stone in proper "standing balance," so that it may, at the same time, be in "running balance."

105,497.—BRIDGE.—Jacob Seebold, Kantz, Pa.

Claim.—1. The combination of the rods C C and castings D D, forming the bottom chord of a bridge, when arranged substantially as herein set forth.

2. In combination with the bottom chords C D, the metal beams H H, wooden beams I I, and cross-braces J J, constructed and arranged substantially as shown and described.

3. The arrangement of the castings K K and braces L L and M M, for bracing and connecting the top and bottom chords of a bridge, substantially as herein set forth.

4. The inclined rods or braces *b b*, connecting the castings *a a*, on the top chord E G, with the castings D D of the bottom chord, in combination with braces L M and casting K, substantially as shown and described.

5. The combination of the top chord E G, bottom chord, C D, beams H and I, cross-braces J, castings K, braces L and M, rods *b b* and *d*, castings *a a*, and with or without the wire ropes P P and castings R, all constructed and arranged substantially as and for the purposes herein set forth.

105,498.—MACHINE FOR SPLITTING WHALE-BONE.—James A. Sevey, Boston, Mass.

Claim.—In connection with the bars D E, when combined and arranged with a series of knives, substantially in the manner as described, mechanism, as set forth, viz., the hangers *b b*, the slots *c c*, in the arms B B, and the clamp-bolts and nut *e d*, by which the said bar E may be adjusted and fixed in position, either nearer to or further from the bar D, as circumstances may require.

Also, the combination and arrangement of the throat-pieces, carriers F G, provided with the bars D E, and the series of knives K, applied to the latter.

Also, the combination and arrangement of the series of throat-pieces or bars L, made so as to be capable of being moved endwise, as and for the purpose described, with the series of knives K and the bars F G applied to the bars D E, as set forth.

Also, the combination of the additional throat-piece supporters *k k* with the main supporting and guide-bars F G applied to the bars D E, as described.

Also, the application of each presser-wheel *q* to its presser-bar or slide *m*, by means of the carrier *p*, pivoted to the said bar, substantially in manner and so as to operate as described.

Also, the combination of the bars D E with the frame or standard A, by means of the arms B B, pivoted to the said frame or its shaft, the same being for the purpose as specified.

Also, the application of the presser-roller frame M to its support-bar N, so as to be capable of being inclined relatively to the knives, as set forth.

Also, the combination and arrangement of the notched bar S and its adjusting screws, or their equivalents, with the frame M and its series of pressure-roller sliders *m*, as described.

105,499.—MANUFACTURE OF LUBRICATING COMPOUNDS.—Edwin B. S. Shoemaker, Towsontown, Md.

Claim.—A lubricator for axles, journals, and other purposes, composed of the ingredients, mixed, substantially as described.

105,500. — WASHING-MACHINE. — Peter B. Shoemaker, Plattsburg, Mo.

Claim.—An improved washing-machine, formed by the combination of the stationary racks C, stationary part D of the cover, support or bracket F, adjustable standard G, lever H *h'*, adjustable pivoted arms I, and pressers J, with each other and with the semi-cylindrical tub A, said parts being constructed and operating substantially as herein shown and described, and for the purpose set forth.

105,501.—BOOT AND SHOE-STIFFENER.—Nathan J. Simonds, Woburn, Mass.

Claim.—A stiffening composed of the back *a*, one or more diminished pieces, as shown at *b c*, and the cover *d*, rolled together, or compressed, in the manner substantially as described and shown.

105,502.—CONCRETE PAVEMENT. — Robert Skinner and Bonnet Bonnet, San Francisco, Cal.

Claim.—1. A compound formed of the materials named, when mixed and united in the manner described.

2. A pavement constructed of the blocks A, of the compound above claimed, when laid and united by cement, as described.

105,503.—GAUGE-COCK. — Levi F. Smith, Philadelphia, Pa.

Claim.—1. The part A, constructed as described, with slotted or hooked projections B and double valve-seat *a*, substantially as and for the purposes herein set forth.

2. The weighted lever C, provided with box-like extension D, pin *b*, and lead or rubber *d*, all substantially as and for the purposes herein set forth.

3. The combination of the part A with projection B and double valve-seat *a*, and the lever C, with weight E, box D, pin *b*, and lead or rubber *d*, all constructed and arranged substantially as and for the purposes herein set forth.

105,504.—RAILWAY-RAIL CHAIR.—Samuel Hulbert Smith, Altoona, Pa.

Claim.—Stop-chairs A, formed of short, narrow plates of metal, twisted spirally at B, to enable one end to be spiked flat upon the tie, while the other end is bolted to the rail at some distance therefrom, as shown in the drawing, and for the purpose specified.

105,505.—Folding Carriage for Children.—Thomas G. Stagg, East New York, N. Y.

Claim.—1. A reach, C, for folding carriages, jointed at F, and held in position by sliding bars and hooks, as shown in fig. 3 of drawing.

2. The support H hinged to the bottom of seat G, and having its lower end resting upon spring I, as shown and described.

3. The removable foot-board L and the staples combined with the seat, so as to form, when adjusted together, a bedstead for a child, as set forth.

4. The projecting sides of seat G, and the transverse rod between them, combined with the notched bar P to adjust back O, in the manner desired.

5. The elastic band q, combined with the seat and thills R, to hold the folded parts of the carriage firmly together, as set forth.

105,506, antedated March 23, 1870.—Machine for Removing Grease from Leather.—James Starratt, Salem, Mass., assignor, by mesne assignments, to Handley Starratt and Benjamin McKeen.

Claim.—In the machine for scraping or removing grease from leather, the auxiliary scraper G, as arranged, and supported in advance of the bed B, and independently of the arm D, in manner substantially as hereinbefore described, and as represented in the accompanying drawing.

105,507.—Vise.—Anson P. Stephens, Brooklyn, N. Y.

Claim.—1. The combination of the slide-bar, the stock, the slide-box and its connecting ears, all constructed for joint operation, as set forth.

2. The combination of the slide-box, the movable jaw, the slide-bar, the rack in the slide-bar, and the toggle-rack, all constructed to operate as set forth.

3. The combination of the lever of the toggle-jointed mechanism with the stock of the vise-box, by means of a tapering pin, fitted tightly into the stock and loosely in the hub of the lever, as described.

4. The arrangement of the upright spring within the recess of the rack-bar of the toggle-jointed mechanism, as set forth.

5. The relative arrangement, as set forth, of the projecting lip of the rack-bar and the second joint of the toggle-jointed mechanism, whereby said lip operates as a stop for said rack.

6. The second joint of the toggle-mechanism, constructed, as described, of uniform section throughout, without projections at its side.

7. The relative arrangement, as set forth, of the lip of the first joint of the toggle-jointed mechanism, and the second joint thereof, whereby said lip operates as the stop for said first joint.

8. The swiveling-mechanism, consisting of the combination of the hollow ball, the ball-socket, the clamp arranged within the cavity of the hollow ball, and the clamp-screw, the whole arranged as represented and described, with the handle of the clamp-screw at one side of the ball, and the hollow ball at the opposite side thereof.

105,508.—Apparatus for Operating Window-Curtains.—John Stephens and Jairus Collins, Fairview, Ohio.

Claim.—The roller B, with the grooves H H, the cords G G, pulley E, and the band D, with the tassel or weight F, in combination with a window-curtain and window, when the same are arranged to operate substantially as and for the purpose set forth.

105,509.—Trace-Buckle.—Charles H. Stevens, Fayetteville, N. Y.

Claim.—The swinging cam-plate E *e*, having a rear projection or tail-piece F hinged or jointed thereto, in connection with the buckle-frame C *c*, substantially as and for the purpose herein specified.

105,510.—Cable-Stopper.—James Stitt, San Francisco, Cal.

Claim.—The combination of slotted bar A, provided with projection *a'*, bent and forked bar *k*, pivoted in A, and the ring *i*, provided with slot *n*, to pass the aforesaid projection, arranged to operate substantially as described.

105,511.—Preparation of Cement for the Manufacture of Cement Pipe.—John W. Stockwell, Portland, Me.

Claim.—1. The mixer, shown in fig. 1, with its receptacle *a*, divisions *d f*, and mixing-gates *e e h*, the whole to be operated as herein described.

2. The device, seen in fig. 2, with its graduated partitions, both fixed and removable, and to be operated as herein described.

105,512.—Secretary-Safe.—Timothy J. Sullivan, Albany, N. Y.

Claim.—1. A secretary-safe, in which is combined the safe portion A and secretary portion B, substantially in the manner set forth, for the purpose specified.

2. The boudoir-safe, in which is combined a safe portion A, secretary portion B, and book-case portion C, in the manner substantially as set forth, for the purposes specified.

105,513.—Device for Inserting the Pintle or Pins in Butt-Hinges.—Lucius P. Summers, New Britain, Conn., assignor to P. & F. Corbin, same place.

Claim.—The combination of the punch *e*, fin *c*, and driver *d*, with the holder *a*, provided with a hole, *b*, to receive the wire, and a slot, *i*, less than the diameter of the hole *b*, substantially as and for the purpose described.

105,514.—Condiment or Relish.—William Francis Swasey, San Francisco, Cal.

Claim.—My improved condiment called bonzet, composed of the ingredients enumerated, and prepared for use, in a manner substantially as above set forth.

105,515.—Construction of Chairs.—Daniel E. Teal, New Lisbon, N. Y.

Claim.—A chair-leg constructed of parallel metal rods or wire, each provided with two or more spiral coils, substantially as shown, and for the purpose specified.

Also, in combination with chair-legs constructed of wire, as described, a circular metal ring or hoop for confining the same in position radially, substantially as and for the purpose set forth.

105,516.—Construction of Chairs.—Daniel E. Teal, New Lisbon, N. Y.

Claim.—The supporting-spider F, constructed as described, with side spring-arm *f*, and connected to the screw E and seat G, substantially as and for the purpose shown.

Also, the spider C, provided with the sockets D, for connecting together, and in combination with, the legs A, substantially as shown and described.

105,517.—Construction of Chairs.—Daniel E. Teal, New Lisbon, N. Y.

Claim.—The devices employed for pivoting the seat D to or upon the screw A, consisting of the roller B, resting within the bearings C, attached to the lower side of said seat by means of the rods E, substantially as and for the purpose shown.

Also, the combination of the forward edge of the plate *c* with the upper end of the screw A, and the roller B, substantially as shown, and for the purpose specified.

Also, in combination with the screw A, the roller B, and the plate *c*, the spiral springs F, constructed and arranged to operate substantially as and for the purpose shown.

105,518.—Gauge-Pin for Tympan-Sheets.—R. W. Thing, Boston, Mass., assignor to himself and David T. Pray, same place.

Claim.—The within-described gauge-pin, whether made with one, two, or more pins or prongs, as a new article of manufacture.

105,519.—Device for Curling Hair.—S. Lee Tibbals, Dutch Flat, Cal.

Claim.—1. A hair-curling iron, when provided with grooves or recesses *b b'*, substantially as and for the purpose described.

2. The combination, with the above-claimed curling-iron, of the locking hair-pin *c*, substantially as and for the purpose specified.

105,520.—Centrifugal Sugar-draining and Molding-Machine.—Patrick Tully, San Francisco, Cal.

Claim.—1. The molds set around the basket, for the purposes as described, and constructed in the manner substantially as set forth.

2. The upper and lower rings fastened to and forming part of the "basket," and against which the molds will rest, for the purposes as set forth, and constructed in the manner substantially as described.

3. The keys as a means of securing the molds in position, substantially as herein described.

105,521.—Ice-cream Refrigerator.—Carl Vigual, New York, N. Y.

Claim.—The ice-cream refrigerator, containing the cylinders B, which are surrounded with non-heat-conducting material, substantially as set forth.

105,522.—Platform-Scales.—Victor Vincent, New York, N. Y.

Claim.—1. In combination with the primary lever, the construction of the bearing beam with the arms for connection with the suspension links, in places on each side of and outside of the long arm of the primary lever, substantially as and for the purpose described.

2. The locking-pieces on the arms of the bearing-beam and of the brackets of the frame to be connected with the platform, in combination with the suspension links, substantially as and for the purpose described.

3. The recesses at the lower end of the bearing-beam and the locking-piece *k*, in combination with and for the purpose of inclosing the knife-edge of the short arm of the primary lever, as and for the purpose described.

105,523.—Sad-iron Holder.—E. H. Gustav Von Doehren and Frederick P. L. Reimers, Davenport, Iowa.

Claim.—The arrangement of the links *b b'*, semi-cylindrical parts A A', and spring *d*, when constructed to operate together, in such a manner that the parts A A' may be held either partially or wholly open, and the spring *d* may be entirely concealed within the said parts, as described.

105,524.—Car-Spring.—Richard Vose, New York, N. Y.

Claim.—A car-spring, composed of the case A, the columns of India rubber B, and the wool C, when arranged and combined substantially as and for the purpose specified.

105,525.—Regulator for Steam Heating Apparatus.—Alfred Walker, Portland, Me.

Claim.—1. The regulator coil, consisting of a serpentine piece of steel, *i*, in combination with a series of brass lining pieces, *j*, the two combined and operating together, substantially as herein described.

2. The screw-rod *r s*, and carriage *m*, in combination with the coil *i j*, rod *s*, valve *d*, cylinder *c*, and receiver *b*, substantially as and for the purpose described.

105,526.—Mode of Protecting Fruit-Trees from Curculio, &c.—Rebecca J. Walker, Goshen, Ohio.

Claim.—The method herein described of protecting fruit-trees from the curculio.

105,527.—Quartz-Mill.—Thomas Walker, Philadelphia, Pa.

Claim.—1. The combination of the bisected cylinder B with perforated segments *j*, having spaces *g* and set-screws *k*, with cross-arms E, detachable hammers F F, and shaft D, when constructed and arranged as hereinafter shown and described, for the purpose set forth.

2. In the cylinder B, the perforated segments *j*, in combination with the peripheral channel or space *g*, as and for the purpose set forth.

3. The elastic packing *m*, when arranged between the ends of the segments *j*, for breaking the shock caused by the striking of the quarts against the inner periphery of the cylinder C, substantially as described.

105,528.—Gang-Plow.—Elisha W. Walton, San Leandro, Cal.

Claim.—The device for elevating and lowering the plow-frame, consisting of the slotted plates E, the plates *e*, and the cams G, with their arms *f* and rods *g*, said rods being attached to the arm *h* of the shaft H, and the whole operated by the sweep I, substantially as described.

105,529.—Weed-Cutter.—Elisha W. Walton, San Leandro, Cal.

Claim.—1. The triangular shovel C, constructed as described, and having the two bent ears *e*, substantially as and for the purpose herein specified.

2. The bent rod E, having its opposite ends secured to the movable handles D, in combination with the clasp F, substantially as and for the purpose described.

3. The arrangement of the bolt A, for retaining the link *g* in the rack-bar of the clevis, substantially as herein set forth.

105,530.—Corn-Popper and Coffee-Roaster.—L. A. Warner, Freeport, Ill.

Claim.—1. The tube K and lid H, when combined with the cylinder X and shaft B, and constructed and operating substantially as described, and for the purposes set forth.

2. The combination of the tube K with the shaft B, the lid H, the spring *d*, and knob *i*, for the purpose of opening and closing the lid or cover of corn-poppers and coffee-roasters, in the manner substantially as described.

3. The spring *d* and the knob *i*, when used in combination with the shaft B and the tube K, in the manner substantially as and for the purpose set forth.

105,531.—Plow.—George Wharton, Jerseyville, Ill.

Claim.—The plow described, provided with the curving-beam A, standard B, and plow C, when the plow is rigidly attached to the standard and the beam is adjusted substantially as described, for the purpose set forth.

105,532.—Water-Wheel.—Henry J. White, Chatham, Iowa.

Claim.—1. The gate E, provided with the guides F, completely filling the space between the chutes D, the arms N, pivoted to the collar O, the swinging fulcrum L, stand M, and lever K, each of said parts being constructed and all relatively arranged as and for the purpose specified.

2. The improved water-wheel, consisting of the lever S, screw-rod U, conical step P, bridge R, wheel G I, buckets J, shaft H, tube W, chutes T, cap A, gate E, guides F, arms N, collar O, lever K, fulcrum L, and stand M, all relatively constructed and arranged as shown and described.

105,533.—Oscillating Churn.—Nimrod E. Wilson, Wilsonburg, West Va.

Claim.—1. The combination of the crank-shaft C, dasher-rod D, block D^1, clamp D^1, and set-screw D^2, or their equivalents, their arrangement being such that the dasher-rod may be confined to the cranks at any desired point, substantially as and for the purpose specified.

2. The combination and arrangement of the barrel E, platform F, and lever G, its shaft G^1, and arms G^2, or their equivalents, substantially as and for the purpose specified.

3. The combination of the hooked springs E^1, cross-bar E^2, and curved spring E^3, substantially as and for the purpose set forth.

105,534.—Lifting-Jack.—George W. Windsor, Allegheny City, Pa., assignor to himself and John F. Beilstein, same place.

Claim.—1. In the construction of a hoisting apparatus, a spherical ball, *c*, resting in a seat in a supporting plate, in combination with a threaded elevating stem, *d*, and threaded nut or head *c'*, the aperture of the seat under the ball being larger than the stem, arranged substantially as described, and for the purposes set forth.

2. A lifting-jack, consisting of a tripod and ball-and-socket joint, the ball being perforated for the stem *d*, to the lower end of which is hinged a grapple, provided with shifting-bar and lever, constructed substantially as hereinbefore set forth.

3. The combination, in the tool *f*, of wrench, claw, and tamping-head, substantially as shown and described.

105,535, antedated July 12, 1870.—Base-Burning Stove.—George A. Wing, Albany, N. Y.

Claim.—1. The combination and arrangement of flues *a*, *b*, and *c*, and chamber B, surrounding the fire-pot A, with a chamber, G, in the base of the stove.

2. The combination and arrangement of an upper casing, C, with flue *c*, and chamber G, when said chamber G is heated by air passing from chamber B, in the manner substantially as herein shown.

105,536. — Water-Wheel. — Charles D. Wright, Leesville, Conn.

Claim.—1. The water-wheel, composed of the plates B D and buckets C, the space between the buckets being not obstructed by a central shaft or hub, as set forth.

2. A series of buckets C, curved on the inner, and straight on the outer side thereof, to allow a column of water to act simultaneously on two or more of them, when arranged as set forth.

105,537.—Knitting-Machine.—William H. Abel, Bennington, Vt.

Claim.—1. The combination of the thread-guide B and presser-wheel E, for introducing weft-thread between reciprocating divided needles.

2. The dividing-wheel C, in combination with the series of reciprocating needles actuated by a cam-groove, when the cam and dividing-wheel act so that the needles are partially raised, rest, are divided, and then continue rising after they are divided.

3. The combination of the reciprocating series of divided latched needles with the presser-wheel E, for pressing down the weft-threads, substantially as described.

4. The combination, substantially as described, of wheels C and E, and warp and weft-guides A and B, the latter having latched guards *g*, with the latched needles, all arranged and operating in the manner and for the purpose specified.

5. The series of reciprocating divided needles, in combination with actuating mechanism, substantially as described, which operates to commence to divide the needles when partially raised, but at rest, and continues to raise them after they are divided.

6. The cam-cylinder, having lower and upper rising inclines, and cam-groove H, the adjustable cams A^6, constructed and applied as described, and provided with an ear, f^6, and adjusting screw, g^6, a spring, I, an operating wheel, f^6, and a spring catch, e^6, in combination with the slides, having butts *d*, all arranged and operating substantially in the manner and for the purposes specified.

7. The rocking-up apparatus, take-up or register, as described, consisting of cones U and T, shaft A^7, worm Y, and gear Z, in combination with the cloth-roll A^6, and the flier, all arranged and operating substantially in the manner and for the purposes specified.

8. The plate or disk A^8, in combination with wheels C and E, and reciprocating latched needles, for the purposes specified.

105,538. — Knitting-Machine. — William H. Abel, Lowell, Mass., assignor to himself, Robert H. Brown, and John E. Crane.

Claim.—1. The combination with the needle-carrying slides, of a wheel operating against such slides below the butts, by which they are reciprocated, the slides and wheel being constructed substantially as described, to skip or press certain of the slides, as described.

2. The slides D^1, in combination with the cam A^6, working against and moving such slides to throw their needles out of line with respect to the other needles, for receiving the weft-thread.

3. The cam-cylinder, having groove H and slides D^1 D^2, each having butts *d*, in combination with a wheel acting against such slides below the butts to separate the needles of such slides, the slides and wheel being constructed substantially as described.

4. The combination of long and short slides D^1 D^2, having butts *d*, with the cylinder having cam-groove H and cam A^6, the latter acting on the long slides to divide the needles and the former reciprocating the slides.

105,539. — Knitting-Machine. — William H. Abel, Lowell, Mass., assignor to himself, Robert H. Brown, and John E. Crane.

Claim.—1. The needle-slides having hooked butts, constructed substantially as described, and operating, in connection with cams on a cam-cylinder, to divide the needles carried by the slides, for the introduction of weft-thread.

2. The combination of the slides having plain and hooked butts, with cams acting in connection with such butts, to reciprocate and divide the needles carried by the slides, all substantially as described.

3. The cam-cylinder herein described, provided with cam-grooves H and Q, the former engaging plain butts to reciprocate the needles, and the latter engaging hooked butts to divide the needles for the introduction of weft-threads.

105,540. — Shingle-Machine. — James E. Austin, Oswego, N. Y.

Claim.—1. The combination of a thin cutting-blade, strengthened and held taut, as described, a table for supporting a block of timber, and mechanism to impart to said blade a reciprocating or shearing movement in reference to the table, or a reciprocating movement of the table in reference to the knife.

2. The combination of the straining-beam C, knife B *b*, parts *c* c^1, and screws c^2, all constructed, arranged, and operating substantially as described.

3. The set-works or gauges L *i* i^1, constructed and operating substantially as described.

4. The knife B, provided with the dovetail heads *b b*, for attaching the said knife to the beam C *c* c^1, as and for the purpose specified.

5. The arrangement of the sliding knife B, the straining-beam C, the movable table D, the set-works L *i* i^1, and operating devices c^3 G F *f e*, and frame A A, all constructed and operated as and for the purpose herein specified.

105,541.—Oven.—Hosea Ball, New York, N. Y.

Claim.—1. The bread-pan, arranged above its axis of support, and provided with a pendulous weight beneath, by which its horizontality is sufficiently maintained.

2. In combination with a bread-pan, arranged as described in claim 1, the basket, plate, or containing-receptacle, which, besides its functions as a weight, may be utilized to contain material capable of absorbing and radiating heat, substantially as and for the purpose described.

3. A basket or plate, suspended from a swinging pan or platform, whether the pan be above or below the axis of support.

4. A basket or plate, placed or suspended below the pan, for the purpose described, used or to be used in any oven in which the pans or bottom are mechanically moved during the baking process, whether the motion be by a reel, a rotating platform, a chain, a band, or otherwise.

5. The combination, with the crown or furnace-arch, of a grating or perforated or reticulated floor above it, substantially as and for the purpose herein set forth.

105,542. — Horse Hay-Rake. — Newcomb M. Barnes, Tiffin, Ohio.

Claim.—1. The head D of a revolving rake, mounted on a frame, composed of the draw-bars A A, upright posts B B and shoes or runners E E, the several parts being constructed and arranged substantially as specified.

2. In combination with the head D, and the frame composed of the bars A A, uprights B B, and shoes E E, the arms F F, provided with the upper and lower springs I I, and pivoted to the frame, so that the springs act upon the pins *b b*, on the rake-head, all substantially as set forth.

105,543.—Machine for Sharpening Saws. John Atkinson Borthwick, Philadelphia, Pa.

Claim.—The rotary cutter A, its jointed frame and driving-belts, operating substantially as described, when the whole is permanently suspended above, and arranged, in respect to a circular saw or other cutting instrument, so that the cutter can be applied to the instrument without removing the latter from its permanent bearings.

105,544.—Winker for Harness-Bridles. William Boyd, Mansfield, Mass.

Claim.—The bridle-winkers herein described, the peculiarity of their construction consisting in making them in two distinct sections, a flat one, A A', and a flaring or crescent one, B B', united together substantially in the manner and for the purpose set forth.

105,545.—Coffee-Mill.—Thomas W. Brown, Boston, Mass., assignor to Charles Parker, Meriden, Conn.

Claim.—The combination of the base B, runner-chamber C, and central support D, cast in one and the same piece of metal, with the vertical runner F, and either with or without the hopper E.

105,546. — Carriage-Wheel. — Seneca B. Buck, Elyria, Ohio.

Claim.—The conical box or pipe D, axle E, and nut F, in combination with the nave C, spokes B, and rim A, arranged in relation to each other, as and for the purpose substantially specified.

105,547.—Fruit and Alcohol Still.—James A. Campbell, Rockingham county, Va., assignor to himself, John W. Ribble, and P. Phares.

Claim.—1. The generator A, having a series of pipes, D D^1 D^2, and cap B, when said generator and cap are connected by vertical rods *a a* and nuts a^1 a^1, or their equivalent, substantially as described.

2. The generator A, cap B, and tube B', when the latter is so constructed as to enable the steam to be fed to two or more stills, substantially as described.

3. The vessel F, when constructed of wood, or other like material, false bottom F^1, and copper cap G, when the same are combined and arranged substantially as described, as and for the purpose specified.

105,548.—Sewing-Machine and its Supporting-Table.—Milton Chase, Haverhill, assignor to himself and Horace Chase, Boston, Mass.

Claim.—A sewing-machine and its table, as arranged and pivoted together in manner as described and represented, so as to enable the sewing-machine to be moved and set into one or more inclined positions relatively to the table-top, substantially as and for the purpose as described.

Also, in combination with a sewing-machine and its table, so pivoted or applied together, the main driving fly-wheel, as applied to swing with the machine while being moved on its pivots, the whole being substantially as explained.

Also, in combination with a sewing-machine and table pivoted together, as and for the purpose set forth, and having the driving fly-wheel arranged to swing with the machine as and while being inclined, as described, a mechanism or means for clamping to the table the machine when in either of its positions, as explained.

105,549.—Valve for Water-Boilers.—Edward H. Clarkson, Alexandria, Va., assignor to himself and James H. Robinson.

Claim.—The conical pipe B, with its hinged plate C and bearing or support-plate D, when the whole is so combined and arranged within the connecting-pipe A as to prevent the water, after being heated, or steam from flowing backward, substantially as described.

105,550.—Harvester-Cutter.—James M. Connel, Newark, Ohio.

Claim.—1. An endless chain, with cutters attached, having the joints of the links formed with annular tongues and grooves, substantially as shown and described.

2. An endless chain, with cutters attached, so constructed that the joints of the links form cogs, and are provided with annular tongues and grooves, substantially as shown and described.

3. An endless chain, with cutters attached, so constructed that the ends of the links form obtuse angles with their front edges, and are formed with triangular depressions corresponding with said obtuse-angled ends, and the joints are formed with annular tongues and grooves, substantially as shown and described.

105,551.—Subsoil-Plow.—Thomas L. Cotten, Madison county, Miss., assignor to Martha J. Cotten, same place.

Claim.—The colter C, having a diamond-shaped or arrow-head point or shoe, C', brace-bar D, when said bar and the colter are permanently connected, arm E, and stirrup F, when the same are so constructed as to render the colter and its brace adjustable, as shown, the whole being combined and arranged substantially as described.

105,552.—System of Fire-Alarm and Police-Telegraph. — Sylvanus D. Cushman, New Lisbon, assignor to the Automatic Fire-Alarm Company, Leetona, Ohio.

Claim.—1. The continuous fire-alarm telegraph-circuit herein described, the same consisting of a continuous metallic circuit, or a continuous ground and metallic circuit, provided with suitable battery-power, and embracing all the signal-boxes at vari-

ous points in the city, or a large portion thereof, and electro-magnetic sounders at each of the fire-department offices, so that an alarm given at any signal-box will be at once announced to every fire-department office without giving a public alarm, substantially as specified.

2. The arrangement of a continuous fire-alarm circuit, embracing all the signal-boxes and fire-department instruments, in two or more loops, and the combination of the said loops with the sections of the circuit-battery, so as to distribute the battery into the circuit, substantially as is herein specified.

3. The combination of a continuous fire-alarm circuit, embracing all the signal-boxes and fire-department instruments, and arranged in two or more loops; a circuit battery, divided into two or more sections, and a switch-board provided with suitable switches, and so combined with the circuit and battery as that said circuit can be worked as a continuous metallic circuit, with distributed battery, or as a continuous ground and metallic circuit with distributed battery, or as two or more ground loops or metallic loops, each with its own battery-section, substantially as is herein specified.

4. The combination with a fire-alarm circuit, embracing all the signal-box and fire-alarm instruments, of a talking or police-circuit, working independent of the fire-alarm circuit, but having an electro-magnetic sounder at each of the fire-department offices in the fire-alarm circuit, substantially as and for the purpose specified.

5. The combination with the telegraph instruments in those fire-department offices, having an instrument on both the fire-alarm and police-circuits of one or two ground-wires with accompanying switches, the several parts being arranged substantially as and for the purpose specified.

6. The combination with a fire-alarm signal-box, of two ground-switches, located on the main fire-alarm circuit, one at each side of the operating mechanism, and arranged to connect with suitable ground-wire or wires, substantially as is herein specified.

7. The combination of a cross ground-wire with the loop of a fire-alarm circuit, substantially as and for the purpose specified.

8. A continuous fire-alarm circuit, provided with suitable battery, and embracing all the signal-boxes and fire-department instruments, said signal-boxes being provided with such operating mechanism as that the closing of the signal-box door switches the electro-magnets out of the main circuit, thus obtaining a combined working and reserve circuit, substantially as specified.

105,553.—Kettle for Melting, Mixing, and Casting Metals. — William S. Deeds, Baltimore, Md., assignor to himself, John H. Baer, and George Koch, same place.

Claim.—1. A kettle for melting metals, constructed as described, provided with a follower for the exclusion of atmospheric air, substantially as shown.

2. A kettle for melting and mixing metals, provided with a stirring apparatus, as described, by means of which the liquid metal can be stirred and thoroughly mixed without exposure to the atmosphere, substantially as shown.

3. A kettle for melting, mixing, and casting metals, arranged as described, with relation to the furnace, whereby the melted metal can be drawn off from the bottom, substantially as shown.

105,554.—Ships' Topmast.—Eben Denton, Braintree, Mass.

Claim.—1. A topmast, arranged to be raised and lowered through an endless rope or line, substantially as and for the purpose described.

2. In combining with the above, the topmast, arranged to be guided on the said endless rope or line, substantially as and for the purpose set forth.

3. The spring catch L, or its equivalent, applied to the main and topmasts, substantially as and for the purpose described.

105,555.—Blacksmiths' Tongs. — Andrew J. Dextor, North Foster, R. I.

Claim.—The combination of the bar C and adjusting-screw D with the parts A B of the tool, substantially as herein shown and described, and for the purpose set forth.

105,556. — Wardrobe Bedstead.—James F. Dodge, Nashua, N. H.

Claim.—1. A wardrobe or folding bedstead, consisting of the head-piece A, constructed as described, in combination with the hinged part H, the ratchet e', angle-braces d' d', spring bolt m, and adjustable box C.

2. Roller G, working on journals within the ratchet e, constructed as described, and for the purpose set forth.

105,557, antedated July 6, 1870.—Apparatus for Generating and Burning Gases in Metallurgic Furnaces. — Josiah W. Ella, Pittsburg, Pa., assignor to himself and S. M. Kier, same place.

Claim.—1. Arranging the gas and air-tubes all within the space of one chamber, so that the whole or undivided body of the outgoing heat and products of combustion will be distributed equally around and among them on its way to the chimney, by which all the tubes, those used for supplying air as well as those employed for the transmission of gases, will be heated uniformly and alike, as herein described.

2. Arranging the gas and air-tubes within the heating-chamber, in such a manner as that one end of said tubes may be exposed, and their interior examined at all times from the outside of the apparatus, in the manner described.

3. Arranging each section forming the gas and air-tubes with an enlarged end or bowl, into which is fitted the small end of the section next it, and so arranging them within the heating-chamber as that the joints of one length of tubes will be opposite, and rest against the solid part of that arranged beside it, by which they tend to support one another, leaving intercepted spaces between the tubes, in the manner and for the purpose hereinbefore described.

4. The arrangement of the gas and air-heating chamber, with its several tubes, passages, and dampers, so arranged, with relation to each other, that, by changing the position of the dampers, the ingoing gases may be directed through the heating-chamber around the outside of the tubes, while the heated products of combustion will pass through them, or *vice versa*, in the manner and for the purpose herein before set forth.

5. The use, in the gas-generator, fig. 7, of the falling apron W, in combination with the bench V, constructed and operating substantially as herein set forth.

105,558, antedated July 6, 1870.—Gas and Air-heating Apparatus for Metallurgic Furnaces. — Josiah W. Ella, Pittsburg, Pa., assignor to himself and S. M. Kier, same place.

Claim.—1. Arranging the gas and air-supplying tubes in such a manner, and in combination with the air and gas-passages at opposite ends of a heating-chamber, that, with a properly-constructed and operating valve or damper, the gas will be directed through one set of tubes, while the air is passing through the other set, or *vice versa*, at the option of the furnace-man, or the person having it in charge, substantially in the manner and for the purposes herein set forth.

2. So arranging the gas and air-supplying tubes, with their respective passages, at each end of the heating-chamber, damper-chest, and inlet-ports, that, by changing the position of the damper so as to close one port and open the other, the current of gases, as they pass into the furnace, will be made to enter either above or below the current of ingoing air, as the circumstances of the case may require.

3. So arranging the damper and damper-chest, with its ports, in connection with the inlet, air, and gas-passages, so that a portion of the damper will be exposed to the cooling influence of the atmosphere, in the manner and for the purposes herein set forth.

105,559.—Spool-Stand and Show-Case.—Eben B. Fenton and Henry S. Penfield, Chicago, Ill.

Claim.—1. A case for silks and other spooled threads, adapted for rotation upon a vertical shaft, which shall receive the spools at the top and discharge them through the bottom, and which shall exhibit, through its exterior, a sample of the silk or thread contained in its various compartments, substantially as herein described, for the purpose specified.

2. A rotary case for spooled threads, so arranged upon its base or stand as to discharge the spools into a recess or depression formed in any side of the stand, substantially as described, for the purpose specified.

3. The rotary case C, constructed with the series of vertical spool compartments provided with the spool-supporting ledges F, and covers H, substantially as described, for the purpose specified.

4. The combination of the ledges F with the interior casing D, and the beveled outer casing of the rotary case, substantially as described, for the purpose specified.

5. The combination of the rotary case C, constructed as described, with the base A, having the side-drawers B, substantially as described, for the purpose specified.

105,560, antedated July 8, 1870.—Preserving and Beautifying Crystallized Salts upon Glass, Mica, &c.—Oscar S. Follett, New York, N. Y.

Claim.—1. As a new article of manufacture, hermetically-sealed crystallized salts, sealed between two sheets of plain, colored, or ornamented glass or mica, for the purposes and in the manner substantially as herein described.

2. Hermetically sealing crystallized salts between two sheets of plain, colored, or ornamented glass or mica, for the purposes as set forth and in the manner substantially as described.

105,561.—Gas Apparatus for Railroads, &c.—William Foster, Jr., New York, N. Y., and George P. Ganster, Reading, Pa.

Claim.—1. In combination with a railroad car, a gas apparatus, having the evaporating-chamber and its connections outside the vehicle, substantially as specified.

2. The feed-cock f^3, with its rod f^2 extending through to the interior of the car, and index and scale f^2 f^3, combined and arranged as represented relatively to a gas apparatus outside of the car, as specified.

3. In combination with a gas apparatus outside of a railroad car, the drip-cock p', operated by the rod p, extending through to the interior of the car, as and for the purposes herein set forth.

4. A blower, operated by a spring, in connection with a gas apparatus, so constructed that it can be placed in any convenient place in the car, boat, or other carriage, and so arranged that it can be wound when the vehicle is in motion, and the lights are burning, as shown, and for the purpose set forth.

5. The combination of the following elements: a railroad car or analogous moving structure adapted to carry passengers; a blowing apparatus within the structure; an evaporating apparatus outside; a provision for discharging the drip or unevaporated portion by operating on the inside of the structure; provision for regulating the amount admitted to the evaporating-chambers, and exactly gauging the aperture from the interior of the structure; and provisions for filling and for discharging the air or gas during the filling operation, all combined and arranged for joint operation, as herein specified.

105,562. — Electro-magnetic Attachment to Ships' Compass.—Alfred Foucaut, Orleans, France.

Claim.—1. Indicating, by means of a magnetic or electrical battery connected with a compass of a ship, through and by means of a needle, any variation from the course or route within which the vessel should be guided.

2. The combination, in a marine compass, of the needle a a, planes or slides H H, with a magnetic or electrical battery, in the manner and for the purpose herein described.

3. The divided circle A A, its insulators E E, when combined with the compass C, needle a a, planes or slides H H, in the manner and for the purpose herein described.

4. The construction and arrangement of a compass, so that, by reason of any material variation in the route of the vessel, the needle of the same will close an electrical or magnetic circuit, and sound an alarm, in the manner and for the purpose herein described.

5. The planes or slides H H, constructed as arranged and described, rendered adjustable, by means of the thumb-pieces I I, in grooves formed upon the sides of the compass, in the manner and for the purpose herein set forth.

6. The combination of the supports D D with the divided circle of the compass A A, the compass C, with its insulated pivots F and G, with an electric or magnetic battery, the whole being constructed, arranged, and operated in the manner and for the purpose herein described.

105,563.—Blotting-Pad.—John F. French, Boston, Mass.

Claim.—As a new article of manufacture, a blotter made in the form of a cuff, substantially as herein shown and described.

105,564.—Hand-Truck.—Leonard Gilson, Boston, Mass., assignor to himself and E. Stone Goodwin, same place.

Claim.—1. The removable and changeable shafts or lever-handles, in combination with the eyes g and with the plate h and platform A, for the purpose and substantially as described.

2. The bottom bars or spring plates B, applied to the platform A, in the manner and for the purpose substantially as described.

3. The combination, substantially as described, with the wheel-furnished platform, of stationary bottom bars B and a sharp-edged plate, l, operating in connection to anchor the truck and to hold a case while loading, as specified.

4. A reversible hand-truck, as described, consisting of wheel-furnished platform A, movable shafts or lever-handles, bearing-bars h, holding-plate l, and bottom bars or spring plates B, all arranged substantially in the manner and to effect the objects herein set forth.

105,565.—Barrel.—Pardon H. Griswold, Grand Rapids, Mich.

Claim.—The inside lining C, constructed as described, and used within the sectional barrel A B, substantially as shown and for the purposes herein set forth.

105,566.—Combined Horseshoe and Boot. Henry G. Haedrich and Edward M. Haedrich, Philadelphia, Pa.

Claim.—1. The horseshoe A, provided, upon each side of its front center, with flanges B B, to which are hinged the pieces C C, all constructed and arranged to operate as and for the purpose set forth.

2. The side pieces D D of shoe A, provided with slots b b, in combination with straps G and I, all arranged as and for the purpose described.

3. The combination of the shoe A, one or more pieces C, pieces D D, shoe E, and straps G H, all arranged substantially as shown and described.

4. The combination of the shoe A, one or more pieces C, pieces D D, and straps G, H, and I, all substantially as shown and described.

105,567.—ROAD-SCRAPER.—Robert Hamilton, Franklin, Ind.

Claim.—1. The described arrangement of curved and forked beams A A′ A″, and curved runners B B′, fixed to the under side of the scoop C.

2. In combination with the forked beams A A′ A″, curved runners B B′, and scoop C, the brace-rods D and E, and latch F.

105,568. — BOLT-THREADING MACHINE.—Mahlon Hamlin, Catawissa, assignor to himself and Benjamin G. Welch, Danville, Pa.

Claim.—The combination and arrangement of the head A, dies B B, springs C C, sleeve D, compensating ring E, and face-plate G, all constructed as described, and operating substantially in the manner and for the purposes herein set forth.

105,569. — BOLT-THREADING MACHINE.—Mahlon Hamlin, Catawissa, assignor to himself and Benjamin G. Welch, Danville, Pa.

Claim.—1. The tool or rose-bit H, provided with the screw K, and connected with the movable sleeve, D, substantially for the purposes herein set forth.

2. The combination of the die-head A, sleeve D, and suitable mechanism for reciprocating said sleeve, and the adjustable stop L, as and for the purpose set forth.

105,570. — SHOVEL-TEETH FOR CULTIVATORS. — Thomas Harding, La Fayette, Ind.

Claim.—A drill or shovel-tooth for cultivators, &c., provided with a clamping-strap, C, rigidly attached to said tooth, and clamp-bolt E, outside of and behind the standard A, substantially as set forth.

105,571. — ORGAN-STOP.—Albert K. Hebard, Boston, Mass.

Claim.—1. A cover or stop, C, to reeds, in combination with a spring, E, and slide J, to which the register is connected, when relatively arranged for relieving the pressure of the spring on the stop, substantially as and for the purpose described.

2. A cover or stop, C, to reeds, in combination with a spring, E, when the spring connects the stop and register together, and constitutes the means of moving the stop through the register, substantially as described.

105,572.—FRUIT-CAN.—Gustav E. Heinig, Louisville, Ky.

Claim.—The improved fruit-can herein described, its body A having the groove B, whose inner wall is made vertical or nearly so, and its cover C having a rim or flange of corresponding angle, so as to fit said inner wall of the groove, as and for the purpose described.

105,573, antedated July 9, 1870.—SHADE-CORD RETAINER.—Enos T. Higham, Philadelphia, Pa., assignor to himself and Daniel Higham, same place.

Claim.—The combination of a plate, A, yoke, a, and thumb-screw, b, or its equivalent, with the wedge-shaped bar B, and the stud d, or its equivalents, for receiving the cord E.

105,574. — WHIP-SOCKET RING. — John J. Hillman, Boston, Mass.

Claim.—For holding a whip-socket, the ring d, when made with the recessed shank, and with the two ears, and held in place by the recessed clamp-plate, the two ears of whichare confined to the ears of the ring, substantially as shown and described.

105,575. — COMBINED CORN-PLOW AND GRAIN-DRILL.—Caswell Hollar, Abingdon, Ind.

Claim.—The arrangement of the frame A A¹ A², wheel B, side beams G G′, lever H, hopper K, with seed-slides n n, shovel-beams L, set-screws k, pipes M, conductors R, shoes S, shaft T, wheels V, with spurs t, shaft Y, and cog-wheels X X′, Z Z′, all constructed and arranged with their several parts to operate substantially as and for the purposes herein set forth.

105,576, antedated July 8, 1870.—PROTECTING AND BEAUTIFYING CRYSTALLIZED METALLIC SURFACES.—Henry M. Johnston, New York, N. Y.

Claim.—1. The new manufacture, hermetically sealed surfaces of crystallized tin, whether plain, colored, or ornamented, to or between plain, colored or ornamented glass or mica, substantially as described.

2. Hermetically sealing surfaces of crystallized tin, whether plain, colored, or ornamented, to or between plain, colored, or ornamented glass or mica, in the manner described, and for the purpose substantially as set forth.

105,577.—BINDING AND HEMMING ATTACHMENT FOR SEWING-MACHINES.—Amasa C. Kasson, Milwaukee, Wis.

Claim.—The combination of the hemming and binding attachment or device B, having the reversed hooks b and c, with the presser-foot, the attachment being constructed as shown, and arranged in relation to the needle-hole in the presser, so that the material being bound or hemmed is not pressed by the foot until it arrives at the needle-hole, as herein described.

105,578.—CORN-PLANTER.—Isaac A. Keeler, Middleville, Mich.

Claim.—The hand corn-planter herein described, having recesses g, o, and r, plunger A, sliding-bar A, valve w, rod s, and springs v and P, constructed and arranged to operate substantially as specified.

105,579.—ANIMAL POKE.—William Kelly, Saranac, Mich.

Claim.—The arrangement of yoke A, rod h, bar e, staple g, and roller b, substantially as herein shown and described.

105,580.—HORSE-COLLAR.—Lester B. Kenney, Charlotte, Mich.

Claim.—The forked springs C C, connected to the castings B B, said castings being provided with the catching devices for connecting the parts of the collar A, all substantially as set forth.

105,581.—AMMONIACAL GAS ENGINE.—Emile Lamm, New Orleans, La.

Claim.—1. The addition of water-chambers to the steam-engine, for the purposes set forth and specified.

2. The tubular reservoir containing the liquefied ammoniacal gas, substantially as specified.

3. The tank F, or its equivalent, in combination with the reservoir L, as and for the purpose specified.

4. The combination of the reservoir and tank with the engine and water-chambers, for the purposes set forth and specified.

105,582. — HOOK.—Robert Vance Laney, Cumberland, Md.

Claim.—The main or base-plate A of a draft-hook, when the same is provided with a slot, B, hook-arm C, trigger-plate D, spring D′, eye E, and slot b, when said slot forms a bearing for the end of the hook-arm C, substantially as described, as and for the purpose specified.

105,583.—CAN-OPENER.—William W. Lyman, West Meriden, Conn.

Claim.—The combination of the revolving cutter a and the pivot B, constructed with the point b, and formed upon an arm, D, and the set-screw E, so that the said pivot and cutter are made adjustable to each other, substantially as described.

105,584.—COFFEE OR TEA-POT.—Edward B. Manning, Middletown, Conn., assignor to Manning, Bowman & Co., same place.

Claim.—The strainer C, arranged upon the rod c, and combined with the loop d, fixed to the pot, so as to hold the strainer over the base of the spout, substantially as set forth.

105,585.—PROCESS AND APPARATUS FOR THE MANUFACTURE OF PAPER.—George E. Marshall, Laurel, Ind.

Claim.—1. The herein-described process of preparing paper-pulp by subjecting the same to alternate bleachings and washings, substantially as described.

2. The process of washing or cleansing paper-pulp by the addition of a supply of fresh water to the vat, and the carrying away of the water drawn off through the gauze cylinder, substantially as described.

3. The combination of the fresh-water-supply box J with the wet-paper machine, when constructed and arranged to operate substantially as set forth.

4. The fresh-water box J, having an inlet-pipe k, a division with a regulating-gate g and waste-pipe f, all arranged substantially as set forth.

5. The combination of a series of wet-paper machines, provided with the bleaching-tanks, arranged to operate substantially as described.

105,586.—MACHINE FOR PACKING SALT.—John McGrew, West Columbia, West Va.

Claim.—1. The packing-hammer o, combined with the sliding head n, substantially in the manner described, and for the purpose of enabling the hammers to lift themselves in the barrel, while packing the salt therein.

2. The packing-hammers, when provided with wedge-shaped projections h, at their outer and lower corners, for the purpose of forcing salt outward into the bulge of the barrel, substantially as specified.

3. In combination with the packing-hammers, the adjustable filling-tubes b, substantially in the manner and for the object specified.

4. In combination with the packing-hammers and filling-tubes, the rotating table c, substantially in the manner and for the purpose set forth.

105,587. — BASE-BURNING STOVE.—Julius Herman Meissner, Pittsburg, Pa.

Claim.—1. The conical magazine M, slotted nearly its entire length, in combination with the cylinder C, and air-flue f, substantially as and for the purpose set forth.

2. The conical slotted and suspended magazine, when the openings or slots in the same extend to the extreme lower end thereof, so as to leave projecting points or fingers for guides to the coal, but so as to leave its passage from such magazine wholly unobstructed.

3. The combination of the reservoir m, and magazine M, substantially as and for the purpose set forth.

4. The combination of the registering-valve r, the casing in which it is placed, the magazine M, the cylinder C, and the air-heating chamber f, the parts being arranged substantially as and for the purpose set forth.

105,588.—VISE.—George Mitchell, Trenton, N. J.

Claim.—The arrangement of parts, substantially as herein described, consisting, essentially of the attachment of the stationary jaw to the bed-plate A, and of the movable jaw to the parallel jaws B, the grooves g and h in the stationary jaw and bed-plate, for the support and guidance of bars E, the connecting-plate J, the movable nut D, and the screw C.

105,589.—VAPOR-BURNER.—Thomas Moore, Bloomington, Ill.

Claim.—The combination of the wick-tube c, having a perforated top, with the sliding cap f, provided with the perforations h, in the manner and for the purpose described.

105,590. — TREATING OIL-WELLS TO REMOVE OBSTRUCTIONS TO THE FLOW OF OIL.—Butler G. Noble, Brooklyn, N. Y.

Claim.—1. The method of increasing the yield of petroleum oil-wells, substantially as herein described.

2. The use of slow-burning compositions without explosion, for the removal of paraffine and other obstructing matters, from the seams, issues, or inflows of petroleum oil-wells, substantially as herein described.

105,591.—CHECK-VALVE.—Louis E. O'Brien, Latrobe, Pa.

Claim.—The joint-piece b, in combination with the valve-seat, valve, and cage, arranged within the check-valve chamber, so as to allow of their ready removal from the chamber, as and for the purposes described.

105,592.—GRINDING-MILL.—George O'Connor and Haines O'Conner, Mishawaka, Ind.

Claim.—1. The combination of the grinding-plates A and B, when provided with curvilinear grooves a, grooves b, and ridges d, in the manner and for the purpose herein described.

2. The construction and arrangement of the curvilinear ridges d, in the manner herein described, so that receiving-openings are formed between said ridges d, upon the plate B.

105,593. — RAILWAY-RAIL CLEANER.—Carlos Ortiz and Hilario Valladares, Matanzas, Cuba.

Claim.—The arrangement, in a locomotive-engine, of steam-pipes and nozzles behind the driving-wheels, in combination with the sand-pipes in front of the driving-wheels, as and for the purposes specified.

105,594.—MANUFACTURE OF PAPER.—Henry Pemberton, Allegheny City, Pa.

Claim.—The application of a saturated or partly-saturated solution of sulphate of lime to the manufacture of paper, wherein sulphate of lime, under any name, enters as an ingredient, whether said solution has been prepared, first, previously in a separate vessel or reservoir, or, second, obtained by the introduction into any part of the process of a cheaper or less fibrous form of sulphate, previous to the introduction of the more fibrous and more expensive form of the sulphate desired to be incorporated; or, lastly, by the recovery and reuse of the saturated or partly-saturated solution of sulphate of lime that has already passed through and escaped from the apparatus.

105,595.—DIE FOR TRIMMING AND STRAIGHTENING AXLE-CLIPS.—Ebenezer H. Plant, Plantsville, Conn.

Claim.—In combination with the trimming-die A A and its follower D, the bed C, constructed and operating substantially as described.

105,596.—PAINT FOR MARBLEIZING WOOD.—Francis G. Pokorny, New York, N. Y.

Claim.—The paint for marbleizing wood, composed of the ingredients herein set forth.

105,597. — HARVESTER.—Amos Rank, Salem, Ohio.

Claim.—1. The combination of the main axle, its fixed pin, the clutch on the driving-wheel hub, the turning, sliding clutch, its longitudinal slot, and circumferential groove, and the spring, all these parts being constructed as herein set forth, for joint operation.

2. The clutch-ring E, constructed as described, with a longitudinal slot, a circumferential groove, and a shell to contain the spiral spring which throws the clutch into gear.

3. The combination of the main axle, the clutch-ring, the spiral spring, and the locking-nut which holds the parts together, all constructed and operating as described.

105,598.—LOCOMOTIVE WHEEL.—John R. Richardson, Max Meadows, Va.

Claim.—In combination with a locomotive wheel, the spurs *b*, springs *d*, and pins *c*, all arranged and operating substantially as described.

105,599.—CONCRETE PAVEMENT.—John J. Schillinger, New York, N. Y.

Claim.—The arrangement of tar-paper, or its equivalent, between adjoining blocks of concrete, substantially as and for the purpose described.

105,600. — GANG-PLOW.—Delos A. Sears, Rockford, Ill.

Claim.—1. The combination of the curving standards C, having the seat thereon, with standards G H, rack and pinions I, and dog J, as and for the purpose described.

2. The combination of lever N with the bearing-plate *a*, constructed as described, for the purpose set forth.

3. The combination and arrangement of the axle A with the wheels *a a*, brace B, standards C, tongue D, beam E, plow-frame F, standards G H, rack and pinion I, dog J, brace M, and lever N, as described, for the purpose set forth.

105,601.—PRUNING-HOOK.—D. B. Seeley, Sterling, Ill.

Claim.—The knife A, provided with the circular slot *g*, and having the bevels *x* and *z* formed upon its end, in combination with the handles D, stops *b*, and hook B, when all are combined to form a pruning-hook, substantially as set forth.

105,602.—WATER-WHEEL.—W. L. Selleck, Beetown, assignor to D. W. Perkins, Milwaukee, Wis.

Claim.—1. A water-wheel, with upper part of the buckets K projecting out over the lower part of the curb H, and the lower part of said buckets passing down in a diagonal or reacting form, so that the water shall strike its upper part direct, and then fall slanting or reacting, substantially as described.

2. Gate-plate D, pins E, chutes F, gates G, and pins I, all in combination, substantially as described.

105,603.—MORTISING-MACHINE.—Henry C. Smith, Lawrence, Kansas, assignor to American Mortising-Machine Company, Boston, Mass.

Claim.—The combination and arrangement of the operating lever K, the short-armed lever *k*, the link *l*, the pawl or ring-lever *m*, the lug *n*, operating the ratchet *o*, the ratchet *o*, the same being arranged and operating the screw P, and the screw P, the whole being arranged and operating the block A, bearing the cutting device, substantially in the manner and for the purpose described.

Also, the arrangement of the gauge *t* upon the frame B, substantially for the purpose described.

105,604. — WRENCH. — Othniel J. Smith, Wauwatosa, Wis.

Claim.—1. Shaft A, with rib C on the front side of it, in combination with jaw B, and thumb-piece F, substantially as described.

2. Shaft A, jaw B, thumb-piece F, screw D, and thimble E, held in position by wedge H, substantially as described.

3. Shaft A, rib C, screw D, with one end of it inserted in rib C, and the other end in thimble E, substantially as described.

105,605.—POWER-PRESS.—Charles M. Stratton and Oscar G. Stratton, Greenfield, Mass.

Claim.—1. The combination of the frame A, adjustable eccentric sleeve C, and shaft D, having the adjustable shaft E, with its eccentric wrist-pin located eccentrically therein, and all constructed and arranged to operate substantially as described, for adjusting the plate F to or from the bed B, as set forth.

2. The combination of the driving-shaft D, with the collar J secured thereto, and the crank-shaft E, having the collar L mounted thereon, when arranged eccentrically to each other for adjusting the length of stroke, as set forth.

105,606.—BUNG-CUTTER.—Nicholas J. Templeton, Cincinnati, Ohio.

Claim.—1. The head C, jaws B *b''*, cutters A, and conical sliding spindle D *d*, combined and operating substantially in the manner and for the purpose specified.

2. The cutters A, when constructed with bits *a a' a''*, as described, and for the purpose specified.

105,607.—EARTH-CHAMBER PAIL.—Henry Terry, Waterbury, Conn.

Claim.—1. The arrangement, below the top of a portable pail or chamber, A, of a receptacle, C, for earth or other deodorising material, so constructed as to hold the material and afterward discharge it into said portable pail, substantially as and for the purpose described.

2. A portable chamber or pail, having a movable seat, B, and a shelf for earth or other deodorizing material, so constructed as to discharge the material into the pail, substantially as described.

105,608.—HARVESTER-RAKE.—James Tony, Mineral Point, Wis.

Claim.—1. The knife E, constructed with two or more cutting-edges, in combination with the chain of a harvester-rake, and arranged so that as one becomes dulled by use the other or others may be brought into requisition without delaying the operation of the machine to any considerable extent.

2. The arrangement of the knife E with reference to the sprocket-wheel B, it being such that the pin D is held in its proper position with reference to each knife by said sprocket-wheel, so that, as said pin or stud passes this point, it shall be held in such close proximity to the knife that all the straw shall be cut off from it.

105,609. — APPARATUS FOR COOLING AND REFRIGERATING.—P. H. Vander Weyde, New York, N. Y.

Claim.—1. Radiation of cold by the special refrigerating tubes or tanks described, the exhaust E, and supply-pipes E or F.

2. Agitating the volatile evaporating liquid, by means of mechanical arrangements, as described, or their equivalent, by the introduction at the bottom of the liquid, either the liquid itself or its vapor, gas or air, single or combined.

3. The portable mechanical water and milk-cooler described.

4. The manner of regulating the temperature, described, by means of thermometer, battery, and electro-magnet, in connection with freezing and refrigerating-machines.

105,610. — MILLSTONE-CURB. — Alexander Van Vleck and Thomas Phillips, Jordan, N. Y.

Claim.—The combination, in the millstone-curb A, of two or more openings C D E, with the adjustable valve B, when constructed and arranged in the manner and for the purpose herein set forth.

105,611.—COMBINED HORSE HAY-RAKE AND TEDDER.—Henry C. Varnum, Hartford, Vt., assignor to himself and James E. Larkin.

Claim.—1. The thimbles S, the coil-springs F, and the forks C, when arranged and combined to operate substantially as described, and for the purposes set forth.

2. The combination of the rods *a* with the cams *m* and the cross-bar of the frame or wheel-axle, for the purpose described.

102,612. — HARVESTER. — Henry C. Velie, Poughkeepsie, N. Y.

Claim.—1. The arrangement of the lifting-lever for raising the finger-bar, with the balance-spring and adjusting-screw for relieving the front part of a mowing-machine, substantially as described.

2. The block *b'*, formed with flanges, as described, in combination with the separately-pivoted draft-bars *a' a'* and the draft-pole of a mowing-machine, substantially as set forth.

3. The eyes *b'*, attached to the platform E, and sliding on the axle C, in combination with the truck-boards *z* and oscillating lever *y*, substantially as set forth.

4. The combination of the gravitating stop with the ratchet-wheels in the interior of the hubs of the driving-wheels, substantially as described.

5. The double-armed lever *y*, in combination with the oscillating rod *x* and truck-boards *z*, substantially as described.

105,613.—BUNG.—Albin Warth, Stapleton, N. Y.

Claim.—The valve *a*, spring *b*, seat *c*, plate *d*, tube *e*, spout *f*, with the packing-piece *h*, interposed within the joint between the flanged ring *g* and the bung, the whole constructed and arranged as herein shown and described.

105,614.—CLAMP-NUT FOR SCREWS.—Robert White, Rockville Centre, N. Y., assignor to himself and Joseph J. Walton, Newark, N. J.

Claim.—The conical screw-clamping portion 3 of the nut *b*, divided by longitudinal incisions, in combination with the conical clamping-nut *d*, substantially as specified.

105,615.—WEATHER-STRIP FOR DOORS.—Franklin Whitmore and Edward Conklin, Channahon, Ill.

Claim.—The weather-strip described, consisting of the wood strip *c*, rubber strip *c*, flat spring *c*, adjustable screw *i*, and plates *r r*, arranged as shown in the groove *x*, constructed and operating in the particular manner and for the purpose set forth.

105,616.—WASHING-MACHINE.—George L. Witsil, Philadelphia, Pa., assignor to himself and Thomas L. Bates, same place.

Claim.—1. The disk E, constructed as herein shown, and for the purpose set forth.

2. The combination and arrangement of the disk E and rollers D, substantially as and for the purpose set forth.

105,617.—FURNACE FOR STEAM-ENGINES.—George M. Wyne and William Mac Grove, Dennison, Ohio.

Claim.—The arrangement of the air-pipes E, and deflector C, in combination with the shield and furnace conjointly, for the purposes set forth, and in the manner substantially described.

105,618. — FLOUR-BOLT ATTACHMENT. — Robert Turner, Rochester, N. Y., assignor to Turner & Lutes, same place.

Claim.—The arrangement of the air-supplying tube *c* above the bolt, in combination with the feed-spout *a*, with which it forms a junction, for the purpose of subjecting the flour in its descent to a continuous sharp blast of air, and driving it into the bolt, as herein described.

REISSUES.

4,074.—MANUFACTURE OF WHITE LEAD.—Daniel C. Colby, Washington, D. C., and Thomas Woods, and Benjamin F. Pine, Philadelphia, Pa., assignees of Henry S. Hannen.—Patent No. 80,168, dated July 21, 1868.

Claim.—1. Spraying the acetic acid or acidulated water directly upon the lead within the chamber by means of a pipe, introduced, for the time, through the opening E in the doors D, substantially as specified.

2. Securing and maintaining the desired temperature within the corroding-chamber through and by regulating the temperature of the agents employed in the corroding process as they are introduced into said chamber.

3. Subjecting lead, after it has been treated, in a chamber, with acetic acid, to the action of carbonic-acid gas, introduced at or near the bottom of the said chamber, for the purposes specified.

4. Subjecting lead, during the progress of its conversion into a carbonate, to the action of a solution of the carbonate of soda or chloride of soda, one or both, for the purposes specified.

4,075.—Division 1.—PRIMING CARTRIDGE.—Arthur Moffatt, Washington, D. C.—Patent No. 53,168, dated March 13, 1866.

Claim.—1. A combined rim and center or flange and center-primed cartridge, having an anvil to explode the fulminate that is in its center and around its periphery.

2. A wad or anvil primed with fulminate, said wad or anvil being consumable when the cartridge is fired, substantially as herein set forth.

3. An anvil primed with fulminating material in its center and around its periphery, substantially as and for the purpose herein set forth.

4. A removable disk or anvil, constructed so as to form a bearing for the fulminate around the periphery and in the center of the base of the cartridge-case, substantially as herein set forth.

4,076.—Division 2.—PRIMING CARTRIDGE. Arthur Moffatt, Washington, D. C.—Patent No. 53,168, dated March 13, 1866.

Claim.—Interposing in the priming of a center-fire cartridge, between priming compound and the butt of the case A on one side, and the anvil B, or its equivalent, on the other, a thin lamina of paper, or other thin flexible material, substantially as and for the purpose herein specified.

4,077.—MODE OF ATTACHING CORNICE TO WINDOWS.—Anthony Peple, East Billerica, Mass.—Patent No. 101,158, dated March 22, 1870.

Claim.—1. Applying a cornice or other ornament to a window in such manner that it shall serve to conceal the curtain-roller, as set forth.

2. The application of the T-shaped extension of a bracket for a curtain-roller, substantially as described, and for the purpose set forth.

3. The application of a cornice by means of one or more staples or clasps, or said extended bracket, so that the said cornice may be adjustable endwise, substantially as described, and for the purpose set forth.

DESIGNS.

4,225.—JELLY-CUP.—James S. Atterbury and Thomas B. Atterbury, Pittsburg, Pa.

Claim.—The design for a jelly-cup, as described and shown.

4,226.—STOVE-DOOR AND PANEL.—Micajah Currier Burleigh, Great Falls, N. H.

Claim.—The design for stove-doors and panels, substantially as herein shown and described.

4,227.—HANDLE OF SPOONS AND OTHER ARTICLES.—Augustus Conradt, Philadelphia, Pa.

Claim.—The ornamental design of a handle for spoons, knives, forks, &c., and other articles for table use, as described and shown.

4,228.—NET FABRIC.—Robert H. Jefford, New York, N. Y., assignor to Abraham G. Jennings, same place.

Claim.—The design for net-fabric, as shown.

4,229.—NET FABRIC.—Abraham G. Jennings, New York, N. Y.

Claim.—The design for a net fabric, formed of pillars constructed as herein described, which are united to form lozenge-shaped meshes, as set forth and shown.

4,230.—KNITTED FABRIC.—Martin Landenberger, Philadelphia, Pa.

Claim.—The design for knitted fabric, as shown and described.

4,231.—KNITTED GOODS.—Martin Landenberger, Philadelphia, Pa.

Claim.—The design for hosiery, as shown and described.

4,232.—KNITTED GOODS.—Martin Landenberger, Philadelphia, Pa.

Claim.—The design for knitted cloth, herein shown and described.

4,233.—SHAWL.—Martin Landenberger, Philadelphia, Pa.

Claim.—The design for shawls, as herein shown and described.

4,234.—SHAWL.—Martin Landenberger, Philadelphia, Pa.

Claim.—The design for shawl, as shown and described.

4,235.—SHAWL.—Martin Landenberger, Philadelphia, Pa.

Claim.—The design for shawl, as shown and described.

4,236.—STOVE.—Isaac T. Montross, Peekskill, N. Y.

Claim.—The design of the shape and ornamentation of the parts *b c e f g*, as described and represented.

4,237.—CLOCK-CASE.—Nicholas Müller, New York, N. Y.

Claim.—The parts *a a* and *b b*, separate and combined, of the design for a clock-case, as herein shown and described.

4,238.—MATCH-SAFE.—Albert P. Seymour, Hecla Works, N. Y.

Claim.—A design for a match-safe, the upper and principal part of whose front is composed of three sides, of a rectangular shape, and the lower and subordinate part of said front of one side, of a rectangular shape, and also of two sides of a triangular shape, substantially as described and represented.

4,239.—STOVE.—George T. Spicer, Charles H. Peckham, and William A. Spicer, Providence, R. I.

Claim.—The design or pattern for stoves herein set forth.

4,240.—STOVE-PLATE.—Nicholas S. Vedder, Troy, and Tobias S. Heister, Lansingburg, N. Y., assignors to Nicholas S. Vedder.

Claim.—1. The compound ornament *a b c*, shaped and arranged upon, and cast with, a stove-plate, as herein described and shown.

2. The frame-like ornament *d e f*, shaped and disposed upon, and forming a part of, a stove-plate, as shown and described.

3. The combination of the central ornament *a b c* and frame-like ornament *d e f*, shaped and arranged together upon, and cast with, a stove-plate, substantially as herein shown and described.

4,241.—STOVE-PLATE.—Nicholas S. Vedder, Troy, and Tobias S. Heister, Lansingburg, N. Y., assignors to Nicholas S. Vedder.

Claim.—1. The general form of an oven parlor-stove, as distinguished by the wider perpendicular lower portion A B, narrower vertical upper portion C D, intermediate inclined or curved parts *e f*, and top plate G, with its depressed projecting front part, S, all in combination, as herein described and shown.

2. The form of the front plate, as distinguished by the perpendicular lower and upper sections A C and intermediate inclined or curved portion *e e*, with a fire-door opening, I, in the upper section, and a projecting part, J, at the bottom thereof, with apertures *k* therein, as herein shown and described.

3. The design, composed of the center ornament L and border ornamentation *m*, as shown and described.

4,242.—STOVE-PLATE.—Nicholas S. Vedder, Troy, and Tobias S. Heister, Lansingburg, N. Y., assignors to Nicholas S. Vedder.

Claim.—The compound panel-ornament A, shaped and arranged upon and cast with a stove-plate, substantially as shown.

4,243.—STOVE-PLATE.—Nicholas S. Vedder, Troy, and Tobias S. Heister, Lansingburg, N. Y., assignors to Nicholas S. Vedder.

Claim.—1. The ornamental design for the top-plate U, as herein described and shown.

2. The design for the bottom-plate V, as shown and described.

3. The design for the damper-frame W, as shown.

4,244.—STOVE-PLATE.—Nicholas S. Vedder, Troy, and Tobias S. Heister, Lansingburg, N. Y., assignors to Nicholas S. Vedder.

Claim.—1. The compound ornament I, having its various parts shaped and arranged together, and cast upon a plate or plates of a stove, as herein shown and described.

2. The combination of the compound central ornament I and ornamental border-molding J, all shaped and arranged upon and cast with a door or doors or a plate or plates of a stove, as herein described and shown.

4,245.—STOVE-PLATE.—Nicholas S. Vedder, Troy, and Tobias S. Heister, Lansingburg, N. Y., assignors to Nicholas S. Vedder.

Claim.—1. The compound ornament N, arranged upon and cast with a plate or plates of a stove, as herein shown and described.

2. The combination of the compound ornament N, and ornamental border molding O, arranged together and cast upon a door or doors, or a plate or plates of a stove, as described and shown.

3. The design for the feet Q, as shown.

4,246.—STOVE-PLATE.—Nicholas S. Vedder and Francis Ritchie, Troy, and Tobias S. Heister, Lansingburg, N. Y., assignors to Nicholas S. Vedder.

Claim.—1. The ornamental design of the vase A, as shown.

2. The ornamental form of the open-work cover B, as shown and described.

3. The panel ornament C, shaped and arranged upon and cast with a stove-plate, as herein shown and described.

4. The design for the lower front doors D, as shown and described.

5. The herein-described design for the front plate G.

4,247.—TEA OR COFFEE-POT.—Horace C. Wilcox, West Meriden, Conn., assignor to the Meriden Britannia Company, same place.

Claim.—The design of a tea or coffee-set, &c., substantially as shown and described.

4,248.—PICTURE-FRAME.—John H. Bellamy, Charlestown, Mass.

Claim.—The design or pattern for a picture-frame herein set forth.

4,249.—HAND-GLASS FRAME.—John H. Bellamy, Charlestown, Mass.

Claim.—The design or pattern for hand-glass herein set forth.

4,250.—BRACKET.—John H. Bellamy, Charlestown, Mass.

Claim.—The design or pattern for bracket herein set forth.

4,251.—STOCKING FABRIC.—Conyers Button, Philadelphia, Pa.

Claim.—The design for a stocking fabric, substantially as described, and as illustrated in and by the accompanying drawing.

4,252.—CARPET-PATTERN.—Hugh Christie, Morrisania, N. Y., assignor to Israel Foster, Philadelphia, Pa.

Claim.—The design for a carpet-pattern, substantially as described, and as represented in and by the accompanying drawing.

4,253.—CARPET-PATTERN.—Jonathan Crabtree, Philadelphia, Pa., assignor to John Gay, same place.

Claim.—The design for a carpet, as shown.

4,254.—MUFF.—John H. Kappelhoff and Samuel Rauh, New York, N. Y.

Claim.—1. The design for a muff, consisting of the concave ends and convex sides constituting a barrel shape.

2. Said configuration, having a segmental polygonal-shaped flap and tassel.

4,255.—SAW.—Edward Rhodes, Philadelphia, Pa., assignor to Henry Disston & Son, same place.

Claim.—The design for a saw, as described and shown.

4,256.—BRACELET.—Frederick Wessel, New Britain, Conn.

Claim.—The herein-described design for a bracelet, consisting of the band A, with a roll, *a a*, upon both of its edges, substantially as shown and described.

EXTENSIONS.

SAMUEL B. FAY, of New York, N. Y.—No. 15,226, dated July 1, 1856.

"Metallic Hook for Labels."

Claim.—The construction of tags or labels, substantially as herein described, by affixing thereto a hook so formed as to readily hook into the goods to be marked, and by the spring of the shank retain its position without being liable to become readily detached, as herein specified.

ARASMUS FRENCH, of New Haven, and CHARLES FROST, of Waterbury, Conn.—No. 15,228, dated July 1, 1856.

"Improved Method of Making Boxes."

Claim.—1. The method of disengaging the article, when formed from the mold, by forcing air upon it, as herein described, by bringing down the piston or other equivalent means.

2. The use of the movable block F, and the movable shelf with a cavity in it, as represented by fig. 6, both block and cavity corresponding in shape to the boxes or article made, and are used to receive them and preserve their shape when they are blown from the mold.

3. The circular groove *a a*, in the rim *s s*, (see figs. 2 and 3,) and such a construction of the plate to which the mold is attached, as would be equivalent to it, the object of this groove being to receive the water which enters the cylinder through the perforated mold when the pulp is deposited thereon, so that it may be drawn off by the stop-cock *b*, whereas, this water, if permitted to remain and accumulate, would, by the pressure of the air upon it, be forced through the sides of the articles formed when they are blown from the mold.

WM. MONT STORM, New York, N. Y.—No. 15,307, dated July 8, 1856; reissued January 1, 1867, No. 2,445.

"Improvement in Breech-loading Fire-Arms."

Claim.—1. A breech-piece hinged at its front end, and swinging upward and over, substantially as described, in combination with a stationary or fixed recoil bearing at its near end, having the characteristic features of being firmly connected with the barrel, and being extended above the line of the bore of the barrel, substantially as and for the purpose set forth.

2. Cutting away the recoil bearing-surface, substantially as described, and for the purpose set forth.

3. The internal bolt *c*, operated by a positive motion, to lock in place the movable breech-piece of a breech-loading fire-arm during the fall of the hammer, or its equivalent, substantially in the manner described.

4. Forming a space or recess between the lower side of the breech-piece and the seat into which it shuts, for the accommodation of dirt which would otherwise prevent the descent of the breech-piece, as hereinbefore fully explained.

WM. MONT STORM, New York, N. Y.—No. 15,307, dated July 8, 1856; reissued January 1, 1867, No. 2,446.

"Improvement in Breech-loading Fire-Arms."

Claim.—1. A chambered breech-piece, when such breech-piece is hinged at its forward end to the barrel and arranged to swing over, substantially as described, for the purpose set forth.

2. In combination with the barrel and movable breech, a packing-tube or ring, arranged to slide within the breech-piece, and formed at the front end to enter the barrel, so that, by the force of the discharge, the said tube will be forced forward and into the barrel, and made to pack the joint between the barrel and breech piece to prevent the escape of the explosive gases.

3. The manner, substantially as shown and described, of coupling the bolt *c* with the tumblers, so that, although said bolt is operated by a positive motion, as described, the lock can be removed regardless of the barrel and bolt, as hereinbefore set forth.

SADY D. BOYES, of Philadelphia, Pa., administratrix of the estate of BURRITT C. BOYES.—No. 15,402, dated July 22, 1856.

"Improvement in Folding-Guides for Sewing-Machine."

Claim.—The employment of one or more helical or slit rings, for the purpose of forming on the edges of fabrics single or double hems, or for forming plaits in the middle of fabrics previous to the said hems or plaits being submitted to the action of the needle and thread of sewing-machines.

ALEXANDER C. TWINING, of Hudson, Ohio. No. 10,221, dated November 8, 1853; patented in England, July 3, 1850; extended June 21, 1864; again extended by Act of Congress; approved July 7, 1870.

"Improvement in the Process and Apparatus for Making Ice."

Claim.—1. The combination of an exhausting-pump or apparatus that is also condensing or compressing, with a restorer and with a freezing cistern having water-chambers, substantially as above.

2. The same pump and restorer, in combination with a separate exhaust vessel, the same whose connection is indicated in the drawing by *p*, in or around which the ether or other liquid, uncongealable at the temperature employed, is cooled and made to pass into the freezing cistern and there perform its office substantially as above.

3. The percolator, or apparatus introducing into the cistern or the separate exhaust vessel, the ether or volatile liquid, in jets or drops, as above, in combination with the exhaust-pump and restorer.

4. The use of the water-vessels, in combination with the water-chambers and the intervening liquid for perfecting contact, as above set forth.

5. In combination with the restoring-apparatus, the cooling of the liquid around the same by exhaustion, using therefor the secondary pump and connections, substantially as set forth.

ISSUE OF JULY 26.

PATENTS.

105,619.—PAPER FRUIT-BASKET.—Alfred Adams, Chagrin Falls, and Joseph F. Jewett, Cincinnati, Ohio.

Claim.—The coated paper fruit-basket or package herein substantially as set forth, as a new article of manufacture.

105,620.—CIGAR-MACHINE.—Julian Allen and John Fanning, Brooklyn, N. Y., assignors to the American Cigar-Machine Company, New York city.

Claim.—1. In a cigar-machine, one or more removable rollers, coupled with wheel-gearing, when so constructed and arranged as to be readily removable, substantially as and for the purpose specified.

2. In a cigar-machine, a follower, I, made adjustable, so as to vary its length, substantially as and for the purpose set forth.

3. A follower of a cigar-machine, when swiveled at its end, in such a manner that its swiveled portion may rotate without contact with the spring, substantially as and for the purpose specified.

4. The lever M, operating in a groove on the follower I, substantially as and for the purpose described.

105,621.—SEED-PLANTER.—Prudden Alling, Norwalk, Ohio.

Claim.—1. The driving-wheel B, and zigzag-wheel K, as arranged, in combination with the lever J, vibrator I, and agitator *e*, in the manner substantially as described, and for the purpose specified.

2. The arrangement and combination of the hopper E, revolving dish F, conductor L, share M, scrapers or wings N, and roller O, in the manner substantially as described, and for the purpose set forth.

105,622.—APPARATUS FOR REDUCING WOOD TO PULP.—Gustavus Ames, New York, N. Y., assignor to himself and William H. Cilley, Northfield, N. H.

Claim.—The combination of the air-cylinder and piston with the hopper, follower, and reducing-cylinder, substantially as and for the purpose specified.

105,623.—ADJUSTABLE DOOR-SILL.—Maurice Armstrong, Girard, Ill.

Claim.—The hinged sill C, having inclined plane in front, recessed base D, hook I J, projecting metal plate F, rubber H, and shortened door A, inclined on its bottom face, all combined, constructed, and relatively arranged, as and for the purpose specified.

105,624.—CHIMNEY-COWL.—Christian W. Bache, Philadelphia, Pa.

Claim.—The frame A and cross-rods *a*, combined with doors B, hinged at the side, and a cap, C, having elongated apertures *b* located in the diedral angles of the cap, all as and for the purpose specified.

105,625.—TELEGRAPH-INSULATOR.—William W. Baldwin, Cleveland, Ohio.

Claim.—The metal shells A and B, when constructed, combined, and arranged with the insulating material C, substantially in the manner shown, and for the purpose set forth.

105,626, antedated July 19, 1870.—STEAM-GENERATOR.—Nelson H. Barbour, New York, N. Y.

Claim.—1. A tube or chamber hermetically closed, containing water or other liquid, from over which the air, or a portion of it, has been exhausted, leaving more or less of a vacuum therein, constructed and operating substantially as and for the purpose herein specified.

2. The evaporater A, in combination with the vacuum tubes *b a*, constructed and operating substantially as described.

3. The combination of the evaporator A and the steam and water-reservoir B, constructed and operating substantially as herein described.

105,627.—MACHINERY FOR CUTTING WAX INTO SHEETS.—William F. Barnes, Rockford, Ill., assignor to himself and Susan H. Clark, same place.

Claim.—1. The combination of the open box frame, to contain the wax, the stock carrying the knife, and pivoted to said frame, and the driving-crank, which both reciprocates and oscillates the knife, substantially as hereinbefore set forth.

2. The combination of the frame, the knife, the crank which works the knife, the link-rod driven by said crank, the arm and pawl vibrated by the link-rod, the elevating-gear, the feed-screw and the table, substantially as hereinbefore set forth.

3. The combination of the table, the feed-screw, the gear F, the gear *g*, for setting the table higher or lower prior to the commencement of the automatic feed, and the automatically vibrated arm and pawl, whereby the gear F serves both to adjust the table and to feed the wax to the cutter, substantially as hereinbefore set forth.

4. The combination of the knife, the automatically-moving feed-table, the fixed open frame, and the removable frame, substantially as hereinbefore set forth.

5. The combination of the fixed central portion of the table, with the adjustable interlocking sections, constructed as set forth.

105,628.—NEEDLE-THREADER.—Nelson Barnum, La Porte, Ind.

Claim.—1. In a needle-threader, the follower or pin *b*, for the purpose of forcing the thread through the eye of the needle.

2. The combination of the slotted plate A with one or more sliding plates B B', and guide-plate and follower C *b*, all constructed and operating substantially as specified.

3. The combination of the slotted plate A, plate B, guide-plate and follower C *b*, and spring *d*, all constructed and operating substantially as specified.

105,629.—PRUNING-SHEARS.—Henry W. Black, Cecilton, Md. assignor to himself and Evan T. Evans, Middletown, Del.

Claim.—The double levers D D and E E, as arranged to act in conjunction, in combination with a sliding cutter, A, hook G, and shank H, substantially as described.

105,630.—SULKY-CULTIVATOR.—Noah G. Blauser, Etna, Ohio.

Claim.—The improved cultivator, consisting of the tongue C, hounds D, axle B, wheels A, triangle F, plow-beams E, pivoted adjustable plows G g^1 g^2, rollers Q, lever S, chain R, foot-levers O, rods N, bar K, standard M, bar J, uprights H, adjustable bars I, and scraper Y, removably attached to the tongue C, all constructed and relatively arranged as shown and described.

105,631, antedated July 19, 1870.—SEWING-MACHINE.—Thomas Bletcher, London, England, assignor to himself and William Riddell, same place.

Claim.—1. The vibrating hook A, formed as described, and the stationary inclined shuttle, in combination with the eye-pointed needle and its thread-controlling device *c*, when constructed and operating together as set forth.

2. The rocking-shaft *p*, having feed-operating cams and the vibrating hook A, when the same are arranged with the shuttle and feeding-dog, and all constructed as herein described.

105,632.—POWER-PRESS.—Eliphalet W. Bliss, Brooklyn, N. Y., assignor to Mays, Bliss & Co., same place.

Claim.—The combination of the rising and falling stop J, the cam I, on the driving-shaft F, the pulley G, the clutch H, and treadle and lever operating the same, with the plunger C of the press, essentially as and for the purpose herein set forth.

105,633.—CUTTING ASHLARS.—William Boulton, Tompkinsville, Staten Island, N. Y.

Claim.—The manner of cutting ashlars from blocks of stone or marble into ashlars having a flange upon one edge, substantially as and for the purpose described.

105,634, antedated June 9, 1870.—COMPOUND FOR MANUFACTURE OF PAINT.—Amos H. Bourne, Fort Scott, Kansas.

Claim.—The improved compound of the earths or minerals herein described, in the proportions and manner substantially as specified.

105,635.—RAILWAY-CAR STARTER.—Charles B. Broadwell, New Orleans, La.

Claim.—The arrangement of the pulleys D D', the cord or chain E, the spring F, and lever G, as herein described, underneath the floor of a street-railroad car, when the axles of the same are provided with square sections C C, and all the parts are constructed and united and operate substantially as specified, for the purpose set forth.

105,636, antedated July 14, 1870.—SPRING BED-BOTTOM.—Mortimer Cahill, Kalamazoo, Mich.

Claim.—The combination of the guide E, the point passing through the slat and the top, with an eye held by a looped wire, with the spring D and movable slat G, in the manner and for the purposes described.

105,637.—DESIGN-DIE FOR ORNAMENTING.—Benjamin F. Calley, Saugus, Mass.

Claim.—The design-die herein shown and described.

105,638.—GAUGE FOR PRINTING-PRESSES.—Andrew Campbell, Brooklyn, N. Y.

Claim.—1. A combined sheet-gauge and holder, consisting of a pressure-arm, E, hung loosely upon a rock-shaft, a feed-guide, G, hinged to said pressure-arm, and a fixed arm, F, upon said rock-shaft, or their equivalents, so arranged that a rocking of the shaft in one direction will drop the pressure-arm and raise the feed-guide, while its reverse movement will lower the feed-guide and raise the pressure-arm, substantially as and for the purpose hereinbefore set forth.

2. The locking-device f^2 f^3, or its equivalent, by which the angular position of the pressure-arm and feed-guide may be so adjusted upon the rock-shaft, and with reference to each other, that either may be made to perform its function independent of the other, substantially as and for the purpose hereinbefore set forth.

105,639.—SHEEP-SHEARS.—Daniel Campbell, Elizabeth, N. J., assignor to Henry Seymour & Co., New York city.

Claim.—1. The arrangement of the blades A A, arms *b b*, screw B, and spring C, constructed and operating substantially as described and set forth.

2. The arrangement of the blades A A, hinged together as described, spring C, and stops *d d*, constructed and operating substantially as set forth and specified.

3. Arranging the pins *e e* and spring C so that the cutting-surfaces of the blades shall always be kept in contact, substantially as described and set forth.

105,640.—STEAM HEATER.—Benjamin F. Campbell and Charles Whittier, Boston, Mass.

Claim.—1. The construction of valve and valve-seat within the body of the radiator, substantially as described.

2. The section of radiator, constructed with a diaphragm running from one extreme end to within a short distance of the other, substantially as and for the purpose described.

3. A series of sections of radiator, when keyed at one end and jointed at the other, substantially as described.

105,641.—RECEPTACLE FOR MEASURING OUT SHOT.—Ezra C. Carleton, Port Huron, Mich., assignor to William Stewart & Co., same place.

Claim.—The arrangement, within the case A, of the compartments B, terminating in tubes C, provided with mouths K projecting through said case, in combination with the stem H, the lever D, the spring E, and the valve-slides *d d'*, when constructed as described and shown, and as and for the purpose set forth.

105,642.—STEAM-GENERATOR.—John Carroll, Detroit, Mich.

Claim.—1. The cylinder I, resting upon the grates B, and having connected therewith the perforated tube K, placed within the smoke-chamber J, when the several parts are constructed and arranged as described and shown, and as and for the purposes set forth.

2. The deflector G, hollow, and connected with the water-space of the boiler by the pipe H, and resting above the flues E and bridge-wall D, substantially as herein designated.

3. The construction of a steam-generator, wherein the grate-bars B, ash-pit C, bridge-wall D, rectangular flues E, combustion-chamber F, deflector G, pipes H M, cylinder I, perforated pipes K, smoke-chambers J Q, suspended bridge-wall L, door

or trap N, perforated pipe O, and flues P R S are arranged, relatively to each other and the water-spaces a of the boiler, substantially as and for the purposes herein shown, set forth, and described.

105,643. — HULLING-MACHINE. — Joseph Eleazer Carver, Bridgewater, Mass., assignor to Henry T. Pratt and John C. Alden, same place.

Claim.—The improved hulling-machine herein described, consisting of the hollow rotary cylinder A, provided with the hinged spring pressure-plates C′, constructed as described, and arranged to operate in conjunction with the fixed semi-annular concave E, substantially in the manner and for the purpose set forth.

105,644. — LAMP.—David Challinor, Birmingham, Pa.

Claim.—1. The metallic ring c, having a handle, d d″, and upright standard d′, substantially as described, and for the purposes set forth.

2. In combination therewith, the socket or eye f, the latter supporting a reflector, h, by means of a wire, g, having a spiral part, g′, substantially as set forth.

105,645.—TOY MONEY-BOX.—John H. Chappell, Brooklyn, N. Y.

Claim.—The combined ball or spherical toy money-box and whistle A a′, B b′, C c′, constructed substantially as herein shown and described, and for the purposes set forth.

105,646.—WASHING-MACHINE.—William B. Cheeseman, Winona, Minn.

Claim.—The adjustable spring f, attached to the sides of the box A by the supports g and set-screws i, constructed as described, in combination with the roller e and removable frame d, provided with corrugated rollers b b, smooth rollers c c, and endless apron e, in the manner and for the purpose specified.

105,647. — SAWING-MACHINE.—Moses Neal Clark, Harrison City, Pa.

Claim.—1. The combination with legs C of sharpened and slotted bars D, guide-pins E, bolts F, and keepers G, all constructed and relatively arranged as and for the purpose specified.

2. The combination with saw T of detachable guide U and pitman S S, formed in two parts, swiveled together, whereby the saw may be set to cut the log or tree at any angle.

3. The combination of the curved bar W with the frame A and saw-pitman S, substantially as herein shown and described and for the purpose set forth.

105,648.—WATER-PROOF CEMENT.—Thomas S. Clark, Charlestown, Mass.

Claim.—1. The employment of burnt linseed-oil in the manufacture of water-proof cement, substantially as described.

2. A water-proof cement, compounded as herein set forth and described, for the purposes specified.

105,649, antedated July 15, 1870.—SAD-IRON.—John Conner, Richmond, Ind.

Claim.—The arrangement of the handle B in two parts, and hinged at the center, as at C, to the bevel-pieces D D, in combination with the sad-iron A, as shown and described.

105,650.—WASHING-MACHINE. — Emanuel Cool and Sabisca Cool, Buckhannan, West Va.

Claim. — The improved washing-machine, consisting of the suds-box A, the wash-board B, pivoted to the swinging links a, and provided with the end spring D, and supporting spring C, the vertically adjustable frame F, screw-rod G, journal-blocks, and the roller E, all said parts being constructed and arranged in the manner set forth.

105,651.—REIN-HOLDER.—William H. Cooper, Glover, Vt.

Claim.—1. The block or joint-piece D and spring bars F, in combination with the standard B, by means of which the device is secured to the dash-board, substantially as herein shown and described, and for the purpose set forth.

2. The combination of the pin G, or equivalent, catch or fastening, with the standard B, block or joint-piece D, and spring bars F, substantially as herein shown and described, and for the purpose set forth.

105,652. — CHURN. — William H. Curtin, Clement, and William Lammers, Breese, Ill.

Claim.—The arrangement of the vessel A A′ A″ A‴, sub-chamber F, dashers D, when combined with rockers C, substantially as and for the purposes set forth.

105,653.—RELAY MAGNET.—Ludovic Charles Adrien Joseph Guyot D'Arlincourt, Paris, France.

Claim.—The pallet c, provided with the insulated portion e f, substantially as and for the purpose herein shown and described.

105,654.—ADJUSTABLE REEL-POST FOR HARVESTERS.—Joseph Watts Davis, Dublin, Ohio.

Claim.—The pulley-fork fastening C, having a shoulder-bearing for the foot of the reel-post and supporting-pulley fork E, in combination with slotted stand A, pulley F F, and pivoted reel-post B the several parts being constructed and arranged to operate substantially as described.

105,655.—EGG-BEATER.—Gilbert K. Dearborn, Pawtucket, assignor to Timothy Earle, Smithfield, R. I.

Claim.—The combination of the double-faced driving-wheel C, pinions B B′, and beaters D D′, all constructed as herein described, for the purpose set forth.

105,656.—CRAMP-HOOK FOR TELEGRAPHIC-WIRE INSULATORS.—William H. Dechant, Philadelphia, Pa., assignor to David Brooks, same place.

Claim. — The improved cramp-hook for telegraph-wire insulators, constructed as described.

105,657.—PLANING AND MOLDING-MACHINE. Frank Douglas, Norwich, Conn.

Claim.—1. The adjustable bed pieces G G G, when used in combination with the under planing or cutter-head D of a planing or molding-machine, for the purpose herein specified.

2. The combination of the bed g, cutter-head D, with the elevating and depressing end pieces B and C, substantially as and for the purpose herein specified.

105,658.—WOOD PAVEMENT.—Henry Dowson, Springfield, Ill.

Claim.—The blocks A and strips C, correspondingly inclined upon their side faces, and relatively arranged for the purpose specified.

105,659.—MACHINE FOR CRUSHING MINERAL AND OTHER HARD SUBSTANCES.—David C. Ebaugh, Charleston, S. C.

Claim.—In combination with a slatted open-bottomed concave, a revolving cylinder, having two sets of spiral threads or flanges running in opposite directions, breaking joint and overlapping at the center of the cylinder, and turning slightly above the bottom of the concave, in the manner and for the purpose described and represented.

105,660.—DEVICE FOR PREVENTING PLOWS FROM CHOKING.—William M. Eccles, St. Louis, Mo.

Claim.—1. The application of the roller A to the plow, running from the beam F to the land-side H, to prevent the plow from choking.

2. The arrangement of the roller A, rod E, platform C, base D, land-side H, and beam F, constructed to operate as described.

105,661. — CARPET "UNDERLIE."—Nelson Edwards, Jericho, Vt.

Claim.—An elastic carpet underlie with cells or recesses in its sides, (which are connected together by self-closing slits,) and operating substantially as herein shown and described, for the purposes set forth.

105,662.—FARM-GATE.—George J. Fiedler, Danby, Ill.

Claim.—1. The triple-armed lever, composed of the parts L E D, when constructed and operating with extension lattice-levers F to open and close a gate, substantially as above, and in the manner specified and shown.

2. The combination of a triple-armed lever, a platform, and a double bar, a weight, and extension lattice-levers, substantially as above described and shown, and substantially for the purpose above specified.

3. The spring catch G, in combination with the parts that operate it and the gate, substantially as above described and shown, and substantially for the purpose above specified.

105,663. — ELECTRO-MAGNETIC MOTOR.—Louis Finger, Cambridge, Mass.

Claim.—1. The described arrangement of rods B^1 B^2 B^3 B^4 B^5, with relation to rods d d′ d″, by means of which, when two or more of the latter cover the ends of one or more of the former, the remaining two of the latter cover spaces between two others of the former, substantially as described.

2. The motor described, consisting substantially of rods B^1 B^2 B^3 B^4 B^5, and d d′, and commutators E I, all arranged and operating substantially as set forth.

3. The form of ends of rods B^1, B^2, B^3, &c., and d d′, shown in fig. 6, substantially as described.

105,664.—ELECTRO-MAGNETIC APPARATUS FOR MOVING PANORAMAS.—Louis Finger, Cambridge, Mass.

Claim.—1. The motor A, in combination with screws b b′, pinions C, and drums D D′, substantially as described.

2. The rollers E E′, rods F F′ and G G′, in combination with drums D D′ and their concavities d d′, as and for the purpose set forth.

3. The commutator I and strip J, in combination with rods G G′, as described.

4. The commutator I, in combination with strips P P′, and magnets N N′, as described.

5. The levers M and armatures O O′, in combination with magnets N N′ and sliding collars K K′, with their rods k k′.

6. The combination of the above combination with commutator I, strips P P′, rods G G′ and F F′, arranged and operating as described.

7. The disk X, with its segment s, in combination with the motor A.

8. The drums D D′ and rollers E E′, in combination with the wires 2 and 3, magnets N N′, armatures O O′, lever M, and clutches K K′, substantially as described and shown in fig. 5.

9. Reversing the motion of drums D D′ by breaking and connecting the current between the same and the magnets N N′, by the means substantially as set forth and shown in fig. 5.

105,665, antedated January 26, 1870.—MOVABLE SCREEN FOR PHOTOGRAPHERS.—Eliphalet J. Foss, Cambridge, Mass.

Claim.—A single portable or movable screen, having a central open space or window for the admission of the direct light, and provided with curtains by which the general or diffused light under the screen can be increased or diminished, while, at the same time, light may be made to fall upon the figures or object in any required direction, as specified.

105,666.—DEPURATOR.—Samuel C. Frink, Indianapolis, Ind.

Claim.—1. The shield C, to inclose the entire head and face of the patient, secured, air-tight, to the depurator, by means of hooks, packing, or equivalent device, as or for the purpose hereinbefore set forth.

2. The combination, with the shield C, inclosing the entire head and face, of the inducting-tube to supply the patient with air, as and for the purpose hereinbefore set forth.

105,667.—FLOUR-SIFTER.—Georg Gessert, Edwardsville, Ill.

Claim.—1. The case A of the sifter, divided by vertical partitions into three, more or less, chambers, c d e, in which the flour is exposed to the draught, as set forth.

2. The arrangement of reciprocating graded sieve E on spring arms f, and, with respect to a cam, K, on the transverse shaft F, as and for the purpose specified.

3. The air-chamber C, having adjustable openings f g, fan D having openings i, and one or more chambers, c d e, entirely open at one end, all relatively arranged in a flour-sifting machine, as and for the purpose specified.

105,668.—MACHINE FOR ROLLING PLOW-BEAMS.—William Gilman, Ottawa, Ill.

Claim.—The grooves C, with lateral walls, curved, as described, and with flat bottoms having marginal grooves therein, all as described and shown, for the purpose of rolling tapered plow-beams with lateral flanges.

105,669. — VAPOR-BURNER. — Lyman A. Gouch, Yonkers, N. Y.

Claim.—Combining with a burner, constructed and operating substantially as described, the detachable conductor E and mixers F F′, as and for the purposes specified.

105,670.—MANUFACTURE OF SOAP.—Louis Groux, New York, N. Y.

Claim.—1. The process of mixing soaps by means of pistons and cylinders with communicating passages, substantially as herein described.

2. The rollers b b, arranged and operating substantially as herein described, in the passage K between the cylinders.

3. The reciprocating cutter g, in combination with the tube L, cylinder A′, and piston B′, substantially as and for the purpose herein specified.

105,671.—BOOT-JACK AND SPUR.—Timothy Gunn, Hamilton county, Ind.

Claim.—The heel plate A, with the raised part D and spring E, in combination with the toe-plate B and C, and spur K, substantially as and for the purpose hereinbefore set forth.

105,672.—COAL-STOVE. — Joseph Hackett, Louisville, Ky.

Claim.—The construction and relative arrangement of the damper and register B C, the grate, the ash-conducting flange, the ash-pan box, and the base A of the stove, substantially as and for the purposes herein described.

105,673.—PLOW.—Joseph D. Hall, Canton, Ohio, assignor to William Kingsworth, same place.

Claim. — The arrangement, in a plow, of the beam A with notches a a, standard B with corre-

sponding recesses, grooved share H, colter I, draft-rod E, with springs *d b* and handles G G pivoted to the standard B, and made adjustable, all substantially as set forth.

105,674.—WAGON-HUB.—John D. Ham, Bethany, Ga., assignor to himself, Eli McCroan, and W. A. Wilkins, same place.

Claim.—The double-conical hub-box A, having its exterior surface polygonal in the middle, rounded outwardly toward each end, and eccentric to the axis of rotation, as and for the purpose specified.

105,675.—BOLT.—Mathew Harbster, Reading, Pa., assignor to Harbster Brothers & Co., same place.

Claim.—My improved arrangement and application of the bolt D, spring E, and the catch-dog or trigger A, whereby the spring is rendered capable of performing two functions, as explained.

Also, the combination and arrangement of the catch C with the catch-dog or trigger A, the spring E, and the bolt D, arranged as set forth.

Also, the combination and arrangement of the wedge or saddle A with the spring E, trigger A, and bolt D, arranged to operate as described.

Also, the trigger, as arranged with the bolts and spring, and to extend through and pivot in the front of the case, as set forth.

105,676.—SCHOOL-SEAT.—Charles G. Harington and David Mills, Northville, Mich.

Claim.—The school-seat above described and shown, consisting of the frames A, the arm B, the board D, the bolt F, and the washer H, when the several parts are constructed, arranged, and secured together as described and shown, as and for the purposes set forth.

105,677.—CHAIR AND LOUNGE.—Milton P. Harley, Philadelphia, Pa.

Claim.—1. The combination of back frame B B with frame of seat A A, and frame C C, by means of articulations, when constructed and operated substantially as and for the purpose hereinbefore set forth.

2. The combination of arms A R and A′ R′ with frame B B and frame A A and pins or screws T T, and the combination of said screws or pins T T with frame C C, which they hold in proper place when closed, the whole constructed, combined, and operated, substantially as and for the purpose above set forth.

3. The combination of sets of legs L L′ and L″ L‴, and their system of rods H H, H′ H′, and J and J′, with grooves G and G′, and their drop-lever R A and R′ A′ cut into the inner faces of sides of frame C C, when constructed, combined, and operated in the manner and for the purpose herein set forth.

105,678.—OVEN OR STOVE FOR HEATING THE BLAST OF BLAST-FURNACES.—John M. Hartman, Philadelphia, Pa., assignor to George W. Whitaker.

Claim.—1. Dividing the flame or gas of a blast-heating stove or oven, substantially for the purpose shown and described.

2. Dividing the adjacent legs of contiguous transverse siphons by gas-openings, as shown and described.

105,679.—MODE OF ATTACHING HOLD-BACK RINGS TO HAMES.—William B. Hayden, Columbus, Ohio.

Claim.—1. The construction of the hold-back ring plate C, substantially as described.

2. The method of securing the plate, to which the hold-back ring is applied, to the hame, by the clip-staple, substantially as described.

105,680.—HORSE-POWER.—John R. Hedges, Glenwood, assignor to himself and Valentine & Sparks, Buffalo, N. Y.

Claim.—The arrangement of the guide-pulleys L L, bed A, band J, pulley K, and hand-wheel H, on the main driving-shaft of a horse-power, substantially as and for the purpose hereinbefore set forth.

105,681.—CIGAR-BOX.—Eugen Henkel, North Scituate, R. I.

Claim.—A box, with its top and front side hinged, as shown at C, supported by the projecting point D, with its hook *a*, and loop *e*, arranged as shown and described, as a new article of manufacture.

105,682.—WINDLASS.—Alonzo Hitchcock, New York, N. Y.

Claim.—1. The use of a driving-shaft, pulley or pulleys, wheel or wheels, when said driver is made to distribute its power equally to the main driving-pulley or pulleys, wheel or wheels, and to co-operating pulley or pulleys, wheel or wheels, placed opposite the main driving-wheel or pulleys or surrounding the driving-shaft, when the peripheries of the driving-pulleys or wheels are all concentrated around and against the driver and held there, thereby producing a driving-power by means of traction, adhesion, or friction, by means of and in proportion to the load or work to be done by the windlass or winding-machine, substantially as and for the purposes set forth.

2. The co-operating pulley or pulleys, wheel or wheels, when placed around and in contact with the driver and held there, so as to relieve the driving-shaft of thrust or pull on its journals, clamping and pressing the driver between the peripheries of the driver by means of the load sustained by the windlass, substantially as and for the purposes set forth.

105,683.—OIL-STILL.—John Hofferberth, Baltimore, Md.

Claim.—1. The short worm for the escape of gasoline, when constructed and operating as shown and described.

2. The flanges *a*, arranged as shown and described, for the purpose specified.

105,684.—DUMPING-WAGON.—Britain Holmes, Buffalo, N. Y.

Claim.—1. A reach, composed of the two pieces C C, united in front at the turn-table, and diverging toward the rear axle, with which they connect, in combination with a dumping-axle and box supported thereby, substantially as hereinbefore set forth.

2. The springs *i* and supports G, for the dumping-axle, arranged on the under side of the curved reach C, substantially as and for the purpose hereinbefore set forth.

3. The tail-board L, hinged at its upper edge to the cross-rod K, and locked at its lower edge by the arm *u* and a spring catch, F, substantially as hereinbefore set forth.

4. The seat S, spring standards *t t*, guides *u u*, and end-board R, constructed, arranged, and operating as hereinbefore set forth.

105,685.—STEAM-GAUGE.—John P. Holt, Cleveland, Ohio.

Claim.—The foil shield *c*, in combination with the rubber diaphragm or gasket *a*, and button C, of a pressure-gauge, in the manner as described, and for the purpose specified.

105,686.—MITERING-MACHINE.—John Holsberger, Newark, N. J.

Claim.—The combination of gauge A, bed B, cutter C, spring catch *f*, standard *h*, sliding frame E, and lever F, all constructed and relatively arranged, as and for the purpose specified.

105,687.—GLOVE.—Daniel S. Hulett, Gloversville, N. Y.

Claim.—As an article of manufacture, a glove constructed of the several pieces A B C D E F, all arranged as shown and described.

105,688.—APPARATUS FOR REMOVING OIL FROM SEEDS, MEAL, &c.—Elias S. Hutchinson, Baltimore, Md.

Claim.—1. The vats A B, arranged in pairs above the tank C, and connected with each other by means of pipes *d e*, substantially as herein shown and described, for the purpose of allowing continuous operation, as specified.

2. The application to the tank C of vats A B, which are provided with slides *a a*, for dumping their contents without being disturbed, as specified.

3. The screw-conveyer E, or its equivalent, applied in combination with the tank C and still F, as specified.

4. The sieve A, arranged under the screw, substantially as and for the purpose herein shown and described.

5. The still F, provided with heating shelves and stirrers, substantially as herein shown and described, to operate as set forth.

6. The chambers G, arranged under the lower end of the still, substantially as herein shown and described.

105,689.—RAILROAD-CAR JOURNAL-BOX.—Charles Ihrig, Jersey City, N. J.

Claim.—1. The pump B, having its plunger C secured to and operated by the vertically moving frame of the car, combined with the journal-box A, as set forth, to form a self-oiling lubricator.

2. The wick E and perforated plates F, resting respectively upon the springs *b b* and *c*, combined with the box D, all relatively arranged in a journal-box, as and for the purpose described.

105,690.—GRAIN-DRILLING MACHINE.—Joseph Ingels, Milton, Ind.

Claim.—In combination with the hooks *b b* on the receiver D, the extended and projecting hubs *a a*, on the seed-wheel C, for the purpose of forming a connection between the concave and the receiver of a grain-drilling machine, substantially as described.

105,691.—PADLOCK.—Joseph Ingels, Milton, Ind.

Claim.—The combination of the segmental ring-hasp, spring bolt, shooting in between the ends of the segment to lock it, and the solid metal case encircling, or nearly so, the bolt, spring, tumbler, key-pin, and key space, as represented and described, so that any force or strain upon the ring-hasp to force the lock shall come upon the solid metal of the lock-case and not upon the spring bolt, for the purpose and in the manner set forth.

105,692, antedated July 11, 1870.—LAMBREQUIN.—Henry M. Johnston, New York, N. Y.

Claim.—The new article of manufacture, a cloth lambrequin, substantially as described.

105,693, antedated July 11, 1870.—LAMBREQUIN.—Henry M. Johnston, New York, N. Y.

Claim.—The new article of manufacture—a lambrequin made of paper, or paper and cloth combined.

105,694.—WATER-WHEEL.—George H. Jones, Rose, N. Y.

Claim.—1. The wheel D, with its buckets F scooped out and through the body of the wheel, curved or inclined, as at *e* and *f*, and with its buckets of an increasing capacity upward, or in a parallel direction with the shaft of the wheel, and arranged to discharge inwardly and in said direction, as at *g*, substantially as specified.

2. In a direct and reacting turbine wheel having curved buckets and receiving and discharging the water as described, the combination of the secondary backings *s* with the curved buckets F, and relatively to the case-fitting portion or rim A, substantially as shown and described.

3. The combination with the elements recited in the preceding claim, of the scroll-case or chamber C, essentially as described.

4. The combination of the gate A, hollowed out on its face, as described, the surface against which said gate works, recessed as at *a*, and the stem B, made capable of revolving, substantially as specified.

105,695.—BOXING FOR COVERING THE SHAFTING OF MACHINERY.—Marquis R. Jones, Darien, Wis.

Claim.—The cylinder B, divided lengthwise in the center, and provided with rubber packing, or its equivalent, at or near their ends, hinged together by the elastic bands F, with the strap D and key G, all constructed and arranged as herein shown and set forth.

105,696.—UNIVERSAL SHAFT-COUPLING.—Moses A. Keller, Littlestown, Pa.

Claim.—The hemispherically-socketed shaft-piece A, having extension lips over its diametrical plane, and the slotted spherical shaft section B, combined with diametrical bolts C E, placed at right angles to each other, the former fast to the socket A, and passing through the latter, all as and for the purpose described.

105,697.—COMPOUND SWITCH FOR ELECTRIC BATTERIES.—Jerome Kidder, New York, N. Y.

Claim.—1. A compound switch, composed of two switches, A and B, arranged to work independently of and insulated the one from the other, from or around a common center, on or over a circuit-breaking and closing surface, substantially as specified.

2. The construction and arrangement, relatively to each other, of the independent switches A and B, whereby said switches, in working from or around a common center, are free to play the one within or through the other, essentially as described.

3. The combination and arrangement of the conductors G, which connect with the cups, the intervening insulators I, and the rollers E and F, of the contact-surfaces of the switches A and B, substantially as and for the purpose specified.

105,698.—WATER-WHEEL.—Alfred Kneass, Northumberland, Pa.

Claim.—1. The arrangement of the converging rims B C, disk D, and buckets F F′, all substantially as specified.

2. The arrangement of the buckets F′ with the buckets F and the rims B C, forming the issues G, common to two or more buckets, substantially as specified.

105,699.—METALLIC RAILWAY CAR.—Bernard J. La Motho, New York, N. Y.

Claim.—1. The metallic frame for vehicles, made of bars passing through holes in the solid intersecting tie-blocks *b*, as specified.

2. The short tubes around the rods *c*, interposed between the tie-blocks, to serve as stops or stays, as specified.

3. The platforms, made by projecting the bars of the longitudinal sills and frame beyond the ends of the car, said bars being stiffened and connected by bent tubes, as specified.

4. The roof of the platform, formed by the longitudinal rods of the roof, terminating and secured to the curved tube coping, as specified.

5. The folded interlocking strips or sheet-metal hooks for attaching the covering of sheet metal, or

other material, to the metal frame of the car, as specified.

6. The metallic slide for the window-sash, formed and attached in the manner specified.

7. A group of rods and intersection blocks at the angles of the car ends, to prevent one car sliding into another, in cases of accident, as specified.

105,701.—Trace-supporting Stud.—Josiah Letchworth, Buffalo, N. Y.

Claim.—The arrangement, with the casting A, provided with loops *a*, of the hook *d*, made of cross-sectional form to correspond with the opening in the eock-eye, the shoulder *c* and spur *e* projecting upward from the crown of the hook, as and for the purpose hereinbefore described.

105,701. — Combined Hobby-Horse and Carriage-Motor.—John Liming, Philadelphia, Pa.

Claim.—The combined arrangement of a hobby-horse and carriage, with the spring-lever platform B, pawls *b''* *b'''*, and ratchet-wheel *a'*, operating together as and for the purpose hereinbefore described and set forth.

105,702.—Corn-Planter.—William H. Littel, Prairie Du Chien, Wis.

Claim.—1. The combination of the spring G, adjustable pin F, and adjustable chains H, with the plow-standard E and frame A *a*^{1}, substantially as herein shown and described, and for the purpose set forth.

2. The combination of the bars or bar L, bar M, having inclines *m'* formed upon or attached to the opposite sides of its opposite ends, clutch N, and lever O, with each other and with the dropping-bar K, frame A, and axle C, substantially as herein shown and described, and for the purpose set forth.

3. An improved corn-planter, formed by the combination of the wheels B, axle C, frame A *a*^{1}, plows D, plow-standards E, adjustable pins F, springs G, adjustable chains H, seed-hoppers I, conductor-spouts J, dropping-slide K, bars or bar L, arm M *m'* clutch N, lever O, and catch-bar P with each other, substantially as herein shown and described, and for the purpose set forth.

105,703.—Corn and Seed-Planter.—Wilber C. Lockwood, Spring Mills, Mich.

Claim.—1. The construction and arrangement of the adjustable dropper-beams C, transverse bars D, axle B, traction-wheel A, spider P, and clutch-pins P', whereby furrows of various distances apart may be planted, substantially as described.

2. The adjustable shovel-beam G, guides *e*, lever F, quadrant *b'*, and rod *b*, the standard H, provided with cultivator-shovel H' and fenders *e*, with the standard I, provided with a winged covering-shovel I', arranged and operating substantially as and for the purpose set forth.

105,704.—Cross-cut Saw.—Peter Longwell, Poplar, Ohio.

Claim.—1. A hand cross-cut saw, having the teeth thereon dressed in such a manner that the angle between the face of the saw-plate and the bevel edge of the teeth is gradually increased in size from the center to the ends of the saw, so as to obtain a thinner cutting-point on the center teeth than on the end teeth, substantially as is herein specified.

2. A hand cross-cut saw, having the teeth on the end thirds of the saw dressed to an acute angle with the face of the plate on the sides toward the center of the saw, and to faces at right angles to the plate on the opposite sides; the teeth on the center third of the plate being dressed on both sides to an acute angle with the face of the plate, substantially as and for the purpose specified.

105,705.—Device for Preventing the Uncoupling of Clutches in Spinning-Mules.—Hezekiah Macon and Joshua Hunt, Providence, R. I.

Claim.—The combination of the head G, the weight H, the pin P, and the lever M, all applied and operating as described, for preventing the clutches of mule-heads from springing apart.

105,706.—Car-Coupling.—Malanethon B. Malott, Richmond, Ind.

Claim.—The hook C, provided with the heel D, and the tumbler E, arranged relatively one to the other, and operated in combination with the draw-head A, provided with the slot B, substantially as described, for the purpose specified.

105,707.—Wood Pavement.—Duncan McKenzie, Brooklyn, N. Y.

Claim.—The combination and arrangement of the blocks A A, and their foundation planks B, having beveling or overlapping edges, as described, with the locking-cleats D D and sleepers C C, substantially as specified.

105,708. — Rotary Engine. — Edwin D. Mead, Shortsville, N. Y.

Claim.—1. The combination and arrangement of the central feed and central discharge, around the shaft and into the end of the cylinder, with the two-winged piston C K, and three or more rotating cut-off cylinders, J J J, and two-way supplying plug, M, the whole being constructed to operate as described.

2. In combination with the grooved cut-off rotary cylinders J J, the circular head and packing-bars *b b*, substantially as described.

105,709.—Grain-Drier. — Robert Milburn and Thomas Browning, No. 76, Church Lane, Whitechapel, Great Britain.

Claim.—Constructing a drying-machine as above described, to be capable of being also used as a portable engine for obtaining power.

105,710, antedated July 22, 1870.—Padlock.—Daniel K. Miller, Reading, Pa.

Claim.—1. A lock-case, having a slot or recess, *y*, near one edge, in combination with the bar B, retained permanently in connection with the case, and sliding in a direction to and from the rim of the same, and so constructed as to close the mouth of said recess when at the limit of its inward movement, substantially as described.

2. The bar B with its recess *x*, in combination with the case A and its recess *y*, and with the within-described devices, or their equivalents, for operating the bar, when the recesses *x* and *y* are so arranged as to coincide with each other when the bar is at the limit of its inward movement.

3. A dog, C, arranged within a case containing a series of tumblers, in combination with a shield or guard, D, and with the within-described devices, or their equivalents, constructed and operating so that the dog is maintained from contact with the tumblers until the key-hole is obstructed by the movement of the shield, for the purpose described.

105,711.—Grinder for Cleaning Castings.—George Miller, Providence, R. I.

Claim.—The cylinder of a grinder or rattler, mounted on the friction-roller C, and having the opening for putting in and taking out the castings arranged in one end, substantially as specified.

105,712.—Water-Wheel.—George Miller, Providence, R. I.

Claim.—A water-wheel, mounted for its support and also for transmitting its power, on rollers B, the axles of which are connected together by gearing, and arranged for gearing with transmitting mechanism, all substantially as specified.

105,713.—Tap-nozzle for Cans.—Herman Miller, New York, N. Y.

Claim.—1. The combination, substantially as described, of the bib C, the valve D, the interposed

chamber B, and the operating stem E, arranged to project through said chamber.

2. The combination of the inside guide or stem H of the valve D, with the bridge I, the chamber B, outer valve-stem or screw-rod E, the spring G, and the nut F, substantially as specified.

3. The outwardly-projecting curved plate or valve-seat *a*, at the back or base of the chamber B, in combination with the bib C, of larger area than the discharge aperture *b* through said plate, essentially as herein set forth.

4. The arrangement, relatively to each other, of the bib C, the chamber B, the valve D, the operating stem E, the nut F, spring G, the guide H, and the interior bridge I, substantially as shown and described.

105,714.—Metallic Standard for Wagon-Boxes.—Edward Milner, Marquette, Mich.

Claim.—The metallic flanged box-strap A, when constructed and operating substantially as and for the purposes herein described.

105,715. — Attachment for Sewing-Machine. — Schamu Moritz Moschcowitz, New York, N. Y.

Claim.—An attachment for a sewing-machine, for automatically sewing and turning a tube simultaneously, substantially such as described.

105,716.—Corn-Harvester.—Nelson Newman, Springfield, Ill.

Claim.—The cutter H, operated by means of and combined with the bar I', secured to and forming a part of said cutter, the disk K, the shaft L, the sleeve M, the lever N, and the eccentric O, substantially as shown.

Also, the means employed for securing in position the hinged doors or traps C, consisting of the locking bars D, the pivoted levers E, the bearings *d*, the catches F, and the springs *e*, when arranged and operating substantially as set forth.

Also, in combination with the above-named locking devices, the pivoted lever G, provided with the bar *g* and spring I, substantially as and for the purpose specified.

105,717.—Adding-Machine.—Nels Ockerlund, New York, N. Y.

Claim.—The plate A, having annular recess on its face, and the knobbed ring-plate B *b'*, fitting and rotating therein, each having respectively the scales C E and D F thereon, combined with the scaled arc-plate M, traveling in groove of plate A, arranged and operated in the manner and for the purpose described.

105,718.—Reed Musical Instrument.—Isaac T. Packard, Chicago, Ill.

Claim.—The levers A and B, and the cam C, or their equivalents, when the same are made and combined substantially as herein described, and used to accomplish the purpose set forth in this specification.

105,719, antedated July 18, 1870.—Planking-Set.—Eliphalet H. Parker, Bucksport, Me.

Claim.—The planking-set herein described, consisting of a staff, A, hook B, pad C, pivoted arms D D, and lips E E, all constructed, combined, and arranged in the manner and for the purpose specified.

105,720. — Treating and Preserving Grain in Bulk.—Charles F. Parrott, New York, N. Y., assignor to himself and John F. Kohler, same place.

Claim.—The treatment of grain with a mixture of carbonic acid and sulphurous-acid gases, substantially as and for the purpose herein specified.

105,721. — Tablet Locket for Photographs, &c.—Gurdon W. Pitcher, Brooklyn, N. Y.

Claim.—The locket made of the frames *a*, having openings in the edges through which the pictures are to be slipped, in combination with the inclosing-case and attaching-pin or screw *i*, so that the frames can be swung out of the case edgewise, as set forth.

105,722. — Horse Hay-Fork. — Henry G. Porter, Grand Rapids, Mich.

Claim.—The harpoon-fork A, provided with tines *b*, links *c*, rod *d*, lever *e*, link *g*, latch *h*, and trip *i*, when each of said parts is constructed as described, and all are arranged to operate as and for the purposes set forth.

105,723.—Hay-Carrier.—Thomas J. Powell, Naples, N. Y., assignor to George Smith, Providence, R. I., and John C. De Lang, Detroit, Mich.

Claim.—1. The bracket or arm *c*, with the gravitating or self-locking catch G *g g'*, applied on or formed upon the pulley, truck, or carriage B, in combination with the block D *d*, substantially in the manner described.

2. The gravitating or self-acting brake *h*, applied and arranged on the arm *c*, of the pulley, carriage, or truck, in combination with the block D *d*, substantially in the manner described.

3. The gravitating or self-fastening catch G *g g'* and the gravitating or self-locking brake *h*, arranged upon the arm *c* of the pulley, truck, or carriage, in combination with the movable stop J and the double-acting stationary device D *d*, substantially in the manner described.

4. The arrangement of the parts A B C D *h* G *b* B' J, for elevating hay, in the manner and for the purpose described.

105,724.—Horse-Power.—Robert Quinn, Whitefield, Miss.

Claim.—The combination of the vertical shaft C, long sweep or sweeps M, and cross-bar or driver L, with the operating mechanism of a horse-power, and with the roof and frame of the building, substantially as herein shown and described, and for the purpose set forth.

105,725.—Floating Tide-Dock.—William Rickard, Jersey City, N. J., assignor to himself and E. K. Meigs, same place.

Claim.—The water-tight floating-dock A, for canal-boats, having hinged end B, and water-escape gates D, each constructed and relatively arranged as described.

105,726.—Music-leaf Turner. — Edward B. Robinson, Portland, Me.

Claim.—1. The arrangement, as well as the combination, in a music-cover, of the wires *a b c*, with their clips *e f g*, hinged either at *h i j* or at *h* and *i* only, for the purpose described.

2. The arrangement, as well as the combination of the wires *a b c*, clips *e f g*, finger-pieces *l m n*, hinges *h i j*, stops *o o*, and rest *p p*, in a music-cover, as described, and for the purposes specified.

105,727.—Match-Stick.—John K. Robinson, Middlebury, Ohio.

Claim.—A match-stick, the shape of which, transversely, is that of a lozenge or rhombus, as and for the purpose specified.

105,728.—Engine for Separating Fiber from Husks of Cotton-Seed.—Thomas Rose and Robert Emerson Gibson, Earlstown, England.

Claim.—1. The pocket or recess *f* in the bed of a rag-engine, in combination with the two drains or ways *e* and *l*, arranged as represented, for the purposes herein set forth.

2. The perforated cover or sieve *k*, arranged as specified.

3. The intercepting-plate *h*, or its equivalent, in combination with the directing-plate *i*, or its equivalent, and with the beater-roll *e* and cover *g* of a rag-engine, adapted to serve as means for increasing the flow of water, and thereby facilitating the separation of the fiber from the husks of coated cotton-seed.

4. The perforated cover *k*, chamber *j*, and way *l*, for admitting, containing, and discharging the separated husks, in combination with the plates A and *i*.

105,729.—PROCESS FOR SEPARATING THE FIBER FROM THE HUSK IN COTTON-COATED SEEDS.—Thomas Rose and Robert Emerson Gibson, Earlstown, England.

Claim.—1. Subjecting the husks and fiber of coated cotton-seed, after the oil-yielding portions have been removed, to the action of a current of water, for the purpose of separating the fiber from the husks, substantially as herein set forth.

2. Subjecting the said husks and fiber, previous to placing them in the separating current of water, to the action of an alkali with heat and moisture, for the purpose of loosening the husks, substantially as specified.

3. Subjecting the said husks and fiber first to the action of boiling water with or without an alkali; second, to a current of water to separate the inner husks; third, to the action of an alkali with heat and moisture; and, finally, to a second current of water, to separate the fiber from the outer husks, substantially as specified.

105,730, antedated July 14, 1870.—LIFE-PRESERVING SKIRT.—Sarah E. Saul, Brooklyn, N. Y.

Claim.—As an article of manufacture, a lady's skirt, formed of a succession of gradually decreasing tubular hoops, filled with sections of cork or other light substance, all arranged upon a series of straps, B, attached to the waist-belt, as shown and described.

105,731. — TABLE-CASTER. — Daniel Sherwood, Edward P. Woods, and George D. Dudley, Lowell, Mass., assignors to Woods, Sherwood & Co., same place.

Claim.—1. The arrangement and combination, with the wires *a a*, which form the handle, of the additional wires *b b*, to make the legs B B of the caster, in the manner shown, described, and specified.

2. The combination with the legs and handle of a caster, constructed as described, of the rings C and fastening-plate D, substantially as described and shown.

3. The combination, with the handle, of the grooved ring E, constructed and applied substantially in the manner described and specified.

4. The caster as a whole, constructed in the manner set forth and specified.

105,732. — TABLE-CASTER. — Daniel Sherwood and George D. Dudley, Lowell, Mass., assignors to Woods, Sherwood & Co., same place.

Claim.—The table-caster, constructed of twisted and wound wire, with the handle A and ring E, legs B, rings C, and plate D, all connected substantially in the manner shown and described.

105,733.—HORSE HAY-RAKE.—Alexander J. Shunk, Des Moines, Iowa.

Claim. — 1. The peculiarly-shaped adjustable hinge E, combined with the shafts C C, and the rake-bar D D, substantially as described, for the purposes set forth.

2. The extension of the bent lever *b b*, and the adjustable catch *c c*, combined and operated substantially as described, for a locking device.

105,734.—SIDE-SADDLE.—Fenwick Smith, Austin, Texas.

Claim.—The side-saddle tree A, with the air-chambers A′ and B, constructed in all respects substantially as herein shown and described.

105,735. — AUTOMATIC GATE. — Pratt A. Spicer and Montgomery Crossman, Marshall, Mich.

Claim.—1. The inverted double incline track-way E, with or without the flange *f*, in combination with the gate A, roller J, and cranked hinge-rod *e*, when arranged in relation with each other and with said gate and its hanging post, substantially as and for the purpose specified.

2. In combination with the subject-matter of the first claim, the slotted track-way plates *p* and slotted latching plates H, for the vertical adjustment of the gate, substantially as described.

105,736, antedated July 22, 1870.—RIFLED CANNON.—Alban C. Stimers, Castleton, N. Y.

Claim.—The within-described grooves in a rifled cannon, when their driving-edges are inclined sufficiently to center the projectile, and the concentric bottom of each groove has a greater circumferential extent than the radius of the bore, as and for the purpose specified.

105,737, antedated July 21, 1870.—HEATING-STOVE.—Carl Lister Svensson, Topeka, Kansas, assignor to J. Q. C. Searle, same place.

Claim.—1. An annular fire-pot, arranged within the casing of a stove, and turning within the latter, for the purpose described.

2. An annular fuel-magazine, C, containing a central flue or chamber, and arranged on a heating-stove so that cold air only shall have access to the central flue.

3. The combination of an annular grate, an annular fuel-magazine, and a chamber below the grate communicating with the central passage or chamber of the magazine, substantially as specified.

4. Mica windows *a′*, arranged to expose the interior of the flue or flues through which heated gases pass from the combustion-chamber to the main flues.

5. A series of grates arranged in a circle, in combination with devices whereby the grates may be tilted, for the purpose described.

6. An annular fire-pot, arranged within a stove so as to rotate, or partially rotate, within the same, for the purpose set forth.

7. The combination of the movable fire-pot J, the tilting grates P, their arms *u*, and the pins *w*, substantially as specified.

8. The slide *g*, arranged in a base-burning stove, between the chamber below the grate and the main flue, substantially as described.

9. A drawer, B, arranged beneath a stove, so as to be withdrawn from either side of the same.

105,738.—HEATING-FURNACE.—William A. Sweet, Syracuse, N. Y.

Claim.—1. In combination with a combustion-chamber, one or more injectors, for forcing the fuel into the side of a previously ignited mass of fuel in said chamber, as described.

2. In combination with a combustion-chamber, having one or more injectors, an adjustable grate or grates, for the purposes hereinbefore set forth.

3. In combination with said chamber A and fuel-injector, an arch, with air-holes for forcing additional supplies of oxygen into the chamber just above the opening S, as described, and for the purposes set forth.

4. In combination with the combustion-chamber A, fuel-injector, and grates D and E, the holes 1 and 2, as described, and for the purposes set forth.

105,739.—VELOCIPEDE.—Ephraim Tarbox, Charlestown, Mass.

Claim.—The combination and arrangement of the body or frame *a a* with the axles *g g*, the supports or boxes *f f*, and their extended supports *f′ f′*, the boxes being outside of the wheel-hub, and, with their extended supports operating as an axle to the vehicle, the wheels *b b*, the washers *d d* and *d′ d′*, with the screws or fastenings *e e*, combined and arranged with the axles *g g*, having fixed washers *h h*, all of the several parts of the vehicle being combined, arranged, and operated substantially in the manner and for the purpose specified.

105,740.—FARMERS' BOILER.—Richard W. Thickins, Batavia, Ill., assignor to David R. Sperry.

Claim.—1. The jacket F, made in sections, substantially as described, for the purposes specified.

2. The kettle H, hung on trunnions J in the jacket or case F, substantially as described, for the purposes set forth.

3. The braces S, in combination with the open jacket or case F, when constructed substantially as described, for the purposes specified.

105,741. — SEWING-MACHINE. — Cyrus B. True, Boston, Mass.

Claim.—1. The thread-controller herein described, consisting of the rocking arm A, crank *b*, connecting-rod C, cam B, pin D, and staple *f*, constructed and operating substantially as described and specified.

2. The combination, with the rocking arm A, of the spring *d*, provided with the eye *e*, constructed and operating substantially as described, and for the purpose specified.

105,742. — DISH-WASHING MACHINE.—Sophia S. Tupper, Churchville, N. Y.

Claim.—The arrangement of the stationary basket H, with its supports *s s*, the suspension-rod J, the vibrating water-tank B, and the swing platform C, and pendants *c c*, the whole operating in the manner and for the purpose specified.

105,743.—HINGE.—Samuel D. Van Pelt, Anderson, Ind.

Claim.—Door or blind-hinges constructed in the parts to be fitted to the doors, blinds, or frames, in semi-cylindrical form, for attachment in semicircular recesses formed by boring between the doors or blinds and the frames, when the doors or blinds are fitted and wedged up to the frames, all substantially as specified.

105,744.—HOLLOW AUGER.—Isaac H. Van Wie, Clarksville, N. Y.

Claim.—The combination of the frame A and its shank, with the knives B B and D, as described and shown, for the purpose set forth.

105,745.—CULTIVATOR.—Charles L. Waffle, Sharon Centre, Ohio.

Claim.—1. The arrangement on one side of the standard A of two parallel staples, E E, the lower one slightly further forward than the upper, to form a rest for the plow-standard, and to enable the same to be adjusted by wedges vertically or horizontally, as set forth.

2. The arrangement of the projecting points of fingers H below the edges of the shovels or shares of a cultivator, to pulverize the soil in advance, as set forth.

105,746. — COOKING-STOVE.—Benjamin F. Warren, Fishkill, N. Y.

Claim.—1. The combination, with a cooking-stove, of a coal-magazine, arranged between the rear top and the oven, and to feed into the fire the whole length of the grate, all substantially as specified.

2. The combination, with a cooking-stove, having the top of the rear elevated, as described, of the magazine, having the bottom inclined into the fire-box, all substantially as specified.

3. The arrangement of the double doors G, opening into the magazine, to rest, when open, against the walls of the opening in the top of the stove, and form chutes to conduct the coal, all substantially as specified.

4. The inclined movable bottom of the magazine, pivoted at E, and arranged to rest on the rear elevation F of the grate, substantially as specified.

5. The plates I K, joining on the reservoir, forming a chute for guiding the coal into the fire-box and a support for the fire-plate, all substantially as specified.

6. The cast-iron fire-plate N, arranged to form three sides of the fire-box, and joining on the chute from the magazine, substantially as specified.

7. The arrangement of the air-passage behind the fire-plate, to conduct the air from the register around both ends and down past the terminus of the lower end plates O to the grate, all substantially as specified.

8. Supporting the grate at the rear on the friction-rollers or balls Q, and at the front on the movable holder S, all substantially as specified.

9. The arrangement, in the front of the grate, of the trough U, substantially as specified.

10. The projection of the stove-grate under and beyond the fire-wall, when arranged to provide a space for the discharge of the debris of the fire, substantially in the manner specified.

105,747.—FURNACE FOR REBURNING BONE-BLACK AND REDUCING ORES. — Adam Weber, New York, N. Y.

Claim.—1. The combination, with the retorts D, of the tiles E, provided with the holes and the grooves, as described, and arranged on the plate H, all substantially as specified.

2. The combination, with the retorts, of the cut-off slides I and the stoppers W X, substantially as specified.

3. The retorts provided with the projections V, substantially as specified.

4. The arrangement of the plugs W X with the retorts and the tiles E, substantially as shown and represented in fig. 3*a*.

5. The plugs W X, provided with the handles X′, substantially as specified.

105,748. — STOVE-LEG. — Frank Whalen, Ballston Spa, N. Y.

Claim.—1. The locking-arm *i* and clamp-screw *m*, applied to and combined with the plate *h* of the leg, to retain the same between the dovetail lugs or recess of the stove, as specified.

2. The movable caster-leg *a*, receiving the caster-wheel *c* and pintle *b*, and being made with a plate, *h*, to pass into the dovetail recess on a stove, as and for the purposes set forth.

3. The removable leg *n*, provided with tongues or plates *t v*, in combination with the caster-leg, substantially as set forth, so that the caster will be relieved when the leg *n* is inserted, as shown.

105,749. — LAND-ROLLER. — Elisha Whitcomb and Daniel A. Gunn, Waterville, Ohio.

Claim.—1. The counter-weight E, as and for the purpose set forth.

2. The shaft G, pulley G′, sheave *a*, and cords I and N, arranged with relation to each other and the counter-weight E and lever L, as and for the purpose set forth.

3. The arrangement of the roller M, vertically adjustable, pivoted in the frame K J to the rear center of the device, in connection with the lever L, cords N, shaft G, and pulley G′, when constructed as described, and operating as and for the purpose set forth.

105,750, antedated July 11, 1870.—LUBRICATOR.—John B. Wickersham, Philadelphia, Pa.

Claim.—1. The combination of the bonnet *m* with the shoulder 2 and stem *l*, substantially as and for the purposes specified.

2. The spring valve *i*, fitted to the cap *f*, substantially as and for the purposes set forth.

3. The bonnet *m* and shoulder 2, in combination with the tube *l*, substantially as and for the purposes set forth.

105,751.—CHURN.—Milton Jones Wikoff, Stout's Post-office, Ohio.

Claim.—The combination of hollow revolving arms E E with a hollow dasher-rod, B L, opened at the top to draw in cold air, and the outlet-pipe M N, opened at the same time for the discharge of warm air, whereby, after the butter has "come," it may be suddenly cooled and hardened, as set forth.

105,752.—MITER-BOX.—Edward M. Wilcox, Bloomer, Wis.

Claim.—1. The guides F G, constructed, arranged, and adjusted on a miter-box, as and for the purpose specified.

2. The arrangement of two opposite pairs of vertically adjustable saw-guides B B, with respect to a pair of horizontally adjustable miter-guides, as shown and described, and for the purpose specified.

105,753. — SAFETY-GUARD FOR RAILWAY CARS.—John Atwater Wilkinson, Wilson, N. Y.

Claim.—The two sheet-metal guards D D, suspended from the axles by boxes *b b*, having hooks *c*, braces *d e*, and arms *f*, all constructed and arranged as in drawing, and for the purpose specified.

105,754, patented in England February 22, 1869.—RAILWAY CROSSING. — Richard Price Williams, Great George Street, Westminster, England.

Claim.—The construction of railway crossings with one of the crossing lines a continuous rail, and the other in two parts, which are bent round parallel to the continuous rail, and fixed to it, flange-passages also being left, and formed substantially as herein described.

105,755. — METALLIC PLATE-SCREEN FOR SCREENING PAPER PULP. — Arthur St. Clair Winchester, Boston, Mass., assignor to himself and James Seton Parsons, same place.

Claim.—The combining with the plate, by the electroplating process, a homogeneous metallic or copper coating, applied to one face of it, and subsequently sawing or cutting each of the slits through such coating and the plate.

Also, the improved manufacture of paper-pulp screen, as made by combining with a metallic or brass plate a homogeneous coating of resisting metal or copper, applied to its upper surface by the electroplating process, and subsequently cutting the slits through such coating and plate, the whole being substantially as set forth.

105,756.—GAS APPARATUS FOR RAILROAD CARS, &c.—Joseph S. Wood, Philadelphia, Pa., assignor to himself and John J. Carberry, same place.

Claim.—1. The horizontal cylindrical vessel A, constructed with a partition *a'* and outlet *h'* and draw-tube basket G, circulating pipe L, arranged and combined as and for the purpose herein described.

2. A machine for generating hydrogen gas, so constructed of a horizontal tube A, containing a perforated guide-tube H, and horizontal draw-tube basket G, as to be adapted to its position beneath railway cars, for the purpose herein described.

105,757.—GAS APPARATUS FOR RAILROAD CARS, &c.—Joseph S. Wood, Philadelphia, Pa., assignor to himself and John J. Carberry, same place.

Claim.—1. Constructing the cylinder G and basket K of a horizontal tubular form, so that the said basket is inserted and withdrawn from the end of the cylinder, so as to adapt the hydrogen-gas generator to its position beneath railway cars, as herein described.

2. The tank B, with a series of dividing-plates, C, for the purpose herein described.

3. The combination and arrangement of the tank B, the horizontal cylinder G, tubular basket K, and circulating pipe P, for the purpose herein described.

4. The arrangement of the horizontal tube R with inside pipe S, surrounded with saturated packing W, so that the hydrogen gas passes out at the end T, and passes backward through the packing and out at pipe X, in the manner and for the purpose herein described.

105,758.—FOLDING BUGGY-SEAT.—Thomas H. Wood, New York, N. Y.

Claim.—1. The folding fly-seat, applied to the hinged back of a buggy, or other vehicle, substantially as specified.

2. The deck-plank *d*, hinged to the swinging back, for the purpose of constituting the back of the fly-seat, as set forth.

3. The inclined guide or track *f*, arranged within the body A, for the support of the front end of the fly-seat, substantially as herein shown and described.

105,759.—PREPARING RAWHIDE FOR USE IN CHAIR-SEATS. — Benjamin F. Wright, Charlestown, and John Rowe, Jr., Wilmington, Mass., assignors of three-fifths of their right to Seth H. Woodbury, William T. Gray, and Charles H. Drew.

Claim.—1. The process of preparing rawhide for use in chair-seats and analogous purposes, by depriving the same of odor, or preventing its acquiring an odor, depriving it of all grease and oil, cutting it in a continuous strip, polishing the strips for imparting a smooth surface to them, and coloring or dyeing them; we do not claim either of these processes separately, but the whole of them in combination as one process, substantially in the manner above described.

2. The process of preparing rawhide for use in chair-seats and analogous purposes, by depriving the same of odor, or preventing its acquiring an odor, depriving it of all grease and oil, cutting it in a continuous strip, and polishing the strips or imparting a smooth surface to them; we do not claim either of these processes separately, but the whole of them in combination as one process, substantially as above set forth.

105,760.—BORING AND MORTISING-MACHINE Simeon M. Wright, Athens, Ohio.

Claim.—The combination of two or more auger-bits, H, with friction-rollers D D, arranged and operated substantially as and for the purpose herein set forth.

105,761.—FOLDING COUNTER-STOOL.—John L. Young, New York, N. Y.

Claim.—An improved folding counter-stool, formed by the combination of the hinged legs B, seat C, hinged leg D, and brace-rods E with each other, substantially as herein shown and described, and for the purpose set forth.

105,762.—LANTERN. — McClintock Young, Frederick, Md.

Claim.—1. The conical air-chamber B E, combined with angular and centrally-pendent double brace L, each arranged to project into the chimney at bottom and top, respectively, for the purpose specified.

2. The wire frame A D C and perforated conical chamber B E, constructed and arranged to fit together, as shown in fig. 1 of drawing.

3. The centering-rod H, cap K, and the two-armed coiled spring, combined and arranged to maintain the braces L in their true position.

105,763.— REFRIGERATOR. — Ignazio Allegretti, Philadelphia, Pa.

Claim.—1. The case C, provided with frame E and covers D and K, in combination with chamber A, provided with cover J and rim or flange G, and having intervening ice-space I, all constructed and arranged as herein shown and described.

2. In combination with the above, the outer box B, provided with cover K, as and for the purpose specified and shown.

105,764.—VENT FOR CASKS.—William Ascough, Buffalo, N. Y.

Claim.—The plug A, having a vertical bore, a^1, horizontal bore a^2, and air-passage *b*, the valve C, toothed bar D, pinion E, and key F, said parts being constructed, arranged, and operating substantially as herein described.

105,765.—TRAVELING BELT-STOP FOR MACHINERY.—Thomas Edwin Baden, Washington, D. C.

Claim.—The belt-stop described, consisting of the stand A, having an arm, C, and grooved arm D, with a detachable serrated pawl, F, having a head, G, and provided with a notch, J, when required, combined, and operating substantially as and for the purpose set forth.

105,766.—BOX-SCRAPER.—Joseph R. Bailey, Woonsocket, R. I., assignor to himself and Selden A. Bailey, same place.

Claim.—The box-scraper, consisting of the frame A^2 with a shank or handle, knife B, and curved or eccentric rod C for holding the latter in position, either with or without the cap D, substantially as described.

105,767.—BENCH-PLANE.—Joseph R. Bailey, Woonsocket, R. I., assignor to himself and Selden A. Bailey, same place.

Claim.—A bench-plane, provided with a metallic sole, B, with flanges B', through which said sole is fastened to the stock by means of screws, or their equivalents, substantially as described.

105,768.—GAS-BURNER.—John F. Barker, Springfield, Mass.

Claim.—An improved gas-burner, consisting of the burner or pillar L, having holes *c c* therein, and provided with the movable or adjustable shell or tube I, all constructed and operating substantially as and for the purposes herein described and specified.

105,769. — APPARATUS FOR IMMERSING SHINGLES AND OTHER ARTICLES IN LIQUIDS.—Caleb Bates, Kingston, Mass.

Claim.—1. In an immersing device, the carrying-chain F F, in combination with the tank N' and drying-line C, substantially as described and for the purpose set forth.

2. In the carrying-chain, the extension P^1 of the connecting-plate, in combination with the link O, to form a griping device, substantially as described and for the purpose set forth.

105,770.—COMBINED HARROW AND SHOVEL-CULTIVATOR.—Albert B. Baum, Grantville, Pa.

Claim.—1. The rotary bars *b*, provided each with a set of harrow-teeth, *d*, and a set of shovels, *c*, in the manner and for the purpose described.

2. The combination of the bars *b*, levers *f n*, standards *l*, and link *o*, in the manner and for the purpose specified.

105,771. — BEDSTEAD-FASTENING. — John Benjamin, Naples, N. Y.

Claim.—The plate C D, provided with a central shoulder, F, to set upon the post A, whereby the said plate and the fastenings *c' c'* are proportionally relieved from strain, substantially as shown and described.

105,772. — AUTOMATIC FAN. — George H. Briggs, Montgomery, Ala.

Claim.—In an automatic fan, the combination of the adjustable telescopic rod A B, which may be extended or contracted and adjusted at different angles with the gearing E F, slotted bar G, plate I, and adjustable wrist-pin H, whereby a reciprocating rotary motion is imparted to the fans, when arranged and operating as herein shown and described.

105,773.—PLATFORM FOR STOVES.—Clark Brownell, Troy, N. Y.

Claim.—1. The use and construction of a platform of metal or fire-proof material, formed so that air may circulate underneath, passing in and out through apertures provided therefor, substantially in the manner and for the purpose as described and set forth.

2. The construction and use of the ring or frame A, with its level B, on which the weight of the stove rests, and its flange or rim C, or its equivalent, substantially in the manner and for the purpose as described and set forth.

3. The domed central part E, or its equivalent, as and for the purpose substantially as described and set forth.

105,774.—MACHINE FOR FLOCKING WALL-PAPER, SHOW-CARDS, &c. — Henry W. Bulkley, New York, N. Y.

Claim.—The construction of a "flocking"-machine, for the purposes above mentioned, with beaters having a positive vibratory motion from an eccentric, crank, cam, or other device, the whole arranged substantially as described.

105,775.—HARROW.—Welcome J. Burdick, Alfred, N. Y., assignor to himself and Joel E. Morehesse.

Claim. — 1. The above-described construction and arrangement of hub, the same being made in two parts connected by bolts, substantially as set forth.

2. The reversible arm, when provided with the adjustable weight, and revolving weight or wheel, substantially as set forth.

3. The two rollers I and K, in combination with the beam, substantially as described.

105,776. — LIQUOR-PUMP. — Martin Cavanaugh, Philadelphia, Pa.

Claim.—The case A, its spout *a*, and openings *f*, in combination with the rod B, having an unobstructed opening through the same, and extending through a piston, substantially as described.

105,777. — SCISSOR-SHARPENING ATTACHMENT FOR SEWING-MACHINES.—George T. Chattaway, Brooklyn, N. Y.

Claim.—The slotted plate *d*, movable bearings *a a*, standard *b*, sharpening-wheel or stone *f*, and fixed rest *h*, arranged and constructed as described.

105,778.—SPOOL OF THREAD FOR SEWING-MACHINE SHUTTLES. — D. M. Church, Holyoke, Mass., assignor to himself and Timothy Merrick, same place.

Claim.—As an article of manufacture, a spool of thread for shuttles, the spool containing the thread being made solid, and having, upon each end, a cap-receiving boss, A, adapted to receive and hold thereon metal caps having pivotal centers, substantially as shown and described.

105,779.—CULINARY VESSEL.—Emma Clark, Buffalo, N. Y.

Claim.—The combination and arrangement, with the perforated bottom of vessel B, perforated flange

b, and slot *c*, of the perforated removable bottom D and projecting pin *d*, all constructed and operating as hereinbefore set forth.

105,780.—ORGAN, MELODEON, &c.—Hugh Archibald Clarke, Philadelphia, Pa.

Claim.—1. The arrangement, in respect to the keys of an organ or melodeon, of the diagonal levers G, overlapping mechanism H, and the devices connected therewith, or their equivalents, for so controlling the valves C that but one of the latter can be lifted at a time in either the bass or the treble, all substantially as described.

2. The diagonal levers G, lifted by the standards *b* of the keys, acted upon by springs *d*, and arranged, as described, to turn upon either of the wires *b'* or *c* as a fulcrum.

3. The keys of the instrument, arranged to act upon the diagonal levers, at one end of the same, through the medium of the standards *b*, and at their opposite ends through the medium of the overlapping mechanism and wires *e*, substantially as herein set forth.

4. The overlapping mechanism, consisting of a series of V-shaped arms or levers, H H', &c., hinged to the fixture *d'*, and embracing the wires *e* at points between the ends of the keys and nuts *f* on the said wires.

5. The combination of the arms *f* and "handles" of the valves C, for transmitting the movement of the wires *e* to the said valves.

6. The combination of the rods *g*, hinged to the levers F, and devices substantially as set forth, whereby the movements of the rods may be regulated, as specified.

7. The combination of the flat strip or flap *p*, operated by a knee-stop, or otherwise, with the valves C, for the purpose of holding any one of the latter open after it has been raised by its key.

8. The combination, with the overlapping mechanism and with the flap *p* and valves, of a strip or flap, *r*, operated by the knee-stop L, or by an "on-and-off" lever, M, either in connection with or independently of the flap *p*, for the purpose specified.

105,781. — LAWN-MOWER.—Thomas Coldwell and George L. Chadborn, Newburg, N. Y.

Claim.—1. The revolving cutter-drum O^1 O^2, consisting of two cast-iron bars, O O, connected, by cross-bars P P, with steel knives o^1 o^2, and shafts Q Q, without a center shaft running from one end to the other, for the purpose as specified.

2. The handle *y*, constructed as described, in combination with the adjustable arms *u u*, on the brace-rod U, as specified.

105,782.—WATER-CLOSET.—James M. Davis, Cincinnati, Ohio, assignor to himself and J. C. Grannan, same place.

Claim.—The tilting bowl B, combined with a seat, which forms one arm of a weighted lever, C H D, whereby the two vibrate on their centers of motion in arcs of different magnitude, as and for the purpose described.

105,783.—ALCOHOL AND SPIRIT-STILL.—Joseph Dawson, Alexandria, Va.

Claim.—1. The evaporating-chamber B, constructed as described, for the purpose of exposing an increased evaporating-surface of the wash.

2. The cooling receiver C, combined with its inclosing-chamber, and with the evaporating-chamber, and with the vapor tube, in the manner described and for the purpose of preventing boiling over of the wash.

3. The weighted valve *c*, constructed and operating as set forth.

105,784.—CORN-HARVESTER CUTTER.—John J. De Freitas, Springfield, Ill.

Claim.—A spiral groove, either permanently or temporarily fixed at or near the ends of the guide, which contains the cutter-bar and controls its longitudinal motion, in combination with a suitable pin, secured to or within said bar, and working in said groove, substantially as and for the purpose specified.

105,785.—CATAMENIAL SACK.—Warren A. Dinsmore, South Boston, Mass., assignor to himself and Emily L. Geer, same place.

Claim.—The within described catamenial sack, consisting of the outer sack A, in combination with an inner sack C provided with an opening, *f*, and so arranged as to form a space, *g*, and combined with bands and straps for securing the same upon the person, substantially as and for the purpose described.

105,786.—FURNACE FOR SALT-BOILING.—William James Dodge, Syracuse, N. Y.

Claim.—1. The flue H, placed in the rear of the combustion-chamber or grate E, and so arranged as to convey a portion of the heated gases from the furnace E to the rear kettles, without said heated gases coming in contact with the front kettles *g* or the side walls A A, while on the way from the furnace to said rear kettles, thereby distributing the heat to the series of kettles more evenly, as specified.

2. The hollow walls A A, with ports B and C, furnace E, distributing-flue H, and stop wall I, with regulating-damper *s* and kettles *g*, all constructed and arranged as herein shown and described, and for the purpose specified.

105,787.—SASH-LOCK.—George W. Dubuisson, Norwich, Conn.

Claim.—In combination with the corrugated strip C on the window-sash A, the corrugated spring D, bent U-shaped, and operated by the cam E in a recess in the frame B, by means of the handle G, all as set forth.

105,788. — RECTIFYING WHISKY, &c.—Henry Fake, Brooklyn, assignor to himself and Charles A. Todd, New York, N. Y.

Claim.—The process herein described, for producing rectified whisky, the same consisting in treating the beer or mash by means of ivory black and charcoal, substantially as set forth.

105,789.—SEAT-FASTENING FOR CARRIAGES.—James H. Fellows, Alba, Pa.

Claim.—1. An automatic seat-fastener, consisting of a seat plate, C, a body-plate, E, a tumbler, H, and a lever, I, arranged and constructed substantially as before described.

2. The tumbler H, constructed with a stop-shoulder, *d*, and a locking-shoulder, *e*, in combination with the lever I, whereby the tumbler is locked when the seat is in place, and held in a position to be acted upon by the seat-plate in inserting the same into its socket, substantially as before described.

3. The thumb-lever I, constructed so that the act of unlocking the tumbler H will also cause said lever to strike and start the seat-plate C from its socket, substantially as before described.

4. In connection with a weighted lever, I, of concave and convex form, the guard-spring J, arranged to prevent the accidental unlocking of the tumbler, substantially as before described.

105,790.—MANUFACTURE OF STRAW AND OTHER PAPER BOARD.—Benjamin F. Field, Beloit, Wis.

Claim.—1. As a new article of trade and manufacture, the herein described paste or straw boards faced with a web of finer paper in a continuous length, as set forth.

2. In combination with the calender A of a paper or straw-board machine, the paste-roller D and supplemental rollers I and K, or the equivalent of those parts, for the purpose set forth.

105,791.—RAILWAY-CAR COUPLING.—Jean C. Fischer and William E. Kittridge, Milwaukee, Wis.

Claim.—1. The overlapping draw-bars A A, perforated at *b b*, and furnished with abutments E *f*, and guides P P, in combination with coupling-pins B B, and springs K, which springs are fitted in housings H H, and connected by pivots *a a* to the draw-bars, the said draw-bars, housings, and springs, being arranged substantially in the manner described.

2. The lifting and guiding-plates P P, in combination with the overlapping, shouldered, and perforated draw-bars A A, pins B, and links L, substantially in the manner described.

3. The combination of the buffers W W, draw-heads M M, overlapping, pivoted, and shouldered draw-bars A A, springs K K, guiding and lifting-plates P P, and hinged pins B B, substantially as described.

105,792.—CHAMELEON WHIRLIGIG.—Ludwig Ottmar Franke, Baltimore, Md.

Claim.—1. The combination of the parti-colored whirligig *a a*, with the recessed extinguishers *k*, in the manner and for the purpose specified.

2. The combination of the whirligig *a a*, with the extinguishers *k* and embossed circular plate *c*, substantially in the manner and for the purpose specified.

105,793.—CARRIAGE-AXLE.—Matthew Ross Freeman, Macon, Ga.

Claim.—1. The box B, provided with a trough or recess for the axle A to rest in, substantially as described.

2. The combination of the axle A, box B, rods C C, bars D D, spindle E, and wheel G, all constructed and arranged substantially as and for the purposes herein set forth.

105,794.—DISH-FASTENER. — Christian R. Freet, Upper Strasburg, Pa.

Claim.—The plate B, provided with the slotted piece C, of tin or copper, in combination with the removable fastening A, constructed as herein shown and described, and for the purpose specified.

105,795.—ARGAND GAS-BURNER.—Jim B. Fuller, Norwich, Conn.

Claim.—1. In an Argand burner, the tubes *a* and *b*, fitted together substantially as shown and described, and provided with the channels *c*, one or more, made between said tubes, substantially as and for the purpose specified.

2. The tubes *a* and *b*, the channels *c*, the air-passages *d*, and the chamber *e*, all constructed and arranged substantially as and for the purpose described.

105,796. — ROTARY ENGINE.—William M. Fuller, New York, N. Y.

Claim.—1. The folding wings or pistons M, when provided with journals O, bearing in the disks, in combination with the disks D and D' and the cylinder C, substantially as specified.

2. The incline bar J, in combination with the long segment or cut-off H, when constructed and operating substantially as and for the purposes described.

3. The combination and arrangement of the case A B, cylinder C, wings M, springs P, plates or disks D, and segment H, provided with the bar J, with suitable steam and exhaust-pipes, substantially as specified.

105,797. — BOTTLE-STOPPER.—William H. Gibbs, Cincinnati, Ohio.

Claim.—1. A bottle-stopper, whose cork A is protected on its under side with an attaching button or disk, B, that is coated with a vitreous enamel, as and for the purpose specified.

2. The retaining device, consisting of the yoke H H' H'' *h*, connected wires I J, recurved projection *i j*, and wire L, for the purpose set forth.

105,798.—BEDSTEAD-FASTENING.—Alexander Grillet, Philadelphia, Pa.

Claim.—1. A rail, having at the end an inclined socket, and a post, having an inclined socket at one side of the same, in combination with a loose pin or bar, E, adapted to the sockets in the post and rail, substantially as described.

2. The plates D and D', having ribs and recesses, arranged, in respect to the orifices, for receiving the inclined detachable pin, as set forth.

105,799.—GUN-LOCK.—Lewis Hailer, Washington, D. C., assignor to William C. Dodge, same place.

Claim.—1. The construction and arrangement, relatively to each other, of the single mainspring and the tumbler, in the lock of a fire-arm, whereby the spring is caused to impel the hammer to deliver its blow for igniting the charge, and then reacts upon the tumbler, to throw the hammer back from the nipple, firing-pin, or cartridge, substantially as described.

2. The tumbler B, provided with two shoulders, in combination with the spring C, arranged to operate alternately upon said shoulders, substantially as and for the purpose set forth.

105,800.—LOCK-SPINDLE.—Joseph L. Hall, Cincinnati, Ohio.

Claim.—1. The hardened core-pieces B, secured in the central parts of arbors, for operating locks for the purpose of preventing drilling through the center of said arbors, when the same are used upon burglar-proof safes or other secure receptacles, substantially in the manner herein shown and described.

2. The arbor or spindle A, provided with a recess or shoulder, and having a split ring D, fitted therein, and held in place by a nut, E, for the purpose of fastening the arbor in its seat, substantially as described.

105,801. — CARRIAGE-AXLE. — William N. Hall, Springfield, Texas.

Claim.—1. An axle, having its bearings made in three sections, the central one being flat, and constituting the supporting-plate for the two bearing sections, substantially as herein described.

2. The flat supporting-plate C for the bearings, inserted into and secured to the axle by means of bolts *a*, and the locking-ferrule D, as herein described.

3. The bearing sections E, made with cavities, *e*, on their flat sides, so as to be inclosed by the corresponding sides of the supporting-plate C, through an opening, *f*, in which they communicate with each other, and provided with cross-grooves *e*, through which the oil passes to the circumference of the bearing, as herein shown and described.

4. The combination of the supporting-plate C, the bearing sections E, the locking-ferrule D, and the inclosed lubricating cavities *e*, constructed and arranged substantially as herein shown and described.

105,802.—MACHINE FOR SHARPENING REAPER-KNIVES.—Charles C. Hardy, Rutland, N. Y.

Claim.—1. The combination of the adjustable spindle and the stud or spline upon the same, with the recessed or slotted socket-piece or tubular post which carries the knife-holding mechanism, substantially as and for the purpose set forth.

2. The combination with the tubular post or socket-piece of the oscillatory frame which carries the knife-holding and guide-bars, said frame being hinged to the post and provided with a finger or stop to operate in connection therewith, substantially as shown and described.

3. The guide-bar carrying the sliding knife-holder bar, and hinged to the oscillatory frame, so that it may be moved back and forth by the handles

with which it is provided, substantially as shown and set forth.

4. The combination with the tabular post and the knife-holder and guide-bars, of an intermediate frame, united by a hinged connection with both the post and the said bars, substantially as and for the purposes shown and set forth.

5. A machine for grinding the sections of mower and reaper-knives, the parts of which are constructed and arranged for joint operation, as shown and set forth,

105,803.—EARTH-CLOSET.—George Baker Jewett, Salem, Mass.

Claim.—The combination of the vibratory chute and its operative mechanism with the seat, and the hopper or mechanism for dropping the earth upon the chute, as set forth, such chute being to operate in manner and for the purpose as described.

Also, the arrangement and combination of the bar *g*, with its two sets of chains, *h h h h*, the seat-cover and the rotary discharger, arranged with the hopper, as explained.

105,804.—SAW-MILL.—Philip Jobson and Michael C. Jobson, Lockhaven, Pa.

Claim.—The muley-saw head *b c d*, when hung upon the yoke *a*, which projects from the back A, and combined with the bolts *f u*, nuts *e*, spur gears *n o r*, shaft *s*, and plate *m*, constructed, arranged, and operating as specified.

105,806.—MACHINE FOR BENDING CORRUGATED-METAL PLATES.—Asa Johnson, Brooklyn, N. Y.

Claim.—1. The clamp *c*, constructed as described, of a double piece of sheet metal, corrugated and then opened, hinged in the groove *d* on the roller *b*, and its inner edge provided with the strip *e*, all substantially as and for the purposes herein set forth.

2. The arch *k*, formed as described, of a corrugated plate of sheet metal and corrugated sheet of wire-cloth soldered together in one piece, the corrugations of the one running at right angles to the corrugations of the other, substantially as and for the purposes herein set forth.

3. The combination of the corrugated roller *b*, with groove *d*, clamp *c*, and corrugated roller *f*, all substantially as and for the purposes herein set forth.

4. The combination of the corrugated roller *b*, with groove *d*, clamp *c*, corrugated roller *f*, and the arch *k*, all substantially as and for the purposes herein set forth.

5. The arrangement of the adjustable back *p*, adjustable supporting-blocks *l l*, arch *k*, and roller *b*, substantially as herein set forth.

105,806.—FIRE-PLACE.—Anson B. Johnson, Washington, Ind.

Claim.—1. In the construction of flues, building them open through from one room to another, substantially as and for the purposes herein set forth.

2. The double-heating fire-place, herein described, consisting of the shell A, grate D, and sliding door E, all constructed and arranged substantially as and for the purposes herein set forth.

105,807.—HOPPER FOR MILLS AND GRAIN-DRILLS.—Russel P. Johnson, Griffin, Ga.

Claim.—The arrangement of the hopper A, hinged door B, metal frame D, screw C, and bar E, all constructed and operating substantially as set forth.

105,808.—CASE FOR TURBINE WATER-WHEELS.—Jacob O. Joyce, Dayton, Ohio.

Claim.—1. The duplex chute case of a turbine water-wheel, made in two parts, A and B, one stationary, the other rotary, the columns *a a a* of the inner case forming the inner end of the chutes, diverging, from the throats formed by the columns *a a* and *b b b*, inward to the termination of the columns and chutes, the columns *b b b* of the outer case B forming the outer part of the chutes, converging from their outer edges to their contact with columns *a a a*, each of these chutes being tunnel-shaped, thereby subjecting the entire outer faces of the buckets of the wheel to the hydrostatic power of the impinging current of water through scroll chutes, and avoiding angular projections and swinging gates, all constructed and arranged substantially as herein set forth.

2. The duplex case of A and B of a water-wheel, when constructed so that the rotating of the case B contracts or expands the size of the throats or issues of the chutes only, thus controlling the quantity of water admitted onto the wheel, and preserving the same tangential line of delivery, and subjecting the entire outer periphery of the wheel to the action of the water, the same at full or any partial opening of the chutes, constructed and combined substantially as set forth.

3. The duplex case A and B, with the columns *a a a* and *b b b*, forming converging and diverging chutes, when constructed with the annular journal bearing *g g* on the periphery of the crown of case A and inner edge of the crown B, so that case B revolves on this annular bearing, and brings the faces of columns *a a a* and *b b b* (without material friction) in contact, the revolving of case B opening and closing the throats, all substantially as herein set forth.

4. Cases A and B, when combined in the manner substantially as shown, so as to enable case B to revolve backward over and past the chute in rear, and, by the shear contact of the guides *a a a* and *b b b*, to cut and clear away obstructions lodging in the throat of the chutes.

105,809.—COMPOSITION FOR "ENCAUSTIC" PAINTING.—William H. F. Kehrwieder, Philadelphia, Pa.

Claim.—1. The encaustic preparation, consisting of the within-named ingredients.

2. The within-described preparation, consisting of the ingredients, and compounded in the manner substantially as set forth.

105,810.—DRILL FOR SEED-PLANTERS.—John F. Keller, Hagerstown, Md., assignor to himself and William Updegraff, same place.

Claim.—The slide block E, or its equivalent, working between or in the drag-bars, for changing the angle of the hoe, so as to plow deep or shallow, as herein described and for the purpose set forth.

105,811.—FERTILIZER ATTACHMENT TO SEEDING-MACHINES.—John F. Keller, Hagerstown, Md., assignor to himself and William Updegraff, same place.

Claim.—The combination and arrangement of the two revolving shafts, B B, having four feeders, C C, on opposite sides of the feed-hole D, when operated by the gearing devices G, H, J, and M, as herein described, and for the purposes set forth.

105,812.—SELF-ACTING MULE FOR SPINNING.—Prentiss J. Kent and Nathan W. Bancroft, Worcester, assignors to themselves, J. Rich Kent, and John G. Avery, Spencer, Mass.

Claim.—1. The combination of the pulley D, main shaft A, gear E, pinions O and P, shaft *b*, and clutch-gear Q, with the pinion J, and lower or drawing-out scroll I, arranged and operated as and for the purposes set forth.

2. The combination of the angle-lever 3, sliding sleeve-rod 1, stud 8, spring 7, lever 5, rock-shaft 6, and fork 9, with the sliding clutch-gear Q, whereby the latter is thrown into gear with the pinion P, for the purposes set forth.

3. The arrangement of the pendent arm 13, on the rear of the carriage R, in combination with the devices specified in the second claim, whereby the clutch-gear Q is automatically thrown into gear with the pinion P, for the purposes specified.

4. In combination with the devices specified in the second claim, the arrangement of the plate 11, pawl 10, and rack-bar 12, for the purpose of holding the clutch-pinion Q in gear with the pinion P during the forward movement of the carriage R, as described.

5. In combination with the pawl 10, and rack-bar 12, operating as described, the arrangement of the stud 14 on the sleeve-rod 11, when used in connection with an arm, 13, arranged on the rear and under side of the carriage R, whereby, as the latter nears the end of its outward stretch, the pawl 10 is automatically detached from the rack-bar 12, and the sleeve-rod 1 forced back, thereby disengaging the clutch Q from the pinion P, and stopping the further advance of the carriage R, as set forth, for the purposes described.

6. The combination of the driving-pulley F, gear-wheel G, intermediate pinion K, transmitting-pinion L, gear-wheel M, shaft N, and saw-toothed pinion *i*, with the pinion *i'*, and upper or drawing-in scroll V, the whole being arranged and operated in the manner and for the purposes set forth.

7. The combination of the sleeve-pulley F, gear-wheel G, intermediate pinion K, gear-wheels L and M, shaft N, and pinion T, with the friction gear-wheel U, and race-belt pulley S, arranged as and for the purposes described.

8. The combination of the sleeve-pulley F, gear G, intermediate pinion K, and gears L and M, shaft N, and endless screw-pinion *f*, with the concave segmental pinion *g* of the swinging rock-shaft A, arranged and operated as and for the purpose described.

9. In combination with the lever 3, sleeve-rod 1, stud 8, spring 7, arm 5, rock-shaft 6, and fork 9, the arrangement of the upper arm *m*, and stop-pin *l* on the main shipping-bar X, whereby the immediate effect of the spring 7, as compressed to throw the clutch Q into gear with the clutch-pinion P, is momentarily stopped, until the main shipping-bar has been properly set, as set forth, and whereby the possibility of the two scrolls I and V being in gear even for a moment, at the same time, is prevented.

10. In connection with the devices named in the last claim as used for keeping the clutch Q out of gear, the arrangement of the arm 92 on the rock-shaft 6, whereby, while both scrolls I and V are out of gear, the segmental pinion *g* on the rock-shaft A is thrown into gear with the worm-pinion *f*, by means of which, through the system of levers *s*, *s'*, *s''*, and *s'''*, and the arm s^1 on the carriage R, the latter is drawn steadily backward for a regulated distance, to compensate for the shortening of the yarn as the final twist is being thrown in, substantially as described.

11. In combination with the drum S that drives the spindles, the arrangement of the ratchet-wheel 27 on the shaft 78 of the carrying-pulley S^1, and self-acting dog 29 on the side of the latter, when used in connection with the belt 24 of the faller-frame 28, arranged and operated as described, whereby, as the race-belt is reversed for performing the backing-off operation, the faller-frame 28 is depressed, for the purposes set forth.

12. The pulley 77, shaft 78, carrying-pulley S^1, ratchet-wheel 79, and self-acting dog 80, in combination with the notched chain-spool *y*, pulley 75, and pin 74, arranged and operated as and for the purpose set forth.

13. The arrangement and combination of the angle-lever 15, main shipping-rod 2, spring 16, lever 18, rock-shaft 19, and fork 20, with the friction-gear U and pulley S, for the purpose described.

14. In combination with the devices used and set forth in the thirteenth claim, the arrangement of the arm 22, on the upper end of the rock-shaft 19, and the pin 23, on the upper side of the main shipping-bar X, for the purpose set forth.

15. In combination with the devices used in the thirteenth and fourteenth claims, the arrangement of the spring 31, and stud-pin 21, for the purpose set forth.

16. The combination of the rack 42, with the pinion 36, ratchet-wheel 35, double-toothed dog 37, carrying-disk 38, guard-plate 39, and detent 30, the whole being arranged and operated substantially as and for the purposes set forth.

17. In combination with the devices last claimed, the thumb-screw 64, notch 65, and spring 66, for the purpose set forth.

18. In combination with the rack-bar 42, operating as described, the slotted segmental lever 23, actuating lever 43, and latch Z, as arranged, for the purpose set forth.

19. The combination of the ratchet-wheel 27, pawl 29, pulley S^1, belt 24, segment pulley 25, segment lever 33, connecting-rods 43 and 45, and double lever Y, with the angle-lever 15, for the purpose set forth.

20. In combination with the lever Y, operated as described, the arrangement of the spring 93, connecting-rod 94, and notched arm *n'*, whereby, on the depression of the faller 28, the arm *n'* is released from the upturned end of the lever *x'''*, that drew the carriage back during the throwing-in of the finishing twist to the yarn, as described.

21. In combination with the latch Z, the slide-plate 48, and friction-roll 47, for the purpose set forth.

22. In combination with the slide-plate 48, friction-roll 47, and latch Z, the inclined guide-plate 52, and inclined slide-plate 54, arranged as and for the purposes specified.

23. In combination with the slide 54, the grooved screw-head 55, and builder-screw 56, as arranged, for the purpose set forth.

24. In combination with the builder-screw 56, the arrangement of the ratchet-wheel 67, traveling dog 68, loose plate 69, pin 70, notched pendent connecting-rod 71, pin 72, gear 59, stationary dog 72, and circular guide-plate 73, for the purposes set forth.

25. The combination of the heart-shaped cam 57, builder-plate 53, and friction-roll plate 46, with the latch Z, arranged and operated as and for the purposes set forth.

26. In combination with the screw-head *o* of the compensation gear used in regulating the motion of the spindles in winding the yarn on the bobbins, the adjustable lift l^2, slide-rod *q*, inclined plane *r*, pin *s*, and bolt *t*, dog l^1, and ratchet-wheel *u*, the whole being arranged and operated in the manner, and for the purposes set forth.

27. The combination of the auxiliary shipping-bar 81 with the main shipping-bar X, arranged and operated as described, for the purpose set forth.

28. The combination of the arm or lever *j*, on the upper end of the rock-shaft W, with the pin *j'*, arranged on the upper side of the main shipping-bar X, for the purpose set forth.

29. The combination of the spring 30, main shipping-rod 2, arm 17, and pin 95, with the arm 32 of the rock-shaft W, and yoke *k* of the upper scroll V, whereby the latter is thrown into gear, as set forth.

105,813.—VALVE FOR STEAM AND OTHER PUMPS.—Lucius J. Knowles, Worcester, Mass.

Claim.—The combination with the valve-seat A, provided with the open ear-pieces B and recess *a*, of the valve D, having curved shoulders *f f*, and journals or pivots C C, substantially as described and as shown in the accompanying drawing.

Also, the combination with the valve D of the curved open ear-pieces B B, substantially as shown and described.

105,814.—STALL FOR PREVENTING CRIBBING.—John Kraus, Clarence, N. Y., assignor to himself and Henry Lapp, same place.

Claim.—A stall for cribbing horses, the side walls A, and head-board B, of which are inclined inwardly, substantially as and for the purpose described.

105,815.—SPINNING-MACHINE.—William La Banister and Lorenzo V. Doggett, Pacific, Wis.

Claim.—1. The combination of two or more sets of rollers *c c*, each set being covered or inclosed by an endless apron, and the elongated beater L, all

constructed and arranged to operate substantially as and for the purposes herein set forth.

2. The arrangement of the frame A, bar B, inclined posts *a a*, cylinder D, rollers *c c*, aprons *f f*, beater L, fliers E', spindles H, and bobbins I, all substantially as shown and described, and for the purposes set forth.

105,816.—HEATING-STOVE.—Silas Hoffman La Rue, Allentown, Pa.

Claim.—1. The contractors E E, constructed as described, forming the throat of the magazine D, substantially as and for the purposes herein set forth.

2. The combination of the cylinder A, reservoir G, air-flue B, magazine D, and contractors E E, all substantially as set forth.

105,817.—PIPE-COUPLING.—William A. Lighthall, New York, N. Y.

Claim.—1. The combination of the pipes A A' with the rubber sleeve C and the metal sleeve B, as and for the purpose set forth.

2. The combination of the pipes A A' with the rubber sleeve C and the metal sleeve B, with the bands D D', as and for the purpose named.

3. The combination of the pipes A A' with the rubber sleeve C, the metal bands D D', and the metal sleeves B and E, as and for the purpose set forth.

105,818.—FAUCET.—James H. Lord, San Francisco, Cal.

Claim.—The above-described faucet, in which are combined the hollow conical auger B, provided with openings *a*, and the elastic washer C and nut D, substantially as and for the purposes set forth.

105,819.—VAPOR OR GAS-BURNER.—John C. Love, Philadelphia, Pa.

Claim.—The tip E, in combination with the arm or arms C D, containing passages for oil or gas, and with orifices *r s* arranged to throw a gas-flame against said arm, as described.

105,820.—SHUTTLE FOR SEWING-MACHINE.—Lucius Lyon, New York, N. Y.

Claim.—1. The tension-bar V, arranged within the shuttle, and provided with a tube, Σ, substantially as and for the purpose described.

2. The combination, with the shuttle, of the bar V, having slides *a b*, and an eye, Z, substantially as and for the purpose described.

105,821.—HORSE-COLLAR.—Charles K. Marshall, New Orleans, La., assignor to the Climax Horse-collar Company, New York City.

Claim.—The collar-plate A, provided with a recess, *a*, substantially as described, as and for the purpose specified.

105,822.—COMBINED HAIR-CURLER AND CRIMPER.—Elisha Matteson, Jersey City, N. J., he having assigned two-thirds of his right to Abraham Hoagland, same place.

Claim.—The combination of the two disconnected hollow jaws, A A, constructed as described, and provided with handles C C, tubes B B, corrugations *a a*, and hollow curler D, all substantially as and for the purposes herein set forth.

105,823, antedated July 22, 1870.—PROCESS FOR COATING OBJECTS WITH COLLODION AND ITS COMPOUNDS.—John A. McClelland, Louisville, Ky.

Claim.—The process for coating the surfaces of objects with collodion, or compounds containing collodion, substantially as described.

105,824.—TURNING DEVICE.—William H. McMillan and David Morris, Philadelphia, Pa., assignors to Morris, Tasker & Co., same place.

Claim.—The combination of the hollow shaft or mandrel, the cutters, and the collars, the cutters being adjusted and fastened by means of the collars, substantially as set forth.

105,825.—HAND CORN-SHELLER.—William A. Middleton, Harrisburg, Pa.

Claim.—The combination of the hinged jaws B and C, provided with the triangular-shaped teeth *a b c d*, the spring *e*, and operating handle A, when said parts are constructed and arranged to operate in the manner and for the purpose specified.

105,826.—WEATHER-BOARD SCRIBE.—Abraham Miller and Uriah Faris, Red Rock township, Iowa.

Claim.—1. The slide C, provided with bar *a*, hook *b*, and springs *d d*, and having the adjustable knife D attached to it, substantially as and for the purposes herein set forth.

2. The combination of the frame A, plate B, slide C, knife D, spring E, trigger G, and button H, all constructed and arranged as described, and operating substantially as and for the purposes herein set forth.

105,827.—WRENCH.—Charles H. Miller, Buffalo, N. Y., assignor to himself and Michael Doll, same place.

Claim.—1. The combination and arrangement, with the wrench-bars A A, of the dovetail guides C and slots D, provided with enlargement *d*, for uniting the said bars, substantially as and for the purpose hereinbefore set forth.

2. The arrangement of the stop-pin or screw *n*, in the slotted bar A, and with the enlargement *d*, as and for the purpose hereinbefore set forth.

3. The arrangement, with the portions A A, of the teeth *i* and spring pawl E, concealed within the wrench, and operated substantially in the manner and for the purpose hereinbefore set forth.

105,828.—CULTIVATOR.—Isaac Miller, Worth, Mich.

Claim.—The arrangement of the frame A B C D, hooks *a a*, tongue E, wheels G G, bars *b b*, pins *d*, teeth H H, braces I I, and handles J J, all constructed and operating substantially as and for the purposes herein set forth.

105,829.—AWNING FOR CARS, &c.—James H. Monce, New York, N. Y.

Claim.—So arranging the awning D D upon either end of the vehicle A, that it may be changed to serve as a protection on either end for the horse or the driver, in the manner shown and described.

105,830, antedated July 16, 1870.—THAWING DEVICE FOR HYDRANTS AND FIRE-PLUGS.—James C. Moore, Philadelphia, Pa.

Claim.—A series of gas-jets, arranged around the vertical water-pipe A, as and for the purpose described.

105,831.—WASHING-MACHINE.—Henry J. Moreland, Whitehall, Ill.

Claim.—The box A, provided with the guide-ways *b*, in combination with the wash-boards *f*, and sliding head B, provided with the corner projections *i* and grooved plates *d*, constructed as and for the purpose specified.

105,832.—WAGON-SEAT FASTENING.—Fred Norris, Freedom Plains, N. Y.

Claim.—The combination of the wagon-seat E, provided with the metal case G, and under-projecting latch H, with the wagon-body A, provided with the angular plate B, with a slot and perforation, as shown, and inclosing the spring C, having a button formed on its end, which protrudes through the perforation, all substantially as set forth.

105,833.—HORSE HAY-RAKE.—Sherman R. Nye, Barre, Mass.

Claim.—1. The arrangement of the drum *d*, spring *i*, holder *e*, and tooth *c*, as herein described, and for the purpose set forth.

2. The brace or lever *g*, applied to operate in connection with the rake-head, the tooth, and tooth-holder, in the manner and for the purpose explained.

3. The stop *h* and brace *g*, when employed in connection with the tooth *c*, the holder *e*, and the rake-head *a*, substantially as and for the purpose set forth.

105,834.—TELEGRAPH-INSULATOR.—Samuel Oakman, Boston, Mass.

Claim.—A glass insulator, as a new article of manufacture, when the same is formed with the projecting flange B C, the neck D D, and the dovetailed recesses *a' a b b'*, substantially as described, and for the purpose set forth.

105,835.—SHOW-CASE FOR RIBBONS, &c.—George W. Pagett, Oxford, Ind.

Claim.—1. In a show-case for ribbons, tapes, &c., the rollers D, having set-screws *e*, in combination with the grooved rotating shaft C and the rubber clamp *d* and bar E, when constructed and arranged to operate as and for the purposes specified.

2. In a show-case for ribbons, tapes, &c., the stationary bar F, provided with the adjustable arms *h* and the adjustable springing arms *h'*, all having the pivot-pins *z*, for the purpose of holding and permitting the rotation of the ribbon-bolts, &c., as specified.

105,836.—MANUFACTURE OF HOLLOW FELTED ARTICLES.—Charles W. Palmer and Henry E. Palmer, Lynn, and Charles Houghton, Boston, Mass., assignors to Charles Houghton.

Claim.—The process of forming hollow felted articles, consisting in depositing in obliquely-arranged layers slivers of carded wool upon "formers" of the shape of the article to be produced, but of greater size, opening the deposit to permit the extraction of the "former," and then felting or hardening such deposit, substantially in the manner described.

Also, as a new manufacture, hollow felted articles, made by the above-claimed process.

105,837.—HAY-LOADER.—Isaac J. Parker, Buffalo Grove, Iowa.

Claim.—1. The combination of drum D with wires *f f*, when said wires pass around the drum, and are secured to a cross-piece in the rear thereof, for the purpose of preventing the hay from passing below the elevator, in the manner set forth.

2. The arrangement of drum D, rollers *c c*, wires *f f*, teeth *a a*, rake H, levers *b b*, cam *a*, and elevators *h i* and *a c*, all operating as and for the purpose set forth.

105,838.—SPADE AND SHOVEL.—John W. Pearce, Suisun, Cal.

Claim.—The herein-described improvement in the construction of shovels; that is to say, the ferrule F, formed by wire thereon, and then soldering the wire together and to the straps, substantially as described.

105,839.—CYLINDER FOR MIXING FERTILIZERS.—Leman B. Pitcher, Salina, N. Y.

Claim.—The cylinder D, formed of ribs or staves, armed with teeth in the manner described, and with an open feeding-head, all combined and operated substantially as and for the purpose described.

105,840.—MORTAR-MILL.—Leman B. Pitcher, Salina, N. Y.

Claim.—The sieve attachment B, made in a flaring or spreading form, as an improvement on the hooped-shaped form, described in Letters Patent of the United States, dated 27th November, 1866, and numbered 60,055, in combination with the cylinder A, substantially in the manner and for the purpose above described.

105,841.—STEAM-ENGINE GOVERNOR.—William H. Place, New York, N. Y.

Claim.—1. The combination of the propeller-wheel D with the ribs B B B, &c., as shown and described and for the purposes set forth.

2. The friction-rollers 1 1 and 2 2, in combination with the shaft A, as and for the purpose set forth.

105,842.—WASHING-MACHINE.—Daniel B. Pond, Woonsocket, R. I.

Claim.—In combination with the rotating barred cylinder A, the epicycloidal trundle B, attached, by elastic bands, to an axial roller, supported by the adjustable arms *k k*, as specified.

105,843.—PLOW.—Samuel W. Pope, Louisville, Ky.

Claim.—The combination of the slotted adjusting plate, notched standard, and beam, as described, for the purpose set forth.

105,844.—SUBSOIL-PLOW.—Elam M. Query, Harris Depot, N. C.

Claim.—The arrangement of the beam C, stock A, ratchet-plate *a*, bolt *b*, nut *d*, subsoil-beam E, and clevis H, all constructed and operated substantially as set forth.

105,845.—BRAKE FOR WAGONS.—Henry Racine, Paola, Kansas.

Claim.—The brake-bar A, provided with the rubbers *a a*, and combined with the sliding rod *c*, provided with the button *e*, the jointed rods *f h*, the sliding ferrule *k*, the pin *l*, connecting-rods *n n*, crank-bars *s*, and handle *t*, in the manner and for the purpose specified.

105,846.—MACHINE FOR PRESSING SEAMS AND CUTTING WELTS FOR BOOTS AND SHOES.—Edwin Reed, Kingston, Mass.

Claim.—1. The divided presser-bar A B, operating substantially as described, and for the purpose set forth.

2. The combination of the divided spring D with the cam H, divided bar A B, and the stop-screws L L', when operating together, and for the purpose substantially as described.

105,847.—STEAM-GOVERNOR.—A. F. Reeder, Normal, Ill.

Claim.—1. The valve *c*, constructed as described, with a circumferential groove and vertical openings, substantially as and for the purposes herein set forth.

2. The combination of the valve-chamber *a*, horizontal steam-passage *b*, and valve *c*, all constructed and arranged as described, to operate substantially as and for the purposes herein set forth.

3. The combination of the valve-stem E, slide *q*, sleeve G, pulley F, and angular stationary revolving arms *k k*, balls I I, and curved bar *k*, all constructed as described, and operating substantially in the manner and for the purposes herein set forth.

4. The ball I, constructed as described, with a chamber, *o*, and having a spiral spring, *s*, in said chamber, around the arm *k*, held and regulated by the adjustable nut *p*, substantially as and for the purposes herein set forth.

5. The segment bar *k*, provided with slots L L, and secured to the balls I I by means of screws J J, substantially as and for the purposes herein set forth.

6. The screw-sleeve M, wrench-wheel n, segment bar k, and set-nut r, all substantially as and for the purposes herein set forth.

105,848. — SAWING-MACHINE. — Augustus Renetzky, Lincoln, Ill.

Claim.—The arrangement of the segments D D′ d′, independent of each other, and connected only by the saw F, spring J, and crank-arm H, all constructed, arranged, and operating as herein described and shown.

105,849.—SULKY ATTACHMENT TO PLOWS.—James H. Reynerson and John Worrel, Clayton, Ind.

Claim.—1. The lever d and staple e, when arranged as described, in combination with the plow and sulky, herein shown and specified.

2. The lever H, with its slot s and the stop r, in combination with the plow and sulky herein shown and specified.

3. The clevis m and bolt n, in combination with the arms g g and the sulky-plow, as described.

105,850.—CABINET-BEDSTEAD.—Andrew J. Roberts, Boston, Mass.

Claim.—The construction and arrangement o the bed-frame and weight or spring applied to the same, and the base and standards j k, to which the said bed-frame is hinged, in the manner shown and described.

105,851.—CURING AND PRESERVING MEAT, &c.—Adolphe Rock, New Orleans, La.

Claim.—1. The compound herein described for curing meat, consisting of the ingredients and substantially in the proportions specified.

2. The process herein described for curing meat, consisting of, first, heating the meat by boiling water surrounding the meat-tank; second, producing a vacuum in the meat-tank by exhaustion of the air, and admitting the curing compound by suction; and third, forcing said compound through the meat by pressure, all substantially as and for the purposes herein set forth.

3. The arrangement of the furnace A, boiler B, with pipe b, and tank C, with grate D and pipe u, substantially as shown and described.

4. The float-valve k, arranged as described within the chamber or tube c, for closing the pipe leading to the air-pump H, substantially as herein set forth.

5. The combination of the safety-valve i and pipe m, substantially as and for the purposes herein set forth.

6. The arrangement of the air-pump H, force-pump I, pipes g s, with their stop-cocks and chambers or tubes c r, all substantially as shown and described.

7. The employment of brine, made of the compounds herein specified, for curing meat and fish, substantially as described.

105,852.—TUCK-CREASING ATTACHMENT FOR SEWING-MACHINES.—James Billings Safford, San Francisco, Cal.

Claim.—The combination of the spring N, with flattened toothed ends, transverse opening O, and rod H, with the rock-shaft of a sewing-machine, as described, for the purpose set forth.

105,853. — SPRING BED-BOTTOM. — Martin Van Buren Shepard, Chicago, Ill.

Claim.—An improvement in bed-bottoms, consisting of the spring G, so bent over at the termination of its base that it may be held to a slat, A, by means of a screw-bolt, C, and nut, D, in combination with a tie-strap, B, held by the same bolt, the aforesaid spring being removed without taking off the nut D, as and for the purpose set forth.

105,854, antedated July 15, 1870.—SPRING CURTAIN-FIXTURE.—John Shorey, Lowell, Mass.

Claim.—The combination of the interior spring brake c and the outwardly-projecting hollow roller-thimble or cap c, constructed and arranged as and for the purpose herein specified.

105,855.—TYPE-SETTING MACHINE.—John T. Slingerland, New York, N. Y.

Claim.—1. The arrangement of a receiving or composing-channel, O, on the surface of a cone, supporting a series of type-channels, substantially as described, so as to save room and avoid the necessity of changing the inclined position of the types while the same are being transferred from the type-wheel to the receiving-channel.

2. The combination of the perforated ring F with the type-channels, placed in an upright or inclined position, substantially as and for the purpose described.

3. The hinged radiating composers E, in combination with the carrier-wheel C, constructed and operating substantially as set forth.

4. The combination of a carrier-wheel, provided with composers, and having a step-by-step motion, with type-channels having an inclined, horizontal, or upright position, substantially as and for the purpose described.

5. The arrangement of one or more ribs, n e, and one or more cavities, m, on the carrier-wheel C, substantially as and for the purpose set forth.

6. The scrapers w on the ends of the composers, in combination with the indicators p, perforated ring F, and with the lip h on the discharge-spouts of the type-channels, on the cone D, substantially as and for the purpose described.

7. The scalloped rim G, in combination with the composers, the perforated rim F, and the cone D, substantially as and for the purpose set forth.

8. The yielding or elastic side plate i, provided with a flange, j, on the discharge-spout of the type-channel, substantially as and for the purpose set forth.

9. The guide-pins or projections v in the carrier-wheel, in combination with the composers E, substantially as and for the purpose set forth.

10. The lifter s², in combination with the recess m in the rim of the carrier-wheel, substantially as and for the purpose described.

11. The retaining-hooks h² on the receiving-channel, in combination with the lifter s², and with the carrier-wheel, substantially as and for the purpose set forth.

12. The bell-crank levers f² and gong u², in combination with the multiple-channel P, substantially as and for the purpose set forth.

13. The combination of the nib-slide w¹ with the key-board levers, the keys, and the indicators of the composers, substantially as and for the purpose described.

14. The mechanism, substantially as herein described, for imparting to the carrier-wheel a step-by-step motion, consisting of a hammer, a series of loose pins inserted in the rim of the carrier-wheel, a stop, n¹, and a pawl capable of engaging with teeth in the rim of the carrier-wheel, as set forth.

15. The oscillating lever H, carrying on one end a pawl, h¹, capable of engaging with teeth on the rim of the carrier-wheel, and on its opposite end a cam, q², acting on the lifter of the receiving-channel, substantially as and for the purpose described.

16. The stop-pawl y¹, having a cam-shaped edge, in combination with the oscillating lever H and carrier-wheel C, substantially as and for the purpose set forth.

17. The restoring-hook s¹, in combination with the hammer r¹, and with the carrier-wheel C, substantially as and for the purpose described.

18. The combination of the restoring-hook s¹ with the nib-slide w¹, and with the keys L, substantially as and for the purpose set forth.

19. The mechanism, substantially as described, for stopping the keys, consisting of stop-latch j², nib slide w¹, and key-board levers N, as specified.

20. The combination of a blank key L*, with the nib-slide and key-board levers, and with the carrier-wheel, substantially as and for the purpose set forth.

21. The combination of the starting lever Q with nib-slide and carrier-wheel, substantially as described.

22. The arrangement of keys L, vibrating upon one common fulcrum, b², in combination with guide-bars e² f², as described.

105,856.—PANTALOONS.—Theodore E. Sloan, Brooklyn, N. Y.

Claim.—The combination, with the knee-part of pantaloons, of strengthening pieces a, secured at the seams thereof, and stretched from said seams, in order to form spaces b between the pantaloons and pieces, so that the knees will press the pieces into the spaces without pressure against the pantaloons, as and for the purpose described.

105,857.—SAFETY MEASURING-FUNNEL. — Franklin H. Smith, Burke, Vt.

Claim.—The combination of the measuring-tunnel A, the glass tube E, and scale F, with the escape-tubes d, d¹, d², and d³ d⁴, arranged substantially as described, and for the purpose set forth.

105,858. — MACHINE FOR DITCHING AND HEDGING.—William Stacy, Hardin county, Iowa.

Claim.—1. The conveyer M, provided with flange N, cam-lever O, rack R, and pivoted board P, all constructed and arranged to operate substantially as and for the purposes herein set forth.

2. The arrangement of frame A B C, bottom G, cutters I I and J J, apron K, scoop L, conveyer M, and cam-lever O, substantially as herein set forth.

105,859. — CIGAR-MACHINE. — George W. Tanner and Francis D. Bliss, Providence, R. I.

Claim.—1. The combination of feed-rollers E and forming-rollers D, substantially as shown and described.

2. In combination with the feed and forming-rollers of a cigar-machine, the hopper F, arranged with relation to the feeding-rollers, substantially as shown and described, for the purposes specified.

3. The forcing-rod G, in combination with the forming-rollers D, substantially in the manner and for the purposes specified.

105,860.—CHUCK.—Stephen P. M. Tasker, Philadelphia, Pa.

Claim.—The combination of the slide C and wedge D with the part A and cap B, substantially as described, and for the purpose specified.

105,861.—DIE-STOCK.—Stephen P. M. Tasker, Philadelphia, Pa.

Claim.—The lever E, having slots f f, in combination with the fulcrum-pin D, and cutter-stocks B B, arranged and operating substantially in the manner and for the purpose set forth.

105,862.—MECHANISM FOR RETAINING, ADJUSTING, AND SEWING PARASOLS.—William John Tate, Philadelphia, Pa., assignor to William A. Drown & Co., same place.

Claim.—1. A holder for umbrellas and parasols, consisting of an adjustable and movable bar, or its equivalent, constructed so that the handle of the umbrella or parasol may be secured to the same, substantially as described.

2. The combination, substantially as herein described, of the said holder with a sewing-machine.

3. The combination and arrangement, substantially as herein described, of the bolt H, disk I, with its tubular projection, and slotted disk I′, with its tubular projection, for the purpose set forth.

4. The adjustable segmental plate L, or its equivalent, attached to the bar J, and forming the holder proper, for the retention of the umbrella or parasol.

5. The combination of the said holder, the handle of an umbrella or parasol, and a detachable block, m, adjustable on the handle, and bearing on the holder, as specified.

6. The presser-feet D D′, constructed and operating in connection with each other, the needle, and the ribs of the umbrella or parasol, substantially as herein set forth.

7. The presser-feet, having edges e e, inclined, as specified.

105,863.—RAILROAD RAIL-SPLICE.—George Oscar Taylor, Hamilton, Va.

Claim.—The within-described rail-splicing clamp B, its bearing points x and c, screws F, and the plate H, with its bearing point y, the whole being adapted to the rails, as set forth.

105,864.—HOT-AIR FURNACE.—George G. Thomas, St. Louis, Mo.

Claim.—1. The arrangement of the fire-pot A, ash-pit B, constructed as described, and walls a a, as described, for the purpose set forth.

2. The water-reservoir E, arranged around the fire-pot, below the flue e and above the line of the grate-bars, as described.

3. The air-passage or flue c, when arranged in relation to the opening d¹, as described.

4. The perforated base-plate F, constructed as described, for the purpose set forth.

5. The arrangement of the draught-tube G, with its lower end opening into the outer air, and its upper end into the reservoir D, for the purpose of expelling the gases from the latter, as described.

6. The radiator described, consisting of the parts H I, connecting-flues i i, drum i¹, chamber i², and smoke-pipe i³, as described, for the purpose set forth.

7. The arrangement of the grate below the upper line of the ash-pit, as described.

8. The furnace described, consisting essentially of the fire-pot A, ash-pit B, grate C, reservoir D, chamber E, plate F, draught-tube G, radiator H I, and casing J, when combined and arranged as described.

105,865.—CORN-MARKER.—Jesse B. Thomas, Centreville, Ind.

Claim.—1. The combination of the rod or bar C, the arm or lever D, and shovel or marker D¹, substantially as and for the purpose set forth.

2. The swinging arm E, in combination with the frame of the machine, when its outer end is provided with a marker which is capable of moving in both a horizontal and a vertical direction, so as to pass obstructions, substantially as and for the purpose set forth.

105,866.—GRAIN-DRILL.—John H. Thomas, Springfield, Ohio.

Claim.—1. The drill-hoes E, having their interior opening made substantially as described, whereby the grain-tubes or conductors D, when attached in a single row to the hopper-bottom, or to seed-cups arranged in a single row, are enabled or permitted to hang and play loosely within the hoes, while the hoes themselves are arranged in either position, substantially as described.

2. The combination of a series of hinged or oscillating grain-tubes D, arranged to receive the grain from a single row of openings in the hopper, with a corresponding series of drill-hoes, E, constructed and arranged as described.

3. The arrangement of the sliding bar c and the supporting-rods a, in relation to the frame A of a grain-drill, substantially as described.

105,867.—LAMP.—George W. Thompson, Buffalo, N. Y.

Claim.—The application of sheet copper, tinned on the inside, in the construction of lamps, as a conducting power to transfer the heat rapidly and constantly from the collar to the bottom of the lamp, as herein described, when used with the aforesaid mineral compound as an absorbing reservoir, or any other filling substantially the same, which will produce the intended effect.

105,868.—Clamp for Bridges.—Lucius E. Truesdell, Chicago, Ill.

Claim.—The clamp, formed of the parts *b b*, constructed as described, to clamp the chord and the ends of the ties or diagonals, when the parts are arranged substantially as set forth.

105,869.—Carpenters' Plane.—Charles E. Tucker, Boston, Mass., assignor to himself and T. L. Appleton, same place.

Claim.—The parts C C′, flanges H H′, set-screws E E′, parts B B′, and planing-knives A A′, when constructed and arranged substantially as shown and described.

105,870.—Machine for Motive-Power.—Horace Wickham, Jr., Chicago, Ill.

Claim.—1. The rocking beam F, constructed substantially as described, and for the purpose specified.

2. The rocking beam, provided with the weighted ball H, for the purpose specified.

3. The combination of the rocking beam F, ball H, rod I, pitman J, crank-shaft K, fly-wheel L, bevel and gear-wheels M S, pinions O and T, and governor R, and automatic brake V, constructed and arranged substantially as herein described, and for the purpose set forth.

106,871. — Curtain-Fixture. — John H. Wilhelm, Chicago, Ill.

Claim.—The spring socket-guide R, the double socket C U, in combination with the cylindrical coiled spring T, roller B, spool collar-plate G, bracket H I, and cord-guard C′, when all the parts are constructed and arranged to operate as herein described, for the purpose specified.

105,872.—Corn-Sheller.—John B. Wolford, Lancaster, Ohio.

Claim.—1. In the corn-sheller herein described, the throat, provided with the yielding flaps or wings D^1 *d*, (one or both,) for the purpose of feeding the ears of corn longitudinally, as set forth.

2. In the corn-sheller, the concave C, provided with ribs *c*, arranged in sections on diagonal lines, with the angle of presentation on alternate sections reversed, in combination with the shelling cylinder B, provided with teeth, arranged in curved lines, substantially as set forth.

3. The combination, in a corn-sheller, of the hopper, provided with the elastic throat D^1 *d*, the deflecting-chamber, as described, the shelling-cylinder B, and concave C, arranged and operating substantially as set forth.

105,873.—Machine for Nicking Screw-Blanks.—Aurin Wood, Worcester, Mass.

Claim.—1. The combination, with the bed or frame A, of the sliding bars D D, and reciprocating inclined bearings C C, which automatically raise and depress the cutters, substantially as and for the purposes set forth.

2. The combination, with the cutters and sliding bars D, and segmental-gear clamps, of the inclined hopper P and separating spring E, substantially as described.

3. The combination, with the segmental-gear clamps N N′, of the separating spring E, which also guides the screw from the hopper to the segmental-gear clamps, substantially as described.

4. The combination, with the sliding bars D and driving-shaft M, of the crank L, pitman K, and connection J, substantially as shown and described.

5. The combination, with the segmental-gear clamps constructed as described, and cam O, of the connecting-bar *m*, and slide A, arranged in relation to each other, as shown and described.

6. The combination, with the inclined bearings C, connecting-rod E, and pins *b b′*, of the rock-shaft F and cam G, substantially as shown and described.

105,874, antedated July 15, 1870.—Percussion Cap.—B. F. Woodside, McDonald Station, Tenn.

Claim.—As a new article of manufacture, a percussion cap composed of paper pulp, as a basis, mixed into which is a small quantity of hair, the exterior surface being coated with collodion or shellac, all constructed as specified.

105,875.—Candlestick.—Henry Zahn, San Francisco, Cal.

Claim.—The elongated nut *b*, provided with a flange, *c*, together with the outside clamping-nut *d*, substantially as and for the purpose above described.

105,876. — Carriage-Step. — Wilson W. Knowles, Plantsville, Conn.

Claim.—As a new article of manufacture, a carriage-step, formed from a solid bar of iron without welding, substantially as hereinbefore set forth.

REISSUES.

4,078.—Mechanical Movement.—Henry J. Case, Nelson Chapin, and Charles Richardson, Auburn, N. Y., assignees of Henry J. Case.—Patent No. 89,028, dated April 20, 1869.

Claim.—1. A pendent curved or bent oscillating pendulum-pedal, as described, operating as and for the purpose set forth.

2. The combination, in a mechanical movement for sewing-machines, of a crank-shaft with a pendent curved or bent oscillating pendulum-pedal, for operating said shaft through connecting-devices, substantially as set forth.

3. The combination, as set forth, with an oscillating pendulum-pedal, of the rocking foot-rest.

4,079.—Paper-folding Machine.—Cyrus Chambers, Jr., Philadelphia, Pa.—Patent No. 15,842, dated October 7, 1856.

Claim.—1. The register-pins I I′, located in the line of the first fold, and in such position as to be acted upon by the first folding device.

2. The register-pins I I′, adjusted and retained in adjustment by means of slides *o o′* and screws 1 and 2, substantially as set forth.

3. The combination of the register-pins I I′, bars Q Q′, and stops S, for correctly presenting the paper in position to receive the second and succeeding folds, substantially as described.

4. The combination of bars Q Q′ and stops S, for the guiding and retaining the paper in position for receiving the various folds.

5. Giving the folding-blades E, F, G, and H, a motion equal to or greater than the surface-motion of their respective folding-rollers, by the shape of the cams 6, 8, and 10, actuating said knives, substantially as shown and described.

6. The mechanism described, or its equivalent, for arresting at will the moving part of the folding device, the same consisting of the treadle 21, shaft 20, and levers 19 and 18.

7. The confining-bars Q Q′, in a paper-folding machine, substantially as and for the purpose set forth.

4,080. — Medical Vacuum Apparatus.—John G. Hadfield, Cincinnati, Ohio.—Patent No. 72,631, dated December 24, 1867.

Claim.—1. A medical vacuum-chamber made in two or more parts, with elastic packing, combined with one or more hinges, and suitable fastenings that allow pressure to be applied on both sides of the door or other hinged part.

2. The medical vacuum-chamber A, having the elevated neck I, with face-opening *i*, and an open rear, closed by the door C and the fastening devices, as set forth.

3. The chair L, capable of being swung out or into the case, in the manner and for the purpose set forth.

4. Such a chair, when adjustable in height upon its axis, substantially as set forth.

5. The parts D E F F′ G G′ H H′, or their equivalents, by which the door is made to bear with an equal and air-tight pressure at every part.

6. In the described combination, the adjustable foot-rest N and notched post P, as set forth.

7. The limb-receptacles U u, when combined with the adjustable hand-rest X X′ s Y.

4,081. — Shank-Spring.—Edward Heaton, New Haven, Conn.—Patent No. 75,266, dated March 10, 1868.

Claim.—As an article of manufacture, shank-springs cut or stamped from sheet metal, the opposite edges of which are similarly curved, substantially as described, so that the same spring may be employed for either a right or left boot or shoe.

4,082.—Division A.—Steam-Generator.—John B. Root, for himself and Thomas C. M. Paton, assignee of John B. Root, New York, N. Y.—Patent No. 74,146, dated February 4, 1868.

Claim.—1. The construction of the steam up-take of a water-tube boiler of a series of chambers and contracted communications, whereby the passage of the water with the steam from the lower to the upper tubes is retarded, substantially as herein described.

2. The connection of the tubes of a water-tube boiler, at their corresponding ends, by a system of connections, whereby the opposing surfaces are presented to the upward current of water and steam, for the purpose of obstructing the passage of the water, substantially as herein described.

3. The connection of the corresponding ends of the tubes, by means of tortuous communications, whereby the steam and water passing through said communications are caused to make a tortuous circuit, in their upward course from one tube to another, without passing longitudinally through the tubes, substantially as herein described.

4. The combination with the water-tubes A A of the return-pipes or bends C C, connecting each tube at each end with one above and one below it, substantially as herein described.

4,083.—Division B.—Steam-Generator.—John B. Root, for himself, and Thomas C. M. Paton, assignee of John B. Root, New York, N. Y.—Patent No. 74,146, dated February 4, 1868.

Claim.—1. The return-tubes C, having free or socket joints connected or held to their places by independent outside clamps and stud-bolts and nuts, or their equivalents, substantially as and for the purpose herein set forth.

2. The cross-pipes E E′ F F′, or either of them, connected with the tubes A A at their ends by means of independent pipes or bends C^1 C^2, fastened by clamps and bolts, essentially as shown, for the purpose set forth.

DESIGNS.

4,257.—Trade-Mark.—John Adams, Birmingham, Pa.

Claim.—The design for a trade-mark, as described and shown.

4,258.—Carpet-Pattern.—James Allinson, Philadelphia, Pa., assignor to James Bromley & Brothers, same place.

Claim.—The design for a carpet-pattern, substantially as described, and as represented in and by the accompanying drawing.

4,259.—Lamp.—James S. Atterbury and Thomas B. Atterbury, Pittsburg, Pa.

Claim.—The design for a lamp herein set forth.

4,260.—Jelly-Glass.—William Doyle, Birmingham, Pa.

Claim.—The design for jelly-glasses, as shown and described.

4,261.—Glass-Ware.—William M. Kirchner, Pittsburg, Pa., assignor to the National Glass Company, Bell Aire, Ohio.

Claim.—The design for glass-ware, hereinbefore described and shown.

4,262.—Corn-Husker.—Almon T. Morris, Nevada, Ohio.

Claim.—The design for a corn-husker herein described and represented.

4,263. — Glass-Ware. — John Oesterling, Wheeling, West Va.

Claim.—The design for pressed glass-ware, as shown.

4,264.—Tip of a Sword-Scabbard.—Virgil Price, New York, N. Y.

Claim.—The design for the tip of a sword-scabbard, as shown.

4,265.—Sword-Guard.—Virgil Price, New York, N. Y.

Claim.—The design for sword-guards, as shown.

4,266.—Trade-Mark.—Henry C. Rogers, Village of Sauquoit, Paris, N. Y.

Claim.—The design for a trade-mark, herein set forth.

4,267.—Type.—Richard Smith, Philadelphia, Pa., assignor to MacKellar, Smiths, & Jordan.

Claim.—The design for a printing-type, as shown.

ISSUE OF AUGUST 2.

PATENTS.

105,877.—Paper Bag.—Alfred Adams, Chagrin Falls, Ohio.

Claim.—Forming the double blank, substantially as shown in Fig. I, and subsequently cutting, pasting, and folding it, substantially as progressively shown in Figs. II, III, IV, and V, to form satchel-bottom bags.

105,878.—Twine and Thread-Cutter.—Samuel W. Adams, Providence, R. I., assignor to T. B. Doolittle, Bridgeport, Conn.

Claim.—A twine or thread-cutter, constructed as described, with its entire body and the fastening-pin or hooks of a single piece of wire, for the purposes set forth.

105,879. — Gang-Plow.—John Alloways, Decatur, Ill., assignor to himself and W. Cummings, same place.

Claim.—The arrangement, with relation to the beams F F, shaft O, and axle A, of the pivoted pendant N, and arm O, adjustably connected at their lower or outer ends, as and for the purpose specified.

105,880.—Animal Trap.—Samuel Arnold, Silver Springs, Tenn.

Claim.—The floor or bottom A, with its uprights and the cross-piece which they support, box B, with its grooves which work upon the uprights; pulleys G and J, chain K, and pan P, when the same are constructed and arranged to operate in combination, substantially as specified, and for the purpose described.

105,881.—Peat-Machine.—Aimé Nicholas Napoleon Aubin, Portland, Conn.

Claim.—A peat-slicing and cleaning-machine, consisting in a series of grate-bars, *c c*, in combina-

tion with revolving blades *d d' d' d' d'*, hanging board *f*, door *g*, the whole constructed and operating substantially as set forth.

105,882.—TUBE-WELL.—Samuel S. Ayers, Plainfield, N. J., assignor to himself and Abram Sebring, same place.

Claim.—The combination and arrangement of the tube A, perforated in its lower part with long and narrow slots, sand-receiver D, valve E, guard-bar F, screen G, and pump-tube H, with each other, substantially in the manner herein set forth and described.

105,883.—EXCAVATING-MACHINE.—John A. Bailey, Detroit, Mich., assignor to himself, L. E. Webb, Joseph Lederle, Anthony Lederle, and John H. Wells.

Claim.—1. The combination, with the platform and the pivot whereon it oscillates, of the pistons, which are connected by suitable means, and worked in cylinders by means of water or other fluids, for effecting the oscillation of the platform, substantially in the manner described.

2. The combination, with the cylinders L and their pistons, of the scoop M and the cylinders R and their pistons, substantially as specified.

3. The combination, with the bottom V of the scoop and arms W, arranged as described, of the holding and tipping-catches Y, and spring bar s^1, substantially as specified.

105,884.—PREPARATION OF PAPER STOCK.—Haydn M. Baker, Washington, D. C., assignor to John M. Smith, Brooklyn, N. Y.

Claim.—The use of the soluble silicates, with and without the assistance of extraordinary pressure and temperature, for the purpose of subduing straw, wood, hemp, jute, cotton-seed hulls, and other sources of fibrin, for the production of paper stock, in the manner herein described and set forth.

105,885.—BEDSTEAD AND COT.—Virginia L. Baker, Richmond, Va.

Claim.—The legs *a a'*, united together by the cross-bars A A', which are provided with a series of hooks, in combination with the sacking C and its metallic end-connections and the bar B, as set forth.

105,886.—STEAM HEATER.—William C. Baker, New York, N. Y.

Claim.—1. The flat sheet-metal radiating chambers, with separate intermediate external stays or supports, forming also radiators, the parts being confined by tie-bolts that do not pass through the steam-spaces, substantially as specified.

2. The sheet-metal steam-radiators, made with the divisions 2, steam-inlets 3, and outlet 5, so as to produce a circulation, as specified.

3. The division *e* of the steam-chamber, separating the steam and water of condensation, in combination with radiating-chambers and steam-supply pipe, as specified.

4. The casing *m*, within which the steam radiating-chambers are supported against the pressure of steam by such casing, as and for the purposes set forth.

105,887.—MOLDS FOR CASTING MACKEREL-JIGS.—Greenleaf Bassett, Taunton, Mass.

Claim.—The arrangement and combination of the pair of jaws or the hook-holder *i i* with the mold for casting a weight on the shank of the hook, and forming such weight with an eye, as described.

105,888.—SLIDING DOOR FOR RAILWAY BOX CARS.—John Bassler, Galesburg, Ill.

Claim.—The semicircular frame J, carrying the bolt N, with a pin, *n*, projecting through the slot *j*, combined with the casings A and B and door F, substantially as described, and for the purpose set forth.

105,889. — MANUFACTURE OF ARTIFICIAL STONE.—William Augustus Battersby, Brooklyn, N. Y.

Claim.—The combination of the before-named ingredients, worked and amalgamated by heat, and colored, substantially as and for the purpose hereinbefore set forth.

105,890, antedated July 19, 1870.—BALL-VALVE FOR INJECTING AIR.—Joseph B. Bennett, Brooklyn, N. Y., assignor to himself and Erastus S. Bennett, New York City.

Claim.—1. The arm D and rubber packing-spring F, substantially as set forth.

2. The ball H, valve-case G, valve *a*, arm D, and packing F, all arranged to operate substantially as and for the purposes set forth.

105,891.—WOOL-DRIER.—Lucius S. Blake, Racine, Wis.

Claim.—1. The combination of the longitudinally-bladed, and vertically revolving fan F, right-and-left inclined guide-boards B B, of the concave D, and the separated air-directors *a a*, substantially in the manner and for the purpose set forth.

2. The combination of the longitudinally-bladed and vertically revolving fan F, right-and-left inclined guide-boards B B, concave D, separated air-directors *a a*, and sieve C, substantially in the manner and for the purpose described.

3. The combination of the fan F, having partition h, the longitudinal concave D, having holes O O in each of its end pieces or heads, longitudinal inclined guide-boards B B, adjustable directors *a a*, and sieve C *o o*, substantially in the manner and for the purpose described.

105,892.—CORN AND COTTON CULTIVATING-PLOW.—William R. Blanchard, Hertford, N. C.

Claim.—1. A mold-board for ridging-plows, having the concavity G, for turning a furrow, a circular recess, *g'*, and an adjustable circular plate, H, attached thereto, all as and for the purpose described.

2. The plates I J, combined with mold-board G, all constructed and relatively arranged on a ridge-plow, as and for the purpose described.

105,893.—STIRRUP.—Albert H. Blossom, Miamisburg, Ohio.

Claim.—The open-sided stirrup, composed of flanged and barred shank A F F' D E and upturned tread B, substantially as described.

105,894.—PAPER-CUTTING MACHINE.—John Bole, Grand Rapids, Mich.

Claim.—A cutter, consisting of the knife *a*, secured to sliding pieces *c c* passing through the table, in connection with the cross-bar R beneath the table, secured to said sliding pieces, and with the single screw passing through the cross-bar, firmly connected to the bevel-wheel *d*, and operated by the bevel-wheel *e* upon the shaft *n*, and the crank-wheel B, substantially as set forth.

105,895.—HEAD-MEASURE FOR HATTERS.—Horace Bonham, Philadelphia, Pa.

Claim.—The band *a*, of lead or other flexible metal, combined with the covering *b*, socket *c*, and graduated tongue *d*, substantially as and for the purpose specified.

105,896. — HOLLOW AUGER. — Charles S. Bonney, Syracuse, N. Y.

Claim.—The revolving disk C and movable piece F, constructed and arranged substantially as specified, and for the purpose set forth.

105,897.—DEVICE FOR RIVETING.—Samuel L. Bower, Auburn, N. Y.

Claim.—In combination with the slide O and riveting-tool A, the spring B and socket G, arranged and operating substantially in the manner set forth.

105,898.—FOLDING CHAIR.—Asahel C. Boyd, Worcester, Mass., assignor to E. W. Vaill, same place.

Claim.—1. The combination of the legs *c*, provided with the slots *d*, side posts *f* of the chair-back, provided with the pins *e*, legs *b*, and seat *a*, substantially as described.

2. In combination with the above, the jointed arms *h*, for the purpose specified.

105,899. — WHIFFLETREE TRACE-HOOK.—Charles Collins Bradley, Brodhead, Wis., and Benjamin F. Upson, Rockford, Ill.

Claim.—The construction of a whiffletree trace-hook, in connection with a ferrule, with the point of said hook within or facing the open end or recess therein, as set forth, or substantially the same.

105,900. — ATTACHING CAPS TO BASES OF BELL-LEVERS. — Edward W. Brettell, Elizabeth, N. J.

Claim.—The combination of the base *b*, the crank-lever and perforated porcelain cap, when the three are secured together by the bolt *a*, which passes through the two latter, and is secured in the base-plate, all as and for the purpose set forth.

105,901. — EGG-HOLDER. — Adna Brown, Springfield, Vt.

Claim.—The herein-described improved egg-holder, consisting of handles *a a*, crossing each other and carrying jaws *b b*, provided with concave strips *d d*, all constructed, arranged, and operating substantially as set forth.

105,902.—GRADING AND DITCHING-PLOW.—Samuel N. Caldwell, Pilot Grove, assignor to himself and William Burton, Newton county, Ind.

Claim.—1. An adjustable mold-board, composed of three separate sections, substantially as herein shown and described, and for the purposes set forth.

2. In combination with the land-side, the arched standard *e*, and the curved brace *m*, with its elongated point, as shown and described, and for the purposes set forth.

105,903. — FOLDING CHAIR. — Walter E. Cameron, Taunton, Mass.

Claim.—1. The lock-bar L, provided with the hooks M and M', in combination with the hooks K and K', when constructed and arranged substantially as described and shown, and as and for the purposes set forth.

2. The strap P, in combination with the seat C and the legs F, when constructed and arranged substantially as described and shown, and as and for the purposes set forth.

3. The arrangement of the standard E, provided with the shoulders *a*, the arms D, the seat C, folding legs F H, and the back B, when constructed substantially as described and shown, and as and for the purposes set forth.

4. The arrangement of the back B, the seat C, the legs F and H, the rails G and J, and the strap P, when constructed substantially as described and shown, and as and for the purposes set forth.

105,904, antedated July 27, 1870.—COUPLING FOR WHEEL-FELLIES. — Chandler Cheney, Milford, Mass., assignor for one-half to Wm. Nash, same place.

Claim.—The apparatus, the different parts of which are represented by the letters *b c d e f*, when made of the shape represented by the accompanying drawing, and for the purpose above described.

105,905.—COMBINED SWIFT AND REEL.—Charles H. Clark, Pittsfield, Me.

Claim.—1. The elbow-lever *m n*, carrying the toothed wheel *i*, in combination with the worm *k'* on the shaft C, as and for the purpose described.

2. The tubular stem *t*, carrying the pointer *u*, in combination with the screw *v*, the wheel *l*, and the dial-plate *p*, as herein described and shown.

3. The combination of the extensible arm *j*, shaft C, crank *k*, friction-spring *x w*, registering mechanism, and lever *m n*, all mounted upon the slotted standard A, and constructed, arranged, and operating substantially as herein described.

105,906.—BIT-STOCK.—Charles H. Clark, Pittsfield, Me.

Claim.—1. The adjustable pinion *g h*, sliding on the notched shank *d*, and provided with a spring catch, whereby it is held in engagement with either toothed rim of the gear-wheel, as herein shown and described.

2. A brace for bits, having its several parts constructed and arranged to operate substantially as herein described.

105,907.—BRANCH ATTACHMENT FOR WATER-TUBES.—Josiah S. Clark, Philadelphia, Pa.

Claim.—The pair of flanged boxes or clamps, one of which is rigid and practically inflexible, and the other flexible, with a flattened tubular, *e*, or neck formed on it, the whole being applied with a gasket, and secured by screws to a tube, as shown and described.

105,908.—JOINT FOR TONGS, &c.—William E. Clarke, Troy, N. Y., assignor to Mary E. Dean, same place.

Claim.—1. The swivel point, consisting of the plates B B and pin C, each plate having a recess on one side, for the reception of one tong-shank, as set forth.

2. The wire tongs, arranged in combination with a swivel point, consisting of circular plates B, in the manner described.

105,909.—STOP ACTION FOR CABINET-ORGANS, &c.—Henry A. Clifford, Rockville, Conn.

Claim.—1. In cabinet-organs, the combination, with the stops and a train of mechanism connected therewith, of the centrally-pivoted and centrally-recessed plate C, arranged a little below the front of the instrument, for the purpose specified.

2. The combination of the piece C, connecting-rod or link D, bent rod E, connecting-rod or link F, bar G, bent or elbow-levers H, sliding bar J, angle-plates L, and screws M, with the stops of the instrument, substantially as herein shown and described, and for the purpose set forth.

105,910.—SAWING-MACHINE.—William M. Cochran, Indianapolis, Ind.

Claim.—1. The construction and arrangement of the gearing F G, combined crank and fly-wheel H, connecting-rod I, lever J *e*, with its counterpoise P, connecting-rod K, lever L, connecting-rod N, sawpitman C, and oscillating guide R *t* W, substantially as and for the purpose set forth.

2. The bent axle 2, with its lever 7, hinged lever tongue 4, with its caster-wheel 5, and cord 6, arranged and operating substantially as set forth.

105,911.—EXTENSION GAS-FIXTURE.—Henry Coester, New York, N. Y.

Claim.—The combination and arrangement of the guide apertures *d d*, and central cord C, substantially as herein specified.

Also, "the regulator," composed of the plugs or barrels *f f*, projecting pins *h h*, with heads *i i*, and

the cross-bar *m*, with its sockets *l l*, all arranged substantially as and for the purpose herein specified.

105,912.—MACHINE FOR SECURING-SHEET-METAL LINING IN PUMP-STOCKS.—Nathan T. Coffin, Knightstown, Ind.

Claim.—The groove-cutting and flanging device, composed of the semi-cylindrical pieces A A', wedge B, cutter-bar C, flanging roller E, shouldered spring F, anti friction roller G, and levers or handles I, all constructed and arranged substantially as and for the purpose set forth.

105,913.—PUMP-VALVE.—Nathan T. Coffin, Knightstown, Ind.

Claim.—The valve-bucket C, furnished with the packing D, and wooden pins G, and arranged to form a water-tight joint by resting loosely, by its own gravity, on a seat formed by the upper end of the tubing B, substantially as and for the purpose set forth.

105,914.—CHIGNON.—Moses M. Cohen, Boston, Mass.

Claim.—A chignon, composed of the tube B, wound around the wire E, when the tube is made up of rings, *b*, woven together, substantially as described.

105,915.—WIND-WHEEL.—Jesse C. Coleman and George Strayer, Clinton, Kansas.

Claim.—1. The combination, with the arms D, of the swinging frames G, the vanes H, arranged to swing in the said frames, the weighted cords L, and the cords I, connecting the frames with the next arms behind or springs thereon, all substantially as specified.

2. The combination, with the vanes hinged to swing in vertical planes, of the cords L, pulleys N O P, and weights M, substantially as specified.

3. The arrangement, with the arms D and the vertical rods F, of the pairs of swinging frames G, and the vanes H, substantially as specified.

105,916.—COUGH-SIRUP.—John Conzelman, St. Louis, Mo.

Claim.—The manufacture or preparation of a medical compound, composed, formed, and compounded of the ingredients substantially as set forth.

105,917.—HORSE-COLLAR CAP.—Dexter Curtis, Chicago, Ill.

Claim.—The horse-collar cap, consisting of the curved plates A B, secured together in such a manner as to leave an air-passage between them, the former being composed of any suitable metal, and the latter of zinc, substantially as described, for the purpose specified.

105,918.—SHUTTER-WORKER.—George L. Danforth, Lebanon, N. H.

Claim.—The combination of the set-screw *f* with said screw-shaft, for the purpose of retaining the window-blind in any desired open, partially open, or closed position, while it also enables the apparatus to be adapted to walls and casings of varying thickness, substantially as specified.

105,919.—TOOL-HANDLE.—John B. Davids, New York, N. Y.

Claim.—The improved handle herein described, having an exterior or body, A, of wood, and an interior socket, C, also of wood, or analogous slightly yielding and strong material, with the strong casing B interposed between the parts C and A, and secured by the cap D or its equivalent, all substantially as and for the purpose herein set forth.

105,920.—SEED-HARVESTER.—Fredericke Decker, Delaware, Ohio.

Claim.—The combination of the adjustable crank-shaft I, with its wheel H, pitmen J J, and arms K K, all constructed and arranged as described, for operating the rake L, substantially as herein set forth.

105,921.—ADJUSTABLE LINK.—Andrew J. Dexter, North Foster, R. I.

Claim.—The combination of the open link A, plate B, and clamp-screw C, each correspondingly constructed, as shown in fig. 2 of drawing, and all adjusted together, as and for the purpose specified.

105,922.—FRAME FOR POTATO-DIGGERS AND SHOVEL-PLOWS.—James Millen Dick, Buffalo, N. Y., assignor to himself and William H. Albro, same place.

Claim.—The construction of the frame with the parallel sides A A', the bar *c*, and cross-bar *d*, and having the beam formed in a single piece therewith, in the manner and for the purpose herein described.

105,923.—PROCESS OF SEPARATING FIBERS FROM COTTON-SEED.—Jules Duval, New Orleans, La., assignor to himself, Richard T. Sprague, Boston, Mass., and Charles D. Sprague, New York city.

Claim.—The process above described, of separating the fiber from crushed cotton-seed, applied as and for the purpose described.

105,924.—MACHINERY FOR THE MANUFACTURE OF ICE.—William T. Duvall, Georgetown, D. C.

Claim.—1. The arrangement of a pump or pumps, with relation to their supply and discharge-apertures, in such manner that both air and water may be admitted, and all the air ejected, while a sufficient portion of the water will be retained within the several compartments to water-seal all the valves and joints, substantially in the manner specified.

2. In an air-compressing apparatus, the introduction of water with the air, for the absorption of a portion of the caloric produced by such compression, and to prevent heating of the apparatus, substantially as set forth.

3. The method, herein described, of discharging the water from the radiator by means essentially as set forth.

4. In combination with the compressing apparatus, operating as described, the radiator I and refrigerator M, and their respective ingress and egress-pipes and valves, arranged and operating substantially as specified.

5. The arrangement of a perforated diaphragm, or its equivalent, in or near the top of the refrigerator, substantially as and for the purpose specified.

6. The construction of the pans P, with V-shaped corrugations across their bottoms, or with conical or similar projections upwardly within them, substantially as shown and described, for the purpose set forth.

105,925.—STOP-PLATE FOR HYDRANTS.—James C. Eastman, Nashua, N. H.

Claim.—The combination of an adjustable rod with the handle I, plates *f f*, guard J, and stops h h, substantially as and for the purposes hereinbefore set forth.

105,926.—WHEEL-HUB.—William F. Ehlers, Pottsville, Pa.

Claim.—The construction of the hub A, with the slots C C and recesses B B, in the manner and for the purpose herein described.

105,927.—CLOTHES-LINE FASTENER.—Ephraim K. Elliott, Cuyahoga Falls, Ohio, and Uri J. Baxter, Washington, D. C.

Claim.—1. The lever E, constructed as described, and having ratchet-teeth *e*, in combination with pawl G and jaw D, arranged and operating substantially as and for the purpose specified.

2. The combination of swivel-post C, or its equivalent, with lever E, jaw D, and pawl G, substantially as and for the purpose specified.

105,928.—SAWING-MACHINE.—James Anthony Elston, Elston Station, Mo.

Claim.—1. The wheel A, for supporting the sawing-machine, provided with pivoted legs, which are locked to notched segments by pins *e*, to be adjustable, as described.

2. The wheel A, and slotted guide-frame C, pivoted together, as set forth, combined with a slide, D, and spring J, all relatively arranged for sawing the erect timber, as shown in fig. 2 of drawing.

3. The subject-matter of the second clause, combined with the weighted frame *f* G H, as shown in fig. 1 of drawing.

4. The perforated adjustable post I, combined with the adjustable legs B, as and for the purpose described.

105,929.—TURBINE WATER-WHEEL.—Enos Emerson, Smithport, Pa.

Claim.—The wheel A, with its concave, back-inclined wings or buckets *a a a*, as constructed, when arranged to operate in the case D, having a water-passage, C, which diminishes in size from the inlet E to the outlet F, thereby compressing the flow of water onto a large portion of the circumference of the wheel, as herein described.

105,930.—TRAVERSING MACHINE.—Valentine Foland, Indianapolis, Ind.

Claim.—1. The reciprocating sliding bar E, when constructed, arranged, and operating substantially as and for the purpose hereinbefore set forth.

2. The tool-carrier K, and bit-block *a*, constructed and combined substantially as and for the purpose hereinbefore set forth.

3. The shifting block Q, combined with the gearing E R R', *t* and T, and the pinion *w*, and segment Y, substantially as and for the purpose hereinbefore set forth.

105,931.—BOAT-DETACHING APPARATUS.—James Foster, Jr., Camden, N. J.

Claim.—The coupled tumblers 4 and 7, in combination with an eye-bolt, having a hinged or swinging jaw, *a'*, the said parts being constructed and arranged to operate substantially as and for the purpose hereinbefore set forth.

105,932.—MODE OF OPERATING SEWING AND OTHER MACHINES.—S. Conant Foster, New York, N. Y.

Claim.—1. The herein-described sewing or similar machine-table, operated by power applied substantially in the manner described and specified.

2. In combination with the hereinbefore described devices, an inclined adjustable table, to support and adjust the machine to the convenience of the operator, and admit of an erect position of the body, substantially as described and specified.

3. In combination with the herein-described devices, an adjustable foot-rest, constructed and operating substantially as described and specified.

4. The inclined adjustable table, constructed and operating substantially in the manner described and specified.

105,933.—SODA-FOUNTAIN.—Elisha M. Fowler, Washington, D. C., assignor to himself and Andrew McCallum.

Claim.—1. A portable soda-water fountain, constructed as described, in which the tube or hollow rod C is the channel of induction and eduction, and also the bond of union, substantially as described and for the purpose specified.

2. In combination with the tube C, as aforesaid, the fountain A, and movable bottom B and nut D, substantially as and for the purpose specified.

105,934.—MODE OF AND DEVICE FOR MAKING GASKETS FOR STEAM PACKING.—Mitchell C. Gardner, Rochester, N. Y.

Claim.—1. The manner or mode of making gaskets used for packing steam-joints in steam-engines, substantially as specified and set forth.

2. The punching device, for making the corner of the gasket, substantially as specified and for the purposes set forth.

105,935.—COTTON-SEED PLANTER.—Thomas C. Garlington, Chambers Court-House, Ala.

Claim.—1. The combination of the vertical auger *a* with the hopper D, and removable plate *d*, and with the frame of a seed-planter, as set forth.

2. The belt *b* for driving the vertical shaft E, when stretched by rollers, *c c*, which are hung in a longitudinally-adjustable frame, H, as set forth.

105,936.—REED MUSICAL INSTRUMENT.—William H. Gerrish, Boston, Mass.

Claim.—1. The sliding bar H, in combination with the register J and stop-valves D, and a suitable mechanism for transmitting the motion of the sliding bar to the stop-valves, substantially as described.

2. The registers I and J, provided with the inclines or wedges I' and J', in combination with the bar H, the rocker-shaft F, and levers G and *b*, arranged and operating substantially as described.

3. The pin *e*, fitted to a hole in the pallet L, in combination with the clamp-bar N, substantially as described.

105,937.—DEVICE FOR TRANSMITTING ROTARY MOTION.—Henry J. Hancock, New York, N. Y.

Claim.—The lever E, arranged to slide through the oscillating fulcrum F, in combination with the eccentrics or cranks C D, substantially as shown and described.

105,938, antedated July 28, 1870.—HAT AND CAP-HOLDER AND BRACKET.—John R. Hartmann and Martan Kais, Peoria, Ill.

Claim.—1. The swinging bracket B, operating automatically by means of a spiral spring, *b*, or its equivalent, in combination with an arm or shaft, *d* of the bracket, substantially as and for the purpose set forth.

2. The swinging bracket B, with shaft *d*, collar K, spring *b*, brace A, spring C, and the transverse braces or guards *f f*, constructed and operating substantially as set forth.

3. The combination of the spring C with a swinging bracket, B, substantially as set forth, for the purpose specified.

105,939.—WHEELBARROW-WHEEL.—George Harris, Weedsport, N. Y.

Claim.—A wheelbarrow-wheel, consisting of wrought-iron axle, spokes, and tire, and cast-iron hub and felly, combined, arranged, and constructed as and for the purposes set forth.

105,940.—LAMP-SHADE.—Andrew W. Haskell, Boston, Mass.

Claim.—The combination, with the lamp-shade, of two or more supporting-hooks or strips adapted to catch over the top of the chimney, when each of said hooks or strips is made in sections united by a sliding connection, so that the length of the same may be varied at pleasure, for the purposes herein described.

105,941.—DIRECT-ACTING COMPOUND ENGINE.—William M. Henderson, Philadelphia, Pa.

Claim.—1. In a compound engine, as described, where the opposite faces of each piston present an unequal area, the arrangement of the passages R

R', eduction-ports J J', and steam-passages Q Q', or their equivalents, in combination with the main pistons E E', and valve-pistons N N', in such manner that the live steam, upon the completion of each stroke, will pass directly from the annular cylinders the valve-pistons N, by the passages R and Q, for the purpose of operating the valves, as described.

2. The slide-valves, admitting the impelling agent employed, to the main pistons, which, in turn, and at the proper time, become valves for controlling the action of the slide-valve pistons, the one admitting the impelling agent to the other alternately, substantially in the manner and for the purposes represented.

105,942, antedated July 19, 1870.—GRATE-BAR. — Mark Hodgson, East Saginaw, Mich.

Claim.—1. A grate-bar, composed of suitably-supported cross-bars A A, set to occupy an inclined position, as described, and of curved or arched form on their tops, substantially as specified.

2. The combination of the inclined cross-bars A A, of curved or arched form on their upper surfaces, the longitudinal side bars or portions B B, and the central longitudinal tie-bar or portions C C, arranged to extend upward, so as to lie on a level with the upper surfaces of the cross-bars, essentially as shown and described.

105,943. — PADDLE-WHEEL. — William H. Holland, Boston, Mass.

Claim.—The floats B B and D D, arranged with reference to each other and to the axis of the wheel, substantially as described.

105,944. — TRACE-BUCKLE.—Alfred Henry Hopson, Taylorville, Ill.

Claim.—The buckle-frame C, having the bored and grooved end D, with lug *a*, in combination with the bail I, all substantially as herein shown and described.

105,945.—GRAIN-THRASHING AND CLOVER-HULLING MACHINE. — Monroe Hubbell, Reynoldsville, N. Y.

Claim. — 1. In the thrashing-machine herein described, the inclined frame A, provided with a series of holes, *a a*, in combination with the adjustable axle T and bolts *f*, constructed and arranged as shown, and for the purpose set forth.

2. The arrangement, herein shown, of the thrashing and hulling-cylinders B O with conveyer E, for the purpose set forth.

3. The combination of the thrashing-cylinder B with the covering D, provided with the openings *c d*, when constructed and arranged in the manner and for the purpose herein set forth.

4. The slide S, in combination with the conveyer E, hole *b*, and hulling-cylinder O, constructed and arranged as herein shown, and for the purpose set forth.

5. The arrangement of the parts H, I, J, K, L, and M, when used to give motion to the straw-agitators, as herein specified.

105,946.—BINDING ATTACHMENT FOR HARVESTERS.—Franklin B. Isett, Hollidaysburg, Pa.

Claim.—1. The combination, with a platform, A, of the lifting-frames B M and a receiving table, S, arranged for joint automatic action, all substantially as specified.

2. The combination, with the platform A and frame B, of the shaft E, arms D H, belt G, and connecting rod I, all constructed and operating substantially as specified.

3. In combination with the shaft E and frame B, the pulley R, strap Q, frame M, shaft N, and pulley P, all constructed and operating substantially as specified.

105,947.—EAVES-TROUGH HANGER.—Jacob J. Kauffman, Ashland, Ohio.

Claim.—The cast-iron standard D, provided with a side slot, *b*, and attached to the bar B and hanger C, in the manner as described, and for the purpose specified.

105,948. — GRATE-BAR.—William Kearney, Belleville, N. J.

Claim.—The transverse bridge C, secured to and combined with the brace B, and provided with fingers *c*, substantially as and for the purposes herein shown and described.

105,949. — BUCK-SAW FRAME.—George R. Kimball, Middletown, N. Y.

Claim.—The arrangement, with the frame-pieces B B', of the inverted arch C C, tie-rod D, toggle-bars E E, and screw and nut *f* F, as hereinbefore set forth.

105,950.—MACHINE FOR ROLLING METALS. Andrew Kloman, Pittsburg, Pa.

Claim.—The parallel-faced guides *a*, simultaneously adjustable to or from each other, as described, in combination with the horisontal rolls and the adjustable vertical rolls, substantially as set forth.

105,951.—MECHANICAL MOTION.—Andrew Kloman, Pittsburg, Pa.

Claim.—1. The mode of increasing or lessening the operative length of a divided reciprocating mechanical device, by means of grooves eccentrically arranged in a rotating block, or converging in a sliding block, such grooves engaging correspondingly curved or inclined grooves in the adjacent ends of the divided reciprocating device, substantially as described.

2. A rotating block, *d*, having a pair of grooves, one, at least, of which is eccentric, in combination with the divided plunger *e e'*, substantially as described.

3. The subject-matter of the last preceding claim, in combination with a headed square-shanked bolt, operating in a slot, *f*, substantially as described

105,952.—IRON-ROLLING MILL. — Anthony C. Kloman, Pittsburg, Pa.

Claim.—In combination with the pair of horizontal reducing-rolls and the pair of vertical feeding and edging-rolls, the crab-clutches, arranged to drive the vertical rolls, and cause them to feed the metal forward to the horizontal rolls, but which may slide over each other without interlocking, when the speed of the vertical rolls is accelerated beyond that which is due to the driving-gear, substantially as described.

105,953.—FLUTING AND SAD-IRON.—Myron H. Knapp, Bay City, Mich.

Claim.—The construction of a sad-iron in two sections, A A', hinged together, and provided with corrugations or flutes, *a a'*, in such a manner that the device may be used both as a fluter and sad-iron, substantially as described.

105,954. — WATER-PIPE MOLD. — Henry Knight, Brooklyn, N. Y.

Claim.—The arrangement of the loose collar B, constructed as described, stationary core C, flanged collar C', and mold-shell A, the several parts being combined and operated in such a manner that the female coupling-end *g* of a pipe, without a collar, is formed entirely within the mold, and at the upper end of the same, while the male end *g'* of the pipe is formed within the mold-shell, and at the lower end of the same, all as shown and described.

105,955. — SLIDING WAGON-SEAT. — Richmond O. Knowles, Coolville, Ohio.

Claim.—The perforated metal plate *a*, combined with the seat *c*, when the latter is provided with the plates *e* and spring pin *b*, in the manner and for the purpose specified.

105,956. — TRACTION-ENGINE. — James K. Lake, Chicago, Ill.

Claim.—1. The combination, in a traction-engine, of two sets of driving-wheels, relatively constructed, arranged, and operated as and for the purpose described.

2. Providing a traction-engine with one or more pairs of auxiliary supporting-wheels, made vertically adjustable, so that the weight of the machine may be thrown upon or taken from the said wheels, substantially as described.

3. The construction of the clutches in two parts, and the connection of the same by the one screwing into the other, and by a set-screw, substantially as specified.

4. The crotched arms, for working the sliding parts of the clutches, arranged to move on the support H^3, in a line parallel with the axle F^2, and connected to the levers H^2 and I^2, substantially as specified.

5. The combination, with the pairs of clutch-shifting levers, of the right and left screw-threaded shafts $I I^1$ and $I^3 I^4$, arranged for joint and simultaneous or independent action, substantially as specified.

6. The combination with the shifting-lever c^{17} and the shifting-plate c^{12}, reversing pinions, and the screw-rods c', of a cam-plate, for automatically disconnecting the reversing-pinions, substantially as specified.

105,957.—ROUND COMB.—George T. Lincoln, Providence, R. I.

Claim.—The article as described, or, in other words, the combination and arrangement of the flexible or elastic or curved band A and the two side combs B B, the whole being substantially as specified, whether the band be made in one entire piece or in several pieces jointed together.

Also, the round comb, as made with each of the side combs B B, connected with the band A by means of the hinge *d'* and pivot *e'*, arranged together and with the comb and band, as set forth.

105,958.—VEGETABLE CUTTER.—John Lusher, La Porte, Ind.

Claim.—A vegetable-cutter, A, having the cutting-edges *a*, rasping-edges *b*, and a corrugation on each side between them, as shown in fig. 2 of drawing, and for the purposes specified.

105,959.—REFRIGERATOR.—William B. Mason, Boston, Mass.

Claim.—In a refrigerator, substantially such as herein described, the arrangement, with relation to the provision-chamber and its door, of the ice-well registers *e f*, applied to the upper and lower ports leading to said well, and spring *h*, applied to said registers, substantially as described, so that, when the door of the provision-chamber is closed, it will open the upper and lower registers, and, when it is opened, it will allow the spring to cause said registers to close the openings leading from the provision-chamber to the ice-well, as set forth.

105,960.—MANUFACTURE OF CARPET-LINING.—William A. Mauran, Providence, R. I.

Claim.—The improvement in the manufacture of carpet-lining, which consists in the substitution of carded jute or flax, treated with size, for the outside surface of the bat which composes the soft body of the lining, the article produced thereby being substantially as described.

105,961.—SEWING-MACHINE.—John N. McLean, Philadelphia, Pa.

Claim.—1. A convex riding swell, arranged between the guiding-eyes *b' c*, so as to operate on the thread, substantially as described.

2. The arrangement, within a pivoted oscillating or vibrating guide, of the tubular sleeve-presser G and needle-bar, when operating to feed the material being sewn, substantially as described.

3. The slotted link J, interposed between the lever E and the looper-lever K, and adapted to operate substantially as described.

105,962.—RAILWAY RAIL.—Fenton A. Meredith, Mount Airy, Md.

Claim.—A compound elastic rail, consisting of the base-piece A, the rails F, with interlocking ends, and the spiral springs C, the whole constructed and arranged substantially in the manner and for the purposes set forth.

105,963.—FLY-TRAP.—Modest Merk, Rochester, N. Y.

Claim.—1. The funnel-shaped conductor A, in combination with the vessel B, when arranged to operate substantially as described.

2. In combination with the conductor A and vessel B, the removable bait-pan *c*, as and for the purposes set forth.

105,964.—MEANS FOR COMMUNICATING MOTION TO MACHINERY.—Charles H. Miller, Buffalo, N. Y., assignor to himself and Emory Cummings, New York City.

Claim.—1. The combination of the rocking levers C C^1, tie connections H H, and bearings or supports F, for communicating motion, substantially as hereinbefore set forth.

2. The slotted arm D, and counterpoise I, combined and arranged with the rocking levers C C^1, and connections H H, as hereinbefore set forth.

105,965.—CAR-SEAT LOCK. — Ezra Miller, New York, N. Y.

Claim.—1. The pendulous self-locking bolt or catch *f*, constructed with one or more shoulders at its lower end, and with a shoulder, *n*, nearly midway between its upper and lower ends, a recess, *m'*, above said shoulder, and lateral extensions *g o*, the said catch being arranged and operating as a car-seat, locking-bolt, or catch, in the manner herein described.

2. The combination of the pendulous self-locking bolt or catch *f* and an open shouldered rest-plate, A, substantially in the manner described.

3. The combination of the pendulous self-locking car-seat, bolt, or catch *f*, constructed as described, spring slide *b b'*, constructed and arranged as described, and rest-plate A *a*, substantially in the manner described.

4. The open slide *b*, constructed with the cross-piece *b'*, pin *t*, and with an oblong slot for the pin *d*, substantially in the manner and for the purpose described.

105,966.—COFFEE-MILL.—John C. Milligan, Brooklyn, N. Y.

Claim.—1. The combination and arrangement of the spindle C, adjusting-nut H, provided with notches M, and cross-bar F, with the handle I detachably connected with said spindle, and provided with the holding and tripping-pawl K and spring L, constructed substantially as specified.

2. The hopper-box B, having flange N, the guiding-shell E, with flange P, and the lower cross-bar G, all relatively arranged to be connected with the box A by the adjusting screw-bolts O, as shown and described.

3. The cone D, provided with the furrows *e* and *b*, in combination with the shell E, provided with furrows *f* and *b*, said cone being curved on its outer surface, and the inner wall of the shell being straight, all as and for the purpose specified.

4. The cone D, shell E, spindle C, bars F and G, screw-bolts O, and hopper B, all constructed and arranged as shown and described.

105,967, antedated July 22, 1870.—HAY-RAKE.—William H. Misner and George E. Marker, Heyworth, Ill.

Claim.—An apparatus for raking hay, consisting of a three-wheeled vehicle, guided by the single wheel behind, drawn by one animal on each side of the connecting-pole, and having, directly in front, a vertically-vibrating rake, operated by a

hand-lever, the several parts being constructed and arranged as shown and described.

105,968.—MANUFACTURE OF PURE CARBONATE OF POTASH.—Conrad F. Moll, Kenton, Ohio.

Claim.—The above-described process for manufacturing granulated carbonate of potash or pearlash, substantially as set forth.

105,969. — WASHING-MACHINE.—Jeremiah A. Morelock, Silver Run, Md.

Claim.—The washing-machine, formed by the combination, with the box *a*, provided with the corrugated bottom *b*, of the rubber *c*, provided with the vertical slots *e* in its triangular sides *c*, and the bottom slats *d* and crank-shaft *h i*, all constructed and arranged to operate as shown and described.

105,970. — CAR-COUPLING. — Anthony T. Norgan, Pottsville, Pa.

Claim.—The combination and arrangement of the head A, bolt C, pin E, and wedge B, with the springs H and G, operating in the manner and for the purpose herein described and specified.

105,971.—APPARATUS FOR AUTOMATICALLY REGULATING THE FLOW OF GAS USED IN HEATING VULCANIZERS, &c.—James M. Osgood, Somerville, Mass., assignor to himself and Flagg & Osgood, same place.

Claim.—1. The gauge composed of tube C, bag F, casing D, set-screw K, adjustable follower *L*, and rubber cylinder J, or the modifications of the latter shown in fig. 4, substantially as described.

2. The combination of the gauge, constructed as described, and gauge-pipe B and vessel A, as and for the purpose set forth.

3. The gas-pipe E, provided with sheath G, in combination with tube H, having orifice I, substantially as described.

4. The combination of gas-pipe E, provided with sheath G, tube H, and vessel A, containing fluid A', substantially as described.

5. The combination of the gauge, constructed as shown, and the gas-pipe E, its sheath G and tube H, with one vessel, A, so that both gauge and regulator will be acted on by the same fluid and pressure, substantially as described.

6. The gas-regulator shown in figs. 7 and 8, composed of the gauge-pipe N, flexible tube O, ping P, and flexible tube R, arranged and operated substantially as described.

7. The regulating of the flow of gas through an elastic-pipe, by means of steam or fluid-pressure upon said elastic pipe, substantially as set forth.

8. A gauge, having a solid column, composed of mercury, with a lighter liquid above, acting against a rubber or other elastic cylinder, to receive the pressure of steam through the gauge-pipe, thus giving a sensitive and efficient gauge, substantially as described

105,972.—MUSICAL BOX.—Améde6 Paillard, St. Croix, Switzerland, assignor to M. I. Paillard & Co., New York City.

Claim.—1. A series of cylinders arranged upon a rotating shaft, in combination with the comb X, so that each cylinder in turn may be brought into co-operation with the comb, thereby making the instrument capable of producing a variety of tunes or melodies, substantially as described and specified.

2. Operating the series of cylinders by means of the wrist-pins *f* and slotted disk *e*, substantially as described and specified.

3. The combination, with the cylinders, of the spring detents *p*, to lock the cylinders in proper position for the wrist-pins *f* to enter the slotted disk *e*, as the cylinders are rotated upon the shaft C, substantially as described and specified.

4. The cam-stop P, for liberating the detents *p* from the cylinders, substantially as described and specified.

5. The combination and arrangement of the lever H, weighted lever I, arm G, and pins *g*, for operating the spring catch F, substantially as described and specified.

6. The mechanism for rotating the cylinders around the shaft C, consisting of the vertical shaft K, pinion *k*, and bevel-wheel M, in combination with the gear *m* and pinion *n*, for operating the dial-plate, in the manner substantially as described and specified.

7. The indicating mechanism N *o*, constructed substantially as and for the purpose described and specified.

8. The combination, with the disk T upon the main shaft C, of the spring lever S and cam-pin *u*, arranged and operating in the manner substantially as described and specified.

105,973.—HARVESTER.—Isaac H. Palmer, Lodi, Wis.

Claim.—1. The reel B, provided with the spring branch *c*, bent backward as described, in combination with the cross-bar A, constructed and operating as described.

2. The combination of the arm *a* with the shaft *k*, provided with the arms *i l*, shaft *o*, provided with the arm *n*, and handle-lever *r*, and connecting-rod *m*, all constructed and arranged to operate as described.

105,974. — GRAIN-BINDER. — William H. Payne, Janesville, Wis.

Claim.—1. The compressing and receiving or carrying-arms, in combination with the star-wheels and notched disks, substantially as herein shown and described.

2. The combination of the cam-wheels N P and the slide A, gear-wheel *g*, and twister *a*, when connected by rods or bars, so as to operate substantially as specified.

3. The combination of the ratchet-wheel c^3, spring-pawl c^4, and arm c^5, with the wheel *g* and slide A, substantially as and for the purpose specified.

4. The combination of the twister *a* with the wheel *g*, slide A, and forked compressor-arms H, arranged and operating substantially as shown and described.

5. The arrangement of the knife a^1, step a^2, slide A, and twisting-pinion *a*, as shown and described.

6. The combination of the receiving-arms F, compressors H, reels T W, star-wheels K M, notched disks L N, clutch M, wheel *g*, slide A, twister *a*, connecting-bars *p q t u*, cam-wheels N P, pinion Q, arranged and operating substantially as specified.

105,975.—CUT-OFF FOR RELAY AND OTHER ELECTRO-MAGNETIC INSTRUMENT.—Frederic M. Perry, Barton, Vt.

Claim.—The combination of the lever B, platinum point C, clamp E, and clamping-screw F, when arranged for application to the plate A and to the armature D, all substantially as specified.

105,976. — SASH-HOLDER.—W. E. Phelps, Elm Wood, Ill.

Claim.—The window-sash fastener, formed by securing the U-shaped India-rubber block D in recesses formed in the outer edges of the side bars of the sashes, as herein described and shown.

105,977. — LUBRICATING APPARATUS FOR AXLE AND JOURNAL-BOXES.—Jean Baptiste Gabriel Marie Frederic Piret, Paris, France.

Claim.—The lubricating apparatus herein described, consisting, essentially, of the wheel d, provided with buckets that project from its inner face the reservoir H, and the chamber B, substantially as set forth.

105,978.—EYELETS FOR FASTENING BUTTONS.—Samuel M. Porter, New York, N. Y.

Claim.—The combination of a button with an eyelet or rivet, the base, head, or cap of said eyelet or rivet being covered with linen or other textile fabric, substantially as and for the purposes described.

105,979.—URINAL ATTACHMENT TO A BED.—Daniel Price, Lockport, N. Y.

Claim.—The packing-disk *c*, the thimble or slide E, with clasp *p*, or equivalent, the wrapper *b*, and the cover *a*, when arranged and operating in connection with the pipe C and "urinor" B or B', in the manner and for the purpose specified.

105,980.—PASSENGER REGISTER FOR VEHICLES. — John Rhoads, Harrisburg, Pa., assignor to himself and William H. Harrison, same place.

Claim.—1. The centrally-revolving doors A B, slotted at F, vertical and horizontal guards D E, ratchet, pawl, and spindle G H I, and spring bolts K L, all constructed and relatively arranged as set forth.

2. Doors A A B B, swinging on a central pivot, C, and corresponding revolving arms T, combined with pinion S and registers Q R, all constructed and relatively arranged as and for the purpose specified.

105,981. — MACHINE FOR PRESSING AND SHEETING TOBACCO.—George W. Rucker, Oswald C. Swan, and Thomas W. Rucker, St. Louis, Mo.

Claim.—In connection with the press-box A of a tobacco-press, constructed substantially as shown, the herein-described cutting machinery, consisting of the stationary frame E and catch R, the sliding frame P, carrying the shaft N and circular knife S, and the sliding plate F, provided with perforations *o o'*, and the longitudinal and transverse grooves 1, 2, 3, &c., all constructed and arranged for joint operation, substantially as and for the purpose specified.

105,982.—WINDLASS.—Albert Russell, Newburyport, Mass.

Claim.—The two disconnected levers or brakes, combined and arranged, as explained, with the windlass and its ratchets and their pawl-cases, the whole being to operate substantially as specified.

105,983.—BOAT-DETACHING APPARATUS.—William S. Ryerson, George Stancliff, and Oliver T. McIntosh, New York, N. Y., assignors to themselves, Stephen G. Tripp, and Charles Chambers, same place.

Claim.—1. The double sling A, having the points of attachment, 2, for the fall, above the shaft *f*, in combination with the horns *a* and guard-fingers *l*, substantially as and for the purposes specified.

2. The spring bolt *t* and the lever *v*, applied as specified, in combination with the sling A, horns *a*, and guard-fingers *l*, substantially as and for the purposes set forth.

105,984.—ADJUSTABLE RAILWAY TRUCK.—Addison V. Sanford, Union Centre, N. Y.

Claim.—1. The adjustable axle F, in combination with the key plate H and bracket G, substantially as set forth.

2. The combination of the frame E, axle F, key-plate H, bracket G, longitudinal stringer D, and intervening track C C', substantially as set forth.

105,985, antedated July 21, 1870.—TOP-PROP FOR CARRIAGES.—Anson Searls, Newark, N. J.

Claim.—1. The hollow screw-bolt D.

2. The screw *c* and nut E, when constructed and combined substantially as described.

3. The combination of the hollow screw-bolt D, bolt *c*, socket J, and cap C, substantially as and for the purpose set forth.

4. The bolt *a* and nut E, when combined and operated substantially as described.

5. The nut K, when used, in combination with the ornamental capped nut E, to hold the prop-joints in place.

105,986, antedated July 19, 1870.—VALVE FOR STEAM-ENGINES.—William C. Selden, Brooklyn, N. Y., assignor to himself and Adam Carr, Paterson, N. J.

Claim.—1. The secondary valve *n*, fitted to slide between a portion of the main valve and the seat, in combination with the ports arranged as specified, and the pistons *p*, for actuating the valve *m*, as set forth.

2. The tube *e*, passing into the exhaust 2, in combination with the rod *i*, toe *l*, and valves *m n*, substantially as set forth.

3. The secondary pistons 14, and cavities 13, in combination with the pistons *p* and valves *m n*, substantially as set forth.

4. The exhaust ports 16, in combination with the piston *p*, for the purposes set forth.

105,987.—PAPER-FILE.—Francis C. Sesseman, Philadelphia, Pa., assignor to himself and A. E. Steel, same place.

Claim.—The file, consisting of the slotted tube A, wire C, and lug *a*, all arranged as set forth.

105,988.—FENCE-POST.—Charles J. Shuttleworth, Springville, N. Y.

Claim.—The connection of the cast point B to the wooden part A, by slitting the end of the latter to receive the four wings, *b b*, of the former, in combination with the band *c*, shoulders *d*, and web-plate *e*, as hereinbefore set forth.

105,989.—SIFTING-MACHINE.—George Sidey, Brooklyn, N. Y.

Claim.—The arrangement of a reel, formed of heads D, arms E, and rollers F, to revolve within a semi-cylindrical stationary sieve, G, attached to head-pieces H, all constructed and relatively arranged in a vessel, A, as and for the purpose specified.

105,990.—INTERFERING-PAD FOR HORSES. John Smith, Boston, Mass.

Claim.—An interfering-pad, provided with two "starts," *e e*, which fit between the hoof and shoe at or near its rear or heel-calks, when constructed and arranged with respect to the leather strap B, and rubber strip A, provided with projections *a*, substantially in the manner and for the purpose set forth.

105,991.—CAKE-PAN.—John Harry Smith, Brooklyn, N. Y.

Claim.—A polygonal cake-pan, A, formed with nearly vertical sides, and of a single sheet of metal, as specified.

105,992.—CAKE-PAN.—John Harry Smith, Brooklyn, N. Y.

Claim.—As a new article of manufacture, a spirally-corrugated cake-pan, formed of tin-ware, struck up in the manner described.

105,993.—METALLIC CHAIR-SEAT.—Silas Allen Snyder, Clarendon, N. Y.

Claim.—As a new article of manufacture, a chair-seat having parts or figures in *intaglio* impressed therein, substantially as and for the purposes set forth.

105,994.—APPARATUS FOR CARBURETING AIR.—James F. Spence, Brooklyn, N. Y.

Claim.—1. The reservoir *a*, provided with hollow walls *d*, arranged to serve as carbureting-chambers, substantially as described.

2. The process of purifying and drying carbureted air by passing it first over a vessel containing sulphuric acid, and then through a chamber containing iron turnings, substantially as described.

105,995.—DITCHING-MACHINE.—Andrew J. Stephens, Milford, Ill.

Claim.—1. The pivoted cutter L, operated by the lever M, adjustable on the perforated bar N, to act as guide, as shown and described.

2. The blades Z Z, pivoted at their front ends to the fixed standards B, and at their rear ends to the standards A', which are made vertically adjustable with reference to the beam A, by means of the pivoted beams B' and perforated standards C', all as and for the purpose specified.

3. The arrangement, with the beam A, of the center-wheel O, pivoted guide-cutter L, blades Z, and slide T, with their respective standards and adjusting levers, the plow C F, extension I, and bar J, as shown and described.

105,996.—APPARATUS FOR CUTTING GRASS UNDER WATER.—Peter Jerome Stone, Athens, Pa.

Claim.—1. The combination of tiller-lever B, adjustable standard C, and cutting-blades E, substantially as set forth.

2. The cutting-blade D, in combination with blades E E, standard C, and tiller-lever B, substantially as set forth.

3. The wing or guard *d*, in combination with blades D E E and standard C, substantially as set forth.

4. The shoe C', in combination with standard C and blades E E D.

105,997. — PLANING-MACHINE. — William Teal, Rochester, N. Y.

Claim.—The cross-bars G, combined rigidly with the bearings E of the cutter, and resting loosely under the boxes of the feed-rollers, thereby allowing them a free action, as shown and described, and for the purpose specified.

105,998.—MACHINE FOR CUSHIONING AND VENTILATING LEATHER.—Edwin Thomas, Philadelphia, Pa.

Claim.—A machine, having a series of adjustable bars, with groove-cutters, as herein described, for the purpose of cushioning and ventilating leather, for the inner soles of boots and shoes, substantially as herein set forth.

105,999. — SMUT-MILL. — William Carroll Thompson, Williamson county, Tenn.

Claim.—The ribs or projections E E E E E on the inside of the box A, the center C, and beaters or arms D D D D, in combination with the box A, the frame F, and the shaft and pulley G, when arranged, constructed, and operated in the manner and for the purpose set forth.

106,000.—FAUCET.—Henry B. Tiffany, Medina, Ohio.

Claim.—The combination, with the nozzle of the plug B, of the gate C, spindle D, spring G, and gears H, substantially as shown and described.

106,001.—RAILWAY CAR-WHEEL.—Frederick H. Trevithick, Jr., New York, N. Y,

Claim.—A compound wheel, in which the cushion-blocks or packing is relieved of all lateral strain by means of a flange on the tire bearing against the ends of lugs formed on the periphery of the body and between the cushion-spaces or seats, substantially as and for the purposes set forth.

Also, in combination with the tire and body of a compound wheel, a retaining-ring, arranged and operating substantially as described.

106,002.—AUTOMATIC FIRE-EXTINGUISHER FOR RAILROAD CARS, &c.—William P. Van Deursen and William C. Davis, Cincinnati, Ohio.

Claim.—1. Providing a fire-extinguishing apparatus with a discharge-valve, which is opened by the accumulated force generated by a spring, said spring being automatically liberated at the moment of collision or overturn of the car or vessel to which the apparatus is applied, by any suitable mechanism, for the purpose set forth.

2. The provision for forcibly opening the discharge-cock or valve of a fire-extinguisher, by the automatic liberation of a spring, or its equivalent, for the purpose set forth.

3. The specific device for applying the accumulated force of a blow to insure the opening of the valve, to wit: The screw-threaded valve-stem, adapted to receive the blow or impact of a pin or projection from a spring fly-wheel, automatically liberated, as and for the purposes set forth.

4. The arrangement, within the boxed wheel, of a clock-spring, attached at one end to the sleeve of the screw-threaded valve-stem, and, at its other end to said box-wheel, near the periphery thereof for the purpose set forth, as herein described.

5. The provision, within the holder or gas-chamber of a fire-extinguisher, of a flexible tube, guarded against collapse or kinking by a coiled spring or rings within it, and furnished, at its extremity, with a loaded tripod or ball, so that its said extremity or receiving end may always be in communication with the (for the time being) lowest part of the holder, and thus discharge the liquid, and the gas absorbed by it, first, as herein described.

6. In this connection, the provision of the two washers, one on each side of the valve, for the prevention of leakage, both in the open and in the closed condition of the valve, as herein explained.

7. The feed-orifice Z, having the screw-threaded plug, which serves as the shank of the weighted lever K, as set forth.

8. The discharge-pipe I, when used as a guide for both spring J and lever K, as set forth.

9. The ball or lead M *m*, when of the form of a flattened sphere or button, as and for the objects stated.

106,003. — SULKY-PLOW. — James L. Van Gorder, Sidney, Ohio.

Claim.—1. The combination of lever K, loop *d*, hook *e*, catch A, and sliding bar G, substantially as and for the purpose described.

2. The axle A, wheels B B, frame C, sliding bars G G, plow-beams H H, loops *d*, cranks *f f*, levers K K, and hooks A A, all constructed and arranged to operate substantially as and for the purposes herein set forth.

106,004. — COMBINED HARROW, CULTIVATOR, WHEELBARROW, AND SLED.—Jacob R. Wagner, Manada Hill, Pa.

Claim.—1. The arrangement in a harrow of handles B B, the cultivator-teeth *c c*, and the swinging, elevating, or clearing-bar B', substantially in the manner and for the purpose described.

2. The gravitating swinging bar B', applied to a combined harrow and cultivator, in the manner and for the purpose described.

3. The arrangement of the sliding bar C, cultivator-teeth *c*, hooks A, and forked props or arms *f* upon the harrow, in the manner and for the purpose substantially as described.

4. The arrangement of the harrow, having handles B, the wheelbarrow-wheel D, and the sleigh-runners G G, the several parts being constructed and arranged and operated substantially in the manner described.

106,005. — CARRIAGE-SPRING. — Robert E. Walker, Dresden, Mo.

Claim. — The carriage-spring, formed of one piece, arranged in three layers, *a b* and *c*, substantially as shown and described.

106,006.—SAW-TABLE FOR SAWING IRREGULAR FORMS.—Gardner A. Watkins, Cavendish, Vt., assignor to himself and Calvin S. Greenwood, Gardner, Mass.

Claim.—The bed B, provided with the pin *e* and groove *d*, in combination with the movable table C, provided with the pin *f* and groove *b*, substantially as described and for the purpose set forth.

106,007.—FAUCET OR TAP.—Abel L. Webster, New York, N. Y.

Claim.—1. The bung *c*, spring *d*, cap *e*, and spring *f*, when arranged and combined as set forth, and provided with the flange *b* and air-hole *a*, substantially as described.

2. In combination with the above, the faucet *j*, provided with the extension *k*, substantially as shown and described.

3. The combination of the caps *g* and *h*, when arranged to operate as set forth.

4. The faucet *j* and extension *k*, in combination with the bung *c*, flange *b*, air-hole *a*, spring *d*, cap *e*, and valve *f*, when all are combined to operate substantially as specified.

106,008.—DEVICE FOR DRAWING LIQUIDS BY COMPRESSED AIR.—Abel L. Webster, New York, N. Y.

Claim.—The fluid-passage F and air-passage G arranged concentric to each other, in combination with the supply-pipe C and cap L for closing the air-vent E, substantially as set forth.

106,009.—HAIR-PIN.—William Wickersham, Boston, Mass.

Claim.—A hair-pin with one or both of its legs formed or made of wire, having an alternate or successive larger and smaller diameters, substantially as described, and for the purpose set forth.

106,010.—MEANS OF ATTACHING THE SOLE TO BOOTS AND SHOES.—William Wickersham, Boston, Mass.

Claim.—1. As a new article of manufacture, a wire for attaching the soles of shoes and boots to their vamps, having a succession of larger and smaller diameters with the larger portions rounded, substantially as shown at *a*, *a''*, *a'''*, fig. 5, and having cross-sections in either form, as shown at 3, 4, 5, 6, fig. 3, as and for the purpose set forth.

2. As a new article of manufacture, a wire having longitudinally a succession of larger and smaller diameters, with the larger portions rounded, of any suitable form in its cross-section, and having a head, *a*, on one end, as and for the purpose set forth.

106,011. — WIRE-DRIVING MACHINE FOR MANUFACTURING BOOTS AND SHOES.—William Wickersham, Boston, Mass.

Claim.—1. The combination of the feeding-tube *j* with the variable surface G, for the purpose of determining the length of each piece of wire to be cut, adapting its length to the thickness of the sole at the place where it is to be driven in, substantially in the manner and for the purpose set forth.

2. A last, D, in combination with the gauge D', formed as described, and for the purpose set forth.

3. The lever E and the variable surface G, when connected by suitable devices, for the purpose and substantially in the manner set forth.

4. The combination of the lever *f*, the clamp *e*, and the wire-tube *j*, in the manner and for the purpose set forth.

5. The combination of the cam I', the link or connection *k*, and the lever *f*, operating as described.

6. In wire-driving machine, the construction of the connection-rod *e* with one open bearing, as described, and for the purpose specified.

7. The combination of the crank-pin *a*, the connection-rod *e*, and the spring or springs K K, for the purpose set forth.

8. A cutter-bar, *t*, with a cutting-edge formed around the wire, in the manner described, so that, with proper movements, it can be made to cut off a piece of wire and, at the same time, bevel or point the lower end of the remaining wire on both sides, as described, and for the purpose set forth.

9. The combination of the slot *u*, the lever *w*, and the cutter-bar *t*, operating substantially as described, for the purpose of cutting and pointing the wires to be driven into shoe or boot-soles, and carrying the wire from which a piece has been cut out of the way of the driver as it descends, substantially as and for the purpose set forth.

10. The spring R, with the two plates Q and Q', for giving friction to the wire *g*, when used in connection with wire-driving machines, for the purpose specified.

11. Combined with the wire-feeding apparatus, as herein described, the wire-cutting device, as specified, for the purpose set forth.

12. The elongated form of the cutting-edge in the cutting-bar *t*, having the diameters of the elongated ends smaller than that of the wire, for the purpose set forth.

106,012.—MANUFACTURE OF BOOTS AND SHOES.—William Wickersham, Boston, Mass.

Claim.—1. A sole of a turn-shoe or boot, as a new article of manufacture, in which is a split from the edge toward the middle, and then the two parts thus split separated by turning the upper portion upward and the lower portion downward sufficiently to render it suitable for the reception of the upper in the split thus made and opened, as described and shown, substantially as and for the purpose set forth.

2. A shoe or boot, as a new article of manufacture, in which the upper is attached to the sole by a seam or chain of stitches passing through the vamp or upper and through a portion of the sole, which has been previously separated from the other portion by a split, passing from the outer edge of the sole toward its middle, into which split the upper is doubled, substantially as specified, and for the purpose set forth.

106,013. — BOOT AND SHOE. — William Wickersham, Boston, Mass.

Claim.—1. A process of attaching the sole to the upper of boots and shoes, by first cutting an opening in the edge of the sole; second, by separating the two parts thus cut, and applying the upper to the opening; third, by attaching the upper to the sole in said opening, by inserting wires, substantially as shown and described, and for the purpose set forth.

2. A turn-shoe or boot in which the space for the part of the upper material *b*, which is attached to the sole, is cut into the outer edge of the sole with its inner part enlarged, into which enlarged part is placed the doubled or folded edge of the upper material, substantially as shown in figs. 1 and 5, as and for the purpose set forth.

3. A turn-shoe or boot in which there is a shallow groove or channel cut out of the upper surface of the sole around its edge, for the reception of the edge of the upper material *b* to be attached to the said sole, substantially as shown in figs. 11, 12, and 13, with a metallic fastening agent, *c'* or *c''*, in the manner and for the purpose set forth.

4. A binding for shoes, boots, &c., which consists in splitting the edge of the leather to a convenient distance, trimming off the inside half, and folding the remainder into the split, then folding the outer half entirely over the inner half, and attaching its edge to the inside of the leather by sewing, substantially as shown and described, and for the purpose set forth.

5. A binding for shoes, boots, &c., which consists of a split being made in the edge of the leather, and the inside part cut off, and then folding the outside part over onto the inside of the leather, and attaching it thereto either by sewing or cement, substantially as shown, and as described, and for the purpose set forth.

106,014.—STAVE-JOINTING MACHINE.—William Widdowson, Rochester, N. Y.

Claim.—1. The bed-piece D, being adjustable at one end by means of the slot *v* and set-screw *u*, in combination with the cutter-frame C, substantially as described.

2. The combination of the gauge-bearings *s s*, arm *e*, and adjustable rock-shaft I, with the cutter-frame C, bearing E, and bed D, substantially as herein set forth.

106,015. — SPIKE-DRAWER. — Benjamin B. Wood, Negaunee, Mich.

Claim.—The spike-drawer, formed at its one end, *b*, and slotted, as at *c*, to constitute a claw, having sides, *d d*, of diminishing depth, from a cavity, *e*, in the outer end of the claw, and with a chisel-point, *a*, at its opposite end, substantially as shown and described, for the purposes set forth.

106,016.—LAP-BOARD FOR DRESS-MAKERS. Royal L. Woodbury, Lexington, Mass.

Claim.—The combination of the measuring-rule, pin-cushions and emery cushions with the lap-board, constructed in the manner shown, viz., by letting strengthening strips into grooves at the ends, all substantially as and for the purposes hereinbefore set forth.

106,017. — STOCKING. — Ferdinand Woodward, Sacramento, Cal.

Claim.—A stocking, in which the stitches are shortened for the ankle, and lengthened for the heel and instep, and in which one or more threads are added to the yarn at the parts where the stitches are lengthened, to maintain the thickness of the stocking, all as described.

106,018. — ACCORDEON. — Carl Friedrich Zimmermann, Philadelphia, Pa.

Claim.—An accordeon having the supplemental keys A B C D, each having two different notes, one in drawing and one in pressing, substantially as and for the purpose shown and described.

106,019. — PRESERVING AND DELIVERING BEER, ALE, &c., ON DRAUGHT, BY MEANS OF CARBONIC-ACID GAS.—Theodore Ahrens, Louisville, Ky.

Claim.—1. The method herein described of forcing beer or other liquids up to any desired height by means of carbonic-acid gas, as set forth.

2. The arrangement of the cylinders A B C, pipes E G H J K, clamps *a* and gauge D, and valve *b*, for the purpose of forcing beer or other liquids up to any desired height by means of carbonic-acid gas, substantially as specified.

109,020. — BEER-FAUCET. — Theodore Ahrens, Louisville, Ky.

Claim.—The combination of the cylinder B, tube D, nut E, valve-stem G, and pin *a*, all constructed and arranged to operate substantially as and for the purposes herein set forth.

106,021.—BROOM, &c. — James H. Anderson, Terre Haute, Ind.

Claim.—The wire braces *a a*, constructed and used on brooms, brush-brooms, &c., substantially in the manner and for the purposes herein set forth.

106,022. — COTTON-PICKER.—William Apperly, Louisville, Ky.

Claim.—1. The arrangement of frame or carriage A, stationary while in use, and adapted to straddle the row of plants, said frame being provided with a congeries or fixed teasels, H, to operate in conjunction with other congeries of ascending and descending teasels L, for the purpose set forth.

2. The picker-frame J K, provided with the pendent congeries of teasels L, and with a box, Q R, and with elevating cords or pulleys, P, or their equivalent.

3. The mode of securing the picker-teasels by elastic and pointed cage M, as represented.

4. The receptacles or pockets S, of canvas or other suitable material, for the purpose designated.

5. The arrangement of the cotton-picker frame A, wheels B, swivels C, and arms D.

106,023. — BUNG.—Joseph F. Applegate, New Albany, Ind.

Claim.—1. The screw ring A, provided with an elongated or elliptic opening, and with inclined projections, *a a*, substantially as and for the purposes herein set forth.

2. The bung B, constructed as described, with the cap C and packing *i* at its upper end, the lower end being elliptic, and provided with the inclined planes *b b*, substantially as and for the purposes herein set forth.

3. The combination of the ring A, having inclined projections *a a*, bung B, having inclined planes *b b*, and packing *i*, all constructed and arranged substantially as and for the purposes herein set forth.

106,024.—FABRIC FOR HEAD-COVERING.—Eugene Arnheim, New York, N. Y.

Claim.—A fabric produced by coating cloth or other fabric with varnish and a compound of flock and flour, when water-proofed in the manner as herein described.

106,025.—KNITTING-MACHINE.—Varnum G. Arnold, Providence, R. I.

Claim.—1. The bars D, constructed substantially as described, and provided with suitable means of attachment to the body of the machine, in combination with adjustable cam-stops E, substantially as shown and described.

2. The combination, with the needle-bed of the machine, of slotted chamber H, provided with fibrous absorbent charged with lubricating matter arranged to bear against the needles, substantially as shown and described.

3. The reservoir L, spring plate K, conducting-wick N, suitable fibrous absorbent and slotted chamber H, arranged to operate substantially as shown and described.

106,026.—MACHINE FOR MANUFACTURING NEEDLES.—Joseph B. Blanchard, Boston, Mass.

Claim.—1. The combination of the cutting-wheels or disks Y Z, constructed substantially as described, mechanism to impart rotary motion to said cutting-wheels or disks, the carrying-wheel M and mechanism for revolving the same, and one or more needle-holders located on the periphery of said wheel M, and arranged thereon, so that the axis of the needle held by them shall lie in a plane perpendicular to the plane of the several cutters, substantially as set forth.

2. In combination with the subject-matter of the first clause, the cutter A^2, substantially as described.

3. The needle-holder P, constructed substantially as described.

4. The combination of the carrying-wheel M, needle-holder P, arm B^4, spring C^4, and cam A^4, substantially as described.

5. The combination, with the subject-matter of the first clause of claim, mechanism to impart oscillatory motion to the needle-holder, substantially as described.

6. The combination of the stop *f*, with the subject-matter of the fourth clause, substantially as described.

106,027. — COOKING-RANGE.—Daniel Bosworth, New York, N. Y., assignor to Jordan L. Mott, same place.

Claim.—1. The arrangement of the drop-flue G between the elevated ovens F F, in combination with the flues E D and smoke-pipe or outlet C, substantially as specified.

2. The air-casing I and air-pipe H, provided with a damper, J, in combination with the smoke-pipe C, and arranged over the elevated oven or ovens F, essentially as shown and described.

106,028.—SPRING BED-BOTTOM.—Silas M. Brooks, Memphis, Tenn., assignor to himself and Charles G. Thompson, same place.

Claim.—The combination of the springs C C, when arranged only in two rows, with bars A A and D D, and with slats or bars E E, when said bars E are attached to a pair of springs, one at the top and the other at the bottom of the frame, constructed substantially as described, and operating as and for the purposes set forth.

106,029. — WASHING-MACHINE. — Daniel Broy, Quincy, Ill.

Claim.—The washing-machine herein described, having box A, wheel E, frame C, block H with its slot *s*, springs K, and blocks *u* and *y*, when constructed and arranged substantially as specified.

106,030. — BOOT AND SHOE. — Andrew Burke, New York, N. Y.

Claim.—1. The projecting piece or portion B of the last, as and for the purpose herein set forth.

2. The concavity or hollow B″ in the boot or shoe, as and for the purpose herein set forth.

106,031.—CABLE-STOPPER.—Ethan R. Cheney, Boston, Mass., and John J. Emery, Owl's Head, Me.

Claim.—The index and pointer L M, in combination with the traversing stopper or holder D F, and springs H, and also the arrangement of these parts, substantially as described.

106,032. — SEWING-MACHINE. — John V. Coon, Elyria, Ohio.

Claim.—1. In a shuttle for sewing-machines, a tension device, substantially such as described, hinged therein and operating as and for the purpose set forth.

2. The hinged arm *m* of the tension device of the shuttle, provided with a lateral hook, 2, for the purpose of guiding the thread in the proper direction therefrom to the opening 4 in the shuttle, as herein shown and described.

3. The combination of the shuttle-case *a*, having an opening, *s*, in its back, the hinged tension device, with its spring *q*, made with a lateral lip or hook, 2, and the bobbin *n*, constructed and arranged as herein shown and described.

4. The slotted arm Y, loosely connected with the vibrating and reciprocating needle-bar I, in combination with the pivoted take-up arm W and the tension spring *z*, for the purpose of taking up the slack of the needle-thread to tighten the stitch, as herein shown and described.

5. The tension device, consisting of a vertical stem, *r*, having a deflecting pin, 10, the frame *w* having a conical socket to receive the conical foot of the stem, and having slots 11 and 12 for the spool-thread, all constructed, arranged, and operating as herein described.

6. The driving-shaft D, with its cams N O, and disk G, the barrel-joint U, and shuttle-carrying arm J, the needle-bar I, and its pivoted guiding-plate R, the tension and the take-up devices W Y, the several parts being constructed, arranged, and operating as herein shown and described.

106,033.—HANDLE FOR CHILDREN'S CARRIAGES AND PERAMBULATORS.—William E. Crandall, New York, N. Y.

Claim.—1. The combination, with the ordinary bar or handle of a child's carriage or perambulator, of one or more secondary handles, substantially as described.

2. The secondary handles D, provided with the ferrules D′, in combination with the ordinary bar or handle of a child's carriage or perambulator, substantially as described, for the purpose set forth.

3. The secondary adjustable handles E, in combination with the metallic ferrules D″, and the ordinary handle of a child's carriage, substantially as described.

4. The slots *a a*, formed in the ring portion of the secondary handles, with the slotted ferrules D″, in combination with a catch-pawl and a spring, or their equivalents, substantially as described, for the purpose set forth.

5. The single secondary handle, so constructed as to be placed at or near the center of the ordinary bar or handle of a child's carriage or perambulator, substantially as described, for the purpose set forth.

6. The single secondary handle H, formed or provided with a slotted ring, H′, in combination with a set-screw, or its equivalent, and the ordinary bar or handle of a child's carriage or perambulator.

106,034. — CORN-PLANTER.—Jonathan W. Crume, Troy, Mo.

Claim.—1. The combination of the pins A and cleats B B, substantially as and for the purpose hereinbefore set forth.

2. The combination of the wheel C, crank D, and bar E, substantially as and for the purpose hereinbefore set forth.

106,035. — FENCE-POST. — Samuel A. Darrach, Newburg, N. Y.

Claim.—1. The shoulders *f g*, chamber *a*, recess *d*, and foot *j*, formed, in relation to the post A, as described, in combination with the base-board *e*, top-rails *b*, bottom rails *h*, and pickets *c*, substantially as set forth.

2. The shoulders *f g*, supporting the bottom rails, one of said shoulders being situated above the top of the base-boards, substantially as described.

106,036.—CORK-SCREW.—Walter Dickson, Albany, N. Y.

Claim.—The ratchets *a a′* and *b b′*, in combination with the stock D and screw A, arranged for operation, substantially as shown and described.

106,037.—TRACE-HOLDER FOR HARNESS.—Richard M. Dill, Morgantown, Ind.

Claim.—A buckle for the back or saddle-band, consisting of a single plate bent and formed as described, and adapted also as a loop, D, for the tug or trace, and a loop, L, for the belly-band, as herein shown and described.

106,038. — LOOM-TEMPLE.—Warren Whitney Dutcher, Hopedale, Mass.

Claim.—The temple, as provided with the trough and toothed roller, and the cover to the roller, as described, and with the projection *a* of the cover-hinge, arranged against the outer side of the supporting-bar F, and with the toothed roller-spindle, supported by the cover, and the latter hinged to the said bar, as explained.

Also, the temple as having the roller-spindle supported by the cover, and the latter hinged to the trough or its support-bar, as described, and provided with the bolt and recess, arranged in connection with the cover and trough, and with respect to the hinge of the two, in manner as specified.

Also, the bolt, substantially as described, arranged with the cover and trough, so as to answer the double purpose of a bolt to and a lifter of the cover.

Also, the arrangement, as described, of the screws and heads of the spindles of the twin temples, as respects the inner and outer ends of their covers, the head of one spindle under such arrangement being at the outer end of its cover, and the head of the other spindle being at the inner end of its cover, and the screws of the two spindles being arranged in the other ends of their covers, the whole being as described and represented.

106,039.—WHEEL CULTIVATOR.—Jefferson Eshleman, Canaan Centre, Ohio, assignor to himself and Levi E. Miller, same place.

Claim.—The spring-metal link F, constructed of

a bow-shape, and used in combination with the pivoted tooth-arm H and bent lever N *k*, on the cultivator-axle A, said link serving as a means both of raising the tooth J from the ground and of holding it down to its work under a spring pressure, substantially as herein set forth.

106,040.—PORTABLE COOKING-STOVE.—Edward Evans, Philadelphia, Pa.

Claim.—1. The within-described stove, consisting principally of an oven, A, and of an extension or end piece, B, containing a fire-place, and connected to the said oven by a flanged or other joint, *d*, in such a manner that it can be readily detached therefrom.

2. The oven A, adapted for the reception of the extension or end piece B, and other detachable portions of the stove, as described.

106,041.—PIPE-COUPLING.—Louis Alexandre Farjon, Brussels, Belgium.

Claim.—The pipe-coupling herein described, formed by a ribbed leaden ring or muff *b* b^1, embracing the adjacent ends of two pipes, A *a*, around which such ring is tightly clamped by a spring band, *c*, and clamping-hoop or hoops D, substantially in the manner set forth.

106,042.—SEED-MARKER.—Stephen D. Fisher, Normal, Ill.

Claim.—The combination of the wheels A A, axle B, beam D, axles E E, wheels G G, levers H H, segments I I, tongue J, and chains K K, all constructed and arranged to operate substantially as and for the purposes herein set forth.

106,043.—SNAP-HOOK.—Joseph A. Fletcher, Eyota, Minn.

Claim.—A snap-hook, constructed substantially as described, when provided with the shoulders *d* or outward bend in the side bars thereof, as shown, for the purpose of holding it more securely between the thumb and finger when compressing the bars, as set forth.

106,044. — BRIDLE-BIT.—Masculine Forearc, New Harrisburg, Ohio.

Claim.—The rings B, constructed with the curved shears C, and sliding levers D, having sheaves *e*, arranged and operating substantially as set forth.

106,045.—ROLLER-SKATE.—James A. Fremon and James H. Carkeet, Montgomery, Ala.

Claim.—1. The hanger E, provided with slot *e* and cross-bar *d*, in combination with center-bar H, pivot *f*, and cushion L, all constructed and arranged to operate substantially as and for the purpose set forth.

2. The wheel-carriage H I, having pivots *f g*, in combination with the slotted hanger E, socket K, and rubber cushion L, all arranged as shown, for the purpose set forth.

106,046.—HARROW.—August Friedemann, Waverly, Iowa.

Claim.—The means employed for connecting together and rendering relatively adjustably the rear ends of the sections A and B, consisting of the arched and straight straps F and I, pivoted to or upon the studs G, substantially as shown and described.

Also, in combination with the sections A and B, the straps F and I, and the studs G, the check-chains H, substantially as shown, and for the purpose specified.

Also, the means employed for connecting the draft-bar L to the harrow, consisting of the chains M and O, attached to said draft-bar, the plates N, and the hook P, substantially as shown and for the purpose specified.

106,047.—MACHINE FOR SEPARATING MINERAL AND FOSSIL SUBSTANCES.—Robert George, Denver City, Colorado Territory.

Claim.—1. The process of separating minerals and valuable fossil substances from extraneous substance by centrifugal apparatus, operating with a jet of air or water.

2. The centrifugal separator, constructed and operating as described.

3. The disk E, with sieves, plates, wings, blades, and flanges, in manner as constructed and described, together with its mode of operation and manner of fastening.

4. The tube-wheels F and F^1, their peculiar construction, together with their attachments and appendages.

5. The process by which the disk E is raised and lowered, so as to be either on a plane or an incline, together with the screw k^4, with its manner of construction and attaching.

6. For the manner of attaching the friction-wheels N and P, so as to regulate the velocity or speed of the apparatus.

7. The process of forcing air or water through materials, and thereby separating them, in the centrifugal separator A.

8. For the manner of constructing rim L^2, whereby joint of the pipe V and the pipe L are rendered air-tight by the mercurial or water-packing.

106,048.—MACHINE FOR SEPARATING AND CONCENTRATING ORES AND OTHER MATERIALS OF DIFFERENT SPECIFIC GRAVITIES.—Robert George, Denver City, Colorado Territory.

Claim.—1. A machine for separating, concentrating, and saving the precious metals, and other valuable and useful minerals or fossil substances, as the same exist and are found, either in a crude state or artificially produced by chemical combinations or technical admixtures, arranged, constructed, and operated in the manner and for the purposes hereinbefore described and set forth.

2. The sieves c^1 c^2 c^3, together with their arrangements and connections to form the adjustable interstices.

3. The troughs m^1 m^2 m^3, with their movable and detached bottoms *o*.

4. The damper *r*, as arranged and described.

5. The lifting-wheels d^1 d^2, for causing the oscillation, and the cam-wheels e^1 e^2, to promote the discharge of the materials, together with their attachments and manner of operating.

6. The fluted roller B and the hopper A, together with their fastenings and manner of construction and application.

7. The cushions, being either India rubber or metallic spring, marked c^1 c^2 c^3, and the boxes, whereby they are secured and kept in position.

8. The slotted pipe C, with the leather, rubber, or metallic connections, which are sufficiently pliable to admit of the free and the unimpeded motion of the separating-chamber I, and its manner of attachment, as described and set forth.

9. The springs f^1 f^2, together with their appliances, mode of regulating, and manner of operation.

10. The swivels f^3 f^4, together with their application, as described and set forth.

106,049.—APPARATUS FOR SEPARATING AND CONCENTRATING ORES.—Robert George, Denver City, Colorado Territory.

Claim.—1. The process of assorting minerals or fossil substances of different specific gravity, according to their nature or quality, by means of a pressure brought to bear on them by forcing a current of air through a pipe, tube, or series of chambers, into which the particles to be assorted are dropped.

2. The process of separating mineral or fossil substances, and assorting them according to their weight, and then size them, or to size them first, and then assort them according to weight, substantially in the manner described.

3. A combined sifter and assorter, constructed and operated in the manner hereinbefore set forth.

4. The cylindrical sieve C, consisting of a series of four or more cylindrical sieves, the one encompassing the other, and graded, so that the coarsest and longest sieve will be the center or inside one, and the shortest and finest the outside one, together with the manner of constructing inlet-plate d^1 and exit-plate d^2 and their appendages; also the rectangular bars f^1, f^2, &c., with their manner of fastening; also, the mode of fastening and securing sieves c^1 c^2 c^3 c^4 to inlet-plate d^1, to exit-plate d^2, and to the rectangular bars f^1, f^2, &c.

5. The manner of putting the cylindrical sieve C together and fastening it to shaft *a*.

6. The construction of the box A, with its trough divided into the compartments j^1 j^2 j^3 j^4 j^5, together with their movable and detached bottoms *u*, constructed and operating in manner described and set forth, together with the hopper B, its method of operation and manner of attachment and construction, and also the mode of attaching journal-box k^2, so as to allow it to slide, thereby regulating the cylindrical sieve C, and placing it either on a plane or incline, and also the slot *k*.

7. The process of introducing a current of air, water, or any other fluid into the box A, and forcing the same through the sieves c^1, &c., thereby separating and carrying off the dust from the sifted materials, and forcing the same through the slot k^1 into the dust-separator D.

8. The construction of the dust-separator D, as explained and set forth, consisting of a series of four or more chambers of increasing dimensions, and fastened together by inserting the end of one into the other, and fastening them laterally together by strips placed to form an equilateral triangle, and opening into the buckets q^1 q^2 q^3 q^4, also, for the manner of constructing and operating the said buckets q^1, &c.

9. The manner of constructing the cap covering the largest chamber, so as to form the aperture p^1 p^2, the hopper H, and providing the same with the damper *r*, regulated by the screws U^1 U^2, and for the corrugated roller B, its manner of attachment and mode of operation.

10. The process of operating the separator D, that is, charging the ore in regulated quantity from above to meet a current of air from below.

106,050.—CARRIAGE-JACK.—Abner R. Giles, Adams, N. Y.

Claim.—In the lifting-jack herein described, formed of the bars A and B, the half-rule joint, constructed of tongue D on the bar A, and corresponding lips or bar B, united by pin *c*, and so arranged that the shoulders *x* and *y* shall operate together, substantially as specified.

106,051. — STAND AND WAITER.—George Gill, Taunton, Mass.

Claim.—1. The strengthening-wire *b*, provided with the lug *c* and combined with the standard B, substantially as and for the purpose described.

2. The hollow trunnion *l*, combined with the standard B, arm D, and screw *m*, substantially as and for the purpose specified.

3. The frame C, provided with the flange *f*, in combination with the spring *i*, plate *k*, and pin *e*, substantially as and for the purpose set forth.

4. The waiter A, combined with either or both of the wings *e* and standard B, substantially as and for the purpose explained.

106,052.—CAR-BRAKE.—Henry A. Goodman, Omaha, Nebraska, assignor to himself and Ernest Von Jeinsen, same place.

Claim.—The springs D D, when attached on the outside of the car-wheels, to the journal-box, substantially as and for the purposes herein set forth.

106,053.—LUBRICATING COMPOUND.—Henry Grogan, Flatbush, N. Y.

Claim.—A lubricating compound, made as herein described.

106,054.—LIME-KILN.—Pierre Jacques Gerbault-Guichard, St. Berthevin-le-Laval, France.

Claim.—The combination of the heating-chamber D, vault E, and door F with the laboratory C and doors H, when constructed and arranged substantially as shown and described, for the purposes set forth.

106,055.—COMBINED SEEDER AND CULTIVATOR.—Henry Haines, Cedarville, Ill.

Claim.—1. The combination of the removable rollers 3′, hoppers 11, marking-shovels 15, and covering-shovels B, arranged to operate as and for the purpose specified.

2. The combination of the bar T, attached to front of frame I I, provided with arms S T′, and marking-shovels F, having beams J pivoted to said arms at J′, when operated with levers E to raise the shovels out of the ground, as specified.

3. The combination of the straps 3, cross-bar A, shovel-beams 9, and standards 20, constructed and arranged to operate as and for the purpose specified.

106,056.—ELEVATED RAILWAY.—James M. Hannahs, Chicago, Ill.

Claim.—1. An elevated railway, mounted on a single or a double row of columns, and consisting of the trussed girders B B, with the rail *c* attached, when constructed and arranged substantially as herein described.

2. In combination, the girders B B, connecting-plates H H, and the truss-rods K K, when constructed and arranged substantially as herein described, and for the purpose set forth.

106,057.—CAR-COUPLING.—John B. Hards and William Hodnett, Chicago, Ill.

Claim.—The draw-head A, provided with the stops *b* and *b′*, and having the sliding head B and segment D connected by a rod, C, arranged therein as herein described.

106,058.—POTATO-DIGGER.—Uriah R. Harlow, Farmersville, Cal.

Claim.—The inclined guard-bar H, for preventing clogging, substantially as herein specified.

106,059.—PORTABLE STOVE.—Mortimer S. Harsha and William M. Van Nortwick, Batavia, Ill.

Claim.—1. A summer stove, when constructed with the fire-pot A constructed in the center, and the escapes F at each end, substantially as described, for the purposes set forth.

2. The combination of the damper H with the above described summer stove, when constructed and operating as shown and described.

106,060. — STEAM FORMER FOR SHAPING AND FINISHING CORSETS.—Charles Heptonstall, Providence, R. I., assignor to himself and Pardon M. Stone, same place.

Claim.—The corset-former herein described, consisting of the two sliding chambers A A′, sliding jointed steam-pipes D D′, actuating-screws B B′, and clamps G G′, the whole arranged as shown.

106,061—ROTARY PUMP.—Robert A. Horning, Lenark, Ill.

Claim.—1. The described cam, revolving in suitable chamber, having valves and recesses, one opening to the water outside, and the other communicating with the hollow shaft, all as set forth.

2. In combination with the cam thus constructed and operating, the sliding valves and spiral spring, all arranged and operating as set forth.

3. In like combination, the disk or strainer, arranged as set forth.

M and O, attached to said draft-bar, the plates N, and the hook P, substantially as shown and for the purpose specified.

2. The process of separating mineral or fossil substances, and assorting them according to their weight, and then size them, or to size them first,

Ty Grogan, Flatbush, N. Y.

Claim.—A lubricating compound, made as herein described.

3. In like combination, the disk or strainer, arranged as set forth.

106,062.—Tile-Machine.—John B. Hughes, Terre Haute, Ind.

Claim.—1. The arrangement of the table B, box C, foot-lever D, and rods *a a*, substantially as and for the purposes herein set forth.

2. The arrangement of the rods *b b*, plunger E, beam G, rods *d d*, and lever H, substantially as and for the purposes herein set forth.

3. In combination with the box C, plunger E, and the dies K L, the cutters J J, substantially as and for the purposes herein set forth.

106,063.—Rolling-Mill.—David I. Jones, Newburg, Ohio.

Claim.—1. The combination of the reversible adjustable roller F and adjusting device, consisting of the screws H, arms I, links J L, and lever K, all arranged to operate simultaneously, and in combination with the reversing-lever F' for operating the clutch, for reversing the rollers, in the manner substantially as and for the purpose set forth.

2. The guides E Q and S T, arranged in relation to the rollers E F, in the manner as described, and for the purpose specified.

106,064.—Clod-Fender for Plows.—William B. Kidder, Pike township, Ind.

Claim.—A clod-fender, combining in its construction an adjustable bar, B, arm C C' thereon, and a screen, A, pivoted to such bar, substantially as set forth.

106,065.—Mode of Attaching Looking-Glass Frame to Bureaus.—Cheney Kilburn, Philadelphia, Pa., assignor to Kilburn & Gates, same place.

Claim.—The within-described combination and arrangement of thumb-screws *s s*, their washers, and the top A of a bureau and frame of a looking-glass.

106,066.—Cup and Bell.—Thomas Leach, Taunton, Mass., assignor to Henry G. Reed, Geo. Brabrook, and Henry H. Fish, same place.

Claim.—The combination of a call-bell and cup, as specified.

106,067.—Combined Chair and Step-Ladder.—August Liesche, Syracuse, N. Y.

Claim.—The parts D *d*, hinged together by means of the links *e*, and provided with the projection *f* and recess therefor, when constructed and arranged as herein described.

106,068. — Manufacture of Imitation Braids, Trimmings, &c.—Henry Loewenberg, New York, N. Y.

Claim.—Flexible or elastic casts, forming *fac similes* of straw braids, trimming, leather embroideries, and other articles of a similar nature, formed of the compound, and by the means, substantially as herein specified.

106,069.—Spring for Beds, Sofas, &c.—William Lord, San Francisco, Cal.

Claim.—In a spring of the described construction, the extended standard G attached to the base, and rubber buffer attached to the cap C, when constructed and arranged as described, for the purpose set forth.

106,070.—Gas Heater.—John Lundgren, New York, N. Y.

Claim.—1. In combination with the hot-air cylinder K of a gas-stove, one or more corrugated radiators, M, consisting each of the corrugated tubes C E H, and the heater-pot D, having corrugated wall, when constructed and arranged to operate as and for the purposes specified.

2. In the radiator M of a gas-stove, the arrangement of the generating-chamber *c'*, heating-pot D, flues *e f* H, and openings *s d f*, as shown and described.

3. The gas-cup *h*, in combination with the corrugated burner-plate h, as specified.

106,071.—Machine for Grinding Hand-saw Blades.—David M. Mefford, Norwalk, Ohio.

Claim.—1. The means hereinbefore described, for pressing saw-blades to a grinding-surface in such a position that the parts of the blades from which the greatest amount of steel is to be removed will traverse the whole grinding-surface, in combination with the revolving table K, substantially as described.

2. The combination of the grindstone H, revolving table K, and saw-plates I, having the adjustable dogs N, when said plates are arranged to be set at or placed upon a proper angle to give the necessary bevel to the blade, substantially as described.

106,072.—Pump.—Charles L. Merrill, Watertown, N. Y.

Claim.—1. The combination of plunger A, cylinder C, plunger D, with cylinder E, when constructed to operate substantially as described, and for the purposes hereinbefore set forth.

2. The arrangement of the levers X X upon the air-chamber L, having a double dome, so constructed as to form a broad seat for the levers, substantially as described, and for the purposes hereinbefore set forth.

106,073. — Manufacture of Blades of Pocket-Cutlery. — William H. Miller and George W. Miller, Meriden, Conn.

Claim.—The process herein described of forging the blades of pocket-cutlery, that is to say, by first subjecting the metal to pressure in the "break-down" die O, and then finishing the forging of the same by submitting it to pressure in the finishing die L, substantially as herein set forth.

106,074.—Bed-Bottom.—Lane L. Newman, East Saginaw, Mich.

Claim.—The combination and arrangement of the bottom slats B B, springs C C, cords F F, top slats A A, eye-screws E E, and cords D D, all substantially as and for the purposes herein set forth.

106,075.—Baling-Press.—George W. Nutter, Santa Cruz, Cal., assignor to himself and Charles Keeton.

Claim.—1. The traveling rods A, provided with the friction-wheels B B', and pulleys F, constructed and arranged as shown and described, for the purposes set forth.

2. The rods A, links D, rope G, and shaft H, when combined with the follower E, substantially as set forth.

3. The rods A, having friction-wheels B B, and pulley F', and having horizontal and vertical guides when combined with the links D and follower E, substantially as set forth.

106,076.—Coach-Cleaning Sponge.—Henry Dietrich Ohlsen, Chicago, Ill.

Claim. — The herein-described apparatus for cleaning coaches and similar polished surfaces, said apparatus consisting of the net-work sack A, filled with pieces of sponge, and held by the clamping-jaws B C, one of which is provided with a socket, for the application of a handle, substantially as described.

106,077.—Pipe-Boring Machine.—Thomas W. Purcell, Fond Du Lac, Wis.

Claim.—The combination of the outer cylinder E, cutter E' thereon, inner worm-cylinder F, and adjustable cutter F' thereon, substantially as and for the purpose set forth.

106,078.—Motive-power Engine.—James Robertson, Glasgow, Scotland.

Claim. — 1. The within-described piston, constructed with passages B^1, &c., formed partly on the surface and partly under the surface, and so connected and operated that it partakes simultaneously, when at work, of a motion of reciprocation and a motion of rotation on its own axis, to receive, direct, and cut off the impelling fluid without a necessity for valves, all as herein set forth.

2. In connection with the above, the bush D^1, free to oscillate in the disk or arm D secured to the piston-rod, in combination with the crank or eccentric stud E^2, and arranged as represented, so as to serve as means both for transmitting motive-power to or from the crank-shaft or mechanism, and for insuring a motion of rotation in the piston, all substantially as described and shown in the drawing.

106,079.—Churn.—Joseph R. Sapp, Danville, Ohio.

Claim.—The arrangement of the churn A, dasher B, rocking-shaft C, connecting-rod G, pinion F, disk F', shaft D', and wind-wheel D, as shown and described.

106,080. — Photographic Print-Cutting Apparatus.—Thomas Martin Saurman, Norristown, Pa.

Claim. — 1. The combination, substantially as herein described, of a revolving table, capable of moving vertically, with a former, supported by a fixed arm or frame.

2. The sliding rod H, for the support of the revolving table, maintained in an elevated position by a suitable spring, and arranged to be depressed by a treadle, or its equivalent, as specified.

3. The former F, of metal, glass, or other suitable material, secured to a spindle, C, hung to and arranged to revolve in the fixed arm or frame B.

4. The said spindle C, hung to the fixed arm, substantially in the manner described, so that it may oscillate as well as revolve in the said arm.

5. The washer *i*, intervening between the yoke *j*, to which the former is secured, and the lower end of the spindle or block attached to the same.

106,081.—Regulator for Spirit-Meters.—Louis Schulze, Louisville, Ky.

Claim.—1. The reservoir D, when applied to regulating vent-pipes of regulators for spirit-meters, substantially as herein described.

2. The combination, with the vent-pipe F, of the reservoir D, and pipes *d a*, substantially as and for the purpose described.

106,082.—Umbrella.—Nathaniel Sehner, Hagerstown, Md., assignor to himself, John F. Keller, and Abraham Huffner, same place.

Claim.—Constructing an umbrella-stock in two parts, B and D, and joining them together by means of the thimble *d*, ferrule *b*, and screw *d'*, substantially as shown and described.

106,083. — Breech-loading Fire-Arm.—Thomas D. Simpson, Gardner B. Gray, and Joseph H. Romans, Mount Vernon, Ohio.

Claim.—1. The combination of the receiver B, breech C, and pivot-bolt D, when the parts are constructed and operate substantially as described.

2. In combination with the above, the spring catch E and positive stop F, substantially as described.

106,084.—Two-horse Equalizer.—Zachariah B. Sims, Bonham, Texas.

Claim.—The double-tree A, provided with a series of longitudinal openings, C C C, and the openings F F, as described, when combined and operating in connection with the stretcher-loops E E and whiffletrees B B, substantially as set forth.

106,085.—Tanning.—John H. Slocum and George F. Turner, Fayette, Me.

Claim.—The combination and arrangement of the reel A with the bars *b*, provided with hooks or brads d, with the vat C, frame B, and gearing E F, all constructed and arranged as herein shown and described, and for the purposes set forth.

106,086. — Manufacture of Carriage-Axles.—Alfred E. Smith, Bronxville, N. Y.

Claim.—A steel axle produced directly from the ingot, substantially as described, as a new article of manufacture.

106,087.—Hay-Tedder.—Franklin R. Smith, Ilion, N. Y.

Claim.—1. The foot-piece F, levers *s*, and cross-bar *s'*, in combination with the lever *h*, hinged arms B, and angle-irons *n''*, with their connections, *f* and *l*, so as to raise the tedder-arms and, at the same time, throw the clutch out of gear.

2. The arrangement of the adjustable clamps H, constructed substantially as described, the rods *c*, and pivoted forks *t*, substantially as set forth.

3. The series of levers *b'*, pivoted to the frame D, connected together by the bars *m*, and operated by means of the cranks *c''* and rods *c'*, said levers being connected to the forks *t* by the rods *c*, all arranged and operating substantially as described.

4. The series of independent arms D, hinged at *c''* to the frame D, and bearing at their lower ends the studs or supports H', upon which the forks are hung, all constructed and operating substantially as described.

106,088.—Portable Fence.—John O. Smith, Reily, Ohio.

Claim.—The arrangement of the stationary panel 1, supported upon the blocks B B, and the movable panel 2, when connected by means of pins *a a*, and when operating together as and for the purposes described.

106,089.—Water-closet Receiver.—William Smith, San Francisco, Cal.

Claim.—A receiver for pan water-closets, formed and constructed so that the side A D, into which the pan C swings for emptying, will conform to the shape of the pan, and avoid the waste space behind the pan, as in ordinary or common receivers, substantially as and for the purpose set forth.

106,090.—Suspended Shelf.—Joseph B. Stockton, Edmunton, Ky.

Claim.—Suspending a case of shelves upon or by means of pivots, resting in a vertical position within cups containing liquid, substantially as shown, and for the purpose specified.

106,091.—Apparatus for the Treatment of Fracture of the Lower Jaw.—John Stowe, Lawrence, Mass.

Claim.—The combination of the splint and head-piece, substantially as described.

106,092.—Needle for Sewing-Machine.—Edwin Strain, Newton, Mass.

Claim.—A sewing-machine needle, provided with a lateral opening, *e*, into the eye thereof, constructed with barb or bur-like points *d d*, directed inward, or so as to admit the ready passage of the thread to the eye, but preventing the escape of the thread therefrom, and with the corners of said lateral opening *e* rounded, so as to prevent its catching or injuring the material in the passage of the needle.

106,093.—Cock.—Theodore H. Thayer, New Haven, Conn.

Claim. — In a swinging-tube compression-cock, the stem D, provided with valve-seat E, sleeve B, and pin F, when combined with the stock A, hav-

ing the groove C, all operated as described, for the purpose set forth.

106,094.—Spittoon.—William H. Topham, New York, N. Y.

Claim.—1. A spittoon made of paper, weighted at its bottom or lower part by a heavier material, to secure its stability, and to enable it to right itself in case of being tilted, substantially as specified.

2. The arrangement of a weight, B, between two thicknesses or layers, of which the bottom *a*, or lower part of the paper vessel is composed, essentially as and for the purpose herein set forth.

106,095.—Stock-Barn.—John Tyler, New Carlisle, Ohio.

Claim.—1. A stock-barn, constructed as described, so as to form three longitudinal compartments, on the front side for the hay, on the rear side for the stock, and an alley in the center, substantially as and for the purposes herein set forth.

2. A hay-loft or barn having in its top a series of trap-doors, to pass the hay down at any point desired, substantially as herein set forth.

3. The trap-doors G G, provided with a movable pin, *i*, and operating in connection with the top K and hay-carrier I, substantially in the manner and for the purposes herein set forth.

4. The folding doors J J, constructed and arranged as described, so that one opens up and the other down, and the edges that meet lap over, substantially as herein set forth.

5. The construction and arrangement of a stock-barn with three longitudinal compartments, having the top E, with trap-doors G G, feed-racks C C, and doors B, D, H, J, and K, all substantially as and for the purposes herein set forth.

106,096.—Lubricating Journal of Railway Axle-Boxes.—Ernest Von Jeinsen, Omaha, Nebraska.

Claim.—1. The wedge C, provided with recesses, as described, and tubes *b b*, substantially as and for the purposes set forth.

2. The combination of the bearing B, felt stripe *a a*, recessed wedge C, tubes *b b*, wick *e*, oil-cup D with tube *d*, and valve *f*, all constructed and arranged to operate substantially as and for the purposes herein set forth.

3. The combination of the recessed wedge C with tubes *b b* and wick *e*, and the bearing B with felt stripe *a a*, all substantially as and for the purposes herein set forth.

106,097. — Paneling-Machine.— Dwight F. Walker, Minneapolis, Minn.

Claim.—1. The knives or cutters I I, provided with inclined cutting projections A A, constructed as described, so that one will cut the rabbet and the other, on the same head, cut the molding, substantially as herein set forth.

2. The arrangement of the bars D D, platforms E E, shafts G G, adjustable cutter-heads H H, and adjustable cutters I I, constructed substantially as and for the purposes herein set forth.

3. The combination of the cutter-heads H H, constructed as described, with the adjustable guides J J, stationary guide K, and spring L, all constructed and arranged substantially as and for the purposes herein set forth.

106,098. — Device for Moistening and Closing Envelopes.–Redford W. Walker, Washington, D. C.

Claim.—The device herein shown, consisting of the arm B, provided with the sponge A, handle C, and sealer D, for the purpose of moistening and sealing the flap of an envelope or wrapper, substantially in the manner herein described.

106,099.—Adjustable Gauge.—Thomas E. Warren, Shelburne Falls, Mass.

Claim.—The combination of the open slotted bar A, stationary marking-point *a*, traveler B *b b'*, head-block C, collar D, washer *d*, and thumb-nut E, constructed as shown and described, and for the purpose specified.

106,100.—Bung.—Albin Warth, Stapleton, N. Y.

Claim.—1. The plate *d*, with its seat *c*, spout *g*, and tube *e*, in combination with the valve *a*, spring *b*, and flanged ring *f*, the whole arranged and operating as herein shown and described.

2. The arrangement of the pin *h*, working in the elbow h, with the plate *d*, spout *g*, tube *e*, valve *a*, spring *b*, and flanged plate *f*, substantially as herein shown and described.

3. The combination of the elbow *h* and retaining-spring *j* with the barrel-head and tap, constructed substantially as herein set forth.

106,101.—Machine for Cutting Textile and other Material.—Albin Warth, Stapleton, N. Y.

Claim.—1. The presser-foot, arranged to slide in the reciprocating shaft of the cutter, and provided with suitable tension-spring, substantially as and for the purpose described.

2. The handle W, rising from the rotating platform B, in combination with the latch *p* of the presser-foot, serving to operate the platform and hold the presser-foot when elevated, as and for the purpose described.

3. The knife G provided with a spring catch formed at its rear edge, substantially as set forth.

4. The rotating platform B, carrying the feeding and cutting mechanism and their operating parts, substantially as and for the purpose described.

5. The arrangement of a socket with a double cutting-edge, to act in combination with the reciprocating knife, substantially as described.

6. The arrangement of a clearing-blade, attached to the cutter-bar, and serving to clear the socket H, substantially as described.

7. The bell-crank lever *k l* and levers *j* and *r*, in combination with the cutter-bar F and feed-dog J, substantially as described.

8. The stationary mold-board-shaped flanges *a' a'*, embracing the sides of the reciprocating cutter-bar F, for throwing off the cut material and preventing clogging with the bar, as set forth.

106,102.—Clothes-Rack.—Charles H. Wolcott, Jamestown, N. Y.

Claim.—The combination of the back A, shelf B, bracket C, and bars or arms D D, all constructed and arranged as shown and described.

106,103.—Meter.—George Sewell, Brooklyn, N. Y.

Claim.—1. The channel E E from induction-pipe L to hollow gudgeon D, so as to keep the wings F F extended and in contact with cylinder A A, by means of liquid pressure, substantially as set forth and described.

2. The groove or channel *m m*, so as to admit the full water-pressure to both wings, as and for the purpose set forth.

REISSUES.

4,084.—Printing-Press.–R. Hoe and Company, New York, N. Y., assignees of Stephen D. Tucker.—Patent No. 43,350, dated June 28, 1864.

Claim.—1. Arranging the inking-rollers so that they may be raised from the inking surface, when desired, by the mechanical device, constructed, shown, and described, or its equivalent, substantially as set forth and specified.

2. So arranging the inking-rollers that, if out of contact with the inking surface, they will be restored to their operative condition as the form of type reaches them in operating the press, substantially as described and specified.

3. So arranging the frame 16, which carries the roller 15, which transfers the ink from the inking-cylinder to the ink-distributing surface of the type-cylinder, that it shall vibrate on the axis of the inking-cylinder, substantially as described and specified.

4. The combination, with the radial bars 36, of the rollers 38, for inking the forms of type, and the eccentric shafts 43 with their weighted levers 44, or equivalents, for disconnecting the rollers from the ink-distributing surfaces of the type-cylinder, substantially as described.

5. Adjusting the range of motion and pressure of the rollers 20, which transfer the ink from the fountain-roller to the inking-cylinder, and 15, which transfers the ink from the inking-cylinder to the ink-distributing surface of the type-cylinder, or either of the said rollers, by the employment of the shafts 27, with the eccentric pins 33, or the equivalents thereof, in combination with the swinging frame, which carries the roller, and is vibrated against the inking surface by a cam, and against the eccentric pin 33 by a spring, or equivalent therefor, substantially as described and specified.

4,085.—Division A.—Water-supply Regulator for Water-works. — Birdsill Holly, Lockport, N. Y.–Patent No. 87,413, dated March 2, 1869.

Claim.—1. A water-gauge, M, in arrangement with a water-supply regulator, and so contrived that the pressure in such gauge shall be lessened below that in one of the main pipes D, in some proportion to the size of the varying orifice into the exit-pipe *c*, as described.

2. In such water-gauge, so arranged, in combination with the valve *a*, the lever *o'*, by which the orifice into such exit-pipe may be regulated, and which will also serve as an index, to show the degree of pressure in the main pipe D that is necessary to produce a given degree of pressure in said water-gauge, while the said valve *a* remains unchanged in position, substantially as described.

3. Connected with such gauge by the pipe *b*, the cylinder G, with its piston H, for the purpose of communicating, through the piston-stem I, to other portions of the machinery, motions corresponding to the degree of pressure upon the under surface of such piston, substantially as described.

4. In combination with cylinder G, piston H, and stem I, the cross-head K, with its weights L L' L'', so constructed and arranged as to cause the weight which is raised by the said piston to gradually increase as that piston rises in height, and to diminish as it descends, substantially as described.

5. The water-gauge M, piston H, and bell *t*, with their proper appendages, in combination with a system of water-pipes and hydrants, when the whole is so constructed and arranged as to serve as a water-telegraph, to give instant notice at headquarters of the breaking out of a fire in any part of a city, substantially as described.

6. The bell *t*, with its appurtenances, so constructed, substantially as described, that the lowering of the piston H below a point to be fixed beforehand shall cause the ringing of the bell.

7. The water-gauge M, piston H, and lever *o'*, with their proper appurtenances, in combination with a system of water-pipes, when the whole is so contrived and arranged that a person at a distance from the actuating machinery of the system may so operate instantaneously upon that machinery as to increase the pressure in the water-pipes sufficiently for the purpose of fire-extinguishment, substantially in the manner above described.

4,086.—Division B.—Water-supply Regulator for Water-works. — Birdsill Holly, Lockport, N. Y.–Patent No. 87,413, dated March 2, 1869.

Claim.—1. The piston H and belt-shifter R, with the intermediate contrivances, in combination with the two belts P P', and the pulleys Q, P'', and P''', the whole so constructed, arranged, and adjusted that the machinery which operates to open and close the gates E' and E'' may be allowed to stand still or to move in the one or the other direction, in order to preserve uniformity of pressure in the pipe D, or to restore that pressure automatically when it has varied from the proper standard.

2. The bevel-wheel T, which can be made fast to the threaded shaft T'', in combination with the boss U, which can be made to rise or descend along the said shaft according as the bevel-wheel T is moved in the one or the other direction, substantially as shown.

3. The boss U, arm *p''* and standard *p'''*, so arranged that the boss U shall not be permitted to turn with the threaded shaft which passes through it, until it has reached a fixed elevation or depression, in the manner and for the purpose described.

4. The boss U, clutch *p*, and link *p'*, to open and close the gate E', in the manner and for the purpose above described.

5. The boss U, pin *q'*, wiper *q*, and rod *r*, constructed and arranged as described, for the purpose of transferring the action of the machinery to the other side of the apparatus, as above shown.

4,087.—Division C.—Water-supply Regulator for Water-works. — Birdsill Holly, Lockport, N. Y.–Patent No. 87,413, dated March 2, 1869.

Claim.—1. The water-chamber V'', with its inlet-pipe *u'''*, its outlet-pipe *v''*, and cock *v'*, the whole constructed as and for the purpose described.

2. In combination with the water-chamber V'', and with its piston *v*, the relief-valve V, the whole constructed as and for the purpose described.

3. The cylinder G, with its piston, in combination with the cock *v'* and intermediate machinery by which the cock may be opened automatically when the pressure of water in the pipe A is very considerably increased, and closed in like manner when that pressure is relieved.

4. In combination with the above-recited machinery for operating the relief-valve V, the slot in the arm *v'''*, so constructed, adjusted, and arranged, that the cock which opens the outlet-pipe *v'* will not commence to turn in either direction for any slight increase or diminution of the pressure in the pipe A, substantially as shown.

4,088.—Mode of Fastening Skates.—Nathaniel Ladd, Brooklyn, N. Y., assignee, by mesne assignments, of the administrators of the estate of Edward Behr, deceased.—Patent No. 23,344, dated March 29, 1859.

Claim.—A skate having one or more screws, *b*, with suitable connections, *f d* B, arranged as shown, so as to develope the force of the screw or screws in a direction transverse to the skate, in the manner herein specified.

4,089.—Harvester-Rake.— Amos Rank, Salem, Ohio.—Patent No. 96,353, dated November 2, 1869.

Claim.—1. The combination of the cam and its switch with the rock-shaft for opening the switch, passing through the axis of rotation of the rakes, substantially as set forth.

2. The combination of the cam, the switch, the rock-shaft, (which opens said switch,) passing through the axis of rotation of the rakes, and the spring above the cam to close the switch, substantially as set forth.

3. The arrangement of the switch-controlling mechanism above and inside the cam, as set forth.

4. The combination of the bifurcated arm, which carries the rake and reel-beater with a continuously-rotating combined reel and rake, as set forth.

5. The combination of the cam, the switch, the bifurcated arm, the friction-roller and its arm *o*, all these parts being constructed to operate as set forth.

6. The combination of the series of bifurcated arms, the continuously-rotating rakes and the beater-arms interposed between the rakes, each arm carrying a rake and a beater, as set forth.

4,090.—PAPER-CUTTING MACHINE.—George H. Sanborn, New York, N. Y., assignee of Thomas C. Robinson. — Patent No. 97,120, dated November 23, 1869.

Claim.—1. The combination of the knife K with the toggle mechanism for operating the clamp, substantially in the manner described.

2. The combination and arrangement of the bar S, springs q q', toggle mechanism, and knife K, substantially as described, for the purpose of throwing up the knife at the completion of its downward stroke, as stated.

3. The knife-head L, hung in the brackets D E by the pivots f f', and adjusted longitudinally by the screws i j, and laterally by the screws i' i^2, operating the sliding journal-box D^2, traversing in a recess in the bracket D, substantially in the manner and for the purpose set forth.

4,091.—GRAIN-DRILL.—John H. Thomas, Phineas P. Mast, and Charles O. Gardiner, Springfield, Ohio, assignors to John H. Thomas and Phineas P. Mast, same place.—Patent No. 93,369, dated August 3, 1869.

Claim.—1. The combination of the eccentric B, lifting-bar B, and the swinging plate G, for the purpose of throwing the driving-wheels in and out of gear by the act of raising or lowering the drill-tubes, substantially as described.

2. The spring arm I, attached to the swinging plate G, and arranged to operate substantially as described, to prevent injury to the teeth of the wheels when thrown into gear.

3. The combination of the eccentric B, slotted stirrup H, and spring arm I, with the swinging plate G, as set forth.

4. The sliding bars C and D, having the drag-bars W attached thereto, and arranged to operate as described.

5. The guard or lip g, arranged, in relation to the wheels p and h', substantially as described.

6. The cups J, provided with the internal ledge or projection e, substantially as and for the purpose set forth.

7. The conductors K, constructed, substantially as described, in two parts, and held together by the pin k, as set forth.

8. The plates U, provided with grooves or recesses for receiving, holding, and guiding the cross-bars C D, as shown and described.

9. The combination of the rock-shaft E, with its arms e, connecting-rods s and s', cross-bars C D, and lever O, with rod n, arranged to operate substantially as described.

10. The combination, in a grain-sowing machine, substantially such as is herein described, of the devices for sowing grain in drills, and also sowing it broadcast between the drills simultaneously, substantially as set forth.

11. In combination, a seed-cup, J, elongated in the line of draft of the machine, and a similarly-elongated conductor, K, arranged, relatively to one another, substantially as set forth.

12. In combination with adjustable hoes, which, when arranged in two rows, are in planes respectively in advance and in rear of the plane of all the hoes when arranged in one row, adjustable conductors, pivoted below, and connecting the hopper with the hoes through the instrumentality of the tubes Y, substantially as set forth.

13. In combination with hoes adjustable in one or more rows, conductors K, pivoted so as to hang below the hopper or cups, and automatically maintain the connection between the hopper or cup and the hoes, through the instrumentality of the tubes Y, whether the latter are arranged in one or more rows, substantially as set forth.

14. In combination with hoes and drag-bars, and mechanism to shift the hoes into one or more rows without detaching the drag-bars, the oscillating conductors pivoted below the hopper, and maintaining the connection between the hopper and the hoes through the instrumentality of the tubes Y, whether in one or more rows, substantially as described.

15. In combination with hoes adjustable in one or more rows, conductors pivoted below the hopper, and oscillating with the movement of the hoes, as shifted into one or more rows, without said conductors being detached, to maintain the connection between the hopper and hoes through the instrumentality of the tubes Y, substantially in the manner set forth.

16. In combination with the seed-hopper or cups and adjustable hoes, conductors constructed substantially as described, so as to incline the discharge-opening to the front or rear, as the conductors are arranged or attached with one or the other side foremost, substantially as set forth.

DESIGNS.

4,267.—TYPE.—Richard Smith, Philadelphia, Pa., assignor to Mackellar, Smiths & Jordan.

Claim. — The design for a printing-type, as shown.

4,268. — BRACKET. — John H. Bellamy, Charlestown, Mass.

Claim.—The design for a bracket, herein shown and described.

4,269.—ARM-CHAIR.—Walter E. Cameron, Taunton, Mass.

Claim.—1. The form of the human leg, or any portion thereof, applied to the legs of chairs for household purposes, as described and shown.

2. The design for a chair, as described and shown.

4,270.—KNITTED FABRIC.—Martin Landenberger, Philadelphia, Pa.

Claim.—The design for knitted fabric, as shown and described.

4,271.—KNITTED FABRIC.—Martin Landenberger, Philadelphia, Pa.

Claim.—The design for knitted fabric, as shown and described.

4,272.—SHAWL FABRIC.—Martin Landenberger, Philadelphia, Pa.

Claim.—The design for a shawl fabric, as shown and described.

4,273.—FLOWER-POT.—James Leak, Geddes, N. Y., assignor to himself, Thomas G. White, and William Holmes.

Claim.—The design for a flower-pot in imitation of a section of the trunk of a tree, with the bark and knots as naturally seen, substantially as shown.

4,274.—REFRIGERATOR AND WATER-COOLER.—Charles C. Savery, Philadelphia, Pa.

Claim.—The design for a refrigerator, as represented and described.

EXTENSIONS.

OLIVER F. GROVER, of Middletown, Conn. Letters Patent No. 15,358, dated July 15, 1856.

"Printers Composing-Stick."

Claim.—The application to the composing-stick of the guide C, to prevent the slide B, and the bed A from separating, while adjusting the composing stick, and the clasp D, to secure and hold the slide B, in its place on A, when adjusted as herein described, using for the purpose the aforesaid guide C and the clasp D, or any other substantially the same, which will produce the intended effect.

HORACE WOODMAN, of Saco, Me.—Letters Patent No. 15,313, dated July 8, 1856; reissue No. 2,202, dated March 13, 1866.

"Improvement in Machinery for Cleaning Top-Flats of Carding-Engines."

Claim.—1. A "cross-connecting shaft," H′, so disposed, in relation to the cleansing-frame arms a a′, as to be carried by or to traverse with them, when said shaft is used in combination with mechanism operating in connection with said arms, which produces, by means of or through the said shaft so disposed, conjoint or uniform intermittent, reciprocating traversing movement of the two sides of the cleansing-frame, substantially in the manner and for the purposes set forth and specified.

2. A "traversing mechanism" proper, substantially such as described, and a "cleansing mechanism" proper, substantially such as described, combined in the manner and for the purposes set forth and described.

3. A "traversing mechanism" proper, substantially such as described, a "cleansing mechanism" proper, substantially such as described, and a "locking mechanism" proper, substantially such as described, combined in the manner and for the purposes specified.

4. A detent or locking mechanism, constructed substantially in the manner and for the purposes shown.

5. The combination of a "traversing mechanism," "cleansing mechanism," and "detent or locking mechanism," with a pulley, P′, located on a line with the axis of the main cylinder of the carding-engine, so that the whole stripping mechanism may be actuated or driven by a single belt acting on the said pulley, substantially as and for the purposes set forth and specified.

6. A brush-bar, V, and waste-pan F, disposed in the upper part of the cleansing-frame, and carried thereby, in combination with a card clothed surface or strip of card filleting, so disposed or arranged in reference to the said brush-bar as to remove the "waste" from the same, or to cleanse the card of said bar prior or preparatory to the cleansing of each top card, substantially in the manner and for the purposes specified.

7. In combination, the lever O, dog M M′, rod q, and sliding clutch N, arranged and operating to reverse the motion of the cleansing-frame, substantially as and for the purposes specified.

8. The grooves across the teeth connecting the space or slots between the teeth of the toothed rack, in combination with snob teeth, whereby the series of top cards being cleansed is changed, substantially as and for the purposes set forth and described.

ISSUE OF AUGUST 9.

PATENTS.

106,104. — BUTTER-WORKER. — Joseph P. Adams and John P. Corbin, Whitney's Point, N. Y.; said Adams assignor to said Corbin.

Claim.—1. The rest C, substantially as and for the purpose hereinbefore set forth.

2. The combination of the plate P, slides K K, latch E, and catch J, substantially as herein set forth.

3. The frame or platform D, and pins R R, or their equivalent, arranged substantially as and for the purpose herein set forth.

106,105. — NON-CONDUCTING CASING FOR BOILERS, STEAM-PIPES, &c.—Francis Y. Arnold, Philadelphia, Pa.

Claim.—1. In combination with a non-conducting casing, the pieces of rubber G and H, to allow for the expansion and contraction of the casing and non-conducting material, substantially as described.

2. The outer casing A, formed in parts connected together by hooks B, the rivets D, provided with heads F on their inner ends, the ribs C, and half circles E E, all arranged as shown and described.

106,106.—MACHINE FOR TRIMMING AND SHEARING HAIR-CLOTH, &c.—Olney Arnold and Isaac Lindsley, North Providence, R. I., assignors to Pawtucket Hair-cloth Company.

Claim.—1. The combination of a shaving-blade and a deflector, or its equivalent, for deflecting the protruding hair or fibers against the edge of the blade as the instrument moves over the surface of the fabric, substantially as described.

2. The combination of two cutting-edges and two deflectors, or their equivalents, placed in a reversed order in one stock, so that the device will operate while moving in both directions, substantially as described.

3. The employment of a gang or series of the said trimming or shaving instruments, in combination with a suitable bed or table over which the cloth or fabric is carried by suitable means, the whole being and operating substantially as shown and described.

4. The trimming instruments, substantially such as are described, combined with an oscillating frame and means for moving it, in order that the said instruments may be elevated or removed from the table, or its equivalent, for spreading and presenting the fabric, substantially as described.

106,107. — ANIMAL-TRAP. — William Ball, Oregon, Mo.

Claim.—The combination of vertical cylinder A, having two compartments, B C, floor D, openings M, and drop-doors N, vertical shaft E, radial wings F, coiled spring G, bait-hooks H, slide I, and tripping-catch K, all arranged as and for the purpose described

106,108.—RAKE ATTACHMENT FOR HARVESTERS.—Charles Barns, West Liberty, Iowa.

Claim.—1. The combination of the pivoted bars or braces F, the sliding frame E, stationary frame D, and shaft C, with a revolving rake, substantially as herein shown and described, and for the purpose set forth.

2. The combination of levers H K, frames D E, bars J L N, rake-head M, shaft C, and grooved plate I, all relatively arranged and operated as and for the purpose described.

3. The combination of the lever T, connecting-bars V, and equal-armed lever W, with the gatherer X and platform A, constructed and arranged substantially as herein shown and described, and for the purpose set forth.

4. The combination of the gear-wheels O P Q, crank-shaft R, and connecting-bar S, with the elements of the preceding claim, all constructed and arranged substantially as herein shown and described, and for the purpose set forth.

5. The combination of the curved guide C′ and spring plate D′, with the curved platform B, platform A, and gatherer X, substantially as herein shown and described, and for the purpose set forth.

106,109.—SUPPORT FOR TABLES.—James Blake, Scranton, Pa., assignor to himself and George Blake, same place.

Claim.—An auxiliary table or support, provided with a beak or beaks C C, and an arm or bracket, or arms or brackets, substantially as set forth, for the purpose of sustaining it in position.

106,110.—SUPPORT FOR TABLES. — James Blake, Scranton, Pa., assignor to himself and George Blake, same place.

Claim.—An auxiliary table, provided with one or more beaks and one or more stops co-ordinated, for the purpose of securing it in position, substantially as described and shown.

106,111.—HAME-CAP FOR HARNESS.—Lot Bonine, Vandalia, Mich., assignor to himself and Warren W. Camp, same place.

Claim.—1. A collar-cap for housing, A, slotted

at each end to receive and steady the hames, with edges curled upward to compel the water to run off at the sides, and with ends projecting far enough beyond the hames and collar to prevent the water from running into them, substantially as herein described.

2. The means employed to secure the cap to the hames, consisting of the links *c*, the strap *e*, the button *d*, and pin *b*, when constructed, arranged, and operating substantially as and for the purpose set forth.

106,112. — PREPARATION OF ALBUMEN. — Gustave Bourgade, New York, N. Y.

Claim.—The process, substantially as herein specified, for separating albumen from blood.

106,113.—WATER-COOLER, &c.—George R. Bowman, Hagerstown, Md.

Claim.—Ice-chamber A, havin the projecting lid I and faucet H combined with water-vessel B, having inlet and outlet-pipe at the bottom, while at the top an air-valve is operated from the outside, all as shown and described, and for the purpose specified.

106,114. — SHUTTER-WORKER.—Henry W. Boynton, Haverhill, Mass.

Claim.—The arrangement and combination of the circular bearing-plate *a*, and the prong or arm D, with the lever C, the link or bar B, the pivot *b* and the bracket A, the whole being for application to a window-blind or shutter and its frame, substantially in manner and for operating the same, as hereinbefore explained.

106,115. — KETTLE-BAIL. — James Britton, Williamsburg, N. Y., assignor to himself and Garrett Brower, same place.

Claim.—1. The handle F constructed as described.

2. The hinged joint, constructed as described, by which the leg B and ear A are united, as set forth.

106,116.—MECHANISM FOR ACTUATING THE PICKER STAFF IN LOOMS.—Micajah C. Burleigh, Somersworth, N. H.

Claim.—The spring F, its support-pin D, the yoke C, the arm A, and the rocker-foot B, the whole constructed, combined, and arranged substantially as described.

106,117. — MILK-SAFE. — James H. Bush, Bengal, Mich.

Claim.—The combination of the rotary shade D, provided with transverse cleats *a*, octagonal or polygonal chamber A, provided with ventilator C, with an orifice in the floor of said chamber, and with walls covered with wire or other gauze, when the several parts are constructed and arranged to operate as above described.

106,118. — CULTIVATOR AND HARROW.—Erastus T. Bussell, Indianapolis, Ind., assignor to himself and John N. Greene, same place, assignors for one-third their right to J. M. Tilford, same place.

Claim.—A cultivator or harrow, composed of the wave-sided frame A, disks B B and C, the toggle E, and handle P, in connection with ratchet-bar R, arranged, combined, and co-operating in the manner described, and for the purposes set forth.

106,119.—RAILWAY CAR-COUPLING.—Solon O. Campbell, Centretown, Mo.

Claim.—The fingers *a* of the boxes A, levers B B, and pins C C, when said parts are constructed and relatively arranged as shown and described.

106,120.—BORING-MACHINE. — Wilson W. Carey and George W. Harris, Lowell, Mass.

Claim.—1. The arrangement of the slide *u*, the pivoted gauge-bar *w'*, clamp-screw *v*, and table *t*, in the manner and for the purpose shown and described.

2. The lever *b'*, arm *l*, rod *g'*, spring seat *p*, spring *r'*, rods *g' g''*, adjustable collar *r*, in combination with the arbor *i*, rods *n n*, and foot-lever *s'*, all constructed and arranged as described, for the purpose specified.

106,121.—VALVE FOR STOP-COCKS.—Josiah W. Carney, Charlestown, Mass.

Claim.—The arrangement of the stud J, spring I, and flanged drum H, with respect to a valve-shaft, E, as and for the purpose described.

106,122.—PIPE-JOINT.—Patrick Clark, Rahway, N. J.

Claim.—1. The elastic collar *e*, in combination with the elastic metal link *f*, substantially as described.

2. The flanges and lugs *c c*, in combination with the elastic collar *e* and the elastic metal links *f*.

3. The metal gland *d*, in combination with the elastic collar *e*, and the elastic metal links or ring *f*, and the flanges and lugs *c c*.

106,123. — SAW-HANDLE. — William Clemson, Middletown, N. Y.

Claim.—The combination of the handle A, slotted screw-bolt B, ferrule C, notched clamp-nut D, and nut *a''*, when constructed and arranged in the manner and for the purpose described.

106,124. — RAILROAD-CAR STOVE. — James M. Comins, New York, N. Y.

Claim.—The arrangement and combination of the open hoods or bonnets L, made and provided with a partition, *v*, as described, the air-duct K, the air-heating chamber H, the perforated partition *g*, and the cone *r*, with the ash and fire-chambers A C disposed as specified.

Also, the combination and arrangement of the cone *r*, and perforated partition *g*, with the air-heating chamber H arranged under the ash-chamber C, as set forth.

Also, the fuel-supply reservoir D, as provided with the series of arms or prongs *g*, for the purpose specified.

Also, the fuel-supply reservoir D, as made or provided with the hollow cylinder *e*, and the discharge-openings *d*, and valve *e*, arranged as described.

Also, the arrangement of the evaporating vessel M, and its air-conduits, with the air-heating chamber disposed beneath the ash-chamber, and provided with an air-supplying apparatus, as set forth.

Also, the air-heating and ventilating apparatus, constructed substantially in manner and so as to operate as described, and consisting of the chamber of combustion A, the ash-chamber C, the fuel-supply reservoir D, the flue-space F, around the latter the flue-space I, and air-heating chamber H, the guard-flues O O, the hollow base P, the air-supply conduit K, and its bonnet or hood L, as explained, such being provided with one or more ducts for the distribution of the heated air, as set forth.

106,125.—MANURE-CART.—Thomas L. Cotten, Madison county, Miss., assignor to Martha J. Cotten, same place.

Claim.—1. The wheel H, having pockets H' H' and pins A A, the shaft G and pinion-wheels G' G', when the same are so arranged in combination with the ratchet-faced hubs *c c* of the wheels C' C', that their revolution can be made to impart like motion to the wheel H, substantially as described, as and for the purpose specified.

2. The bars D D, when the same are provided with slots *d d*, so arranged as to allow a horizontal movement to the hopper and feed-mechanism, substantially as described.

106,126.—SLEIGH AND CARRIAGE FOR CHILDREN.—Benjamin P. Crandall, Jr., Williamsburg, N. Y.

Claim.—1. The pushing or pulling-handle B of a carriage or sleigh, extending the entire length of the body, curved or bent upwardly from the center, substantially as described, for the purpose set forth.

2. The seat C, mounted upon the pushing or pulling-handle of a child's sleigh or carriage, substantially as described, for the purpose set forth.

3. The bottom board or boards, secured directly to the pushing or pulling-handle of a child's sleigh or carriage, when said handles are constructed substantially as described, for the purpose set forth.

4. The seat C, handle B, with the bottom D, constructed substantially as described, in combination with the running-gear of a child's carriage or perambulator, as herein set forth.

5. The seat C, handle B, and bottom D, in combination with the runners of a sleigh or sled, substantially as described.

106,127.—MEDICAL COMPOUND AND LINIMENT.—Walter S. Crooker, Shamburg, Pa.

Claim.—The above-described compound, substantially as and for the purposes set forth.

106,128.—SPOOL-THREAD CASE.—John D. Cutter, New York, N. Y.

Claim.—1. The combination of the cut-off slide E with the chambered upper portion A of the case and chambered drawer D, for operation together, substantially as specified.

2. The combination of the dog or dogs h on the cut-off slide E, the recess or recesses *g* in the drawer D, and the stop or stops *s*, in the stationary portion A of the case, essentially as described.

3. The incline or inclines *m*, in combination with the drawer D, the cut-off slide E, and upper portion A of the case, substantially as specified.

106,129. — DUPLEX WRENCH. — Augustus Ball Davis, Philadelphia, Pa.

Claim.—1. The vibrating and sliding jaw E, having on one or both sides a thin web, as set forth.

2. A nut, F, adapted to the screw-stem A, and confined between the rounded top and bottom, *s s*, of a recess in the movable jaw E, as specified.

3. The combination of the serrated or toothed portion *i* of the permanent jaw with the plain inclined portion *i'* of the movable jaw.

106,130.—DRAWING-FRAME FOR HEMP, &c. George Davis and John R. Hoover, Elizabeth Port, N. J.

Claim.—The rotary disks A A, and comb-bars B, provided with the cranks D E, in combination with the stationary grooved disks G G, placed eccentrically to the disks A, and all constructed and arranged as and for the purpose specified.

106,131.—RAILWAY SWITCH.—James Davis, New Orleans, La.

Claim.—1. The combination of vibrator F, arms H L, links I M, and levers N K, with an elastic projecting catch-bar, S K', constructed and operating as and for the purpose specified.

2. The arrangement of studded levers K R, K N, and spring projecting catch-bars S K', when constructed as and for the purpose described.

106,132, antedated August 4, 1870.—AUTOMATICALLY-OPERATED WATER-CLOSET-SEAT.—Perry W. Davis, Portland, Oregon.

Claim.—The combination of the parts from A to J, inclusive, and the particular arrangement of the double cylinders D and G, as described, when used for the purpose set forth.

106,133.—APPARATUS FOR REDUCING FIBROUS MATERIAL TO A TEXTILE STOCK.—Lorenzo Dean, Fort Edward, N. Y.

Claim.—1. The combination of the cylinders B C D, frame-work A, apron E, block F, provided with the scraper and bed-knife, and shaft I, provided with the brooming-knives *i*, all substantially as and for the purpose described.

2. The combination of the rolls C and B, when the former is of greater diameter than the latter, in order that the fiber may be partially disintegrated while passing between the two rolls, substantially as described.

3. The process, herein described, of soaking the fibrous material in tepid water while passing through the machine.

106,134.—ATTACHMENT TO PAPER-MACHINES TO PREVENT THE STRAINING AND BREAKING OF THE PAPER DURING MANUFACTURE. — Lorenzo Dean, Fort Edward, N. Y.

Claim.—The standard *e*, or other part of the frame, in combination with the box *f* and spring *k*, substantially as described.

106,135.—BOILER FOR REDUCING FIBROUS MATERIALS TO TEXTILE STOCK.—Lorenzo Dean, Fort Edward, N. Y.

Claim.—1. The boiler herein described, consisting essentially of the outer shell *a* and the inner perforated shell *b*, having a smooth interior, in combination with the furnace *c*, substantially in the manner and for the purpose set forth.

2. The process of reducing fibrous material to a textile-fibered stock, substantially as herein described.

106,136.—CLOTHES-WRINGER.—Charles H. De Knight, Pittsburg, Pa.

Claim.—1. The frame A, the base of which conforms to the outer surface and top edge of the tub, over which projects a flange, B', to which is attached clamp C, the whole being constructed, arranged, and operating as herein described, and for the purpose set forth.

2. In combination with the above, the arrangement of the rollers D, guides and bearings *f*, and springs *e*, constructed, arranged, and operating as herein described, and for the purpose set forth.

106,137.—WASHING-MACHINE.—Charles H. De Knight, Pittsburg, Pa.

Claim.—The combination and arrangement of the hollow vertical shaft J, provided with slots *i*, spiral spring S, guide or bearing K, pin X, and set-screw P, with the rubbing-disk R, operated through the medium of lever h, wheel *f* and pinion *e*, the whole being constructed substantially as herein described, and for the purpose set forth.

106,138. — NUT-LOCK. — James Dennis, Churchville, N. Y.

Claim.—The spring *c*, inclosed in the washer B, the said spring being provided with the bearing *d*, and the washer having the lateral opening *g*, for the insertion of the arm A, in combination with the nut A, having the offsets and inclinations *a b*, the whole being arranged and operating substantially as herein set forth.

106,139.—PLANING-MACHINE.—Frank Douglas, Norwich, Conn.

Claim.—1. The swing box F, with pulley E and its shaft and pinion G, in combination with the feed-rolls of a planing-machine, when constructed and operating substantially in the manner herein set forth.

2. The yoke Q and arms R and X, in combination with gears S, V V, and W, as and for the purpose herein set forth.

106,140.—SPINNING-RING.—William F. Draper, Hopedale, Mass.

Claim.—The rebated ring-supporter C, provided with the conical shank, and with one or more cuts or kerfs, *c c c*, arranged in such supporter, substantially as hereinbefore described.

106,141.—ELECTRO-MAGNETIC LOW-WATER ALARM FOR STEAM-BOILER. — Wright Duryea, Glen Cove, N. Y.

Claim.—The combination of the floating circuit-

breaker D, the insulating-tube A, and the insulated circuit-wires *b b'*, to operate substantially as herein described, for the purpose set forth.

106,142.—ELECTRO-MAGNETIC LOW-WATER DETECTER FOR STEAM-BOILER.—Wright Duryea, Glen Cove, N. Y.

Claim.—1. An expanding and contracting circuit-closer, arranged within a steam-boiler, or its connections, for operation, by the difference of temperature of the steam and water therein, in connection with an electro-magnetic alarm or signal, substantially as and for the purpose herein set forth.

2. The combination of the wire termini G G', in the break of the circuit, the siphon tube F, containing quicksilver, the outer tube E, and the pipe or pipes A A', arranged for operation in connection with the boiler and with an electro-magnetic alarm or signal, essentially as specified.

106,143.—MANUFACTURE OF PAPER PULP.—Asahel K. Eaton, Piermont, N. Y.

Claim.—The use of oxysulphide of calcium as a solvent in the manufacture of paper pulp from straw, wood, or other vegetable substance suitable for that purpose.

106,144. — WASHING-MACHINE. — William Eaton, Norwich, N. Y.

Claim.—The buckets G, provided with the openings *d* and *e*, when constructed and arranged as described and shown, and as and for the purposes set forth.

106,145.— PIANO-FORTE. — Loring Farnsworth, Nashua, N. H., assignor to himself and William H. Flinn, same place.

Claim.—The combination of the abutment and check-nut, with the spring-plate and the pin, provided with either one or two screws, as explained, the whole being arranged and to operate substantially as and for the purpose as hereinbefore explained.

Also, the arrangement of the standards C C on opposite sides of the straining-pin and with respect to the string-plate and the check-nut, in manner as specified.

Also, the double key, as described.

106,146.—AUTOMATIC REEL FOR CLOTHES-LINE. — William Farrah, Des Moines, Iowa.

Claim.—The covered box A A A, or its equivalent, the single reel 1 2, the double reel *a a* with its detached part *b*, the disk *c* with a hole and catches, the disk *d* with a pinion attached, the drive-wheel *e*, the shaft *f*, all made, combined, and operated with the lines and weights, substantially as described and for the purposes specified.

106,147.—APPARATUS FOR DRYING PHOSPHATES.—Ernst Frank and John B. Adt, Baltimore, Md.

Claim.—The receiver A, screw-cylinders, worm-shaft B, and distributer *o r*, all combined and arranged as described.

106,148.—TRUSS.—Henry Fuller, Cattaraugus, N. Y.

Claim.—The screw-threaded extension B of the spring, provided with the two jam-nuts *m m*, whereby the arm K or L may be adjusted thereon, as shown and described, for the purpose specified.

106,149.—DEVICE FOR PACKING BOTTLES.—George C. Furber, Yreka, Cal.

Claim.—1. In combination with the plate B, of pasteboard or other similar material, the flaps A, substantially as and for the purposes herein shown and described.

2. In combination with the plate B and flaps A, the orifice C, for supporting the cork, substantially as shown and described.

106,150.—LUBRICATOR.—William Gee, New York, N. Y.

Claim.—1. The open or transparent drip-chamber, arranged below the reservoir and feed-regulating device, and in combination with the contracted opening through which the oil or lubricating material escapes from the reservoir, substantially as herein described, to provide for the dripping of the said material and the view of the drip.

2. In combination with the drip-chamber and reservoir, the test *a*, substantially as and for the purpose specified.

106,151.—TUCK-CREASING ATTACHMENT FOR SEWING-MACHINES.—Harry C. Goodrich, Chicago, Ill.

Claim.—1. The combination of the plate A, wheels E F, shaft *d*, and frame C *a b*, constructed substantially as and for the purposes specified.

2. The movable wheel E, located outside of the presser-foot of a sewing-machine, in combination with the shaft *d* and creasing-wheel F, substantially as and for the purposes specified.

3. The combination of the hinged bar *e*, frame C; wheels E and F, and yielding bar *f*, with the plate A and guide D, constructed and operating substantially as specified.

106,152.—CAR-BRAKE.—Merritt W. Griswold, New York, N. Y.

Claim.—1. A pivoted oscillating or rocking bar or frame, so supported from the truck of a railroad car and combined with its wheel-brakes, as that the friction of the latter upon the wheels shall operate to depress and force down upon the rail one end of said bar or frame, substantially in the manner and for the purpose herein set forth.

2. Lateral grooves formed in the sides of a rail-brake-bar or shoe, G, substantially as and for the purpose herein set forth.

106,153.—SCROLL-SAW.—Nicholas B. Hadley, Providence, R. I.

Claim.—1. The mechanism herein shown for operating a "scroll-saw," consisting of a series of quadrants, in combination with a series of parallel rods, the whole constructed and arranged in the manner substantially as described.

2. The fleeting connection shown in fig. 2, consisting of the yoke F, the rod G, latch and thumb-screw H, the whole constructed and arranged in the manner substantially as described.

3. A saw, provided with a circular enlargement at each end, and attached to the bars A and A', in the manner substantially as described.

106,154. — STOVE-GRATE. — Robert Ham, Troy, N. Y., assignor to Cox, Church, & Co., same place.

Claim.—The vertical, transverse, suspended, or oscillating supporting grates B B, in combination with the horizontal or main grate A, substantially as and for the purpose herein specified.

106,155.—HEMMER FOR SEWING-MACHINE. Milo Harris, Jamestown, N. Y.

Claim.—The block C, provided with spiral grooves or ridges, and arranged near the termination of the scroll-plate B, on the horizontal part of the same, as and for the purpose specified.

106,156. — FARM-GATE.—Amasa Hathaway, Prairie Du Lac, Wis.

Claim.—In combination with the gate E F G and the beam C, centrally pivoted on the post B, the bar H, when connected with said beam by rods K, and pivoted centrally to the post A, all constructed and arranged and operating as shown and described.

106,157.—SKY-LIGHT.—George Hayes, New York, N. Y.

Claim.—1. The arrangement of the vertical stay-plate *c*, with the shell or body *a* of the rafter, molding *d*, rebates *b b*, and gutters *c c*, substantially as specified.

2. The clip G, formed with corrugations *h*, made to constitute gutters, and arranged and applied relatively to the glass, essentially as described.

3. The arrangement of the end outlets *f f* with the hollow body of the lower transom E and escape apertures *g*, substantially as specified.

106,158.—MANURE-DRAG.—Josiah D. Heebner, Norrittonville, Pa., assignor to himself and David S. Heebner, same place.

Claim.—The combination of the drag *a b* with the standard *d*, and jointed beam *e f*, in the manner and for the purpose specified.

106,159.—RAILWAY-CAR COUPLING.—Jacob Wilson Hess, Montandon, Pa.

Claim.—The coupling-box A, in combination with the draw-head B, the jaws C C, the coupling-pin E, the segmental cogged wheels F F, the pawl G, the lever H, with springs *a a'*, and axes *b b'*, the guides I I, and the pin K, all constructed, arranged, and operated as described, and for the uses set forth.

106,160.—MACHINE FOR TURNING LOGS.—William E. Hill, Erie, Pa.

Claim.—The combination of the swinging bars D, weights or springs E, spur-wheels F, bevel-gear wheels G H, shafts I, bevel-gear wheels J K, pulleys L, and band M, with each other, and with the frame and carriage of the saw-mill, substantially as herein shown and described, and for the purpose set forth.

106,161.—CULTIVATOR.—Seth B. Hoisington, Galesburg, Ill.

Claim.—1. The combination and arrangement of the plate N, with its cross-head N', with beam U, plates F, bolts G and H, and rod C, substantially as and for the purpose specified.

2. The arrangement of bearings E, eye-bolt D, axle A, and rod C, substantially as and for the purpose specified.

3. The combination and arrangement of beam U, hook W, and nut W', socket V, bolt Y, and nut V', with shank X, substantially as and for the purpose specified.

106,162.—APPARATUS FOR THE MANUFACTURE OF BESSEMER STEEL.—Alexander L. Holley, Brooklyn, N. Y.

Claim.—1. The combination, with a converter, of a tweer-box, having such relation to the opening in the bottom of the shell of the converter, that when the tweer-box is attached to the converter, a portion of the opening in the converter, constituting the annular space above described, shall be exposed, so that it can be filled by ramming from the outside of the converter, substantially as and for the purposes set forth.

2. The combination, with the tweer-box, of two or more brackets, having between them openings, suitable to admit of ramming the annular space above described from the outside of the converter, in the manner and for the purposes set forth.

3. The herein-described arrangement, in the lower portion of a converter, of openings through the shell thereof, located opposite the annular space, and below the line of the upper surface of the new bottom, and adapted to enable the annular space to be filled by ramming from the outside of the converter, substantially in the manner described.

4. The herein-described method of filling the annular space, by so exposing the same that it may be reached and rammed from the outside of the converter, substantially as and for the purposes made known.

5. The combination, with the shell of the converter, of the covers, as described, for the purpose of covering and holding in the rammed material, substantially as set forth.

103,163. — BALANCE. — Woodbury Storer How, Cincinnati, Ohio.

Claim.—The combination of the freely-suspended scale-pan D, the pivot E, the counter-numbered equal gradnations *b* to *b'*, and the movable poise-weight *c*, with the long arm A of an unequal balance or scales, substantially as and for the purposes hereinbefore set forth.

106,164.—SAD AND CRIMPING-IRON.—Charles Hyatt, Buffalo, N. Y.

Claim.—1. The construction and arrangement of sad-iron *a a* with crimping-iron *b b*, as and for the purpose set forth.

2. The combination of sad-iron *a a*, crimping-iron *b b*, and crimper *c c*, substantially as and for the purpose specified.

106,165. — ROTARY BLOWER.—William G. Hyndman, Cincinnati, Ohio.

Claim.—1. The blower-case A, made to support the abutting pistons, the circle or sweep of which in the surrounding case is lined with a cement of bees-wax and resin or brimstone, retained without the use of guards and ledges, all substantially as herein set forth.

2. The pistons B B, composed of the blades C C, guards E E, concavities D D, with the lining *d* applied in a liquid condition, while heated, to form a continuous contact of the blade-surfaces, all substantially as herein set forth.

106,166.—BILLIARD-CUE.—Martin V. Ingersoll, Norwalk Bridge, Conn.

Claim.—A billiard-cue head formed with a sleeve to surround the cue, and constructed with a shoulder below the head, and secured to the cue by means of a band or ferrule, B, the end of which is covered by the shoulder below the head, substantially as described.

106,167.—MACHINE FOR SHARPENING HARVESTER-CUTTERS. — William S. Ingraham, Evanston, Ill.

Claim.—1. The combination of a holder, having a guide-arm or arms, *a a*, with a tank or bed, having a guide standard or standards, G G', and a pitman and crank, E *d*, when constructed to operate substantially as and for the purposes specified.

2. In a machine for grinding harvester-cutters, the described construction of the shoulder *m*, and flange *n*, formed upon the tank F, when arranged to operate together, and in combination with the set-screw *t*, as and for the purpose specified.

106,168.—BUNG-BORER.—William A. Ives, New Haven, Conn.

Claim.—As an improved article of manufacture, the herein-described "bung-borer," consisting of the conical body *a*, formed in the manner described, provided with a gimlet point, *d*, and combined with a cast-metal head, B, in the manner substantially as set forth.

106,169.—HINGE.—William Johnson, Milwaukee, Wis.

Claim.—Button or cam F, at the lower end of pintle D, to prevent said pintle from being accidentally lifted out of its socket.

106,170.—HINGE.—Frank B. Jones, Louisville, Ky.

Claim.—As an article of manufacture, the hinge A A B, formed with two right-angled bends on each leaf, to fit upon the rabbeted edges of the shutters, as shown in fig. 2 of drawing, and for the purpose specified.

106,171.—PROCESS OF SEPARATING NAILS FROM FELT.—William Jones, New York, N. Y.

Claim.—The herein-described process for sepa-

rating nails from felt, the same consisting in placing the felt in a vessel, A, containing water, and provided with orifices for the admission and escape of water, and having a trap-door, *b*, and then subjecting it to the action of rotary beaters B *f f*, operated by means of gearing *h e g*, whereby the nails are loosened from the felt and fall to the bottom of the vessel, all substantially as set forth.

106,172.—MACHINE FOR BENDING CLEVIS AND STIRRUPS.–William C. Kaiser, Louisville, Ky.

Claim.—1. The combination and arrangement of the slotted clamps C C, the movable center-piece G, the vertical pins F F, slotted plate A, slotted and grooved sliding plate M, bolt T, connecting-rod P, transverse rock-shaft Q, having its bearings in pendants secured to the lower side of plate A, and lever R, all constructed and operating substantially as described, and for the purpose set forth.

2. In combination with the above, the clamping-device or appliance for holding in place the article while being bent, consisting of the horizontal sliding rod H, lever I, and link L, secured to the plate A by means of the lugs J K, arranged and operating as described.

106,173.—LAMP-SHADE AND REFLECTOR.—James M. Kenerson, Newport, N. H., assignor to himself and Edmund Burke, same place.

Claim.—The employment of polished or burnished copper surfaces in the construction of lamp-reflectors, as herein set forth.

106,174. — PLATFORM-SCALES. — Michael Kennedy, New York, N. Y.

Claim.—In combination with the knife-edges, permanently secured in the levers, substantially as described, the arrangement of the bearing-blocks in links of the connecting-rod or rods so constructed, substantially as described, that they can be opened and closed, to connect or disconnect the levers without removing the knife-edges.

106,175.—ATTACHING RUBBER TO WRINGER-SHAFTS.—Silas R. Kenyon, Greenville, R. I., assignor to himself and William D. Vernam, Elizabeth, N. J.

Claim.—1. The rubber dowels, passing into and through holes in the shaft, to connect the rubber cylinder to said shaft.

2. A rubber roller, having a corrugated surface, produced by the interior of the mold, in which the same is vulcanized.

106,176. — SHUTTER-FASTENER. — John W. King, New York, N. Y.

Claim.—The combination of hook C, sectional apertured tubular piece D in the shutter, catch E, and flanged sectional tube F in the casing, operated by the lever H, all constructed, arranged, and operated as set forth.

106,177.—GRAIN-SEPARATOR AND SCOURER. William C. Knox, Jacksonville, Ill.

Claim.—The combination of the dust-chamber C, formed between the outer cylinder A and the inner perforated lining B, tube D, and air-inlet G, all substantially as and for the purposes herein set forth.

106,178.—SLEEPING-CAR.–George S. Koontz and John B. Hill, Washington, D. C.

Claim.—1. The combination of the folding portions D D of the partitions, and the recesses formed in the raised panels, when the partitions are held in said recesses by means of journals or pivots formed upon their ends, substantially as and for the purpose set forth.

2. The partitions between the berths, consisting of hollow portions D^2, folding portions D, and sliding portions D^1, or their equivalents, substantially as and for the purpose set forth.

3. The spring *d*, in combination with the folding portion of the partition, substantially as and for the purpose set forth.

4. The longitudinal seats B and chairs B^2, when arranged with reference to each other, substantially as and for the purpose set forth.

5. The sliding partition between the state-room and the other portion of the car, having in it a swinging door, when arranged with reference to the folding partition, substantially as and for the purpose set forth.

6. The sliding backs of the longitudinal seats, when constructed and arranged substantially as and for the purpose set forth.

7. The swinging panels or doors E E, when arranged with reference to the folding portions D D of the partitions, substantially as and for the purpose set forth.

106,179.—BELT-GUIDE.–Charles P. Leavitt, New York, N. Y.

Claim.—The combination of the double rollers 1 2, with the swivel-yoke D, and the belt A, constructed, arranged, and operating substantially as and for the purpose herein described.

106,180.—PRESSURE-GAUGE.—Charles Liedke, Sandusky, Ohio.

Claim.—A pressure-gauge, composed of the plunger C, cylinder *d*, springs *h* h^1 h^2, spring ring *k*, rollers *n*, chain *p*, lever *r*, chain *s*, pulley-wheel *w*, in combination with the spiral spring *y*, spindle *v*, and hand or pointer E, all constructed and arranged as and for the purposes hereinbefore described.

106,181. — STABLE-CLEANER. — Thomas F. Longaker, Philadelphia, Pa.

Claim.—The band E, tongue B B, handles *g g*, the spring C C, and the diagonal supports *f f*, fastened to head or cross-bar *a* and to band E, arranged and operating as herein described.

106,182. — EGG-BEATER. — Thomas Marsh and James Berney, Pawtucket, R. I.

Claim.—1. The combination of wheels B, C, D, D′, and D″, with the beaters *a a* and *a′*, when constructed and arranged to operate in the manner and for the purpose herein described.

2. The spring foot *c*, attached to center guide-shaft *b*, and having pivot-pins at *c′*, in combination with the removable beaters *a a*, in the manner described.

106,183.—FENCE.—David McCurdy, Ottawa, Ohio.

Claim.—The fence above described, consisting of the sills A, uprights B, cross-stakes C, caps G, wire ties *b*, bars E, riders F, blocks *a*, and rails D, when constructed and arranged as described and shown, and as and for the purposes set forth.

106,184. — GRAIN-SCOURING MACHINE. — William McLaughlin, Jersey City, N. J.

Claim.—The combination of one smooth-faced stone with a stone having one continuous groove, forming a coil upon its surface, as shown in fig. 2 of drawing.

106,185.—STEAM-ENGINE.—Joseph P. Merriam, Sandusky, Ohio.

Claim.—1. A variable cut-off, composed of the clutch-plates R R′, gear-wheels S S′, W W′, U, and Y, bevel-wheels *o o*, T T, and worm O, oscillating guide-plate V, with the guide-studs thereon, cams *p p′*, tripping-lever 9, supplementary valve-stems *m m′*, *n n′*, in combination with the governor M, all arranged and constructed as hereinbefore described.

2. The arrangement of the steam-passages or channels *a b c d*, ports *g g* and F F in the chamber B, the pockets E E, valve-chambers *e e*, *f f*, and ports K′ K″, the jacket H, and exhaust-pipe K, all as and for the purpose set forth.

106,186.—METALLIC HEEL FOR BOOTS AND SHOES.—Edgar T. Miller, Albany, N. Y., assignor to himself and John Hewitt, same place.

Claim.—A metallic heel, consisting of the spurred shoulder *s* and flared mouthed flange *s*, plate *h* and flange H′, when the same are cast or otherwise formed in one piece, substantially as described, as and for the purpose specified.

106,187.—SAW.—Charles Mitzelfield, Detroit, Mich., assignor to Mack Flanigan, same place.

Claim.—1. The teeth B, constructed as described and shown, and as and for the purpose set forth.

2. In circular saws, the combination of the cutting-teeth B and clearing-teeth C, when constructed in the form, and operating substantially as and for the purposes herein set forth, shown, and specified.

106,188. — MACHINE FOR BENDING AND PUNCHING CAR-HOOKS.—David G. Morris, Catasauqua, Pa.

Claim.—1. The combination of the segmental movable die P *p′*, stationary die O, guides or jaws N, grooved bed-plate A, and gear-wheel Q, substantially as herein shown and described, and for the purpose set forth.

2. In combination with the elements of the above claim, the punch M, substantially as and for the purpose shown and described.

3. The combination of the gear-wheel F, shaft G, eccentric H, box I, plunger J, punch-holder K, hand-wheel L, punch M, stationary guides and supports N, stationary die O, movable segmental die P *p′*, grooved bed-plate A, gear-wheel Q, vertical shaft R, and bevel gear-wheels S T, with each other, and with the frame-work B, substantially as herein shown and described, and for the purposes set forth.

106,189. — WATER-ELEVATOR. — Thomas Lafevda Morriss, Claypool, Ky.

Claim.—The combination of the timber A, bar B, track C, rollers D D, carriage E, roller G, cords or chains *a b*, and rollers *d d*, all constructed and arranged substantially as and for the purposes herein set forth.

106,190.—PROCESS OF FORGING CARRIAGE-SHACKLES.—Francis B. Morse, Plantsville, Conn.

Claim.—The process herein described for forging carriage-shackles, consisting in constructing the several parts of the form substantially as described, and temporarily attaching the two ears to the base by inserting the ends of the base C in the grooves of the ears, and then swaging the lips *a d* down into the base C, as shown, so as to be locked onto the base preparatory to welding, substantially as set forth.

106,191.—BASE-BURNING FIRE-PLACE HEATER.—Andrew Murdock, Brooklyn, E. D., N. Y.

Claim.—1. The descending flue *i*, between the fire-pot *g* and front portion of the casing *f*, opening at the top into the combustion-chamber *u*, and at the bottom into the side flues *b b* of the fire-place heater, substantially as set forth.

2. The damper *e*, below the ascending flue *v*, in combination with the flues *c*, *b b*, and *i*, as and for the purposes set forth.

106,192.—ATTACHMENT TO PLOWS.—James W. Murfee, Havanna, Ala.

Claim.—1. In a subsoil-plow, the openers A B C D and *a b c d*, having brackets *f f*, in combination with the colter, having projections *p p p*, substantially as above described.

2. In a subsoil-plow the scrapers *k i r w z q* and *g h t s u v*, having brackets *f f*, in combination with the colter, having projections *p p p*, constructed substantially as specified.

106,193.—ATTACHING THE POINT TO THE SHANK OF SUBSOIL-PLOWS.—James W. Murfee, Havanna, Ala.

Claim.—In a subsoil plow, the mortised heel *h*, to the end of the colter shank, in combination with the tenon *d*, attached to the point of the plow, and secured in place by the screw *s* and tap *t*, substantially as specified.

106,194.—HORSE-POWER.—James W. Murrell, Eldorado, Arkansas.

Claim.—The employment in a horse or other power apparatus, substantially as specified, of a driving-wheel, D, and pinion E, provided with teeth L K, arranged and operating substantially as specified.

106,195.—SUBSOIL PULVERIZER.—Godfrey S. Newsom, Nashville, Tenn.

Claim.—The arrangement, in a subsoil pulverizer, and on a rotating tool-stock thereof, of a series of triangular plow-points, L, sharpened on two sides, and shanks K, drawn to an edge on their front sides, all for the purpose of cutting and breaking up without turning the soil.

106,196.—SCRUBBING-BRUSH.—Jacob Odell, Petroleum Centre, Pa.

Claim.—A long-handled scrubber, having two independent brushes, B B, a central strip, C, shorter than the bristles, and a vacant space between the said strip and bristles, as shown and described.

106,197. — ROCK-DRILL.—Hermann Osterkamp, Eschweiler City, Prussia.

Claim.—The improved drill, formed by the combination of the cylinders A and F, pistons B G, and their rods C H, the piston-rod *l*, (with its ports *j k*,) the pawls *h*, ratchet-wheels *g*, bevel-gears *d e*, shafts *f* and E, when said parts are constructed and arranged as shown and described.

106,198.–INK.–Charles F. Panknin, Charleston, S. C.

Claim.—The improved anti-acid ink above described, formed of the ingredients, and in the proportions specified, and brought into combination, as set forth.

106,199. — VAPOR-BURNER. — Robert W. Park, Philadelphia, Pa.

Claim.—1. The wick-tube A, fluid or vapor-chamber C, perforated air-chamber E, and the deflector G, when combined and arranged as shown and described.

2. The circular space *c*, between the edges of the rim *b* of the fluid-chamber C, and the upper truncated cone of the deflector G.

106,200. — VAPOR-BURNER. — Robert W. Park, Philadelphia, Pa.

Claim.—The wick-tube A, in combination with the fluid or vapor-chamber C, and the cap or deflector E, substantially as and for the purpose shown and described.

106,201.—STEAM-TRAP. — E. Lamson Perkins, Joseph H. Moulton, and Charles E. Sawyer, Boston, Mass.

Claim.—The elastic plug C, in the valve of a steam-trap, having a flat elastic surface, which is brought in direct contact with the mouth *b* of the pipe A, the point of contact being on a line with or above the mouth of the pipe E, all constructed as and for the purpose described.

106,202.—Corn-Planter.—George W. Pittman, Winona, Miss.

Claim.—The frame A, with the two upright posts B and handles *d* attached, with the drag *c* at the bottom, in combination with the wheel C and conical pulleys *f* and *g* upon the shaft D, operating by means of the belt h upon the inverse conical pulleys *i* and *j*, and feed-wheel F, with buckets *m* and *n* attached, in connection with the box E, secured by the screws *o*, and the conductor *l* and plow-share *a* in its front, as and for the purposes hereinbefore set forth.

106,203. — Arching-Bricks. — Watson F. Quinby, Wilmington, Del.

Claim.—The brick A, herein shown, when provided at each end with the two radial ribs *a a*, and the radial groove *b*, said groove being equal in width to the sum of the widths of the ribs, as and for the purpose specified.

106,204.—Car-Coupling.—William A. Rex, and Joseph M. Rex, Jr., Butler, Ind.

Claim.—The arrangement of the spring catch-lever K L, rod I, and the connecting-link by which the pin D is operated, all as shown and described.

106,205.—Drier.—Jacob E. Rice, Moline, Ill., assignor to himself and Charles H. Remington, same place.

Claim.—The chambers A and B, furnace E, pipes or flues G G' and I, shields C and D, chimney H, pipes J and K, and valves *h*, *j*, and *i*, fruit-trays L L, ledges *l l*, and bars *l' l'*, when combined and arranged to operate substantially as described, and for the purpose specified.

106,206.—Air-Heating Steam-Condenser. Peter J. Rice, Ashtabula, and David A. Scott, Cincinnati, Ohio.

Claim.—1. The precipitator B, with the compartments *d d' d''*, combined with the condenser and radiator A, composed of flues h h and apertures *h'* and *j*, air-passages *g g*, and fan K, substantially as herein set forth.

2. The condenser A, with the flues h *h*, apertures *h'* and *j*, and air-passages *g*, combined with the precipitator B, divided into the compartments *d d' d''*, all constructed and arranged substantially as herein set forth.

106,207, antedated August 5, 1870.—Mode of Treating Tobacco.—Samuel G. Rice, Albany, N. Y.

Claim.—The mode, substantially as herein described, of preparing and improving tobacco.

106,208.—Cooking-Stove.—Francis Ritchie, Troy, assignor to Jewett & Root, Buffalo, N. Y.

Claim.—1. The arrangement with the baking-oven A and rear extension A', of the lower portion thereof, of the flues F H G G, damper *m*, and exit-passage I in front of the extension A', all as hereinbefore set forth.

2. In combination with the baking-oven A, provided with a lower rear extension, A', the extension of the outer top, rear, and side plates, *f*, *h*, and *g g*, till they intersect each other, so as to inclose the space over the extension A', as and for the purpose hereinbefore set forth.

3. The arrangement of the warming-oven E under the fire-chamber B, and in front of the oven A, arranged wholly in rear of such fire-chamber, and separated from the warming-oven, all as hereinbefore shown and described.

106,209.—Apparatus for Tanning.—John Robinson, Samuel F. Robinson, and Christopher C. Putnam, Skowhegan, Me.

Claim.—The tanning-cylinder C, with the legs F, provided with the brads N, movable laterally around the cylinder-heads, and operating substantially as and for the purposes herein shown and described.

106,210.—Broiler.—David E. Roe, Elmira, N. Y.

Claim.—The improved broiler herein described, composed of the conical or equivalent-formed body A, provided with the groove, or its equivalent, in the inner side thereof, in combination with the removable gridiron B, resting in the said groove, substantially as and for the purpose herein specified.

106,211. — Curtain-Fixture. — Franklin Root, Hartford, Conn.

Claim.—1. The combination of the fixed roll B, the collar *c*, and the pulley *b*, constructed substantially as described, for the purposes set forth.

2. The combination of the parts mentioned in the preceding clause with the movable roll C, the pulley *i*, cord *s'*, and loose pulley *b'*, constructed substantially as described, for the purposes set forth.

106,212. — Apparatus for Cooling the Rollers Used in the Manufacture of Isinglass.—Ebenezer Rowe, Rockport, Mass.

Claim.—In combination with the rollers, the refrigerating or cooling-cistern, and its means for supplying the cooled water thereof to the rollers, one or more pipes or conduits, or means of returning into the refrigerating-vessel or cistern the spent cooled water after its exit from the rollers.

Also, the combination of the cooling-cistern, the receiving-tank, the pump, the rollers, and the conduits leading from the rollers to the said cistern and tank, the whole being substantially and to operate as and for the purpose as set forth.

Also, in combination with the rollers, the pump and conduits for conveying water to and into the rollers, and leading it therefrom to the cooling-cistern, such cistern, as made in two compartments, provided with a passage or means of communication, arranged as and for the purpose substantially as explained.

106,213.—Liquid for Raising Paste or Dough.—Arthur Sauer, Gustave Sauer, and Léonce Cachal, Paris, France.

Claim.—The composition of a liquid for raising paste or dough, composed of a certain number of parts of the several ingredients herein described.

106,214.—Cigar-Machine.—Socrates Schofield, Providence, R. I., assignor to himself and Richard A. Bright, Jr., same place.

Claim.—A flexible tubular covering, revolving upon a stationary curved spindle or core, arranged to operate in a cigar-machine, substantially as described.

Also, the combination of an inner metallic and an outer non-metallic tubular covering, revolving upon a central spindle or core, when used to inclose and roll a cigar, substantially as described.

Also, the employment or use of spiral or screw-thread-surfaced rolls, operating to force the inclosed cigar into the head of the machine, substantially as described.

Also, a slide, F, in combination with any tubular covering used to perform the function of a roll in a cigar-machine, each machine being opened to insert or remove the cigar by a direct movement of the slide, substantially as described.

Also, a spindle, G, in combination with a former-head, M, and tubular roll *g*, or its equivalent, embracing the cigar longitudinally from tack to point, substantially as described.

106,215.—Nut-tapping Machine.—William Scully, Detroit, Mich., assignor to the Michigan Bolt and Nut Company, same place.

Claim.—1. The nut-holders L, constructed and arranged as described and shown, and as and for the purposes set forth.

2. The arrangement of the standard J, guide-bars K, nut-holders L, and springs M, when the several parts are constructed and arranged as described and shown, and as and for the purposes set forth.

3. The construction and arrangement of a series of nut-holders L, moving independently of each other between the guide-bars K, reservoir O, and flexible tubes P, in connection with a corresponding series of taps N, continuously rotated in the same direction by any suitable train of gearing, in the manner and for the purpose set forth.

106,216.—Apparatus for Carrying Grain, Plaster, &c., for Sowing.—Orson W. Smith, Flint, Mich.

Claim.— The herein-described arrangement of the bag A, belts C and D, and hoop B, as herein constructed and combined.

106,217. — Steering Apparatus.—George Seymour, London, England.

Claim.—The combination of the double rudder and stern-post, substantially as described.

Also, the combination of the double rudder, stern-post, and screw propeller, substantially as described.

106,218. — Mitering-Machine. — Ephraim Shaw, Tarr Farm, Pa.

Claim.—The arrangement of the slotted ring-guide E, provided with the shank or rod D, the disk C, turning on an arbor, *c*, the clamp-arms *b b*, clamp-screws *d e*, and post B, as shown and described.

106,219.—Composition for Oiling Wool. James Shaw, Philadelphia, Pa., assignor to Conyers Button, same place.

Claim.—A wool-oiling composition, consisting of the ingredients described, prepared in the proportion and manner substantially as set forth.

106,220.—Washing-Machine.—Morrill A. Shepard, Evansville, Ind.

Claim.—The oblong, oval-ended, and corrugated vessel B, the forked staff A, the arms F F, axles D D, the two handles E E, and the two straps L L, the cover M, all combined as shown, for the purpose hereinbefore set forth.

106,221.—Box.—Charles J. Siercke, Chicago, Ill.

Claim.—As a new article of manufacture, a wooden box formed by a folding strip of wood in the line of a series of beveled transverse grooves formed partially through the same, upon a bottom whose beveled edges fit within a longitudinal groove formed in the strip of wood at or near one edge, substantially as described, for the purpose specified.

106,222. — Steam-Generator. — Edwin B. Sintzenich, Rochester, N. Y., assignor to himself and Henry G. Hamilton, same place.

Claim.—1. The thimbles *c*, passing through the water-spaces of a steam-boiler, when used in connection with the circulating-tubes B, centrally located within the fire-flues, and connected to the water and steam-spaces of the boiler, substantially as described.

2. The arrangement of the bent tubes B' within the furnace and fire-flues of a steam-boiler, one end being connected to the water-bottom and the other to the water or steam-space of the boiler, substantially as and for the purposes set forth.

106,223. — Flour-Bolt. — John Skinner, Hadley, Mich.

Claim.—1. In combination with the shaft B and the reels C and C', the bracket D, when constructed and arranged as described and shown, and as and for the purpose set forth.

2. In combination with the conveyer F, provided with the gudgeon *b*, the hanger G, depending from the cross-beam E, when constructed and arranged as described and shown, and as and for the purpose set forth.

3. The arrangement of the shaft B, the reels C and C', the bracket D, the cross-beam E, and the conveyer F, in connection with the frame A, when the several parts are constructed as described and shown, and as and for the purposes set forth.

106,224.—Lathe-Dog.—John S. Skinner, Lebanon, N. H.

Claim.—The combination of the angularly-notched jaws A B, arm *b*, screw-bar *d*, and right-and-left screw C, all constructed, arranged, and operated as and for the purpose set forth.

106,225. — Die for Forging Carriage Shackle-Blanks. — Willis B. Smith, Plantsville, Conn.

Claim.—1. The dies A and B, for forging carriage shackle-blanks, constructed as herein shown and described.

2. The carriage shackle-blank H, constructed and formed substantially as shown and described.

106,226.—Pump.—Peter M. Snell and Oscar Snell, Williamsburg, Ohio.

Claim.—1. In combination with the cylinder B, the piston C, the piston-plates H H', the head J J', the discharge-pipe D, and the partition G, (through which the piston works,) arranged and operating substantially as and for the purposes herein shown and described.

2. The hollow piston C, provided with the ports I, and formed on or attached to the lower end of the discharge-pipe D, as shown and described.

106,227.—Iron Frame for Pianos.—George Steck, New York, N. Y.

Claim.—The construction of the iron frame of piano-fortes with braces A A A A A A, so formed and arranged that the strain of the strings shall have no tendency to bend or warp them in either direction, substantially as herein specified.

Also, in combination with the foregoing, the transverse rib N, projecting from the back of the bar or rail G, substantially as and for the purpose herein set forth.

106,228.—Feeding Device and Presser-Foot for Sewing-Machines.—Charles M. Stocker, Georgetown, Mass.

Claim.—The presser-foot and feeder, provided with the stitch-receiving recesses, arranged with reference to their needle-slots, and so as to extend therefrom laterally out of the feeder and presser-foot, as and for the purpose as hereinbefore explained.

106,229.—Cotton and Hay-Press.—Charles W. Stoppel, Houston, Texas.

Claim.—1. The pivoted swinging yoke A, combined with track K, pivoted link-bar M, and nut B, as and for the purpose described.

2. The yoke A, formed in two sections, combined with nut B, and ratchet-collar P, and plain collar O, formed solid, as described, and for the purpose specified.

106,230.—Horse Hay-Fork.—Leverett W. Stuart, Narrowsburg, N. Y.

Claim.—The tripping device, composed of the dog K, spring catch L, and stud N, arranged and operating substantially as and for the purposes described, in combination with the lever E, and connecting-rod or rods, and the cutting-forks B C.

106,231.—Water-Closet.—William George Stuart, Springfield, Mass., assignor to John W. Trafton, same place.

Claim.—1. The combination of the discharge-

valve D, and supply-valve H, with rod E and weighted lever J, to enable the two valves to be opened and closed simultaneously by a person sitting upon the pan B.

2. The tubular piston-rod O, and wire P, constructed and arranged in the tube N, as and for the purpose specified.

106,232.—PHOTOGRAPH ALBUM.—Jesse F. Tapley, Springfield, Mass.

Claim.—The album-leaf with openings for pictures, composed of two pieces of paper, wherein one is wider than the other, for the purpose of forming a flexible hinge, in combination with the pieces of board to fill the back, and the cover having flexible joints, as described.

106,233.—REFINING PETROLEUM.—Joseph A. Tatro, Hartford, Conn.

Claim.—The process described of applying the said ingredients, in about the proportion specified, to the whole product arising from the distillation of crude petroleum, substantially in the manner and for the purpose set forth.

106,234.—BOOK-BINDING.—Jabez C. Terry, Springfield, Conn.

Claim.—As an article of manufacture, a book-handle, B, of an elongated form, and having a concavity in each side thereof, so that it may be readily applied to a book, as shown in drawing, and described in specification.

106,235.—CULTIVATOR.—James B. Tibbits, Portland, Mich., assignor to himself and Joseph Stebbins, same place.

Claim.—1. The combination of the hinges L M, with the plows K and standards E, substantially as herein shown and described, and for the purpose set forth.

2. The combination, with the beam A and standards E, of the hinged plows K, bars or rods N, and pivoted adjustable lever O, all arranged to operate as specified.

106,236.—AUTOMATIC TABLE-FAN OR BRUSH. Robert E. Tolar and William D. Ott, Newnan, Ga.

Claim.—The combination of the crank *i*, connecting-rod *j*, bent rod or crank *k*, running through the standard I, rod K, provided with sleeve M and screw *z*, adjustable sleeve L, set-screws *n n* and *m*, arms P with brushes or fans, slide *g* and stop *h*, and fly-wheel E, constructed and arranged to operate in connection with the driving mechanism hereinbefore described, for the purpose specified.

106,237.—COCK.—John W. Trafton, Springfield, Mass.

Claim.—The combination of the stem C with the head K, cap I, center-piece G, with screw-sockets and rubber plug E, all arranged and constructed as shown, and for the purpose set forth.

106,238.—STUMP-PULLER.—Grey Utley, Charlotte, N. C., assignor to himself and Glenn & Wright, Atlanta, Ga.

Claim.—An improved stump-puller, formed by the combination of the uprights A, sills B, detachable brace-rods D, beam C, flanged plate E, having hooks or catches N formed upon its opposite sides, links M, levers L, links K, blocks H, with its dogs I *i'*, and hooks J, bar F, hook G, and block O, with its dogs P *p'*, with each other, substantially as herein shown and described, and for the purposes set forth.

106,239.—MEDICAL COMPOUND OR PILL.—Joseph P. Waddell, of Brookhaven, Miss.

Claim.—The combination and use of the above medicine and extracts, for the purposes as stated.

106,240.—SHOW-CASE.—Edward Watson and Richard H. Norris, Paterson, N. J.

Claim.—The combination and arrangement of the glass strips C, in the stand or frame of the case, with the drawers B, arranged to present a step-like position relatively to the front of the case, substantially as specified.

106,241.—WIRE FOR ATTACHING SOLES TO BOOTS AND SHOES.—William Wickersham, Boston, Mass.

Claim.—A wire for attaching the soles of boots and shoes to their vamps, having a screw-thread around it with a short twist, as described, and having the outer portions of said screw-thread rounded, substantially as and for the purpose set forth.

106,242.—SEWING-MACHINE TABLE.—Charles H. Wilcox, New York, N. Y., assignor to Wilcox & Gibbs Sewing-Machine Company, New York City.

Claim.—The rock-shaft B, beveled at the ends, and provided with V-shaped bearings *b*, extending to the center of motion of the rock-shaft B, and supported in a V-shaped bearing-seat, *a*, in combination with a treadle movement, substantially as and for the purposes set forth and specified.

106,243.—CAST-IRON CAR-WHEEL.—William Wilmington, Toledo, Ohio.

Claim.—The method herein described of casting a car-wheel by the separate pourings of molten hard and soft iron into a mold that is provided with an induction-aperture, for the reception of the molten metal, and a series of eduction-apertures, through which a portion of the molten metal first poured into the mold is discharged therefrom and replaced by the second pouring of metal into the same, all substantially as herein set forth.

Also, as a new manufacture, an improved car-wheel, composed of two qualities of cast-iron, when molded and cast substantially in the manner herein set forth.

106,244.—EARTH-CLOSET.—Joel Wood, Martinsville, Ohio.

Claim.—The combination of the seat A, lever C, doors D and E, and hopper B, arranged and operating as shown and described.

106,245.—TWEER.—Edmund Younge, New York, N. Y.

Claim.—The construction of the recesses *f* in the annular plate C, and the lugs *e* on the hearth D, as and for the purpose described.

106,246.—MAGAZINE GUN.—Nathan H. Ambler, East Cleveland, Ohio.

Claim.—1. The revolving magazine B, provided with one or more chambers, C, as arranged in relation to and in combination with the barrel A, substantially in the manner as described and for the purpose set forth.

2. The air-chamber N, surrounding the barrel A, formed by the magazine in the manner as described, and for the purpose set forth.

3. The cartridge-holder J, when constructed in the manner as described, and used for the purpose specified.

4. The cartridge-holder J, spring L, and chamber C, when arranged to operate conjointly in the manner as described, and for the purpose set forth.

106,247.—MICA CHIMNEY FOR LAMPS.—John Baird and Warren Fisher, Hamilton, Ohio.

Claim.—The mica lamp-chimney, composed of a sheet of mica, A, united by the clips B B', and the bands C C', of elastic metal, in the manner set forth.

106,248.—SHADE-CORD RETAINER.—William Henry Bechtel, Philadelphia, Pa.

Claim.—The combination of the frame A, its projections *e e*, the sliding rack B, and the cylinder C, having a spiral thread adapted to the teeth of the rack, all as set forth.

106,249.—SEWING-MACHINE.—Joseph Bennor, Philadelphia, Pa., assignor to himself and Abraham Rex, same place.

Claim.—1. The bed-plate A, having slotted lugs A, and shuttle-guiding face *e'*, and the frame B B', when constructed and combined substantially as described, so that the frame and bed-plate can be adjusted the one to the other, as set forth.

2. The rock-shaft D, having the arm D', and provided with feed-operating cam *n*, combined with the sleeve E, pivoted to the driving-pulley C, all substantially as set forth.

3. The adjustable cam-slotted plate *o*, in combination with the shuttle-carrier and the operating arm *e*, all substantially as described.

106,250, antedated August 3, 1870.—SAUSAGE-STUFFER AND LARD-PRESS.—Abner Bishop, Smithville, Ohio.

Claim.—The combination and arrangement of the bed A, standards B B, bar C, rack-bar D, segment rack E, lever G, hopper H, spout I, and tube *b*, all substantially as and for the purposes herein set forth.

106,251.—PROCESS OF FORMING VACUUM IN FREEZING APPARATUS.—Edward S. Boynton, Meriden, Conn., assignor to himself and Charles Parker, same place.

Claim.—The herein-described process of forming the vacuum in freezing apparatus, which consists in filling the vacuum-chamber with a liquid, then removing the same therefrom by gravitation or otherwise, substantially as set forth.

106,252.—HOP-PRESS.—Jeremiah Brockway, Richland Centre, Wis.

Claim.—1. The folding or contracting end pieces, composed of the boards *f f*, straps *h h*, and plates *i i*, all constructed and arranged substantially as and for the purposes herein set forth.

2. The combination of the slotted guide-box I, roller J, and pawls K K, with pins *i i*, all constructed and arranged substantially as herein set forth.

3. The combination with the roller J, the handle L, lever M, and drop-key *k*, constructed and arranged substantially as and for the purposes herein set forth.

4. The arrangement of the pawls K K, headed rods *m m*, block O, and spring *n*, all substantially as and for the purposes herein set forth.

5. The beam N, provided with T-shaped iron *p*, double ratchet-teeth *r r*, and dividing-flange *s*, substantially as and for the purposes herein set forth.

6. The roller P, arranged as described on the beam H, its axle being pivoted at one end and held at the other end by the hook *t*, substantially as and for the purposes herein set forth.

106,253.—PRUNING-SHEARS.—Ransom Bullard and George E. Mills, Litchfield, Mich.

Claim.—The slotted metallic standard plate F, with shoulder *e*, the shear-blades N N, arms G G, bar C, curved arm B, and lever D, all constructed and arranged as described.

106,254.—HANDLE FOR KNIVES, &c.—Matthew Chapman, Greenfield, Mass.

Claim.—The handle, herein described, composed of the two scales A A, cemented together, and bound by the ferrule B and cap C, substantially as set forth.

106,255.—SEAL-LOCK.—Everett Clemons, Catawissa, Pa.

Claim.—The combination of the casing A with beveled recess E, bolt C, with bent extension G, spring D, and hasp B, all constructed and operated substantially as set forth.

106,256.—RAILWAY-RAIL FASTENING.—John Cochrane, Farmingdale, N. J.

Claim.—A metallic cleat, having a bearing by one of its ends upon the flange of the rail, and also a bearing by its opposite end upon or in the cross-tie, in combination with a holding-down bolt that has a bearing against the rail-flange, substantially as described.

106,257.—MACHINE FOR SOLDERING METALLIC VESSELS.—Edward T. Covell, Brooklyn, N. Y.

Claim.—The combination of one or more supports or supporting devices, for sustaining a can or other vessel to be soldered, with a carriage or frame moving horizontally over a pan or vessel to contain molten solder, so as to carry the support device or devices successively to and from the solder-pan, substantially in the manner and for the purpose herein set forth.

106,258.—SAFETY-SHOE FOR RAILWAY-CAR TRUCK.—John S. Crary, Salem, N. Y.

Claim.—1. The shoe B, with its under surface, from the center outward, inclined, as shown at *c* and *a*, substantially as and for the purpose set forth.

2. The adjustable plate C, arranged to slide vertically in the shoe, in combination with the screw E, when arranged to operate substantially as described.

106,259.—SWITCH-STAND.—Charles C. Dodge, Marshall, Mich.

Claim.—1. The sleeve E, provided with tongues *i i*, and also with the side protuberance F, acting as a compound weight and handle, recessed to receive a latching device, in combination with the target-lever D and grooved guide-bars B B of the stand A, or any equivalent frame, substantially as and for the purpose specified.

2. The pendulous tumbler J and bolt *n*, in combination with the aforesaid sleeve E, protuberance F, and lever D, substantially as and for the purpose set forth.

106,260.—MACHINE FOR MANUFACTURING HOOPS.—John B. Dougherty, Rochester, N. Y., assignor to himself, Robert E. Sherlock, Joseph C. Schanck, Albert G. Wheeler, and Patrick H. Lawler, same place.

Claim.—1. The combination, in a hoop-machine, of a main saw for cutting off the hoop, and the inclined saws for cutting the inclined ends for the lap of the hoop, substantially as described.

2. The reciprocating carriage B, having secured thereto the frames C, arranged to tilt or tip in a vertical plane in the line of the movement of the carriage, substantially as set forth.

3. The combination of the latch *m*, star-wheel *l*, with its polygonal plate *k* and the tilting frame C, all constructed and arranged to operate substantially as described.

4. The sliding dogs *e*, having the rod *g* attached thereto, and arranged to strike against the stops *i*, substantially as and for the purpose set forth.

106,261.—LUBRICATOR.—Isidore Dreyfus, New York, N. Y.

Claim.—1. A lubricator, in which the oil-reservoir or vessel is combined with a sliding tube or hollow spindle, closed at one end, and provided with suitable apertures for admission and discharge of oil, the same being applied and operating substantially as shown and set forth.

2. The employment, in a lubricator for machinery, and in combination with the oil-reservoir of the sliding discharge-tube or spindle, having its end within the reservoir closed and weighted, as shown and set forth.

3. The combination of the body of the reservoir, the caps closing the top and bottom of the same, the perforated tubular stem connecting said caps, and the sliding hollow spindle or tube, under the arrangement and for operation as set forth.

106,262.—TOY.—John G. Fine, Cincinnati, Ohio.

Claim.—The combination, substantially as herein described, of the shaft A *a* L, pivot B *b*, reciprocating rotary table C, figure D E *e* F *f*, flexible support G, artificial fly H, arms I, and elastic cord or cords J, for the purpose set forth.

106,263.—MANUFACTURE OF ARTIFICIAL MARBLE.—George A. Frear, Chicago, Ill.

Claim.—1. The solution, herein described, of sulphate and chloride of zinc, sugar of lead, alum, or salt, when combined with cement, silex, or any materials or substances, either singly or in combination, suitable as a base to form an artificial marble, all substantially as herein set forth.

2. The within-described process of polishing and finishing off an artificial marble, produced substantially in the manner herein set forth.

106,264.—MOLDING-MACHINE.—Thomas Glover, Philadelphia, Pa., assignor to Morris, Tasker, & Co., same place.

Claim.—1. The patterns D, constructed as described, with a back draft, substantially in the manner and for the purpose set forth.

2. The combination of the stationary pin L with the concentric slot *g* of the hand-wheel K, substantially as and for the purpose specified.

106,265.—CORE FOR CASTING AXLE-BOXES.—William H. Hawley, Utica, N. Y.

Claim.—The arrangement upon the core, as herein described, of the soft-metal bearings B and the sand head, whereby, in casting the box, gutters D D are left between the edges of the soft-metal bearings and the rims C C, substantially as set forth.

106,266.—RAILWAY SWITCH.—James P. Herron, Atlanta, Ga.

Claim.—1. The levers F G N P, rods *d e* A *i*, levers I L M, and rock-shafts H K, combined and operating substantially as herein set forth.

2. The cam S, consisting of the rail-seats *k l* and the curved and sloping surfaces *m m*, with or without the lugs *n n*, in combination with and operated by a rock-shaft, substantially as and for the purpose set forth.

3. The cam S, when provided with the grooved eccentric, and the chains, or their equivalent, substantially as set forth.

106,267.—BELT-SHIFTING MECHANISM FOR LOOMS.—L. J. Knowles, Warren, Mass.

Claim.—1. The combination with the shipper-arm G, and swinging arm H, to which the shipper-arm is hinged, of the horn *m*, attached to said swinging arm, and the spring *n* extending between, and attached to said horn and shipper-arm, substantially as and for the purpose set forth.

2. The combination with the arm G, and rods C and F, of handles D and E, suspension arm H, and spring *n*, all constructed and operating substantially as and for the purposes set forth.

106,268.—DEVICE FOR OPERATING WINDOWS.—James S. Lester, Knoxville, Tenn.

Claim.—1. In combination with the shaft B, having feather *a*, the rollers C C, having their eyes beveled, and provided with slots *i i*, placed within the mortises on the window-frame, and connected, by cords *b b*, with the upper and lower sash, respectively, substantially as and for the purposes herein set forth.

2. In combination with the above, the spring catch E, substantially as and for the purposes herein set forth.

106,269.—STOVE-PIPE.—William P. Lewis and Silas L. Vera, Pittsburg, Pa.

Claim.—1. The pipe A, constructed with flanges or grooves at top and lower ends, in combination with the lid C and elbow E, substantially in the manner and for the purposes specified.

2. The bracket D, in combination with the pipe A and flange G, in the manner and for the purposes specified.

3. The shelf B, in combination with the bracket D and pipe A, the whole constructed and operated in the manner and for the purposes specified.

4. The combination and arrangement of the pipe A, elbow E, lid C, bracket D, shelf B, the whole constructed and operated substantially in the manner and for the purposes as shown and described.

106,270.—APPARATUS FOR EVAPORATING.—Norman R. Martin, Canandaigua, N. Y.

Claim.—1. The arrangement herein described of the air-pump A, furnace D, air-chamber B, receiver H, with false perforated bottom Z, and tubes C, K, and S, as and for the purpose specified.

2. In the evaporoting apparatus herein described, the air-heater, consisting of the furnace D, flues E E, passing through air-chamber B, together with dome F, when the several parts are constructed and arranged substantially as specified.

106,271.—GRINDING-MILL.—Gove Mitchell, Philadelphia, Pa.

Claim.—1. The combination, in a mill for grinding quarts, phosphates, &c., of the revolving wheel, with removable hammers and fanning-flanges, and an inclosing casing, the rim of which is composed of adjustable segments, some of which are serrated upon their inner surfaces, substantially as herein set forth.

2. The wheel D, constructed with removable hammers D^1 and fanning-flanges D^2, substantially as and for the purposes set forth.

3. In combination with the wheel D, the adjustable serrated segments C, substantially as and for the purpose set forth.

106,272.—BLIND-FASTENING HINGE.—John H. Nevins, Brooklyn, E. D., N. Y., assignor to William A. Bosman, same place.

Claim.—1. The pintle of a hinge provided with grooves or corrugations having inclined sides fitting the end of the locking-bolt, whereby the force used is distributed in line with the bolt.

2. The combination of the cam C, spring bolt *b*, and corrugated stud S, for the purpose named.

106,273.—MOLDING AND VENTING-MACHINE.—William Newsham, Philadelphia, Pa., assignor to Morris, Tasker, & Co., same place.

Claim.—1. The combination and arrangement of the mutilated pinions H and M M with the racks G and N N on the hubs A and *l l*, the said pinions being constructed and arranged in relation to each other for elevating and depressing the patterns E and wires R, substantially in the manner and for the purpose set forth.

2. The construction of the pinion H with the segmental blank *c*, in combination with and for retaining the pattern-plate F in its elevated position during the upward movement of the venting wires R and partial descent of the same, substantially in the manner and for the purpose specified.

106,274.—APPARATUS FOR LOADING WOOD ON RAILWAY CARS.—Jesse Nicholson, Monticello, Ind.

Claim.—1. The suspended wood-rack C, when constructed with hinged bottom boards *a a*, the inner ends of which are supported, in the manner substantially as shown and described, upon cross-heads of a sliding-bar, G, resting in hangers *a' a'*, the parts operating substantially as set forth.

2. The combination of the wood-rack C, constructed as described, pulley-block D, rope E, windlass H, and chain K, all arranged to operate substantially as set forth.

3. The combination of the windlass H, rope M, snatch-block L, stirrup N, inclined plane S, and trigger T, all arranged to operate as herein described.

106,275.—ORGAN-BELLOWS.—Joseph R. Perry, Wilkesbarre, Pa.

Claim.—1. The chamber D, fig. 1, formed with the opening for receiving air from the chamber *c*, and passing the same into the space formed by drawing on the exhaust G, and provided with the opening H, for expelling the air externally, substantially as described.

2. The valve-chambers in figs. 2 and 3, as varieties of the same, shown in fig. 1.

106,276.—MACHINE FOR HUSKING CORN.—Peter Philip, Stockport, N. Y.

Claim.—1. The picking-rolls B B', when the same are provided with spiral threads and grooves, gearing with each other, and formed of variable pitch from end to end, substantially as shown, and for the purpose described and set forth.

2. The husking-rolls C C^1, when provided with spiral depressions C^2 C^2 upon their peripheries, and formed as described, substantially as and for the purpose set forth.

3. In combination with the husking-rolls C C^1, the oscillating presser-bar E, substantially as and for the purpose set forth.

106,277.—HEDDLE-MACHINE.—Peter Philip, Stockport, N. Y.

Claim.—1. The method herein described of forming the warp-eye of a wire-heddle, by making the twist at one end of the eye, either wholly or in part, before the twisting at the other end is commenced, and relieving the grip *e* of the twisting device first closed in time to give slack sufficient for the twisting at the opposite end.

2. The pinchers B, adapted to receive, by appropriate mechanism, a lateral motion, as set forth, to correspond with and accommodate the slack required for the twist at each end of the eye of the heddle.

3. The collars C C', in combination with the jaws or their respective cylinders A A', in the manner, or substantially in the manner, and for the purpose herein described.

4. The combination of the shaft D, cams *a a'*, slide-bars *b b'*, springs *c c'*, forks *g g'*, and collars C C', substantially as and for the purpose herein set forth, whereby the successive or alternating lateral motions are communicated to the collars C C'.

5. The combination of shaft D, cam *d*, slide-rod *e*, pinchers B, and spring *f*, substantially as herein described, whereby a lateral motion is given to pinchers B.

106,278.—HINGE.—John Plant, Washington, D. C.

Claim.—The combination of the two spirals D D, cast upon the leaves of the hinge beyond the pintle-sockets, with the inclines J J, for catching upon the corresponding inclines G G, the said spirals always resting upon the inclines, to relieve the pintle of strain, all arranged as and for the purpose described.

106,279.—SASH-HOLDER.—James A. Printz, Reading, Pa.

Claim.—The combination of the spring roller-box B, having a double circular slot, C, for the journal D of the roller E to shift in, the hinged plate F, spiral spring G, and supporter H, with operating button J, when arranged and combined upon the same plate, as herein described, and for the purposes set forth.

106,280.—BROILER.—James T. Page, Rochester, N. Y.

Claim.—1. The construction of the rim A and handle *b* of a single piece of sheet metal, in combination with the wire grating D, substantially as and for the purpose herein set forth.

2. In combination with the above, the drip-pan B, provided with the annular groove *h* and central opening *k*, substantially as and for the purpose described.

106,281.—PLANING-MACHINE.—George T. Pearsall, Apalachin, N. Y.

Claim.—1. The chip-breaker and shaving-director J, hung concentrically with the planing cutter-head I, substantially as and for the purposes herein set forth.

2. The combination of the frame N, cutter-head frame X', screws G' G', and spur-wheels H' H', constructed and arranged as described, for setting the cutter-heads so as to tongue and groove lumber of different widths, substantially as herein set forth.

3. The combination of the frame N, blocks O O, bar P, with inclines *f f*, and the screw R, for adjusting the four cutter-heads simultaneously to any desired height, substantially as and for the purposes herein set forth.

4. The bar C', having turned-down ends and provided with set-screws *k k* and *m m*, for adjusting the cutter-head E', both vertically and laterally, substantially as and for the purposes herein set forth.

106,282.—PREPARATION OF LIME AND MORTAR.—Leman B. Pitcher, Salina, N. Y.

Claim.—1. The mechanical process of slaking and preparing lime for use, substantially in the manner and for the purposes described.

2. The improved mortar-mixing machine herein shown, consisting of the vat A, post C, and sweeps D D', when the latter are hung loosely upon said post, and provided with blades *f f f*, all constructed, arranged, and operated in the manner and for the purpose set forth.

106,283.—MILLSTONE-BEARING.—Peter Plamondon, Atchison, Kansas.

Claim.—1. The followers A A, provided with flanges *d* and back center bearings of concavo-convex form, to make them universal and self-adjusting, substantially as and for the purposes herein set forth.

2. The tapering half-round keys B B, operated by means of the bolts C C, substantially as and for the purposes herein set forth.

3. The universal and self-adjusting followers A A, in combination with the keys B B, bolts C C, and covers D E, all constructed and arranged to operate substantially in the manner and for the purposes herein set forth.

106,284.—HOISTING APPARATUS.—Thomas Pollard, Philadelphia, Pa., assignor to J. V. Merrick, W. H. Merrick, and J. E. Cope, same place.

Claim.—The combination, with a hoisting-cage, its rope, and drum, of a supplementary drum holding a rope moving in unison with the hoisting-rope, and connected to arresting-cams, levers, or their equivalents, all substantially as set forth.

106,285.—BOOK-HOLDER.—Elias Propst and James F. Avis, Tipton, Ind., assignors to themselves and William H. Hartley, same place.

Claim.—1. A book or paper-holder, the standard of which is adjustable at its lower end, substantially as and for the purpose set forth.

2. The combination and arrangement of the adjustable standard B, arm C, rack E, and rack or frame F, substantially as and for the purpose set forth.

106,286.—CHILDREN'S CARRIAGE.—Günther Fridrich Carl Rosenthal, Philadelphia, Pa.

Claim.—The combination with a children's car-

riage, supported at the rear by wheels A A, of a permanent guide-bar or bars projecting at the rear of the carriage beyond the said wheels, as set forth.

106,287.—APPARATUS FOR FORCING WATER. James M. Rucker, Forrest Depot, Va.

Claim.—The combination of the reservoirs *a a*, provided each with a valve, *n*, at its bottom, the branch pipes *b b* and *i i*, the main pipes *b i*, the block *l*, the ping *m*, provided with two-way cocks at the junctions of the main pipes with their branches, and the condenser *c*, when all these parts are constructed and arranged as described.

106,288.—COMBINED BROILER AND FURNACE. — John S. Runyan, Columbus, Ohio.

Claim.—1. The combination of a broiler with the flanged ring B, having hooks B^2, substantially as set forth.

2. The combination of a broiler, flanged ring B, having hooks B^2, and vessel C, provided with a central aperture and a downwardly-projecting flange, C^1, around the same, substantially as and for the purpose set forth.

3. The combination of a broiler, flanged ring B, vessel C, and furnace D, all constructed and arranged substantially as and for the purpose set forth.

106,289.—ROLL FOR FLUTING-MACHINES.—Henry Sauerbier, Newark, N. J., assignor to Susan R. Knox and Daniel Jackson, New York city.

Claim.—A roll or rolls for fluting-machines, in which there is a series of corrugated surfaces, the corrugations of which are placed more or less out of line, substantially as and for the purposes set forth.

106,290.—MACHINE FOR THE MANUFACTURE OF COMPOSITION PIPES FOR DRAINAGE.—Robert Skinner and Richard Gaines, San Francisco, Cal.; said Gaines assignor to said Skinner.

Claim.—The combination of the cylinders G' G' and piston-rods G G, cross-head B, and plunger or ram E of the pipe-machine, constructed, arranged, and operating substantially as herein described, and for the purposes set forth.

106,291.—CUTTER-HEAD.—George E. Somers, Waterbury, Conn.

Claim.—The cutter-head herein described, consisting of the shaft E, collar B, provided with the flange *b* and screw *c*, and slotted clamping collar-plate A and cutters D, the whole constructed and operating substantially in the manner described and specified.

106,292. — SHIFTING BUGGY-TOP.—George Stricker, Catawissa, Pa.

Claim.—1. The combination of the lugs *a a*, screws *b b*, and slotted bars B B, substantially as and for the purposes herein set forth.

2. The rest C, made in two parts, hinged together, substantially as and for the purposes herein set forth.

106,293. — ATTACHING AND DETACHING HORSES FROM VEHICLES.—George Switzer, Washington, D. C.

Claim.—1. The method herein described of attaching and detaching horses from vehicles by means of the traces or tug-straps, made in two sections, B and C, the front ones, C, secured to and carried by a detachable plate, E, and the breeching-straps I, and the rear ones, B, by an armed plate D, secured to the shafts, the two plates constructed so as to interlock with each other, and be locked and unlocked from each other by means of attaching and detaching-pins H, carried by the breeching-straps, and controlled by a single strap within reach of the driver, substantially as herein described.

2. The combination of the detachable plate E with the plate D and staple F, substantially as herein described.

3. The breeching-straps I^2, constructed with attaching and detaching-pins H, in combination with the interlocking-plates D and E, substantially as herein described.

4. The breeching-straps I^2, constructed with hooks K, in combination with a detaching-strap, M, and the locking and unlocking-pins H, substantially as herein described.

5. The staples F, which carry the interlocking-plates D, constructed so as to be unfastened from the shafts, to allow the said plates, with their straps, to be removed from the shafts when desired, substantially as herein described.

6. The hubs *a*, as described, of the interlocking plates E, provided with interior bearings, *c*, of leather or rubber, to prevent the rattling of the parts, substantially as herein described.

7. The strap L, attached to the traces or shafts, for the purpose of elevating the shafts, to bring into action spring brakes N, to stop the vehicle by the same pull and by the same strap which effects the release of the horse, substantially as herein described.

8. The combination of the interlocking-plates D and E, the staple F, the trace-straps B and C, breeching-straps I I^2, hooked buckle K, and detaching-strap L, the several parts being constructed, arranged, and operating substantially as herein described.

9. In the above-described detaching apparatus, the strap L, as arranged, and operating in such manner as to lift and hold up the shafts when the horse is released, substantially as herein described.

106,294.—WHEEL PLOW.—John E. Swallow, Hagerstown, Md.

Claim.—1. The axle 1 of a sulky-plow, having a guide-box or slot, 2, substantially as and for the purpose set forth.

2. The arrangement, in a sulky-plow, of the axle 1, guide-box 2, socket 3, having a quadrant upon its upper portion, lever 5, sliding arm 3', segmental gear 4, draft-rod 9, segmentally slotted guide C^3, substantially as herein shown and described.

106,295.—MACHINE FOR BENDING TUBE-SKELPS.—Stephen P. M. Tasker, Philadelphia, Pa.

Claim.—1. The combination of the grooved rolls J J and J' on shafts K K and K', driven by suitable mechanism, the said rolls being constructed, arranged, and operating substantially in the manner and for the purpose set forth.

2. The combination of the said rolls J J and J' with the rolls D and D', the two sets of rolls being arranged and operating in relation to each other, for bending the skelp at one operation, substantially as described.

106,296.—WASHING-MACHINE.—William H. Welch, Bloomington, Ill.

Claim.—1. The cylinder A B, provided with spouts C C, and buckets D D, all constructed and arranged substantially in the manner and for the purposes herein set forth.

2. In combination with a wash-boiler, the cylinder A B, spouts C C, buckets D D, pivots *a a*, bearings *b b*, and crank G, all constructed and arranged substantially as and for the purposes herein set forth.

106,297.—CAR-SEAT.—William Wells, Salem, Mass.

Claim.—A seat for cars, &c., constructed of slats B, convex from end to end, and arranged transversely between side rails A A, to which they are connected through wires D, having elongated loops at their ends hung to the slats, and at their other ends fastened to the side rails, substantially as and for the purpose specified.

106,298.—BOX OR CASE FOR HOT-BEDS.—William Wells, Salem, Mass., assignor to himself, E. B. Horton, and David Buffum, same place.

Claim.—1. A hot-bed box or case, constructed with a reflecting-surface or surfaces, substantially as described, for the purpose specified.

2. In combination with the above, said surface or surfaces, when arranged for adjustment, substantially as and for the purpose described.

106,299.—STOPPING MECHANISM FOR SPINNING AND OTHER MACHINES.—Samuel B. Westcott, River Point, R. I.

Claim.—1. The combination and arrangement of the pulley F with pins *b b* on one of its sides, and the inclined planes X' X' on the other side, with the springs *f*, arms V and W, and shafts H and C, substantially as set forth, and for the purpose specified.

2. The slotted bar *j*, with plate *n* and spring *e*, in combination with the bar *k*, arms *t*, *y*, and *q*, and shafts D and H, substantially as specified, and for the purpose set forth.

106,300, antedated August 5, 1870.—SHEARING AND PUNCHING-MACHINE.—Josiah C. Wilcox, New London, Wis.

Claim.—The arrangement, herein described, of the pivoted bar or jaw D, cam-lever I, spring G, shear-blades C and E, punch K, hooked-shaped projection J, and guides L L, substantially as and for the purpose set forth.

106,301. — WASHING-MACHINE. — Joseph Bearford Wilson, Philadelphia, Pa., assignor, by mesne assignments, to himself, Philip W. Lawrence, and Walter Reckless.

Claim.—1. The combination of the rotating tub, shaft E, its arms, and friction-rollers *d*, beaters F, and their pins *c*, covered, or partly covered, with felt, or its equivalent, all as set forth.

2. The combination, with the said beaters and operating devices, substantially as described, of the rotating tub H, having its bottom corrugated in four sections, as set forth.

3. The combination, substantially as herein set forth, of the bar K and its spring catches *f* with the recessed or notched beaters.

REISSUES.

4,092.—PLANTING-MACHINE.—Samuel Leeds Allen, Cinnaminson, N. J.—Patent No. 84,247, dated November 24, 1868.

Claim.—1. In a planting or fertilizing-machine, a revolving reservoir carried above and free from contact with the ground, having discharge-openings and internal buckets, arranged and operating substantially as described.

2. In combination with the said reservoir, its buckets and discharge-openings, the adjustable slides for increasing and diminishing the size of the said openings.

4,093.—BRIDGE.—Albert Fink, Louisville, Ky.—Patent No. 63,714, dated April 9, 1867.

Claim.—The combination of a wrought-iron bottom chord and wooden top chord in a triangular truss, when both chords are connected together by a brace or braces so constructed as to be able to resist strains of compression as well as of tension, that is to say, by braces which can act as struts and as ties when placed in a position in a bridge-truss where, under a moving load, they may be required to act at one time in the one, and at another time in the other capacity, substantially as herein described.

4,094.—SPINDLE FOR SPINNING.—Albert H. Gilman, Boston, Mass.—Patent No. 66,017, dated June 25, 1867.

Claim.—1. The combination of the steel cap and the spindle, in such a way that the same will revolve with the spindle, or allow it to be freely raised off the step, to enable the step to be supplied with oil, as described.

2. The combination of the spindle, having the enlargement D arranged with a step, as described, the collar being for the purposes set forth.

3. The arrangement of the spindle A, having the enlargement D and the cap C, provided with the means of securing said cap to the spindle, and all with the step B, as herein described.

4,095. — COMPOSITION FOR COVERING STEAM-BOILERS AND FOR OTHER PURPOSES. — Ferdinand Leroy, administrator, and P. A. Victor Le Lubez, assignee of Ferdinand Leroy, deceased, London, England.—Patent No. 97,781, dated December 14, 1869.

Claim.—The composition of matter, substantially as hereinabove described, as a non-conducting cement, suitable for coating surfaces, to prevent the radiation of heat from or conduction to surfaces coated therewith, as set forth.

Also, the preparation of the same by fermentation, substantially as described.

Also, the method of applying the same in more than one coat with hoop-iron, or equivalent, interposed between the coats and secured to the surface coated, as set forth.

4,096.—SAW.—Elisha P. Wheeler, Edward M. Madden, and William Clemson, Middletown, N. Y., assignees of Joseph H. Tuttle.—Patent No. 9,807, dated June 21, 1853; extended seven years.

Claim.—1. The saw herein described, having a series of alternate sets of fleam and curved planing-teeth located upon the same plate or blade, the sets of fleam-teeth for scoring the sides of the kerf, and sets of curved planing-teeth for removing the wood between the scores, when constructed and arranged to operate in the manner shown and described.

2. A saw, as above described, having a series of alternate sets or pairs of scoring and curved planing-teeth, the sets or pairs of scoring set to opposite sides of the blades to score the wood on the opposite sides of the kerf, the sets or pairs of curved planing-teeth set back to back, and projecting less than the scoring teeth, and when thus constructed and arranged, act as gauges to control the depth that the scoring-teeth may cut, substantially in the manner described and shown.

4,097.—EXTENSION WASH-BENCH.—Samuel Wiswall, Hyde Park, Vt., assignor to Albert H. Spencer, Providence, R. I.—Patent No. 30,371, dated October 9, 1860.

Claim.—1. The combination of two extension-shelves B and C and an elevated frame or posts, A, with the ordinary wash-bench, all the parts being constructed and arranged as and for the purposes set forth.

2. In combination with the wash-bench J, the employment of supporting-standards A A, for a clothes-wringing apparatus, substantially as described.

DESIGNS.

4,275.—TOP PLATE FOR MANGERS.—Samuel S. Bent, Port Chester, N. Y.

Claim.—The design of the sectional shape and configuration of the top plate for a manger, as shown.

4,276.—Spool-Stand.—Robert Gordon, Peoria, N. Y.

Claim.—The design for a spool-stand, as herein shown and described.

4,277.—Collar-Box.—Samuel F. Hilton, Providence, R. I.

Claim.—The design for a collar-box, as shown and specified.

4,278.—Clock-case Front.—Samuel B. Jerome, New Haven, Conn., assignor to Samuel Peck & Co., same place.

Claim.—The design for a clock-front, as herein shown and described.

4,279.—Type.—William H. Page, Norwich, Conn., assignor to Wm. H. Page & Co., same place.

Claim.—The design for letters, as shown.

4,280.—Type.—William H. Page, Norwich, Conn., assignor to Wm. H. Page & Co., same place.

Claim.—The design for letters, as shown.

4,281.—Type.—William H. Page, Norwich, Conn., assignor to Wm. H. Page & Co., same place.

Claim.—The design for letters, as shown.

4,282.—Type.—William H. Page, Norwich, Conn., assignor to Wm. H. Page & Co., same place.

Claim.—The design for letters, as shown.

4,283.—Type.—William H. Page, Norwich, Conn., assignor to Wm. H. Page & Co., same place.

Claim.—The design for letters, as shown.

4,284.—Type-Border.—William H. Page, Norwich, Conn., assignor to Wm. H. Page & Co., same place.

Claim.—The design for a border, as shown.

4,285.—Type-Border.—William H. Page, Norwich, Conn., assignor to Wm. H. Page & Co., same place.

Claim.—The design for a border, as shown.

4,286.—Neck-yoke Ring and Slide.—Robert L. Reat, Charleston, Ill.

Claim.—The design for the rings and slides of neck-yokes, as shown.

4,287.—Group of Statuary.—John Rogers, New York, N. Y.

Claim.—The design for a group of statuary, as herein shown and described.

4,288.—Sausage-Filler.—Amos Shepard, Southington, Conn.

Claim.—The design for a sausage-filler, consisting essentially of the straight cylinder A, cone-shaped end piece B, and nozzle C, all formed, combined, and arranged substantially as shown and described.

4,289.—Type.—Richard Smith, Philadelphia, Pa., assignor to MacKellar, Smiths, & Jordan, same place.

Claim.—The design for printing-type, as shown.

4,290.—Clock-case Front.—Solomon C. Spring, Bristol, Conn.

Claim.—The design for a clock-case front, as described and shown in the accompanying drawings.

4,291.—Inkstand.—Levi L. Tower, Somerville, Mass.

Claim.—The said design for an ink or mucilage-stand, substantially as described and represented.

4,292.—Inkstand.—Henry Whitney, East Cambridge, Mass.

Claim.—The design for an inkstand herein shown and described.

ISSUE OF AUGUST 16.

PATENTS.

106,302. — Lamp-Burner. — Benjamin F. Adams, Boston, Mass.

Claim.—The chimney, as made, not only with the flat-sided oblong tapering base B, and parallel sides *a a*, but with the oblong and tapering body, and the circular top, all formed as described and represented.

Also, the air-deflector C, as made with the oblong socket *e*, and foraminous chimney-rest *b*, in combination with the screw base or wick-tube supporter, as made, or provided with the oblong foraminous dished tenon *f* to enter the socket *e*, and to be held in connection therewith by means substantially as explained.

106,303.—Lamp-Burner.—Benjamin Franklin Adams, Boston, Mass.

Claim.—The air-distributer and chimney-holder E, as constructed, with the foraminous chamber or recess *e*, to receive and hold the deflector F, and also with its series of separate inclined peripheral springs, provided with the oblong air-passages arranged in them, in manner as represented.

Also, the chimney-holder E, as made or provided with the recess or chamber *e*, and the tenon holes or mortises in the bottom thereof, in combination with the air-deflector F, as made with its bottom to enter and fit to such chamber, and with tenons to enter such holes or mortises, as set forth, the whole being as described and represented.

Also, each of the brackets D, as formed of wire, bent in the manner as described and represented, so as to form the projection or foot *d* for supporting the bottom of a glass chimney while such chimney may be encompassing the holder E, as set forth.

Also, in the burner, as described, the supporting wires D, the chambered chimney-holder E, the series of slotted peripheral springs, the deflector F, and its tenons *f f*, constructed, arranged together, and combined with the wick-tube A and the box B, as set forth.

106,304.—Equalizing the Mainspring of Time-Pieces. — John Peabody Adams, Ipswich, Mass.

Claim.—In combination with a clock movement, driven by a spring, the wheel *e* acting upon the main wheel A, by means of the pinion *b*, or other well-known contrivance, and the stud *d*, with the cord *c*, connecting with a spring, *g*, or weight *k*, or their equivalents, for the purpose of equalizing the tension of the mainspring, substantially in the manner hereinbefore set forth.

106,305.—Cutting Apparatus for Harvesters.—Henry C. Aydelott, Carthage, Ind.

Claim.—The endless chain for harvester-cutters, composed of the sections or links *a*, connected by joint *m n*, constructed substantially as set forth.

106,306. — Harness-operating Mechanism for Looms.—John Ashworth, North Andover, Mass.

Claim.—The combination, with the jack, of the projecting radial arm C′, having the duplex inclined cams or groove, the vibrating bar to move the same, and the guide-piece, controlled by a pattern, substantially as described.

106,307. — Sewing-Machine.—Merrick M. Barnes, North Adams, Mass.

Claim.—1. The needle-arm F, link E, connections D, eccentric B, and arm *b*, all constructed and arranged substantially as set forth.

2. In combination with the above, the shuttle-arm G and link *n*, when arranged and operating in combination, substantially as described.

106,308. — Stone-sawing Machine.—Charles Bateman, Baltimore, Md.

Claim.—1. The construction and arrangement, substantially as described, of disk or wheel C with set-screws E E E E, for holding and adjusting the saw D, in the manner set forth, and for the purpose described.

2. The combination of spindle B, disk C, and saw D, substantially as and for the purpose herein set forth.

106,309.—Top Plate of Cooking-Stove.—Milton Bennet, Dayton, Ohio.

Claim.—Protecting the whole or any portion of the top plate of a stove from the intense heat of the fire by means of a lining, composed of any suitable non-conducting material, applied to the inner or lower surface of the said plate.

106,310.—Chisel for Cutting Gains.—Hiram Bigelow, Skowhegan, Me.

Claim.—1. The gauge E, (or arms *f g*,) gauge H, and spur *k*, or their equivalents, in combination with a chisel, when arranged to operate substantially as and for the purposes described.

2. The combination, with the stock and handle A B, of the chisels C and D, gauges E and H, and spur-plate J, substantially as and for the purposes herein shown and described.

106,311.—Hand Corn-Husker.—Samuel L. Bligh, Sandy Lake, Pa.

Claim.—The hand corn-husker herein described, consisting of the plate B, knives D E, and hooks A, all constructed substantially as specified, and arranged to operate in the manner set forth.

106,312.—Steam Pumping-Engine.—Thomas E. Blunt, Brookfield, Ohio.

Claim.—In steam-pumps for mines, the method of discharging the exhaust-steam into the water-discharge pipe, as set forth.

106,313. — Compound for Fertilizer.—Gustave Bourgate, New York, N. Y.

Claim.—The fertilizing material, made in the manner substantially as specified.

106,314. — Foot-Measure.—John Charles F. Bremser, St. Louis, Mo.

Claim.—The guides E, combined with the slide D, spring *e*′, and foot-rule D′, substantially as and for the purpose set forth.

106,315. — Hinge. — John David Browne, Madisonville, Ohio.

Claim.—The combination of the plates A B, the central knuckle *a*, with the bearing *b* and the opening *c*, and slotted knuckle *d e*, all substantially as described, and for the purposes set forth.

106,316. — Spring Bed-Bottom.—Charles T. Baade, Brooklyn, N. Y.

Claim.—The combination of frame A B, spiral springs C, straps E H P Q, wood springs I, transverse bar K, blocks N, when said parts are constructed and arranged, with respect to each other, in the manner set forth.

106,317.—Device for Leveling Billiard and other Tables, &c.—Buckland W. Bull, New York, N. Y.

Claim.—The described arrangement of the rod C, screw-threaded at its top, and extending through the leg of the table, the threaded gear D, located in a cavity in the body of the table above the leg, the worm *i*, also located within the body of the table, and the fixed thumb-piece F, or its equivalent, the whole constructed and operating as set forth.

106,318.—Table.—Ernst Brücker, Old Tappan, N. J.

Claim.—1. The folding leg-frames G H, hung on centers *g h*, arranged one higher than the other, in combination with the extension frame M N of the table, and with confining means K, all adapted for joint operation, as herein specified.

2. In combination, the boards A B and frames M N, sliding upon each other, the folding legs G H, confining means K, intermediate frame I, and confining means J, all arranged for joint operation, as and for the purposes herein set forth.

106,319.—Machine for Making Match-Splints.—Denslow Burhaus, Burlington, Iowa.

Claim.—The V-shaped adjustable knife C, screws K, spurs D, slotted plate D, and clamp-screw I, arranged with relation to the stock A, and constructed as shown and described, for the purpose specified.

106,320, antedated July 2, 1870.—Combined Drill and Seeding-Machine.—John E. Buxton, Owatonna, Minn.

Claim.—1. The conveyers or spouts F, adapted to be slid backward to guide the grain into the broadcast spouts, and forward to permit the grain to fall directly into the drill-spouts, for the purpose of converting a seeding-machine either into a drill or broadcast seeder, substantially as herein shown and described.

2. The combination of an apron with the conveyers and with the broadcast spouts, for the purpose of preventing a blast of air from coming in contact with and scattering the grain during its passage from the conveyers to the broadcast spouts, substantially as herein shown and described, for the purpose specified.

3. The combination of a fixed apron, either plain or corrugated, with the sliding conveyers, substantially as herein shown and described for the purpose specified.

106,321.—Padding for Harness.—James Cormac and Alexander Stobbs, Hector, N. Y.

Claim.—1. The harness-pad A, composed of the shell H, with the cross-bar net-work or ribs E, within the shell, and sustaining it, substantially as and for the purposes set forth.

2. The arrangement of the shell H, provided with the cross-bars or net-work E, with the skirt or other part C of the harness, for the purpose of making an air-chambered pad, substantially as set forth.

106,322.—Manufacture of Resin Soap.—Dudley B. Chapman, New London, Conn.

Claim.—The improvement in the manufacture of soap, which consists in the employment of a saponified resin compound prepared with crystallized carbonate of soda, substantially as described, and mechanically incorporating the same with the soap while in a fluid or pasty condition, as herein specified.

106,323.—Table-Knife.—Matthew Chapman, Greenfield, Mass.

Claim.—A knife-handle, constructed as shown, and attached in the manner described.

106,324.—Protecting Safes and Vaults from Burglars.—Charles T. Chester, Englewood, N. J.

Claim.—A continuous electrical conductor im-

bedded in the interior or exterior covering of a vault, safe, or room, which, when ruptured, will produce an electrical alarm in the usual manner.

106,325.—POST-OFFICE CABINET FOR SUNDAY-SCHOOL AND OTHER ROOMS.—William M. Clark and Alexander Clark, Pittsburg, Pa.

Claim.—A cabinet, consisting of compartments A B and glazed pigeon-holes D G, and provided with a door, J, indicator F, and signal-bell, substantially as shown and described.

106,326.—WELL-BUCKET.—Alvens J. Clemmons, Aberdeen, Miss.

Claim.—The combination of the bucket *a*, arm A, lever *f*, valve *e*, and connecting-rod *i*, substantially as specified.

106,327, antedated August 4, 1870.—ROOFING-FELT.—William B. Coates, Philadelphia, Pa., assignor for one-half his right to Joseph Leeds, same place.

Claim.—The preparation of roofing-felts by the process of sizing, carbon painting, sanding, white or color washing, and fixing the washers, as fully set forth and described in the foregoing specification, as a new article of manufacture.

106,328.—GARTER.—Charles Coester, Jr., and James L. Moore, Bridgeport, Conn.

Claim.—A garter, composed of a single piece of wire, coiled in the form of a spring, and one end formed into an eye, and the other into a hook, substantially as herein described, as a new article of manufacture.

106,329. — STRAW-CUTTER.—Samuel Colahan, Cleveland, Ohio.

Claim.—1. The combination of the reversible boxes *l*, crank-shaft K, pitman-rods *p p*, and knife *w*, said parts being so arranged that the position of the knife may be changed to effect either a pressure cut or a shear cut, as and for the purpose specified.

2. The combination and arrangement of the shaft K, rods *p*, knife *s w*, reversible boxes *l*, rollers F C, boxes *g*, spring *h*, set-screw *i*, the drive-wheels D, fly-wheel or wheels E, pinions *m*, the frame B with guide *o*, and the box A, all constructed and operating substantially as described.

106,330. — APPROACH-GATE. — Stephen H. Cole, East Enterprise, Ind.

Claim.—1. The elbow-levers, composed of the arms E E and S S, when arranged to operate substantially as shown and for the purposes set forth.

2. In combination with the triangular eye *e* and elbow-levers E E, the main or back post C, when the same is set obliquely to the roadway, so as to form faces on which to pivot the said levers, substantially as shown, and for the purposes specified.

106,331. — PADDLE-WHEEL. — Richard H. Connelly, Philadelphia, Pa.

Claim. — The combination, with the paddle-wheels and the paddles, of the wheel-rim D, rim E, grooved rollers F, crank-arm H, bar K, and a shifting-lever L, all arranged substantially as specified.

106,332.—STRETCHER FOR PICTURE-FRAME.—John D. Crocker, Norwich, Conn.

Claim.—A right-angular tenon or rib, applied on one side of a plate, B, and adapted to operate in conjunction with springs S S, applied in mortises in a frame, substantially as described.

106,333. — COMPOUND FOR CURE OF COUGHS, &c. — John Cushions, Wellington, Ohio.

Claim.—The herein-described compound, consisting of the ingredients specified, for the purpose set forth.

106,334.—LOOM.—Hilas D. Davis, North Andover, Mass.

Claim.—1. The combination, with the pattern-chain and double-hooked jack, of two needles or pushers and connecting mechanism, substantially as described, one for causing the hook to engage with the lifter and the other for causing the other hook to engage with the depresser, so that the engagement in both cases is made positive.

2. The combination, with the hook-pawl that turns the card-prism to change the pattern-chain, of the devices shown, or their equivalent, that will move the pawl away from the ratchet on the prism during the time that the reversing of the motion of the loom, by pushing back the lay or otherwise, would move the prism to a false position and cause the breaking of the parts, substantially as described.

3. The combination of the crank or cranks to work the lifter and depresser, as described, with the ratchet and its accessories or equivalents, by which an entire revolution of the crank and a period of rest are alternately produced, substantially as described.

4. The adjustable extension pieces F and clamp G in combination with the jacks and heddles, substantially as described.

106,335.—SHEAVE.—Hilas D. Davis, North Andover, Mass.

Claim.—A sheave formed of two thin plates of metal, embossed to form, and placed together face to face, and combined with a central bushing or hub, substantially as described.

106,336, antedated August 5, 1870.—HORSE HAY-RAKE.—Samuel L. Denney, Christiana, Pa.

Claim.—1. The combination of the rim K, having outwardly-projecting teeth, and rod M, having a hooked end, with lever N, arm L, retracting spring O, and curved stand P, when arranged substantially in the manner and for the purpose described.

2. The metallic guards G G G G G G G G, when provided with lateral and longitudinal grooves and longitudinal slots, for the reception of the rake-teeth, in connection with the supporting-bar H and axle C, substantially, and for the purpose set forth.

106,337.—GUN-LOCK.—Joseph Deutz, San Antonio, Texas.

Claim.—1. The catch H, pivoted to the trigger D, and held in position by a spring, *j*, substantially as herein shown and described.

2. The holder E, catch H, and trigger D, combined with the tripping device G and spring *h*, substantially as herein shown and described.

106,338.—SPRING SEAT FOR VEHICLES.—George W. Diller, Odell, Ill.

Claim.—The combination of the device D and clevis C with a wagon-seat spring, when arranged substantially as specified.

106,339.—PITMAN CONNECTION FOR HARVESTERS.—Joseph Dixon and Matthew B. Sampson, Eddyville, Iowa.

Claim.—A pitman connection for harvesters, consisting of the spring arms a^1 a^1, forming part of the pitman-rod, in combination with the conical joint *g g* a^2 a^2, boss a^3, tapered upward, and the adjusting devices *b c*, substantially as described.

106,340.—EXTENSION-TABLE SLIDE.—William Donoghue, Philadelphia, Pa.

Claim.—The guide A, provided with tenons *a a* and a' a', and ends *b b*, and the plate C, when constructed as shown and described, in combination with the runners B and D of an extension table.

106,341.—HAME FOR HARNESS.—William Duncan, Spring Hill, Ind.

Claim.—1. A wooden hame, constructed with the curved inside *h i* and the notch E, substantially as herein set forth.

2. A hame curved as aforesaid, and constructed with the notch and mortise E' *e e*, substantially as set forth.

3. The combination of the hame A B, the trace-hook D, the loop *g g*, the set-screw *f*, and the cap or thimble C, in manner and form substantially as set forth.

106,342.—HARVESTER-RAKE. — William T. Eastes, Summitville, Ind.

Claim.—The rake-frame A, with the springs *n n*, wheels D D and D' D', and endless chains *b b*, in combination with the tooth-bar *z*, the parallel bars *s s*, and the guides *i i*, all constructed and arranged substantially as and for the purpose set forth.

106,343.—INVALID CHAIR AND LOUNGE.—William T. Eastes, Summitville, Ind.

Claim.—A combined lounge and invalid chair, composed of a frame, A, constructed with a sliding side board E, parts B, C, and D, pivoted as described, and revolving on the center screw *c*, with the elevating prop *b*, notched sills *p p* and *a a*, arms *d e*, latch G, and perforated strap *x*, all constructed and arranged substantially as and for the purpose set forth.

106,344.—PLOW.—Isaac Eastwood, Lanark, Ill.

Claim.—1. The bent bar C, having cutters *a a' a'* attached thereto, and terminating in arm *d*, when attached to and made adjustable upon the beam A of a plow, in the manner and for the purpose described.

2. The adjustable and detachable cutters *a' a'* and bar C, when arranged with relation to each other, and operating in the manner and for the purpose described.

106,345.—RECORDING PRESSURE-GAUGE.—Jarvis B. Edson, Brooklyn, N. Y.

Claim.—1. The combination of the springs *a a a*, the connecting-rod a^3, the oscillating segmental rack *k*, the adjustable sliding link *p*, the pinion *j*, the shaft *k*, the spur-wheels *l* and *m*, for operating the racks *w* and *n*, the paper-carrying drums R and S, and the alarm movements 1 and 5, with the spring recording-pencil X, as shown and described, whether put in motion by any fluid or liquid under pressure, or in part operated by gearing to an engine.

2. The cylindrical frame (inclosing the springs) and its interior bridge *g*, which affords a firm and substantial bearing for the segmental rack *k*, supporting the adjustable link *p*, to which the upper end of the connecting-rod a^3 is attached, and upon which it depends for support, and to protect the spring-connections from injury and vibratory strain from the constant jarring of a locomotive, while the front of said frame E affords a suitable bearing for the rack *w* and the paper chart, when receiving records or delineations of pressure.

106,346.—INDIA-RUBBER SHOE.—Lewis Elliott, Jr., and George H. Fowler, New Haven, Conn., assignors to L. Candee & Co., same place.

Claim.—An India-rubber shoe, with elastic cord applied to the surface of the upper, in the manner and for the purposes set forth.

106,347.—MANUFACTURE OF WROUGHT AND PUDDLED IRON.—William Ennis, Philadelphia, Pa.

Claim.—The process described, of mixing and puddling iron of different qualities together, by melting iron of one quality in a furnace and agitating it with iron of a different quality, as set forth.

106,348. — FAN-BLOWER. — John Ericsson, New York, N. Y.

Claim.—1. A fan-blower, provided with a rotary fan on a stationary shaft, substantially as herein shown and described.

2. The rotating case A, provided with the wings *i*, diaphragms *h*, and plates *j*, substantially as herein shown and described.

3. The stationary wings *m*, rings *n*, and plates *o*, arranged on the stationary shaft within the rotating case A, substantially as herein shown and described.

4. The combination of the rotary wings *i* in the case A, with the stationary wings *m* on the shaft B, arranged to operate as set forth.

106,349.—BENCH-VISE.—George M. Evans, Pittsburg, Pa.

Claim.—1. A bench-vise, having jaws *b* and *c*, the inner jaw, *b*, of which is made loose, so that it may slide up and down by an arrangement of tongues *b' b'*, and grooves *a' a'*, in a box or standard, *a*, substantially as and for the purposes described.

2. The jaws *b c*, vertically adjustable, in combination with a lever, *f*, fixed or removable at pleasure, substantially as described.

106,350.—RAISIN-SEEDER.—Henry G. Fiske, Springfield, Mass., assignor to George L. Taylor and Dwight Holland, same place.

Claim.—1. The gang of needles G, in combination with the elastic clearers M M', substantially as specified.

2. The frame A, spindle E, needles G, bed I, clearers M M', and spring N, all arranged, combined, and operating substantially as herein specified.

106,351.—HINGE.—Charles Gaylord, Washington, D. C.

Claim.—1. The leaf A, provided with the projection *a* on said leaf, in combination with the leaf B, having a horizontal groove, with perpendicular notches on the exterior surface of its socket E, substantially as set forth.

2. The fastening, consisting of the plate B, in combination with the flaring pieces or semi-disks *d d* and screw or wedge, substantially as described.

106,352.—OVEN.—David J. George, Arcade, Ind.

Claim.—The oven herein described, when the same is constructed with the top A A, the lid C C, the screws H, and the nut G, the hanging partition F, and its adjustable slides D and E, the bottoms L and K, when constructed and used in manner and form substantially as set forth.

106,353.—TABLE-LEAF SUPPORTER.—George L. Gerard, New Haven, Conn.

Claim.—In a table provided with a leaf having a swinging bracket hinged thereto, the curved stop C, provided with a recess and projections, arranged as described, for the purpose set forth.

106,354.—CULTIVATOR.—John L. Graham, Bentley Station, Ill.

Claim.—The combination and arrangement of the pivoted part E, rod H, crank I, its vertical shaft and lower crank-arm K, and connecting-rod to back end of frame L, substantially as and for the purpose specified.

106,355.—HAY-LOADER.—William H. Gray, Ashfield, Mass.

Claim.—1. An apron-guide, H, attached to the shaft C, and having roller G in ears thereon, arranged as and for the purpose described.

2. The combination of a self-adjusting roller, G, and apron H, with the toothed cylinder I, and toothed eccentric P, all relatively arranged as and for the purpose described.

3. The roller G, aprons H J, toothed cylinders I K, and toothed eccentrics P P', all combined and relatively arranged as and for the purpose described.

106,356.—BUCKLE WITH BUTTON-HOLE ATTACHMENT.—Benjamin J. Greely, Boston, Mass.

Claim.—1. A buckle in combination with a metallic button-hole, when constructed substantially as described.

2. The continuous wire piece B C, forming a metallic button-hole and the tongues of a buckle, in combination with the frame A, substantially as described.

106,357, antedated August 4, 1870.—APPARATUS FOR RAKING AND BINDING GRAIN. Thomas K. Griffith, Redstone, Pa.

Claim.—1. The gathering-platform A, combined with the rake, operated through the medium of cords C, pulleys D, and a segment, E, having a reciprocating motion, said motion being imparted to the segment by means of shafts and gearing, the whole being constructed, arranged, and operating substantially in the manner herein described and for the purpose set forth.

2. The binding device, consisting of drum *f*, tension-shaft *g*, winding-arm *h*, operated through the medium of pinion *k* on shaft *i*, and wheel 3, constructed, arranged, and operating substantially as herein described and for the purpose set forth.

106,358, patented in England, November 2, 1869. — STEERING APPARATUS.—Charles Godfrey Gumpel, No. 49 Leicester Square, England.

Claim.—1. A rudder-blade, hung at points intermediate between its forward and rear edges by means of a crank-shaft or crank-arms, whereby the rudder-blade, when deflected, is thrown entirely to the one or other side of the keel, substantially as described.

2. The rudder-blade, hung as set forth in preceding claim, connected, at or near its forward edge, either directly or by an interposed arm, with a guiding-slot, guide, or other equivalent parallel motion, whereby the forward edge of the rudder-blade shall be held in or near the line of the keel, substantially as described.

3. The tiller-arm *r*, connecting the tiller *t* of the crank-axle *b* with the journal *f* of the guiding-arm *e*, combined substantially as described.

4. The rudder-blade *a*, hung in the crank-arms *k*, in combination with pin *i* and slot *h*, substantially as illustrated in figs. 4 and 5.

106,359.—MACHINE FOR PREPARING APPLES FOR THE MANUFACTURE OF CIDER.—George B. Hamlin, Willimantic, Conn.

Claim.—In a machine for preparing apples, the combination of a suitable hopper for holding a supply, with a series of continuous or knife-edged, and short interspersed cutters, arranged to operate substantially as and for the purposes described.

106,360.—GEARING AND SELF-ADJUSTING SHAFT.—George B. Hamlin, Willimantic, Conn.

Claim.—The employment, in combination with the shaft to which power and motion are to be applied, of a series of driving-wheels connected by gearing or other positive working mechanism, and operating substantially and for the purposes set forth.

Also, the arrangement, with a series of friction-pulleys and gears, of yielding or self-adjusting shafts, substantially as and for the purposes set forth.

106,361. — WHEEL-HUB.—John B. Harda, Chicago, Ill.

Claim.—1. A wheel for vehicles, having its spokes attached to the hub in the manner described, so as to be capable of adjustment to regulate the dish of the wheel, substantially as specified.

2. In combination with the hub and spokes of a carriage-wheel, the flanged ring C, screw-bands E G, screw-rings F H, and annular band I, substantially as described, for the purpose specified.

3. The ring C, having its flanges D so constructed and arranged as to form lateral dovetail sockets for the reception of the spokes, substantially as herein shown and described.

4. In combination with the annular band and the spokes, the slotted flanges of the ring C and the T-headed bolts, substantially as described, for the purpose specified.

106,362.—DOOR FOR STREET-CARS.—Daniel R. Hart, St. Louis, Mo.

Claim.—1. The combination of the lighter and heavier weights G M and cords E I with the door B and car-body A, substantially as herein shown and described, said weights and cords being arranged and operating as and for the purposes set forth.

2. The combination of the gong P, hammer Q, arm or lever R, toe T, springs U V, and arm S, with each other and with the car-body A, weight M *m'*, cord I, and door B, substantially as herein shown and described, and for the purpose set forth.

3. The combination of the stop-bar O with the casing N *n'*, weight M, cord I, and door B, substantially as herein shown and described, and for the purpose set forth.

106,363.—LAMP-BURNER.—Hiram W. Hayden, Waterbury, Conn., assignor to Holmes, Booth & Haydens, same place.

Claim.—1. The wick-tube *a*, interior air-tube *c*, and lateral connection *f*, in combination with the wick-holder *i*, rack-bar *k*, and wheel *h*, substantially as and for the purposes set forth.

2. The tapering perforated guide *o* and spring chimney-holder *n*, constructed substantially as specified, and combined with the foraminous air-distributer *e*, that supports the removable spring chimney-holder and guide when in place, substantially as set forth.

106,364.—MACHINE FOR TURNING AXLE-TREES.—William H. Heffley, Rochester, Ind., assignor to himself and David Barb, same place.

Claim.—1. The combination and arrangement of the rotary frame D, longitudinally sliding frame I, and transversely sliding cutter-heads L, substantially as herein shown and described.

2. The combination with the frame I, herein described, of the two sets of nuts *m n*, which can be adjusted to reverse the direction of the feed, as specified.

3. The cutter-heads L, levers *r*, links *s*, and the levers M, which revolve in the thimble, combined and arranged substantially as shown and described.

4. The combination of the pressure-levers N with the cutter-heads, and the fixed cam P, substantially as and for the purpose herein shown and described.

5. The springs V V, combined with the levers *r*, links, and levers M, to cause their simultaneous action, in the manner set forth.

106,365. — MANUFACTURE OF IRON AND STEEL.—James Henderson, New York, N. Y.

Claim.—The process of treating crude iron by the application to it of a combination of fluorides and oxides, substantially in the manner and for the purposes set forth.

106,366. — MANUFACTURE OF BOOT AND SHOE-SOLES. — Eugene Ibos, Paris, France.

Claim.—The mode herein described of making soles of thin sheets of wood, coated with gutta-percha and protected by an outer sole of leather, in the manner and for the purposes herein set forth.

106,367.—RAILWAY CAR-COUPLING.—John H. Johnson, Dresden, Mo.

Claim.—1. The coupling-pin B, in combination with the grooved or notched ears *a* of the draw-heads A, as and for the purpose specified.

2. The coupling-pin B, combined with the spring *b*, and with the notched ears *a* of the draw-heads, for the purpose of operating substantially as herein shown and described.

106,368. — KEY-HOLE GUARD. — J. Hilton Jones, Binghamton, N. Y,

Claim.—The lever E, pivoted to an oscillating axis, D, in combination with the key-hole guard C, substantially as shown and described.

106,369.—EGG-CARRIER.—Edward E. Joseff, St. Louis, Mo.

Claim.—The sheets d^1, d^2, &c., when provided with star-shaped incisions, having the rays bent inwardly, substantially as and for the purpose set forth.

106,370. — SEPARATOR ATTACHMENT TO THRASHING-MACHINES.—Moses A. Keller, Littlestown, Pa.

Claim.—1. The combination with the straw-separating bars F G and pins I, of the adjustable slats L, substantially as specified.

2. The arrangement of pivoted bar *a* and weights *b*, with respect to the slotted fan-shaft, as and for the purpose specified.

3. The arrangement, with respect to the straw-carrier E and belt S, of guide-pulleys U, sliding vertically, as and for the purpose specified.

106,371. — WATCH-MAKING TOOL.—Michael D. Kelly, Cadiz, Ky.

Claim.—1. A watchmakers' tool, consisting of the block A, oscillating support E F, and tool-support G H, combined and arranged substantially as specified.

2. The combination, with the tool-support G H, of the springs I^1, cup I^2, screw I^4, connecting-rods I^3, and the adjusting block K', all substantially as specified.

3. The combination and arrangement, in relation to one another, and to clamp O and block A, of the flattened and perforated spindle N and the rod Q, as shown and described.

4. The combination with the stock H and the tools provided with adjustable collars C', of the gauge-plates *a*, substantially as specified.

5. The combination with the leveling-ring *d* of the screw-clamps *e f*, substantially as specified.

106,372. — DEVICE FOR WINDING MAINSPRINGS OF WATCHES.—Michael D. Kelly, Cadiz, Ky.

Claim.—1. The winding and transferring-tool, composed of the bars A B, jointed together as described, provided with the recesses F, spring plates and rings H, guide-shoulder K, pins L, and the screw D and spring E, all substantially as specified.

2. The combination, with a winding-shaft N and plate O, of the improved tool herein described, substantially as specified.

106,373.—AXLE-GAUGE.—Rollin C. Kelly, Brandon, Wis.

Claim.—The device herein described, consisting of the bar E, provided with the tongue B and arms C D, and the gauge-bar G, having jointed ends H I, provided with pins *o*, all constructed and arranged as and for the purpose specified.

106,374. — LATH-MACHINE. — John J. Knowlton, Philadelphia, Pa., assignor to himself and William H. Burr, same place.

Claim.—The toothed or ribbed guides F F', arranged in combination with the gang-saw, substantially as and for the purpose herein shown and described.

106,375.—FENCE-POST.—Orville L. Larkin, Otto, N. Y.

Claim.—The metal foot A, corrugated as described, and provided with sockets *e* for holding the wooden head B, as specified.

106,376. — HARROW AND CULTIVATOR.—John Lerch, Uhlersville, Pa.

Claim.—The detachable frame F, rigidly secured to the frame of a harrow or cultivator, in combination with a roller hung to the said detachable frame, all substantially as described.

106,377. — BEE-HIVE. — Volney Leonard, Springfield, Pa.

Claim.—1. The comb-frame B, made up of loose parallel frame-sections B', provided with holes, *d d*, in their sides, at or near their tops, and holes, *g*, at their bottoms, as specified.

2. The detachable ledge-section C, carrying the hinged lighting-board D and the pivoted arms G, arranged for operation essentially as described.

3. The combination of the movable sides F with the honey-boxes E and comb-frame B, substantially as specified.

106,378.—RAILWAY CARRIAGE.—Aaron R. Locke, Boston, Mass.

Claim.—The combination of the two clutches and their operative mechanism, substantially as described, or the equivalent thereof, with the wheels and the two axles, applied together and to the carriage-body, essentially as hereinbefore explained, the purpose of the clutches and their operative mechanism being as hereinbefore described.

Also, the mechanism or combination, as explained, for operating the sliding parts of the clutches I I', the same consisting of the cam-grooved curved bar S, (fixed to an arm, U, projecting from the front axle,) the levers N P, the slide-rod M, and the springs Z Z, and the furcated levers K K of the sliding parts X X of the clutches, the curved bar being provided with mechanism for moving it in its guides, as set forth.

106,379. — CARRIAGE-JACK. — David Marshall, Northville, Mich.

Claim.—In the construction of carriage-jacks, the arrangement of the standard B, prop C, with the wheel F, lever D, and fulcrum-plates E, when all are made and combined substantially as and for the purpose herein set forth.

106,380. — PORTABLE GAS-PIPE VISE.—Thomas Marshall, Paterson, N. J.

Claim.—An improved portable pipe-vise, formed by the combination of the flanged plate A *a'*, bolts and nuts B *b'*, top plate C, springs D, and jaws E with each other, substantially as herein shown and described, and for the purpose set forth.

106,381.—CORSET-SPRING.—Frank W. Marston, Philadelphia, Pa.

Claim.—A corset-steel, whose main spring is constructed in two parts, which are placed end to end, and each rigidly fastened to an outer auxiliary spring near its ends, the inner ends of said main spring being confined within a band or equivalent device.

106,382. — BEDSTEAD-FASTENING. — Pres. Maulding and John U. Fraley, Marshall, Texas.

Claim.—A bedstead-fastening, formed by the combination of plates D and G, inclined planes E E, lugs I I, with the lips J and bolt L applied, arranged substantially as described.

103,383.—GALVANIC BATTERY.—Edwin D. McCracken, New York, N. Y.

Claim.—The combination, in the same electric circuit, of two or more batteries and a switch, arranged to bring each battery in turn into and out of the circuit, substantially as and for the purposes herein described.

106,384. — PAINT-BRUSH. — Alvin McDonald and James M. White, Washington, Ill.

Claim.—The bristle-holder, when constructed of

the pieces C C, with their slots *b a* and segmental centers *d d*, the carriers D D, with pins *b b b b*, or equivalents, and their segmental centers *a a*, and their offsets or bases *f f*, combined with the cone E, or equivalent, screw F, handle A, bristle-shell B with its socket *g* and bristles G, substantially as and for the purposes described.

106,385.—HORSE HAY-RAKE.—G. M. L. McMillen, Dayton, Ohio.

Claim.—The hinged lever C hinged upon the axle *c*, when combined with the bell-crank lever A, link R, and lifting-bar D, arranged to form an automatic lock for the bar D all substantially as herein set forth.

106,386.—MOSQUITO-NET HOLDER.—Charles Messenger, Cleveland, Ohio.

Claim.—The herein described mosquito-net holder, consisting of the stay B, standards A, adjustable stay C, having rings E, and horizontal rods F, all arranged in the manner described, for the purpose specified.

106,387.—GUIDE FOR CIRCULAR SAW.—Alexander Middlebrook, Glasgow, Mo., assignor to himself and John B. Ruthvin.

Claim.—The arrangement, in bed-plate A, and with respect to saw-guide B *b*, of car *c*, lugs *d d*, swiveled screw D, and nut E, each relatively constructed as and for the purpose described.

106,388.—STEAM-GENERATOR.—Joseph A. Miller, New York, N. Y.

Claim.—The two series of inclined pipes A E, one within the other, combined with a fire-space, K, under the upper portion of said pipes, all arranged to subject the water and steam to progressive augmentations of heat, as set forth.

106,389.—CARBURETING APPARATUS.—Joseph Millward, Fayetteville, N. Y.

Claim.—In combination with the blowing-wheel and its appliances, the carbureting-chamber E, composed of a series of concentric rings or cylinders, through, over, and between which the air to be carbureted passes in contact with the carbureting vapor, substantially as and for the purpose described.

106,390.—TILE-CUTTING MACHINE.—Oscar F. Monfort, Dearborn, Mich.

Claim.—1. The arrangement of the steel cutter C, constructed as set forth, between the arms E and F, and transversely to the endless tile-carrier B, as and for the purpose described.

2. The combination, with the tile-cutter and the carrying-belts B B, of the weighted table S and spring catch T, substantially as specified.

3. The combination, with the shaft D, arm G, and wheel-tine E, of the shifting-arm H K and cams N O, substantially as specified.

106,391.—VENEERING-PRESS.—John More, New York, N. Y.

Claim.—The clamp, composed of the parts B C, and screws D, and nuts B′, constructed, arranged, and operating in the manner herein described, and for the purpose herein set forth.

106,392.—STEAM-GENERATOR.—David A. Morris, New York, N. Y.

Claim.—1. Making coils for steam-boilers, to consist of two or more threads, substantially as above set forth.

2. Connecting two separate chambers by means of coils, as described, one being a water and sediment-chamber, and the other a steam-chamber.

3. Superheating the steam by means of the tubes or pipes H and I, extending from the upper part of the steam-chamber down into the fire-flue, substantially as shown and described.

4. The combination of the upright boiler herein described, with furnaces arranged in relation thereto, in the manner specified.

106,393.—BOX.—John Nelson, Rockford, Ill.

Claim.—A box, constructed as herein shown and described, as an article of manufacture.

106,394.—SELF-CLOSING COMPRESSION FAUCET.—Edward Noble, North Haven, Conn.

Claim.—The combination of the tubes A and B, and the chamber D, with the valve E and tube G, the whole being arranged to operate substantially as and for the purposes set forth.

106,395.—FANNING-MILL.—Harrison Ogborn, Richmond, assignor to Samuel Watson, Lewisville, Ind.

Claim.—The shoe U, provided with plates *a a* and ears S S, the supporting-rods X X′, operating-rods H I R, and bell-crank K M N P, when said parts are constructed, combined, and arranged to operate substantially as described, and for the purpose set forth.

106,396.—PIANO ACTION.—Charles F. Oliver, Lynn, assignor to Nathaniel Cummings, Boston, Mass.

Claim.—1. The spring stop *i*, constructed and applied substantially as described, for the purpose specified.

2. The hammer-stem L, when cut away near the hammer, substantially as described.

3. The insertion of cloth, felt, rubber, or other suitable material in the rear end of the key D, and in the hammer-stem L, substantially as described.

4. The spring *a*, attached to the rear end of the key, in such a manner that it may be readily adjusted, substantially as described, for the purpose specified.

106,397.—GROUND-PULVERIZER.—Ezra A. Olleman, Mooresville, Ind.

Claim.—The construction and arrangement of the crushers E, F, and G, and arc-shaped plates E′ E″, F F″, and G′ G″, and the pins V V V, in manner and form substantially as set forth.

106,398.—HAND-STAMP.—William Edwin Osborn, Brooklyn, N. Y.

Claim.—1. A partially revolving crown-plate or bed-plate, *v* or *w*, centrally pivoted to the plunger *x* or bed *y*, of a seal-press, and combined with a detachable die or counter-die, A or *m*, fitting thereon, for the purpose of securing the same, substantially as herein set forth.

2. The combination, substantially as herein set forth, of the pins *h h* or *e e*, projecting from the counter-die or from the plunger of my improved press, with perforations made in bed *y* or die A, to prevent a horizontal movement of the die or counter-die when attached thereto.

3. A detachable center-plate, *t* or *l*, fitting within a die to form or complete the design thereof, when secured and supported therein by means of a projection, *g g*, formed upon the crown-plate *w* of the press, to enter a counterpart recess in the die and bear against said center-plate, the whole being arranged and combined substantially in the manner and for the purpose herein set forth.

106,399.—CAR-COUPLING.—William R. Patton, Des Moines, Iowa, assignor for one-half his right to Denison Tisdale, same place.

Claim.—The coupling-box A A A A, the coupling-jaws B B and C, the arms D and E, the eccentric G, the shaft H, the coupling-bolt I I, the springs *a a*, the spring-bolt *b*, the cross-bar *c c*, the hollow projection *d*, the chamber *f f*, the lever A, and the handle *k*, all made, combined, and operated substantially as described, and for the purposes specified.

106,400.—GOVERNOR FOR STEAM-ENGINE.—Andrew J. Pevey, Boston, Mass., assignor for three-fourths of his right to George F. Pottle, same place.

Claim.—The combination of the fan-wheel A A and the buttress-cylinder D D, operating in confined fluid, one upon the other, substantially as described, and for the purpose set forth.

106,401.—REFRIGERATOR.—Eliab Perkins, Fond Du Lac, Wis.

Claim.—1. A refrigerator, consisting of the circular body with the hollow walls, and the openings *a* and *b*, with the ice-basket B and cover D, all constructed and arranged to operate substantially as described.

2. The circular shelves, mounted on rollers *f*, attached to the inside wall of the refrigerator, so that each shelf can be turned independent of the others.

106,402.—BOX FOR BLUING, &c.—Andrew F. Pickens, New York, N. Y.

Claim.—A box for bluing and spice-powders, having a perforable cover at one end, and provided with a metallic flanged band for holding said cover in place, as described.

106,403.—SCHOOL-DESK.—John F. Piehl, Richmond, Ind.

Claim.—1. In combination with the standards A A, and pieces M, or pieces C, the pins I and O, clamps G, jam-nuts H, and lugs K, forming the joints Q, all constructed and arranged as herein described.

2. In combination with a school-desk, constructed as herein described, the ears P and braces L, for the purpose specified.

106,404.—LATHE.—Philip H. Pitts, Waverly, Mo.

Claim.—1. The device for supporting and adjusting the tail-center, consisting of the slide N, yoke R, bar O, rods Q, block M, springs Q′, and screws P and S, as described.

2. The combination, with the mandrel, face-plate, and centers of a lathe, of the device for supporting and adjusting the tail-center, the tool-rest V, and feed-screw T′, arranged relatively thereto, as described.

3. The arrangement of the live center and screw-cutting die in plate G, and of the latter in the groove across the surface of the face-plate, as described.

4. The arrangement described in relation to the ways T, and to each other, of the lathe-rest V and feed-screw T′.

106,405.—RAMROD-STOP.—Samuel W. Porter, Springfield, Mass.

Claim.—An improved ramrod-stop, consisting of the bar *b*, having thereon the two projections, *a* and *c*, the same being used in connection with the protuberance *g*, or annular shoulder *x*, formed upon the ramrod, and the band J, all constructed and operated substantially as described.

106,406.—WAGON-BRAKE.—Asahel Quimby, Salem, Mass.

Claim.—The combination of the lever H, bolts G G, and rods F F, the whole operated substantially as and for the purpose set forth.

106,407.—COFFEE-MILL.—François Charles Richer, Gilmer, Texas.

Claim.—In an upright coffee-mill, a shell formed of two parts, C′ *b f* and C *c d*, applied together, as and for the purpose specified.

106,408.—PORTABLE IRON DERRICK.—Samuel Rider, Oil City, Pa., assignor to himself, Samuel R. Griffith, and Andrew W. Cox, same place.

Claim.—1. The portable derrick herein described, when constructed of strips of plate-iron A, bent longitudinally as shown, and connected by braces B of plate-iron, and strengthened by diagonal braces C of rod-iron, and when made in sections and secured by the angular plates D, clamps E, and keys F, all as shown and described, for the purpose specified.

2. The working-beam K, samson-post M, jack-posts N, and pump-rig P, in combination with the portable iron derrick, constructed and arranged as shown and described.

106,409.—POUNCING-MACHINE.—John Rosenkranz, Boston, Mass.

Claim.—1. In a pouncing-machine, the arrangement of the roller G, having a vertical, horizontal, and rotary motion, as and for the purpose specified.

2. The pouncing-roll G, combined with a hat-block, C, the two vibrating in opposite directions, as set forth.

3. The combination, with brim-pouncing rolls T T, of levers S S, arranged opposite to each other and vibrating in different directions, as described.

4. The combination of shaft V, having reverse cams X X thereon, and the hand-crank W, combined with two pivoted levers S S, as and for the purpose specified.

106,410.—STOVE-PIPE DAMPER.—William F. Roseman, Hudson, N. Y.

Claim.—1. A damper, provided with spindle, composed of two parts, figs. 1 and 2, constructed as, or substantially as, and for the purpose herein set forth.

2. The combination and arrangement of plate A and the two parts of the spindle, represented by figs. 2 and 3, substantially in the manner and for the purpose herein set forth.

106,411.—FARM-GATE.—Cyrus W. Saladee, St. Catharines, Canada.

Claim.—1. The combination of the intermediate post H with the permanent post L and the flexible gate, as constructed and operated as and for the purposes set forth.

2. The braces A and lever A′, for raising and lowering the gate, substantially as described, and operating as set forth.

106,412.—RAILWAY-CAR BRAKE.—Elijah W. Sandford, Brooklyn, N. Y.

Claim.—A car-brake, consisting of one or more pairs of revolving wheels, placed between the carrying-wheels of a car, and so arranged that the peripheries of such wheels may be thrown in contact with each other, and, at the same time, in contact with the treads or peripheries of such carrying-wheels, substantially as and for the purposes set forth.

103,413.—PARLOR GRINDSTONE.—Josiah M. Simpson, Oshkosh, Wis.

Claim.—As an article of manufacture, a parlor grindstone, consisting of the frame F, the cylinder D, coated with emery A and B, the crank E, and clamp C, constructed as described.

106,414.—WASHER AND BOILER.—John Slater, Norwich, N. Y.

Claim.—The buckets E, constructed as described, and secured to or upon the inside of the periphery of a revolving cylinder, substantially as and for the purpose specified.

106,415.—TATTING-SHUTTLE.—Charles H. Smith, Brooklyn, N. Y., assignor to himself and Theodore D. Day, Bergen Point, N. J.

Claim.—A tatting-shuttle, provided with the removable side or shell, for the purposes set forth.

106,416.—CURTAIN-FIXTURE.—Rodney L. Smith, deceased, Wolcottville, Conn.; Elisha Turner, executor.

Claim.—The stud K, secured to the bracket G,

in front of the spool D, in combination with the horizontal or inclined slot *g* and tape I, or its equivalent, substantially as shown and described and for the purpose specified.

Also, the means employed for releasing the ratchet-wheel E from engagement with the detent H, consisting of the slot *g*, the tape I, or its equivalent, and the stud K, substantially as shown and described.

106,417.—COTTON AND HAY-PRESS.—William M. Smith, Augusta, Ga.

Claim.—1. The combination of the T-shaped racks C, secured in the upright timbers B, as described, with the pawls A and the pawl-boxes F and F', constructed as and for the purpose specified.

2. In combination with T-shaped racks of a cotton-press, the pawl-boxes F and F', constructed with an inside incline, nearly parallel with the upper face of the teeth of the pawls, so that there will be little or no loss motion when the pawls engage with the racks, substantially as and for the purpose specified.

3. In combination with the follower-block of a cotton-press, the double crane H, hinged to one side thereof, and the windlass I, substantially as and for the purpose set forth.

4. The arrangement of the rods *n'*, pivoted in and passing through the uprights A, and provided at each end with hooks *n n*, in the manner and for the purpose shown and set forth.

5. The arrangement of the hinged door L with the hinged platform K, provided with hooks, all in relation to the press-box, as herein shown and described.

6. The arrangement herein shown of the movable fulcrums, formed of the links E, with their lever-sockets G, pivoted to pawl-boxes F, so that said fulcrums can pass, at each stroke of the levers, a vertical line drawn from the pivoting point *e*, as and for the purpose described.

7. In combination with a cotton-press, the bent lever M, clamps S and O, and wedge Q, for the purpose of holding the bands N while being fastened, substantially as described.

8 In combination with the retaining pawl-boxes F' and the links E', the wedges *p*, for the purpose of releasing said links from the boxes, substantially as described.

106,418.—ELECTRO-MAGNET.—William W. Smith, Cincinnati, Ohio.

Claim.—The herein-described method of dividing and simultaneously passing the electric current through the coils of electro-magnets, as applied to telegraph lines, by the connection or junction of wires A B and wires C D, in the manner substantially as shown, for the purpose of greatly reducing the resistance to the passage of electric currents through the coils of the magnets, as set forth.

106,419.—MACHINE FOR MAKING CHAIN-LINKS.—John H. Snyder, Troy, N. Y.

Claim.—1. The combination, in an organized machine, of a double-acting mechanism for cutting off the stock, with two or more bending mechanisms, substantially as and for the purposes set forth.

2. The blank-table and die-frame C, formed with a groove or receptacle to contain water, as and for the purposes described.

3. The inclined surfaces described, in connection with the blank-table C, and carrying-arm I, by means of which the cut blanks are fed to the bending mechanisms, as set forth.

4. The combination, with a single driving-shaft, of a vibratory arm, I, or its equivalent, for effecting the cutting off and carrying away from the feed-hole of the stock, and a walking-beam or oscillating lever, H, for imparting motion to the bending mechanism, the whole constructed and operating substantially as set forth.

106,420. — SLIDE-CHUCK FOR LATHES. — Charles F. Stackpole, Woburn, Mass.

Claim.—The combination with the face-plate A, of the slide B, provided with holes *a*, centering-pin E, set-screws *b'*, the reversed screw C, and nut D, adjustable dogs F, and set-screws *a'* and *f'*, all constructed as described, and arranged to operate as and for the purpose set forth.

106,421. — CUTTER-HEAD FOR PLANING-MACHINE.— Darius Stevens, Danbury, Conn.

Claim.—The combination and arrangement of the swiveled screws D and sliding nuts E with the grooved cutter-head A, for the purpose of clamping the cutters B laterally, substantially as herein shown and described.

106,422.—DIAPER-PIN.—Isaac W. Stewart, New York, N. Y.

Claim.—As an improved article of manufacture, diaper-pins having the shields constructed and attached to the wires substantially in the manner described.

106,423. — RAILWAY SWITCH. — Joseph H. Stockton, Thompson, Ga.

Claim.—1. The combination, with the main rails, the switch-rails, and the shifting-bar C, of the holding and tripping-lever O, and the drop-weight K, the latter being connected to the said bar, so as to move it when the lever O is tripped, all arranged substantially as specified.

2. The combination, with the lever O, of the friction-holding wheel S, substantially as specified.

106,424.—WATER-PIPE MACHINE.—John W. Stockwell, Portland, Me.

Claim.—1. The suspended and oscillating hopper N, adjustable slide Q, and auxiliary hopper-plate P, all constructed and relatively arranged to form an improved feeding device for a pipe-molding machine.

2. The core G, shaft F, and revolving trowel-carrier U, all constructed and relatively arranged together, as specified.

3. The device X Y, for forming the tip of the pipe, constructed and operating substantially as herein shown and described.

106,425. — BARBERS' FURNITURE. — Otto Stoelker, Montgomery, Ala.

Claim.—1. The vessel C, provided with the nozzle and valve at the lower end, and with the suspended knob A, so that it can be opened by pressing against the knob, as set forth.

2. The case A, provided with the drawers E, sliding boards D, and vessels C, all combined and arranged as described.

106,426.—CLASP FOR LIGHTNING-RODS.—Richard Street, Albany, N. Y.

Claim.—A clasp or holder, constructed in two parts, and held together by a key or wedge, as before described, and for the purpose hereinbefore set forth.

106,427.—PRESS FOR HAY, COTTON, &c.—George W. Swinebroad, Bolivar, Tenn.

Claim.—The arrangement, with respect to the follower A, fulcrum blocks E, and detent blocks G, of the links D F H, and lever G, as and for the purpose specified.

106,428. — BEVERAGE, OR "CHAMPAGNE MEAD."—Asher S. Taylor, San Francisco, Cal.

Claim.—My improved beverage, called champagne mead, composed of the ingredients above enumerated, and mixed in about the proportions and manner above described.

106,429. — GEAR FOR CARPET-SWEEPING MACHINES.—Gilbert Fink Taylor, New York, N. Y.

Claim.—The metallic toothed ring C, cast with projection *b*, and fitted on the extension *a* of rubber rim A, where it is secured by the rubber collar or rim B, the whole constituting an improved gear-wheel for carpet-sweepers, as herein shown and described.

106,430.—DREDGE-BOX.—Augustus F. Tripp, Buffalo, N. Y.

Claim.—The arrangement of the annular groove or depression D about the central perforated portion C, in combination with the flanged cap E, as and for the purposes hereinbefore shown and described.

106,431.—SAW-FILING MACHINE.—William Tucker, Fiskedale, Mass., assignor to himself and Prince A. Snell, Pittsburg, Pa.

Claim.—1. The toothed feed-bar I, having a hinged arm, which is adjustable for varying widths of saws, substantially as and for the purpose described.

2. The toothed feed-bar I, with a deep groove, *i'*, which is traversed by the index-wheel of the feed, the two features coacting to form a guide for the edge of the saw-blank relatively to the cutter.

3. The arrangement on one axis of the index-wheel G and feed-wheel H, when the latter is made to act intermittently upon a toothed feed-bar, which impels the saw-blank, substantially as described.

4. The combination of the pairs of spring-bars which hold the upper and lower jaws of the saw-holder.

5. The jaw-pieces D D, journaled at their ends in the spring arms, so that the jaw-faces may have a capacity for adjustment parallel with the plane of the saw, whatever may be the thickness of the blade.

6. In combination with the spring jaw-pieces D D, the screw-clamps E E, for bringing the jaw-faces to the required relative adjustment for varying thicknesses of blades.

7. The carriage M M', having a sliding adjustment to and from the work, an adjustment in a horizontal plane, to give more or less hooking to the teeth, and carrying a cutter-stock capable of adjustment for varying obliquity of the teeth.

8. The combination of the crank-shaft and the concentric sleeve-shaft, the former carrying the driver-wheel and the latter forming an adjustable stock, carrying the driven pinion and the cutter-mandrel.

9. The driver-pinion, shaped as a hollow spherical segment, to admit in its concavity a point of the rim of the rotating cutter, substantially as described.

106,432.—REVERSIBLE CENTER PINION FOR WATCHES. — Almon Twing, Waltham, Mass.

Claim.—The loose reversible center pinion C, with recess *d*, for engaging with the clutch-pin *e* on the center wheel, and provided with oblique leaves or teeth *c c*, engaging with similarly-cut teeth on the barrel-wheel, for the purpose of automatically releasing the said pinion on the recoil from the rupture of the mainspring, as shown and described.

106,433.—PUMP.—Henry Van Kouren, Jersey City, N. J.

Claim.—The auxiliary ring *b*, soldered to the sheet-metal pump-barrel, and combined with the base *c* and valves *c*, constructed and arranged substantially as and for the purposes set forth.

106,434. — RAILWAY.—Horace S. Weaver, Freeport, Pa.

Claim.—A curved switch-track, *b*, running from and returning to the main track, for reversing or turning locomotives and tenders, substantially as herein before set forth.

106,435. — BASE-BURNING STOVE.—Albert G. Webster, Troy, N. Y., assignor to himself and George T. Scudder, same place.

Claim.—1. The descending flue or flues D, having inlets E, and passing through the body or center of the combustion-chamber A, and communicating with the base of the stove or heater, substantially as herein shown and described and for the purpose set forth.

2. The combination of the flue-strip or strips H with the base of the stove or heater, and the subject of the first claim, substantially as and for the purpose herein shown and specified.

3. The arrangement of the air-chamber I, having inlet opening or openings *a*, and the air-flue or flues C, in combination with the combustion-chamber A, and the subject of the first claim, substantially as shown and described, and for the purpose set forth in the above specification.

106,436. — CORN-HUSKER. — Dwight F. Welsh, Bucyrus, Ohio.

Claim.— The arrangement upon the pointed husker A of two projections, B B, at a finger's distance apart, and curved away from each other, as shown in the drawing, to furnish separate receptacles for three different fingers, as set forth.

106,437.—VINE-CUTTER AND TRIMMER.—Harrison W. White, Joppa Village, Mass.

Claim.—An improved vine-trimmer or cutter, consisting of the handle A, forked arm B, and knife or cutter C, whether said knife be made solid in one piece or in sections, and whether it be an entire circle or a semi-circle, substantially as herein shown and described, and for the purpose set forth.

106,438.—SAW-JACK.—Abel Whitlock, Danbury, Conn.

Claim.—The saw-jack herein described, when constructed and operated substantially as and for the purpose set forth.

106,439. — MACHINERY FOR WORKING HIDES, SCOURING LEATHER, &c.—Theron R. Williams, Salem, assignor to Chester Guild, Jr., Boston, Mass.

Claim.—The new arrangement of each tool in its carrier, viz., so that such tool, while in operation, shall stand obliquely to its traverse or path of movement.

Also, the tools of each pair as arranged at an angle with each other, and obliquely relatively to the direction of their traverse, as hereinbefore described.

106,440, antedated July 30, 1870.—PRESS FOR BAILING BROOM-CORN.—William J. Willson, Coles county, Ill.

Claim.—The top E, F, and F', in combination with the cleats G and links H, when constructed and arranged to operate substantially as and for the purpose set forth.

Also, the front end I/ M'' M''', provided with the hoops N', and, in combination with the links P, when constructed and arranged to operate substantially as and for the purpose set forth.

Also, in connection with the beads L and I/, the frames R, when constructed and arranged to operate substantially as and for the purpose set forth

106,441.—ROTARY STEAM-PLOW.—James T. Wilson, Rochester, N. Y.

Claim.—1. The arrangement of a series of shares and mold-boards with or upon a rotary shaft or cylinder in two or more parallel rows, so that the cutting-edges of the shares shall project therefrom radially, and their points in each row all be formed in a plane passing through the axis of the shaft, substantially in the manner and for the purpose herein set forth.

2. In combination with the sliding-boxes M M, carrying the journals of the shaft G of a rotary plow, the chains P P and revolving shaft L, for operating the same, substantially as and for the purpose herein set forth.

3. Curved slots, N N, formed in supporting frames J J, projecting from the carriage A, as guides for the sliding journal-boxes M M of a rotary plow, the curvature of each slot being such as to describe in its length arcs of different radii, for the purpose of loosening the chain when the cylinder is elevated, substantially as herein set forth.

106,442.—STOVE OR FURNACE-GRATE.—George A. Wing, Albany, N. Y.

Claim.—1. The combination and arrangement of rock-shaft B B, arms *f f*, and grate-bars *b b*, with sliding shaft C C, arms *e e*, and grate-bars *c c*, substantially as herein shown, and for the purpose set forth.

2. In a grate constructed as above described, the corrugations in the fixed and movable bars *b b* and *c c*, and the corrugations *h h* on the inner sides of the bed-plate A.

3. The combination and arrangement of shaking and dumping attachment M with sliding shaft C C and rock-shaft B B, substantially as and for the purpose herein shown and described.

106,443.—DITCHING-PLOW.—Stephen Sidney Wood, Brooklyn, N. Y.

Claim.—1. The branch-handle O, attached, by an adjustable band, P, to the main handle, for the purpose specified.

2. The combination, in a ditching-plow, of plate E and straps F with a pivoted beam, A, each constructed and relatively arranged as and for the purpose specified.

106,444.—HAY-SPREADER.—Gilbert I. Wooster, Plymouth, Conn.

Claim.—The arrangement of the crank-shaft F, bar I, and the several forks upon the hinged block L, combined with the lever P, so as to be operated to raise and throw the crank-shaft out of gear, substantially as described.

106,445.—PORTABLE BATH-SEAT.—Allen P. Young, Providence, R. I., assignor for one-half of his right to Albert H. Spencer, same place.

Claim.—The seat A, constructed substantially as described, and provided with the leg or legs B and projections C, or their equivalents, as and for the purposes specified.

106,446.—QUILTING-FRAME HOLDER.—Nicholas Young, Parma, Mich.

Claim.—The quilting-frame holder, consisting of the stool A, screw D, adjustable ring E, and swiveled dog or bar F, substantially as herein shown and described.

106,447.—WOOD PAVEMENT.—Andy M. Adams, Washington, D. C.

Claim.—A pavement, consisting of blocks provided with the diagonal facings A, vertical fronts *a*, and angular grooves *b*, cut in the vertical side, as shown, arranged in succession, so as to form the flaked wedge-shaped cement-pits B, in the manner and for the purpose herein set forth and described.

106,448.—MANUFACTURE OF GLUE.—William Adameon, Philadelphia, Pa.

Claim.—1. The process, substantially as described, of producing a continuous sheet of gelatine, that is to say, passing the size in a wide continuous stream onto a traversing band, and there hardening, or partially hardening, the same.

2. The process of producing a continuous sheet of gelatine by coating the surface of a cylinder, maintained at a low temperature, with size, and removing the latter as it solidifies, substantially as described.

3. The combination with a revolving cylinder, A, containing a freezing mixture, of a trough or vessel, C, containing size.

4. Cooling pipes D, arranged in the trough C, in combination with any suitable exhausting apparatus, by which the ice-water in the cylinder may be caused to circulate through the said pipes D.

5. The combination of the cylinder A with an endless apron, F, of wire gauze.

6. The knife *g*, arranged in respect to the roller *f*, and apron F, substantially as described.

7. The combination of the said endless apron F and wires *p*.

8. The combination of the rotating wires *n n* with the endless apron I.

106,449.—MANUFACTURE OF WHEELS.—Edward A. Archibald, Methuen, Mass.

Claim.—The described process in the manufacture of wheels.

106,450.—MANUFACTURE OF POCKET-BOOKS.—James C. Arms, Northampton, Mass.

Claim.—1. The herein-described method of applying and securing the spring C to pocket-books or diaries, that is to say, by means of a pocket formed in the flap, to receive it substantially as described.

2. The improved spring for pocket-books or diaries, consisting of the strip E, having the bent spring F secured thereto by means of the clips G, substantially as described.

106,451.—MANUFACTURING ENVELOPES.—James Ball, New York, N. Y., assignor to himself and Samuel Raynor & Co.

Claim.—The sheet A for envelope-blanks, formed with scalloped ends *a* and *b*, the scallops made with angular recesses in succession across the sheet, when those of the edge *a* are reverse to those of the edge *b*, substantially as herein shown and described.

106,452.—EJECTOR AND STEAM-CONDENSER.—Andrew Barclay, Kilmarnock, North Britain.

Claim.—1. A chamber, closed at the lower end by a water-trap, in combination with a discharge-pipe or nozzle, valve I, and a surrounding annular steam-passage, when the condensing water is discharged intermittently by the operation of said valve, substantially as described.

2. A narrow pipe or passage, communicating with the exhaust-ports of an engine, and with a water-reservoir, and provided with a valve operating so as to discharge water intermittently into said passage, when the latter is contracted below the point where the water is discharged into it, as described.

3. The combination, with the said chamber, of a water-reservoir and a valve closing the communication between the two, and operated substantially as described.

4. The cistern L and valve C, combined with the receiving-chamber, and with the cistern F, as specified.

106,453.—CHURN-DASHER.—Henry F. Bartlett, La Grange, Mo.

Claim.—The arrangement of cylinder A, provided with air-holes C, flanges B, and socket D, to receive handle *c*, substantially as and for the purpose set forth.

106,454.—AUTOMATIC LUBRICATING-SLEEVE.—Samuel R. Bartlett, Chicago, Ill.

Claim.—The cylindrical sleeve A, secured to the shaft B by a thumb-screw, C, and provided with a space, D, with apertures F, with an orifice, H, provided with screw G, when each of said parts is constructed as described, and all are combined to operate as and for the purposes set forth.

106,455.—FENCE.—William Bartlett, Little Hocking, Ohio.

Claim.—The posts *a*, planted in zigzag order, and inclined at alternate corners of the fence inwardly, or toward the vertical plane, passing centrally lengthwise of the fence, substantially as described.

106,456.—MODE OF ATTACHING SLEIGH-BELLS TO STRAPS.—William E. Barton, East Hampton, Conn.

Claim.—1. A bell, B, constructed with a flat boss, C, having lateral projections, *c*, adapted to secure the bell from rotation on its strap, substantially as set forth.

2. The combination of the screw D passing through and countersunk in the strap A, the bell B, having a threaded aperture, *b*, to receive the said screw and projections, to hold the bell from turning, as set forth.

106,457.—COOKING APPARATUS.—Henry C. Berry, Wauseon, Ohio.

Claim.—A cooking apparatus, constructed and composed of the various parts herein shown and described, when arranged as and for the purposes herein specified.

106,458.—MACHINE FOR CUTTING OFF SHAFTS AND PIPES AND FOR CUTTING SCREW-THREADS.—George Blake, Whitby, Canada.

Claim.—1. The combination of the tubular axle B, the chuck D, provided with the adjustable slotted slides *b*, and the toothed rim *a*, and the chuck E, consisting of the right and left-hand screws *e*, pinions *f g*, and jaws *d d*, all constructed and arranged as shown and described for the purpose specified.

2. The improved gauge or stop, consisting of the lever L, slide *t*, rod *u*, and head *v*, combined and arranged as shown and described.

3. The combination, with the frame A, of the cup M and plate F, the latter provided with the foot *j*, and all arranged as shown and described, whereby said parts are adapted to be relatively adjusted or to be detached, one from the other.

4. The combination of the stop or gauging device, plate F, disk G, chucks E D, and tubular shaft B, said disk, plate, and chucks being provided with the holding and cutting devices shown and described, and all constructed and arranged as specified.

106,459.—LAST FOR MACHINE-SEWED TURNED SHOES.—Lyman R. Blake, Boston, Mass.

Claim.—A last, having a rebate cut around its sole-edge, said rebate being filled with an elastic material, substantially as described.

106,460.—DINING-TABLE.—Minor P. Boyd, Unionville, S. C.

Claim.—1. In combination with a table, the detachable grooved track B and the carriage D, provided with rollers or wheels *a a*, substantially as and for the purposes herein set forth.

2. The combination of the sectional track B, carriage D, and a series of independently-revolving disks, E G, all constructed and arranged substantially as shown and described, and for the purposes herein set forth.

106,461.—TOY TOAD.—George E. Bringman, Baltimore, Md.

Claim.—1. The lever G *t*, arranged, relatively to the platform J, as shown, in combination with frame D and hollow open-mouthed toad B, all operating as set forth.

2. The combination of figure B, cord *e*, pins *f g*, trigger E, and spring or rubber cord *b*, all arranged to operate substantially as described.

106,462.—BREAD-TOASTER.—Heman P. Brooks, Waterbury, Conn.

Claim.—The herein described toaster, consisting of the handle D, prongs *a* and *c*, one or more of which are bent in the manner described, so as to form springs or reverse bearings *f*, substantially in the manner described.

106,463.—DENTISTS' CHAIR.—William M. Butler, Louisville, Ky.

Claim.—1. The combination of the devices for producing the backward tilting of the chair, and the lateral inclination of the same, consisting of the quadrant D, circular slide U, arch Y, triggers 4 and 5, pin S, and spring V and X, as herein set forth.

2. The combination of the ring T, the set-screws A^2 A^3, the arch Y, the quadrant D, and set-screws A^1 A^3, the frame C with its lugs Z Z, and circular slide U, constituting a universal joint, and the means by which the chair is held in position, substantially as and for the purpose set forth.

3. The combination of the racks E E E E, the pinions N N N N, the plate or frame J, to which they are attached, also the tube guides K K K K, the universal screws L L on shaft I, and the pinions L′ L′, in which they work, constituting the devices for raising the chair, substantially as and for the purpose set forth.

4. The rest G, the screw R, the connecting-link B^1 B^1, the pinion Q on screw R, and P on shaft 3, constituting the device for raising the foot-rest, substantially as and for the purpose set forth.

5. The combination of the plate B^3, the rack C^1, the scroll thread-wheel C^2, and crank D^1, the set-screw C^3, and the slide D^2, the set-screw F′, the hinge-joint E′, the plate J′, and set-screw H′, the plate K′, and cushion L′, constituting the head-rest, when arranged, constructed, and operated in the manner and for the purpose set forth.

6. In combination with the devices claimed in the foregoing clause, the rack F, pinion F′, and universal screw M on shaft I, constituting a device for raising the seat, as herein described.

106,464.—COMBINED SHOVEL AND DUNG-FORK.—Jesse Carpenter, Niconza, Ind.

Claim.—The arrangement of the slotted handle A, jaws B B, projection C, lugs *a a*, spring bar D, and the movable tines E and set-screws *b b*, all constructed to operate substantially as set forth.

106,465.—PRESERVATION OF MEAT AND OTHER ARTICLES OF FOOD.—Ferdinand Cassel, Cologne, Prussia.

Claim.—The improved method of preserving an article of food by coating it with the oil obtained from the corns of grapes, substantially as before set forth.

106,466.—MACHINE FOR SPINNING FLAX, HEMP, &c.—Henry A. Chapin, Bridgeport, Conn., assignor to William Sparks Thomson, New York.

Claim.—1. The combination, with and arranged in advance of the flyer, of the stationary frame *k* and its compressing blocks, as and for the purpose described.

2. The grooved pulley for griping and drawing the yarn at a variable rate of action, substantially as described.

3. The combination of the yarn-carrier with the grooved pulley, constructed as described, and for the purpose set forth.

106,467.—WRENCH.—Sylvanus Chapman Charlestown, Mass.

Claim.—1. The pin *p′*, arranged within the socket L^3 of the movable jaw, in such a manner as to be operated upon by a spring, M, substantially as described, for the purpose set forth.

2. The connecting-bar F, formed with the loops G and H, in one piece, with the spring M arranged within the socket L^3 of the jaw E, substantially as described.

3. The clasps G and H, jaw E, and connecting-bar F, formed in one piece, with the operating nut interposed between the clasps G and H, and the spring M located within the socket L^3 of the jaw E, when combined and arranged to operate in connection with the stock A, formed with the jaw B, substantially as herein shown and described.

106,468.—Block for Carpet-Printing.—Thomas Crossley, Bridgeport, Conn.

Claim.—A block for printing carpets and other fabrics, combining in its construction a sheet of metal, which is provided with perforations or indentations for the reception of the types, a backing of wood, or other equivalent substance, to which the plate is attached, and the types or pegs for giving the impression, substantially as and for the purpose set forth.

106,469.—Axle-Box.—David Dalzell, South Egremont, Mass.

Claim.—An axle-box for the hubs of carriage and wagon-wheels, constructed of two parts, A B, one of which is of wrought and the other of cast metal, the two parts being connected together substantially as and for the purpose specified.

106,470. — Axle for Vehicles. — David Dalzell, South Egremont, Mass.

Claim.—1. The detachable oil-cup E, on the outer end of the box C, constructed and arranged substantially as and for the purpose set forth.

2. The annular groove d, at the inner end of the box C, for the purpose of preventing the escape of oil out from the arm B, between said inner end of the box and the packing c in the flanged collar D, at the inner end of the arm, substantially as described.

3. The cap G, in combination with the oil-cup E and nut H, all being constructed and arranged substantially as and for the purpose specified.

106,471, antedated August 4, 1870.—Railway Car-Coupling.—Jonathan L. Devol and Atwell L. Peadro, Parkersburg, West Va.

Claim.—1. In combination with the coupling-pin C D, the weighted-levers E, spring H, lever G, and lever K, with arm L, substantially as set forth, the parts being so arranged as to constitute an automatic coupling, which is capable of raising the coupling-link and guiding the same into the aperture in the buffer-head.

2. The combination of the hinged lever K, having attached to it an arm, L, and lever or bar G, arranged to operate substantially as and for the purpose set forth.

3. The combination and arrangement of the levers E E F and G, cross-head D, coupling-pin C, and buffer-head B, substantially as and for the purpose set forth.

4. The combination and arrangement of the levers G and K, and spring H, substantially as and for the purpose set forth.

106,472. — Permutation Lock. — Charles Diebold and Jacob Obernesser, Cincinnati, Ohio, assignors to Charles Diebold and Jacob Kienzle, same place.

Claim.—1. The combination of the pivoted jaws L L, the sliding plate B, the dog-lever C, and disks D, all constructed and arranged to operate substantially as described.

2. The combination of the plate G with the pin H and plate B B, substantially as and for the purposes described.

106,473.—Vegetable Knife.—Fred. Durand and William F. Gilbert, Derby, Conn.

Claim.—As an article of manufacture, the knife-blade A, provided with the scoop-shaped end C, substantially in the manner herein set forth.

106,474. — Medical Compound for the Cure of Gravel.—Theodor G. Eiswald, Providence, R. I.

Claim.—The within-described medical compound, composed of the ingredients, substantially in the proportions specified.

106,475. — Wrench.—Henry Fessler and Robert V. Jones, Canton, Ohio, assignors to themselves and John D. Graber, same place.

Claim.—1. The lever-arm H, attached to one of the pivoted jaws F G, and working through a mortise, h, in the other pivoted jaw D E of a wrench, substantially as and for the purpose specified.

2. The combination of the handle A B B, jaw D E, arranged on the pivot a and provided with mortise h, and jaw F G, arranged on the pivot b and provided with the lever-arm H, the several parts being arranged substantially as and for the purpose specified.

3. The jaws D E and F G and the handle A B B, when so constructed and arranged as that, in any position of said jaws and handle, there shall be a face bearing between the two jaws and between the lower jaw and handle, substantially as is herein specified.

106,476.—Brush for Cleaning Tumblers.—Adolph Fischer, New York, N. Y.

Claim.—1. The stationary brush A, supported by a hollow stem, rising from the bottom of the vessel, substantially as and for the purpose described.

2. The annular brush D and central brush, both stationary, when combined and arranged for use, substantially as described.

106,477.—Loom for Weaving Rattan.—Samuel L. Fitts, Ashburnham, Mass., assignor to George C. Winchester, same place.

Claim.—1. In combination with the elastic roller f^2, the series of warp-spools f^3, arranged upon a common axis, the latter provided with a thumb-screw or its equivalent, for compressing the frame A^2, and graduating the tension for the several spools, substantially as shown and described.

2. In combination with the vibrating lay, and moving with it, a filling-spool for holding the rattan filling, substantially as shown and described.

3. The combination, with the filling-spool mounted on the lay, of the spring p upon the vibrating lay, for presenting the end of the filling to be grasped by the nipper-jaws.

4. In combination with the filling-spool mounted on the lay, of the nippers and sliding spreader q, substantially as described.

106,478. — Cultivator. — Julius Gerber, Rockford, Ill.

Claim.—The device described, consisting of the clevis d, with bar d^1, and notched face d^2, angle-iron e with bolt e' and set-screw a, when combined and arranged as described, and employed in connection with a cultivator-beam and shovel-standard, as described.

106,479.—Composition to be used in Dyeing.—Franz Graupner, Evansville, Ind.

Claim.—The coloring composition, herein described, as and for the purposes specified.

106,480. — Railway Switch. — James T. Guthrie and Louis Pausch, Leesburg, Ohio.

Claim.—In combination with the rod M', and movable rail F, the lever O, and rod P, when constructed and arranged substantially as set forth.

106,481.—Ruffling Attachment for Sewing-Machines. — Henry M. Hall, New York, N. Y.

Claim.—1. The ruffling-plate F, provided with the lips h, i, and j, when constructed and arranged substantially as described and shown, and for the purpose of holding two pieces of cloth passing between them, after said pieces are sewed together, and are beyond the needle, and also for the purpose of directing said piece of cloth toward the guide.

2. In combination with the ruffler-plate F, constructed as described, the guide-plates B, C, and D, arranged substantially as described and shown, and as and for the purposes set forth.

3. In combination with the ruffler-plate F, constructed as described, and the guide-plates B, C, and D, the strap E, as described and shown, and as and for the purposes set forth.

4. The ruffler-plate F, the guide-plates B, C, and D, the guide-pin d, the straps E, and the base-plate A, all constructed and arranged substantially as described, and as and for the purpose set forth.

103,482.—Stalk and Kindling-Wood Cutter.—George B. Hamlin, Willimantic, Conn.

Claim.—In combination with the friction driving-wheels C and D, and shaft A, the inclined rotary cutter-blade or blades c, stationary cutting-edge g, and feed-table B, the whole constructed and arranged to operate as and for the purposes set forth.

106,483.—Horse-Power.—George B. Hamlin, Willimantic, Conn.

Claim.—1. The main driving internal gear, and two or more pinions, with their respective shafts, and provided with suitable friction-wheels, in combination with a central shaft provided with a friction-wheel, the whole arranged to operate substantially as and for the purpose set forth.

2. A driving mechanism, provided with two or more main power-shafts, so arranged that the driving machinery may be located either on the same or a different floor from that where the motor is employed, substantially as hereinbefore set forth.

106,484, antedated August 4, 1870.—Fruit-Drier.—Henry Henley, Shoals, Ind.

Claim.—1. A fruit-drier, so constructed that it can generate its own steam or be supplied with steam from a separate boiler, substantially as and for the purposes herein set forth.

2. In combination with a fruit-drier, having a series of parallel, horizontal steam-chambers, whether stationary or movable, a pipe, so constructed and connected with said steam-chambers that it will convey from the same steam, water, and air, substantially as and for the purposes herein set forth.

3. The combination and arrangement of the boiler B with spout I, pipes E G H, steam-chambers C C, whether stationary or movable, connecting-pipes e e, and with or without the fruit-pans D D, all constructed as described, and substantially as and for the purposes herein set forth.

106,485.—Hoisting-Jack.—Frank Hollenberry, Frizellburg, Md., assignor to himself and John C. Frizell, same place.

Claim.—1. The clamp e, provided with the corners i and handle n, in combination with the bar b, link o, and lever k, when the latter has its fulcrum in the eye s or other part of the inclosing-frame, substantially as described.

2. The clamp f, provided with the corners m and tail t, in combination with the eye s of the rod r, or other suitable fulcrum, the bar b and lever u, substantially as set forth.

3. The arrangement of the clamps e f, levers k u, bar b, frame a A B, and handle n, as specified.

106,486. — Journal-Box.—John Hughes, New Berne, N. C.

Claim.—The journal A, having flanges b b and c, in combination with the box D G, the lower half, G, of said box being beveled at e, when said box D G is provided with the tubular reservoir H, having the opening k and grooves f f, all constructed, arranged, and operated as set forth.

106,487.—Coupling for Wire Rigging.—William Carlton Ireland, Boston, Mass.

Claim.—The rods K K, connecting together the plates E and F of the dead-eye, when combined and arranged with the plates P, and rubber N, sliding upon the extensions M M of the bolts K K, and operating in relation to the cable A, and rod R, substantially in the manner and for the purpose described.

106,488.—Shoe.—Joseph L. Joyce, New Haven, Conn.

Claim.—1. In the manufacture of shoes, the extension of the quarter forward onto the vamp, so that the upper edge of the quarter will pass beyond the instep-edge of the vamp, and be secured, substantially in the manner and for the purpose described.

2. In combination with the vamp A and instep-piece B, formed upon or united thereto, as described, the elastics f f, so as to yield for the accommodation of the instep-piece B, substantially as described.

106,489.—Hemming and Felling Device for Sewing-Machines. — Jacob Karr, Washington, D. C.

Claim.—1. The combination, with the foot B, of the adjustable gauge D and scroll E, substantially as and for the purpose shown and described.

2. The spring plate E, provided with a curved tang, and adjustable in the stock of the foot, in combination with the spring plate f, as and for the purpose described.

3. The combination and arrangement on the presser-foot, of the spring presser A, and the cam-lever C, substantially as shown and described.

106,490.—Brick-Machine. — John Keller, Paduca, Ky.

Claim.—1. In the described connection with the revolving mold-table B, hopper C, and plate T, the sliding plungers N r, cam P, and cam Q R, combined and arranged substantially as described and for the purpose specified.

2. In the described connection with the mold-table B and plungers N, the sliding boxes J, operating substantially in the manner and for purpose set forth.

3. The combination and arrangement of revolving mold-table B, hopper C, plate T, plungers N, plungers G, cam-track H H', sliding boxes J, and cams L M P Q R R, operating substantially in the manner and for the purpose described.

106,491, antedated August 5, 1870.—Centrifugal Sugar-Draining Machine.—Hugh W. Lafferty and Robert Lafferty, Gloucester, N. J.

Claim.—1. Suspending the vertical spindle carrying the drum or basket of a centrifugal draining-machine upon a movable support, to obtain a movement of the spindle in the line of its axis, substantially as herein set forth.

2. The combination, in a centrifugal machine, of a friction-surface upon its basket or drum, with a counterpart friction-surface upon its casing, when said basket or drum is free to move in the line of its axis, as well as to revolve thereon, substantially as herein set forth.

3. A friction-clutch, N, secured to the movable spindle D, carrying the drum or basket B of a centrifugal machine, in combination with a friction-pulley, M, revolving upon a fixed hollow shaft encircling said spindle, but wholly disconnected therefrom, substantially in the manner and for the purpose herein set forth.

4. The combination of the annular cup-shaped nut with the lower end of the fixed hollow shaft L, and of the friction-pulley M, substantially in the manner and for the purpose herein set forth.

5. The combination of the friction-clutch N of the pulley M with the spindle D, by means of an interposed sleeve, in such manner as that, while neither can revolve independently of the other, either may vibrate or have slight lateral motion without communicating the same to the other, substantially as herein set forth.

6. An elastic washer or packing, interposed between the spindle D and friction-clutch N, of a centrifugal machine, substantially in the manner and for the purpose herein set forth.

7. A lever, F, in combination with the spindle D of a centrifugal machine, substantially as herein set forth.

8. The combination of an eccentric, V, with the lever F, carrying the spindle D of a centrifugal machine, substantially as herein set forth.

9. The combination of a movable frame, X, carrying the idle-pulleys Y Y, with the lever F F', supporting the spindle D of a centrifugal machine, substantially as herein set forth.

10. Extensible links, interposed between the arms of the lever F and its eccentric on one side, and the sliding frame X on the other, substantially as herein described.

106,492.—WASHING-MACHINE.—John L. La Rose, Leavenworth, Kansas,

Claim.—1. A washing and rinsing-cylinder, with angular beveled oblong apertures, *d d*, through the heads *c c*, as arranged in combination with the oval or oar-shaped covering slats *e e e e*, operating in the manner as and for the purposes described.

2. In combination with the above, the dovetail coupling F *f*, the stuffing-box E, and crank D, as herein shown and described.

106,493. — ELECTRO-MAGNETIC MOTOR.—Landy Tunstall Lindsey, Jackson, Tenn.

Claim.—The combination of the magnets M M', lever L, connecting-arm T, pawls P, ratchet-wheel R, toothed wheel W, and spring N, for directing the vibratory motion of the lever of the governor, set, arranged, connected, and operated substantially as set forth.

2. The manner, as described, of utilizing the motor for telegraphic purposes, by a combination of the line wire with spring N and toothed wheel W, and the use of a relay magnet, substantially as set forth.

106,494.—COMBINATION OF LABEL-HOLDER AND HANDLE.—Henry Manneck, New York, N. Y.

Claim.—The combination of the handle E and frame or label-holder B, constructed, arranged, and secured to the box by the fastenings D, or their equivalents, substantially as shown and described.

106,495.—SPRING FOR PISTON PACKING.—David Maydole, Norwich, N. Y.

Claim.—A series of open springs, having substantially the form shown and described, and arranged within the interior of piston packing-rings, so that the lateral and outward pressure of each spring against the others, or against suitable interposing blocks, shall produce a uniform outward pressure upon said rings entirely independent of or from the piston spider, or other central support, substantially as shown and set forth.

106,496.—HANDLE FOR CASKET.—Alexander McGuire, Winchester, Conn.

Claim. — The trunnion A, provided with the screw a cast therein, as and for the purpose described.

106,497.—STEAM-ENGINE.—Hermann Mohr, New York, N. Y.

Claim.—1. As an improvement in the Corliss engine, for working steam expansively, the liberating devices C and D, when constructed and arranged to be actuated by the speed of the piston and the position of the governor, substantially as herein described and for the purpose set forth.

2. In combination with the piston, main-shaft, and governor, the rod A, devices C D, rods L M, N, and K, and eccentric E, when constructed and arranged to operate substantially as and for the purpose set forth.

106,498.—FLEXIBLE SHAFT.—James B. Morrison, St. Louis, Mo.

Claim.—1. The sleeve 2 3 4 5, enveloping more or less of the flexible shaft, and giving journal-bearing to more or less of said shaft and to the tool, as set forth.

2. In combination with the flexible shaft, the joint W *w* X *x* Y *y y'* or 11, as described.

3. The combination of the flexible shaft with the adjustable bracket, supported substantially as stated, by parallel bars H I, held in position by a clamp, 13, operated by a set or thumb-screw, 14, or its equivalent.

106,499. — KNITTING-MACHINE. — Edward Morse, Winchendon, Mass., assignor to Hinkley Knitting-machine Company.

Claim.—1. The combination, with the looper L, or its equivalent, of a knitting-machine, of a mechanism substantially such as herein shown and described, which will impart to the looper, (besides its ordinary movements to carry a loop from the needle to a tooth of the comb of the machine,) a rising-and-falling or other suitable movement, at certain intervals, to clear the yarn carried by the needle, so as not to form a loop therefrom, thereby producing a ribbed appearance in the fabric knit, substantially as described.

2. The looper-shank O, constructed in parts *f*, *g*, and A, arranged together substantially as described, in combination with the lever-bar *s*, link *u*, lever S, and disk U, having apertures for the reception of pins, and a pinion, A, on its shaft, arranged to gear with the rack of the comb, when the whole are arranged together for operation, substantially as and for the purpose described.

106,500.—SEEDER AND FERTILIZER COMBINED.—Washington B. Myers, Hampton, Pa.

Claim.—1. The hoppers D D, connected as described, and rendered adjustable by spring hook *d* and perforated bar *b*, substantially as and for the purpose set forth.

2. The arrangement of the frame A, hoppers D D, slide E, spouts H H, plow-shanks J J, and levers K K', all constructed as described, to operate substantially in the manner and for the purposes herein set forth.

106,501.—NAIL.—Andrew Patterson, Worcester, Mass., assignor to John Dean, same place.

Claim.—An improved tack or nail formed of a disk provided with jagged or other hole, into which the shank is inserted and imbedded by swaging, in such manner that the head protrudes through and is exposed to the force of the blow, as described.

106,502.—FIRE-GRATE.—Merritt Peckham, Utica, N. Y.

Claim.—1. The cleaning-disks C, having either a smooth, serrated, or toothed periphery, hung between the bars of a fire-grate, on a shaft, with which they revolve, but on which they laterally slide freely, substantially as herein described.

2. The combination of the above with the lugs E, arranged and operating substantially as and for the purpose herein described.

106,503.—BASE-BURNING STOVE.—Merritt Peckham, Utica, N. Y.

Claim. — The air-openings G, in the magazine of a base-burning magazine stove, when arranged and operating substantially as herein described.

106,504.—TOBACCO-BOX OR DRUM.—John Potter, Quincy, Ill.

Claim.—As a new article of manufacture, a tobacco-drum formed of one hoop, A, and strengthened by metal straps B B and hoops C C, all as shown and described.

106,505.—HORSE-POWER.—Tapley B. Pyron, Springfield, Mo.

Claim.—1. In horse-powers, traversible platform, secured rigidly to the main shaft, and arranged to rotate in a direction contrary to that of the draft, as specified.

2. In combination, the platform D, provided with the teeth E, the shaft C, having the spur-wheel H, the stationary inner frame *f*, provided with the gear-wheels H, guides I, and grooved rollers *g*, and

the internal wheel G, provided with a bearing-rib, substantially as shown and described.

106,506.—DRIPPING-PAN.—Adam Reid, Buffalo, N. Y.

Claim.—1. The combination of a dripping-pan, A, with the horizontal revolving perforated platform or grate B, for the purposes set forth.

2. Providing a dripping-pan, A, with recessed bottoms A^1 and A^2, connected, by grooves A^3, with pivot A^4 and revolving grate B, all constructed and arranged as described, and for the uses and purposes set forth.

106,507.—SHEAVE-BLOCK.—Thomas H. Rice, Baltimore, Md.

Claim.—The block *a b*, boxes *e*, and rollers *f*, all arranged as specified.

106,508, antedated August 10, 1870.—MANUFACTURE OF TRUSS-PADS.—S. S. Ritter, Philadelphia, Pa.

Claim.—The block B, having in its upper side a cavity, of a shape suited to the reception of a truss-pad, and combined with the frame A and screw A', in the manner and for the purpose set forth.

106,509.—IRONING TABLE.—James H. Ruff, Thomas Run Post-Office, Md.

Claim.—1. The combination of the frames B C D, connecting-bar E, and braces G G, with hooks *d d*, and projections *e e*, all substantially as and for the purposes herein set forth.

2. In combination with the above, the board A, with its metal bar *a*, metallic loop *f*, and elastic loop *g*, all substantially as and for the purposes herein set forth.

106,510.—GRINDSTONE JOURNAL-BOX.—Joseph B. Sargent, New Haven, Conn.

Claim.—The cover C, attached to the base A by means a hooked flange, *a*, and secured by the turn-button E working over the slot D, substantially as described.

106,511. — MORTISING-MACHINE. — George Thomas Savary, Newburyport, Mass.

Claim.—In a mortising-machine, the combination of two separate cutters, C C, two separate pitmen, (one for each cutter,) two separate links or yokes, D D', and two cranks for operating such pitmen, the cranks being upon a single shaft, substantially as shown and described.

Also, in such a combination of cutters, pitmen, and cranks, the arrangement of the cranks upon the shaft at an angle to each other, and operating to drive the cutters one after the other, in the manner shown and described

Also, the combination of the cutters C and C', the crank-shaft B, pitmen G G', and links E E' F F', and yokes D D', substantially as and for the purpose set forth.

Also, the combination of the cam on the driving-shaft with the gravitating slide L and the cutter-carriage I, substantially as shown and described.

Also, the combination, with the carriage and gravitating slide, of the ratchet-bar M, arranged to be turned to place its teeth into and out of connection with the pawls, substantially as shown and described.

106,512.—PROPELLING APPARATUS.—Cornelius Schilling, New York, N. Y.

Claim.—1. The lever D, carrying the blade *e*, and secured to rods *d d'*, in combination with the link *f*, the crank *c*, and the platform A, substantially as shown and described.

2. The pinion *i* and rack *j*, in combination with the platform A, rods *d d'*, link *f* and lever D, carrying the blade *e*, substantially as set forth.

106,513. — HARVESTER-RAKE.—Jacobs W. Schuckers, Philadelphia, Pa.

Claim.—1. The combination of the vibrating sweep-rake, the rake-arm carrying the guide-roller and the oscillating guide, these parts being constructed, arranged, and operating as herein set forth.

2. The combination of the oscillating stud, the rake-arm vibrating in the stud, the pitman, and the oscillating guide pivoted on the gearing side of the machine, all these parts being constructed, arranged, and operating substantially as herein set forth.

106,514.—TOWING-HOOK FOR CANAL-BOATS. Leonard R. Shipman, Bloomsburg, Pa.

Claim.—The tow-hook herein described, having bed-plate A, with toe *n* and slot *s*, hinged post K, ring L, and catch G, operated by spring, substantially as and for the purpose specified.

106,515.—SPARK-ARRESTER.—James Smith, Altoona, Pa.

Claim.—1. A perforated pipe, situated within the smoke-chamber and communicating with the smoke-pipe and exhaust-pipes of a locomotive, in combination with a sleeve or casing, so arranged that an upward current shall cause the cinders to pass upward from the lower part of the smoke-chamber and strike and traverse the perforated surface of such pipe, substantially as described.

2. The perforated pipe A, when tapered as described, in combination with the sleeve or pipe B, having a flaring lower end.

3. The pipe B, consisting of a stationary section, *a*, and adjustable section *a'*, arranged substantially as specified.

4. The perforations A, in the outer pipe B, for the purpose set forth.

106,516.—WASH-BOILER.—Oscar F. Stedman, Westfield, N. Y.

Claim.—The combination of the sectional plates E E with the perforated bottom D, and upright band H, the whole operating in connection with the tubes F F, substantially in the manner and for the purposes described.

106,517. — FIRE-EXTINGUISHER. — Thomas Tripp, Chicago, Ill.

Claim.—1. Two or more cylinders for receiving chemicals to be saturated with water for extinguishing fires, arranged in upright positions upon a suitable platform or truck, for the purpose of permitting the passage of water upward through the chemicals before being discharged upon a fire, substantially as herein shown and described.

2. In combination with one or more receptacles for saturating water with chemicals, a receiver or chamber for mixing clear water with a solution of chemicals, substantially as described, for the purpose specified.

3. In a machine for saturating water with chemicals for extinguishing fires, the application of steam to the chemical-receiving cylinders, for the purpose of increasing the dissolution of said chemicals, as herein shown and described.

4. The combination of the receiver E and pipe D with the upright cylinders C, for the purpose specified.

5. The perforated diaphragms P, in combination with the cylinders C and bent pipe D, for the purpose specified.

6. The perforated baskets S, adapted for insertion within the cylinders, to receive and hold the chemicals to be saturated, substantially as herein shown and described.

7. The arrangement for charging the cylinders with chemicals while the machine is in operation, as herein shown and described.

8. The arrangement of the pipes G, H, F, and D, with relation to the cylinders C and receiving-chamber or drum E, as herein shown and described.

106,518.—COMPOUND FOR EXTINGUISHING FIRE.—William P. Van Deursen, Cincinnati, Ohio.

Claim.—Glycerine, as a vehicle for holding in solution or suspension any fire-extinguishing agent,

solid or liquid, substantially as and for the purpose set forth, the compound thus formed to be applied by any common means or apparatus to the extinguishing of fire, on land or sea.

106,519.—Combined Latch and Lock for Gates.—Henry R. Van Eps, Peoria, Ill.

Claim.—The combined gate-latch and lock, consisting of the quadrant-shaped box or lock A, with key *l*, constructed and attached to gate-post as described, in combination with the catch B provided with the recess V, and lever C, having its bearing in box *a* on the gate, substantially as described.

106,520. — Vegetable-Cutter. — Franz Wagner, New York, N. Y.

Claim.—The combination of a single grooved cylinder, E, the series of knives C, mounted on the rotating shaft D, and the stripper F, secured to the sides of the frame, and all constructed and adapted to operate together as herein represented and described.

106,521.—Stove-Grate.—R. Ward, Edinburg, Ind.

Claim.—1. The curved plate A, provided with a number of perforations, each having lips *b b*, extending below the plate, substantially as shown and described.

2. In combination with a stove or furnace of any description, the curved perforated plate A, having lips *b b*, projecting below the plate, substantially as and for the purposes herein set forth.

106,522.—Vapor-Burner.—Thomas Ward, Columbus, Ohio.

Claim.—1. The flange or projection at the top containing the air-holes A A A, in combination with openings B and C, as specified.

2. The packing-tube, provided with a solid point, *J*, acting as a plug-key or stop-cock, as described.

3. The combination of burner H, hollow tube M, packing-tube M, provided with solid point *J*, when all arranged to operate as herein specified.

106,523.—Motive Power.—William Medd Watson, Tonica, Ill.

Claim.—In the construction of mechanism for driving street-cars, the frame A D D, in combination with gearing K, H, G, and F, spring J, and endless chain I, as described.

106,524. — Sad-Iron. — William Webster, Washington, D. C.

Claim.—The flat-iron A, when provided with the T-shaped plug B and tooth *a*, arranged as shown, and connecting with the tubular handle C by means of the base D, foot *c'*, and sliding catch F, in the manner and for the purpose herein set forth and described.

106,525.—Steam Water-Elevator.—Henry Morse Wightman, Boston, Mass.

Claim.—1. The condensing-pipe and valve, in combination with the supply-chamber B, when operating substantially as described.

2. The interposition of a valve between the main chamber or barrel A and the supply-chamber B, when constructed and operating substantially as described.

3. The small tank H, when used for the purposes, and operating substantially as described.

4. The contraction of the outlet-pipe *J* to such a size and for such a height as to insure its operation, substantially as described.

5. The combination, in an apparatus substantially such as described, of the supply-chamber B, with the tubes C C, and a water-back or other device for heating water in the fire-box of a stove or range, said parts being arranged and operating substantially as herein set forth.

106,526.—Thread-Cutter for Sewing-Machines.—Cornell J. Wood, Brewerton, N. Y.

Claim.—The spring C, with knife D, and guard *c*, when constructed substantially as represented and described, and combined with the presser-foot of sewing-machine.

106,527.—Water-pipe Support.—Chauncey D. Woodruff, Toledo, Ohio.

Claim.—1. The plates A and A', with rims *b b* and *b' b'*, lugs or projections countersunk, in combination with rims C C and D D, constructed substantially as described, and for the purposes set forth.

2. The plates A A', fastened together by means of countersunk lugs *d* and indentations *c c*, filled with solder, substantially as described, and for the purposes set forth.

106,528.—Ventilator for Stove-Pipes.—Chauncey D. Woodruff, Toledo, Ohio.

Claim.—The combination of the band with loops *c* and *d d*, screw *f*, and key *e*, constructed and arranged substantially as described and for the purposes set forth.

106,529. — Velocipede. — Charles Wyndham, Southover Grange, near Lewes, England.

Claim.—1. The construction and employment to bicycles of a jointed leg or legs, bars or struts, which is or are capable of being drawn up or down by a cord or cords, in the manner and for the purposes hereinbefore described and shown.

2. The spring claw or catch upon the handle or handle bar, for retaining the cord and leg, or bars and legs, in a raised or lowered position, in the manner described and illustrated.

3. The construction and employment of a sliding leg, whether such leg be fitted with a pawl-rack or other appliance for retaining it in a raised or lowered position, in the manner and for the purposes before described and shown in the drawing.

4. The sheave or sheaves, and the parts connected therewith, for drawing up the cord or cords of the jointed or sliding leg or legs, as hereinbefore described and represented in the drawing.

5. The employment of a pawl or a spring or a pawl and a spring, to return the leg or legs or bars into the reverse position, as hereinbefore described and represented in the several figures of the drawing annexed.

106,530.—Apparatus for Rectifying Alcoholic Liquors.—Charles Louis Fleischmann, Cincinnati, Ohio.

Claim.—The charcoal or other rectifying medium placed between two chambers, each provided with a discharge-pipe governed by a valve or cock, in combination with a supply-pipe for supplying the spirits to be rectified under hydrostatic pressure, when the said supply-pipe is provided with two branch pipes governed by cocks or valves, each communicating with one of the said chambers, substantially as and for the purpose specified.

Also, in combination with the combination specified in the foregoing claim, the water-pipe, or its equivalent, for supplying water under pressure, and provided with two branch pipes governed by cocks or valves, each communicating with one of the chambers, substantially as and for the purpose specified.

REISSUES.

4,098.—Stove-pipe Thimble.—Thomas K. Anderson, Hornellsville, N. Y.—Patent No. 41,502, dated February 16, 1864.

Claim.—1. A stove-pipe thimble, consisting of the caps or heads A and B, having on their inner sides, respectively, flanges *a* and *b*, and of the connecting cylinders C and D, the former having its ends fitting about the flanges *a* and *b*, and the latter having its ends turned over and clinched upon the faces of the openings in the heads, substantially as herein shown and described.

2. A stove-pipe thimble, having a bright-surfaced inner cylinder provided with protuberances, in the manner and for the purposes herein described.

4,099.—Machine for Husking Corn.—L. Augustus Aspinwall, Albany, N. Y.—Patent No. 101,809, dated April 12, 1870.

Claim.—1. The husking-rolls R R, when provided (one or both) with depressions *r*, formed substantially as shown, and for the purpose set forth.

2. In combination with the rolls R R, constructed substantially as described, the double gears L L, as and for the purpose specified and set forth.

3. In combination with the depressions *r* of the rolls R R, the teeth P, as and for the purpose described.

4. The combination and arrangement of the knives M M with the rolls R R, constructed substantially as shown, and for the purpose set forth.

4,100.—Capstan and Windlasses.—David N. B. Coffin, Jr., Newton, and Benjamin Woodward, Somerville, Mass., assignees, by mesne assignments, of David N. B. Coffin, Jr.—Patent No. 59,969, dated November 27, 1866.

Claim.—1. The combination of the partially-rotatory cap or cover and the locking or sliding bolts, for the purpose of connecting the lever-head to the barrel, or disconnecting the same therefrom, substantially as set forth.

2. Fastening the cover of a capstan by means of lugs *v* in combination with sockets or grooves in the hub, substantially as described.

3. The arrangement of the cover-fastening in relation to the locking mechanism of the capstan, so that, when the cover is rotated to a stop in one direction, the bolts will be adjusted for the simple power, and the cover fastened, and, when rotated in the opposite direction to a stop, the cover will also be fastened and the bolts adjusted for the multiplied power, while in an intermediate position the cover is unfastened, and may be removed, substantially as described.

4. The employment of the shaft *b*, extended from the capstan, in combination with the shafts *d* or *e*, with suitable gears, as *u*, *f'*, *s*, and *t*, substantially as described.

5. Locking the fulcrum-gear of a capstan to the bed-plate by means of bolts movable upward from beneath into contact therewith, substantially as described.

6. The employment of a series of inclines, movable in a circle, and so applied in combination with the fulcrum-gear of a capstan as to lift said gear from its position of inaction to the proper position to be acted on by gears playing into it, substantially as described.

7. Suspending the fulcrum-gear to the rotating body of the capstan.

8. The arrangement of the gears A Z, pawl-wheel P, barrel I, friction L, and chain-wheel P, and the points of disconnecting, whereby both barrel I and chain-wheel P are brought under control of the friction mechanism, and yet used separately for winding, heaving in, &c., substantially as described.

9. The windlass-shaft N, in combination with the friction-band and barrel of a windlass, substantially as described.

10. The partly-circular heads and sockets, in combination with the pawls of a windlass, substantially as described.

11. A groove formed under the projecting part of a capstan's base, substantially as and for the purpose set forth.

4,101.—Saw-Mill.—Alexander McCreight, Tranquility, Ohio.—Patent No. 82,970, dated October 13, 1868.

Claim.—1. The arrangement, as herein shown and described, of the frame A A, which supports the saw, and to which the guides F F and G are attached, with reference to the mechanism for elevating and depressing the saw, and to the carriage or way upon which the log is placed, as a consequence of which such log may be sawed longitudinally into boards, of equal or unequal thickness, by the horizontal movements of the saw in different planes, substantially as and for the purpose set forth.

2. The ratchet-bars *g g*, ratchet-wheels *h h*, and shaft K, when combined with the fixed frame *b b b' b'*, moving frame *d d d' d'*, and operated substantially as and for the purpose set forth.

3. The shaft C of the described mill, in combination with the shaft H and H', with their connections of gearing upon the shaft C, and bearing in the boxes *m m'*, and connecting-bands with roller M, all substantially as and for the purpose set forth.

4,102.—Chills for Casting Car-Wheels.—William Wilmington, Toledo, Ohio.—Patent No. 85,046, dated December 15, 1868.

Claim.—The improvement in the annular metallic portion or chill of a car-wheel mold, produced therein by the annular groove *a* for the reception of core-sand, or its equivalent, substantially as and for the purpose herein set forth.

DESIGNS.

4,293.—Journal-Box.—Pascal P. Child, St. Louis, Mo.

Claim.—1. The conformation of the box or stand A, substantially as represented.

2. The ornamental configuration of the cap C, substantially as represented.

4,294.—Carpet Pattern.—John Dornan, Philadelphia, Pa.

Claim.—The design for a carpet, as shown.

4,295.—Shade for Gas or Lamp-Burner.—John Letchworth, Philadelphia, Pa., assignor to Hartell & Letchworth, same place.

Claim.—The design for a lamp-shade, substantially as described, and as illustrated in and by the accompanying drawings.

4,296.—Hand-Stamp.—Jules F. Pages, San Francisco, Cal.

Claim.—The design for a stamp or seal-press above described and shown.

4,297.—Table-Caster.—Daniel Sherwood and George D. Dudley, Lowell, Mass.

Claim.—The design for a table-caster, substantially as shown in the accompanying photographic drawing.

ISSUE OF AUGUST 23.

PATENTS.

106,531.—Knitting-Machine.—William H. Abel, Bennington, Vt., assignor to himself and John E. Crane, Lowell, Mass.

Claim.—1. The combination of outer and inner dividing-wheels A and B with the needles, for the purpose of forming a path or passage between the needles for the tubular guide *c*, and the weft-thread, when all are arranged and operate substantially in the manner set forth.

2. The stationary adjustable tubular guide D, as described, in combination with the outer and inner dividing-wheels, and with the divided needles, as set forth.

3. The guard C, constructed as described, in combination with the wheels A and B, and with the needles.

4. In combination with the guard C, the shield *g*, which supports the wheel B, and keeps the fabric from contact with the said wheel, as set forth.

5. The combination, substantially as described, with the tubular guide and the dividing-wheels, of the presser-wheel E, for pressing down the weft-thread inserted between the needles.

6. The combination, substantially as described, of the tubular guide D, the dividing-wheels A and B, the presser-wheel E, the guard C, and the shield g, with the needles, all arranged and operating in the manner specified.

106,532.—COAL-SIFTER.—Sanford Adams, Boston, Mass.

Claim.—The arrangement and construction of the rim A, the rings D and E, the rolls a a a, the sieve C, and hoop f, as described, for the purpose set forth.

106,533.—SHEET-METAL CAN.—Franz Albaum, Green Point, N. Y.

Claim.—The cam-joint, consisting of the shoulder b, and inward bent end portion a, on the body, and of the flange a on the end plate b, substantially as herein shown and described.

106,534.—MACHINE FOR RULING SLATES.—Franklin Ames, North Bridgewater, Mass.

Claim.—1. The combination of the cranks m and g, shaft n, and link t with the plate c and table b, substantially as and for the purpose specified.

2. The combination of the fingers w w, cross-bar x, recesses w' w', slot x', inclined slot y, slide y', and recesses z z' with the bed a, substantially as and for the purpose set forth.

106,535.—HARVESTER.—Vincent S. Barber, Alliance, Ohio, assignor to Nixon & Co., same place.

Claim.—1. The shoe J, when arranged in relation to the drag-bar G, and pivoted below the finger-bar and in line with the cutter-bar, in the manner described and for the purpose set forth.

2. The arrangement of the rod M, tubular drag-bar G, link L, and lever K, substantially in the manner as described and for the purpose specified.

106,536.—MACHINE FOR SAND-PAPERING MOLDINGS.—Joseph Barker, Chicago, Ill., assignor to himself and Philip Myers, same place.

Claim.—1. The connecting-rods A, rod C, crank G, in combination with rods N, elastic straps V, and hinged frame s, letters f f, and lever Q, as set forth.

2. The combination of conical rollers Z, shipping levers d j, rods f f, standards a, gearing c b z, and feed-roller U, for carrying a molding under the block E, as set forth.

106,537.—MOTIVE POWER.—Charles Batcheller, Polk county, Iowa.

Claim.—The construction of a compound balance-lever power, in the manner described, and for the purposes set forth.

106,538.—PRUNING-SHEARS.—Georg Bergner, Washington, Mo.

Claim.—1. The blades d d', case b, and spring c, in combination with the blades A and B, and arranged, constructed, and operating jointly, as and for the purpose shown and specified.

2. As a new article of manufacture, an attachment for shears, composed of the blades d d', case b, and spring c, arranged and constructed as and for the purpose specified.

106,539.—COMBINED HARROW AND ROLLER.—John M. Blankenbeker, Powers' Station, Ind.

Claim.—The arrangement, in a combined harrow and roller, of side bars E, teeth F, adjustable cross-bar G, side bars H, teeth I, roller L, armed shaft M, roller N, armed shaft O, wheels J, armed shaft K, lever R, crank-shafts Q q P p', connecting-bars V W X, lever Y, and bar Z, operating as described.

106,540.—METHOD OF PUTTING FACE-DRESS ON MILLSTONES.—Joel S. Braley, John A. Schmitt, and Phillip L. Schmitt, Utica, Mo.

Claim.—1. The process of sharpening or putting a face-dress upon millstones by attrition, by running them with their faces in contact when in excess, or in an air-tight covering, in the manner and for the purpose specified.

2. The combination of the plug g, rim d, and air-tight covering a, having the holes b and q, and plug c, substantially as and for the purpose hereinbefore specified.

106,541.—SCYTHE.—Hiram C. Brown, Barkhamsted, Conn,

Claim.—A scythe-blade, A, of nearly uniform thickness, with its under side flat, and with a rib or corrugation, B, on its upper side, substantially as shown and described.

106,542.—COMBINATION OF SHAFTS AND POLE.—John G. Burchfield and Seth W. Brock, Niantic, Ill., assignors to Seth W. Brock.

Claim.—1. The arrangement of the shafts of a buggy for adjustment together for use as a pole, substantially in the manner described.

2. The combination with the bar A, and the shafts, of the bars F, keys G, and braces H, all substantially as specified.

3. The combination with the shafts, of the case K, and extension L, all substantially as specified.

106,543.—LET-OFF MECHANISM FOR LOOMS.—Micajah C. Burleigh, Somersworth, N. H.

Claim.—In combination with the whip-roll and the mechanism for effecting delivery of the warp, as described, the catch p, and its ratchet or rack q, the lever r, (connected with the lay,) the reciprocating rack q, and the pawl p and slider o, connected with the pawl for actuating the ratchet-wheel, in combination with the whip-roller and its connections, for actuating the pawl p, as and for the purpose described.

106,544.—PAINT-BRUSH.—William B. Burtnett, New York, N. Y.

Claim.—The combination of the ferrule A, wooden-disked handle B C, plug D, and screw E, or a pin, all substantially as specified.

106,545.—FERRULE FOR PAINT-BRUSHES.—William B. Burtnett, New York, N. Y.

Claim.—The sheet-metal paint-brush ferrule, formed of one piece of sheet metal, as herein described, as an improved article of manufacture.

106,546.—SEEDING-MACHINE.—Alphonso Button, Dunkirk, N. Y.

Claim.—1. The combination, on a truck-frame, A, of the broad-cast sower, consisting of the trough G' and brush-cylinder, arranged and operating as described.

2. The combination, with the perforated convex bottom H, and brush-cylinder M, of the convex sliding and perforated gate L, substantially as specified.

3. Combining, in the hopper of a broad-cast seeder, two upwardly-convex and perforated plates, H L, the upper sliding over the lower, to regulate the supply of seed, in the manner shown and described.

106,547.—DEVICE FOR PROPELLING CANAL-BOATS.—John B. Calnan, New Haven, Conn., assignor to himself and Varunus P. Parkhurst, Templeton, Mass.

Claim.—1. The combination, with the driving mechanism on the boat, and the draft-carriage, of a flexible band, rope, or chain, connecting the same, substantially as described, so that, while motion is communicated from the driving mechanism to the draft-carriage, through said band or chain, the boat may be free to move from side to side, and to respond to its rudder, as set forth.

2. The combination, with the driving mechanism, draft-carriage, and flexible band connecting the same, of an independent tug-rope or chain, attached at one end to the draft-carriage, and at the other end to the boat, substantially as and for the purposes set forth.

3. The combination, with the draft-carriage, the driving mechanism in the boat, and the band or rope connecting the same, of a band-supporting device, for upholding the band or rope at or near the point where it passes around the wheel of the carriage, as shown and set forth.

4. A band-supporting device swiveled upon the draft-carriage, so as to vary its position in accordance with the change in the position of the boat and the flexible band, substantially as set forth.

5. The combination of the draft-carriage, constructed as herein described, with the rails upon which its runs, and by which it is supported both vertically and laterally, as shown and set forth.

106,548.—WHEEL PLOW.—Henry C. Carr, Bordentown, N. J.

Claim.—1. The arrangement of the beams B, made adjustable by means of a series of holes, b b, shaft B', and cross-beam C, substantially as set forth.

2. The arrangement of the beams B, rock-shaft E, arms E', and adjustable rollers E', substantially as set forth.

106,549.—HITCH-HOOK.—George W. Chandler, Mason, N. H., assignor to himself and Calvin Searle, same place.

Claim.—1. The combination of the slide F with the oblique cheeks C C, substantially as and for the purposes set forth.

2. The combination, with the oblique cheeks C C and ring D, of the slide F and curved horn G, substantially as and for the purposes herein set forth.

3. A hitch-hook for holding harness-reins, clothes-lines, and for other purposes, the parts of which are constructed and combined together, substantially as and for the purposes herein set forth.

106,550.—TILE-MACHINE.—Joseph Christen, New Orleans, La.

Claim.—1. In combination with a follower, E, and molding-cylinder F, the connecting-rod M crank-shaft H', lifting-hook P, and toothed disk N, substantially as described.

2. In combination with the elements of the above clause, the ratchet-wheel G and its pawl, the lever T, lever-pawl S, and ratchet-wheel R, substantially as specified.

106,551.—CHUCK FOR HOLDING PIPES AND TUBES WHILE BEING SCREW-THREADED.—William T. Cole, New York, N. Y.

Claim.—1. The slotted circular-plate B, having socket b b thereon, disk A, and lever E, all combined, arranged, and relatively constructed as and for the purpose described.

2. The disk A, plate B, band J K, and lever O, having pin S thereon, all combined, arranged, and relatively constructed as and for the purpose described.

3. The hook T, dog or lever R, block K, plate B, and disk A, all combined, arranged, and relatively constructed as and for the purpose described.

4. The hook-lever O S T, band I K, slotted socket-plate B, dog R, block K, lever E, and disk A, all combined, arranged, and relatively constructed to form a chuck, as set forth.

106,552.—DISH-STAND.—William F. Collier, Worcester, Mass.

Claim.—A dish-stand, composed of the center-ring A, and radial wires B, the said wires being bent into the form shown and described, and connected with the center-ring, and with each other, as set forth.

106,553, antedated August 15, 1870.—ROASTING-FURNACE FOR ORES.—John Collom, Empire City, Colorado Territory.

Claim.—1. The combination of the inclined reaction-bed D and melting-hearth with a mechanical roasting-furnace, all arranged as and for the purpose specified.

2. The combination of scraper, scraper-rod, and regulating-valves, each constructed and operated as described.

3. The improved stirring-rakes p p, having tapering flukes, q q, thereon, to prevent an accumulation of the roasting ore beneath them, and having angles, s s', of different acuteness, so that, when reciprocated, they will stir the ore at each half stroke and cause it to pass slowly in the direction of the larger angle.

4. As an improvement in metallurgic furnace-rakes, the construction of the flukes q, in the manner shown and described.

106,554.—HORSE HAY-RAKE.—James M. Colson, Morrill, Me.

Claim.—An improved horse hay-rake, formed by the combination of the thills A, axle B, wheels C, spring teeth D, slotted and pivoted bars E, pivoting-rod F, coiled springs, G, long cross-bar H, lever I, pivoted bars J and K, foot-lever L, pivoted arms M, long cross-bar N, bent hand and foot-lever O P, pivoted bars Q, and driver's seat R S, with each other, substantially as herein shown and described, and for the purpose set forth.

106,555.—AUTOMATIC BUGGY-BRAKE.—Leander T. Conant, New Lisbon, Ohio.

Claim.—Semicircles M M, lock-bars A A, rubber-blocks B B and C C, with their flanges H H, levers D D, pulleys S S S S, springs I I and O O, as arranged in their combination with their attachment to shafts P P, in the manner hereinabove described, and for the purpose substantially as herein set forth.

106,556.—PLOW.—William G. Coombs, New Gloucester, Me.

Claim.—The combination and arrangement of the lever a, pivot b, pivot c, arm d, pivot e, lever f, pivot h, arm i, pivot k, slotted slide j, with its confining bolts in the slot, and cleaners m n, arranged on opposite sides of the colter and share respectively, applied as herein described.

106,557.—BOTTLE-STOPPER.—James Thompson Cree, Worcester, Mass.

Claim.—The bottle-stopper or cork-holder, with its curved top A', and beveled knife-edges a a a formed upon the same, in the manner and for the purpose herein described.

106,558.—VENTILATING-WINDOW FOR RAILROAD-CARS.—Samuel Darling, Providence, R. I.

Claim.—A car-window, composed of sashes placed at an angle with the outside of the car, and at an angle with each other, those of each part being arranged to be run up or down independently of those of the other part, substantially as shown and described.

106,559.—PLOW.—Robert Dickie and Hugh Kirkwood Johnston, Bunker Hill, Ill.

Claim.—The standard A, screw-threaded brace-rod B, screw-nuts F F, plate G, and clamp-bolts K, passing through elongated perforations I of said plate, all constructed and arranged with reference to the plow and beam, as shown and described, whereby the latter may be adjusted both horizontally and vertically, as and for the purpose specified.

106,560.—WEIGHING-SCALES.—George W. Dickinson, Charleston, Ill.

Claim.—The combination of the weighted pen-

dant H, attached to the end of the radial lever, and provided with vertical lines to make the ounces, with an arc-plate, B, having perpendicular lines of subdivision for the pounds, all as shown and described.

106,561.—Machine for Manufacturing Watch-Cases.—Thomas Bradford Dill, Boston, Mass.

Claim.—1. The combination, with the matrix and plunger, of two rollers or revolving swages, mounted, the one upon a vertical and the other upon a horizontal axis, and arranged to move in a circular path around the plunger, and to operate in connection with said plunger and matrix, substantially as described, so that the former roller shall prevent the lateral displacement or fracture of that portion of the blank which projects above the matrix, while the latter roller is crowding or compressing the said portion of the blank down into the space between the matrix and the plunger, as set forth.

2. The combination, with the matrix and plunger, of the two rollers or revolving swages J and O, the revolving tablet D, upon which said rollers are mounted, and the means, substantially as described, whereby said rollers may be both vertically and laterally adjusted with respect to said matrix and plunger, as shown and set forth.

3. The combination, with the roller J, oscillating arm a, and post b, supported upon the tablet D, of the pitman d, sleeve f, and wheel j, arranged substantially as shown and described.

4. In combination with the elements named in the preceding clause, the adjustable stop i, arranged and operating as set forth.

5. The combination and arrangement of the revolving tablet D, post A, matrix m, rollers J and o, plunger x, arbor k, and screw c', the whole operating together to produce results hereinbefore explained.

106,562. — Grass-seed Separator for Mangers.—David B. Dixon, Unionville, Mo.

Claim.—The combination of the frame B, wire-cloth covering C, and beveled cross-slats D with each other, said parts being constructed and arranged substantially as herein shown and described, to adapt the device for use in a manger, box, or hopper, for receiving and preserving the grass-seed, as set forth.

106,563. — Tubing-Clamp. — William H. Downing, Pioneer, Pa.

Claim.—The combination, with the block A, having the notch C and circular-notched hub E, and arranged for attachment to a hoisting-chain, of the notched confining-ring F, provided with the locking-pin G, or other locking device, substantially as specified.

106,564.—Earth-Closet.—James Addison Drake, New Orleans, La., assignor to himself and Mary E. B. Clark, same place.

Claim.—1. The combination of a cover, L, of the seat of an earth-closet with the pitmen I and G, the groove-crank F, the axis E, and scroll-winged valve D D', and the guide H, when these parts are constructed and united for conjoint operation, in the manner and for the purpose herein set forth.

2. The above combination, in combination with a rocking hopper, A, when the latter is provided with an inclined back terminating in a box-chute, C, and all the parts are arranged separately and relatively to each other, substantially as herein described for the purpose set forth.

106,565.—Earth-Closet.—James Addison Drake, New Orleans, La., assignor to himself and Mary E. B. Clark, same place.

Claim.—The winged valve F, when constructed as herein described, and actuated by a hand-crank, I, in combination with a hopper, A, when the latter rests on an axis, B, and is otherwise constructed as specified, for the purpose set forth.

106,566.—Earth-Closet.—James Addison Drake, New Orleans, La., assignor to himself and Mary E. B. Clark, same place.

Claim.—The grooved crank-arm C, when secured on an axis, B, provided with wings H, and connected with a pitman, D, which is pivoted to a bar, E, that is attached to the cover F, in combination with a pawl, G, and a chute, A, for delivering dry earth, or its equivalent, when the several parts are constructed, arranged, and operate as described, for the purpose set forth.

106,567. — Spindle-Bolster.—William F. Draper, Hopedale, Mass.

Claim.—The arrangement and combination of the helical groove *c*, or each end the annular groove *e* on the spindle-bearing *d*, with the oil-elevator or cone *b*, and reservoir *a*, disposed in the bolster, and with respect to the spindle-bearing, as explained.

106,568. — Hand Corn-Planter. — Hugh Dyer, Fort Scott, Kansas.

Claim.—1. The combination of the oscillating disk E and adjustable gauges F, arranged between the disks C D, as and for the purpose described.

2. The combination of disk E with screw J and spirally-channeled shaft G, as and for the purpose described.

106,569, antedated August 12, 1870.—Manufacture of Inflammable Gases for Fuel, &c.—William Elmer, New York, N. Y.

Claim.—1. The form and arrangement of retorts, in the manner and for the purposes specified, substantially as above set forth.

2. The method of subjecting crude fuel to the process of distillation, in the manner and for the purposes named in the foregoing specification, substantially as above set forth.

3. The method or process of isolating and eliminating in the gaseous form the heat-producing elements contained in crude fuel, in the manner described in the foregoing specification, substantially as above set forth.

4. The method of decomposing and converting the various compounds given off from crude fuel by distillation into permanent inflammable gases, in the manner and by the process specified, substantially as above set forth.

5. The method or process of decomposing and converting into permanent inflammable gases, the solid hydrocarbons generated in the process of distillation of crude fuel, by means of highly heated steam, in the manner specified, substantially as above set forth.

6. The method of decomposing the heavy oils and other hydrocarbons generated in the process of the distillation of the crude fuel into permanent inflammable gases, in the manner and by the means specified, substantially as above set forth.

7. The method of decomposing and converting the light, oily products, and other hydrocarbons given off from crude fuel by distillation, into permanent inflammable gases, in the manner specified, substantially as above set forth.

8. The method of decomposing aqueous vapor generated in the process of distillation of crude fuel into permanent inflammable gases, by passing the vapor through the vertical retorts in contact with highly heated carbon, deposited in those retorts, in the manner specified, substantially as above set forth.

9. The method of taking up the residue of free carbon deposited in the retorts from the decomposition of the various hydrocarbon compounds given off from crude fuel by distillation, and converting this carbon into permanent inflammable gases, by means of highly heated steam, in the manner specified, substantially as above set forth.

10. The method of converting the carbonic acid generated in the process of distillating crude fuel into carbonic oxide, by passing the carbonic acid through the vertical retorts, in contact with highly-heated carbon, in the manner as specified, substantially as above set forth.

11. The method of decomposing the sulphur and ammoniacal compounds generated in the distillation of crude fuel, and liberating the hydrogen contained in these compounds, in the manner specified, substantially as above set forth.

12. A combination of the various processes and means employed, as a whole, for the purpose of isolating and eliminating, in the gaseous form, the heat-producing elements contained in crude fuel, in the manner described and set forth in the foregoing specification; and this I claim whether the means employed for this purpose be in the precise form described by me, or otherwise, so long as substantially the same results are produced.

106,570.—Truss.—Thomas M. Fell, Glastonbury, Conn.

Claim.—1. The combination of the thumb-nut *d*, working through the part *f*, the pad-finger *a*, secured to the piece *i*, which piece *i* is adjustably secured to the part *b* by the same screw which secures the piece *f*.

2. A truss, having the pad *g*, adjustable back and forth upon a pad-finger *d*, pivoted to the part *b*, and governed by the screw *e*, substantially as described.

3. The combination of the pad *g*, attached to the screw-pin *c* by a ball-and-socket joint, with the pad-finger *d*, the screw-pin *c* being adjustable in a slot in said pad-finger, substantially as shown.

106,571. — Harness-operating Mechanism for Looms.—Albert R. Field, Central Falls, R. I.

Claim.—The levers K, in combination with one or two sets of tappet-shafts C, and pintons L M, and disks A D, and internally-toothed disk F, all arranged and operating substantially as described.

106,572.—Coffee-Pot.—William Funk and George Walter Port, Warrensburg, Mo.

Claim.—In combination, the movable chamber *n*, having a perforated bottom, the tube B, the valve A, and the device H, for retaining the sediment, substantially as described.

106,573.—Medical Compound.—Lewis L. Gebhart, New Providence, Ind.

Claim.—The medical compound, prepared of the ingredients and in the manner substantially as herein set forth and described.

106,574.—Vapor-Burner.—Ernest Gillert, St. Louis, Mo.

Claim.—1. The combination with the burner A of flanges C C.

2. The division of the cylinder B into chambers or flues D and E, for the purpose of forming a draught to the heating-flame, which is supplied with gas or vapor from the perforation M, substantially as set forth in drawings and specifications.

106,575. — Churn-Dasher. — William H. H. Gorham and Burett H. Williams, Greenwich, Ohio.

Claim.—A churn-dasher, when constructed with a perforated concavo-convex disk, A, wings B, and socket C, in the manner described, and for the purpose specified.

106,576.—Washing-Machine.—Allen Gregg, Springborough, Ohio, assignor to himself and Perry Gregg, same place.

Claim.—The combination of the perforated suspended pressing wings *a'*, perforated partitions *g g'*, hinged rods L L, link S, and lever M, arranged and operating conjointly, substantially as and for the purpose described.

106,577. — Traction-Engine. — Moses P. Hall, Hinsdale, N. Y.

Claim.—1. The pivoted feet T, pivoted bars or legs O P R S, cross-arms N Q, one or more shafts J, arms or levers K, sockets L, and pivoted connecting-rods M, with each other and with the frame-work of the machine or carriage, substantially as herein shown and described, and for the purpose set forth

2. The combination of the stationary nut Z, hand-screw Y, swiveled block X, arms M, and pivoted connection rods V with the sockets L, working upon the arms or levers K attached to the rock-shafts J, and to which the connecting-rods M are pivoted, substantially as herein shown and described, and for the purpose set forth.

3. The combination of the movable frame or bars U, or their substantial equivalents, with the pivoted bars or legs O P R S and frame-work A of the machine, substantially as herein shown and described, and for the purpose set forth.

106,578.—Head-Block for Saw-Mills.—Jacob W. Handshy, Zanesville, Ohio.

Claim.—The combination of the frame, the horizontal roller, the head-block and its vertical roller, all these parts being constructed to operate in combination as set forth.

106,579.—Wheel Cultivator.—Edwin D. Hatch, Oconomowoc, Wis.

Claim.—The arrangement of the axle C with the adjustable screws A, frame D, and lever B, substantially as set forth, and for the purpose specified.

106,580.—Guard for Roofs.—Samuel R. Hathorn, Worcester, Mass.

Claim.—The combination, with the wrought-metal foot-bars, A of the ornamental uprights B, when said parts are connected together by sockets or rings, substantially as and for the purpose herein set forth.

106,581. — Rotary Pump. — George W. Heald and Lorenzo D. Sisco, Baldwinsville, N. Y.

Claim.—1. Priming or filling a rotary pump, by means of a lifting or suction-pump connected therewith, substantially as shown and described.

2. In combination with a rotating piston, constructed and operating as above described, the collar L, substantially as and for the purposes specified.

106,582.—Ink or Writing-Fluid.—Charles Hebel, Louisville, Ky.

Claim.—The indelible fluid above described, substantially as and for the purposes set forth.

106,583.—Potato-Digger.—Leonard Henderson, Manson, N. C.

Claim.—1. The arrangement of the vibrating knife E, serrated guard D, clearers I I, arranged in reference to the digger K, constructed and operating as described, and for the purposes set forth.

2. The combination of the adjustable slotted digger K between the side plows *h h*, the inclined or curved dirt-trough L, elevating-reel *f*, and vibrating hopper M, operated by mechanism connected with the axle of the main wheel A, when the parts are constructed as herein described and set forth.

106,584, antedated August 11, 1870.—Dressing and Tanning Skins.—Hermon A. Hibbard, Augusta, Mich.

Claim.—The application of the above-mentioned liquor or compound to skins, for dressing them, substantially as above described.

106,585.—Coating Metal Articles with India Rubber.—Constantine Hingher, New Brunswick, N. J.

Claim.—The herein-described improvement in

the process of covering metal articles with vulcanized India rubber, consisting in subjecting the articles, while undergoing a vulcanizing process in the molds or flasks, to the action of coatings of varnish, soap, or other substances, which will swell or expand by the action of the heat employed for vulcanizing the coverings of India rubber placed between the said articles and the said India-rubber coverings, substantially as specified.

106,586.—SHOW-CASE.—John A. Holmes, Shopiere, Wis.

Claim.—A revolving show-case for exhibiting goods, divided into compartments by mirrors, arranged at an angle of about ninety degrees, so as to reflect and multiply reflections of the articles placed in it, substantially as specified.

106,587.—ATOMIZING-TUBE.—Thomas J. Holmes, Malden, Mass.

Claim.—An atomizer, provided with a joint at or near the liquid point or discharge-orifice, substantially as and for the purpose set forth.

Also, the combination of an air-tube and a liquid tube, so constructed and connected that the air will be forced through the air-tube in a line passing centrally through the liquid point or discharge-orifice, substantially as and for the purpose set forth.

106,588.—LIQUID-MEASURE AND FUNNEL.—Joseph Huff, Ironton, Mo.

Claim.—As a new article of manufacture, a liquid-measure, in combination with a funnel having a corrugated pipe, substantially as hereinbefore described.

106,589.—MACHINE FOR REPAIRING BOILER-FLUES.—Joseph Hughes, Bloomington, Ill.

Claim.—1. The attachment of the mandrel Q to a standard, O, that may be adjusted on the platform R, so that the mandrel shall lie over and parallel with the die L, or may be made to turn in either direction away from said die, as set forth.

2. In combination with the die, mandrel, and adjustable standard, set forth in the above claim, the hammer and helve K G, spring B, and lifting-ratchet or tappet-wheel E, as and for the purpose set forth.

106,590.—FURNITURE-FASTENING.—Leonard A. Johnson, Candor, N. Y.

Claim.—The improved furniture-fastening, consisting of the pieces C and F, the one, C, being provided with the two tapered and under-cut lugs, D E, and the one, F, with the corresponding notches G and the recess H, all substantially as specified.

106,591.—LAST.—Nathaniel Jones, Syracuse, N. Y.

Claim.—The instep block, divided laterally into two or more rigid sections, united to each other by the yielding joints, and adjusted in the manner and for the purposes set forth.

106,592.—SCREW-CUTTING MACHINE.—Edward Kaylor, Pittsburg, Pa.

Claim.—1. The form of construction, herein described and shown, of the inner surface of the sliding socket G, and of the upper edge of the pivoted holders I, and the arrangement of them in relation to each other and to the die-head H, in virtue of which the dies are opened on retracting the socket, and forced toward each other and held firmly in position on the forward movement of the socket, substantially as set forth.

2. The combination, with the mandrel K, dies, die-holder, and socket G, of the ring *d*, supported below on flange A, pivoted at the middle to the socket G, and connected at the top with the bar C, or its equivalent, through the medium of which, and other suitable mechanism, the force exerted by the bolt-blank on mandrel K is communicated to said ring and socket, substantially as described.

3. The socket for inclosing the die-holders, and the ring *d*, in combination with the shifting-bar C, mandrel K, lever L, and beveled projections *u u*, substantially as set forth.

106,593.—EARTH-CLOSET.—Christian Kiefer and Joseph R. D. Seeds, Wilmington, Del.

Claim.—In combination of the lid C of the seat B, the connecting-rods G H, crank-handle I, roofing-cylinder K, chute M, all arranged and operated (by the action of the hinged seat-cover *c*) substantially in the manner and for the purposes set forth.

106,594.—GRAIN-DRILL.—Seth L. King and William Ogden, Owego, N. Y.

Claim.—1. The distributing-cases A A, formed in halves, both sides alike, and joined in the center, combined with the wheels B B, with concave peripheries, and furnished with a row of nibs or points, and the hopper C, attached by dovetails, all constructed as shown and described.

2. In combination with the distributing-wheels B, the plate *s*, with its bolt and thumb-screw, for fastening or releasing the wheels from the rod *x*, as described.

3. The arrangement of the gear-wheels *f e a c*, and the partially-toothed wheel *i*, on the roller *h*, in combination with the levers *k k*, with their latches, arches *l l*, and pawl *r*, the whole arranged substantially in the manner and for the purpose herein set forth.

4. The grass-seeder consists of a square trunk, running across the machine, with a cylindrical bore, F, fig. 3, with a narrow slot the whole length of the bore, from the hopper E on the top of the trunk to the slide at the bottom, for regulating the amount of seed to be discharged.

5. The peculiar shape of the iron stirrers, conforming to the shape of the plaster-hopper D, when attached to the bar *s*, and operating in the manner herein described.

6. The zigzag-rimmed wheel *u*, gears *v* and *w*, in combination with the plaster-cover, when these several parts are arranged in the manner and for the purpose herein set forth.

7. The inclines *p p*, and spouts *d d*, on the tube-board *t*, as described.

106,595.—STAY FOR CARRIAGE.—George G. Larkin, Portland, Me.

Claim.—The improved stay for the tops of covered vehicles, constructed as herein described.

106,596.—PEN-HOLDER.—Robert B. Lawrence, Wheeling, West Va.

Claim.—The pen-holder A A^1 A^2, constructed with a groove in it at *a*, and furnished with an elastic ring cushion, *b*, and a confining sheath, B, substantially in the manner shown and described.

106,597.—SIEVE.—Robert J. Mann, Dallas City, Ill.

Claim.—The combination of the hoop A and sieve-cloth C, when the edge of the sieve-cloth is clasped within the hoop, and thus fastened by swaging, substantially as and for the purpose specified and shown.

106,598.—LOW-WATER AND HIGH-PRESSURE ALARM.—Gideon B. Massey, New York, N. Y., assignor to Massey Low-water Detector Company, New York City.

Claim.—The combination, with a boiler and continuous tubing B H B, of the partioned connecting-tubes E F D, as and for the purpose described.

106,599.—CHURN.—Riley T. McCormick, Greencastle Junction, Ind.

Claim.—1. The metal frame A B C D E P Q R, herein described, when constructed and arranged substantially as set forth.

2. The combination and arrangement of the frame A B C D E P Q R, the winch I, the master-wheel G, the pinion into which it gears, the wrist-wheel F, the pitman H, and the cross-head K, substantially as set forth.

106,600.—MOTIVE POWER FOR DRIVING STREET-CARS.—Patrick E. McDonnell, Lyons, Ill.

Claim.—The weighted pendulums 6, operated by means of looped connecting-rods 8′ *t*′ and curved rods 8, in combination with connecting-rods 9, wheel-clutch gear 1 2, vertical shaft *u* carrying upper and lower pinions, pinion *v*′, gear-wheels *d k p*′, wheels *x*′ driving the journals 22, springs *f*, platforms *l*, the clutch-gear 1 2 being provided with suitable pinions on the inner ends of their shafts for driving the central wheel 5, which is provided with cranks for driving the looped connecting-rods 8′ *t*′, as set forth.

106,601.—COTTON-PICKER.—Daniel M. McRae, Webberville, Texas.

Claim.—The arrangement, in a cotton-picking machine, of the gatherers M, guards F, saws C, and brushing-drum H, as shown and described.

106,602.—SEEDING-MACHINE.—Daniel E. McSherry, Dayton, Ohio.

Claim.—1. Combining part of the drag-bars with a pivoted adjustable cross-bar, B, applied to frame A, in such manner as to allow the hoes which are attached thereto to be adjusted, and held either in the same rank with the hoes of bars C′, or in a rank which is in advance of these hoes, substantially as described.

2. The fastening rods *b*, or their equivalents, in combination with a pivoted adjustable cross-bar, B, having part of the dragbars attached to it.

3. The tube-board R, with oblong apertures through it, provided with adjustable funnels and forward and rear bearings *y*′ *y*′ and turn-button *p*, substantially as described.

4. The tube-funnel P and seed-pan N, connected together by a pivotal bearing-rod, *s*, substantially as described.

5. A fertilizer hopper, E, having spirally-ribbed wheels *j*, arranged in flat and slotted bottom cups *k*, substantially as described.

106,603.—MACHINE FOR BENDING VOLUTE SPRINGS.—Reuben Miller, Pittsburg, Pa.

Claim.—1. Constructing the groove of a width equal or about equal to the thickness of the metal, and attaching one of the roller journal-bearings to the pillar-block by a hinged cap, to permit the roll to be readily removed, substantially as set forth.

2. The combination of the slotted roller or mandrel A, the feed-rolls E E′, hinged table D, and mechanism for applying an upward pressure to the table, substantially as set forth.

106,604.—HORSE HAY-RAKE.—Joseph Mills, Milan, Ind.

Claim.—The combination, substantially as herein described, of the rake-head A, B B′, fixed rings D D′, ratchets E E′, pockets F F′, pawls G, latches H H′, hinged and flanged clamps I I′, *i i*′, recesses J J′, extensions K K′, and handles L L′, for the purpose set forth.

106,605.—FRUIT-BASKET.—Richard Mitchell, Smyrna, Del.

Claim.—The inwardly-curved staves A, thickened beveled hoops B, and perforated disk-bottom D, combined in the manner and for the purpose described.

106,606.—APPARATUS FOR THE MANUFACTURE OF NITRO-GLYCERINE.—George M. Mowbray, North Adams, Mass.

Claim.—1. The centrifugal apparatus shown in fig. 5, whereby the materials are mixed and scattered, in manner substantially as described.

2. The revolving table, with radial arms, or divisions, or disks, or plates with radial grooves, substantially as described.

106,607.—APPARATUS FOR THE MANUFACTURE OF NITRO-GLYCERINE, NITRO-BENZOLE, &c.—George M. Mowbray, North Adams, Mass.

Claim.—1. The spindle A, paddle or stirrer D, lower centrifugal basin B B, with the upper annular disk and attachments C C, arranged substantially as described and for the purposes set forth.

2. The sheltered or partially covered tank P P P, with the inner rim I I, bracketed slats J J, suspended ice-floor O O O O, inlet-pipe L, waste-outlet M, and nitro-glycerine, &c., eduction-pipe N, arranged substantially as described, and for the purposes set forth.

3. The combination of the centrifugal apparatus, with the fixed tank P P P, and its appurtenances surrounding the spindle A, arranged substantially as described, and for the purposes set forth.

106,608.—CABIN-TABLE.—Henry J. Nichols, Searsport, Me.

Claim.—The combination of the adjustable center board *a*, knuckle-joint *e*, hanging regulating-lever *d*, and pivots *f f*, with frame A, side boards *b b*, and slots *g g*, substantially as and for the purpose set forth.

106,609.—BASE-BURNING STOVE.—Benjamin Nott, Albany, N. Y.

Claim.—1. In combination with a stove, range, or grate, a fuel-magazine suspended above the same by a chain or cord, and a windlass for raising and lowering such magazine through the medium of said chain or cord, substantially as set forth.

2. The combination and arrangement of a stove-fuel-magazine H, traveling pulley-block K^1, chain or cord K, sheave K^2, frame I, and windlass L, substantially as set forth.

106,610.—AUTOMATIC PASSENGER-REGISTER FOR VEHICLES.—Charles Ottinger, Philadelphia, Pa.

Claim.—The gate G, for closing the entrance to the platform, and having the supplemental platform *g* adapted to cover the treadle-step *a*′, as described, for the purpose set forth.

106,611.—HAY-LOADER.—Gilbert G. Park, Xenia, Nebraska.

Claim.—1. The combination of the curved springs *l*, with shield L, and toothed cross-bar *m*, all relatively arranged as shown and described, and for the purpose specified.

2. The arrangement in the upright frame D, and over the front of horizontal frame A, of a vertical spring bolt, S, as and for the purpose specified.

106,612.—PIANO.—Samuel W. Parker, Somerville, Mass.

Claim.—1. The bridges and hammers c^1 c^3 c^6 c^4 d^1 d^3 d^5 d^4 e^1 e^3 e^5 e^4, arranged in sections of straight lines, substantially as and for the purpose described.

2. The bridge, of the shape shown in fig. 4, concave and sloping at the back, in combination with the brass plate *u*, shaped as described, and for the purpose set forth.

3. A sounding-board, with the thin barrings n^1 n^2 and h^1 h^2 h^3 h^4 h^5, on both sides of the sounding-boards, said sounding-boards being sized with coatings of glue, for the purpose above described.

4. The bass sounding-board *g*, with the thin barrings, and glue sized, constructed and arranged substantially in the manner above described.

106,613.—GIN FOR LINTING COTTON.—George W. Payne, Memphis, Tenn.

Claim.—1. The reel, consisting of the fingers G, projecting from the shaft F in spiral rows, in combination, the saws C, as and for the purpose herein shown and described.

2. The grate-bars or ribs D, forming the slotted bottom of the box E, substantially as described, and grooved on their concave surfaces, as and for the purposes specified.

3. The hopper H and agitator I b, arranged on a cotton-gin for linting cotton, substantially as and for the purpose herein shown and described, and to be used in combination with the screw-reel, as set forth.

106,614.—Lubricator for Loose Wheels. Sylvanus E. Peart, McKeesport, Pa.

Claim.—The chamber m, cast with and extending around through the hub, and increasing in width from one side of the diaphragm b' to the other, and with an oil-opening, c', at or near the narrowest end of the chamber.

106,615. — Railway Car-Seat. — Joseph Ives Pease, Stockbridge, Mass.

Claim.—1. The foot-rest C, close partition E, vibrating side arms D, and convex-bottomed seat B, all constructed, arranged, and operating together, as set forth.

2. The winged head-rests I L, combined with the hollow back H, as and for the purpose specified.

3. The vibrating arms D, pivoted between the seat and frame in a vertical plane running transversely through the middle of the seat, and to an upwardly-projecting bracket of the frames, as shown and described.

4. The circular guide-bar G, attached to the seat back, and the rods F, having spring side-arms and adjusting-screws, combined with the arms D D, as and for the purpose specified.

106,616. — Production of Colors for Dyes, Inks, &c., from Aniline.—Robert Pinkney, London, England.

Claim.—The production of colors from aniline by the employment of a salt or compound of nickel, in conjunction with a salt or compound of aniline and an oxidizing agent, in the manner as hereinbefore described.

106,617.—Material for Paste for Book-binders and others.—Isaac L. Plumer, Chelsea, assignor to J. S. Chase, Harwich, Mass.

Claim.—A dry, gummy, or glutinous substance, substantially as described, produced from flour, and capable of, or being reduced to a fine or impalpable powder for making paste, substantially as set forth.

Also, the process of treating flour, substantially as herein described, for the purpose set forth.

106,618.—Wagon and Buggy-Brace. — Nicholas Ramseyer, Farmersville, Ill.

Claim.—The standard A, having its lower end forked, to fit the sockets *c c* of plate B, when strengthened by the braces *e e* and *d d*, the whole combined and arranged with the bottom of a vehicle and the reach or pole thereof, substantially in the manner and for the purpose as shown and set forth.

106,619.—Boat-detaching Apparatus. — Nathaniel M. Ray, Surrey, Me.

Claim.—A safety detaching tackle-block, constructed substantially as described, that is to say, with the pivot-hook H, collar D, rods E, shanks C and J, and spring K, arranged to operate substantially as shown and described, for the purpose set forth.

106,620.—Paddle-Wheel.—James Rees, Pittsburg, Pa.

Claim.—1. In combination with an outer shell, A, an inner shell, A', the distance between the shells being about equal to the depth in the water at which the wheel is designed to operate, the annular space between the shells being closed at the ends, substantially as described.

2. In combination with an outer close shell A, a series of flanges, c, two or more in number, with interposed buckets *d*, arranged angularly to the axis of the wheel, substantially set forth.

106,621. — Spindle-Bolster. — Isaac P. Richards, Whitinsville, assignor to George Draper & Son, Hopedale, Mass.

Claim.—The combination of the annular guard B with the bolster, made with the oil-elevating cone arranged in its oil-reservoir, as set forth.

106,622. — Grain-Thrasher, &c.— Henry Rice, Norwalk, Ohio.

Claim.—1. The arrangement of the bottomless apron E with the shaker-board K, as herein shown, so that the grain falls through between its slats directly on the shaker-board, substantially as and for the purposes described.

2. The slats G G', arranged as described, to prevent grain from falling on the belts and injuring the pulleys, substantially as set forth.

3. The beater-shafts C C', with their arms *a a'*, in combination with the inclined boards D D' and shield J, substantially as and for the purposes described.

4. The arms H, arranged on the sides of the machine as shown, substantially as and for the purposes described.

5. The arrangement of the endless apron E, horizontally or level, in contradistinction to an inclined position, in combination with the beater-shafts C C', all operating for the purpose substantially as set forth.

6. The combination and arrangement of the thrashing-roller B, teeth *a*, inclined boards D D', beater-shafts C C', endless apron E, slats G G', shield J, arms H, shaker-board K, and endless apron O, substantially as and for the purposes set forth.

106,623.—Wash-Boiler.—Henry R. Robbins, Baltimore, Md.

Claim.—1. The combination of the boiler A, pipe *a*, with valves *i* opening downward, and valves *m* opening upward, substantially as and for the purpose specified.

2. The combination of the boiler A with the band B, as and for the purpose set forth.

106,624.—Process of Forming Smooth Tops on Glass Jars.—Frederick Rohrbacher and Ferdinand Hormann, Philadelphia, Pa., assignors to Salmon B. Rowley, same place.

Claim.—1. The mode or process, substantially as described, of forming, on the extreme upper end of a glass jar, a smooth surface for receiving a packing-ring.

2. A mold-blown glass jar, terminating at its extreme upper end in an entirely unground, blown surface, for the packing-ring.

3. A glass jar, having, at its upper end a blown lip, the inner edge of which is ground or reduced, in combination with a cover, having a circular projection adapted to the mouth.

106,625, antedated August 12, 1870.—Preserving Wood.—Alexander J. Sheldon, Buffalo, N. Y.

Claim.—The process of boiling wood in caustic lye to remove its albumen and hygroscopic matter, and prepare it for the reception of preservative compounds, substantially as hereinbefore set forth.

106,626.—Manufacture of Fertilizers. Thomas Sim, Baltimore, Md., assignor to himself and Jesse L. Hutchinson, same place.

Claim.—A fertilizing material, produced by the combination of cotton-seed residuum, or other matter, divested of oil by chemical means, with phosphate of lime, substantially as described.

106,627.— Machine for Decorticating and Drying Grain.—Evan Skelly, Plaquemine, La.

Claim.—1. A grain-decorticator, consisting of the cylinders A B and the spiral corrugated vanes or blades E K, combined, arranged, and operating substantially as herein described.

2. The combination, with the cylinder B and the spiral blade K, of the corrugated disk F', and the blades L, substantially as specified.

3. The combination, with the cylinders A B and the spiral vanes, of a hollow perforated shaft, O, and an air-heating and injecting apparatus X Y, the said hollow shaft being also arranged for the admission of a steam-jet, all substantially as specified.

4. The combination, with a hollow cylinder, B, having the corrugated spiral vane on the exterior, of a spiral conveyer or propeller, K, arranged within the said cylinder, and the latter provided with openings G K, for the admission and discharge of the grain, all substantially as specified.

5. The combination, with the cylinders A B, of the divided discharge-spout V', arranged substantially as specified.

6. The combination, with the decorticating cylinders and screw blades, of the screen V, substantially as specified.

7. The mode of detaching the hulls and chaff from the kernels of grain by subjecting it to the action of air suddenly admitted to it while contained in a vacuum, substantially as specified.

8. The combination, with the decorticating cylinders A B and the adjuncts thereof, of the vacuum vessel A', the air-pump D', substantially as specified.

106,628.—Reed Organ-Pipe.—Charles W. Small, Worcester, Mass.

Claim.—The improved organ-pipe A, constructed of wood or metal, having the spherical chamber B at one end, with a mouth, E, at the side, and having the reed attached to one side of A, all substantially as specified.

106,629.—Vapor-Chandelier.—Charles E. Smith and Henry J. Rice, Columbus, Ohio.

Claim.—The combination, with the gas-generating chamber D D, of the heating or jet-pipe K, having at one end, for receiving and oxygenizing a portion of the crude gas, a chamber constructed substantially as shown and described, and serving to convey the gas thus oxygenized back two feet, or thereabout, to the point where its flame first causes the gas to be generated.

Also, the combination, with the generating-chamber, of a smaller chamber within the same, the two communicating by holes or openings, as and for the purpose described.

106,630.—Vapor-burning Street-Lamp.—Charles E. Smith and Henry J. Rice, Columbus, Ohio.

Claim.—The combination, with the removable reservoir D, of the tubular arms *c c*, serving as a means for suspending the reservoir, and also for filling the same, substantially as shown and described.

Also, the combination with the reservoir and its arms, of a gas-generating apparatus, the whole adapted to be applied within a hollow lamp-post, as shown and described.

Also, the arrangement, within a lamp-post, of a removable reservoir and gas-generating apparatus, suspended therein in such manner that the air admitted into the post below the reservoir shall, in rising, afford a continuous current, serving as a cooling medium on all sides of the reservoir between it and the post, and then escape at the top of the post, substantially as shown and described.

106,631. — Seed-Planter. — Levi Smith, Chester Centre, Mass.

Claim.—1. The adjustable reservoirs J, with the partition R, flap Q, endless belt P, with the cups O thereon, combined, arranged, and operating substantially as and for the purposes described.

2. In combination with a seed-planter, the adjustable wheels A and pulleys S, on the axles of the machine, substantially for the purposes described.

3. In combination with a seed-planter, the plows K and coverers L, adjustable, substantially as described.

106,632.—Preserving Meat.—Lewis H. Spear, Peekskill, N. Y.

Claim.—The process, herein described, for curing meat, the same consisting in perforating the flesh to be cured by suitable means, and subjecting it to the treatment in vacuo, as described.

106,633.—Folding Chair.—Alexander W. Stewart, Boston, Mass.

Claim.—A folding chair, having its seat pivoted to the two legs *b b'*, beneath which pivots the legs are connected by a rigid stretcher, *c*, when all the parts are arranged to fold as shown and described.

Also, in combination with the inner legs *a a'*, between which the seat slides and drops, and the outer legs *b b'*, to which the seat is pivoted, the seat *g*, made wide at its front, to fill the space between the legs *b b'*, to which it is pivoted, substantially as described.

Also, in combination with the folding-seat and the bar upon which it is supported and slides, the grooves *l* and runner *m*, substantially as shown and described.

106,634. — Window-Frame. — Adam W. Stine, Crestline, Ohio.

Claim.—The combination, with the sash B B provided with the pivots *b b*, of the strips *f f*, provided with slots *f' f'*, slats D D, and springs E E, substantially as shown and described.

106,635.—Railway-car Axle.—Frederick Sturneyk, St. Paul, Minn.

Claim.—The broad-headed screw E, combined with a cylindrical axle, C, and a surrounding tubular axle, D, as and for the purpose specified.

106,636.—Stack for Puddling, Boiling, and other Furnaces.—William Swindell, Allegheny City, Pa.

Claim.—In furnace-chimneys or stacks, the metallic casing made in separate lengths, such lengths being joined together by sleeves or draw-bands and clips, substantially as set forth.

106,637. — Curtain-Fixture.—Albert E. Tripp, Springfield, Ohio.

Claim.—1. A double curtain-roller, provided with pinions *c* and *c'* and sleeves *g* and A, each part operated independently by cords wound one or more times upon the ends of the inner and outer roller, or upon parts attached to the same, substantially as shown and described, for the purpose hereinbefore set forth.

2. The pinions *c* and *c'*, ratchet-plates E, sleeves *h* and *g*, with collars *j* and *n*, and flanges *e* and *e'*, constructed substantially as shown and described, for the purpose hereinbefore set forth.

3. The combination of ratchet-plates E, pulleys *c* and *c'*, and spring *s*, when constructed substantially as shown and described, for the purpose hereinbefore set forth.

4. The combination of all the parts, as shown and described, substantially as and for the purpose hereinbefore set forth.

106,638.—Hay and Cotton-Press.—Grey Utley, Charlotte, N. C.

Claim.—The loose clamping-block J K and angle-plate G, provided with a hook or catch upon its outer side, made separate, and operating in connection with the link I, lever F, link E, clamping-block A C, and stationary bar B, substantially as herein shown and described, and for the purpose set forth.

106,639.—Lifting-Jack.—Alonzo M. Waters, Cuyahoga Falls, assignor to himself and Henry E. Mariner, Akron, Ohio.

Claim.—A lifting-jack, composed of the feet,

block A, and the stock B pivoted and hinged to the same, in combination with the standard D', metallic extension sliding piece C, and its holding-pin *f*, lever D, and rocker-piece F, said parts being arranged for joint operation, as herein shown and set forth.

106,640.—FENCE.—Isaiah M. West, Wilmington, Ohio.

Claim.—The combination of the wires B B and the panels or sections C C, when the said panels or sections are suspended upon the wires by means of their rails *a a*, in the under sides of which are grooves *c c* to receive the wires, substantially as and for the purpose herein specified.

106,641, antedated August 12, 1870.—LOGOTYPE.—William H. Wilkinson, Southwick, Mass.

Claim.—1. The employment of two or more individual types of type-metal, or analogous hard material, united by rubber, substantially as herein specified.

2. The within described construction of compound types, of two or more individual types, with the within-described cavities extending around or through the bodies, when used in combination with an elastic material, *m*, which fills the cavities and connects the bodies strongly together, as herein specified.

106,642.—HOISTING-MACHINE.—William C. Williamson, Philadelphia, Pa., assignor to Williamson Brothers, same place.

Claim.—The eccentric K, in combination with the friction-band or strap M, the rocker P, link Q, and the rock-arm S, substantially as is herein shown and described.

106,643.—COMBINATION OF OCHERS FOR PAINT.—David S. Wood, Tiskilwa, Ill.

Claim.—An umber compounded and prepared from the various colors set forth.

106,644.—COMBINED SCRUBBING-BRUSH, &c.—Eugene Kincaid Wood, De Witt, assignor to Newbury J. Eaton, Montana, Iowa.

Claim.—The combination and arrangement of the brush B, driers C, more or less in number, water-can E, head A, and handle H, with the curve I and swivel-joint J, substantially as and for the purpose shown and described.

106,645.—ADJUSTABLE FRUIT-LADDER.—Samuel Wright, Hillsborough, Mo.

Claim.—The combination of the adjustable heads A and B, combined and attached to the common ladder, as above described and for the purposes set forth.

106,646, antedated August 19, 1870.—TABLE.—George E. Young, Providence, R. I., assignor to himself, Charles A. Young, and Solomon W. Young.

Claim.—Securing the table-bed B to the table-top by means of the screws M on the legs G passing through the posts H into the cleats C, secured to the under side of the table-bed, in combination with the removable side pieces J, as herein described.

106,647.—METHOD OF PREVENTING DECAY IN THE TIMBERS OF BRIDGES, BUILDINGS, &c.—Augustus Allen, Cass county, Mich.

Claim.—The air-tight case D, having openings to receive the pedestals C, when constructed and arranged as and for the purpose set forth.

106,648.—STEAM COUPLING FOR RAILROAD CARS.—Samuel A. Appold, Baltimore, Md.

Claim.—1. The combination of the cones A, tube D', tube E, spring F, plug G, and hemisphere D, substantially as and for the purpose specified.

2. The combination of the cones A, pipes *a d*, hemisphere D, and cup H, substantially as and for the purpose set forth.

3. The combination of the cone A, connecting-rod *f*, box B, stem *g*, and disk C, substantially as and for the purpose explained.

106,649.—MANUFACTURE OF SHEARS.—William B. Barnard and Andrew J. Barnard, Waterville, Conn.

Claim.—1. In the construction of shears, scissors, &c., a blade, secured to its handle by means of projections upon the edges of the recess formed to receive the tang of the blade, made to overlap the edges of the tang, which are recessed or beveled for the purpose, substantially in the manner herein set forth.

2. In combination with the overlapping edges of the recess in the handle, made to secure the edges of the tang of the blade of a pair of shears, as described, a tent or projection formed in the handle to fit into a counterpart recess in the tang of the blade and secure the same, substantially as herein set forth.

106,650.—STOVE-LEG.—Daniel L. Bates, Dayton, Ohio.

Claim.—Attaching a leg to a stove by means of two flaring, curved, and straight slots, D and D', provided within the horizontal portion of said leg, and so arranged as to receive and embrace two upward-tapering pins or studs, E and E', secured to or upon the bottom plate of the stove, substantially as shown and described.

106,651.—WOODEN PAVEMENT.—George A. Beidler, Philadelphia, Pa.

Claim.—Wooden blocks for pavements, having offsets or V-shaped joints *a a*, so constructed that the blocks will overlap and interlock with each other, substantially as herein set forth.

106,652.—JACKET FOR HEATING-PIPES.—Michael Ber, New York, N. Y.

Claim.—The combination, with a distributing-pipe, F, of a hot-air or other heating apparatus, of a tubular jacket, G, having an air-supply, J, and one or more discharges, K, substantially as herein described, and for the purposes set forth.

106,653.—DITCHING-MACHINE.—Ulric Blickensderfer, Springfield, Pa.

Claim.—1. The ditching-buckets, arranged and secured directly upon the surface of a frustum of a cone hub, G, having a thickness equal to the width of the buckets, as herein shown and described.

2. The buckets, having a gradually increasing area from their cutting-edges to their backs *b*, for the purpose of facilitating the discharge of the earth therefrom and relieving their outer sides *c* from friction, as described.

3. The ditching-buckets, arranged as described, provided with angular braces *f g* h, in such manner that each brace shall also form part of a chute to the discharging mouth of each succeeding bucket, substantially as described.

4. In combination with a ditching-machine, an adjustable sight, R, and graduated stakes S, for the purpose of graduating and maintaing a uniform depth of cut or given grade in the ditch, substantially in the manner herein described.

5. The arrangement, in a ditching-machine, of a frustum of a cone-hub, G, having buckets shaped and braced as described, the vertical supporting and carrying frame E, the hand-wheel P, the yoke braces U V, and the sight R, and graduated stakes S, the whole constructed, arranged, and operating as described.

106,654.—BREAD-TOASTER.—Alanson Brown, Rochester, N. Y.

Claim.—1. The spring clamp B, provided with the lever *c*, extending over the handle C, in combination with the clamp A, fixed in said handle, all arranged to operate as and for the purposes set forth.

2. The flattened section of the clamp A, when the head of the latter is formed so as to answer for a cake-turner, substantially as set forth.

3. A combined bread-toaster and cake-turner, constructed and operating substantially as described.

106,655.—SAW-MILL DOG.—John S. Brown, Seabrook, N. H.

Claim.—1. The combination of the sliding bar J, dog K, teeth *a*, lever *b*, and block L, constructed and arranged substantially as and for the purposes herein set forth.

2. The combination of the sliding bar J', dog K', spring pawl *d*, and block L', constructed and arranged substantially as and for the purposes herein set forth.

106,656.—GRAIN-FORK.—William W. Bryan, Schaghticoke, N. Y.

Claim.—The combination and arrangement of the metallic head A, with depressions on its under side and perforations, clamps E, for securing the tines B, end pieces I, and angular brace D, all secured to the handle C, and constructed substantially as set forth.

106,657.—HEEL-BURNISHER.—Moses Burnham, 2d, Wenham, Mass.

Claim.—1. A heel-burnisher, having a lip, *a*, when constructed in the manner and for the purpose specified.

2. A cylindrical heel-burnisher, mounted in forked bearings by means of a screw, and so that one fork shall be on each end of the burnisher, when constructed in the manner and for the purpose specified.

106,658.—APPARATUS FOR GAUGING OR REGULATING THE FLOW OF WATER OR OTHER FLUIDS.—Edme Augustin Chameroy, Paris, France.

Claim.—The box C D, provided with the inlet E and outlets F, combined with the distributer G, arranged with orifices H, spindle I, and weighted diaphragm J, substantially as and for the purpose specified.

106,659.—EXTENSION STEP-LADDER.—Hiram D. Chance, Llewellyn, Pa.

Claim.—1. The combination and arrangement of the sides A, steps *a*, hinged brace A', extensions B, provided with the recesses *f*, guides *b*, b^1, b^2, b^3, adjustable steps E^2, provided with the projections *e*, stay-rods D, and extension frame C, substantially as and for the purpose set forth.

2. The method described and illustrated in fig 2, of folding the ladder.

3. The adjustable steps E^2, provided with the legs *a e*, projecting from opposite sides, in combination with the extensions B B, having corresponding recesses *f*, and beveled notches e^2, as and for the purpose set forth.

106,660.—BALING-PRESS.—Moses D. Cheek, Memphis, Tenn.

Claim.—1. In combination with the doors R R, and straps W W, the tumbling-bar U, with its hooks, constructed so that the loops of the straps W shall descend below the axis of said rod, as and for the purpose described.

2. The guides G G, at the bottom of the receiving-box C, for the purpose set forth.

3. The pressure-beam I, constructed with the side beams and key-pieces J, in the manner and for the purpose set forth.

4. The straining-rods M M, in combination with the packing-head O, and pressure-beam I, substantially as set forth.

5. The latching-lever P, in combination with the straining-rod M, for the purpose set forth.

6. The packing-head O, constructed with the hooks N N, inserted and supported as shown and described.

7. The hinge-arm S, inserted through the side frame, so as to form a part of one of the hinges, and a stop for the opposite door, for the purpose set forth.

106,661.—PIANO.—Charles Frederick Chew, George Street, Chalk-Farm road, England.

Claim.—1. The ends of strings formed of two or more twisted pieces, as set forth.

2. Constructing the bars of piano fortes employed for stiffening the bellies thereof by combining metal with wood in the manufacture of such said bars, substantially as set forth.

106,662.—STEAM-GENERATOR.—Jonathan M. Clark, New York, N. Y.

Claim.—1. The hollow heads A, provided with annular projections *d* around the circulating passages at their one side, and corresponding recesses *e* around similar passages at their opposite side, for forming the joints, each with two adjacent heads, above or below, or both, and secured together by means of the clamps *g* and bolts *h*, applied and arranged substantially as shown and described.

2. The contraction of the hollow head A, as at *f*, substantially as and for the purposes set forth.

106,663.—FRUIT-BOX.—Charles Colby and Henry Charles Ward, Benton Harbor, Mich.

Claim.—A fruit-box made of two pieces of veneer, one piece, A, forming the four sides, and the other piece, B, forming the top and bottom, when the top thus formed is provided with a downward-projecting lip *b*, overlapping the part *d* which projects above the sides of the box, substantially as and for the purposes herein set forth.

106,664.—MUCILAGE-HOLDER.—Charles Crozat Converse, Brooklyn, N. Y.

Claim.—As a new article of manufacture, a sealing device of lip glue, combined with the handle A and provided with the sheath B, as herein set forth, for convenient use.

106,665.—HAND-STAMP.—William F. Corne, New York, N. Y.

Claim.—The combination of a canceling-wheel, D, having figures upon its circumference from 0 to 9, with a supporting-cushion, E, and feeding-slide, I, constructed, arranged, and operating as herein described.

106,666.—BED-BOTTOM.—Adon W. Cramer, Honesdale, Pa.

Claim.—Suspending a bed-bottom, constructed as herein described, in a bedstead, by means of the eccentric-headed screw-bolts E, and the side rails B B, as herein set forth and described.

106,667.—BRONZING-MACHINE.—Samuel Crump, Brooklyn, N. Y.

Claim.—1. The combination of the fan D and nozzle D^2, for producing an impinging current of commingled air and powdered material, with the air-chamber C, and sheet-feeding mechanism, or their equivalents, arranged and operating substantially as hereinbefore set forth.

2. The combination of mechanism for producing an impinging current of commingled air and powdered material with an exhausting mechanism for carrying off the air and superfluous material, substantially as and for the purpose hereinbefore set forth.

3. The screen-bag G, in combination with a fan or fans arranged and operating to produce impinging and exhausting currents, substantially as and for the purpose hereinbefore set forth.

106,668, antedated August 11, 1870.—NUT-LOCK.—David Cumming, Jr., Brooklyn, N. Y.

Claim.—The combination of the indentations D with the soft-metal key *c*, substantially as and for the purpose set forth.

106,669. — SLIDE-VALVE FOR STEAM-ENGINE. — Francis Curtis, Newburyport, Mass.

Claim.—1. The grooves *a a'*, with openings X X, Y Y, *h h*, and *i i*, in combination with valves C and F, as herein set forth.

2. The cylinder-valve C, with its stationary piston D and rod E, when arranged relatively to the respective ports and the slide F, substantially as described.

106,670.—PORTABLE GATE-FENCE. — John W. Curtis, Bath, N. Y.

Claim.—As an improvement in portable fences, the slotted battens *b*, when used in combination with the hooks *d*, posts A, and panels B, in the manner and for the purposes herein set forth and described.

106,671.—MACHINE FOR CUTTING HOOPS.—William H. Davis, Lexington, Ind., assignor to himself and Joseph Harlan, same place.

Claim.—The knife-bearing arms G G and knife-stock H, when constructed and arranged to operate in conjunction with each other, substantially in the manner shown, and for the purposes set forth.

106,672. — STOP-MOTION FOR BRAIDING-MACHINES.—Edmond W. Dean, Norwich, Conn.

Claim.—The bars *f* and *g*, the protector *h*, the springs *l* and *s*, the stops *m* and *t*, the adjustable worm *k*, the worm-gear *i*, and the cushion *o*, the whole being constructed, arranged, and operated in the manner substantially as and for the purpose described.

106,673, antedated August 11, 1870.—PUMP-ROD CONNECTION FOR DEEP WELLS.—Henry De Zavala, New York, N. Y.

Claim.—The coupling or male and female screws C C', provided with parallel screws d and tapering screws *e*, for connecting them with the ferrules A, and at the same time expanding the rods within said ferrules, substantially as shown and described.

106,674, antedated August 13, 1870.—REVOLVING ROAD-SCRAPER.—Edward M. Doty, Joel L. Little, and Peter A. Schindler, Springfield, Ohio, assignors to Edward M. Doty, same place.

Claim.—1. The combination of the bottom A, made of wood and metal, the angular metal strap or plate *b*, and metal cleat *a*, constructed and united substantially as shown and described, and for the purposes herein set forth.

2. The combination of the pull-rod G, arched ends *m m*, cross-braces *n n*, sliding steps I I, and shouldered or bent pins *i i*, with the cross-bar H, plates *p p*, and spring *r*, substantially as and for the purposes herein set forth.

3. The sheet-metal covers or protectors O O, substantially as and for the purposes herein set forth.

4. In combination with the sides C and bail L, the oblong washer *f*, box *g*, bolt A, and combined box and washer *k*, all constructed substantially as set forth.

5. The combination of the metal and wood bottom A, with its cutting end curved downward, grooved sides C, metal-bound, and with rocker bottom, and tail-board B, of a road-scraper, when all are constructed substantially as set forth.

6. The combination and arrangement of the bottom A, sides C C, tail-board B, with grabs D, and friction-plates *w*, bail L, and swivel K, washer *f*, box *g*, box and washer *k*, rails E E, cross-bars H J, slides I I, and rod G, with their various parts all constructed and operated substantially as set forth.

106,675. — SPINNING-MACHINE. — William Duffner, Petersburg, Ind.

Claim.—The combination of the drawing-rolls *l l*, twister *o*, flier *n*, and spool *t*, with the main driving-wheel *d*, shaft *i*, pitman *h'*, and sliding head *o'*, provided with the arm *d'*, when all these parts are constructed, arranged, and operated substantially as described.

106,676.—MACHINE FOR VARNISHING AND DRESSING LOOM-HARNESS.—Edward J. Ellis, Lewiston, Me.

Claim.—1. The combination of the frame J, having pivoted end pieces, with the frame I, as described, for the purpose set forth.

2. The combination of the varnish-pad, shaft, and segmental gearing, as described, for the purpose set forth.

3. The trough D, when combined with the lever E and its connections, and provided with springs, as described, for the purpose set forth.

4. The combination of the frame, gearing, revolving brushes, harness-frames and troughs, when constructed and operated substantially as described, and for the purpose set forth.

106,677.—HARROW.—George M. Ellis, Huntertown, Ind.

Claim.—The construction and arrangement of the sections A C C, all as shown and described.

106,678.—HUB FOR CARRIAGE-WHEELS.—John M. Emmerich, New Haven, Conn.

Claim.—The arrangement of the bands B B upon a wooden hub, the said bands provided with two or more lugs, *d*, turned into the hub, in the manner and for the purpose described.

106,679.—CARPET-DUSTER.—Thomas Ferry, Wilmington, Del.

Claim.—The arrangement of the clutch *c*, rollers *b b*, ropes *a a*, beater *e*, sweepers *d d*, with their coordinates, whereby to perform the functions set forth, all substantially as herein described.

106,680.—HAIR-BRUSH.—Samuel M. Firey, Clear Spring, Md.

Claim.—The combination of the irritating section of wire teeth D with the bordering of bristles E, in the manner and for the purpose herein shown and described.

106,681, patented in England, September 21, 1868. — UMBRELLA. — Samuel Fox, Stockbridge Works, Deepcar, near Sheffield, England.

Claim.—The combination of the rib, the strengthening piece, and the middle bit, all these parts being constructed to operate in combination, as hereinbefore set forth.

Also, the combination of the strengthening piece and the middle bit, with a rib fitted for a portion of its length, so as to afford greater flexibility, as hereinbefore set forth.

106,682.—BALLOT-BOX. — Gilbert Adolphe Frébault, Paris, France.

Claim.—An electoral box, consisting of the metallic frame, with glass sides and top *f*, with the perforation *g* and a cover, *k*, so as to be applied to the top and secured in the manner described, and combined with the tube *i* and plunger *s*, substantially in the manner described.

106,683.—STEAM-PUMP.—Alexander Friedmann, Vienna, Austria.

Claim.—1. The combination and arrangement of a valve or throttle-valve, *s*, in the delivery-pipe of a pump, to be kept open whenever the liquid is discharged, but to be shut from the outside when required, for the purpose of cleaning the suction filter of the injector patented by me in the United States by Letters Patent of April 6, 1869.

2. A valve or throttle-valve or cock, *s*, in the delivery-pipe or suction of the apparatus, and of a steam-pipe, *v*, provided with a valve or cock, *r*, entering the suction-pipe below the suction-valve, for cleaning the suction filter of any apparatus for raising or forcing fluids, substantially as described.

106,684. — COMBINED MOP-HEAD AND WRINGER. — William Gage, Buffalo, N. Y.

Claim.—1. The head D, constructed as described, of the bars *a a*, pins *d d*, screw *f*, and set-nut *g*, for clamping the ends of the mop-cloth, as herein set forth.

2. In combination with the above, the frame A, handle C, head D, cloth E, and collar G, with arms I I, all constructed and arranged as described, substantially as and for the purposes herein set forth.

106,685.—WOOD-MOLDING MACHINE.—Alonzo S. Gear, New Haven, Conn.

Claim.—1. In connection with the swinging frame C D, the arrangement of the toothed segment H and dog A, constructed so as to operate in the manner specified.

2. The arrangement upon the cutter-spindle, of a fan, fixed upon the said spindle, so as to revolve therewith, with the blades constructed to direct a current of air onto the cutter, in the manner described.

106,686.—APPARATUS FOR COOLING BEER. William Gee, New York, N. Y.

Claim.—The combination of the spirally-arranged pipes B B, in independent series, within the spirally-constructed trough A, together with their several inlets and outlets, substantially as specified.

106,687.—THILL-COUPLING.—Willis S. Geer, Marshall, Mich.

Claim.—The chambered and slotted box C, constructed with an extension, *i*, and circle arc flanges *i*, and provided with the elastic lining *a b*, inserted as shown, in combination with the headed thill-iron E *c*, all made, applied, and operating substantially as described.

106,688.—COOKING-STOVE.—John M. Goodfellow, Troy, N. Y.

Claim.—1. The flue-stripe *m m*, in combination with the chamber G, as and for the purpose described.

2. In combination with a cooking-stove, a chamber, O, provided with a central water-tank and end heating chambers, substantially as set forth.

3. A hot-water tank, in combination with a stove, constructed as and for the purpose described.

4. Extending the air-chamber G, by means of the passage H, downward, in rear of the fire-box, and so as to open into the ash-pit, substantially as described.

5. Perforated pot-hole covers, substantially as described.

106,689. — VAPOR-BURNER. — Benjamin D. Greene, Sturgis, Mich.

Claim.—1. The combination and arrangement of the stove A, cups C D, burners E, disks G, reservoir H, closet I, and pipes *a*, *d*, and *e*, all substantially as and for the purposes herein set forth.

2. In combination with the above, the cylinder K, cone L, and pipe M, constructed and used substantially as and for the purposes herein set forth.

106,690.—CONSTRUCTION OF DITCHES. — Tobias K. Grube, Napoleon, Ohio.

Claim.—The angular supporting frame-work A composed of the sticks *b*, substantially as specified.

106,691.—TIME-LOCK.—Lewis A. Haines, Wakefield, Md.

Claim.—1. The combination of the bolt D, and door-knob I, by means of the plunger *v*, pitman *u*, and the stem of the knob, or other equivalent mechanism, which is operative when the knob and lock are entirely separate, and the knob does not indicate the position of the lock.

2. The combination of the lever E, bolt D, eccentric rods *s*, eccentric *l*, nut *k*, and shaft *s*, in the manner and for the purpose specified.

3. The combination of the shaft *e*, eccentric *l*, eccentric strap *m*, and automatic pawl *n*, in the manner and for the object set forth.

106,692.—PARLOR-ORGAN.—Emmons Hamlin, Winchester, Mass., assignor to Mason & Hamlin Organ Company.

Claim.—In combination with the chamber *c*, the auxiliary chambers *c*, formed in the extensions of the body or casing of the instrument, substantially as shown and described.

106,693.—CORN-PLOW.—Henry Harrier, Indianapolis, Ind.

Claim.—The combination and arrangement of the beams C C and A, the stocks D D and E, pivoted handles F F, bar G, and plates E E, substantially as and for the purpose hereinbefore specified.

106,694.—MACHINE FOR CUTTING BLIND-SLATS.—John W. Helder, Shannon, Ill., assignor to himself and Luther Truscott, same place.

Claim.—The splint-plane herein described, consisting of the stock A, block *b*, clamp *i*, plate *c*, cutter *f*, adjusting-screw *e*, adjustable guide-plate *l*, and gauge *k*, as and for the purpose specified.

106,695.—CHURN.—Franklin Marion Hindman and Nicholas Hiatt, Sidney, Iowa.

Claim.—1. The arrangement of the water-tight box A, with funnel C and faucet D, in combination with the cylinder E and cover H, substantially as and for the purposes herein set forth.

2. The combination of the box A with funnel C and faucet D, cylinder E, shaft G, arms J J, and bow K, all constructed and arranged to operate substantially in the manner and for the purposes herein set forth.

106,696.—BLOTTING-PAD.—George C. Hinman, Boston, assignor to Levi L. Tower, Somerville, Mass.

Claim.—A duplex or double-face blotting-pad, substantially as described and shown, and for the purpose set forth.

106,697, antedated August 12, 1870.—FLOUR-BOLT.—James H. Jones, Yellow Springs, Iowa.

Claim.—1. The shoe C, provided with screens *d* and *e*, of different degrees of fineness, in combination with an adjustable regulator-valve, substantially as described.

2. The combination of the screening-shoe C, regulator-valve J, and hoppers G G', substantially as described.

3. The screen-shoe C, applied by means of its cross-bar C' to the wrist-pin *r* of driving-shaft B, in combination with the cam-plates *c c'*, substantially as described.

4. The oblique portions *e e*, applied to the screen-shoe C and to the beveled rests in a machine constructed substantially as described.

106,698.—BALE-TIE.—William A. Jordan, New Orleans, La., assignor to Edward P. Jones.

Claim.—The buckle A, when made of plate iron, having smooth surfaces, and provided with a slot, D, and a slot, E, into the latter of which a cleft, *a*, enters, when said slots and cleft are formed as herein described, for the purpose set forth.

106,699, patented in England January 5, 1864.—MANUFACTURE OF GAS FOR ILLUMINATION, &c.—Joshua Kidd, New York, N. Y.

Claim.—The apparatus for generating gas or vapor under pressure, and the method of regulating the supply of gas for one or more burners, as described.

Also, heating the pit from the top of its vertical column under pressure, substantially as set forth.

106,700.—MACHINE FOR TREATING RAMIE AND OTHER TEXTILE PLANTS.—Emile Lefranc and Joseph Nagoua, New Orleans, La.

Claim.—The combination in the decorticating machine herein described, of the rollers *a a'* and *b b'*, cylinders *c*, provided with knives *f*, cushioned, as shown, revolving beaters *d*, and support *e*, when said parts are constructed substantially as described, and arranged to operate as and for the purpose specified.

106,701.—ADDING-MACHINE.—Frank T. Leilich, Frederick, Md., assignor to himself and Michal Leilich, same place.

Claim.—1. The combination of the stationary bar H, disk and ratchet-rims B C D, revolving independently of each other and stationary dial-plate G, all arranged and operating substantially in the manner set forth.

2. The combination of the stud B^1, lever E with projection E^4, pawl E^1, and spring E^3, substantially as and for the purpose set forth.

3. The arrangement of the stationary bar H H' upon the disk B, with reference to the openings G^1 and G^2 in the dial-plate, substantially as and for the purpose set forth.

106,702.—POTATO-PLOW.—Augustus Leonard, Newell's Run, Ohio.

Claim.—The plow described, consisting of the beams A A' A', rigidly secured at the front ends, connecting beam B, arms *c c'*, and handles *d d'*, when all the parts are constructed and arranged as described, for the purpose set forth.

106,703.—BALING-PRESS.—Conrad Locher, Oroville, Cal.

Claim.—1. The spring-catches *i*, hooks *h*, and release-bars *j*, when arranged as described, for the purpose set forth.

2. The follower *b*, cam *c*, shaft *d*, chains *e* and *f*, and eye-bolt *g*, when constructed and arranged as described, for the purpose set forth.

106,704.—BUCKET FOR PADDLE-WHEELS.—Alfred C. Loud, San Francisco, Cal., assignor to himself and W. J. Miller, same place.

Claim.—A paddle-wheel bucket, constructed of bars placed at intervals, or of perforated plates, when the intervals between the bars or the openings in the plates or buckets lie at right angles with the plane of the bucket, substantially as described.

106,705.—PRUNING-SHEARS.—Enoch J. Marsters, Shaw's Flat, Cal.

Claim.—In a pair of pruning-shears, the arrangement of the bar B, capable of moving endwise in either direction, the coiled spring *c*, removable pins or stops *e*, and recesses *a*, substantially as shown and described.

106,706. — FRUIT-CORER.—Enoch J. Marsters, Shaw's Flat, Cal.

Claim.—1. In combination with the slide E, having prongs *s*, and opening *u*, the shaft C, with fork *e* and *d*, and the adjustable cutter K, when constructed and operated substantially as and for the purposes specified.

2. In combination with the shaft C, having fork *e*, and the lower guide-rod D, the slide E, having arms *d d*, and head F, with opening *u* and prongs *s s*, as specified.

3. The adjustable coring and quartering cutter K, in combination with the standards H H', as specified.

106,707.—STRAW-CUTTER.—Albert P. Massey, Cleveland, Ohio.

Claim.—1. The hollow roller C, as arranged in combination with the shaft G, substantially in the manner described, and for the purpose set forth.

2. The adjustable feed-roller, when so arranged as to be operated by means of an arm or shaft from the outside passing into the cavity of said roller, and connected to it by a coupling or joint, which will admit of the said roller being yielding as it rotates, substantially as and for the purpose described.

3. The stationary cutter O, when arranged in such relation to the revolving cutter P that the plane thereof shall be in a radial line of the axis of the revolving cutter O, in the manner substantially as described, and for the purpose specified.

4. The oscillating bearing H, in combination with the adjustable roller C, arranged in relation to each other, substantially as and for the purpose described.

5. The two reversible pinions A' B', of different radii, revolving upon the same axis, in combination with the wheel I and feed-rolls, substantially as and for the purpose set forth.

6. So arranging the stationary knife O in the form that its cutting-plane shall form an angle of ninety-five degrees, or more, with a vertical plane through its cutting-edge, when said edge is not in the same horizontal plane as the axis of the revolving cutter, substantially as and for the purpose described.

106,708.— HOT-AIR FURNACE.—John McCoy, Burlington, N. J., assignor to himself and Carbon Stove Company.

Claim.—1. The combination, with a series of drums, B, of the horizontal deflectors F, attached to a surrounding case, and arranged to project into the recesses formed by the drums, substantially as described.

2. Forming an air-chamber around the neck or throat of the furnace, by means of flanges, cast on the fire-pot, or on the drum surmounting it, or on both, substantially as and for the purpose set forth.

3. The fire-pot A, with its contracted top, in combination with a neck or throat more or less elongated, and having around it an air-chamber with a perforated inner wall, substantially as and for the purpose specified.

4. The combination and arrangement of the fire-pot A, drums B, case E, supporting the deflectors F, and the outer radiating drums G and H, to form a heating furnace, substantially as herein set forth.

106,709.—DRAIN-TUBE.—James McMillan, Perinton, N. Y.

Claim.—The strainer, consisting of the cross-tube C, capable of adjustment vertically and angularly, when combined with the main tube A A, in the manner and for the purposes specified.

106,710.—MANUFACTURE OF PAPER-PULP FROM WOOD.—Harrison B. Meech, Fort Edward, N. Y.

Claim.—1. The process herein described, of separating the fibers from a log or block of wood, the same consisting in rasping, grinding, or rubbing off the fibers from the log or block, while subjected to the action of steam in a closed vessel.

2. The jet of steam or gas, applied between the wood and the grinding-surface of the roller or rollers, as herein set forth.

3. Two revolving rollers having rasping or file-like surfaces, so arranged as to act upon a log or other mass of wood, substantially as described.

4. The grinding-rollers B B, so arranged as to act upon the log C within the vessel D, having steam or gas admitted into it, substantially as and for the purposes herein set forth.

5. The combination of the conical cylinder E, log C, and steam or gas-pipe *c'*, as and for the purposes herein set forth.

6. The herein described process of making pulp from wood, the same consisting in separating the fiber from the log or block, and bleaching it by a continuous operation, as set forth.

106,711.—REDUCING AND BLEACHING PAPER STOCK.—Harrison B. Meech, Fort Edward, N. Y.

Claim.—1. The engine-wheel or roller *g*, within a boiler, as a means of grinding and rubbing, at same time as boiling the fibers, for the purpose of reducing paper stock, as described.

2. The within-described boiler A, provided with air and water-pipes, and used in combination with the wheel or roller *g*, substantially as and for the purposes herein set forth.

3. The process herein described of bleaching paper stock, the same consisting of the application within the boiler A of chlorine liquor, chlorine gas, steam, and air, to the pulp, substantially as set forth.

4. The pipe *r*, for the admission of a jet of steam at the mouth of the beating-engine, at time of grinding, for the purpose of bleaching the fiber, as set forth.

106,712. — LUBRICATOR. — James Meehan, Covington, Ky.

Claim.—1. The perpendicular-tube B, with its concave mouth or opening F, bore G, and seat C, constructed and arranged substantially as herein set forth.

2. The cup-shaped valve A, with its concave or lower face resting on the seat C, and its stem H, terminating in a point and fitted into the bore G, substantially as herein set forth.

3. The combination of the cup J with tube B, valve A, stem H, cap I, screw D, and jam-nut E, all constructed as described, and operating substantially as and for the purposes herein set forth.

106,713.—FORM OF INGOTS FOR CORRUGATED METAL BEAMS.—Richard Montgomery, New York, N. Y.

Claim.—The within-described improvement in the form of ingots designed for use in manufacturing longitudinally-corrugated steel beams.

106,714.—FIRE-CRACKER HOLDER.—Charles Most, Bergen City, N. J.

Claim.—A fire-cracker pistol, having a swinging breech-piece, D, and slot C, extending from the muzzle to said breech-piece, substantially as shown and described, as a new article of manufacture.

107,715.— WATER-POWER WHEEL. — John Nipp, Jr., Raleigh, Ind.

Claim.—1. The combination of the gates *a a*, arms *b b*, rack-bar *d*, guide *e*, pinion *f*, and shaft D, all arranged as described, and used with the chutes C C, substantially as and for the purposes herein set forth.

2. The combination of the casing B, chutes C C, gates *a a*, with the described mechanism for operating the same, standard E, spindle G, wheel H, buckets I I, and bell-shaped projection J, all constructed and arranged substantially as shown and described, and for the purposes set forth.

106,716.—HAND-STAMP.—Marcus P. Norton, Troy, N. Y., assignor to Helen M. Ingalls, same place.

Claim.—The arrangement of the knives or cutting devices *a*, when used alternately with the type for forming or printing the month, the day of the month, and the year, in the manner and for the purposes substantially as herein described and set forth.

106,717. — TREATING BITUMINOUS SUBSTANCES FOR PAVEMENTS, &c.—James O'Friel, Brooklyn, N. Y.

Claim.—1. The composition of a bituminous substance with sand or gravel, black oxide of manganese or sulphur, and sulphate of lime, when subjected to superheated steam, so as to produce the "vulcanized bitumen," substantially as and for the purpose herein specified.

2. In combination with the vulcanized bitumen, as above specified, the elastic stratum or layer, composed of elastic cement, as described, and gravel, sand, or earth, for the purpose set forth.

3. In combination with the vulcanized bitumen and elastic stratum, as above specified, the stratum or layer composed of sulphate of lime and gravel or sand, substantially as and for the purpose herein described.

106,718.—SOLAR-TIME INSTRUMENT.—François Martin Pannetrat, Paris, France.

Claim.—In connection with a box, A, having one or more semicylindrical graduated dials provided with indicating-wires, and a compass, N, and levels *n n*, one or more stationary or movable alidades G H M, provided with suitable indicators and dials B *h g*, substantially as described, and for the purposes set forth.

106,719. — FRUIT-BASKET. — Sanford D. Payne, Kasota, Minn.

Claim.—A basket made of paper, card, pasteboard, or other suitable material, cut and folded substantially as shown and described, and whereby its sides are held in place by the folding of the cut portions, essentially as specified.

106,720.—MACHINE FOR BENDING WIRE SCREW-EYES.—Noah C. Perry, Chester, Conn.

Claim.—1. The jaws D D', in combination with the slide E, and standard *i*, for the purpose of bending, when said jaws are operated by arms *d* and *d'*, substantially as shown and described.

2. In combination with the above, the tongs J, cutters *o*, and gauge *i'*, holding-rod C, and scraper R, arranged and operated in the manner described.

106,721.—MOLE-DITCHING MACHINE.—Alfred Peterson, Stockwell, Ind.

Claim.—1. The mode, formed as shown, and attached to the cutter-bar D, the latter being hung by its upper end to the adjustable piece F, in combination with the beam A, constructed as described, and hung by its forward end to the axle B, all arranged and operating substantially as set forth.

2. The arrangement of the capstan and truck with its foot, as described.

106,722.—ICE-MACHINE.—Charles Plagge, New York, N. Y., assignor to himself and Theodore C. Glazier, same place.

Claim.—1. The combination of a differential gearing with a condensing-pump or engine, substantially as set forth.

2. The combination of a differential gearing with an expansion engine, substantially as set forth.

3. An adjustable cut-off, in combination with an air-expansion engine, substantially as set forth.

4. The rod K, the crank I, or their equivalents, by means of which the air-expanding engine is connected with the driving-shaft and differential gearing, to work the air-compressing pump or engine, substantially as set forth.

5. The above-described arrangement for regulating the air-expanding engine and its adjustable cut-off, in order to equalize the power required for compressing the air as far as possible, and to obtain the greatest effect of the power reproduced by the expanding air, substantially as set forth.

106,723.—CAN-OPENER.—Alfred C. Platt, Sandusky, Ohio.

Claim.—1. The cutting-plate C, set in an inclined position, and provided with the spur or point *a* and the hooked cutting-spur *b*, constructed and operating substantially as and for the purposes herein set forth.

2. In combination with the cutting-plate C, the cutting-wheel D, both constructed and arranged to

operate substantially as and for the purposes herein set forth.

3. The bar or frame B, constructed as described, with slot *e*, semicircular part *f*, and curved part *d*, all constructed substantially as and for the purposes set forth.

4. A can-opener, having the handle placed in advance of the cutting apparatus, substantially as herein set forth.

5. The combination of the handle A, bar B, cutting-plate C, cutting-wheel D, and central spur or point E, all constructed and arranged as described, to operate substantially as and for the purposes herein set forth.

106,724.—MACHINE FOR VARNISHING AND LABELING FRUIT-CANS AND OTHER CYLINDRICAL PACKAGES.—Alfred C. Platt, Sandusky, Ohio.

Claim.—1. The rebated bars *d d*, constructed as described, with arched part forming the adjustable track and guides, substantially as and for the purposes herein set forth.

2. The independently-adjustable spring guides K, constructed and arranged substantially as and for the purposes herein set forth.

3. The wheel D, provided around its periphery with an elastic covering, *v*, substantially as and for the purposes herein set forth.

4. In combination with the elastic wheel D, the elastic belt P and weighted spring wheel G, arranged and operating substantially as and for the purposes herein set forth.

5. The cluster of wheels *a a*, each revolving around its own center, and all around a common center, substantially as and for the purposes herein set forth.

6. The eccentric wheel E, revolving upon the periphery of the elastic wheel D, in combination with the cluster of wheels *a a*, substantially as and for the purposes herein set forth.

7. The feed-box O, constructed as described, with slide *s* and set-screw *t*, substantially as and for the purposes herein set forth.

8. In a machine for labeling cans, applying the paste to the can, for the purpose of picking up and carrying along the label, substantially as herein set forth.

9. The paste-pad *z*, arm *z*, swivel-bar or shaft g^1, and crank f^2, on the shaft c^1, all constructed and arranged to operate substantially in the manner and for the purposes herein set forth.

10. The arrangement of the shaft b^1 with arms a^1 f^1, spring h^1, rack R, and pinion d^1, for operating the paste-pad *z*, substantially as herein set forth.

11. The clasp *y*, constructed as described, and held by the spring catch n^1 or other suitable device, substantially as and for the purposes herein set forth.

12. The spring catch h^1, operating, in combination with the arm m^1, on the shaft c^1, substantially as and for the purposes herein set forth.

13. The bar o^1, carrying the clasp *y*, and provided with the point r^1 and arms s^1, and forced upward by the spring p^1, all substantially as and for the purposes herein set forth.

14. The adjustable label-holder V, constructed as described, and provided with adjustable guide-plates g^2, substantially as and for the purposes herein set forth.

15. The movable end-plate t^1, adjusted by means of the set-screw o^2, and provided with springs h^2, substantially as and for the purposes herein set forth.

16. The movable adjustable bottom d^2, formed of two plates dovetailed into each other, and adjusted by the set-screw e^2, working in an oblique slot, substantially as and for the purposes herein set forth.

17. The arrangement of the adjustable bottom d^2 upon the arms f^2, working on the upright screw-shaft *w*, substantially as and for the purposes herein set forth.

18. The combination and arrangement of the arm m^2, shaft m^3, lever r^2, brass Z, and grooved disk f^3 on the upright screw-shaft W, for supplying the labels, substantially as herein set forth.

19. In combination with the mechanism for supplying the labels, as herein set forth, the wheel f^4 and pinion e^3, for reversing the motion, substantially as herein set forth.

20. The combination and arrangement of the spring bar w^2, adjustable guide-bar z^2, and lever z^3, connected with the brace Z, for the purpose of regulating the supply of labels, substantially as herein set forth.

21. In combination with the spring rod or bar w^2, the set-screw x^2 and bar h^3, for regulating the pressure of the paste-roller h^2 on the labels, substantially as herein set forth.

22. The combination of the paste-rollers X and h^2, intermediate roller f^5, and adjustable paste-box Y, all constructed and operating substantially as and for the purposes herein set forth.

23. The arrangement upon the end of the swivel-rod g^1 of the arm l^1, working in the ratchet-wheel v^1, for turning the paste-roller S, substantially as herein set forth.

24. The arrangement of the screw-rods *e* with cranks *f*, for varying the distance between the tracks, substantially as herein set forth.

25. The arrangement of the rods *g g* and set-screws A, for securing the adjustable track-bar in any position desired, substantially as herein set forth.

26. The sliding bar M, provided with unequal inclines *p*, and operated by means of the screw-wheel L, for the purpose of varying the distance of the track from the main wheel, reservoirs, and brushes, substantially as herein set forth.

27. In combination with the unequal inclines or wedges *p* on the sliding bar M, the set-rod *n*, passing through the oblique slots *o*, for adjusting the curvature of the track to cans of different diameter, substantially as herein set forth.

28. The varnish-reservoirs H, constructed as described, and arranged on the shaft e^2, one being stationary and the other adjustable on said shaft, substantially as and for the purposes herein set forth.

29. The tubes h^3, extending from the reservoirs H, and provided with small valves, operated by the spring levers h^3, substantially as and for the purposes herein set forth.

30. The varnish-brushes f^6, constructed as described, and attached to the tubes h^3, substantially as and for the purposes herein set forth.

31. The wheels c^3, for operating the spring levers h^3, to open the valves in the tubes h^3, substantially as herein set forth.

32. The arrangement of the spring bars n^3 with the set-screws m^3 and r^3, for adjusting the wheels c^3, substantially as and for the purposes herein set forth.

33. The adjustable brushes I, all revolving around a common center, and each around its own center, substantially as and for the purposes herein set forth.

34. The arrangement of rack i^2 and pinions i^3, for revolving the brushes I, each around its own center, substantially as herein set forth.

35. The inclined bars v^3, for opening the brushes I, carrying them outward from the can, substantially as and for the purposes herein set forth.

36. The spring bands *r r*, arranged as described, between the reservoirs H and between the brushes I, substantially as and for the purposes herein set forth.

37. The inclined track c^5, arranged substantially as described, and for the purposes set forth.

38. The combination of the inclined track c^5 and guide-bar c^4, substantially as and for the purposes herein set forth.

39. The regulating-fan b^4, arranged substantially as described, and for the purposes herein set forth.

40. A machine for labeling and varnishing fruit-cans, when it is operated in all its parts by the weight of the cans, substantially as herein set forth.

106,725.—SKATE.—Alfred C. Platt, Sandusky, Ohio.

Claim.—1. The adjustable heel-plate D, constructed as described, so as to be capable of adjustment in any direction desired, substantially as and for the purposes herein set forth.

2. The wedge-shaped spur E, constructed as described, and operated by means of the ratchet *e* and spur-wheel A, substantially as and for the purposes herein set forth.

3. The notched clamps K K, constructed as described, and operated by means of the cams G G, substantially as and for the purposes herein set forth.

4. The combination of the bolt *f*, spur-wheel A, ratchet *e*, cams G G, and spring lever I, all constructed and arranged as described, to operate the spur E and clamps K K with one motion of the lever, substantially as herein set forth.

5. The stem or spindle *p*, provided with ratchet-wheel *e* and one or more spring pawls *i*, for the purpose of winding one or more cords or straps around said spindle, to tighten the skate, substantially as herein set forth.

6. In combination with the tightening device O, the pad M, substantially as and for the purposes herein set forth.

106,726.—BED-BOTTOM.—George Richardson, Milwaukee, Wis.

Claim.—1. The combination of the bed-bottom herein described, and the mattress B B′, substantially as set forth.

2. In combination with the within-described bed-bottom, the copper wire or rod A^2, arranged as described, and for the purpose set forth.

3. The combination of the bed-bottom, mattress, and straps C, for attaching the latter to the former, substantially as set forth.

106,727.—PUMPING-ENGINE.—Louis C. Rodier, Springfield, Mass.

Claim.—1. The valve E, constructed with a single aperture or groove upon its face, substantially as and for the purpose set forth.

2. The valve F, constructed with induction-passages J J, and eduction-passages J′ J′, substantially as and for the purpose set forth.

3. The combination and the arrangement of the valves E and F, substantially as and for the purpose set forth.

4. The arrangement of the passages I′ and J″ in the valve-seat, with reference to the passages J′ in the valve F, substantially as and for the purpose set forth.

5. The arrangement of the valves E and F with reference to each other, as a consequence of which the induction-passage in valve F is opened twice during each stroke of the main piston, substantially as and for the purpose set forth.

6. In reference to the pump, the construction of the cylinder-heads, when made to extend into the cylinder, and having formed in them chambers for water, and valve-seats upon their inner surfaces, substantially as and for the purpose set forth.

7. The induction-valves, when made to slide upon and be guided by the piston-rod, or upon rods secured to the cylinder-heads, substantially as and for the purpose set forth.

8. The arrangement of the eduction-valves with reference to the discharge-passages 9, 10, and 11, substantially as and for the purpose set forth.

106,728.—CULTIVATOR.—John Root, Hartland, N. Y.

Claim.—1. The combination of the adjustable frame C C *d* d^1, draft-pole E, jointed brace-rods *c*, axle A, guide-stirrup J, and operating lever L, all arranged and operating substantially as herein before set forth.

2. The combination of the laterally-adjustable plow-beams D, vertically-adjustable frame C C *d* d^1, connecting-bar G, and lever F, arranged and operating as herein shown and described.

106,729, antedated August 17, 1870.—CIRCULAR-SAW MILL.—Titus H. Russell, Northfield, Vt.

Claim.—1. The combination of the bars Q K L and jaws M M, with the flanged wheel J, screws K, and gearing G H, substantially as described, for the purpose specified.

2. The arrangement of the jointed bars U V, carrying the rollers *m′ n*, with reference to the feeding mechanism and the oblique bar W, for rendering the device self-setting, as herein shown and described.

3. The combination of the handle T, loaded arm P, and pawl O, with the bars Q K, and the teeth *b* of the wheel J, all arranged and operating substantially as described, for the purpose specified.

4. The adjustable crank *q*, constructed as described, fitted or applied to the screws E, substantially in the manner as and for the purpose set forth.

5. The hollow mandrel H′, perforated at its bearings, and receiving in its end opposite the saw the spiral fan I′, as herein described, for the purpose specified.

6. The combination of the collar *f′*, pendent rod M′, block *k′*, sliding plate P, having the oblique groove *i′*, bar O′, and lever N′, for the purpose of giving the saw-mandrel H′ a longitudinal adjustment, substantially as herein described, for the purpose specified.

7. The adjustable gauge-roller S′, having its frame T arranged to swing upon the screw-shaft W′ by the nut U′, said nut being provided with the index O′, working over the graduated plate *p′*, upon the frame of the machine, as herein described, for the purpose specified.

106,730.—BINDING ATTACHMENT FOR SEWING-MACHINES.—Joseph W. Sawyer, Boston, assignor to F. Draper & Co., Cambridge, Mass.

Claim.—1. The adjustable guide B and folder C, constructed and arranged on the arm *b*, as described, in combination with the adjustable jaws D D′, as and for the purpose set forth.

2. In combination with the above, the spring guide E, with its clamping-screw *m*, and slot *n*, arranged and operating substantially as and for the purpose described.

106,731.—FIFTH-WHEEL FOR CARRIAGES.—Henry Sayler, Saint Paris, Ohio.

Claim.—1. A fifth-wheel for carriages, consisting of the part A, provided with the central boss *a*, and having the wrought-iron clips *c* secured thereto, in combination with the part B, constructed substantially as described.

2. The part B, having the recesses *m* formed therein, for the reception and retention of the spring block, substantially as set forth.

3. The dovetail recess, with the wrought-iron piece *o* fitted therein, substantially as shown and described.

4. The part A, provided with the boss *a*, having a hole through it for the reception of the bolt D, in combination with the part B, having a hole for the upper portion of the boss *a*, and having also the flange *g* to fit over said boss, all as herein described.

106,732. — BREECHING ATTACHMENT FOR HORSES.—William F. Schatz, Columbus, Ohio.

Claim. — 1. The metallic shiftable breeching clasps and loops.

2. Their connection with each other by means of a breechen, made of leather or other suitable material, and fastened to them and the shafts by screws, buckles, or their equivalent.

3. The breechen affixed to the shafts by means of said clasps and loops, or their equivalents.

106,733.—CULTIVATOR.—Nelson S. Shields, Rockford, Ill.

Claim.—The springs B B, with bar *b*, when constructed specifically as described, and employed to connect the evener C directly to the beams A A of the cultivator, as described.

106,734. — METALLIC SEAL.—Alexander B. Small, New Orleans, La.

Claim.—The disk *c*, provided with the holes *b c*

e, in combination with the wire *d*, when both branches of the same are passed through the central hole *b* and then bent backward and passed one through each of the parallel side holes *c*, whether the eye *f* be formed in one of the branches or not, substantially as described.

106,735.—POCKET SUN-DIAL.—Dwight L. Smith, Waterbury, Conn.

Claim.—1. The combination of the dial A, needle B, and gnomon C, constructed and united together by the extension D of the gnomon, through both the dial and needle, in the manner described.

2. The combination of the gnomon C, cover L, lining E, and crystal F, as described, and when the dial is secured in the lining, in the manner set forth.

106,736.—VAPOR-BURNER.—Willard H. Smith, New York, N. Y.

Claim.—1. The employment of the chamber H, provided with jet-holes *b b*, in combination with the plates B and B′ and the studs J J, substantially as and for the purpose herein shown.

2. The jet-holes *b b* and studs J J, when arranged in relation to each other, and used for the purpose substantially as herein described.

3. The employment of the perforations *a a*, when used in combination with the vertical heater-plate B and B′, when connected together by studs J J, substantially as and for the purpose herein stated.

4. The employment of the cross-plate I, when arranged relatively to and in combination with the chamber H, substantially as and for the purpose set forth.

5. The arrangement of the vertical heating-plate B and B′, when connected together by studs, and employed to guide the flame vertically, for the purpose herein stated.

6. The employment of the double valve and seats, of the socket D and screw E, in combination with the shoulder K, substantially as and for the purpose herein set forth.

106,737.—MEANS FOR ADJUSTING CAR-WHEELS TO DIFFERENT GAUGES.—William B. Snow, New York, N. Y.

Claim.—1. The fixed feather or key, C, in the axle B, formed with notches, *b*, for locking-attachments connected with the wheel to bite into or gear with, substantially as and for the purpose herein set forth.

2. The combination of the bands D and bolt *c*, arranged to pass through the wheel, with the notched fixed key, C, in the axle B, essentially as shown and described.

106,738.—SUSPENSION RING.—Daniel M. Somers, Brooklyn, N. Y., assignor to Levi L. Tower, Somerville, Mass.

Claim.—As an improved article of manufacture, my said suspension device, as stamped from a single sheet of metal, and bent and swaged into the form as represented, the same being as and for the purpose set forth.

106,739.—RAILWAY-CAR SEAT.—W. Horace Soper, Baltimore, Md.

Claim.—1. The standards S S, constructed with offsets, as shown, and having the rests *r r* situated so as to form the bearings for the stops *i i* on the levers L L, which support the pivoted seat, substantially as described, and for the purpose hereinbefore set forth.

2. The seat-frames F F, provided with levers L L, pivoted as shown, and having suitable stops, *i i*, to arrest and sustain the levers, substantially as described, and for the purpose hereinbefore set forth.

3. In combination with the seat, supported on the frames F F, the cleat I, substantially as described.

4. A reversible car-seat, when said seat is supported on levers, projecting downward, and pivoted to the standards so that the seat may be reversed by turning it on the axis from one side of the standards to the other, substantially as described, and for the purpose hereinbefore set forth.

5. The combination of the fixed back B with a reversible back and seat, substantially as described.

6. The combination of a reversible seat with the foot-rest F, pivoted on its lower edge, so as to tip from side to side, and rest on the stop *d*, substantially as described.

106,740.—STOCK OR BLANK FOR BRACELETS.—Isaac B. Staples, Attleborough, Mass.

Claim.—The stock or blank, composed of the parts A and B, constructed and united as shown and described.

106,741.—GAUGE FOR CUTTING BIAS PIECES OF CLOTH.—Samuel T. Taylor, New York, N. Y.

Claim.—The combination of the main wand *a*, sliding cross-pieces *b b*, and cord *f*, arranged as described.

106,742.—HARROW.—Cornelius Thayer and Leman L. Thomas, Otego, N. Y.

Claim.—The improved harrow, constructed and operating as described.

106,743.—COMBINED GANG-PLOW AND CULTIVATOR.—Sterling C. Thornton, Macomb, Texas.

Claim.—1. The frame A, axle B, radial arms *b*, curved arms *c*, lever *h*, and fulcrum-post *e*, said lever and fulcrum-post being located on the central line of the frame, and operating to raise both sides of the latter equally at the same time, and all the parts specified being arranged with reference to each other, as described.

2. The braces *m′*, standard *i*, cross-bar *n*, and frame A, the said cross-bar being placed upon the said frame, and all the parts specified being arranged with reference to each other, as described.

3. The frame A, standards *i*, rigidly attached to the frame, double-tree H, bars *w*, and rods *s*, the latter connecting the double-tree directly to the standard *i*, and all the parts specified being arranged with reference to each other, as described.

106,744.—HEAD-BLOCK OF SAW-MILLS.—William B. Trunick, Louisville, Ky., assignor to Nathaniel B. Connel, same place.

Claim.—1. The pulleys C C C and wheels D D D, the shaft F, with its wheels E E E and stands G G, in combination with the head-blocks B B, the friction-pulleys J J, and lever I, by which they are operated, substantially as and for the purpose hereinbefore set forth.

2. The wheel H, with its slide-block N, holes P, and pin L, for gauging the lumber, substantially as and for the purpose hereinbefore set forth.

106,745.—CULINARY APPARATUS.—John Van, Cincinnati, Ohio.

Claim.—1. A steam cooking apparatus, with cone-shaped cover C, condensing-chamber D, and partition *d*, when constructed and operating as and for the purpose specified.

2. The water-tank B, constructed with the series of caps *b* and projections *b′*, in combination with the cover C, with notches *c′* and a distributing device, for the purposes of a steam-cooking apparatus, substantially as described.

106,746.—HOT-AIR FURNACE.—John Van, Cincinnati, Ohio.

Claim.—1. The dust-catcher, arranged at the place of entrance of air into the heating-chamber, in combination with the dust-catcher arranged at the place of discharge thereof, substantially as and for the purpose described.

2. The part J, resting on the part I, and provided with the locking-joint, substantially as and for the purpose described.

106,747.—CALK FOR BOOT AND SHOE.—John L. Wager and Abram L. Scudder, Sanford, N. Y.

Claim.—1. The plate A, when secured to the heel of a boot or shoe, and provided with pin or stop *a*, in combination with the adjusting calk B, substantially as and for the purpose set forth.

2. In combination with plate A and calk B, the spring *d*, arranged as and for the purpose described.

3. Spar B′, in combination with lever C, arranged to operate substantially as and for the purpose set forth.

106,748.—SKATE.—Edward P. Waggoner, Syracuse, N. Y.

Claim.—The screw O, the lever Q, and thumb-screw R, combined with the button P and skate-runner A, substantially as set forth, and operating with the plate S, to fasten the skate to the heel.

106,749.—WALL FOR BUILDINGS.—James Weathers, Greensburg, Ind., assignor to himself and V. P. Harris, same place.

Claim.—The metallic face-plate B, provided with two flanges, each of which extends between the layers of bricks, and one of which is made sufficiently longer than the plate to break the joint between and bind together the contiguous bricks, substantially as set forth.

106,750.—COAL-STOVE.—Jonathan R. Webber, Morris, Ill.

Claim.—In the construction of stoves, the hot-air pipes extended through the fire-box L′, combined with the air-chambers J A, and so secured by nuts P as to clamp the cap and base of the stove to the case R, as set forth.

106,751.—SEED-PLANTER AND FERTILIZER.—Dexter P. Webster, Boston, Mass.

Claim.—1. The reciprocating disk K, when combined and operating with the cover N, substantially as described.

2. The regulating cover or side, substantially as and for the purpose described.

3. The reciprocating disk K, cover N, combined and operating in connection with the cords or wires R and S, and spring J, substantially as herein set forth.

4. Providing the feeding-tube or box with an agitator, substantially as and for the purpose described.

106,752.—SHUTTLE FOR SEWING-MACHINE.—William W. Wells, Webster, Iowa.

Claim.—The combination of the tension-pulley B, fixed washer B′, having lug *s*, screw *c*, cushion *s*, and shuttle A, when constructed and arranged to operate as specified.

106,753.—VAPOR-BURNER.—Joseph White, Philadelphia, Pa., assignor to himself and J. B. Wickersham, same place.

Claim.—The vapor-burner, made with a hollow head, of sheet metal, projecting around the periphery of the cap, and above the perforations, for the vapor to issue and burn in jets, as and for the purposes set forth.

106,754.—BIT-STOCK.—Charles P. Whitman, Charlemont, Mass.

Claim.—1. The sliding chuck *d*, arranged within the socket of a bit-stock head, so as to receive and center the end of the shank of the bit or other tool, substantially as described.

2. The screw-cap B, provided with the pivoted jaw C, constructed and arranged to operate substantially as set forth.

106,755.—SHAFT-COUPLING.—Seth H. Whitmore, Decater, Ill., assignor to Caleb C. Burroughs and James Milliken, same place.

Claim.—The combination of the shafts A A, pins D D, and the inner and outer sleeves B C, all connected together substantially as set forth.

106,756.—SHAFT-COUPLING.—Seth H. Whitmore, Decatur, Ill., assignor to Caleb C. Burroughs and James Milliken, same place.

Claim.—The method herein described of securing wheels or pulleys to shafts, by means of a slotted sleeve introduced between the hub of said wheel or pulley and the shaft, and fastened by one or more set-screws or keys, substantially as and for the purposes herein set forth.

106,757.—WEATHER-STRIP.—Henry W. Wicker, Norwich, Conn.

Claim.—The plate *e*, hinged as shown, and provided with the spring *f* acting against the staple *g″*, and also provided with the rod *f*, said rod acting as a weight for raising the front edge of the plate *e*, and at the same time strengthening said plate, the above being combined with the plate *d* and the guide *h*, and constructed, arranged, and operated in the manner substantially as shown and described, and for the purposes specified.

106,758.—COMBINED FORK AND BAND-CUTTER.—Milton Wenger, Upper Leacock Post-office, Pa.

Claim.—The combination of two forks A A′ with a cutting-blade, B, between them, made adjustable by a screw, *c*, substantially in the manner and for the purpose specified.

106,759.—DEVICE FOR REMOVING LIME FROM HARD WATER.—Kasson Frazer, Syracuse, N. Y.

Claim.—1. The construction and combination of the sections, substantially in the manner and for the purpose set forth.

2. An apparatus, with separate steam-inlet and outlet and water-inlet and outlet, through which water and steam are passed conjointly, and in the same general direction, for the purpose of precipitating the lime rapidly and more perfectly, substantially in the manner described.

REISSUES.

4,103.—SPRING MATTRESS.—Edwin L. Bushnell, Poughkeepsie, N. Y.—Patent No. 95,984, dated October 19, 1869.

Claim.—1. A spring for beds, having eyes or loops formed thereon, by bending or twisting the wire of the spring, substantially as described.

2. A spring mattress, consisting of a series of springs, A, with eyes or loops *a*, united by cords *e* and *f*, as described.

4,104.—BUGGY-TOP.—A. Morrell Cory, New Providence, N. J.—Patent No. 97,479, dated December 7, 1869; antedated November 20, 1869.

Claim.—1. The combination of the bows *a* with the bars B, or their equivalents; the base C, and posts G, or their equivalents, permanent in their relation to one another, and turning upon the axis D, substantially as and for the purposes specified.

2. The combination of the mechanism adapted, effecting the support and acquirability, and limitation of action of the top, the shaft I, the tumblers H, the props L, the stops K, the rests P, the guards R, and the bosses *b*, or their equivalents, substantially as and for the purposes specified.

4,105.—CHERRY-STONER.—George Geer, T. G. Hadley, and William Hamilton, Galesburg, Ill., assignees of George Geer.—Patent No. 63,716, dated April 9, 1867.

Claim.—1. The combination of a cherry-stoner, composed of a piece of wire, E, with four prongs, *i*,

in its end, with the stone-retainer, composed of the cavity *e*, hole *f*, and a flexible strip or strips, *g*, secured under said hole, all substantially for the purposes set forth.

2. The arrangement of the rock-shaft D, the handle or lever F, and the curved arms or forks E E, made and arranged, and operating in the manner substantially as and for the purposes set forth.

3. The upright plate H, for the combined purpose of arresting the downward stroke of the plungers and stripping the cherries from the forks, made and arranged substantially as shown and described.

4. The combination of the trough G and grooves *d d*, with the arms E E, lever F, and plate H, all constructed and arranged to operate as herein described.

4,106.—STONE PAVEMENT.—Charles Guidet, New York, N. Y.—Patent No. 85,814, dated January 12, 1869.

Claim.—A pavement composed of stone blocks made in the form of parallelopipeds, having their narrow edges or ends cut smooth, and their broad sides purposely cut rugged or uneven, when the blocks are arranged with their rugged surfaces transversely to the street, substantially as described.

4,107.—APPARATUS FOR CRUTCHING SOAP.—George M. Leslie, Northumberland, Pa., assignor to himself and Jesse Oakley, New York, N. Y.—Patent No. 44,142, dated September 6, 1864.

Claim.—1. A kettle or vessel to contain soap, mounted so as to be revolved, in combination with crutches or stirrers to operate automatically on the soap as presented to the stirrers by the revolution of the kettle, substantially as set forth.

2. The crutches E F, operated by cranks, so as to receive a rising, falling, and swinging movement, in combination with the kettle or vessel A, substantially as set forth.

4,108.—BRICK-MACHINE.—The United States Brick-machine Company, Chicago, Ill., assignee of Benjamin M. Gard and Emery R. Gard.—Patent No. 100,136, dated February 22, 1870.

Claim.—1. The arrangement of the mold-wheel and feeding screw both fast upon, and driven directly by, the same shaft, substantially as shown and described, and for the purpose specified.

2. The arrangement of the mixing-arms and the mold-wheel, substantially as shown and described, both being fast upon and driven directly by the same shaft, as and for the purpose herein set forth.

3. The arrangement of the pug-mill bottom G concentric around the same shaft that bears and drives the mold-wheel and feeding-screw, substantially as and for the purpose herein specified.

4. The arrangement of the pug-mill tub, tub-bottom, mixing-arms, feeding-screw, mold-wheel, and follower cam-way, on and around one driving-shaft, for the purposes herein specified.

5. The pug-mill bottom G, having one side, which is provided with the feed-opening *f*, arranged to fit closely over the mold-wheel, and the other side raised above the mold-wheel, to admit of the expulsion and removal of the bricks, substantially as herein set forth.

6. The flanged or oil-trough cam-way E, with its adjustable cam-plate *f*, for the purpose herein set forth.

7. The movable draft-arm D, with its adjusting clamp *a*, in combination with the sweep C, as applied to the driving-shaft B of the brick-machine, substantially as and for the purpose set forth.

DESIGNS.

4,296.—LAMP-STAND.—James S. Atterbury and Thomas B. Atterbury, Pittsburg, Pa.

Claim.—The foot or stand herein described.

4,299.—CLOCK-FRONT.—John H. Bellamy, Charlestown, Mass.

Claim.—The design for a clock-front, herein shown and described.

4,300.—"PERSIAN CLOAK."—Thomas Dolan, Philadelphia, Pa.

Claim.—The design or configuration for a "Persian cloak," produced by slitting the garment on the line D E, puckering the lower part into a panier, and stitching the upper part together on the lines A C, B C, to form a hood-piece, as herein shown and described.

4,301.—"PERSIAN CLOAK."—Thomas Dolan, Philadelphia, Pa.

Claim.—The design or configuration of a "Persian cloak," produced by slitting it longthwise, platting the lower part into a panier, cutting the upper part down the middle, stitching it together to form a hood-piece, and shaping the same into the form of a hood, as shown and described.

4,302.—JOINING WOOD.—Charles B. Knapp, Waterloo, Wis.

Claim.—The design for joining wood, as shown.

4,303.—HAIR-PIN.—George W. Manson, New York, N. Y., assignor to Charles M. Vandervoort and William F. Fluhrer, same place.

Claim.—The design for hair-pins, substantially as herein shown and described.

4,304.—ASH-PAIL.—John Merry, New York, N. Y.

Claim.—The cylindrical longitudinally-ribbed design, as represented, for ash-pails and analogous articles.

EXTENSIONS.

ALFRED BAILEY, of Amesbury, Mass.—Letters Patent No. 15,406, dated July 29, 1856.

"Improvement in Pegging-Jacks."

Claim.—1. The application of a spiral or other spring, *c*, substantially as I apply it to hold the last L firmly in its place, and at the same time allow the head-pieces E and F to be put in any desired position without readjusting the last L or spring *c*.

2. The arrangement by which the vertical head E may be turned vertically above the axis upon which it turns horizontally, in the manner and for the purpose substantially as herein described.

SIDNEY W. PARK, of Albany, and EDGAR S. ELLS, of Fremont, N. Y.—Letters Patent No. 15,492, dated August 5, 1856.

"Improvement in Rotary Knitting-Machines."

Claim.—Combining together two annular series of hooked needles with a sinker, two pressers, and a web-guide, D, or its equivalent, substantially as herein set forth, for use in the production of ribbed work, as specified.

Also, the manner of arranging the two annular sets of needles in relation to each other; that is, arranging them together, so that the hooked ends of the needles of one set are parallel or nearly parallel with, alongside of, and pointed in the opposite direction to those of the other series, as herein set forth.

Also, the improvement of arranging the sinker C, substantially as herein described, to increase the distance between the yarn and the old loops of the second set of needles just before the barbs of those needles are pressed.

Also, the improvement of arranging the cam B, so as to spring out of the second set of needles, substantially as described for the purpose specified.

Also, the improvement of holding the needles of an annular series in place on the grooved needle-block, or its equivalent, by the ring A, constructed, arranged, and operating as set forth.

ISSUE OF AUGUST 30.

PATENTS.

106,760.—TRUSS-BRIDGE.—John S. Adams, Elgin, Ill.

Claim.—1. The posts A and A', constructed with the long sleeve openings *b b*, to receive the iron girder-beams C C, substantially as and for the purposes described.

2. The large bolt or pin *c*, to support the girder-beam C in the sleeve *b* of the post A, in combination with the keys *d d*, for plumbing and holding the post A in a vertical position, as herein set forth.

3. The swivel stirrups E E, as constructed, in combination with the posts A' A' for equalilising the strain on the cord D D' and diagonal ties, as specified.

4. The upper cord I, constructed with concave and convex ends to fit each other, with their annular flanges *i i* to fit in the grooves in the top of the posts A' A and saddle J, as and for the purpose specified.

5. The sleeve brackets or supplementary beams M, attached to the outer ends of the girder cross-beams C, for supporting the sidewalks and railings, substantially in the manner as specified.

106,761.—NECK-TIE.—Morits Altman, Baltimore, Md.

Claim.—The herein-described neck-tie, *a b b'*, with a lining, *d*, attached as described, and provided with a clasp or fastening, constructed substantially as specified.

106,762.—LUBRICATING-BOX.—Charles Andrews, Providence, R. I.

Claim.—A side tank, A, supplied with oil from a reservoir, in combination with a wick or leach, *e*, operating to purify the oil as it passes to the shaft, substantially as described.

Also, the notch *f*, or hole *f'*, in combination with the groove *e*, in the box, and the wider groove *e'* in the cap, substantially as and for the purpose specified.

Also, the inclined nick or notch *g*, or an equivalent inclined surface, operating to scrape or guide the oil back into the groove *e*, substantially as described.

106,763.—GATE.—Thomas Andrews, Warren, Wis.

Claim.—In combination with the posts A A', provided with the vertically-elongated indentures D D' and E E', and perforations *a*, the gates C C', when constructed and operating as described and shown.

106,764.—STREET-LAMP.—Theodore P. Austin, New York, N. Y.

Claim.—The ring B^1, fixed to the upper glass C^2, and turned down at its upper edges to fit around the lower ring B^2 when the latter merely supports the lower glass laterally, leaving it free in the vertical direction, as specified.

Also, the pins a^1, or their equivalents, on the rods *a*, for supporting the lower glass C^1 by its lower edge, and allowing it to expand and contract freely in all directions, as specified.

Also, the entire combination of parts composing the improved lamp shown, the same being composed of a lower or principal glass, C^1, supported by its lower edge, and steadied laterally only at the top, an upper or auxiliary part, C^2, of glass, or analagous cheaply molded and easily repaired material, with the rings B^1 B^2 notching together, as shown, and the top ventilator supporting-rods and pins, and hinged connection, all as and for the purpose set forth.

106,765.—COMBINED HARROW AND ROLLER.—Timothy Bailey, Wyoming, Ill.

Claim.—The arrangement of roller G and harrow A B C D, the former moving within the latter, in combination with the breaking teeth, *a a a*, of the harrow, and the distributing-teeth *e e* of the same, the standards *d d*, adjustable handles E E, and stationary double-tree F, all substantially as and for the purposes described.

106,766.—WATER-WHEEL.—Vincent M. Baker, Preston, Minn.

Claim.—1. The crown-plate C, curved from *a* to *b*, and the rim I, curved from *b* to *c*, combined with gates N, having beveled edges O, and outer curved ends, as and for the purpose described.

2. The arrangement of the vertical concave plates a^1 a^2, the vertical convex plates *b'*, and the oblique plates *d d'*, with respect to the flange *c* and plate B', for the purpose of forming an improved set of buckets for turbine wheels.

106,767.—WOOD-TURNING LATHE.—Frederick Baldwin, Janesville, Wis.

Claim.—The combination, with the shaft K, pinion O^2, wheel O^3, worm-wheels O^3 and P^1, shaft P^2, and feed-wheel O^4, of the cone-pulleys I L, the belt-shifter N, and the screw-shaft M, the latter being arranged to gear with the pattern-wheel, all substantially as specified.

106,768.—SHAFT-COUPLING.—Marshall L. Bassett, West Haven, Conn., assignor to himself and Leonard H. Burt, same place.

Claim.—1. The combination of the ordinary transversely-grooved shafts A A, double-lugged key B *a a*, and conical tube C, with a sleeve, D, formed in a solid piece, and held to all the other parts by a pair of screws, *d*.

2. The subject matter of the foregoing clause, combined with the threaded apertures *c c* in the flanges *c*, whereby the screws *d* are forced against the shoulders *b*, as and for the purpose specified.

106,769.—MACHINE FOR BENDING FORKS.—Isaac Gale Batcheller, Wallingford, Vt.

Claim.—1. The particular construction herein described, of the dies A and B jointly, with the arrangement of them relative to one another, and to mechanism to reciprocate the one and elevate and depress the other, as set forth.

2. The combination of reciprocating die B, vertically-moving die A, cam K, shaft L, bar O, and operating gears, arranged substantially as shown and described.

106,770.—CURTAIN-CORD TIGHTENER.—John E. Baum, Philadelphia, Pa.

Claim.—The combination and arrangement of the cord-holder B, ratchet-bar C, spring D, and case A, substantially as and for the purpose above described.

106,771.—FIRE-PROOF RAILWAY-CARS.—George C. Bestor, Peoria, Ill.

Claim.—1. A fire-proof railway-car, having spaces in the floor and roof, and hollow walls, all communicating with each other through holes in the longitudinal strengthening-partitions, as shown and set forth.

2. In combination therewith, the vertical bracing on the sides, with its openings and angle-irons *d*, as set forth.

106,772.—FIRE-PLACE GRATE.—Frank S. Bissell, Pittsburg, Pa.

Claim.—The combination of casing A, grate-basket B, and cold-air chamber C, when constructed and operating as described.

106,773.—TOOTH-PICK.—William E. Blake, New York, N. Y.

Claim.—A tooth-pick, A, saturated or in combina-

tion with a medical compound, D, perfumery E, and gold finish F, or its equivalent, as and for the purposes set forth.

106,774. — SHUTTLE-STOPPING DEVICE.—Theodor Bosshard, Columbus, Ohio.

Claim.—The loops *a* and *b*, and eyes *c c*, attached respectively to the case B and pivoted lever C, all said parts being constructed and arranged in the particular manner shown and described, for the purpose specified.

106,775.—MACHINE FOR UPSETTING TIRES. William Bowden, Hamburg, N. Y., assignor to himself and Abbott C. Calkins, same place.

Claim.—The improved apparatus herein described, consisting of the block A, having the reverse concaves *p p'* and the studs *a a'*, forming wedge-shaped and dovetailed spaces *e e'*, for the insertion of the keys *c*, and serrated wedges *d*, the whole arranged as described and operating in the manner and for the purpose specified.

106,776.—WARDROBE-BEDSTEAD.—Sanford S. Burr, Boston, Mass.

Claim.—1. A secretary-bedstead, composed of a folding bedstead-frame proper and an outer removable shell or case, which, while adapted to receive the said bedstead-frame, can be entirely detached and removed therefrom whenever there is occasion for the use of the bedstead, as herein shown and set forth.

2. A folding bedstead, composed of the two frames, B C, the intermediate frame E, and the central trough or support D, said parts being constructed and arranged for joint operation, as shown and described.

106,777.—STEAM-ENGINE.—Henry L. Butler and Thomas A. Christie, Pittsburg, Pa.; said Christie assigns his right to said Butler.

Claim.—1. In steam pumping-engines, operative in pumping water by steam applied to one side of the piston, the water-discharge pipe F with a port or ports leading to the other side of the piston, whereby the column of water to be raised shall itself effect the return stroke of the piston, substantially as described.

2. The cock H in connection with the pipe or water-passage a, through which the water under pressure enters and passes out from the working cylinder of an engine, operated with steam and water, as described, for the purpose of regulating the working of the engine by enlarging or contracting the opening through which the water flows, substantially as and for the purpose described.

3. The sliding valve *h*, with valve-stem concentric with and attached to the main piston, and working freely in a steam-chamber within the valve, and arranged substantially as and for the purpose hereinbefore described.

4. The piston B, having an upper area of face *a'* exposed to the action of steam at the down stroke, in excess of the lower area of face *a* exposed to the action of water or other hydrostatic pressure, substantially as described.

5. The pumping-chamber *i* and annular chamber *h*, in combination with inlet-pipe E leading to the former and outlet-pipe F communicating with both, substantially as set forth.

106,778.—PAPER-FILE.—John Cash and Joseph Cash, Jr., Coventry, England.

Claim.—Forming inclines, single or double, upon or attaching them to the sides of a box, case, drawer, or other receptacle, to adapt them to receive a bar to confine the letters or other papers in place, substantially as herein shown and described.

106,779.—SPADE AND SHOVEL.—Jacob Caylor, Half Way, Ind.

Claim.—1. The arrangement of a short cutter, *a*, on each side of the scolding-spade, to incise the earth, cut the roots, and regulate the width of sod, as shown in fig. 2 of drawing.

2. The slotted ferrule *b*, ring D, screw *d*, and plate *c*, combined with each other and with the handle C, for the purpose of clamping the shank of a spade or shovel, as set forth.

106,780.—VELOCIPEDE.—John C. Clime, Philadelphia, Pa.

Claim.—The combined arrangement of all the parts, as described and shown, for the purpose set forth.

106,781.—DRIVING MECHANISM FOR SEWING-MACHINES. — John Cochrane, Jr., Malden, Mass.

Claim.—In combination with a sewing-machine mounted upon a table and having a treadle or foot-driven mechanism, by which to operate the machine, a hand-crank connected with the treadle-operated crank-shaft, and placed beneath the table or on the treadle-operated crank-shaft, substantially as described.

106,782. — CIRCULATING WATER-HEATER FOR STEAM FIRE-ENGINES.—Henry V. Coleman, Chicago, Ill.

Claim.—1. In circulating water-heaters, the construction and arrangement of the three-way cocks G G', pipes H H', check-valve I, pipes E F, and stand-pipe D, with a heating-boiler, A, substantially as and for the purpose set forth.

2. In combination with a boiler, A, constructed substantially as described, the bifurcated flue L, as and for the purpose set forth.

106,783.—SCAFFOLDING.—James V. Cook and Edward J. Crossman, Auburn, N. Y.

Claim.—The combination of the frame A B C, lifts D D', and upper cross-bar G, all constructed and arranged substantially as and for the purposes herein set forth.

106,784.—MANUFACTURE OF PAINT AND VARNISH.—George Frederick Cornelius, Westminster, Great Britain.

Claim.—The preparation of paint and varnish of the ingredients, in the proportions, and by the process, substantially as set forth and described in the above specification.

106,785.—BOOK-MARKER.—Edmund Cottle, Randolph, Mass.

Claim.—The combination and arrangement of the hitching-wire *a* with the hook C, the band B, and the book A, the whole being substantially as described.

106,786.—RAILROAD-CAR DUSTER AND VENTILATOR.—John Penn Curry, New York, N. Y.

Claim.—The combination of the hood B, pipe C, ventilator V, and curtain E, when constructed and operated substantially as herein set forth.

106,787.—WATER-WHEEL.—Dwight. Cushman, Hartford, Conn.

Claim.—The combination of the flanged sleeve *i* with the plates *e f* and wheel *c* all constructed and arranged substantially as set forth.

106,788, antedated August 17, 1870.—GATHERING DEVICE FOR SEWING-MACHINES. Job A. Davis, Watertown, N. Y.

Claim.—The combination of the inclined wedges *g h*, each having a yielding support, with the gathering-knife, as and for the purpose set forth.

Also, the combination of the gathering-knife, the adjustable graduating-lever and its slide, and the graduated scale, substantially as set forth.

106,789, antedated August 26, 1870.—CREASING ATTACHMENT FOR SEWING-MACHINE. Job A. Davis, Watertown, N. Y.

Claim.—In combination with the stationary

edge, the upper creasing roller, or its equivalent, having a positive ascending and descending movement, to come in contact with and leave the cloth at each forward and backward movement, and also a down-bearing pressure on the fabric, substantially as shown and described.

Also, the combination with the upper creasing device, or the short arm or link F, rod C, rocking-arm H, sleeve I, and operating lever J.

Also, the adjustable actuating lever, in combination with the rocking-sleeve I and supporting-rod C.

106,790.—MUSICAL ROCKING-CHAIR.—Clayton Denn, Frankford, Philadelphia, Pa.

Claim.—1. The combination of the bellows C, lever D, and reeds *f f* with a rocking-chair, substantially as described.

2. The keys or knobs A, arranged on the sides of a rocking-chair, for operating the reeds of a musical instrument, as set forth.

3. The slide *l*, applied to the rocking-chair, for the purpose of arresting the motion of the bellows, substantially as herein shown and described.

106,791, antedated August 24, 1870.—ADJUSTMENT FOR PUMP-RODS. — Byron Densmore, New York, N. Y.

Claim.—The lever D, in combination with the attachments E, F, and C, arranged and operated as specified, for varying motions.

106,792, antedated August 24, 1870.—WATER-METER. — Byron Densmore, New York, N. Y.

Claim.—1. The inlet D, buckets C, arms B, shell A, and stop G, as set forth.

2. The oil-cups I I and extended slotted boxes *a a*, as specified.

3. The arrangement of an indicating register, substantially as shown, with a meter, consisting of the buckets C, shell A, and stop G, as and for the purposes shown and described.

106,793.—REMOVING DEPOSITS FROM OIL-WELLS.—James Dickey, Venango City, Pa.

Claim.—The herein-described method of removing the paraffine and other combustible deposits in oil-wells and the crevices tributary thereto, by means of the combustion of oxygen or other combustible gas or air introduced and burned in the presence of the said deposits, substantially as specified.

Also, the herein-described method of removing the paraffine deposits from the walls of the wells and the crevices tributary thereto, by explosions of oxygen gas or air and the natural gas of the wells, produced substantially as specified.

106,794. — TORPEDO FOR OIL-WELLS.—James Dickey, Venango City, Pa.

Claim.—1. A torpedo for oil-wells, provided with the guiding and centering-springs C, substantially as specified.

2. The combination, with the shell of a torpedo, of the filling and plugging-tubes D E, substantially as specified.

3. The combination, with the torpedo and the firing-spindle L, of a funnel arranged at the top, to guide the spindle or point of the bomb to the said spindle L, for delivering the blow thereon, substantially as specified.

4. A bomb or secondary torpedo, in combination with the primary torpedo previously placed in the well for firing it by being let fall thereon, substantially in the manner described.

5. The combination of the bomb or secondary firing-torpedo M, having the spiral vanes U, with the primary torpedo, substantially as specified.

106,795.—PENCIL-SHARPENER.—Moses W. Dillingham, Amsterdam, N. Y.

Claim.—A hollow-cone pencil-sharpener, formed of two principal parts, connected together by a band and nut, so that the two parts may be readily separated, substantially as and for the purposes described.

106,796.—TENSION DEVICE FOR SEWING-MACHINE.—George L. Dulaney, Mechanicsburg, Pa.

Claim.—As a tension-device for a sewing-machine, a roller constructed with ridges arranged tangentially or nearly so, as described and shown in figs. 4 and 5, and for the purpose set forth.

Also, the combination of the post G, and loose spindle provided with a head, D, and screw-thread, with the disk E, and the adjusting nut and spring, the latter serving to hold the spindle in place as well as to vary the tension, substantially as shown and described.

Also, the combination of the barrel, tension-disk, pad, spindle, and an adjusting-device, substantially as described.

Also, the combination, with the removable face-plate of a shuttle, of a box or barrel secured thereto, adapted for the reception and protection of a tension-device, substantially as described.

106,797.—ROLLER-TEMPLE FOR LOOMS.—Warren W. Dutcher, Hopedale, Mass., assignor to the Dutcher Temple Company, same place.

Claim.—1. The temple-roller, as made of the connected list and body-cylinder *a c*, having different diameters, as and for the purpose as described.

2. In combination with the differential roller A, formed of the connected list and body-cylinders *a c* of different diameters, as described, the trough, as made with its list and body-receiving parts of different diameters, and arranged with the parts *a c* of the roller, as explained.

3. In combination with the differential temple-roller and trough, substantially as described, the cap, as formed, with its parts embracing the list part *a* of the roller, of a greater diameter than the part covering the body part *c* of such roller, the whole being as set forth.

4. The temple-roller, as made with the parts *a c* of different diameters, and connected by a conic frustum, *b*, the trough and cap to operate with such roller being substantially as described and represented.

106,798. — TRAP FOR LOWERING ICE. — Charles Egnor, Catskill, N. Y.

Claim.—The hinged weighted platform A, combined with the swinging cross-bar D and detaining string *d*, all arranged to operate substantially as herein shown and described.

106,799. — GANG-PLOW. — Abram Ellison, Marysville, Cal.

Claim.—The combination, with the bent arms or bars I, pivoted at one end, and holding the axles *p* of the lever K, provided with the curved slotted arm or link J, and held by a rack, or equivalent device, substantially as and for the purpose specified.

106,800.—MARINE ENGINE.—John Ericsson, New York, N. Y.

Claim.—1. The rock-shaft P, for operating the air-pump, when connected, by means of a link, *l*, with the revolving crank-shaft F, substantially as herein shown and described.

2. The valve-gear, operated by the lever R, which receives motion at its middle, and transfers it at the end, substantially as herein shown and described.

3. The reversing-gear, connected, by jointed arms, with the slotted plate S of the valve-gear, so as not to effect the action of the same during the operation of the engine, as specified.

106,801, patented in England April 25, 1870.—MAXIMUM AND MINIMUM WATER-GAUGE.—George Jordan Firmin, No. 19 Lorn Road, North Brixton, England.

Claim.—The maximum self-registering liquid-

gauge, constructed with a measuring-tube and self-acting inlet-valve, substantially as described.

Also, the minimum self-registering liquid-gauge, constructed with a measuring-tube and self-acting exit-valve, substantially as described.

Also, the combination, in one instrument, of the maximum and minimum self-registering liquid-gauges, substantially as described.

106,802, antedated August 15, 1870.—Portable Sprinkler.—Warren L. Fish, Springfield, Mass.

Claim.—An improved watering device, consisting of the tube B, the valve *f*, with the spring *h* thereon, and operated by means of the rod *a'*, all constructed and operating substantially as described, and connected with a suitable vessel for containing the water, by means of the flexible tube C.

106,803.—Machine for Forming Sheet-metal Moldings.—Henry G. Fiske, San Francisco, Cal.

Claim.—1. The bar *c*, in combination with the bars *b b'*, the weights *e*, lever *f*, and pin *i*, with or without the purchase-frame *g*, substantially as and for the purpose described.

2. The bar *c*, in combination with the bars *b b'*, the weights *e e'*, and the lever *f*, with or without the pin *i*, and with or without the purchase-frame *g*, substantially as and for the purpose set forth.

3. The frame *a*, the bar *c*, with the bars *b b'*, the weights *e e'*, the levers *f f'*, the open links *d*, with or without the pin *i*, and with or without the purchase-frame *g*, the whole constructed and arranged to operate substantially as described.

106,804.—Rotary Steam-Engine or Pump.—George Stores Follansbee, Philadelphia, Pa., assignor to himself and John Rosencrantz, same place.

Claim.—1. The case A, with its ports *p q*, internal projections and curved bearing-surfaces *m m*, arranged, in respect to the ports, as set forth, and cog wheels B B', attached to independent axles, one only of which extends through the casing, all as described.

2. The combination of the subject matter of the first claim, adjustable blocks E E, and set-screws *n*, whereby a positive adjustment of the blocks may be obtained.

106,805. — Folding Seat. — Charles A. French, Lowell, Mass.

Claim.—1. The jointed folding leg, constructed as shown and described, and provided with a pivoted swinging rod or rods E and connecting-eyes *f*, in the manner and for the purpose set forth.

2. The arrangement and combination with the box, as described, of connecting stud-plates B B', &c., in the manner and for the purpose specified.

3. The combination of the folding legs, constructed as described, with the opened box, provided with connecting plates and studs, as set forth.

4. The relative arrangement and adaptation of the folding legs and the box, each constructed as described, whereby the former is concealed within the latter, which also forms the seat, as set forth.

106,806. — Combined Planter and Seeder.—William E. Fricke, Mexico, Mo.

Claim.—1. The combination of the wheels A, pawls C, ratchet-wheels D, axle E, frame F, spur-wheel Q, lever O, frame G, bar I, hoppers H, slides K, lever L, spring N, and grooved wheels L', slotted arms K' with each other, substantially as herein shown and described, and for the purpose set forth.

2. The combination of the wheel U, constructed as described, lever V, arm W, plate X, and rod Y with each other and with the axle E, frame G, and seed-dropping device, substantially as herein shown and described, and for the purpose set forth.

3. The combination of the hinged hollow plow-standards D', draft-rods or chains E', rods F', rigid arms G', shaft H', and foot-lever I', provided with a catch-bar, J', with each other and with the hoppers H, frame G, and frame E, substantially as herein shown and described, and for the purpose set forth.

106,807.—Car-Coupling.—James H. Froman, Plattsburg, Mo.

Claim.—The jaw B, beveled, as shown in figures of drawing, and the spring *b*, fitting up to the shoulder *a*, combined with an upper jaw, A, having the pivoted lever C passing therethrough, as and for the purpose specified.

106,808.—Plane-Guide.—Michael Garland, West Eau Claire, Wis.

Claim.—The plane-guide D', provided with the clamp-screw *d*, in combination with the segment D, in connection with the plane A, provided with the guide B, half-butts *a*, eye-bolts C, and catch-springs *c*, when the several parts are constructed and arranged as described and shown, and for the purpose set forth.

106,809.—Loom.—Lucien M. Gilbert, Cow Run, Ohio.

Claim.—A loom cam, having a slot or recess in the edge of the disk to permit the removal of an adjacent lever, and a continuous unbroken cam-groove to give motion to its own lever, substantially as shown and described.

Also, the combination of the lever I and its protection F, and pin, with the recessed disk D, and continuous groove G, as and for the purpose described.

106,810.—Tobacco-Ridger.—Ozias W. Goslee, Glastenbury, Conn.

Claim.—The combination of the shear-plates *a a*, flattener *g*, and dividing and marking-wheel *h*, substantially as and for the purpose set forth.

106,811.—Milk-Cooler.—Warren H. Gould, Manchester, N. H.

Claim.—The arrangement of the vats A B F and pipes C, D, E, and K, operating as described, for the purpose specified.

106,812. — Fire-Escape. — John A. Griswold, Chicago, Ill., assignor to himself and Phineas E. Merrihew, same place.

Claim.—1. In a fire-escape, the arrangement of the hand-lever upon the tube, substantially in the manner and for the purpose described.

2. The combination of the concave tooth *h*, with the concavity *e* of the tube, substantially as and for the purpose described.

106,813. — Treadle-Motion.—Charles M. Guess, New Orleans, La.

Claim.—1. The arrangement in pulleys E F of a sewing-machine-treadle device, of unequal and reversely-operating springs H H, as and for the purpose described.

2. The two reversely-operating and unequal springs H H, loose pulleys E F, and opposite arms I L of rock-shaft M, combined with two belts K H' passing over their respective pulleys in same direction, as and for the purpose described.

106,814.—Boot and Shoe-Heel.—Henry F. Harris and Gaylord P. Pinney, Chicago, Ill.

Claim.—In combination with the plate C, having the angular screw-boss D, and the plate F, having the angular opening, the fixed washer H, and flanged screw I, all constructed and arranged as operate within the fixed and removable portions A G of the heel, as herein shown and described, for the purpose specified.

106,815.—Escapement for Watches, &c.—William Hart, Kirksville, Mo.

Claim.—1. The hair-spring of a watch-escapement, connected with the lever C, in such manner that it will draw the said lever against and retain it in contact with the banking-pins, as set forth.

2. The escapement lever C, provided with the projecting pin *d*, to which the outer end of the hair-spring is secured, substantially as and for the purpose herein shown and described.

3. The key *e*, pivoted to the arbor E, to lock the hair-spring to the pin *d*, as specified.

106,816.—Measuring-Faucet.—Francis C. Heiser, Brooklyn, N. Y.

Claim.—The cock C, pipes *a c d*, handle *b*, faucet D, hopper *e*, and orifice *f g*, arranged with respect to each other, and to a measure, B, as and for the purpose specified.

106,817. — Carriage. — John R. Hiller, Woodland, Cal., assignor to himself and Clark Elliott, same place.

Claim.—1. The springs E E, with the spring G and the connecting bar F, constructed and operating substantially as herein described.

2. The combination, with the springs E, of the elastic blocks *c*, when said blocks are held by springs *i*, arranged to furnish additional support if required, substantially as specified.

106,818.—Lime-Kiln.—David Hills, Richville, N. Y.

Claim.—1. The combination, with a body, A, and chamber B, of perforated and arched fire-places C D D, as and for the purpose described.

2. The combination, with a fire-place, C, of the recess *e*, located in the body A of the kiln, as and for the purpose described.

3. The arches *d*, constructed of perforated limestone, and built over each fire-place, to be removed with the burnt lime, as specified.

106,819.—Covering Metal Articles with India Rubber.—Constantine Hingher, New Brunswick, N. J.

Claim.—The herein-described improvement in the process of coating metal articles with vulcanized India rubber, consisting in the application of the coating of India-rubber cement, and subjecting it to the action of heat before applying the covering of rubber, all substantially as specified.

106,820, antedated August 26, 1870.—Low-water Indicator.—George M. Hopkins and John A. Straight, Albion, N. Y.

Claim.—1. The compound ring B, or its equivalent, when so far removed from a steam-generator, but so constructed with the water therein that, when the water is sufficiently high, the ring shall be in contact with water cooler than the water in the generator; but when the water in the generator shall fall below a proper height the steam will come in contact with the compound ring B, and cause it to expand, for the purpose substantially as described.

2. The combination of the compound ring B, the safety-valve G, and the accompanying devices, substantially as and for the purpose hereinbefore set forth.

106,821, antedated August 13, 1870.—Low-water and High-pressure Indicator.—George M. Hopkins and John A. Straight, Albion, N. Y.

Claim.—The combination, with the low-water and high-pressure alarm-valve C, of the rod F, having its lower end embracing the projecting stem *d* of the valve, with a nut, *e*, above it, in connection with the expansion-tube A and air-chamber B, when the parts are adapted to operate together, substantially as described.

106,822.—Boom-crotch Supporter.—Hiram Hopkins, Wellfleet, Mass.

Claim.—The combination and arrangement of the metallic boom-crotch socket or supporter B, and its tubular vent-screw C.

Also, the combination and arrangement of the metallic boom-crotch socket B and the vent-screw C with the taffrail A of a navigable vessel, the whole being substantially and for the purpose as hereinbefore explained.

106,823, antedated August 19, 1870.—Coloring Gun-Barrels.—James Spooner Howard, Mansfield, assignor to himself, T. E. Grover, same place, E. Adams, Jr., and N. Carpenter, Attleborough, Mass.

Claim.—1. The above-described solution for plating nickel or antimony with iron.

2. The solution described for oxidizing the iron after it is plated upon the nickel or antimony.

3. The above-described process of coloring metal articles, by plating them first with nickel, then with iron, and then oxidizing the iron to produce the desired color.

106,824.—Propeller.—Lewis Howard and Charles Howard, Watkins, N. Y.

Claim.—The bar B, placed across the rear end of the chamber *a*, as described, and for the purposes set forth.

106,825. — Roofing. — Seymour Hughes, Hudson City, N. J.

Claim.—1. The plates A and B, so constructed and arranged as to form the water troughs *c c* at their corners or angles, substantially as specified.

2. A roofing-plate, formed by the sheets A and B, united by the self-supporting lap-joints *a a*, as set forth, whereby the same are permitted to expand, in the manner described.

106,826.—Portable Fence.—Eli Hunt, Hartford, Ind.

Claim.—The combination of the panels A B C, braces D D, keys E E, wedges G G, bases H H, and caps I, all constructed and arranged substantially as shown and described, and for the purposes set forth.

106,827. — Barrel. — George M. Huntly, Grand Rapids, Mich.

Claim. — Confining the sections together by means of upright iron bands or straps *f*, secured as shown, in combination with the head, constructed with its inside hook *b* and flange *a* for its support, all as shown and described, for the purpose set forth.

106,828.—Fluting and Sad-Iron.—Charles Hyatt, Buffalo, N. Y.

Claim.—The combination of a sad-iron, *i*, with a fluted detachable plate, *a*, and crimper *c*, one or both of the two latter being lined or faced with metal *g*, constructed and arranged substantially as and for the purpose specified.

106,829.—Wire-Cutter.—Joseph Johnson, Marshalltown, Iowa.

Claim.—The plate A, with the measuring-rule F, the flange C, with the rib *d*, by means of which a groove is formed at the angle, the gauge E, and the cutting-chisels G and K, the whole arranged and operating substantially as and for the purposes described.

106,830.—Lock for the Meeting Rail of Sashes.—Frederick W. Judd and George M. Hubbard, New Haven, Conn.

Claim.—The arrangement of the catch-pin A upon the handle end of the lever D, and the notches *a a* and *a'* in the edge of the plates C and E, the whole arranged and operating together substantially as described.

106,831. — Fanning-Mill. — Daniel Kane, Tivoli, Iowa.

Claim.—The arrangement of the hopper K K, fan-case *d d m*, fan F, shoes S S, and discharging-

guides *g*, all constructed substantially as described, in the manner and for the purpose specified.

106,832.—PAVEMENT.—John Stafford Kelley, New York, N. Y.

Claim.—1. The combination of a wooden block, of uniform horizontal cross-sectional area, with an iron band, shaped on the inside to fit upon said block, but tapering on the outside, to enable the band to readily work down with the wear of the wood, or to be driven, without unnecessary resistance, by any suitable implement.

2. A band for wooden paving-blocks, having the lug and socket b^1 b^2 on its opposite ends, as and for the purpose described.

3. A cast-iron band, B, entirely open at both ends, and having a lug, b^1, and socket b^2, on opposite sides thereof, as and for the purpose described.

4. A pavement, formed of wooden blocks, and open, uncapped iron bands, correspondingly shaped, and held together by lug and socket, as exemplified in drawing and specification.

106,833. — COTTON-PRESS. — William W. Knowles, Bastrop, Texas.

Claim.—1. The arrangement of friction-wheels I I G and spur-gear D E on their respective shafts and screw, as and for the purpose described.

2. The arrangement of lever K, end-sliding shaft F, and friction-wheel G, with respect to the two friction-wheels I I, as and for the purpose described.

106,834.—MACHINERY FOR PRINTING OIL-CLOTH, &c. — Joseph Kraft, Newark, N. J.

Claim.—1. The fast worm-wheel *e*, worms *f*, loose wheels *g*, rods *h*, and crank-pins *i*, all relatively arranged to revolve a series of axles, E E, simultaneously, and for the purpose described.

2. The swiveled frame G secured to a sliding frame, D, substantially as and for the purposes herein shown and described.

3. The combination of the roller J, with the pins *m*, clamp L, and rollers *d*, all arranged to hold and stretch the fabric to be printed, as set forth.

4. The axles E E, notched to receive and hold the sectional printing-rollers F F, which have spring-catches *a*, as set forth.

106,835.—DOOR-STRIP.—John W. Kramer, Bloomsburg, Pa.

Claim.—The hinged flat metal strip A, hinged yoke C, and rod E, combined with an elastic pivoted lever, F, whose elasticity will admit of varying thicknesses of carpet over the strip, when all are relatively arranged with respect to the door, and to one another, as shown and described.

106,836.—CHURN. — Hermann Kuhlmann, Cincinnati, Ohio.

Claim.—The winged churn-dasher, suspended from and actuated by means of cranks *b* and *d*, substantially as herein shown and described.

106,837.—COMBINED PLOW AND CULTIVATOR.—Jacob M. Landes, Souders, Pa.

Claim.—The reversible plows J K, standards I D, draft-bar F, and beams A G G, all constructed and relatively arranged, as and for the purpose described.

106,838.—MANUFACTURE OF PLOWSHARES. John Lane, Chicago, Ill., assignor to himself, Charles H. Hapgood, W. B Young, and George H. Laughton, same place.

Claim.—A plowshare having a thick flange, *a*, a thick end, *b*, and a thin body, *c*, when made in one piece, without a weld, substantially in the manner and for the purpose set forth.

106,839. — SUGAR-CANE SCRAPER.— Alcide Landry, East Baton Rouge, La.

Claim.—The arrangement, in a sugar-cane scraper, of the inclined side bars A, central draft-bar B, cross-bars C D, handles E, teeth G, scraper H, and adjusting-rods I, as shown and described.

106,840.—CALL-BELL AND VESSEL.—Nathan Lawrence, Taunton, Mass.

Claim.—The combination of vessel *a*, tube *f*, stem A, and sounder *b*, as specified.

106,841.—ELEVATOR.—Alfred Lawton, Philadelphia, Pa.

Claim.—1. The combination, substantially as described, of a bucket or buckets, or any equivalent to the same, by which granular or other material can be hoisted with an endless traversing band or bands, by which the material is conveyed horizontally to or within range of the said buckets.

2. Endless band conveyers, when arranged in a passage or chamber extending beneath the platform on which is deposited the material to be moved, or moved and raised, all substantially as described.

3. The combination of the elevating mechanism, the endless bands, arranged to convey the material to the elevator, and the gearing described, or its equivalent, whereby the elevating mechanism and the endless bands are operated simultaneously and from the same driving-shaft, substantially as specified.

106,842.—BEDSTEAD-TESTER.—Francis Layaux, Monroe, La.

Claim.—The combination of the tester B, side-rods *a*, and sliding bar *b*, substantially in the manner and for the purpose specified.

106,843.—CLOCK-ESCAPEMENT.— Benjamin B. Lewis, Bristol, Conn., assignor to himself, and Welch, Spring & Co.

Claim.—The escapement-wheel A, constructed with the beveled end teeth, as shown, in combination with the verge B, having repose-pallets only, both constructed and operating together, substantially as described.

106,844, antedated August 25, 1870.—REEL FOR DYEING AND FINISHING SILK AND VELVET WOVEN FABRICS.—Edward Mafat, New York, N. Y.

Claim.—A volute reel or bars C C′, C″, provided with tenter-hooks or pins on the outer periphery of the spiral curve, and flexible springs S S′ S″ S‴, and adjustable supporting-wheels D and D′, with slotted gauge-bars E and E′, secured by set-screws O O′ to the adjustable wheels upon the shaft or axle N N, all arranged and operating in the manner and for the purpose set forth.

106,845.—CONSTRUCTION OF BRUSHES.—John Marchbank, Lansingburg, N. Y.

Claim.—As a new article of manufacture, a coiled wire-ferrule, made in keg or barrel form, and soldered or cemented together in one piece, for the insertion of the bristles and handle, substantially as herein shown and described.

106,846.—MEDICAL COMPOUND.—Ann Augusta Marsh, Frankfort, Mich.

Claim.—The manufacture or preparation of a compound denominated Nervine, of the ingredients, in the proportions, and for the purposes set forth.

106,847.—SAFETY CAR-BRAKE.—Anthony S. Martin, Washington, D. C.

Claim.—1. The combination of the flanged grooved, and inclined shoes, hung upon the hindmost car of a train, with the line or chain of rods leading from the engine, substantially in the manner and for the purpose described.

2. The construction of the shoes with a groove, corresponding to the tread and flange of the wheels, and with roughened or cutting bottom surface, substantially as described.

3. The arrangement of the slotted links I, sliding hinged stay-rods J, cushions *h*, as described.

106,848.—CHURN.—George H. McGlothlen, Chariton, Iowa.

Claim.—The arrangement of the parts described, to wit, the frame, gearing, adjustable wrist-pin, pitman, shaft, with tube and set-screw, dasher, and vessel, as and for the purpose described.

106,849.—COMBINED LOCK-NUT AND SPLICE-BAR.—Robert L. McGowan, New Brighton, assignor to himself, Charles A. Woods, Pittsburg, Pa., John Fletcher, Ravenna, Ohio, and Thomas Johnston, Allegheny, Pa.

Claim.—The combination of a bolt with convex under surface of head, and convex nuts with fish-plates, having a concave outer surface, into which said bolt-head and nut-rest, substantially as described.

106,850. — MOLDING-FLASK. — John McLaughlin, Philadelphia, Pa., assignor to himself and Jacob Apple, same place.

Claim.—The combination, substantially as described, of detachable cross-bar or bars D, and sockets E, with the cope of a molding-flask.

106,851.—TREATMENT OF GUANO AND THE MANUFACTURE OF FERTILIZERS.—Campbell Morfit, New York, N. Y.

Claim.—The method of recovering back the hydrochloric acid employed in making hydrochloric solutions of navassa (navassa) guano and other kinds of mineral phosphate of lime, by the use of crude ammonia either in the form of coal-gas liquor or as gas distilled therefrom, for neutralizing the acid, so as to produce simultaneously the salt chloride of ammonium and a semi-gelatinous precipitate of great agricultural value, to be known as Colombian phosphate of lime or fertilizer, by the suitable means and after the economical manner herein described and substantially as set forth.

106,852.—WATER-METER.—Andrew Morse, Skowhegan, Me.

Claim.—1. The combination of the weighted valve D, of a water-supply pipe, variable cam-block L, air-vessel N, water-wheel R, the escapement regulating apparatus, and the bar O of a registering apparatus, all arranged for operation substantially as specified.

2. The combination of the valve D, cam-block L, and pawl-bar O, substantially as specified.

106,853.—WASHING-MACHINE. — Russell S. Morse, Chelsea, Mass.

Claim.—The disk A, with its holes *a a*, arms *c*, and the series of bars E, combined and arranged relatively to each other, and with the shaft B, as and to operate in the tub in the manner as explained and represented, the disk and arms under such arrangement being extended horizontally beyond the series of bars E, and combined therewith, so as to revolve with them in one and the same direction, all as shown and described.

106,854.—IRON BUILDING.—Thomas W. H. Moseley, Boston, Mass.

Claim.—1. The foundations, formed of a suitable support, S, and a curb, C, and cement or concrete filling, D, surrounding the base of the posts B.

2. The compound wall-plate E F G, adapted for the purpose and constructed substantially as described.

3. The combination and arrangement of the angle-bars E, wooden plates F, connecting plates or sheets G, and roof-sheets H, substantially as represented.

4. The girts I, connected to the posts B by slot-joints *i*, to permit of motion under changes in temperature, as set forth.

106,855.—BRIDGE.—Thomas W. H. Moseley, Boston, Mass.

Claim.—The combination in one bridge-truss of the following elements: The beams or fin-plates A A, the arch *b b*, the girder or chord G, king-post H, and tension-rods I I, arranged as described, or in any equivalent manner.

106,856.—HOOD FOR PLANING-MACHINE.—Barker D. Mott, Green Island, assignor to himself and Harcourt Mott, Troy, N. Y.

Claim.—A hood or mouth-piece for planing or matching-machines, when constructed substantially in the manner and for the purpose as herein described and set forth.

106,857. — LUBRICATOR. — Charles Nelson, Brooklyn, E. D., N. Y.

Claim.—1. The non-conducting handle *f*, passing transversely through the cap *e*, and through which handle the spindle *i* of the stopper *h* passes, in combination with the oil-cup *a*, as and for the purposes specified.

2. The escape-hole *n*, introduced in the screw-cap *e* of the oil-cup *a*, for the purposes and as set forth.

106,858.—ANIMAL TRAP.—Abner Newton, Darby Creek, Ohio.

Claim.—The combination, with a suspended cage, of the loop L, lever J, and tripping devices H G, operated by a suspended bait-holder, substantially as described and represented.

106,859.—COTTON-SEED PLANTER.—Henry Nicholls, Fairfield, Ky.

Claim.—1. The combination and arrangement of the hopper D, having a slotted bottom, with the cog-wheel B, for regulating the discharge of the seed or grain, the axle *a*, rigidly fixed to and revolving with one of the carriage or driving-wheels, the toothed stirrer I, pivoted at the forward end, the carriage-wheels A and A′, the wheel H, with its adjustable bearing, and the frame of the seed-planter, and connected and operated substantially as described.

2. The combination and arrangement of the hopper D, stirrer I, cog-wheel B, axle *a*, carriage-wheels A and A′, and frame of a seed-planter, the roller J, with its bars T T hinged to the frame forward of the main axle, and the rake K, when they all are constructed and operated substantially as described.

106,860. — OSCILLATING STEAM-ENGINE.— August Nittinger, Jr., Philadelphia, Pa.

Claim.—1. The construction and arrangement of the bearings D and D′, coiled springs S and S′, nuts N and N′, plate A, and handle H, as and for the purpose herein specified.

2. In combination with the above, the steam-chest C, provided with a flange, F, uprights G and G′, and catches E, in the manner and for the purpose herein specified.

106,861. — COMBINATION SIDE-COMB.— Charles Horace Noyes, Brooklyn, N. Y.

Claim.—1. The opened head-band, constructed as described, the said article being distinguished by the two following characteristics, viz., first, it is constructed with openings to hold an ornamental material; and, second, it is constructed in such manner as to fit it for connecting two side-combs.

2. The combination of two side-combs, with a head-band, constructed with openings adapted to hold an ornamental material, as described.

106,862, antedated August 25, 1870.—AERIAL CAR.—Edward Oakes, Richmond, Ind.

Claim.—1. The combination of the balloons, sail, car, lifting and propelling-wheels, substantially as herein described.

3. The combination, with the balloons A and car

C', of a sail constructed and arranged substantially as specified.

3. Cords K and T, and the adjusting-drums J, operating-gears and holding-pawls P, for suspending the car from the sail for adjustment relatively thereto, substantially as specified.

4. The combination, with the pawls P and gear-wheel M, of the treadle S, substantially as specified.

5. The arrangement, with the vanes, of the lifting and guiding-wheels, of the spiders, and the adjusting-rods Y or levers *f*, substantially as specified.

106,863.—Apparatus for Producing Gas from Coal.—Timothy O'Meara, Brooklyn, N. Y., assignor to himself, James F. Preston, Robert M. Fryer, Dwight Marcy, and Andrew R. Fryer, assignors to United States Gas Company, Rockville, Conn.

Claim.—1. The combination of the retorts A and C, the passage B, pipes D and E, and valves F and G, substantially as and for the purpose hereinbefore set forth.

2. The process of converting the product of coal into gas, by the introduction and assistance of charcoal, or its equivalent, into the retort, substantially as and for the purposes hereinbefore set forth.

3. The combination of the two distinct processes herein described, substantially as and for the purposes hereinbefore set forth.

106,864.—Cultivator.—Benjamin F. Osborn, Nashville, Tenn., assignor to T. H. Jones & Co., same place.

Claim.—The arrangement, with respect to the beams A A and bars D E of a cultivator, of flanged vertical stud-plates F G H, grooved joint K L M, horizontal stud-plate O P, and bolts N G, to admit of lateral and vertical adjustment, as shown and described.

106,865.—Earth-Scraper.—Silas R. Owen, Stewartsville, Mo.

Claim.—The sulky earth-scoop herein described, provided with removable caster C, scoop E, with automatic gate F, levers H and *b*, spring catch K, chains *e e*, and spring stops *h h*, all constructed and arranged to operate substantially as and for the purposes herein set forth.

106,866.—Lamp-shade Holder.—Thomas Brower Peacock, Dresden, Ohio.

Claim.—An improved shade-holder, formed by the combination of the corrugated or notched wire uprights B, and clasp A, whether closed or open, with each other, substantially as herein shown and described, and for the purpose set forth.

106,867.—Operating Valve.—Abraham L. Pennock, Upper Darby, Pa.

Claim.—The flanged tube A E, valve-seat D, valve B H, stem C, and covering-plate F, combined, constructed, and relatively arranged, as and for the purpose described.

106,868. — Carpenters' Plane.—Russell Phillips, Boston, Mass.

Claim.—The herein-described carpenters' plane.

106,869.—Scale for Showing Weight and Price.—William H. Phinney, Pawtucket, R. I.

Claim.—The arrangement and combination of the spring H, or its equivalent, the slide rack-bar F, the gear E, the scale C, and the divided cylinder or cylinders D, the whole being substantially as described.

106,870.—Washing-Machine.—John Prehn, New York, N. Y.

Claim.—The plunger D, connected by the rods *d*, with a crank-shaft, C, and combined with a transverse bar, *e*, whose ends move in horizontal grooves or tracks, substantially as herein shown and described.

106,871. — Cleansing Wool.—Emil F. Richter, Berlin, Prussia.

Claim. — The process of cleaning wool by the use of amylic alcohol, substantially as described.

106,872.—Press for Stencil-Printing.—Henry W. Rudolph, Louisville, Ky.

Claim.—1. The folding-press A, with the raised center or bed H, and the guiding-stops O O O O, the paper cushions P P, and the adjustable hinges N G, with their slots E E E E and set-screws F F F F.

2. The paper stencil-plates or forms R and S, with only a portion of each letter cut in them.

106,873. — Treadle-Motion.—George B. Safford, Burlington, Vt.

Claim.—The two treadles, D D', working in opposite directions, and mounted upon the shaft E, in combination with the arm G, connecting rods C C', and the crank B of the fly-wheel, substantially as described, and for the purpose herein set forth.

106,874.—Stave-Jointer.—James F. Sayer, Macomb, N. Y.

Claim.—1. The combination, with pivoted clamp-head D and block E, of the longitudinally-slotted plank *a*, curved blocks G H I, and slotted wedges *d*, all constructed, arranged, and applied in the manner described.

2. The slotted timber *c*, movable block J, and swiveled stock L, combined with a knife, M, to adjust it in the manner described.

3. The combination of spring T and frame R with vertically-adjustable blocks S, as and for the purpose specified.

106,875, antedated August 19, 1870.—Compound or "Rough Stuff" to be Applied to Carriage-Bodies, &c.—Edward Scharnikow, Margarettville, N. Y.

Claim.—A compound for rough stuff, made of the ingredients herein set forth, and mixed together about in the proportion and in the manner above described.

106,876. — Cattle-Stanchion. — John D. Scott, Alviso, Cal.

Claim.—The levers E arranged above a stall, for operating the stanchions, and locked by their own weight in the notched or grooved timber for locking the stanchions, as set forth.

106,877. — Composition for Blacking Stoves, &c.—Thomas C. Scottron and Sidney Plummer, Springfield, Mass.

Claim.—The improved compound, composed of the ingredients herein described, substantially as and for the purposes specified.

106,878.—Liquid-Meter.—Henry C. Sergeant, Newark, N. J., assignor to William Tobin, New York, City.

Claim.—1. The combination of the independent crank-shafts F F', and gear-wheels H H' with the pistons C C', the cylinders A A', and the valves J J', operating essentially as shown and described.

2. The cylinders A A', made of tubing, and fitted at their ends within ribs or flanges *a a'*, said ribs being arranged to project from the interior of the box or case B, and secured therein by swelling out or riveting down the ends of said tubes over or on the ribs which carry them, essentially as described.

3. The arrangement of the exhaust-passage or chamber *d*, relatively to the cylinders A A' and ribs or flanges *a a'*, in combination and with the valves and their passages and inlet and outlet, substantially as herein set forth.

4. The arrangement, relatively to the bearings h h' or outside ends thereof, through which either crank-shaft passes, of the wheels H H', together with their intervening washers or packings *k*, essentially as described, and whereby leakage past the crank-shaft is prevented by lateral pressure of the fluid on the wheels, as herein set forth.

106,879.—Meat-Chopper.—Albert R. Silver, Salem, Ohio, assignor to himself and John Deming, same place.

Claim.—1. The construction of the bed or center A with annular bearing rib *a*, and a central tubular bearing B, and, also, with the legs of the machine secured directly to it, substantially as described.

2. The cross-head guide K *s s*, applied to the knife-rod g^2, and working between anti-friction wheels *k k*, substantially as described.

3. The knife-rod g^2, connected to the fly-wheel F' by means of a pitman, s^1, and prevented from lateral displacement by means of a cross-head working between wheels beneath a rotary tub, substantially as described.

4. Communicating a regular reciprocating motion to the knife-rod g^2 by means of wheels L, *k*, and F' and a pitman, g^1, in combination with means which will give an intermittent rotary motion to the meat-tub, substantially as described.

106,880.—Machine for Bending Wood.—James K. B. Solomon, Rigglesville, Pa.

Claim.—1. The screw B, combined with the slides C, to form an adjustable support for the block D, substantially as herein shown and described.

2. The arbors *d* on the band E, provided with the cams *c* to operate to operate the slides *f*, substantially as herein shown and described.

3. The rack *j*, combined with the ratchet-wheel *l* and pawl *m*, and applied to hold down the strap E, substantially as herein shown and described.

4. The arrangement of vertically-adjustable bar *j*, with respect to disk *u* and hooks *v*, as and for the purpose specified.

106,881. — Adding-Machine.—Charles E. Spear, Gardiner, Me., assignor to Eugene Humphrey, Chelsea, Mass.

Claim. — 1. The arrangement of two series of slides in a double-grooved board or bed, with slots *c c* through the same, whereby a carrying and adding-slide may be moved with a pointer simultaneously, as and for the purposes described.

2. The double-grooved board, with its openings *m m*, slots *c c*, apertures *b b*, and its arrangement of numbers between its grooves from 1 to 9, the two series of slides, with their numbers, stops, and perforations, the caps A A, with the stops *d d*, and the back board, with its stops *n n* and apertures *b b*, when constructed, combined, and operated substantially as and for the purposes described.

106,882.—Process for Manufacturing Plug Tobacco.—Lewis W. Spencer, New York, N. Y., assignor to Peter Lorillard, same place.

Claim.—The method herein described of forming plug tobacco, by first compressing the material into thin dense layers, only a little more than one-fourth, or other given proportion of the thickness, and then applying and powerfully compressing these thin layers together, to form the finished plug, the several operations being conducted substantially in the manner and with the effect herein set forth.

106,883.—Plug-tobacco Machine.—Lewis W. Spencer, New York, N. Y., assignor to Peter Lorillard, same place.

Claim.—1. The carrier G, pressing means B C, roll D, and suitable guiding means for maintaining its parallel motion as the tobacco accumulates thereon, combined and arranged for joint operation, as herein specified.

2. The within described means for applying together the tobacco from several separate rolls D, that is to say, the arrangement of a series of two or more rolls, D D, so that they shall deliver in succession upon the single carrier A, in combination with means B C, or their equivalents, for compressing and firmly uniting the layers in a plug of the proper thickness, as specified.

3. In combination with the last above, drawing off the separating material J by means of spools I, driven by friction, as specified.

4. In combination with means for pressing the tobacco into a plug, a knife reciprocating backward and forward, moving at the same rate as the tobacco when traversing outward, and raised and depressed squarely, substantially in the manner and for the purposes herein set forth.

5. In combination, the operating shaft M, and means for raising and depressing the knife, and the changeable cam M^2, with suitable changeable gearing for giving a variable traverse to vary the length of the plug, when arranged to operate in combination with means B C, for pressing and delivering plug tobacco, substantially in the manner and for the purposes herein set forth.

6. The stripper or holding-down piece R, arranged and operating as represented, relatively to the knife P and carriage O, and to the means B C, for presenting the tobacco, as specified.

7. The governing-roll K, arranged and operating relatively to the compressing-rolls B C, carrying apron G, and measuring and cutting means P Q, and their connections, as and for the purposes specified.

106,884.—Valve for Pneumatic Draw in Organ.—Adam Stein, Westfield, Mass.

Claim.—In a pneumatic draw for organs, a segmental valve, having a recess, A', therein, pivoted at *i*, in combination with the ports D D', and K, constructed and operating substantially as described.

106,885.—Combined Stocking-Supporter and Skeleton Waist.—Augusta M. Stiger, Brooklyn, N. Y.

Claim.—As an improved article of manufacture, the combined stocking-supporter and skeleton waist herein described, consisting of the waist-strap A, shoulder-straps B, breast and back-straps C and D, side-straps E G, front straps F, and elastic straps H and I, all connected and arranged as specified.

106,886, antedated August 18, 1870.—Cornish Engine.—John Storer, Peekskill, N. Y.

Claim.—1. The tappet-rod *c*, lever *b*, valve E, and stop-lever *g*, with the cataract-cylinder D, and cross-head F of the main cylinder, substantially as shown and described.

2. The rod *t*, carrying the tappets *u*, and the slotted bracket *s*, in combination with the lever *q*, rock-shaft *p*, friction-clutch *o*, and valve-stem of the auxiliary cylinder F', and with the cross-head of the main cylinder, substantially as set forth.

3. The mechanism herein described for cutting off the steam at any part of the stroke, consisting of a trip-dog secured in the cross-head or any other part attached to the piston-rod, and of a device for releasing said trip-dog at the required point, substantially as herein set forth.

4. The depressions a^1 a^2, openings b^1 b^2, and valves c^1 c^2, in the piston of a steam-cylinder, constructed substantially as set forth.

106,887.—Stock-Car.—Zadok Street, Salem, Ohio.

Claim.—The arrangement, in a cattle-car, of the frame C and stanchions E D, in combination with the separating posts G H, located so as to be at or near the shoulders and hips of the animals, as and for the purposes set forth.

106,888. — Stock-Car.—Zadok Street, Salem, Ohio.

Claim.—1. The partitions D, suspended from a

movable transverse beam, and adapted to swing upward out of the way of the cattle, or for the reception of freight, as the case may be.

4. The partition M, adapted to divide the car longitudinally for the use of the smaller kinds of stock.

106,889.—Combined Furnace and Tea-Kettle.—Cebra L. Taylor and George C. Setchell, Greenville, Conn.

Claim.—1. The combined tea-kettle and furnace, as constructed, with the furnace A, arranged within, and extending both above and below the body t of the tea-kettle, and having air-openings, e, and a smoke-discharge flue, g, disposed in manner as set forth.

2. The combined tea-kettle and furnace, as constructed with the furnace A, the tea-kettle body t, the extension e, and the escape-flue g, arranged as explained.

3. The combination and arrangement of the perforated cover, as described, with the tea-kettle and furnace, made and arranged as set forth.

106,890.—Curtain-Fixture. — Charles M. Thielcke, Chicago, Ill.

Claim.—The guiding-wire H, and the spiral spring F, provided with the nail or stud, having a removable head, G, in combination with the curtain, its rollers, and sticks, and the operating cord, as herein shown and described, for the purpose specified.

106,891.—Harvester. —John S. Truxel, Greensburg, Pa.

Claim.—The combination of the vibrating tongue, the vibrating coupling-frame, the crank-shaft vibrating with the coupling-frame, the shoe vibrating around the crank-shaft, the lifting-lever pivoted on the tongue, the lifting-cord attached to the shoe outside of its pivot, the curved stop B^3 on the coupling-frame, and the stop b' on the tongue, all these parts being constructed, arranged, and operating as and for the purpose described.

106,892. — Compressed-Air Forge-Hammer.—Charles Vogel, New York, N. Y.

Claim.—1. The arrangement of the valve U, ports T and V, and check-valve W, with the chamber J and valve-chest R, as and for the purpose specified.

2. The arrangement, with the chamber J and piston H, of the cam K, valve g, and spring f, as shown and described, for the purpose specified.

3. The combination of the rod s, connecting-rod a, crank-shaft, valve-rod d, valve u, spring f, and valve g, substantially as shown and described, for the purpose specified.

106,893.—Hay and Cotton-Press.—Marshall Wallace, Little Rock, Arkansas.

Claim.—The combination of the standard D and pivoted levers E, provided with sliding pawls F, studs P, and hinged plates o, and operated by levers H, and springs I, all substantially as and for the purpose herein set forth.

106,894. — Miter-Machine. — Daniel B. Ware, Athens, Mich.

Claim.—1. The turn-table A, secured to the bed D, in connection with the catch b and lever C, substantially as herein shown and described.

2. The vertical guides g, arranged in the slotted standards F, and provided with the pins f, for holding the slotted saw G, substantially as herein shown and described.

103,895, antedated August 24, 1870.—Extensible Gas-Pendant.—George Warner, Des Moines, Iowa.

Claim.—The combination with the frame B C D E, the guides b b and c, and socket A, the lowering and raising device composed of the slide F and tube G, the tubes K and M, with their pivot joints I, L, and N connecting with the socket A by the joint I, and by the joint N with the slide F, tube G, and center H.

Also, the device for holding the slide at various heights, composed of the ratch J on the frame B C D E, the pawl P, and shaft Q, on slide F, the lever Q, with rod R, socket d, and catch-pin e, and slotted bar S, attached to tube G, all arranged to operate in the manner substantially as and for the purpose set forth.

106,896.—Seeding-Plow and Planter.—James B. Watt and John C. Watt, Greene county, Ohio.

Claim.—1. Center-rail sections E, in combination with posts B, substantially as shown and described, for the purpose hereinbefore set forth.

2. Strap D, in combination with the transverse bar C, levers o, guides o', and shields H, substantially as shown and described, for the purpose specified.

3. The combination of the backward inclined posts B, frame a c, vertical levers b b, b' b', gauge-bars G g, plow-beams F, levers o, guides o', fenders or shields H, and strap D, substantially as shown and described, for the purpose specified.

4. Shifting foot-levers f, in combination with rear rail I', loops s' s', plow-beams F, and coupling-bars s s, substantially as shown and described, for the purpose specified.

5. The adjustable parts t, on planting plow-beam F', substantially as shown and described, for the purpose hereinbefore set forth.

6. Rods d', in combination with droppers d, lever w', foot-piece p, and hand-lever V, substantially as shown and described, for the purpose specified.

7. Cross-beam L, markers u', arms u, and blocks m, substantially as shown and described, for the purpose specified.

106,897. — Knife and Fork-Cleaner.—Herrman Wegner and Friedrich Wegner, West Troy, N. Y.

Claim.—A knife and fork-cleaning machine, consisting of the brushes A and A', crowded by the springs s s', the pulleys p p, bands o o, brushes q q', cog-wheels r r', crank f, the drum b with slot-holes n, the fork-holder t with its opening x, and all in combination and substantially in the manner set forth, for the purposes described.

106,898.—Corn-Planter. — Lewis West, Georgetown, Ky.

Claim.—1. The arrangement of the pivoted third wheel D, independent hounds F F, frame A, and stirrup-bolt E, as and for the purpose specified.

2. The combination of the guide-plates O, pivoted plate K, lever L, rods N, and slotted arms P, with the conductor spouts J, and dropping bar H, substantially as herein shown and described, and for the purpose set forth.

3. The combination of the pivoted bars R, pivoted bent bars S, shaft T, and lever U, with each other, and with the conductor spouts J, opening plows Q, and frame A of the planter, substantially as herein shown and described, and for the purpose set forth.

4. The combination of the cam V, catch-pin lever W, and plate X, or equivalent, with the shaft T, frame A, and tongue-hounds F, or other support, rigidly connected with the pivoted third wheel standard, substantially as herein shown and described, and for the purposes set forth.

106,899. — Steam-Engine and Pump.—George Westinghouse, Jr., Pittsburg, Pa.

Claim.—1. A pair of rocking-valves, e e, on a common stem, each valve having two or more recesses, e^1 e^2, such recesses alternating with each other, and opening on opposite directions on the same valve, substantially as and for the purposes described.

2. A valve-seat, e, having ports e^1, which open into an annular steam-passage, e^2, in combination with the valve e of the previous claim.

3. A piston-head and stem, made hollow for the insertion therein of a valve-stem, which latter is to be

actuated therein and thereby, substantially as described.

4. A steam-valve, g, having a stem, g^1, twisted at such points, that entering a slit in a hollow piston-head and stem, it shall, by the motion of such head and stem, be rotated or rocked, substantially as described.

5. A groove f^1, in the lower face of the disk-valve g, in combination with the ports e, e^1, and e^3, arranged substantially as described.

6. A central auxiliary exhaust, o, arranged at or near the middle of that part of a steam-cylinder through which the piston-head operates, for the purpose of arresting the stroke of the piston-head, substantially as set forth.

7. A stuffing-nut, c c, formed in two or more parts, so constructed together and arranged with reference to the stuffing-box as automatically to bear with equal pressure on the opposite sides of the stem, substantially as described.

8. The subject matter of the last claim, in combination with a piston-stem, a^2, of other than cylindrical form.

9. The air-inlet flues B^2 b^2 and air-outlet flues b^3 B^3, in connection with the air-ports m m^1 and valves v v^1 v^2 v^3, arranged substantially as described.

10. In combination with the valve-stem c^3 and valves c, the adjusting set-screws l l^3, arranged substantially as described.

11. The arrangement of the auxiliary steam-cylinder E, with its axial line at right angles to the axial line of the main cylinder, substantially as set forth.

106,900.—Clamp.—Levi Wharton, Salem, Ohio.

Claim.—The combination of the bar, having a V-shaped edge on one side, a ratchet on the other side, a nut for the clamp-screw, and the clamping-screw, with the S-shaped link, slotted at one end to embrace the bar, grooved on one side correspondingly with the V-shaped edge of the bar, and having a clamping-head on the other end, all these parts being constructed to operate in combination as hereinbefore set forth.

106,901.—Heel-Rounding Machine.—John C. White, Auburn, N. Y.

Claim.—1. A rotary carriage, W, having clutch-sleeve thereon, sliding clutch x, broad pinion K, and spur J, all combined with the shifting frame Y Z and cam m, to rotate the knife intermittently, as set forth.

2. A cam, m', and spring retracted sliding frame q o r, combined with the lever N to operate the sliding stop and presser simultaneously, and at the times specified.

3. A revolving carriage, W, combined with a sliding stop, f, on the vibrating lever N, for the purpose of stopping the knife and removing the pressure on blank simultaneously, so that said blank may be removed therefrom in the manner described.

106,902.—Brush.—John L. Whiting, Boston, Mass.

Claim.—The improved brush, constructed as described and represented, viz., with the expander made separate from the handle, and arranged in a socket therein, or in its head, or in both head and handle, or head, and driven with its larger end outward, into the bristles in a direction toward the handle, the whole being essentially as shown in the accompanying drawing.

106,903, antedated August 18, 1870.—Harvester.—Daniel D. Whitker, New York, N. Y., assignor to James McGhee for one-half of the invention.

Claim.—The combination of the endless-chain cutters C, finger-bar F, pinions I and J, operating-pinion K, wheel D, stirrup G, and levers K and L, arranged and operating as described.

106,904.—Pump.—Martin Wilcox, Sacramento, Cal.

Claim.—1. The arrangement of the passage s, with valves K and m, in combination with the piston S, the cylinder P, tube A, and valves V and U, operating as and for purposes substantially as set forth.

2. The cylinder P, in combination with piston S, passage s, valves K and m, V and U, tube A, and filter G, arranged and operating substantially as described.

3. The filter G, in combination with the tube A, cylinder P, pipe B, piston S, and valves V and U, arranged and operating substantially as represented.

106,905.—Medical Compound.—William M. Wilson and Dallas S. Denton, Polk county, Mo.

Claim.—The manufacture or preparation of a compound which is denominated timber-oil, of the ingredients, in the proportions, and for the purposes set forth.

106,906.—Folding Table.—Albert Windeck, Peoria, Ill.

Claim.—The combination of the connected legs B B, their hinge-rod b, and brace d, folding-legs C C, separately pivoted or hinged to the brace d, the stops or fastenings D D, or their equivalents, and the hinged or jointed table-top A A, substantially as and for the purposes described.

106,907.—Apparatus for Treating Club-Feet.—George B. Wood, Chicago, Ill.

Claim.—1. The straps A, acting as levers, when pivoted to the standards G of frame J, and made to project below the pivot, so as to prevent the anterior part of the foot from dropping down, as set forth.

2. The combination of the straps A, frame J G R, and adjusting-screws O, for adjusting the anterior part of the foot, as set forth.

3. The shoe-plate K, pivoted to the frame J G R, and adjusted by means of a screw, N, or its equivalent, for bringing the plantar surface of the foot near its anterior part into position, substantially as set forth.

4. The combination of the plate K, frame J G R, straps A, and strap M, arranged to treat club-feet, as set forth.

106,908. — Harrow. — Stephen Woodard and Albert Woodard, Saratoga, Ind.

Claim.—1. In combination with a harrow, the bar G, spiral spring L, sliding box H, arm I, and lever O, with the joints C, E E, and F, by means of which the harrow is made self-adjusting, substantially as and for the purposes described.

2. In combination with the hinged side bars A of a harrow, the bars D, a central bar, G, a spring, L, arm I, and lever O, substantially as shown and described.

106,909. — Blacking-Box and Brush.—Charles E. Yager, Hudson, N. Y.

Claim.—The construction and combination of the box B, with its device for attaching the cover C, brush or cushion A, and the interior arrangement, with sponge b, &c., as shown and described.

106,910.—Wood-Pavement.—Henry J. Alvord, Washington, D. C., assignor to himself and Charles E. Bishop, same place.

Claim.—A pavement, composed of the wooden blocks A set on end, having strips of suitable thickness nailed thereto, the whole resting on boards of the length and width of the blocks and strips combined, the foundation-boards being beveled and grooved, as shown, and the spaces between the blocks and above the strips being filled with concrete or any suitable filling, all as shown and described.

106,911, antedated August 25, 1870.—Cement.—Daniel Arndt, Cleveland, Ohio.

Claim.—A cement, composed of curd, slaked lime, and vinegar, as herein set forth.

106,912.—MACHINE FOR PACKING FLOUR.—Benjamin F. Bashor, Carter's Depot, Tenn.

Claim.—1. The packing-cylinder B with its grates *b b*, in combination with the upright shaft D and its packing-rollers C C, arranged and operating as herein shown and for the purpose described.

2. The rocking beam H, gear-wheel I, pawl A, and weight *h'*, in combination with the sliding bolt G, arranged and operating in the manner and for the purpose herein set forth and described.

3. The chair L, provided with the rock-seats *m m*, constructed, arranged, and operating in connection with the packing-cylinder B, in the manner and for purpose herein set forth and described.

106,913.—TRACK-LIFTER.—Joseph M. Batchelor, Foxcroft, Me.

Claim.—The arrangement of the lever B, rods E E, grapple F, and the friction-brake or pawl C, or their equivalents, in connection with the self-adjusting oscillating ratchet-fulcrum and bearer-bar A, or its equivalent, operating substantially as and for the purpose set forth.

106,914.—HOISTING APPARATUS.—Michael K. Carpenter, Cincinnati, Ohio.

Claim.—The sliding pulley-block D C, stationary pulleys A, and driving-screw H, combined and operating substantially in the manner and for the purpose specified.

106,915.—TREATING ACID TAR FROM COAL.—Gervais Chevrier, Paris, France.

Claim.—The treatment of acid tars and oils with chloride of sodium or chloride of ammonium, whereby the residuum from distillation of coal-oils may be purified, and the acids utilized in the manner substantially as and for the purpose herein specified.

106,916.—HAY-LOADER.—David Clagett, Hagerstown, Md.

Claim.—1. The arrangement of the rakes K, operated by the crank-shaft I, in relation to the elevating-rakes E^2, as shown and described.

2. The combination, with the above-described parts, of the inclined trough D^1, arranged to operate as shown and described.

106,917.—AUTOMATIC GATE.—James B. Cottom, Dayton, Ohio.

Claim.—The combination of the adjustable hinge X X', with the pivot-shaft N, provided with the elongated crank O, substantially as and for the purpose described.

106,918, antedated August 19, 1870.—FERTILIZER.—Benjamin R. Croasdale, Philadelphia, Pa.

Claim.—A fertiliser prepared from hoofs and horns, substantially as set forth.

106,919.—HOLLOW AUGER.—Austin F. Cushman, Hartford, Conn.

Claim.—The cutters G, secured, as described, to the cutter-slides C, by means of the screw-pivots *e*, locking-screws *f*, and slots *g*, and arranged for operation in pairs or sets on opposite sides of the center of the spindle A, substantially as specified.

106,920.—FASTENING FOR GARMENTS.—Joseph Edward Dallon, Brooklyn, N. Y.

Claim.—The flap A, hinged to the one plate or strap B, attached to one side or edge of the garment or other article it is applied to, and provided with a bent tongue, *b*, on its inner side or face, in combination with the perforated plate or strap B', attached to the other side or edge of said garment or other article, substantially as specified.

106,921. — CASE-STAND.—Alexander T. De Puy, New York, N. Y., assignor to R. Hoe & Co., same place.

Claim.—1. The combination and arrangement, with the cabinet, of the galley-chamber B, provided with inclined shelves to hold the galleys *a*, substantially in the manner and for the purpose herein described and specified.

2. The combination and arrangement, with the cases, of the galley-rest A, constructed substantially as herein described and set forth.

106,922.—DOVETAILING-MACHINE.—Joseph Dill, Grand Rapids, Mich.

Claim.—The arrangement of the circular saws D E F, when constructed and operating as herein shown and described.

106,923.—LIQUID SLATING FOR FORMING BLACK-BOARDS, &c.—William W. Dudley, Centreville, Ind.

Claim.—The manufacture or preparation of a compound, which is denominated liquid slating, of the ingredients in substantially the proportions, and for the purposes set forth.

106,924.—APPARATUS FOR THE MANUFACTURE OF ELASTIC FABRICS.—Charles A. Ensign, Naugatuck, Conn.

Claim.—1. The feeding-clamps *d*, combined with the slotted bar E, the said bar arranged to hold the fabric, and serve as a guide for the knife, substantially as set forth.

2. In combination with the slotted bar E and a feeding device for the fabric, the elastic bar *f*, substantially in the manner and for the purpose set forth.

3. In combination with the slotted bar E and a feeding device for the fabric, the blade *n*, arranged so as to double or hem the fabric, substantially in the manner described.

106,925.—COMBINED SPOOL AND NEEDLE-THREADER.—George Penrice Farmer, Philadelphia, Pa.

Claim.—1. A spool, with which is combined a needle-threading device, substantially in the manner described.

2. A needle-threading device, arranged for attachment to or forming a part of a spool, substantially as specified.

106,926. — STUMP-EXTRACTOR. — Enoch Farnsworth, Sabbath Rest, Pa.

Claim.—A stump-extractor, consisting of the parts A A A', bars *a a*, rod *d*, boss D, screw C, and pulley B, when said parts are arranged to operate substantially as shown and described, and for the purpose set forth.

109,927.—APPARATUS FOR SATURATING FELLIES WITH OIL.—Joshua R. Faus, Espy, Pa.

Claim.—A circular metal trough, having the sectional covers C C and the legs B B, as and for the purposes specified.

106,928.—SASH-FASTENER.—Henry Fickel, Dayton, Ohio, assignor to himself and David G. Brown, same place.

Claim.—The sash-fastener herein described, consisting of the slotted plate C and spring D, which latter is bent near its loose end to form a transverse bar, extending through the slot in the plate for the purpose of engaging the notched window-sash, and terminates in a projecting knob by which to operate it, substantially as shown and set forth.

106,929.—CHURN.—Moses Gascon, Malvern, Ohio,

Claim.—The arrangement of the gallows-frame A C, gears F and G, fly-wheel H, pitman L, wrist *f*, staff *e*, jack *b*, and dasher E, all constructed as herein shown and described.

106,930.—MACHINE FOR TONGUING AND GROOVING.—Peter Geiser and L. P. Thompson, Waynesborough, Pa.; said Thompson assigns to said Geiser.

Claim.—1. The feed-board C, when constructed with a groove, *c*, in combination with the roller E and guide-board H, substantially as set forth.

2. The arrangement of the arm E', and extension-brace F F', for regulating the pressure of the roller E, substantially as set forth.

106,931.—MACHINE FOR ROUNDING FELLIES FOR WHEELS.—Henry A. Gore, Goshen, Ind.

Claim.—1. The cutters D D, shaped and made with chisel-teeth *e*, as herein described, and arranged upon their mandrel C, with their concave faces opposite each other, for the purpose of allowing the cutters *e* to extend over the sides of the material to be shaped, and act jointly to cut a half round, as herein shown and described.

2. The spring detent I and spring gauge J, arranged and operating in connection with the opening in the felly, so as to gauge and determine, without pattern, the flush shoulders around said openings for the spokes, substantially as herein described.

3. The combination of the oval concave cutters with the spring detent I and gauge J, substantially as herein described.

4. The combination and arrangement of the fixed gauges F and G, with the movable spring detent I and gauge J, and the rounding or shaping-saws, substantially as herein described.

5. The spring detent I and spring gauge J, arranged so as to enter the holes in the rim or felly, and thus gauge the length of the rounded sections as well as the flush shoulders around the spoke-holes, as herein shown and described.

106,932.—HEAD-BLOCK.—Henry H. Gridley, Auburn, N. Y.

Claim.—1. Passing the shaft B of the lower dog longitudinally through the upright portion A' of the head-block, substantially as and for the purpose described.

2. The lifting apparatus E D F, substantially as and for the purpose described.

106,933.—TACKLE-BLOCK.—Joseph F. Harcourt, Cincinnati, Ohio.

Claim.—The provision of the eyes *d d*, bolt and nut P P', and eye-ended clevis H A, combined substantially in the manner and for the purpose specified.

106,934. — CORSET-SPRING. — Thomas A. Hares, New York, N. Y., assignor to himself and Cornelious Van Ness, same place.

Claim.—A double-spring corset-steel, when said springs are secured together by a slot and tongue, with or without rivets, substantially as described, and for the purpose set forth.

106,935.—CHURN-DASHER. — John Harris, Palestine, Ill.

Claim.—The arrangement of the ball B and seats *b b'* in the tubular rod A, provided with the funnel-shaped perforated dasher *a*, as shown and described.

106,936. — CAR-COUPLING. — Charles M. Heag, Nassau, N. Y.

Claim.—1. The coupling-bolt B, constructed as shown and described, in combination with the spring H, for the purposes herein specified.

2. The combination of the draw-bar A, coupling-bolt B, sliding bolt E, and the springs G and H, as and for the purposes set forth.

106,937. — SASH AND BLIND-MACHINE. — Randolph D. Hobart, Binghamton, N. Y., assignor to himself and J. V. Simmons, same place.

Claim.—1. The combination of the vibrating lever I, and cutter J, chisel K, and rotatory cutter L, substantially as and for the purpose herein set forth.

2. The arrangement of the vibrating lever I, and cutter J, chisel K, and rotatory cutter L, frame A, face-plate B, main shaft and pulleys M, N, and O, crank-pin C, pitman D, vertical shaft E, provided with cross-head F, connecting-pin G, table P, and guide-plate S, all being constructed substantially as herein described, for the purpose set forth.

106,938.—DIE FOR FORMING EYELETS.—Esek Tallman and Nicholas G. Hoxsie, Providence, R. I., administrators of David K. Hoxsie, deceased, assignors to Waterbury Brass Company and American Flask and Cap Company, Waterbury, Conn.

Claim.—1. The compound tool herein described, consisting of the punch J, with the annular cutting-shoulder T, and annular projection *m*, and the forming-punch N, for the purpose set forth.

2. The die M, provided with the cutting-orifice *e*, the swell or cushion *c*, and the forming-die *f*, as and for the purpose herein described.

106,939.—MACHINE FOR CUTTING OUT THE ENDS OF EYELETS.—Esek Tallman and Nicholas G. Hoxsie, Providence, R. I., administrators of David K. Hoxsie, deceased, assignors to Waterbury Brass Company and American Flask and Cap Company, Waterbury, Conn.

Claim.—1. The combination of the endless perforated belt or apron A, the brush or brushes D, and the grinding-wheel or wheels M N, substantially as and for the purpose specified.

2. The mode herein described of making eyelets by first converting the metal into detached bell-shaped pieces or caps, and afterward opening the end and flattening the flange of the caps, to convert them into eyelets, in the manner and by means substantially as specified.

106,940. — RAILROAD-CAR VENTILATOR. — William H. Hunt, Bolton, Conn.

Claim.—An ogee strip or molding placed opposite the opening at the bottom of a car-window, to check the inflowing current, and give it an upward and rotating motion, substantially as and for the purpose set forth.

Also, the flanges C C, in combination with the window-groove or frame, to enable me to make a portable ventilator for cars.

Also, the combination of the two narrow strips of the sheet metal, together with the flanges C C, as and for the purpose set forth.

106,941.—BUREAU.—Cheney Kilburn, Philadelphia, Pa., assignor to Kilburn & Gates, same place.

Claim.—1. The combination of a top, A, of a bureau, looking-glass standards or frame, box or boxes *a*, and thumb-screws *c*.

2. The combination of a detachable top of a bureau, strip A connected to or forming part of the bureau, box or boxes *a*, thumb-screws *c*, and looking-glass standards or frame.

106,942. — FASTENING FOR POLICEMEN'S BADGES. — Thomas Kirkpatrick, New York, N. Y.

Claim.—The plate B, with its holes *c c* and catch D, in combination with the hooks *a a b* on the back of the badge, the whole arranged to operate substantially as and for the purpose herein specified.

106,943. — SEWING-MACHINE. — Jenny L. Lake, Brooklyn, N. Y.

Claim.—The sliding thread-guide and needle-closer F, with its spring *d*, constructed and arranged for operation in connection with the needle H, substantially as specified.

106,944.—VAPOR-BATH APPARATUS.—Ursula L. Leete, Owego, N. Y.

Claim.—1. A vapor-bath apparatus, in which the steam or heated liquor is received in a receptacle at the bottom and ascends through a perforated cover at the top of said receptacle, and through an adjustable perforated bed-plate above said cover, substantially as described.

2. In combination with the elements enumerated in the first clause, the jointed head-piece D', by means of which the head of the patient may be raised or depressed, and kept beyond the influence of the vapor, substantially as described.

3. In combination with the perforated bed-plate C, the springs *s*, cover B, and receptacle A, when all are combined to operate substantially as set forth and described.

106,945.—MACHINE FOR CUTTING AND BINDING GRAIN.—Sylvanus D. Locke, Janesville, Wis.

Claim.—1. The jointed pole I, capstan P, cable Q, jointed lifting-lever O, and frame A A, the parts being constructed and arranged substantially as described, so as to permit a horizontal and vertical adjustment thereof, as set forth.

2. The plate S, attached to the jointed pole I, and arranged as described, with reference to the rear girt A of the main frame, so as to prevent the twisting of the pole, while permitting a horizontal and vertical adjustment of the parts, substantially as set forth.

3. The arrangement of the apron W, having the extending slats a^1 on the under side, and the short slats or washers on the upper side thereof, with the fingers y' of the binding-platform Y, substantially as and for the purpose described.

4. The combination of an elevating-apron, binding-platform, and rotating binding-arm, when arranged in relation to each other, substantially as described, so that the continuous stream of grain flowing from the apron upon the binding-platform is separated and gathered into bundles by the binding-arm, substantially as set forth.

5. The combination of the rotating binding-arm m' with the compressing-arm n', substantially as described.

6. The combination of the pin m^4, on the arm m', with the cam-head n'', on the arm n', whereby the binding-arms are held together while the band is secured, and afterward opened to allow the bundle to be discharged, substantially as described.

7. The combination of the rotating binding-arm m', having thereon the segmental pinion m^3 and pin m^4, with the reciprocating arm n', having thereon the segmental gear n^2, and cam-head n'', for the purpose of carrying the binding material around the bundle, substantially as described.

8. The combination of a rotary compressing-arm i', with a reciprocating arm n', whereby the loose grain is gathered and compressed ready for the binding material, substantially as described.

9. The twisting pinion 2, having a central bearing, 6, when the teeth by which the pinion is revolved are made to twist the binding-wire, which is inserted between them on opposite sides of the pinion, substantially as described.

10. The rotary part of the wire-holder and cutter, constructed and operating substantially as described.

11. The fixed part of the wire-holder and cutter, when provided with cutting-edge $3'$, holding-face 3^x, openings 3^1 3^2, for receiving the ends of the band around the bundle, and the groove $3'''$, substantially as and for the purpose described.

12. The combination of the twisting pinion 2, with the circular groove $3'''$ in the fixed part of the wire-holder and cutter, whereby the ends of the binding-wire are held in the twisting-pinion until the same are twisted together, substantially as described.

13. The combination of the rotating part of the wire-holder and cutter, constructed as described, with the lug a', whereby the requisite movement of the former is obtained, substantially as described.

14. The horn I' on the rotating arm m', arranged with reference to pinion 2, as set forth, whereby the binding-wire is inserted and held in the rear teeth of the pinion, substantially as described.

15. The shield A, on the rotating binding-arm, for guiding the wire over the projecting portions of the binding arms, substantially as described.

16. The rack-box Y', when provided with the lug s', rack s, and opposite flange r, for holding the binding-head in the rack and against the lug, substantially as described.

17. The arrangement of the friction-roll 9, and flange r, of the rack-box Y', whereby the twisting, holding, and cutting mechanism are held in proper position as they pass through the rack-box, substantially as described.

18. The shield 1, attached to the arm m', when used to shield the various parts of the binding-head as it passes through the stream of flowing grain coming from the apron, substantially as described.

106,946. — COOKING-STOVE. — William B. Mackenzie, Cincinnati, Ohio.

Claim.—The combination and arrangement of the central opening D, side openings D' D', double-winged dampers J J', with reference to the opening H, and central diving-flue B, divided flue F F E, flues G G', and ascending side flues C C', substantially as set forth.

106,947.—SHIFTING CARRIAGE-TOP.—Orson E. Mallory, Batavia, N. Y.

Claim.—1. A movable wagon or carriage-top sliding horizontally over the seat, when made detachable, substantially in the manner herein described.

2. The combination of the slotted loops *b d*, and square portions *h j* on the standards C and slide-bar D respectively, with the bent standards I and lugs *f*, substantially as and for the purpose described.

106,948.—HARVESTER-CUTTER.—Henry W. Mason, Hagerstown, Md.

Claim.—The cutter-bar A, provided with the grooves *c* and rail *d*, in combination with the teeth *a*, provided with the tenons *b*, substantially in the manner and for the purpose specified.

106,949. — REVOLVING GRAIN-SCREEN.—Francis Mills, Mount Vernon, Ind.

Claim.—The combination in the grain-screen B herein described, of the hinged hopper J and lug N, with the sprocket-wheel O and shaft C, all constructed and arranged as shown and described, for the purposes set forth.

106,950. — FEEDER FOR GRAIN-DRILL.—Michael Lewis Nickels, Dunlapsville, Ind., assignor to himself and Thomas Nickels, same place.

Claim.—The combination of the circumferential grooved wheels E and wheels D, provided with the diagonal wings *a a*, both mounted upon shafts, and operating under the hopper A of a grain-drill, substantially as set forth.

106,951. — MACHINE FOR MAKING WIRE BELLS.—Russell W. Norton, New Haven, Conn.

Claim.—Jointly, the construction, as herein described, of the recesses in the faces of the heads C and E, the arrangement of said heads with their faces in parallel planes, and with their axes in line with each other, and the combination therewith of mechanism to both rotate and reciprocate the head E, substantially as and for the purpose set forth.

106,952.—PACKAGE FOR TEA AND COFFEE.—Henry Odenkirchen, New Haven, Conn.

Claim.—As an article of manufacture, the herein-described package, formed from two pieces, the said pieces cut and bent into form and secured together in the manner described, by projections formed upon one part to lap onto the other part, substantially as herein set forth.

106,953.—RAILWAY-CAR SEAT.—John M. O'Neill, Clinton, Iowa.

Claim.—1. The curved and slotted bars J J, in combination with the arms T T, carrying the seat G, and with pins or bolts H H, passing through the slots in the bars J J, and fitting into notches at either end of said slots, to guide the movements of the seat in turning, and secure the same in position, substantially as herein set forth.

2. Double pivot-bearings, formed on the upper ends of the posts *a a*, in combination with the pivot-pins F F, sustaining the seat G, and with the curved and notched slots in the curved bars J J of the arms T T, all operating substantially in the manner and for the purpose herein set forth.

106,954.—BED-BOTTOM.—Otis S. Osgood, Burlington, Iowa.

Claim.—The arrangement of the slats A, slotted at each end, cross-bars B, springs C, slotted at each end, and secured to the slotted bars D and the bars B, all as set forth.

106,955, antedated August 25, 1870.—LATCH FOR GATES, &c—William Patton, Towanda, Pa.

Claim.—In a fastening for a door or gate that opens and closes in both directions, the arrangement of the pivoted lever F, and pivoted latches C D, suspended thereto by links *g g*, so that while the latches can be raised from either end of the lever, either latch can rise or drop independent of the lever, when struck by the bolt or keeper on the door or gate, as described and represented.

106,956.—CULTIVATOR.—Reuben L. Payne, Raceville, Va.

Claim.—1. The arrangement of the interchangeable scrapers A, with harrows E and center piece H, and with the right and left-hand teeth B, substantially in the manner and for the purposes set forth.

2. The teeth B, constructed substantially as set forth.

106,957.—WASHING-MACHINE. — Lowell L. Peck, Portland, Oregon.

Claim.—The beater B, rod *c*, and upright rack or partition K, in combination with the corrugated wash-board E, hinged cover C, and box or tub X X, the whole constructed and arranged substantially as and for the purpose set forth.

106,958. — WATER-WHEEL. — William S. Place, Charleston, Me.

Claim.—1. The curved buckets K, consisting of the two wings *k*, at right angles with each other, in combination with the shroudings *m n*, all constructed, arranged, and operated as set forth.

2. The case A, having its interior angles fitted up to a tapered point, for the purpose of guiding the current to the center and point of the bucket, as specified.

106,959. — LUBRICATOR. — Hugh Pringle, Green Point, N. Y.

Claim.—1. The distributing-disk C, provided with a cavity, *c*, in combination with the cup A, distributing-chamber B, and channels *a n*, substantially as shown and described.

2. The ratchet-lever D, in combination with the disk C, cup A, distributing-chamber B, and channels *a n*, substantially as set forth.

106,960.—SAW-MILL.—Chester Purdy, Bedford, Ohio.

Claim.—1. The slotted guard or shield F, constructed as described and placed between the table and wheel, so as to have an inclined groove on either side of the saw, substantially as and for the purposes herein set forth.

2. The curved and slotted guard or shield G, constructed as described and placed between the saw and the wheel, substantially as and for the purpose herein set forth.

3. The combination of the two guards or shields F and G, constructed substantially as described, and for the purposes set forth.

4. The combination of the table C, pivot H, circular bar E, slotted bar I, and screw bolt *b*, all arranged substantially as and for the purposes herein set forth.

106,961. — GRAIN-BIN. — Fitch Raymond, Cleveland, Ohio.

Claim.—1. The combination of the perforated tube or shield C, air-pipe *c'*, angular bracket or plate *c*, with the grain-bin A B, in the manner and for the purpose substantially as described.

2. The combination of the perforated tube or shield D, having conical perforated top *c* and opening *d*, with the grain-bin A B, in the manner and for the purpose substantially as described.

106,962.—WATER-WHEEL.—John R. Richardson, Newcastle, Pa.

Claim.—In combination with the wheel A, casing B, and outside rim E, the gates or wickets C C arranged and operating substantially as and for the purposes herein set forth.

106,963. — STAMP-CANCELER. — George B. Rogers, Boston, Mass.

Claim.—The revolving cutter or punch, with disks C B A held together on a common axis, and provided with teeth or projections and washers *d e*, as arranged for perforating written, printed, or embossed instruments, to prevent their being forged or altered, substantially as described.

Also, the elastic bed K, in combination with the revolving cutter or punch G, substantially as and for the purpose set forth.

106,964.—APPARATUS FOR PITCHING BARRELS.—Louis Schulze, Louisville, Ky.

Claim.—1. The bayonet-lock *c d*, for the purpose of uniting the parts B and C of the retort, substantially as described.

2. The beveled door G, with its opening H, covered with isinglass, substantially as and for the purpose set forth.

3. The combination and arrangement of tube *e*, water-jacket *f*, reservoir *g*, and tube h, substantially as and for the purpose described.

4. The revolving tube *e*, having its bent end provided with slots *i* and openings *j*, and operated by handle *k*, substantially as and for the purpose described.

5. The combination and arrangement of table I, frame J, and treadle K, for the purpose of adjusting the barrel to the apparatus, substantially as described.

106,965. — STEAM-GENERATOR. — Thomas Sharp and Charles S. S. Griffing, Salem, Ohio.

Claim.—1. The combination of the chambers A B, flues or tubes C, and bolts E, when so arranged that, by removing any one of the bolts from a flue or tube, an unobstructed passage will be left for the passage of a scraper through the same, substantially as and for the purpose set forth.

2. The combination of the chambers A and B, having the enlarged apertures in their outer surfaces, the concavo-convex washers D, the tubes C, and bolts E, substantially as and for the purpose set forth.

106,966.—PLOW.—Justin Malancon Smith, Haddam, Conn.

Claim.—1. The colter G, constructed as described, with teeth *a a*, and grooves *i i*, and attached to

a plow, substantially in the manner and for the purposes herein set forth.

2. The arrangement, with the mold-board B, of the wing H, point D with teeth *e e*, and the colter G with teeth *a a* and grooves *i i*, all substantially as set forth.

106,967.—SKY-LIGHT.—Samuel P. Snead, Louisville, Ky.

Claim.—The frame A, with the inner flanges E, shouldered flanges B C, provided with escape-openings D D and the gutter F, and a glass, H, secured on the shoulder C, all as herein described, for the purpose specified.

106,968.—APPARATUS FOR HEMMING, &c., FOR SEWING-MACHINES.—William B. Snyder, Bridgeport, Conn., assignor to the Wheeler & Wilson Manufacturing Company, same place.

Claim.—The adjustable guiding-trough, in combination with a hemmer, slotted substantially as described, and for the purpose set forth.

106,969.—AXLE FOR VEHICLES.—Albert J. Straight, Richland Centre, Wis.

Claim.—1. In combination with the axle A and hub B, the circular disk C, provided with the rollers *d d*, which act against a circular washer, D, all arranged on the inner end of the hub and axle, to operate as set forth.

2. In combination with the hub B and axle A, the employment upon the inner surface of the nut E of the rollers *e e*, which act against the circular washer *D'*, all arranged upon the outer end of the hub and axle, to operate as set forth.

3. In combination with the axle A, hub B, disk C, with rollers *d*, and nut E with rollers *e*, the disk or disks *a a* with rollers *b b*, all constructed, arranged, and operating substantially as set forth.

106,970.—DESK.—Charles Wharton Titus, Philadelphia, Pa.

Claim.—1. A desk in which a curved front, F, and board, H, are so connected and arranged in respect to each other that a sliding motion shall be imparted to the board when the said curved front is turned upon its pivots.

2. The curved front F, when hung to the desk by segmental plates or arms *a*, as described.

3. In combination with the curved front and sliding board H, the within-described devices for connecting the same, consisting of a lever, I, and arms or links, *e* and *f*.

4. The spring bars J J, with their hooks or catches *h'*, in combination with the curved front F and with the catches *h* of the drawers, for locking and unlocking the latter simultaneously, as set forth.

106,971.—BURNER FOR LOCOMOTIVE HEAD-LIGHTS.—Aaron C. Vaughan, Philadelphia, Pa., assignor to James M. Sellers and A. K. McClure, same place.

Claim.—1. The shield B, provided with the series of perforations E and F, and the shield C, provided with the perforations G, each in relation to the other, as described and set forth.

2. The combination of the detachable shields B and C with the wick-tube A, as specified.

3. The combination of the shield B, shield C, and deflector D, as specified.

106,972.—FEED-WATER HEATER.—Gardner Waters, Cincinnati, Ohio.

Claim.—1. The guard D, open at both ends, and surrounding, as shown, a pipe, C, for the admission of steam, and the mouth of a supply-pipe, F.

2. A pipe or entrance, C, for the admission of steam, a water supply-pipe, E, and guard D, when combined for the purpose described.

106,973.—CONDENSER.—Friedrich Wegmann, Naples, Italy.

Claim.—1. The condensing receptacles A, C, and D, in combination with the vessel B, arranged between and communicating with the said receptacles, as described.

2. The compartment or casing *i*, secured to the top of the vessel B, when its lower open end extends downward to a point beneath the water level in the said vessel.

3. The projections or guides *s*, arranged at about the water level within the vessel B, for the purpose specified.

4. The arrangement, substantially as herein described, in respect to each other and to the vessel B, of the receptacles A, C, D, and E.

106,974.—PUMP-VALVE.—George M. Weinman, Columbus, Ohio.

Claim.—1. The valve-seat B, joined to the casing A by the ground-joint *b* or packing, and provided with the guide *d* and a port corresponding with the port *a* of the casing, substantially as and for the purposes herein set forth.

2. The combination of the casing A with port *a*, valve-seat B, with joint *b* and guide *d*, and the valves C D, constructed and arranged to operate substantially as and for the purposes herein set forth.

106,975.—STRAW AND FEED-CUTTER.—August Werner, Buffalo, N. Y.

Claim.—1. The pitman-rods, pivoted to the projecting ends of the knife or cutter, and connected with the crank-shaft below the knife, so as to leave a free space in front of the cutter, substantially as described.

2. The arrangement and combination of two or more cams, of different pitch, (constructed as shown,) with the feed-rollers, for the purpose described.

3. The feed-rollers, constructed as described, with the journals of one roller mounted on springs and arranged within curved slots, in combination with the pinion which operates said roller and moves with it as the rollers are clogged or clear.

4. The two-part pawl, constructed as shown, in combination with the operating-cam and the ratchet-wheel of the feed-rollers, substantially as described.

106,976.—CORN-PLANTER.—Lucius Winston, Pontiac, Ill.

Claim.—In combination with the pocket-wheels G G of a corn-planter, the rising and falling markers E, sliding spring K, tapering cam-roller F, and reversely-tapering drive-roller H, when constructed and arranged to operate as and for the purposes herein shown and described.

106,977.—COATING TACKS AND NAILS WITH COPPER.—Howell W. Wright, Taunton, Mass., assignor to Albert Field Tack Company.

Claim.—A tack or nail, formed of iron, and afterward electroplated with copper, substantially as and for the purpose described.

106,978.—MACHINE FOR ELONGATING AND SPREADING SAW-TEETH.—John Orm, Paducah, Ky.

Claim.—1. The revolving eccentric saw-swage C *c*, for elongating, swaging, and shaping the teeth of saws, in the manner shown.

2. The revolving eccentric C *c*, in combination with the plates A, back piece B, holding-jaws *b b*, and clamping device S, when constructed in the manner and for the purpose shown.

106,979.—HORSE-POWER APPARATUS.—Abraham Gaar, Richmond, Ind.

Claim.—1. The metal cross-beams A^1 in a horse-power, when mounted and operated as set forth.

2. The diagonal iron brace-rod *a*, in a horse-power frame, when mounted and operated on four wheels, as set forth.

3. The clamp, shoe, and rod, for clamping and holding the wheels of a mounted power when in operation, as described.

4. The combination and arrangement of the rods F and F^3, the shoes F^2, clamps F^4, and nuts F^5, or their equivalents, when used in connection with the mounted horse-power, substantially as and for the purpose set forth.

5. The diagonal iron brace-rod *a*, when used in combination with the two rods *c c*, attached to each end of the bridge-piece, and passing through each side of the frame, when mounted and operated as herein specified.

6. The master-pinions and bevel-wheels, in combination with the loose stud-pins, when mounted and operated as herein set forth.

106,980.—SPRING FOR BEDS.—Charles Rich, Poughkeepsie, N. Y., assignor to himself and David S. Mallory, same place.

Claim.—1. The construction and arrangement of the collars or bearings B B B upon the upper and lower coils of the spiral springs, in the manner and for the purpose herein described.

2. The construction and arrangement of the rods D D, having formed upon their ends the sleeves C C, in combination with the coiled spring A A, when combined in the manner and for the purpose herein described.

REISSUES.

4,109.—SPOKE-MACHINE.—R. H. Boynton, Oshkosh, Wis.—Patent No. 52,130, dated January 23, 1866.

Claim.—1. The endless feed-bed *y*, in combination with laterally-acting rotating cutter-heads *u u*, substantially as shown and described, and for the purposes herein specified.

2. The cam-pattern S, levers *m m''*, stirrup *n*, link *i*, bent arms *t t*, and spring 6, in combination with cutter-heads *u u*, substantially as shown and described, and for the purposes herein specified.

3. The movable connecting stirrup *n* and levers *m m''*, in combination with bent arms *t t*, cam-pattern S, and cutter-heads *u u*, substantially as shown and described, and for the purposes herein specified.

4,110.—Division A.—PUMP.—John Brokenshire, for himself, Kingston, Canada, and George Goble and J. D. Macfarlane, assignees of John Brokenshire, Oswego, N. Y.—Patent No. 80,905, dated August 11, 1868; reissue No. 3,280, dated February 2, 1869.

Claim.—1. In ship's lift-pumps, the chamber E, arranged between the working barrels, and communicating directly therewith at the bottom, and also in communication with the suction-pipe, and provided with a plug or valve, H, immediately over said pipe, which permits the sounding of the vessel in the manner described.

2. The combination of the central chamber E, barrels A A, plungers B B, having valves, the stationary valves C C, partition G, discharge-chamber M, and a suction-pipe, the chamber E, suction-pipe, and barrels being in direct communication, substantially as described.

4,111.—Division B.—PUMP.—John Brokenshire, for himself, Kingston, Canada, and George Goble and J. D. Macfarlane, assignees of John Brokenshire, Oswego, N. Y.—Patent No. 80,905, dated August 11, 1868; reissue No. 3,280, dated February 2, 1869.

Claim.—In a double-acting ship's lift-pump, having a chamber between and in direct communication with the barrels, the attachment of the induction-hose or pipe at an orifice made in the side of the pump, above deck, and communicating with the central chamber, whereby the point of attachment is rendered always accessible from the deck, for attaching and detaching the pipe or hose, and controlling the suction, for the purpose stated.

4,112.—PARING-KNIFE.—John Jacob LeBeau, Cincinnati, Ohio.—Patent No. 56,235, dated July 10, 1866.

Claim.—1. The combination of the handle A B and blade E, connected and operating substantially as described, and for the purpose specified.

2. The combination of the handle A B and adjustable blade E *e e'* F F^1, as and for the purpose specified.

3. The combination of the gange-piece D with the handle A B and knife-blade E, substantially as described and for the purpose specified.

4. The knife E, when formed with a scoop, G or G^1, as and for the purpose specified.

4,113.—ANIMAL-TRAP.—John A. Lee, Chattanooga, Tenn., assignor, through mesne assignments, to Robert D. Mann.—Patent No. 83,642, dated November 3, 1868.

Claim.—1. Two casings with openings, one stationary, the other rotated progressively, in combination with stops and latches, operated substantially as specified, for catching the animal and then resetting the trap as the animal passes into a second receiver or prison, substantially as set forth.

2. The gate *f*, swinging in the passage *g* between the trap and the receiver or prison, and acting to disconnect the stop of the trap so as to allow the trap to reset itself automatically, substantially as set forth.

3. The lever *i*, connected with the hooks *l* and platform *m*, in combination with the rotating casing *c* and stops 3, substantially as and for the purposes set forth.

4. The rotating casing *c* and stops 3, in combination with a latch or lever to arrest the movement of the casing, and a hook, *l*, or platform *m*, to be acted upon by the animal for liberating the latch or lever, substantially as set forth.

DESIGNS.

4,305.—CARPET PATTERN.—Jonathan Crabtree, Philadelphia, Pa., assignor to James Bromley & Brothers, same place.

Claim.—The design for a carpet pattern, substantially as described, and illustrated in and by the accompanying drawings.

4,306.—CARRIAGE.—Amzi S. Dodd, New York, N. Y.

Claim.—The design for a carriage, substantially as shown and described, for the purposes set forth.

4,307.—CLOCK-CASE.—Robert Dunn, Brooklyn, N. Y., assignor to "Waterbury Clock Company," Waterbury, Conn.

Claim.—The design for a clock-case, as shown.

4,308.—CLOCK-CASE.—Robert Dunn, Brooklyn, N. Y., assignor to "Waterbury Clock Company," Waterbury, Conn.

Claim.—The design for a clock-case, as shown.

4,309.—CLOCK-CASE.—Robert Dunn, Brooklyn, N. Y., assignor to "Waterbury Clock Company," Waterbury, Conn.

Claim.—The design for a clock-case, as shown.

4,310.—COAT AND HAT-HOOK.—William R. Goodrich, Utica, N. Y.

Claim.—1. The design for a coat or hat-hook, with recessed panel or panels, leaving the edges of the hooks around the panel or panels raised, substantially as described and represented.

2. The design for the lower or coat-hook, substantially as shown, viz., as made up of pieces united at an obtuse angle with each other.

4,311. — CARPET PATTERN.—Alfred Heald, Philadelphia, Pa., assignor to McCallum, Crease & Sloan, same place.

Claim.—The design for a carpet pattern, substantially as described, and as illustrated in and by the accompanying drawing.

4,312. — CARPET PATTERN.—Alfred Heald, Philadelphia, Pa., assignor to McCallum, Crease & Sloan, same place.

Claim.—The design for a carpet pattern, substantially as described and as illustrated in and by the accompanying drawing.

4,313. — CARPET PATTERN.—Alfred Heald, Philadelphia, Pa., assignor to McCallum, Crease & Sloan, same place.

Claim.—The design for a carpet pattern, substantially as described, and as illustrated in and by the accompanying drawing.

4,314. — CARPET PATTERN.—Alfred Heald, Philadelphia, Pa., assignor to McCallum, Crease & Sloan, same place.

Claim.—The design for a carpet pattern, substantially as described, and as illustrated in and by the accompanying drawing.

4,315.—CARPET PATTERN.—William Kerr, Philadelphia, Pa., assignor to James Bromley & Brothers, same place.

Claim.—The design for a carpet pattern, substantially as described and illustrated in and by the accompanying drawings.

4,316.—BOX FOR THE TOP OF BUREAUS.—Cheney Kilburn, Philadelphia, Pa., assignor to Kilburn & Gates, same place.

Claim.—The design for boxes for the tops of bureaus, substantially as described, and as represented in and by the accompanying drawing.

4,317.—HANDLE OF SPOONS, FORKS, &c.—John Polhamus, New York, N. Y.

Claim.—The design of the configuration and ornamentation of the handle, as shown and described.

4,318.—CUSPADORE.—Samuel Roebuck and John Roebuck, Brooklyn, N. Y.

Claim.—The design for cuspadores, substantially as herein set forth.

4,319.—PLATE AND DOOR OF A COOKING-STOVE.—Isaac Applin Sheppard, Philadelphia, Pa.

Claim.—The design for the plates and doors of a cook-stove, substantially as described and as illustrated in and by the accompanying drawing.

4,320.—PORTABLE RANGE.—David Stuart and Lewis Bridge, Philadelphia, Pa., assignors to Stuart, Peterson & Co., same place.

Claim.—A range, of the shape and configuration, substantially as described and illustrated in and by the accompanying drawings.

4,321.—FRAME OF AN EMERY GRINDER.—Abijah Wallace, Stroudsburg, Pa., assignor to the Tanite Company, same place.

Claim.—The design and configuration of the frame of an emery grinder, as herein shown and described.

4,322. — CARRIAGE-BOOT.—Edward Wells, New Haven, Conn., assignor to Wells, Crittenden & Co., same place.

Claim.—The design for carriage-boot, substantially as herein described and shown.

4,323.—CARRIAGE-DOOR HANDLE.—Daniel W. Thomas, New York, N. Y., assignor to Henry Brewster, John W. Button, and James Lawrence, same place.

Claim.—The design for carriage-door handles, substantially as herein set forth.

EXTENSIONS.

Extended by an Act of Congress, Approved July 14, 1870.

JOHN RACHELDER, of Boston, Mass.—Letters Patent No. 6,439, dated May 8, 1849; reissue No. 617, dated November 2, 1858; extended seven years; again reissued, No. 1,543, dated September 22, 1863, and again reissued, No. 2,125, dated December 12, 1865.

"Improvement in Sewing-Machines."

Claim.—1. In combination, the supporting-bed, which supports the material horizontally in the machine, and is provided with a throat for the passage of the needle and the constant yielding pressure-holder, each having the functions and mode of operation hereinbefore specified.

2. In combination, the supporting-bed, the constant yielding pressure-holder, and the reciprocating eye-pointed needle, each having the functions and mode of operation hereinbefore specified.

3. In combination, the supporting-bed, the constant yielding pressure-holder, and the reciprocating needle-carrier, each having the functions and mode of operation hereinbefore specified.

4. In combination, the supporting-bed, the yielding pressure-holder, the reciprocating eye, pointed needle, and the perpetual feed, which moves the material horizontally under and past the needle while it is supported by the supporting-bed, each having the functions and mode of operation hereinbefore specified.

5. In combination, the supporting-bed, the yielding pressure-holder, the reciprocating needle-carrier, and the perpetual feed, which moves the material horizontally upon and over the supporting-bed, each having the functions and mode of operation hereinbefore specified.

6. In combination, the holding surface which supports the material immediately about the needle, horizontally under the thrust of the needle, and the perpetual feed which moves the material, horizontally under and past the needle, upon and over such holding surface, each having the functions and mode of operation hereinbefore specified.

7. In combination, the holding-surface, which supports the material immediately about the needle, horizontally under the thrust of the needle, the perpetual feed which moves the material horizontally under and past the needle, upon and over such holding surface, and the receiving plate, which receives the material from the feed during the operation of the machine in sewing a seam, each having the functions and mode of operation hereinbefore specified.

8. In combination, the horizontally holding surface, immediately about the needle, the perpetual feed, the receiving-plate, and the yielding pressure holder, each having the functions and mode of operation hereinbefore specified.

9. In combination, the horizontally-holding surface, immediately about the needle, the perpetual feed, and the yielding pressure-holder, each having the functions and mode of operation hereinbefore specified.

10. In combination, the horizontally-holding surface, immediately about the needle, the perpetual feed, the yielding pressure-holder, and a reciprocating eye-pointed needle, each having the functions and mode of operation hereinbefore specified.

11. In combination, the horizontally holding-surface, immediately about the needle, the perpetual feed, the yielding pressure-holder, and the reciprocating needle-carrier, each having the functions and mode of operation hereinbefore specified.

12. In combination, the receiving-plate, and the perpetual feed, each having the functions and mode of operation hereinbefore specified.

13. In combination, the horizontally holding-surface, immediately about the needle, the perpetual feed, and reciprocating needle-carrier, each having the functions and mode of operation hereinbefore specified.

14. In combination, the perpetual feed, the receiving-plate, and the yielding pressure-holder, each having the functions and mode of operation hereinbefore specified.

RICHARD M. HOE, of New York, N. Y.—Letters Patent No. 15,501, dated August 5, 1856; reissue No. 3,893, dated March 22, 1870.

"Improvement in Printing-Presses."

Claim.—1. The arrangement of the rules *c'*, provided with feet *a* fitted to grooves in the bed, and having plates or keys *b* fitted over the ledges *b'*, for holding columns of type in place upon the bed of the press, substantially as described.

2. In combination with the rules *c'*, constructed substantially as described, the wedge-strips B C D E, whether operated by screws, coins, or equivalent devices, substantially as described and specified.

3. Constructing each series of wedges or inclines B C D E in a single piece, substantially as described and specified.

4. The combination with a type-revolving bed of the above-described method of securing type thereon, substantially as described and specified.

A. D. WAYMOTH, of Fitchburg, Mass.—Letters Patent No. 15,446, dated July 29, 1856.

"Improved Machine for Manufacturing Spools."

Claim.—Combining the rounding, severing, and body-cutters, with a carriage made to slide between the chuck and boring-carriage, and in line with the latter, and so as to be moved toward the chuck by the boring-carriage, while it is moved toward the work, in the manner hereinbefore set forth.

Also, arranging the body and severing-cutters, and combining them with the cutter-carriage by means of a turning-holder, K, as above specified, whereby the said cutters may be made to operate and be put in operation by means substantially as hereinbefore explained.

WILLIAM S. CARR, of New York, N. Y.—Letters Patent No. 15,474, dated August 5, 1856; reissue No. 978, dated June 12, 1860.

"Improvement in Water-Closets."

Claim.—1. A cylindrical plunger or plug 3, substantially as specified, acting to close the water passage, at the time the water-closet seat is depressed, irrespective of the weight on the seat, as distinguished from a valve which requires compression to a given point before closing, as set forth.

2. The valve *g*, cylinder 3, and openings *e*, in combination with the seat *e*, and acting in the manner and for the purposes set forth.

3. In a valve for water-closets, a cup-leather for controlling the motion of said valve in closing gradually, substantially as specified, said cup-leather moving freely in one direction and closing against the containing cylinder in the other direction, and the leakage of water in said cylinder allowing the movement of said cup-leather, as set forth.

4. The lever *p*, acted on by the seat and simultaneously controlling the movements of the pan *r*, and valve or cock for admitting water, as specified.

5. The combination of the lever *p*, latch *t*, and valve-spindle *g h*, as described, for regulating the movements of the pan *r*, as set forth.

6. The valve for admitting water to the closet, in combination with the trunk or hopper, when said valve is connected directly to the said hopper, for the purposes and as set forth.

7. In a water-closet, in which the cock is attached to the hopper, a hollow arm, *o*, or opening into said hopper, substantially as specified, for conveying leakage from said cock into the hopper, as set forth.

HEZEKIAH BRADFORD, of Reading, Pa.—Letters Patent No. 15,544, dated August 12, 1856.

"Improved Ore-Washer."

Claim.—The employment of a hollow perforated cylinder, rotating on a horizontal or nearly horizontal axis, provided with numerous pins or teeth on the inner periphery pointing toward the axis, combined with a feeding aperture and hopper at one end and lifting scoops and delivery aperture at the other end, and with a water-trough or vessel, within which the lower part of the said cylinder revolves, the said trough or vessel being provided with a delivery aperture, controlled by a valve, all substantially as and for the purposes specified.

DAVID MUNSON, of Indianapolis, Ind.—Letters Patent No. 15,491, dated August 5, 1856.

"Improvement in Lightning-Rods."

Claim.—Constructing a tubular lightning-rod with spiral flanges, one of which is left open or divided its entire length, for the purpose of admitting the electric current to the inner surface of the rod, to diminish its intensity and mechanical effect, substantially as herein described.

LEVI AVERILL, of Elmira, N. Y.—Letters Patent No. 15,549, dated August 19, 1856.

"Improvement in Lime-Kilns."

Claim.—The construction and arrangement of the kiln with small separate branches situated outside or around a single furnace, from which the heat is conducted through converging passages to several points of their peripheries, substantially in the manner and for the purposes herein set forth.

J. HERVA JONES, of Rockford, Ill.—Letters Patent No. 15,610, dated August 26, 1856.

"Improvement in Hand Seed-Planter."

Claim.—The use of a hinge or joint, B, or its equivalent, for connecting two single hand-planters at their tops, for the purpose of allowing them, like a pair of compasses, to expand and contract in their operation, substantially in the manner and for the purpose set forth.

ISSUE OF SEPTEMBER 6.

PATENTS.

106,981.—CORN-PLANTER.—Michael Ackerman, Steamboat Rock, Iowa.

Claim.—1. The arrangement of the rod *g*, ratchet-wheel *m*, bars *h k*, and cross-bar H, for raising the plunger, substantially as herein set forth.

2. Bar *e*, rods *f f*, dropper-wheels I I, and shaft H, arranged with rods *g d* and plungers *a a*, substantially as and for the purpose set forth.

106,982.—GANG-PLOW.—James H. Andrews, Benicia, Cal.

Claim.—The combination, with the levers E, connected to the plow-frame by links G, of the levers H, provided with friction-rollers *e*, and held by a rack, J, or other equivalent device, substantially as and for the purpose herein set forth.

106,983.—Egg-Carrier.—James R. Asher, Oskaloosa, Iowa, assignor to himself and Robert I. Robeson, same place.

Claim.—The box for packing eggs, when composed of separate sections A B, secured between a top and bottom piece by the rods E, and provided with pockets H and canvas J, constructed and arranged substantially as specified and shown.

106,984.—Detachable Boot and Shoe-Heel. — Charles W. Bailey, Boston, Mass.

Claim.—The clamping-plates a and a, when constructed with the radial inclined catches c c and f f, and arranged to operate substantially as and for the purposes specified.

106,985.—Fire-Place.—Thomas W. Baird, Bowling Green, Ky.

Claim.—A fire-place constructed of converging planes, substantially as herein shown and described.

106,986, antedated August 25, 1870.—Mop. Charles L. W. Baker, Hartford, Conn.

Claim.—Its construction from hollow or braided material or fabric d, block a, cord or wire c, as an article of manufacture, as shown and set forth.

106,987. — Fountain Pen. — Gustav A. Becker, Seymour, Conn.

Claim.—1. The arrangement, with respect to tube A, of apertured cap C c', perforated plug B, and threaded perforated piston I, as and for the purpose described.

2. The arrangement of rubber tubes G H and spring F, with respect to the supply-pipe D, as and for the purpose described.

106,988, antedated August 25, 1870. — Stave-Jointer. — John B. Bell, Pittsburg, Pa.

Claim.—The plate E, substantially as and for the purpose described.

106,989.—Wood Pavement.—Albert Betteley, Boston, Mass.

Claim.—A pavement in which the blocks composing it have their peripheries formed as screw-threads, and are interlocked, substantially as and for the purposes set forth.

106,990.—Street-Lamp.—Emil Boesch, San Francisco, Cal.

Claim.—1. The perforated reflector A, constructed as described, and placed in the bottom of a lamp, substantially as and for the purposes above described.

2. The standards d, formed of two pieces of sheet metal, so as to leave the grooves or channels for receiving the glass, substantially as above specified.

3. The arched tapering roofs B over each side, so constructed as to form channels f, substantially as and for the purpose described.

4. The adjustable reflector G, having as many concave faces as there are sides to the lamp, and provided with the flange or sleeve A, in combination with the springs k, substantially as and for the purpose above described.

5. The box I, provided with the slot w and spring u, substantially as and for the purpose above described.

6. The above-described street-lamp, in which are combined the reflectors A and G, chimneys D and E, roof B, with its channels f, and the cowls F and F', all constructed and arranged substantially as specified

106,991.—Top for Sheet-Metal Cans.—James Britton, Williamsburg, N. Y., assignor to himself and Garrett Brower, same place.

Claim.—1. The cover A, crowded under the central piece B, for supporting the same, substantially as herein shown and described.

2. The herein-described method of crowding the inner part of the cover A under the central piece B, or vice versa, by compressing a projecting part or molding, substantially as specified.

106,992.—Rolling-Mill.—William Brown and David Brown, Smithwick, England.

Claim.—The reaching combination of two pairs of grooved rolls, arranged, the one pair in advance of the other, and operating in conjunction in the manner herein before described.

106,993.—Pulley Mechanism. — William H. [illegible], Bangor, Me.

Claim.—The combination and arrangement of the movable carrier D, [illegible] m m, and the weights G, and [illegible] f g, with the driving and driven [illegible] A B and their endless band F, the whole being applied together and to a frame or table substantially in manner and so as to operate as described.

Also, the arrangement and combination of the arm E and its guides p p q with the endless belt or band F, the wheels A B, the carrier D, the guide-wheels m m, and the weight G and its wheels f g, the whole being applied to a table or frame, so as to operate essentially as described.

Also, the combination of the counterbalance weight s with the carrier D, the driving and driven wheels A B, the endless band F, the guide-wheels m m, and the weight G, arranged and applied together as and for the purpose, and to operate as hereinbefore explained.

106,994, antedated August 26, 1870. — Grain-Separator. — John D. Brunner and Edwin R. J. Ueberroth, Doylestown, Pa.

Claim.—In the grain-separator herein described, the improved arrangement of parts, consisting of the hinged box B, with its graduating screens E G H, spouts E' G' H', opening I, sliding door J, and board K, and the square operating shaft C, when said parts are constructed and arranged as herein shown and described.

106,995.—Flood-Bridge.—Thomas Alfred Bryan, Baltimore, Md.

Claim.—1. The floats C C, arranged beneath the bridge B, within spaces inclosed by side and end walls A A, and a guard, G, substantially as described.

2. The aprons d applied at the ends of the bridge, between the float C and the end walls, and arranged to rise and descend with the ends of the bridge, substantially as described.

3. The passages S, in combination with the hinged guards G and a bridge which will float, substantially as described.

4. The construction of the floats C, with rounded or inclined ends and sides, substantially as and for the purposes explained.

5. A bridge which, during ordinary tides, will be substantially supported upon solid masonry, and which is so constructed with floats that, during an extraordinary rise of water, will be buoyed up, and thus sustained above the level of the water, substantially as described.

106,996.—Fruit-Ladder.—Corodon S. Cannon and Clinton D. Cannon, Chicago, Ill.

Claim.—1. The fruit-bridge or latter, consisting of the triangular frame, provided with the [illegible] C, cross-bars B, and adjustable hooked levers D, substantially as described, for the purpose specified.

2. The fruit-bridge or ladder, constructed as described, for the purpose specified.

106,997.—Bedstead-Fastening.—William H. Carter, Candor, N. Y.

Claim.—The plate A, shaped as described, and fastened to the inner side of the rail, combined with a straight plate, B, having vertical ribs b b and transverse ribs c c, and fastened to the inner side of the bed-post, as and for the purpose described.

106,998.—Whip-Socket.—Edwin Chamberlin, Lansingburg, assignor to himself and John O. Marriam, Troy, N. Y.

Claim.—A whip-socket, and the jaws to attach the same to the carriage, formed in two pieces a and a', secured together and to the carriage by the same screws or rivets, substantially as shown and described.

106,999.—Adding-Machine.—Gilbert W. Chapin, Brooklyn, N. Y.

Claim.—The loose scalloped finger-wheels D E, notched as set forth, and a shaft, C, having spring washers F fastened to the same, combined with a ratchet-wheel, H, pawls G J, and spring cam L, all relatively arranged, as and for the purpose described.

107,000, antedated August 26, 1870.—Mode of Forming Umbrella-Handles from Plastic Material. — Levi Chapman, New York, N. Y.

Claim.—The handle made of plastic material around a lining of paper or other flexible material, substantially as specified.

107,001.—Button-hole Sewing-Machine. William Chicken, Chelsea, Mass.

Claim.—An adjustable cam or cam-piece, g, in combination with the slide m, reciprocating head s, and needle-bar e, substantially as described.

Also, the pins $s s^2$, in combination with the stitch spacing mechanism, and arranged to automatically effect the change of feed movement of the cloth-plate actuating-ring, when the cloth-plate brings the eye of the button-hole and the slit into position to be worked, substantially as described.

Also, the feed-regulating pin s or s^2, made adjustable in position with relation to the friction feed-lever, substantially as described.

107,002. — Method of Hanging Grindstones.—Henry M. Church, Brunswick, Ohio.

Claim.—The collars E F, when provided with continuous concentric ribs, G, in combination with the stone A, provided with concentric grooves C and shaft D, substantially as described, and for the purpose set forth.

107,003.—Fruit-jar Cover.—Thomas A. Clark and Henry C. Mascroft, Worcester, Mass.

Claim. — A fruit-jar cover provided with the valve E, spring F, and cylinder D, arranged for operation as herein shown and described.

107,004.—Harvester-Rake.—Daniel Clow, Janesville, Wis.

Claim.—The construction and arrangement of the bevel-wheel A, having recesses h, and hinge projections g, and the rake-arm d, having recesses f f and chamber n, as described.

107,005, antedated August 24, 1870.—Device for Lubricating, Cooling, and Washing Vertical Hammer-Shafts or Stamps.—Z. E. Coffin, Newton, Mass.

Claim.—An annular or horizontal groove in a cylindrical or other-shaped bearing or guide, in which moves vertically a shaft, said groove having a channel or channels for the influx of water under a pressure, the shaft moving loose in its bearing or guide below the said groove or grooves, so as to permit the descent of water sufficient to wash downward all debris and to cool and lubricate the shaft.

107,006.—Wire for Wire Goods.—William F. Collier, Worcester, Mass.

Claim.—A wire for making wire goods, made as herein described, and shown in the accompanying drawing.

107,007. — Water-Wheel. — Jacob M. Cook, Lake Village, N. H., assignor of one-half his right to Benjamin J. Cole, same place.

Claim.—The cover a of the water-wheel case, constructed with a large central aperture, covered by a divided removable cap or dome, B, substantially as and for the purpose herein specified.

Also, the ring-gates E E, with their adjustable valve-plates A A, the guides G G, and chutes K K, constructed, arranged, and combined, substantially as and for the purpose herein set forth.

Also, the two or more sets of gates E E and E' E', one above the other, to cover the same chutes K K, in combination with buckets p p, divided into compartments, substantially as and for the purpose herein specified.

107,008, antedated July 15, 1870.—Railway Car-Coupling.—Rensselear Cowell, Cleveland, Ohio.

Claim.—1. The opening a', when made at an angle to the passage a, as shown, to receive the coupling-pin and prevent its working up, as set forth.

2. The combination and arrangement of the draw-head A, inclined passages a and a', pin c, shoulder c', cap e, rod or chain g, and the pivoted pallet d, all constructed and operating as herein described.

107,009, antedated August 20, 1870.—Button-hole Cutter.—David H. Cunningham, Waltham, Mass.

Claim.—1. The elliptical base-plate g, revolving around and directly under the circular cutter d, as described.

2. The T-headed screw k, with the piston and coiled spring, in combination with the T-headed groove and gauge-points on the under side of the base-plate, as set forth.

3. The gauge-plate s, in combination with the projections r r r r, for the purpose as fully set forth and described.

107,010.—Machine for Covering Cord.—Thomas N. Dale, Jr., and George Kraink, Paterson, N. J.

Claim.—The combination, with the stand or table B and spindles C, of the guide-plate H, twisting or covering-head, and the traversing spindle Q, all constructed and operating as specified.

107,011. — Maxillary Compress.—Cornelius E. Davis, St. Helena, Cal.

Claim.—A maxillary compress, consisting of one or more sections, A B, retained in place by clasps f, or equivalent device, substantially as and for the purpose above described.

107,012.—Bee-Hive.—Enos Davis, Noblesville, Ind.

Claim.—The hive A, door B, support D, frames E E and G G, slides I I, alighting-board K, glass trap L, and tubes d e, all constructed and arranged substantially as and for the purposes herein set forth.

107,013.—Wardrobe, Bedstead, and Bureau.—John Rolph Davis and Frederick Rominger, Bloomfield, Iowa.

Claim.—The combination of the frame A, drawers B B, bed C D, hinges a a, pins d d, hooks e e, legs E E, hooks f f, and curtain G, all constructed and arranged substantially as shown and described.

107,014.—PADDLE-WHEEL.—David De Haven, New Orleans, La.

Claim.—The outer circle or tier of braces B B, hinged in the manner substantially as shown, and for the purposes set forth.

107,015.—COOKING-TABLE.—Eliza D. Dodge, Worcester, Mass.

Claim.—A cooking-table provided with one or more side drawers D, and cover or covers to the same, substantially as and for the purposes set forth.

107,016.—IMPLEMENT FOR CUTTING THREAD. Fredrick Egge and Robert W. Churchill, Bridgeport, Conn.

Claim.—1. The levers a and d, hinge-joints c and e, cutters 1 and 2, spring 4, constructed as described and shown.

2. A ring-shaped lever cutting implement, operated by the finger, as specified and shown.

107,017.—BRICK-MACHINE.—Josiah S. Elliott, Boston, Mass., assignor to Union Stone Company.

Claim.—1. The knife R, attached to the carrier, to shave the brick after the final blow has been given by the ram, that the bricks may be of uniform size.

2. The block t, substantially as described, to prevent the hollow plunger from clogging.

3. The device, constructed and operating as described, to give a reciprocating movement to the carrier and knife, consisting of the sleeve k, the connecting-rods o o', the levers m m', and cam E, acting as described.

4. The device for raising the platform H, consisting of the rods h h, the arms e e, the shaft J, lever L, pivoted as shown, and cam D, all acting as described.

107,018.—HAND-RAKE.—Minot Ellis, Greenfield, Mass.

Claim.—The herein described hand-rake, as a new article of manufacture.

107,019.—FEEDING MECHANISM FOR SEWING-MACHINE. — George A. Fairfield, Hartford, Conn.

Claim.—As a means for feeding, the combination of levers F and I and their operative cams, spring N, and the adjustable slotted disk, or its equivalent, substantially as shown and described.

Also, the longitudinal shaft M, its slotted disk and adjusting spring handle, when arranged in connection with the bed of the machine, for adjusting and holding in position the disk, as shown and described.

Also, as a means for reversing, graduating, and equalizing the feed, the combination with the feeding-levers F and I and their cams, of the shaft M and its slotted disk, lever O, and graduated, notched plate P, substantially as shown and described.

107,020.—FENCE. — Edward Fales, Glenwood, Mo.

Claim.—The combination of the pickets A A, wires B B, with loops a a, braces C C, and stakes D D, all constructed and arranged substantially as and for the purposes herein set forth.

107,021. — BURGLAR-PROOF SAFE. — John Farrel, New York, N. Y.

Claim.—The application to the body of the safe of an exterior, consisting of a series of continuous metal bands, occupying the top, bottom, and sides of the safe, in combination with the solid frames of angle iron or steel at the front and back, substantially as and for the purposes set forth.

107,022.—FILLING FOR FIRE-PROOF SAFE.—John Farrel, New York, N. Y.

Claim.—The improved fire-proof safe-filling, specified, prepared, and used substantially as described.

107,023.—MECHANISM FOR OPENING AND CLOSING SAFE-DOORS.—John Farrel, New York, N. Y.

Claim.—1. The combination, with a safe-door, of hinges E G E G, constructed to operate substantially as described, and for the purpose specified.

2. In combination with a door and hinges, substantially such as described, the worm H and leaf I, for the purposes set forth.

107,024. — MEDICAL COMPOUND FOR THE CURE OF FEVER AND AGUE.—Michele Ferro, Iuka, Miss.

Claim.—The above-described medical compound, substantially as and for the purposes specified.

107,025.—CORNER-SUPPORT FOR CARRIAGE-BOXES AND SEATS.— Willet Fisher, Marathon, N. Y.

Claim.—The combination of the groove f, the cut g, the screws h, the strap or plate e, the folded corners d of the band c, with said band c and the corners of carriage-boxes and seats, and all other boxes and structures having corners, substantially as and for the purpose hereinbefore set forth.

107,026. — LAMP-SHADE HOLDER. — John Foller, Washington, D. C.

Claim.—1. The hinged band b, composed of the part f, provided with a forked end having crooked prongs i i, part g, having a notched end, h, and part e, arranged relatively one to the other, substantially as described, for the purpose hereinbefore specified.

2. The wires d and d', forming the frame r, and pintles for the hinges c c, substantially as hereinbefore described.

107,027.—COMPOUND FOR DESTROYING THE OIDIUM IN VINES, PLANTS, &c.—Claude Paul Folliet, Amonce, France.

Claim.—The preparation or manufacture of a powder, as herein set forth, and its application to vines and other plants, to destroy the oidium; also, the preparation of a powder and its application to the destruction of parasites between the bark and wood of trees, substantially as described.

107,028.—ELEVATOR.—Charles R. Foreman, West Branch, N. Y.

Claim.—1. The combination of block T U, guide-tube H, plate I, arms J, bars or rods K, and cross-bar L, with the frame A of the carriage, and with the catch Q and catch-frame R, for the purpose of disengaging the said carriage from the said catch, substantially as herein shown and described.

2. The combination of the spring P, lever N, and sliding notched plate M with the block T U, plate I, rods K, and catch-frame R, for the purpose of supporting and releasing the fork or other work automatically, substantially as herein shown and described.

3. Detachably connecting and pivoting the carriage frame A to the wire or rod E by means of the open loops a', grooved wheels D, hooks F, and pins G, substantially as herein shown and described and for the purpose set forth.

4. Detachably connecting and pivoting the catch-frame R to the wire or rod E by means of the notched end bars of said frame, the hooks S and collar e, substantially as herein shown and described, and for the purpose set forth.

107,029, antedated August 26, 1870.—BALANCING MILLSTONE.—Charles V. Foreman, Mechanicstown, Md.

Claim.—The combination of the bands d d, when provided with ears e e, screw-rods f f, and balance-weights I I, when operated by means of the nuts g g, all constructed and arranged as herein set forth.

107,030. — GAME-BOX FOR TEN-PINS.—George Benedict Fowler, Brooklyn, N. Y.

Claim.—The combination of the suspended ball C, the detached pins B, and capsular platform or box A, all being constructed and arranged substantially in the manner as and for the purpose specified.

107,031.—SELF-WINDING COUNTER-SPOOL. William J. Fox, Morrisania, N. Y.

Claim.—An improved self-winding counter-spool, formed by the combination of the spool A, shaft B, gear-wheels D E F G, spring pawl H, ratchet-wheel I, spring J, ratchet wheel K, pawl L, coiled or equivalent spring M, and rod or lever N, with each other, substantially as herein shown and described, and for the purpose set forth.

107,032.—ADJUSTABLE DIE FOR BENDING MOLD-BOARD.—Jonathan H. Franklin, Avoca, Wis., assignor to himself and J. P. McCallister, same place.

Claim.—The combination of the fixed jaw D and movable jaw E, hinged together at C, the die-plates A and B, screws L, guide-rods K, and the vertical rods F, provided with screw-nuts G, the connecting-rods J, and pivoted eccentric-levers I, all constructed and arranged as shown and described, and for the purpose specified.

107,033.—PLOW. — Horatio Gale, Albion, Mich.

Claim.—The laterally-adjustable plate G, serrated disks E and F, and slotted standard B, all constructed and arranged to operate substantially as described.

107,034.—CAR-SPRING.—Perry G. Gardiner, New York, N. Y.

Claim.—The peculiar form and construction of the intermediate iron plates, and headings of the springs, made and operating as hereinbefore particularly described, in combination with the rubber rings, alternating with the iron disks, substantially as described.

107,035.—CAR-SPRING.—Perry G. Gardiner, New York, N. Y.

Claim.—1. The construction of a railroad car-spring by the combination of an India-rubber cylinder with an iron shell or case, in which the interior face is divided longitudinally into recesses or chambers by the projecting ribs, and horizontally by the encircling ring, whereby space is afforded for the play of the rubber, and it is also held in its place, and at the same time receives support, from gradually-increasing bearings, arranged and operating substantially as described.

2. The combination of the heads E E, constructed as described, with the other portions of the spring, so as to move freely within the open ends of the shell, and slide upon the bolt, always in a position parallel with each other, and with the line of the axis of the spring.

107,036.—CAR-SPRING.—Perry G. Gardiner, New York, N. Y.

Claim.—1. The combination of the caps B, constructed with tubular sockets, d, the India-rubber cylinder A, ring c, and the bolt, all arranged and operating as shown and described.

2. The combination of the cap B, the cap B', constructed with the tubular socket f, the India-rubber cylinder A, ring c, and the bolt, all arranged and operating as shown and described.

107,037.—PLOW. — Robert Gibbs, Brunswick, Mo.

Claim.—1. The adjustable mold-board I J K, made in three parts, constructed and connected with each other and with the frame-work of the plow, substantially as herein shown and described, and for the purpose set forth.

2. The interchangeable shear L and land-side F', constructed and detachably connected with the adjustable mold-board I J K, standard E, and mold-board handle C, substantially as herein shown and described, and for the purpose set forth.

3. The cutter N, constructed and connected with the shear, land-side, and standard of the plow, substantially as herein shown and described, and for the purpose set forth.

4. The arrangement of the adjustable extension rods H with the standard E and beam A, as shown and described.

5. The draft device or clevis O P Q R S T, constructed substantially as herein shown and described, to enable the point of draft attachment to be adjusted at will, as set forth.

6. The spring H, in combination with the beam A, standard E, and nut G, substantially as herein shown and described, and for the purpose set forth.

7. The adjustable brace g^1, slotted longitudinally in its forward end and transversely in its rear end, in combination with the adjustable standard E and beam A, substantially as herein shown and described, and for the purpose set forth.

8. The shears L L', constructed substantially as herein shown and described, that is to say, with the line of its outer or mold-board end parallel with its front or land-side end, substantially as herein shown and described, and for the purpose set forth.

107,038.—HAY-LOADER.—Henry L. Gockley, Jackson, Ill.

Claim.—The arrangement of main frame a, carrier-floor g t, toothed belt r, rake c c, arms h, notched pawl i, cross-bar g, springs a' o', and revolving rake m, all constructed and operated substantially as and for the purpose set forth.

107,039.—HARVESTER.—Lewis Hall, Metamora, Ill.

Claim.—The arrangement of the pawl N and spring hook 2, rod M', provided with ratchet O, collar 1, and revolving fork M, and removable arm p, carrying the inclined arms n, in combination with the frame A and elevator G, all as shown and set forth.

107,040.—GRAIN-DUMP.—William M. Hall, Jr., Bloomington, Ill.

Claim.—In combination with the frame A, lid B, and pivoted platform D, the removable self-acting bar E, secured in inclined grooves in each side of the frame, for supporting the platform, all as shown and described.

107,041, antedated August 27, 1870.—SEWING-MACHINE.—Charles F. Harlow, Boston, Mass.

Claim.—The combination of the feed-lever B, bar W, hub k, swinging lever a, and bar C, when constructed, arranged, and operated substantially as and for the purpose described.

107,042.—SAFE CASE FOR BOOKS.—Samuel H. Harris, Chicago, Ill.

Claim.—1. The pieces A, B, and D, in a case for record books, when constructed and fastened together substantially as and for the purposes specified.

2. The rollers C, in a case for record books for fire-proof purposes, made of wood, and covered with sheet metal, substantially as specified and shown.

107,043.—FRAME OF SAFE CASE FOR PAPERS.—Samuel H. Harris, Chicago, Ill.

Claim.—The iron frame of safe cases for papers, constructed and arranged as shown and described.

107,044.—LUBRICATOR.—Joseph E. Hendrick, Waterbury, Conn., assignor to himself and Philo Brown, same place.

Claim.—The lubricator-cup, carrying the perforated tube B, and provided with a loose valve,

C, which has the groove or channel *d*, substantially as herein shown and described, to operate as specified.

107,045.—MOCCASIN BOOT AND SHOE.—Thomas Hersey, Bangor, Me.

Claim.—1. The described improvement in the patterns or method of cutting the sole D or D′ of a moccasin boot or shoe or pac, as shown in figs. 5 and 9, whereby the most expensive part of the stock is economized and the part ordinarily used as a counter is omitted, and left to be cut in separate pieces, from other and less valuable stock.

2. The tip B of a moccasin boot or pac, cut as shown in fig. 7, whereby the positions of the seams on the boot are changed and placed as at fig. 1, thereby economizing stock, stiffening the boot in those parts where it is needed, and conforming the sole and its adjacent parts more nearly to the shape of the foot of the wearer.

3. A moccasin boot or shoe, constructed with a counter, C or C′, as and for the purpose described.

4. A moccasin boot, constructed with a leg, A, tip B, counter C, and sole D, the parts being shaped and arranged as in fig. 1.

5. A moccasin shoe, constructed with a tip, B″, cut in the form shown in fig. 12, and for the purpose set forth.

6. A moccasin shoe, constructed with a quarter, E, cut in the form shown in fig. 10, and for the purpose set forth.

7. A moccasin shoe, constructed with a quarter, E, tip B″, counter C″, and sole D′, all joined or sewed together as described and shown in fig. 3.

107,046.—PEN FOR RULING-MACHINES.—William O. Hickok, Harrisburg, Pa.

Claim.—A series or group of paper-ruling-machine pens, having each pen of the group made separate and distinct from the others, and from the usual head-plate, and then their upper ends secured, by soldering or otherwise, to the head-plate, so as to afford a group of independently elastic pens, parallel to each other, and as near together as the close line ruling desired may require, substantially as described and set forth herein.

107,047.—BEE-HIVE.—Joseph M. Hicks, Indianapolis, Ind.

Claim.—1. The frames P P, hinged to the door of the hive and secured by braces *n m*, all arranged as and for the purpose set forth.

2. So beveling the top of the hive or sides thereof, where the doors are hinged, that the bees will not be injured by the shutting down of the top or the closing of the doors, substantially as described.

3. A bee-hive, consisting of base A, drawer M, top E, sides B B, doors C D, slides O O, frames P P, top H, frames J J, and cover K, all arranged substantially as set forth.

107,048.—SCHOOL-SEAT.—George W. Hildreth, Lockport, N. Y.

Claim.—The U-shaped spring *a*, constructed as described, in combination with the arm *g* and standard *b* of a school-desk.

107,049.—HOBBY-HORSE.—Christopher Hitzelberger, South Orange, N. J.

Claim.—In combination with a hobby-horse for children's use, the detachable guard A, constructed and arranged substantially as and for the purposes herein shown and described.

107,050.—DOUGH AND CAKE-MIXER.—Thomas Holmes, Williamsburg, N. Y.

Claim.—1. The combination of the loose roller Q with the diagonal bar or rod P and revolving cylindrical vessel B, substantially as herein shown and described, and for the purpose set forth.

2. The combination of the hollow or tubular gudgeons C, spindles E, and sleeve F, provided with a set-screw, with each other and with the revolving cylindrical vessel B, to enable the said vessel and the beaters or scraper to be revolved together or independently, as may be desired, substantially as herein shown and described.

3. The detachable strips b^1 b^2, either or both, in combination with the openings in the upper and lower parts of the revolving cylindrical vessel B, substantially as herein shown and described, and for the purposes set forth.

4. The combination of the screw-plug b^3 with the opening formed in the middle part of the detachable strip b^2, placed in the opening in the lower or larger part of the cylindrical vessel B, substantially as herein shown and described, and for the purpose set forth.

5. The combination of the hinged studs K, hinged frame L, and hinged leg M, with the frame A and hinged upper or smaller part of the revolving cylindrical vessel B, substantially as herein shown and described, and for the purpose set forth.

107,051.—MACHINE FOR MAKING TUBULAR LIGHTNING-CONDUCTORS.—Benjamin F. Housel and Simeon O. Thayer, Winona, Minn.

Claim.—1. For the purpose of corrugating tubes, the fluted plug or mandrel E, combined with four or more rotary benders D, concave on their peripheries, as and for the purpose specified.

2. The combination, with the fluted plug or mandrel and four or more rotary benders, with peripheries corresponding thereto, of the fixed guide F, constructed and arranged, relatively thereto, as and for the purpose specified.

3. The combination, in a tube-bending machine, of the converging guide F, with the hinged sliding and end-conical plate H, as and for the purpose described.

4. The arrangement, with respect to plug E, of the hinged sliding and swinging plate H, as and for the purpose specified.

107,052.—SULKY-PLOW.—Benjamin R. Hubbard, Hillsborough, Ill.

Claim.—The construction and arrangement of the metallic support B, the tongue F, and the wire or chain attachment W, substantially in the manner and for the purpose described.

107,053.—SEPARATING STONES, &c., FROM CLAY, &c.—David James Hunter, Boston, Mass.

Claim.—The combination, in a machine such as described, of the two separating-cylinders *a* and *b*, when either or both of said cylinders are mounted in rocking bearings, and upheld by spring pressure, which will enable them to separate, so as to allow the passage of stones and like substances between them, substantially as shown and set forth.

107,054.—TEA-POT OR WATER-HEATER.—Edward Hunter, Norwich, Conn., assignor of one-half his right to Henry H. Gallup, same place.

Claim.—The combination of the interior and exterior chambers E E E, with the tubes or pipes D D, and strainer F, when taken in connection with the heat-channel C C, and the top B B, with perforated draught-holes, as represented, substantially as and for the purpose hereinbefore set forth.

107,055, antedated August 23, 1870.—SLEIGH-KNEE.—Obadiah Johnson, Lasselleville, N. Y.

Claim.—As an article of manufacture, the sleigh-knee herein described, formed of cast metal, and consisting of the vertical standard A, (T-shaped in cross-section,) with the inner and outer top extensions F G, and the foot formed of the elongations B for embracing the sides of the runner, and the projections D for lapping on the top thereof, all constructed as set forth and shown.

107,056.—SEEDING-MACHINE.—J. Herva Jones, Rockford, Ill.

Claim.—1. The metal cut-off, working loosely in the seeding-tube, and held in place by the static pressure of the grain contained therein, substantially as hereinbefore set forth.

2. The cut-off, constructed with a lip to receive the downward pressure of the grain, and a flange to receive the lateral pressure of the grain, substantially as hereinbefore set forth.

3. The cut-off, constructed with lugs, which move in slots or guides in the tube, and on which the cut-off swings, substantially as hereinbefore set forth.

4. The combination of the cut-off and slide, these parts being constructed for joint operation, substantially as hereinbefore set forth.

107,057.—HARROW.—William P. Jones, Arcade, N. Y.

Claim.—The arrangement of the longitudinal bars C, metallic clips D, transverse bars E, hinges *e e′ g* and *i k*, metallic strips F, bolts H, and apertures *f f*, constructed and operating substantially as described and shown.

107,058.—BALE-TIE.—William A. Jordan, New Orleans, La.

Claim.—The cotton-bale tie A, when provided with a central opening, B, that is formed as herein described and shown on the drawing, a slit, D, lugs *a a′*, and recesses *b b′*, for the purpose set forth.

107,059.—PAINT COMPOUND.—William N. Jordan, Cambridge, Mass., assignor to himself, Porter M. Smart, and Henry W. Cook.

Claim.—The paints above described, as compounded of the ingredients, in the proportions, and for the purposes set forth.

107,060.—GARDEN-HOE.—Alonzo C. Judson, Grand Rapids, Ohio.

Claim.—As a new article of manufacture, the plate A, notched at both ends, substantially as and for the purpose described.

107,061.—CAN-OPENER.—Joseph Kaufman, New York, N. Y.

Claim.—A cutting-stamp or can-opener, substantially as described.

107,062.—PISTON-PACKING.—John Keesey, Chester, Pa.

Claim.—In piston-packing, a spider-ring, E, rebated on each end, combined with two pairs of packing-rings *f g*, cut at several points, located as set forth, and operating as and for the purpose described.

107,063.—PLOW FOR CUTTING POTATO-ROOTS.—Horace M. Keith, Commerce, Mich.

Claim.—The cutter G, secured to or forming a part of the plowshare D, constructed and arranged to operate as and for the purpose specified.

107,064.—SHOE-FASTENING.—Jonathan Coykendall, Farmington, Ill.

Claim.—The shoe or boot A, having the flap B arranged to overlap flap C on the front of the shoe, and fastened by straps *b c*, in the manner and for the purpose as shown and set forth.

107,065.—COMBINATION GAME-BOARD.—Conrad Krath and Gustav Hermann Moll, St. Louis, Mo.

Claim.—As a new article of manufacture, the hereinbefore described game-board, composed of a number of cubic blocks contained within a suitable frame, and having upon one side of each a portion of the diagram used in each of the games represented.

107,066.—PECTORAL SIRUP OR MEDICINE.—George La Montague, Muskegon, Mich.

Claim.—The manufacture or preparation of a compound, which is denominated "Dr. G. La Montague's New Pectoral Sirup," consisting of the ingredients, in the proportions, and for the purposes set forth.

107,067.—PAPER FOR PRINTING, WRITING, AND OTHER PURPOSES.—John Langtree, New York, N. Y.

Claim.—1. Writing, printing, or other paper, having the numbers which indicate the lines that run across its face pressed or water-marked in the margin of the paper, substantially as specified.

2. The arrangement of duplicate numbers pressed or water-marked in the margin of the paper opposite the lines or spaces in the latter, essentially as and for the purpose herein described.

3. The arrangement of the pressed or water-marked numbers, which indicate the lines in the paper, within a pressed or water-marked marginal line or border of a waved or chain-line pattern, substantially as specified.

107,068.—INSTRUMENT FOR DRAUGTING GARMENTS.—Ursula L. Leete, Owego, N. Y.

Claim.—1. The instrument herein described for draughting the front of an upper garment, having its shoulder-rule C and dart forms B B connected to the main rules by a slide and pivot, for the purpose set forth.

2. The instrument for draughting the back of an upper garment, having its rule R pivoted to the main rule, as shown and described.

3. The implement for draughting the side pieces, consisting of the main rule G, arm-rule F, pivoted rule H, and pivoted sliding rules I J, the whole arranged and graduated as described.

107,069.—CULTIVATOR.—James R. Little, Galesburg, Ill.

Claim.—1. The plate B, constructed substantially as described, arranged with the shovels and standards of cultivator-plows, for securing and adjusting the same, substantially in the manner set forth.

2. The construction and arrangement of plates B and C, bolts *b′ b′* and E, head D, pivot-bolt J, and plug S, substantially as and for the purpose specified.

107,070.—FRUIT-CARRYING BOX.—George A. Lloyd, San Francisco, Cal.

Claim.—1. The India-rubber gratings C, substantially as and for the purpose set forth.

2. The fruit-box described, consisting of the sides, cells, grating, and diaphragm, when combined and arranged as described, for the purpose set forth.

107,071.—PROCESS OF OBTAINING OZONE OR OZONIZED AIR.—Oscar Loew, New York, N. Y., assignor to Reuben D. Turner and Wellwood Murray, same place.

Claim.—The process of obtaining ozone or ozonized air, by passing common air through a flame, substantially as herein described.

107,072.—VAPOR-BURNER.—Josiah F. Marsh, Dubuque, Iowa.

Claim.—A vapor-burner, consisting of the chamber A, provided with perforations arranged in vertical semicircle tube B, perforations *a*, heating-collar *a′*, chamber *c*, tube D, cut-off valve *v*, packing-box G, screw *s*, packing-disk *z*, and valve-rod H, all constructed, arranged, and operated as set forth.

107,073.—FLOWER-POT, VASE, AND BASKET.—Thomas McClunie, Hartford, Conn.

Claim.—The elastic spring holder *d*, the vase or basket and globe or reservoir *g*, constructed and arranged substantially as set forth.

107,074.—FIELD-ROLLER.—Robert Anderson McConaughy, Ripley, Ohio, assignor to James Reynolds, Senr., same place.

Claim.—The employment, in connection with a

field-roller or rollers, of a ring or rings, supplied with curvilinear teeth, arranged and operating as and for the purpose set forth.

107,075.—TELEGRAPH-INSULATOR.—Samuel McKee, Pittsburg, Pa.

Claim.—A new article of manufacture, viz., a glass insulator, the body A provided with two enlargements, *x* and *x'*, and groove C and projections D, the body A being of a uniform thickness, the whole being constructed substantially as herein described, and for the purpose set forth.

107,076.—BUCK-BOARD WAGON. — Michel Miller, Buffalo, N. Y., assignor to himself and William Hewson, same place.

Claim. — 1. The combination of buck-board *b*, cross-bar *d*, and reaches *a*, with two or more springs, arranged substantially as and for the purpose specified.

2. The combination and arrangement of buck-board *b*, reaches *a*, springs *c*, cross-bar *d*, and fifth-wheel *e*, constructed and operating in the manner substantially as and for the purpose specified.

107,077. — FIRE-ESCAPE.—William Miller, Boston, Mass.

Claim.—The combination, with the detachable pins *b b* and frames E E, of the pivoted levers *F F*, arranged on each side of the truck, as and for the purpose described.

107,078, antedated August 26, 1870.—REACTION ROTARY STEAM-ENGINE.—Francis E. Mills, San Francisco, Cal.

Claim.—1. In a reaction-wheel, driven by steam or other elastic gas, rushing against the atmosphere or other surrounding medium, the expansion-chambers D D, in combination with the throats C, substantially as and for the purpose described.

2. In combination with a reaction-wheel, driven by steam or other elastic gas, the pressure-drum E E, with the adjustable escape-port F, and the water-cock K, substantially as and for the purposes described.

107,079. — KEROSENE-STOVE. — Robert B. Mitchell, Chicago, Ill.

Claim.—1. The combination of the short chimneys T, the plate U, and the plate P, when arranged and operating substantially as and for the purposes described and shown.

2. The combination of the short chimneys T, the plate U, and the plate P, with the long chimneys G and the water-reservoir A, when constructed and operating substantially as and for the purposes specified and shown.

3. The combination of the legs B, water-reservoir A, and plate H, when constructed and arranged substantially as and for the purposes described and shown.

107,080.—FOLDING COAT AND HAT-RACK.—James H. Monce, New York, N. Y.

Claim.—The slots in the ends of the plates A A, for sliding onto the shanks of the buttons *b b*, cast on the hooks D and E, for forming the joints for portable coat and hat-racks, as shown and described.

107,081.—ROTATING ENGINE.—David Smith Money, Valdosta, Ga.

Claim.—1. The combination, with the ordinary engine-wheel, of a steam or water-chest from which the power shall only act upon the wings at a tangent to the circumference of the wheel, thereby greatly lessening the counter-frictional pressure.

2. The steam or water-chest H E F, constructed and applied to the wheel, as and for the purpose specified.

107,082. — CARRIAGE-POLE COUPLING. — Charles A. Moore, Akron, Ohio.

Claim.—The semicircle G, provided with a notch H, when arranged in relation to and in combination with the double-tree E, pole A, and strap I, substantially in the manner as described, and for the purpose specified.

107,083.—CONSTRUCTION OF CAR-WHEELS. James K. Morange and Napoleon B. Morange, Pittsburg, Pa.

Claim.—As described, an alloy for a filling, and used in combination with a recess or recesses in the periphery or tread of a car-wheel, constructed substantially as and for the purpose herein set forth.

107,084. — FOLDING CHAIR. — Ezekiel P. More and Samuel J. Anderson, Cazenovia, N. Y.

Claim.—1. The seat C, when pivoted to the folding supports B B, and provided with devices *e f*, capable of connection and disconnection, for securing the seat to the back A when the chair is unfolded, substantially as herein described.

2. In combination with the seat, constructed and applied as related in the first clause, the back A and front supports and arms B *b*, when all said parts are made and arranged as herein set forth.

107,085.—TRACE-HOOK.—William H. Morgan, Alliance, Ohio, assignor to himself and Richard B. Geyer, Allegheny, Pa.

Claim.—The trace-hook, when the part B is provided with rivets D on both sides of it, and with openings C C, the whole constructed and arranged as herein described, and for the purpose set forth.

107,086.—TRACE-HOOK AND CLIP FOR HARNESS.—William H. Morgan, Alliance, Ohio, assignor to himself and Richard B. Geyer, Allegheny, Pa.

Claim. — The hame-clip, consisting of hook A, provided with a dovetail, B, recess C, shield D, tongue *e*, openings *f* and *g*, the whole being constructed and arranged as herein described, and for the purpose set forth.

107,087. — HARNESS-HOOK AND LOOP-SHIELD.—William H. Morgan, Alliance, Ohio, assignor to himself and Richard B. Geyer, Allegheny, Pa.

Claim.—The harness-hook and loop-shield hereinbefore described, consisting of hook A, openings B and B', tongue *e*, and flanges C, the whole being constructed and arranged as and for the purpose set forth.

107,088.—PRESERVING BREAD.—Jean Joseph Auguste Mouriés, Phalsbourg, France.

Claim.—The process of preparing bread, by submitting it first to a slow drying, then to momentary contact with steam, and finally to a powerful compression, substantially as and for the purpose hereinbefore set forth.

107,089.—SCHOOL-REGISTER.—Stephen S. Nash, New York, N. Y.

Claim.—The improved index, consisting of the case A and blocks or tablets F, all combined and arranged substantially as specified.

107,090.—CORN-STALK CUTTER.—Andrew Jackson Nebergall, Cedar county, Iowa.

Claim.—The frame E, axle D, arms F, rollers C, with arms E, and cutting-blades A, lever F, adjusting-bars G, and connecting-bar H, the raising frame K, and hooks M for straightening the stalks, all combined, and for the purpose substantially hereinbefore set forth.

107,091.—MACHINE FOR BORING AND MARKING.—Governeur M. Nickason, Ellenville, N. Y.

Claim.—1. The marker E, hung on a slide, D, to receive both rotary and reciprocating motion, as set forth.

2. The arrangement, upon the frame A, of the slide I between the two or more boring tools and a series of marking-tools, as and for the purpose specified.

107,092.—SHINGLE-MACHINE.—Carl Nordell, New York, N. Y.

Claim.—The revolving bed A, constructed of adjustable sections H H', substantially as shown and described.

107,093. — APPARATUS FOR ATTACHING STANDING RIGGING TO MASTS. — James Nute, Boston, Mass.

Claim.—1. The plate-band B, (whether of iron or any other metal or composition of metal,) made substantially as and for the purposes hereinbefore set forth.

2. The combination, in one apparatus, of the inner band A and the plate-band B.

107,094.—HAND-LOOM.—James E. Nute, Lincoln, Me.

Claim.—1. The arrangement of the levers *b c*, connecting-rods *d*, and bar F, relatively to each other and to the lathe, substantially as described, and for operating the lathe, as shown.

2. In combination with the foregoing, the springs *f*, or their equivalents, for the purposes specified.

3. The mechanism for releasing the picking-sticks, consisting of the catches *h'*, springs *i'*, rod *j'*, stop *k'*, rod *l'*, spring *n'*, and shuttle-holder O, or their equivalents, whereby the lathe may be actuated, when the shuttle is removed, without actuating the picking-sticks, substantially as described and shown.

107,095. — FENCE. — Thomas W. Owens, Granville, Ohio.

Claim.—The sections A, connected together by the upright pieces B B, cross-pieces D C, and wedge E, all constructed and arranged as herein described, for the purpose specified.

107,096.—BOLT-FASTENING.—Peter Peterson, Abingdon, Ill.

Claim.—The combination of the lever E, cams H H, and buttons I, I, F, and D', with the bolt B', and plate A, all constructed and operating substantially as described and for the purpose specified.

107,097.—METHOD OF INLAYING WOOD.—T. W. Porter and H. K. Porter, Boston, Mass., assignors to themselves and Charles L. Marston.

Claim.—Producing ornamental figures in wood by the exclusive use of circular-shaped pieces of contrasting colors, inlaid contiguous to or intersecting each other, substantially in manner as described and shown.

107,098. — STEAM-ENGINE. — Elting Post, Boston, Mass.

Claim.—The arrangement and combination of the openings *p p p* and the parts *h h* with the auxiliary cylinder C, its balanced piston B, the valve-chest D, the two connected slide-valves E F, the main cylinder A, its piston P, the steam-passages *a b c d e o e f g h i l*, and with mechanism, as described, for operating the slide-valves by the main friction-rod, the whole being substantially as specified.

107,099, antedated August 27, 1870.—GUN-CARRIAGE.—Abiather F. Potter, Oakland, Cal.

Claim.—1. In a gun-carriage, the cams *a* and *b*, for adjusting the gun to the proper elevation or inclination, arranged to operate substantially as described.

2. The combination of the T-shaped lever I, crank-levers *c* and *d*, and connecting-bar G, with the shafts D and E for operating said cams, substantially as specified.

3. In combination with the operating device above claimed, the horizontal graduated arc L, substantially as and for the purpose specified.

4. The combination, with the lever I and arc L, of the clamping-screw *f*, arranged to operate substantially as described.

107,100.—LOCK.—Titus Powers, New York, N. Y.

Claim.—The combination, in a lock, of the bolt B, the fence *a*, the tumbler C, and the double-acting spring *p*, all constructed, arranged, and operating substantially as and for the purpose specified.

107,101. — ELECTRO-MAGNETIC RAILROAD-ALARM.—Edward H. Pursell, Galesburg, Ill.

Claim. — 1. The combination of a telegraph-sounder, C, battery B, wires E E' and L, and spring jaws V, with a train of railway cars, in such manner that the breaking of the train at any time will ring the train signal-bell, substantially as described and for the purpose specified.

2. The arrangement, substantially as herein described, of a battery, B, sounder C, bell D, wires E E' and L, and key G, with a railway train, A A', to operate in ringing the signal-bell, substantially in the manner and for the purpose specified.

107,102.—COTTON-GIN FEEDER.—Joe Ralston, Brenham, Texas.

Claim.—The arrangement of the bars G and H with reference to the apron C and cylinder F, as and for the purpose specified.

107,103. — DRAIN-PIPE.—George Richardson, Milwaukee, Wis.

Claim.—1. The coupling A, having a smooth or even exterior surface, as described, the enlarged recesses, with their abutments, and its interior diameter of the same area as the pipes which are joined to it, substantially as and for the purpose set forth.

2. The arrangement of the removable or manhole portion of the pipe with reference to the coupling, it being such that, when in position upon the fixed portion of the pipe, it shall be held in its place by the coupling, substantially as shown and described.

3. The combination of the pipe B, with its removable portion, and the vertical pipe C, when constructed and arranged substantially as and for the purpose specified.

107,104, antedated September 1, 1870.—CAPSTAN. — James W. Riggs, Wade, Ohio.

Claim.—1. The spool or barrel L, provided with the pin-holes M M O O, and ratchets N N, arranged as and for the purpose herein described.

2. The spool L, provided with the holes M M O O, ratchets N N, in combination with the spool or barrel I, provided with the pin-holes K K and pawls J J J, arranged as and for the purpose herein set forth.

107,105.—APPARATUS FOR LIGHTING GAS BY ELECTRICITY.—Horace T. Robbins, Boston, Mass.

Claim.—1. The spring *i*, in combination with a frictional electro-motor, arranged substantially in the manner and for the purpose set forth.

2. The stop device *r s*, in combination with a gas-cock and frictional electro-motor, substantially in the manner and for the purpose above specified.

3. The combination of the insulator *e*, generators *v w*, insulator *j*, rod or key *h*, spring *i*, current-conductors *x y*, and burner *d*, with a gas-fixture, substantially as and for the purpose specified.

4. The combination of the gas-cock *b*, stop device *r s*, insulators *j e*, cups *f g*, electric-generators *v w*, spring *i*, current-conductors *x y*, and burner *d*, with a gas-fixture, substantially as and for the purpose specified.

107,106.—BRIDGE.—Jacob Seebold, Kautz, Pa.

Claim.—1. The combination of the top chord G, bottom chord C D, blocks H H, the vertical ties which pass through the upper chord and block D, and braces I I, all constructed and arranged substantially as shown and described.

2. The arrangement of the abutment A, shoes B, bottom chords C D, floor-beams E, top chords G, blocks H, and braces I J, all substantially as shown and described.

107,107.—MILK-CAN AND COOLER.—Samuel Shattuc, Kipton, Ohio.

Claim.—1. The milk-can C, when constructed with a pipe, E, and concave bottom J, substantially as described and for the purpose specified.

2. The milk-can C, as arranged in relation to, and in combination with the vessel A, water-tank F, and connecting pipe, in the manner substantially as described, and for the purpose set forth.

3. The concave bottom J, constructed with the central opening and flange, as and for the purpose set forth.

107,108. — MOWING-MACHINE.—George F. Shaw, West Roxbury, Mass.

Claim.—A crank, H, provided with a spring, d, and revolving in bearings attached to the cutter-bar B, in combination with a hollow guide, I, secured to the finger-bar A, the several parts being arranged to operate substantially as and for the purpose described.

107,109.—TUCK-CREASING ATTACHMENT FOR SEWING-MACHINE.—John J. Sibley, New York, N. Y.

Claim.—1. The combination of wheels B and C, operating together in substantially the manner described, to crease material between the faces thereof.

2. The combination of wheels B, C, and D, operating together substantially as and for the purpose set forth.

107,110. — CORN-PLOW AND PLANTER.—Clark Sints, Clark county, Ohio.

Claim.—1. The combination of draft-bar E with stay-plate P, double-tree M, tongue T, bolt *f*, and frame A, when used in a corn-plow and planter, substantially as and for the purpose hereinbefore set forth.

2. The arrangement of the angular foot-levers *g g*, stirrups *j j*, suspending-bars *g' g'*, and connecting-rods *r r*, in connection with frame A, tongue T, and bolt *f*, substantially as and for the purpose hereinbefore set forth.

107,111.—GUANO-DISTRIBUTING MACHINE.—George Washington Sizer and William Miller Owen, New Orleans, La.

Claim.—1. The axle G, cog-wheel H, clutches *b c*, beveled pinions *d d e e*, and vertical shafts *f f*, having arms or stirrers *g g*, when the same are so arranged as to be operated by the ratchet or toothed face of the hub of the wheel D', substantially as described.

2. The movable bar *j*, lever M and plate N, when the same are so arranged, in connection with the stationary or check-bar *i*, on the under side of the hopper or box C, that the discharge of the guano through the tubes K K can be regulated and controlled, substantially as described.

107,112. — CARRIAGE-AXLE. — Alfred E. Smith, Bronxville, N. Y.

Claim.—1. The axle A, formed with double nibs B and C, of unequal diameters, in combination with a metal box, having a ledge, H, flush with the outer end of the box, substantially as herein shown and described.

2. The axle A, formed with double nibs B and C of unequal diameters, the metal box E with its ledge H, the oil-chamber G, washer F, and nut G, the whole combined and arranged to operate substantially as set forth.

107,113.—RAILWAY SWITCH.—Charles S. Smith, Seneca Falls, N. Y.

Claim.—1. A railway switch, constructed and arranged in its several parts, and operated in the manner and for the purpose herein described.

2. The combination of the lever C and the bar D, constructed and arranged to lock the rails A'' A'' and hold them firmly in position, in the manner and for the purpose herein described.

3. The combination of the treadle E and shaft *a* with the lever C', joint M, lever C, and levers F' *l' 2' 3'*, in the manner and for the purpose herein described.

107,114. — LOW-WATER AND HIGH-STEAM INDICATOR.—Levi F. Smith, Philadelphia, Pa.

Claim.—1. The arrangement of the pipe A with side pipe B, pipe C, and expanding tube D, the pipes A C D being in a straight line, substantially as shown and described.

2. In combination with a steam-valve of any description, a siphon, arranged substantially as and for the purposes herein set forth.

3. The combination of the indicator D, whistle H, safety-valve O, and siphon M, all constructed as described, and arranged with necessary pipes on a steam-boiler, substantially as and for the purposes herein set forth.

107,115.—SAFETY-TRUCK AND CAR-BRAKE.—William C. Smith, New Britain, Pa.

Claim.—1. The safety-truck, composed of the upper and lower sills, cross-beams, and bolster, all arranged as shown and described.

2. The combination of the axle-boxes, constructed as described, with the upper and lower sills of the truck.

3. The combination, operating as shown and described, of the lower sills of the truck with the brake-beams.

107,116. — COMBINED POWER-PUNCH AND SHEARS.—Abram C. Stannard, Milton, Wis.

Claim.—1. The combination, with the frame J, of the cam-lever A, stirrups B, vertical bar C, the toggle-levers D D', and the punch-head H, constructed and arranged substantially as and for the purposes herein set forth.

2. The combination of the segmental toothed wheel F, provided with socket *d*, for receiving a lever, pivoted at *f*, to the frame, the double toothed lever G, the rack-bar C, the toggle-levers D D', and the punch-head H, as and for the purposes herein described.

107,117. — LOCOMOTIVE ASH-PAN.—Henry A. Stoddard, Springfield, Mass.

Claim.—A locomotive ash-pan, having the horizontal partition C therein, and the dampers *f* and D, all constructed and operating substantially as described.

107,118. — HARVESTER-CUTTER. — Daniel Stukey, Lancaster, Ohio.

Claim.—The stationary saw-blade *a*, arranged, in relation to the reciprocating knives *c*, substantially as described.

107,119.—BRIDGE-GATE.—James D. Sturges, Chicago, Ill.

Claim.—1. The bridge-gate, consisting of the shaft C, having attached rigidly thereto the arms E, the arms E being made to rise by the revolution of the shaft C, substantially as and for the purpose described and shown.

2. The weight K, chain L, shaft C, and levers J, when arranged and operating substantially as and for the purpose specified and shown.

3. The covers E, when constructed and arranged substantially as and for the purposes set forth and shown.

107,120.—PROPELLER FOR STEAM VESSELS.—Robert Sutton, New Castle, Del.

Claim.—A screw-propeller, made up of hollow air-tight sections, connected together on a shaft by means of interlocking devices, substantially as described.

107,121. — NAIL-EXTRACTOR. — George C. Taft, Worcester, Mass.

Claim.—A nail-puller, composed of the jaw and lever A B, made in one piece, the vibrating and adjustable foot-piece C, and the adjustable jaw D, held in said foot-piece, said parts being constructed and arranged for joint operation, as shown and set forth.

107,122.—REED-ORGAN BELLOWS-ACTION.—Simeon Taylor, Brighton, Mass.

Claim.—1. The combination, with the exhaust-board E, of the bellows and the foot-pedal J, of a double-hinged connection-piece, K, arranged substantially as herein shown and described.

2. The combination, with the lower end of the exhaust-board E, of a downwardly-projecting arm, H, and a curved and double-hinged connection-piece, K, substantially as and for the purposes described.

107,123.—TRUNK-LOCK.—James Terry, Jr., Terryville, Conn.

Claim.—The hook-plate B *a*, spring-plate C *c*, and arm-plate *b* D, combined, constructed, and relatively arranged, as and for the purpose specified.

107,124.—DEVICE TO REGULATE THE FLOW OF SAP TO EVAPORATING-PANS.—John Thomas, Hardwick, Vt.

Claim.—1. The tube D, extended above the knee C, substantially for the purpose described.

2. The levers I J, in combination with standard H, said standard being provided with adjusting holes, and all arranged to operate substantially as set forth.

107,125.—DEVICE FOR CUTTING WIRE OR CORD FROM BOTTLE-STOPPERS.—Justus A. Traut, New Britain, assignor to himself and Jeremy W. Bliss, Hartford, Conn.

Claim.—A new article of manufacture, a device for removing the fastening-cord or wire from a bottle-stopper, constructed as shown and set forth.

107,126.—BINDING ATTACHMENT FOR HARVESTERS.—Dudley W. Travis, Enfield, and Charles M. Clinton, Ithaca, N. Y.

Claim.—1. The combination of the incline G and the guides H H', with the incline F and its guides I I, for the purpose of giving a pit or space between them, into which the hands and arms of the operator are thrust in seizing the bundle to be bound, as set forth.

2. The arrangement of the incline G and its guides, seat C, tables D, and spring swivel J, operating together, substantially as and for the purposes described.

3. The combined arrangement of the incline G and guides, incline F and guides, seats C, tables D, a swivel, J, operating substantially as and for the purposes described.

107,127. — AUTOMATIC GAS-REGULATOR.—Samuel O. Trudell, Detroit, Mich.

Claim.—1. Chamber B, provided with valve G and outlet C, and used in connection with chamber A and float D, essentially as set forth.

2. The counterbalanced valves G and H, used in connection with chambers A and B, essentially and for the purpose set forth.

107,128.—SHEARING AND CLIPPING APPARATUS.—George Twigg, Birmingham, England.

Claim.—1. The arrangement of the handles *b b'*, carrier plate *a*, recess a^3, slot *g*, stud *f f'*, cutting-plates *d* and *h*, and guide-bar *i*, constructed substantially as described.

2. The arrangement of the cutting-plates *e* and *d*, recesses *e e*, studs *e'*, arms *f f* of the handles *a* a^1, spring *g*, bar *h*, studs *h' h''*, and guide-slots *i* as herein shown and described.

107,129.—PHOTOGRAPHIC BACKGROUND.—Daniel W. Van Riper, Columbus, Ga.

Claim.—A conical-shaped recessed background or chamber, to be used in connection with a camera to produce a negative, the background of which shall be perfectly transparent, or shall pass gradually from perfect transparency to semi-transparency, substantially as herein described and set forth.

107,130.—HAIR-ROLL.—John H. Vogt and George Dietzel, New York, N. Y.

Claim.—The tapering hair-roll, provided with a spiral spring, B, by which it is held distended, as set forth.

107,131. — BEDSTEAD-FASTENING. — James H. Waite, Orange, Mass., assignor to Rodney Hunt, James H. Waite, and David B. Flint, same place.

Claim.—As a new or improved manufacture, the bedstead-fastener B, as provided with the projections *g g g*, and constructed in other respects as described, for use with the folly part A, made in manner as explained and represented.

107,132.—HEEL-CALK.—Martin F. Walter and Charles Standinger, Hartford, Conn.

Claim.—The part *d*, with its pin d^2, when employed in connection with the part *b*, having its orifice c^2, as described.

107,133. — WAGON-JACK. — Jeremiah W. Walton, Decatur, Mich.

Claim.—The block D, hinged at *c*, in combination with the rabbeted lever C, the latter being slotted to receive the upper end of the serrated standard B, and having the stirrup E pivoted to its longer arm, all as shown and described.

107,134.— BREAST-STRAP PROTECTOR FOR HARNESS.—Lorenzo R. Ward, Ward's Corners, Iowa.

Claim.—The breast-strap protector, consisting of the shield B and links C C, substantially as herein shown and described.

107,135.—MACHINE FOR GROOVING THE FRAMES OF CHAIR-SEATS.—Gardner A. Watkins, Cavendish, Vt., assignor to the American Chair-seat Company, Gardner, Mass.

Claim.—The herein-described machine for cutting grooves in chair-seat frames, composed of the rotary cutter *b*, clamp *e f*, pattern B, with holes *m m'*, and rack *g*, and made in the form of a chair-seat, the pinion *c*, and hollow guide-stud *e* containing a bit, *l*, all arranged upon the plate A, and constructed and operating in the manner set forth.

107,136.—CHAIR-SEAT.—Gardner A. Watkins, Cavendish, Vt., assignor to the American Chair-seat Company, Gardner, Mass.

Claim.—A chair-seat or other frame, constructed with a beading or other suitable impression, as and for the purpose hereinbefore recited.

107,137.—Chair-Seat.—Gardner A. Watkins, Cavendish, Vt., assignor to the American Chair-seat Company, Gardner, Mass.

Claim.—As a new article of manufacture, a chair-seat, back, &c., constructed with spliced rattan, or other suitable material, in the manner and for the purpose hereinbefore stated.

107,138. — Churn-Dasher. — Thomas H. Weaver, Marietta, Ga.

Claim.—A churn-dasher, consisting of the perforated cylinder A, with a perforated disk, B, and the shaft C, the disk being attached to the cylinder at the center of its length, and dividing it radially, and the tube C being attached to the disk, all substantially as specified.

107,139.—Butter-Pail.—Henry P. Westcott, Seneca Falls, N. Y.

Claim.—The combination of the body of the pail A, and the cover B, with the ears *a* and *d*, and the button *c*, constructed and arranged substantially as above described.

107,140. — Lantern. — William Westlake, Chicago, Ill.

Claim.—1. The stop or spur *i* or *e*, in combination with a loose globe-seat or band C, substantially as and for the purposes specified.

2. The wire-ring E, when bent at the points where the tips pass around the same, to prevent the wearing of the tips, substantially as set forth.

107,141. — Oil-Can. — William Westlake, Chicago, Ill.

Claim.—The combination and arrangement of the cover *b* and wire *a a* with the hooks *d d* and can-spout B, substantially as and for the purposes specified.

107,142.—Cultivator.—Charles L. Whaite, Waverly, Pa.

Claim.—The arrangement, in a cultivator formed of wrought iron, of the double-curved central plow-beam B, split clevis C, braces *m*, horizontal brace K, handles H, bent brace *s*, thumb-nut *v* and screw *t*, and sectional side plow-beams E, horizontally jointed by twisting the adjacent ends of the sections at *e*, all constructed as set forth.

107,143.—Screw for Soles and Heels of Shoes.—Levi H. Whitney, Washington, D. C.

Claim.—As a new article of manufacture, the within-described hardened steel armor-screw, for shoe-soles and heels.

107,144. — Galley.—Frederick M. Wildman, Bethel, assignor to himself and John S. Fayerweather, Ridgefield Station, Conn.

Claim.—The quoins D, constructed with lip-shaped projections *d d*, to travel within grooves *e e* in the under side of the chase B and strip C, so as to expand or contract the galley, as specified.

107,145.—Lock.—Horatio Willard and Peter Truns, Evansville, Ind.

Claim.—1. The bolt E, constructed as described, with right-angular slots and circular grooves *e e*, arranged as shown, substantially as and for the purposes herein set forth.

2. In combination with the bolt E, constructed with right-angular slots and circular grooves *e e*, guide-bars D D, and spring C, all arranged to operate substantially as described.

107,146. — Drawing-Frame. — Thomas S. Winn, Lawrence, Mass.

Claim.—In combination with the two sliver-guides and the draft-rollers, a mechanism for moving the said guides simultaneously, with equal velocity, so as to cause them to approach toward, and afterward to recede from each other, with reference to the draft-rollers, when the upper is weighted or pressed toward the lower, substantially as explained.

Also, the mechanism or combination hereinbefore explained, for so moving the two sliver-guides, such consisting of the two racks, the gears, the sectoral gear, the arm, the connecting-bar, the worm-gear, and the driving-worm or screw, the whole being arranged and applied together and to the guides and the roller-frame, substantially in the manner as hereinbefore set forth.

107,147.—Apparatus for and Process of Distillation.—George S. Williamson, Gallatin, assignor to himself and Edwin R. McKean, Nashville, Tenn.

Claim.—1. The adjustable rake G, constructed to be raised or lowered by means of the nut I upon the screw-shaft F, in combination with the lever P and stop Q, or their equivalents, for the purpose set forth.

2. In combination with the nut I and lever J, as and for the purpose set forth, the pivoted T-stop Q′, arranged to operate substantially in the manner described.

3. The arrangement of the refiners above the still or doubler, substantially as described, so that the spent coal may be discharged into said still or doubler, for the purpose of saving the spirit contained in the spent coal.

4. The refiners formed of separate vessels, T T, arranged as described, provided with trap *b* and with interposed perforated valves *a*, substantially as set forth.

5. The refiner formed of several chambers, each provided with a trap, *b*, and with interposed valves, substantially as described, and for the purpose set forth.

107,148.—Automatic Cradle.—Darius Alger, Byron, Mich., assignor to himself and Theodore Barnum, same place.

Claim.—The arrangement of the cradle A, pivoted upon the standard B, and provided with the stud F, and the clock-work D, secured to the pivoted pendulum C, and provided with the stop-pins E, when the several parts are constructed as described and shown, and as and for the purpose set forth.

107,149.—Railroad-car Heater.—Joshua G. Allen, Philadelphia, Pa.

Claim.—1. The heater A, having its body surrounded with an air-chamber, M, and its lower end provided with an adjustable hood, F, when constructed as described, and arranged under the platform of a car, so that the hood may catch the air-currents and direct them through the air-chamber into the car, as set forth.

2. The combination of the heater A, provided with an air-chamber, M, divided into compartments, with air-flues, O O O, of different lenghts, each compartment having an air-flue and said flues opening into the car at different points, as described, for introducing the air evenly throughout the car, as set forth.

3. The combination of an induction-pipe W, provided with cowl X, with the air-chamber M divided into compartments, and the air-flues O O O, as herein described.

4. The combination of the hood or cap E with the air-chamber M, divided into compartments, and the air-flues O O O, when constructed and arranged substantially as and for the purpose set forth.

5. In a railway car having an air-chamber, M, divided into compartments, with hood E or pipe W, with cowl X, for supplying it with air, and with air-flues O O O, for introducing and distributing the air, the floor-registers U, pipe or air-flues E, and cowl Z, for withdrawing the air, substantially as set forth.

6. The arrangement of a portable heater A, and coal-bin in a railway car, as herein described, for the purpose of allowing the coal to be fed into the heater, as set forth.

107,150. — Method of Inlaying Wood, &c.—James S. Baldwin, Newark, N. J., assignor to Charles F. Ritchel, same place.

Claim.—Producing designs of inlaid work, by cutting out the base or foundation stock and inserting a figure, and then cutting out both the stock and the inserted figure, for the insertion of another figure, substantially as hereinbefore set forth and described.

107,151.—Washing-Machine.—Charles S. Banker and Alexander Purdy, Hector, N. Y.

Claim.—The hereinbefore-described washing device, for application to ordinary tubs, consisting of the base A, the posts B and C, the pivoted lever D, the shaft E, provided with the head G and bar H, and the disks F and F′, provided with the radial ribs or rubbers *f* and *f′*, substantially as shown and specified.

107,152.—Wood Pavement. — Albert Betteley, Boston, Mass.

Claim.—A pavement made up of blocks, which are conic frustums, grooved and grouped together, and locked by filling, occupying the grooves in the blocks and the inter-spaces between the blocks, substantially as described.

107,153. — Jewelers' Tool. — Daniel M. Bissell, Shelburne Falls, Mass.

Claim.—The improved device herein described, consisting essentially of the slotted block, perforated die-plate, movable and adjustable guide, and clamp, exclusive of any tool to be used therewith.

107,154, antedated August 26, 1870.—Shooting-Stick for Printers.—Benjamin B. Blackwell, New York, N. Y.

Claim.—1. A reversible shooting-stick, formed with noses *a a′*, of different widths, substantially as specified.

2. The combination of one or more side wings, *b*, with the body A of a shooting-stick, essentially as and for the purpose or purposes herein set forth.

107,155.—Sole-sewing Machine.—Lyman R. Blake, Boston, Mass.

Claim.—The combination, with a supporting-horn, of the whirl, when operated to lay the thread in the hook of the needle at each movement of the whirl in reverse directions, substantially as described.

107,156, antedated August 27, 1870.—Corn-Planter.—Joel L. Bond, Marshalltown, Iowa.

Claim.—1. The arrangement of the two curved bars B B, made adjustable, as described, and carrying the gauge-wheel C, substantially as and for the purposes herein set forth.

2. The hopper D, suspended at the side of one of the bars B, by means of the hooks *e e*, and eyes *d d*, which can be fixed or removed by means of the ears *k* and *m m* and spring key *n*, substantially as and for the purposes herein set forth.

3. The combination of the forked axle *a*, collar or socket *p*, and pin *s*, all substantially as and for the purposes herein set forth.

4. The removable incline *f*, provided with the brush *t*, substantially as and for the purposes herein set forth.

5. The arrangement, within the hopper D, of the inclines *f f*, brush *t*, and wheel E with cavity *g* and screw A, all substantially as shown and described.

6. The combination of the adjustable bars B B, gauge-wheel C, and hopper D, all constructed and arranged as described, and operating substantially in the manner and for the purposes herein set forth.

107,157.—Sash-Holder.—Charles S. Bonney, Syracuse, N. Y.

Claim.—The piece B, which is used to hold the locking-piece C back into the slotted plate A, and which is acted upon automatically by the window to release the fastening-piece.

107,158.— Manufacture of Albumen.—Gustave Bourgade, New York, N. Y.

Claim.—1. The use of liquid ammonia in the separation of albumen from blood, by the process substantially as specified.

2. The employment of an acid in the purification of albumen, by the process and substantially as set forth.

3. The process herein specified for separating albumen from blood, and concentrating the same *in vacuo*.

107,159.—Flood-Gate.—Thomas H. Breed, Dundee, Mich.

Claim.—The construction and arrangement of the sills A, posts B, cross-beam C, and gate-frame D, pivoted thereto by the bar *b*, said bar having also pivoted on it the sections E, the slides D′, and bar F, as and for the purpose set forth.

107,160.—Die for Heading Bolts.—Frederick Bruso, Buffalo, N. Y.

Claim.—The semi-annular recess *d*, formed in the face of the shear-bar B, and arranged with the cutting-edge *b′* and clamping-jaws A A′, substantially as hereinbefore set forth.

107,161.—Steam-Engine.—David B. Caldwell, Cincinnati, Ohio, assignor to himself and John H. McGowan, same place.

Claim.—1. In connection with the ports F G G′ H, arranged substantially in the manner described, the valve E, having recesses or chambers *e e′ e″*, and operating in the manner and for the purpose set forth.

2. In combination with the valve E *e e′ e″ e‴* P, and ports J J′ K K′ N N′ O, the piston I, provided with side grooves or ports M M′, as described, and for the purpose stated.

3. In connection with the collar U and follower T A′, the spring packing-ring L and feather S, as described, and for the purpose specified.

4. In connection with the spring ring L, the spring packing-gibs R R′ and feather *b*, as described, and for the purpose stated.

107,162.—Ditching-Plow.—George Chamberlin, Olean, N. Y.

Claim.—The herein described construction of the beam A, blade B, and cone-point *c*, the latter being fitted to receive the angular cones D and E, the pieces D and E being removable and interchangeable, as and for the purpose specified.

107,163.—Deflector for Windows of Railroad Cars.—William Conrad, Burlington, N. J.

Claim.—A portable deflector for car-windows, composed of two plates, A and B, hinged together, substantially as shown and described, and for the purposes herein set forth.

107,164.—Coffin.—James E. Cox, Cincinnati, Ohio.

Claim.—The inner metallic case L for ice-coffins, having the upward bend *l* and the rib or fold *s*, as and for the purpose specified.

107,165.—Side Light for Vessels.—William Darley, Chatham, England.

Claim.—1. The combination of a frame, R, a pivot arranged at one side of the frame, a dead-light hung to the said pin and device, substantially as described, for securing the dead-light in its position on the frame.

2. The combination of the above, a frame carry-

ing a glass, *c*, and springs *e*, interposed between the frame B, the movable frame and the dead-light, as set forth.

3. The combination of the frame B, fulcrum-pin D, and frame C C', balanced on the said pin and having a glass at one end and a disk at the other, as specified.

107,166, antedated August 27, 1870.—ENVELOPE.—Biram C. Davis, Binghamton, N. Y.

Claim.—The envelope having two face-flaps, B and F, with perforation C C made inside the gummed sealing parts H, and thumb-place D, all as and for the purpose set forth.

107,167.—FAN-BLOWER FOR SMITHS' FORGES. — Lindsay Duskin and Benjamin Sledge, Thomasville, N. C.; said Duskin assigns his right to William Dickson and J. D. Delap, same place.

Claim.—1. The double fan-blower herein described, having the case of varying curvature, so as to form blast-chambers B B, as described.

2. The three-fan wheel, in combination with the case, of the form shown in figs. 1 and 2.

107,168. — LOOM-TEMPLE. — Warren W. Dutcher, Hopedale, Mass., assignor to the Dutcher Temple Company, same place.

Claim.—The adjustable bracket D, the temple arm carrier D, the clamp-nut *h*, and screw *i*, the pivoted temple arm A, the stops *d e f*, and spring *g*, all constructed and arranged as hereinbefore described.

107,169, antedated August 26, 1870.—MACHINE FOR WASHING AND SCREENING ORES AND FERTILIZERS.—Alfred Duvall, Baltimore, Md.

Claim.—1. A machine for washing and screening ores, &c., combining in its construction a rotary dish, F, and perforated cylindrical screen G, substantially as set forth.

2. The combination of the rotary dish F, perforated cylinder G, and ribbed disk K K', substantially as set forth.

3. The combination and arrangement of the rotary dish F, cylindrical screen G, casing H, disk K, and opening I, substantially as set forth.

4. In combination with the rotary dish F and perforated cylinder G, a gate, L, substantially as and for the purpose set forth.

107,170. — AXLE-BOX FOR CARRIAGES. — Lewis R. Dye, Cranberry, N. J.

Claim.—The axle-box A, cylindrical in form externally, and containing a chamber, C, and two tapering bearings, *b b'*, when the face of the former is tapered to a greater degree than that of the latter, as and for the purpose set forth.

107,171.—WIRE-CLOTH FOR COAL-SCREENS. Jacob G. Frick, Pottsville, Pa.

Claim.—As a new article of manufacture, wire-cloth for coal-screens, constructed as herein described, namely, of square or angular wires or rods arranged with their angles or corners facing each other, and provided with two or more crimps in each side of a mesh, substantially as and for the purpose set forth.

107,172. — PRUNING-TOOL. — Samuel Gamwell, Wayland, Mich.

Claim.—1. In combination with knife A and guard B, the chisel C, pivoted at *b*, as described, and for the purposes herein set forth.

2. The combination of the knife A, guard B, handles D D, chisel C, and clasp G, all constructed and arranged as described, to operate substantially as and for the purposes herein set forth.

107,173.—SPRING CARRIAGE.—Demon R. Gould and Warren S. Wickham, Chestertown, N. Y., assignors to themselves and Nelson B. Mallory, same place.

Claim.—1. The divided spring reach G G, constructed substantially as shown, connecting the front and rear axles, and also the body of a vehicle as and for the purposes herein set forth.

2. In combination with the spring reaches G G, the springs I I, connecting the body with the rear axle, substantially as set forth.

3. The combination of the axles A B, spring C, body E, spring reaches G G, bar H, and springs I I, all constructed and arranged substantially as and for the purposes herein set forth.

107,174. — PERMUTATION LOCK. — Henry Gross and Joseph L. Hall, Cincinnati, Ohio.

Claim.—The combination of the bolt A, provided with the dogs *a*, and having the check-bolt D pivoted thereto, with the two independent nests of tumblers C, vibrating-bars B, and the independently-operating cam F, all constructed and arranged to operate substantially as set forth.

107,175.—WHIP-HOLDER.—Nelson Hanchett, Leslie, Mich.

Claim.—The whip-holder above described, consisting of the disks A and B, the wire loops *a*, and the suspension-rod C, when the several parts are constructed as described and shown, and arranged as and for the purpose set forth.

107,176.—LOCK FOR SECURING STAMPS UPON BARRELS.—Joseph L. Harley, Baltimore, Md.

Claim.—1. A stamp-holder for barrels, consisting of the case L, and plate E, the latter being provided with a series of catches, *d*, to engage with a corresponding series of springs, *a*, arranged within the former, said springs having their free ends projecting through its inner side, so as to be actuated by a key, all constructed and arranged substantially as described.

2. In combination with the springs *a*, the guard-plate D, and the plate E, when provided with an irregularly-shaped or grooved edge, the whole constructed and arranged substantially as herein shown and described.

107,177.—TANNING LEATHER.—Clarence L. Jenkins, Omaha, Nebraska.

Claim.—The process of liming, bating, and tanning hides to make leather, by subjecting them successively to the compounds herein described.

107,178.—WATER-CLOSET.—John Keane, New York, N. Y.

Claim.—1. The inclined-faced adjustable collar F and the spring-bolt I, in their combination with and relation to each other.

2. These, in their combinations with and relations to the rod C and the levers E G H.

3. All these, in their combinations with and relations to the retarding-cylindor J, the globe or water-way V, and the operating parts thereof.

4. A water-closet apparatus, consisting of a bowl, levers E and H, and a retarding-valve, adjustable collar, and spring-bolt, constructed substantially as described, and in which mercury is applied as a retarding medium, as and for the purpose set forth.

107,179.—MACHINE FOR SHEARING METAL. Artemas A. Kent, Lyons, Iowa.

Claim.—1. In combination with the frame A, cast in one piece, having an offset, as shown, and the slide or cash C, the adjustable casing *c*, arranged and operating substantially as described.

2. The combination and arrangemt of the frame A, slide C, casing *c*, nut *e*, screw *d*, levers E and J, straps G and H, and upright bar F, when constructed, arranged, and operating substantially as and for the purpose set forth.

107,180.—REFRIGERATOR AND SIDEBOARD. William High Kern and Thomas Murat Davis, Philadelphia, Pa.

Claim.—A case, constructed internally so as to serve as a refrigerator, and provided with a flat top, and with a back-piece, A, as described.

107,181. — STEAM-GENERATOR. — John C. Kilgore, Philadelphia, Pa.

Claim.—1. The boiler herein described, composed of sections A, each section consisting of a downwardly-tapering steam-drum, C, mud-drum B, connecting-tube *m*, and >-shaped or angular pipes D, substantially as specified.

2. In combination with a steam-drum, C, and mud drum B, the >-shaped angular or bent pipes D, having their branches inclined to the horizontal, as specified.

3. The sectional boiler A, consisting of pipes and steam and mud-drums, provided with interior hand-holes, *z*, and secured together by short bolts or rivets, *n*, from the inside, substantially as specified.

107,182. — BALANCE. — George W. King, Georgetown, D. C.

Claim.—1. The combination, in scales, of a frame having a curved slot securing one or more weighted rollers acting upon a balance-shaft pivoted to the front of the frame, substantially as set forth.

2. The combination of the triangular-shaped frame A, curved slot *a*, shaft *b*, roller *d*, weights C C, and bifurcated balance-shaft B, all constructed to operate substantially as set forth.

107,183.—HORSE HAY-RAKE.—Gaaway O. Lackey, Akron, Ohio.

Claim.—1. The combination of the bar I, provided with the groove *w* along its lower front edge, rake-head C, U-shaped tension-spring M, arranged in the rear of and parallel to the rake-head, tension-rod K, and pivoted metallic tooth J, the several parts being arranged as and for the purpose specified.

2. The combination of the rake-tooth J, provided with the pivot-arm *m*, tension-rod K, provided with the hooked ends *n p*, and the tension-spring M, provided with the notches N N O, and resting in the groove *w* of the bar I, the several parts being constructed and arranged as and for the purpose specified.

107,184.—MILL FOR GRINDING BONES.—Alfred Lister and Edwin Lister, Newark, N. J.

Claim.—The revolving grinding-cylinders *a b*, the surfaces of which are composed of diagnal cutting-edges, moving in opposite directions, substantially in the manner and for the purposes specified.

107,185.—FEED-WATER HEATER FOR STEAM-BOILER.—Daniel Lordon, Memphis, Tenn., assignor to himself and James Shields, Grand Rapids, Mich.

Claim. — The particular arrangement with the boiler of the mud-drum D, coil G H, with parts *a* and *b*, the valve-chamber F, and cocks K and L, all constructed as shown and described.

107,186.—COMBINED ADJUSTABLE CULTIVATOR AND GRAIN-DRILL.—Thomas Lumsdon, Waterford, Ohio.

Claim. — The arrangement of center beam A, hinged side beams B B, perforated plates C C, seed-box I, with shaft *f*, agitators *g g*, and pulley-cord *h*, spur-wheel K, standard D, and tubes J J, all substantially for the purposes as set forth.

107,187.—CIDER-MILL.—Samuel Males, Cincinnati, Ohio.

Claim.—1. The combination and arrangement of the cross-head A, bolts N, and the parts J J' *j j'*, composing the mill-chamber, as described, and for the purpose specified.

2. In the described connection with the posts B B', sills D D', and sill E, the knees F F', and bolt G H I, as described, and for the purpose specified.

3. The scraping and discharging-cavity O, constructed as described, and arranged in the case J J' *j j'*, substantially as and for the purpose set forth.

4. The cam-shaped journal-bearings, figs. 5 and 6, when formed with perforated inclosed ends *r* and grooves *r'''*, for the purpose specified in the described connection with the sockets 2 2' R of the case J J' *j j'*.

107,188.—URINAL.—Samuel Males, Cincinnati, Ohio.

Claim.—1. In the described connection with the bowl or sink A, having lugs or ears *e* in the discharge-opening, the strainer C *e'' e''' e''''*, constructed and connected substantially in the manner and for the purpose specified.

2. In combination with the elements of the preceding clause of claim, the hooked locking strip F, as described, and for the purpose specified.

107,189.—CASE FOR BOTTLE AND GLASS.—Jules Mathieu, Paris, France.

Claim.—1. A case of wood, metal, or other suitable material, adapted for the reception of traveling or other flask, and of a glass, intended to receive the liquid from the said flask, substantially as described.

2. The straps *l* or *g*, arranged in the lid B, as set forth.

3. The washer R, arranged on the bottle F, as described.

4. Arranging the case to contain, in addition to the bottle and glass, one or more boxes, for the reception of various articles, substantially as described.

107,190. — PERMUTATION LOCK.—Luke H. Miller, Baltimore, Md.

Claim.—1. A combination of two or more locks, or a double lock, whose bolts are operated simultaneously by a single motion of a common spindle.

2. A combination of a single spindle, or dial and spindle, and two or more locks, or a double lock, operated thereby unitedly or either separately.

3. The fence M, hinged to a moving arm, and so arranged as to be held aloft by a stationary hook from the guard-plate or tumblers during the greater portion of the time, and lowered once in each revolution of the said plate, to try whether the gates are ready to receive it.

4. The fence M, arm N, and spring *n*, in combination with the guard-plate L, and a periodical tripping or actuating device, to wit, the pin *k* and dog S, or equivalent device.

5. The spindle D, with a longitudinal adjustment, the spline-wheels E E', and upper and lower wheels F G, forming an arrangement by which either of the locks may be operated at will.

107,191. — GAS-FIXTURE. — David Milne, Norwich, N. Y.

Claim. — The hereinbefore described drop or bracket burner, consisting of the pipes C, E, and H, connected together by means of the elbow B, the swing joints D, and the double swing joint E, *f*, and G, constructed substantially as and for the purpose specified.

107,192.—LUBRICATOR.—Thomas J. Mooers, Blossburg, Pa.

Claim.—1. The opposite oil-reservoirs A B, combined with a hub having channels, G H I, arranged as and for the purpose described.

2. The reservoir A on a loose wheel, combined with the plate E, elastic packing F, and their clamping bolt, as and for the purpose described.

3. The reservoir B, combined with the spring oil-tight valve D at the side thereof, as and for the purpose described.

107,193.—HARVESTER.—Halvor H. Nestestu, Deerfield, Wis.

Claim.—1. The combination and arrangement of

frame B', handle C, staple C', lever D, cord or chain E, pulley F, arm A''', and grain-platform A, when constructed substantially as and for the purpose set forth.

2. The combination and arrangement of the frame B', handle K, guide K', connecting-rod L', standard I, and adjustable cut-off H, when constructed substantially as and for the purpose set forth.

107,194.—MACHINE FOR ROLLING TIRES.—Hippolyte Ulysse Petin, Rive de Gier, France.

Claim.—The rolls *f g*, the projecting outer ends of which are constructed to form the sides and tread of a tire, in combination with the roll B for rolling the inside of the tire, when said roll is arranged substantially as herein shown and described, so as to be removed through the tire.

107,195.—SAWING-MACHINE.—John T. Plass, New York, N. Y.

Claim.—1. The arrangement, substantially as specified, of the hollow open column D, the upper arch E, and forward portion F of the frame, with the upper and lower saw-carrying pulleys I and B, and sides or side and gate G H to said frame, for directing the run of the saw under cover and behind the guide-bar K, substantially as specified.

2. The guide-bar K, constructed or provided with a protecting flange, *d*, arranged in relation to the saw and its bench or table, essentially as described.

107,196.—CAR-COUPLING.—Andrew J. Prescott, Catawissa, Pa.

Claim.—1. The bottom bar of the draw-bar A, extending through the center of the head, and working up and down in slots on the same, substantially as and for the purposes herein set forth.

2. The combination of the bars C C with arms *b b* and springs D D, constructed and arranged as described, within the draw head B, and operating substantially as and for the purposes herein set forth.

107,197. — STOVE-GRATE.—William Quay and Ezra M. Hinsdale, Troy, N. Y.

Claim.—A center-piece pivoted to or within a corresponding opening within a grate, with its axis parallel with the face thereof, so as to be capable of a vertical rotary motion independent of said grate, and having its surface provided with suitable abrading or grinding points, ribs, or grooves, substantially as and for the purpose specified.

Also, in combination with the above-named pivoted center-piece, a toothed or serrated opening for containing the same, substantially as and for the purpose set forth.

107,198.—PACKED ROTATING VALVE-STEM.—Ezra Ransom, Flint, Mich.

Claim.—The combination and arrangement of the packing-nut C, the packing-box A, the gland B, the jam-nut A', and the threaded valve-stem D, when the several parts are constructed as described and shown, and as and for the purposes set forth.

107,199. — CLOTHES-DRIER. — George W. Richardson, Taunton, Mass.

Claim.—The hinged frame *a a*, connected by the pieces *b b*, in combination with the supplementary frames or racks *c c c c*, supported by the braces *d d f f*, respectively, all arranged and operating as set forth.

107,200.—PAINT-BRUSH.—George L. Shuttleworth, Sharon, assignor to himself and Darwin E. Washburn, Woodstock, Vt.

Claim.—The construction and combination of devices as explained, that is, elastic arms C C, the jaws D D, and the elastic tube E, as constructed, arranged, and combined with the contractile tube B, made as set forth, and with the brush-body and handle, as specified.

107,201.—TORPEDO FOR OIL-WELL.—Henry Julius Smith, Boston, Mass.

Claim.—An apparatus for producing an explosion in oil-wells, the same consisting of a torpedo united to an insulated wire, covered with a protection armor, as and for the purpose specified.

197,202. — NUMBERING-MACHINE. — James D. Smith, Washington, D. C.

Claim.— In a numbering-machine having a yoke, B, with rotating disks D mounted therein, the combination of the post A with one or more removable plates, *f* and *i*, when constructed and arranged substantially as herein described, and for the purpose set forth.

107,203.—FEED-ATTACHMENT FOR THRASHING-MACHINE.—Barnes Thompson, Horton, Iowa.

Claim.—The portable rotating feed-attachment for thrashing machines described, consisting of center post A, sections E D, thimble C, braces B, and rods *b*, all constructed substantially as described, and arranged to operate in the manner and for the purpose specified.

107,204. — CARDING-MACHINE. — George Thresh, Oxford, Me., assignor to himself and Jonathan Roberts, same place.

Claim.—1. The combination and arrangement of the strippers 2, 3, 4, band *o*, box-pulley *m*, cross-band *p*, and pulley on the shaft *b*, with the drum *a*, as herein described.

2. The arrangement of the pulley on the shaft *b*, cross-band *r*, band *t*, box-pulley *s*, and workers *i g f e d*, with their pulleys, as described.

107,205.—CLOTH-MEASURING MACHINE.—Thomas Weeden and Thomas Tribe, Hilladale, Mich.

Claim.—1. The double parallel bars or guides I, for allowing a lateral adjustment of the folding or wrapping-board J, substantially as herein set forth.

2. The frame A, cylinder B, pin C, dial D, rods E, guides F I, cranks G, plates H M, spurs K, shafts L, and springs N, when arranged to operate as set forth.

107,206. — STEAM AND VAPOR-ENGINE.—Franklin A. Morley, Syracuse, N. Y.

Claim.—1. In combination with the engines A B, and condenser E, the second multitubular condenser H A A, substantially as and for the purpose specified.

2. The third multitubular condenser P *r r*, substantially as and for the purpose specified.

3. The method herein described of regulating the height of the liquid in *e* and H, namely, inserting the pipes K *l* at such point that they will receive more gas or liquid as the surfaces of the liquid fluctuate in height, for the purpose specified.

4. The method of preventing back pressure in the aqua ammonia engine I, by causing the water of the solution to accompany the ammonia to the cooling-vessel or condenser H.

107,207.—COMBINED LOCK AND LATCH.—Samuel C. Weddington, Jonesborough, Ind.

Claim.—1. The combination of the tumblers G, dogs F, springs H', and bars H, all arranged substantially as set forth.

2. The projecting finger I, on the locking-bolt B, arranged to operate substantially as and for the purpose set forth.

3. The combination and arrangement of the spring D, its support D', and screw D'', substantially as and for the purpose set forth.

107,208.—APPARATUS FOR THE MANUFACTURE OF ILLUMINATING-GAS.—Henry G. Ludlow, Troy, N. Y.

Claim.—1. The fluid in the main caused to maintain different levels therein for the purpose of sealing and unsealing the dip-pipes by means of a plunger, or its equivalent, projected into or against the body of the fluid and withdrawn therefrom, as herein described.

2. In combination with the hydraulic main A of a gas-manufacturing apparatus, an auxiliary receiving and displacing chamber, C, for the fluid in said main, and a plunger, D, or other device operating as herein described.

3. In a hydraulic main, A, having sealing and unsealing dip-pipes, B, using the same body of liquid continuously to seal and unseal said pipes for the purpose described without drawing off said liquid from the main or replenishing it to accomplish such result, as described.

REISSUES.

4,114.—ATTACHING KNOBS TO SPINDLES.—Matthew Andrew, Melbourne, Victoria.—Patent No. 101,808, dated April 12, 1870.

Claim.—The spring catch C, arranged to project over one side of the spindle B, in combination with a hole, *d*, in the shank of the knob, at one side of the spindle, substantially as and for the purpose described.

4,115.—WEIGHT FOR SASHES, CLOCKS, &c. Daniel B. Lacy, Mott Haven, N. Y. Isaac A. Lacy, Saugerties, N. Y., Thomas T. Lacy, Jersey City, N. J., the Lacy Sash-Weight Company, and the Standard Sash-Weight Company, New York, N. Y., assignees, by mesne assignments, of Daniel B. Lacy.—Patent No. 58,172, dated September 18, 1866.

Claim.—1. The construction of sash and other weights with an outer case of sheet metal and a filling of slag, substantially as set forth.

2. The construction of weights with an outer case of sheet metal and a filling of slag and a malleable or wrought-metal ring or shank around which the slag is cast, substantially as herein set forth.

4,116.—CARRIAGE-WHEEL.—James D. Sarven, New Haven, Conn.—Patent No. 17,520, dated June 9, 1857; reissue No. 3,079, dated August 11, 1868.

Claim.—A carriage-wheel constructed with the spokes combined with the wooden hub, by tenons entering mortises in said hub, and with each other, in such manner that a solid belt is formed around the said hub, substantially as before set forth.

Also, a carriage-wheel constructed with a mortised wooden hub, with tenoned spokes, and with flanges which embrace the faces of the spokes in the immediate vicinity of the hub, and are connected together so as to form a metallic band, through which the spokes extend into the mortises in the wooden hub, substantially as before set forth.

Also, a carriage-wheel constructed with a mortised wooden hub, with tenoned spokes combined with each other, so that a solid belt is formed around the hub, and with metallic flanges which embrace the faces of the spokes in the immediate vicinity of the hub, and are connected together so as to form a metallic band, through which the spokes extend into the mortises in the wooden hub, substantially as before set forth.

DESIGNS.

4,324. — CARPET-PATTERN. — Robert R. Campbell, Lowell, Mass., assignor to Lowell Manufacturing Company, same place.

Claim.—The configuration of the design hereunto annexed, when made by being inwrought into three-ply, ingrain, or other carpeting, in the form similar to the photographic print accompanying this specification.

4,325.—CARPET-PATTERN.—Robert R. Campbell, Lowell, Mass., assignor to Lowell Manufacturing Company, same place.

Claim.—The configuration of the design hereunto annexed, when made by being inwrought into three-ply, ingrain, or other carpeting, in the form similar to the photographic print accompanying this specification.

4,326.—CARPET-PATTERN.—Robert R. Campbell, Lowell, Mass., assignor to Lowell Manufacturing Company, same place.

Claim.—The configuration of the design hereunto annexed, when made by being inwrought into three-ply, ingrain, or other carpeting, in the form similar to the photographic print accompanying this specification.

4,327.—CARPET-PATTERN.—Robert R. Campbell, Lowell, Mass., assignor to Lowell Manufacturing Company, same place.

Claim.—The configuration of the design hereunto annexed, when made by being inwrought into three-ply, ingrain, or other carpeting, in the form similar to the photographic print accompanying this specification.

4,328.—CARPET-PATTERN.—Robert R. Campbell, Lowell, Mass., assignor to Lowell Manufacturing Company, same place.

Claim.—The configuration of the design hereunto annexed, when made by being inwrought into two-ply, ingrain, or other carpeting, in the form similar to the photographic print accompanying this specification.

4,329.—CARPET-PATTERN.—Robert R. Campbell, Lowell, Mass., assignor to Lowell Manufacturing Company, same place.

Claim.—The configuration of the design hereunto annexed, when made by being inwrought into two-ply, ingrain, or other carpeting, in the form similar to the photographic print accompanying this specification.

4,330.—CARPET-PATTERN.—Robert R. Campbell, Lowell, Mass., assignor to Lowell Manufacturing Company, same place.

Claim.—The configuration of the design hereunto annexed, when made by being inwrought into two-ply, ingrain, or other carpeting, in the form similar to the photographic print accompanying this specification.

4,331.—CARPET-PATTERN.—Robert R. Campbell, Lowell, Mass., assignor to Lowell Manufacturing Company, same place.

Claim.—The configuration of the design hereunto annexed, when made by being inwrought into two-ply, ingrain, or other carpeting, in the form similar to the photographic print accompanying this specification.

4,332.—CARPET-PATTERN.—Robert R. Campbell, Lowell, Mass., assignor to Lowell Manufacturing Company, same place.

Claim.—The configuration of the design hereunto annexed, when made by being inwrought into three-ply, ingrain, or other carpeting, in the form similar to the photographic print accompanying this specification.

4,333.—CARPET-PATTERN.—Robert R. Campbell, Lowell, Mass., assignor to Lowell Manufacturing Company, same place.

Claim.—The configuration of the design hereunto annexed, when made by being inwrought into three-ply, ingrain, or other carpeting, in the form

similar to the photographic print accompanying this specification.

4,334.—KNITTED FABRIC.—Thomas Dolan, Philadelphia, Pa.

Claim.—The design for a knitted fabric, substantially as described and illustrated in and by the accompanying drawing.

4,335.—CUPBOARD-LATCH.—William Gorman, New Britain, Conn., assignor to the Russell and Erwin Manufacturing Company, same place.

Claim.—The ornamental design for a cupboard-latch, substantially as herein described and shown in the drawing.

4,336.—COLLAR-BOX.—Samuel F. Hilton, Providence, R. I.

Claim.—The design for a box called "the cottage," as shown.

4,337.—NET FABRIC.—Robert H. Jefford, New York, N. Y., assignor to Abraham G. Jennings, same place.

Claim.—The design for net fabric, as shown.

4,338.—CLOCK-CASE.—Samuel B. Jerome, New Haven, Conn., assignor to Samuel Peck & Co., same place.

Claim.—As a new and original design, a polygonal-shaped clock-case, with an ebony-finished bevel edge, as herein shown and described.

4,339—CARPET-PATTERN.—Elemir J. Ney, Dracut, assignor to Lowell Manufacturing Company, Lowell, Mass.

Claim.—The configuration of the design hereunto annexed, when made by being inwrought into three-ply, ingrain, or other carpeting, in the form similar to the photographic print accompanying this specification.

4,340.—CARPET-PATTERN.—Elemir J. Ney, Dracut, assignor to Lowell Manufacturing Company, Lowell, Mass.

Claim.—The configuration of the design hereunto annexed, when made by being inwrought into three-ply, ingrain, or other carpeting, in the form similar to the photographic print accompanying this specification.

4,341.—CARPET-PATTERN.—Elemir J. Ney, Dracut, assignor to Lowell Manufacturing Company, Lowell, Mass.

Claim.—The configuration of the design hereunto annexed, when made by being inwrought into two-ply, ingrain, or other carpeting, in the form similar to the photographic print accompanying this specification.

4,342.—CARPET-PATTERN.—Elemir J. Ney, Dracut, assignor to Lowell Manufacturing Company, Lowell, Mass.

Claim.—The configuration of the design hereunto annexed, when made by being inwrought into two-ply, ingrain, or other carpeting, in the form similar to the photographic print accompanying this specification.

4,343.—CARPET-PATTERN.—Elemir J. Ney, Dracut, assignor to Lowell Manufacturing Company, Lowell, Mass.

Claim.—The configuration of the design hereunto annexed, when made by being inwrought into three-ply, ingrain, or other carpeting, in the form similar to the photographic print accompanying this specification.

4,344.—FLOOR OIL-CLOTH.—John T. Webster, New York, and Albert E. Powers, Lansingburg, assignors to Deborah Powers, Albert E. Powers, and Nathaniel B. Powers, Lansingburg, N. Y.

Claim.—The design for floor oil-cloths, as shown on said drawings and herein described.

4,345. — CURTAIN-CORNICE, &c. — Henry Whittemore, Passaic, N. J.

Claim.—As a design for suspending draperies for wash-stand screens, windows, &c., the flat cornice A, provided with the arms *g g*, of the form and configuration herein shown and described.

ISSUE OF SEPTEMBER 13.

PATENTS.

107,209, antedated September 3, 1870.—TAPER-HOLDER.—Henry B. Adams, New York, N. Y.

Claim.—1. In combination with the groove *a*, having an enlarged portion, *a'*, the sliding clamp *c*, arranged and operating as described.

2. The handle B, constructed with an annular groove, *e*, and central cord *c*, in combination with the taper-holder A, with groove *a*, enlarged portion *a'*, and the sliding clamp *c*, all constructed and arranged to operate as described.

107,210. — BLIND-FASTENER. — Franklin Babcock and Frederick Babcock, Middletown, Conn.

Claim.—The circular case, with lower part furnished with locking lugs with raised circular projections, and with projections to secure the double spring through which the hook passes, combined with the recessed cover, and all secured by the single central screw, as and for the purpose described.

107,211. — SAWING-MACHINE. — James T. Baggs, Bridgeport, Ohio.

Claim.—1. The table G and the semicircular slotted braces I, in combination with knife-edged supports H and clamping-screws K, each constructed as and for the purpose specified.

2. The combination, with the frame F and table G, of the slides H, screws M, shaft R, worm-gears Q P, semicircular slotted arms I, and clamp-screws K L, all substantially as specified.

3. The combination, with the guide-plate U, of the spring-guides Z^1 and Z^2, substantially as specified.

107,212.—COFFIN-HANDLE.—Alonzo B. Bailey, Cobalt, Conn.

Claim.—1. The tubular hand-piece A, having screw-threads formed upon its ends, to adapt it for being screwed into the sockets b^1 of the lugs B, substantially as herein shown and described.

2. An improved coffin-handle, formed by screwing the ends of the tubular hand piece A into the screw-sockets b^1 of the solid lugs B b^1 b^2, substantially as herein shown and described, and for the purpose set forth.

107,213. — SPRING-BED BOTTOM. — Henry Dwight Wright Bailey, Sterling, Ill.

Claim.—The combination of the bed-rails B, slats E, elastic loops C, loops D, and flexible strap F, all arranged as described, for the purpose specified.

107,214. — HARVESTER.—Moses Bales and William P. Bales, London, Ohio.

Claim.—1. The described arrangement of wipers W, rock-shaft E, pallets D D', adjustable boxes F f F' f', shifter G g g', l l', and lever P, for the object explained.

2. The arrangement, in the described connection with the rock-shaft operating the cutter, of the rod J, collars K K', nuts M M', cushions N N', and brackets O, for the purposes stated.

107,215.—EXTENSION TABLE.—Melvin Bancroft, Montague, Mass., assignor to George F. Richardson & Co., same place.

Claim.—1. In combination with the leaf H, the pawl *b*, ratchet *a*, drum D, and shaft C, as herein described, for the purpose specified.

2. The combination of the shaft C, drum D, coiled spring E, ratchet *a*, pawl *b*, and band F, with the parts A B and leaf H, as described, and for the purpose specified.

3. The combination of spring G with shaft C, drum D, coiled spring E, ratchet *a*, pawl *b*, band F, parts A B, and leaf H, as shown and described, and for the purpose specified.

107,216.—MACHINE FOR MAKING FLANGED AND BEADED HOOPS.—Joel Blood, Watertown, N. Y.

Claim.—1. The combination, with the hoop-rolls of the flanging roller, arranged to move toward or away from the end of, and to operate in connection with said rolls, so as to form a flange on the hoop passing between them, substantially as herein shown and set forth.

2. The combination of hoop-rolls and flanging roller or device, substantially as herein described, when the hoop-rolls are provided, the one with a groove, and the other with a bead, fitting said groove, so that the hoop may be beaded at the same time that it is flanged.

3. The combination, with the hoop-rolls and flanging device, of the friction-roller, in rear of the rolls, for bending the finished hoop to a circle of the required diameter, substantially as shown and set forth.

4. The combination of the hoop-rolls, the flanging device, and the gauge for determining or regulating the width of the flange formed on the hoop as it passes between the hoop-rolls, arranged for joint operation, substantially as described.

5. The combination, with the hoop-rails, of the flanging-plate, mounted upon one of the rolls, so as to operate to form the flange on the hoop, in the manner herein described, the spring interposed between said plate and roll and the pressing-roller, for holding the flanging-plate up to its work under the arrangement, substantially as shown and described.

6. A machine for flanging metallic hoops and like articles, the parts of which are combined and arranged for joint operation, as herein shown and set forth.

107,217. — REFRIGERATING CAR. — Alfred Booth, Chicago, Ill.

Claim.—The arrangement of the series of air-tight ice-receptacles, as described, in combination with the deflecting-plate L, fan J, air-chamber H, and discharge-pipes O N, constructed as described, all as herein set forth.

107,218.—PLOW, PLANTER, AND CULTIVATOR.—Elijah Bourne, New Iberia, La.

Claim.—1. The detachable rotary plow-stock H, formed in two parts, hinged together, and constructed with tubular spokes, as described.

2. The arrangement of double spur-wheel D, pinions P G, seed-dropper M, and rotary plows I, operating as described.

107,219.—MUSIC-STAND.—Lewis V. Brown, Salisbury, N. C.

Claim.—The extension or sectional staff A, socket-cap D, candle-socket E, and adjustable arms I J, arranged to operate substantially as and for the purposes herein shown and described.

107,220.—SHUTTLE FOR LOOM.—Hugo Carstaedt, New York, N. Y.

Claim.—The combination, with the shuttle, of the take-up drum, having a thread-guide, *d'*, carried thereon, with a spring, acting to turn the drum in a direction to take up and wind thereon the slack of the weft, and yielding to allow the weft to be delivered, when necessary, all substantially as herein set forth.

107,221.—MOTIVE POWER.—John M. Cayce, Franklin, Tenn.

Claim.—1. The combination of shaft A, rod E, sleeve I, and spring barrel D, forming a single spring apparatus, when constructed to operate substantially as and for the purposes described.

2. The combination of two or more of said spring apparatus with each other, when the shaft A and rod E are so constructed that by moving the rod along it will adjust the several springs to be wound independently of each other, substantially as and for the purpose described.

3. The combination of each spring apparatus, consisting essentially of the parts A I D E *m i d*, with the shaft B, and the apparatus G *h* H H', substantially as and for the purposes specified.

4. In combination with the several cog-rims *d d d*, the cut-off O *o* N *n*, constructed to operate substantially as and for the purpose specified.

107,222.—MACHINE FOR TENONING WINDOW-SASH.—Frank G. Chapman, Chicago, Ill., assignor to Dennis Beach, same place.

Claim.—1. The table L for dovetailing and tenoning-machines, provided with the adjustable lifts *f* for determining the bevel of the dovetails upon sash-rails, substantially as described.

2. The adjustable table L, provided with the adjustable lifts *f*, stops *d*, and adjustable gauges *g*, for the purpose specified.

3. The sliding table L of a dovetailing and tenoning-machine, provided with the adjustable lifts *h*, and made adjustable longitudinally, to permit the formation of tenons and dovetails simultaneously upon both ends of sash-rails of different lengths, substantially as described.

107,223.—HANDLE FOR TABLE AND OTHER CUTLERY.—Matthew Chapman, Greenfield, Mass.

Claim.—1. The mode of making the handles of knives, forks, and other articles of table and other cutlery, substantially as herein described.

2. Knives, forks, and other articles of table and other cutlery, made in the manner substantially as herein described, as a new article of manufacture.

107,224.—SOFA.—Julius Cicsor, Davenport, Iowa.

Claim.—The cabinets or desks A A, (or either of them,) in combination with a sofa or lounge, arranged and operating substantially as and for the purposes herein shown and described.

107,225.—ADJUSTABLE LIFTING-LADDER.—George Claflin, Miller's Corners, N. Y.

Claim. — The arrangement of the platform B, provided with the hinged leaf *p* and adjusting brace-arms *w w*, when the same is combined with a foot-ladder having the braces C C, which are removable and adjustable, in the manner and for the purpose specified.

107,226.—ICE-VELOCIPEDE.—Mark Coffin, Milton, Ky.

Claim.—The metal flanges A A, when provided with beveled edges, and so placed upon a wheel that they will bind and extend beyond its periphery, in the manner shown and for the purpose described.

107,227. — STONE ADZ.—William Covart, Claytonville, Kansas.

Claim.—The stone-dressing adz, formed of a body A, provided with a plain cutting-edge, B, having side lips C, and with a notched edge, D, arranged substantially as specified.

107,228.—PLOW.—Albert A. Dailey, Wilson, N. Y.

Claim.—The combination of the curved or inclined axle M′, slotted pivoted arm N′, and gauge-plate P′, with each other and with the plow-beam A, substantially as herein shown and described, and for the purpose set forth.

107,229.—POTATO-DIGGER.—Cook Darling, Utica, N. Y.

Claim. — A potato-digger, constructed as described, combining the shares *a b*, as described, for loosening up the ground and potatoes, as described, and the revolving raker in the rear for further stirring the ground and raking out the potatoes, as described, the whole being constructed, arranged, and combined substantially as herein set forth.

107,230.—KNITTING-MACHINE.—Owen Davis, New Lebanon, Ind.

Claim.—1. The combination of the lever A, connecting-rod E, frame B, stops *d d*, and clamp D *f*, all constructed and arranged substantially as described, and adapted to operate the sliding frame of a knitting-machine, in the manner set forth.

2. The fender F, provided with the cape or flange G′, and slots *e*, and adapted to be applied to the machine in the manner and for the purpose described.

107,231.—LADIES' BOOT.—Edgar F. Doty, Ravenna, Ohio.

Claim.—In boots, the arrangement of the elastic sections and the slitted linings herein shown, substantially as set forth and for the purposes described.

107,232.—ROOFING COMPOUND.—Joseph V. Douglas, Philadelphia, Pa., assignor to himself and James A. Craig, same place.

Claim.—A surface coating for roofs, formed of rolled iron scales, applied in hot liquid tar and in one or more successive coats, as set forth.

107,233, antedated September 1, 1870.—TRACTION-ENGINE.—William C. Douthett, Chicago, Ill.

Claim.—1. The combination of the foot C, constructed as described, with the lever A, in manner and for the purpose specified.

2. The combination of the pivoted levers A, chains D, and cross-bars *i*, in the manner described.

107,234. — GAS-BURNER. — Antoine Ernest Dupas, New Orleans, La.

Claim.—Depressing the middle of the tops of such concentric chambers, so as to make such tops of grooved form, and making the perforations at the bottoms of said grooves, as herein described, when said chambers are supplied by cross-pipes *a b*, as specified, for the purpose set forth.

107,235. — PLANTER AND CULTIVATOR.—Nathan Earlywine, Centreville, Iowa.

Claim.—1. The combination of the double platform C, circular dropping-plate D, ratchet-teeth E, pawl F, springs G and H, lever I, connecting-rod J, lever K, connecting-rod L, and hand-lever M, with each other and with the handle N, frame A, and seed-hopper O, substantially as herein shown and described, and for the purpose set forth.

2. The combination of curved bar or beam B′, teeth C′, hinged arms A′, and plates Z with the frame A, substantially as herein shown and described, and for the purpose set forth.

3. The combination and arrangement of the cutter U, furrowing-plow T S, conductor-spout R, and covering-plows V W, with the frame A and seed-dropping device, substantially as herein shown and described, and for the purpose set forth.

107,236.—CARPET-RAG CUTTER.—William Eberhard, Akron, Ohio, assignor to himself and J. P. Alexander, same place.

Claim.—1. The combination, in a rag-cutting machine, of two rotary knives, E G, with a pair of notched feeding-disks, H H, arranged, respectively, on each side of one of the cutters, and projecting above the cloth-supporting plate, as shown and described.

2. The combination of two notched disks, H H, with two pressure-rolls, I I, arranged relatively with respect to each other and the cutters, as described, to feed and hold in position the material to be operated on.

3. An improved carpet-rag cutter, containing the following instrumentalities, arranged and combined as specified, namely: a pair of rotary cutters, E G, a pair of notched disks, H H, a pair of spring pressure-rolls, I *d* I *d*, and a supporting-table, A.

107,237.—MOUNTED HORSE-POWER.—Massena B. Erskine, Racine, Wis.

Claim.—1. The axle, made in the form shown and described, and provided with the strengthening bar A, as and for the purpose specified.

2. The wrought-iron eye-bolt B, when used in the connection and for the purpose specified and shown.

3. The enlargement or swell E of the flange of the axle, to permit of the said flange being perforated by the three holes out of line with each other, for the purpose specified.

4. The truss-rod C connecting the two axles, substantially as described.

107,238.—ELASTIC NASAL-PLUG.—James J. Essex, Newport, R. I.

Claim.—As an article of manufacture, a nasal-plug, consisting of a perforated former inserted in the end of a rubber tube, substantially as shown and described.

107,239. — SELF-REGISTERING WEIGHING-SCALES.—Henry Fairbanks, St. Johnsbury, Vt.

Claim.—1. The poise-slider b^4, moved in a path independent of the scale-beam B, but parallel to its position previous to its weighing motion, and so connected with the poise that the force exerted shall act in a line directly toward or from the supporting knife-edge of the beam, substantially as herein set forth.

2. The hook-bar b^6, connecting the poise-moving mechanism with the poise, adapted to allow its ready disconnection, in order that the scale may be used in the manner of the ordinary scale, when desired.

3. Extending the said connection through or past the poise, so as to reduce the angular motion without extending the mechanism.

4. A preparatory stop mechanism, controlled by the position of the poise upon the freely-tilting beam, as specified.

5. Making the preparatory stop adjustable, so as to vary the point from which registering commences, as herein set forth.

6. Using the weighing motion of the scale to release a weighing stop, which, on being released, stops the mechanism irrespective of the position of the beam thereafter, all substantially as and for the purposes herein set forth.

7. In combination with a weighing-scale and poise-moving mechanism, a weighing stop, adapted to not only stop the poise-moving mechanism, but also lock the registering apparatus and hold it until it is unlocked by the preparatory or backward motion of the machine, as specified.

8. The intermittent or feeling motion of the weighing-stop mechanism, constructed and arranged substantially as herein specified, so that, while it is perfectly retained until the scale-beam moves, it shall only for very brief intervals interfere with that movement.

9. Providing ratchets or their equivalents, so arranged that neither the outward nor the inward motion of the poise can be reversed until the poise has made the entire traverse essential to correctly registering the weight of the load upon the scale, and providing for such reversals in connection with the preparatory stop and weighing stop, as herein set forth.

10. The duplex registering mechanism, registering both the sum of the weight and the number of the loads, in combination with a weighing scale, as specified.

11. The within-described machine, weighing variable loads by moving a poise upon a free scale-beam with automatic stops to arrest the motion of the poise in both directions, and adding and registering the sum of their weights, so that correctness does not depend upon mental effort or observation on the part of the operator, as specified.

12. The combination of, first, a weighing-scale, adapted to weigh variable loads; second, an adding and registering mechanism, adapted to add and register the sum of the loads weighed; and third, operating means working independently of and without disturbing or interfering with the weighing motion of the scale, all substantially as herein specified.

107,240.—RECORDING WEIGHING-SCALES.—Henry Fairbanks, St. Johnsbury, Vt.

Claim.—1. A weighing-machine, provided with the index-wheels I, having figures so formed thereon that their shape may be impressed on a strip of paper, in combination with an elastic coated hammer, F, or its equivalent, for recording the weighings, substantially as herein set forth.

2. The light lever A, arm h^4, the shoulder h^5, on the hooked rod H, spring h^{10}, and actuating-wheel h^9, or their several equivalents, arranged in connection with the other mechanism, to induce the variable preparatory movement of the printing-hammer F, or its equivalent, and to, at the same time, effect the preparatory stop of the poise-moving means, and of the entire mechanism, as herein specified.

3. The means herein described for automatically moving a readily-detachable strip of paper, J′, at each operation of the weighing and automatic printing mechanism, the action being controlled by the movements of the beam, as specified.

4. The grooved feed-rollers, in combination with the registering and automatic printing mechanism, and with the strip of paper J′, or its equivalent, and with the beam and poise moved thereon, as specified.

5. The spring h^3, for supporting the lever h, or its equivalent, when out of use, in combination with the beam A and printing mechanism, as specified.

6. The arrangement of the vibrating feeler f^7, relatively to the beam and to the operating mechanism, as described, so that it is restrained after the weighing movement of the beam, substantially as and for the purpose herein set forth.

7. The primary vibrating part f^6, arranged to serve as a pusher to the feeler f^7, but free to move in another direction, as and for the purposes specified.

8. The feeler f^7, the vibrating pusher f^6, and connected piece f^8, arranged as represented relatively to each other and the operating mechanism, so that the piece f^8 is moved only when the vibrating motion of its associate f^6 is restrained, and thereby initiates the action of the other mechanism, substantially in the manner herein set forth.

9. The poise-moving mechanism, in combination with the mechanism for automatically printing the weight, as specified.

10. The preparatory stop mechanism, when controlled as specified by the preparatory motion of the beam, as and for the purposes herein set forth.

11. The weighing-stop mechanism, in combination with means for automatically printing the weight, as specified.

12. The combination of automatic printing mechanism with automatic weighing mechanism, substantially as herein specified.

107,241.—DEVICE FOR MOLDING PLASTER CORNICES. — Smith Ferris, New York, N. Y.

Claim.—1. In a cornice-molding apparatus, a pair of detachable handles, D d′, each pivoted at one end to a slipper, and at the other to an arm of the mold, as and for the purpose described.

2. The bracket J, for attachment to the wall, to support the slide K, when used in connection with said slide, substantially as herein shown and described, and for the purpose set forth.

3. The slides K, formed with adjustable stops O, and pivoted guides P, to adapt it for use in connection with the bracket J, and mold A B C D, substantially as herein shown and described, and for the purpose set forth.

4. The combination of the lugs *k*′, adjusting and clamping-screws L, and adjustable lugs or knees M, with the slides K and bracket J, substantially as herein shown and described, and for the purpose set forth.

5. The combination of the pivoted levers Q with the slides K and guides P, substantially as herein shown and described, and for the purpose set forth.

107,242.—HAND-PUNCH.—Omri C. Ford, Burlington, assignor to himself and N. C. Stiles, Middletown, Conn.

Claim.—1. The cutter *a*, pivoted in one of the jaws *b* in such manner as to be capable of revolving in the jaw, as and for the purpose described.

2. The connecting-bars B B, in combination with the fixed pulley A, substantially as described.

3. The device described, consisting of the punch, rotary cutter *a*, pulley A, and connecting-bars B B, when the parts are constructed specifically as described, for the purpose set forth.

107,243. — PISTON-PACKING. — Walter J. Ford, Chicago, Ill.

Claim.—1. The adjustable piston-packing H, and ring I, adapted for rotation within the horizontal cylinder of a steam-engine, substantially in the manner described, for the purpose specified.

2. The combination of the adjustable packing H, rotary ring I, flange C, separated from the ring by a small space, two screws J J, arranged as described, and piston A E, when said parts are constructed and arranged in the manner and for the purposes set forth.

107,244.—MANNER OF TREATING COD-LIVER AND CASTOR-OILS.—George Wakefield Fox, Manchester, Great Britain.

Claim.—The method of rendering cod-liver and castor-oils palatable, by the addition thereto or the admixture therewith of the ingredients herein described, substantially as set forth.

107,245.—BRACKET-SHELF.—Isaac H. Frost, Bristol, Conn.

Claim.—As a new article of manufacture, the herein-described metallic shelf consisting essentially of the brackets B C, lugs *c c′ c′*, pin *h*, socket *d*, arm *a*, and shelf A, combined and operating together, substantially as described.

107,246.—GALLEY-REST.—Henry H. Gale, Eugene City, Oregon.

Claim.—The triangular end pieces C C, provided with hooks F, and pivoted at their lower ends, longitudinal rods D D′, slotted center piece E, screw-rod G, and clamp-nut I, all constructed and arranged as shown and described, for the purpose specified.

107,247.—CLAMP.—Francis Glasser, Mystic Bridge, Conn.

Claim.—The springs H H, rope K, and hook L, when used in combination with the serrated dogs F F and screw M, substantially as and for the purposes described and set forth.

107,248.—BIAS-CUTTER.—John H. Goodfellow, Troy, N. Y.

Claim.—1. The combination of straight-edge A, arm B, and clamping-bar or lever *c*, constructed and arranged substantially as described.

2. The knife D, constructed substantially as specified.

107,249.—Apparatus for Moving Buildings. — Matthew N. Gordon, Foster's Crossing, assignor to himself and James S. Gordon, Cincinnati, Ohio.

Claim.—1. The self-anchoring gin, consisting of the frame A, gear-wheel B, drum C, pinion D on driving-shaft *b*, and anchor-arms E, when constructed and arranged to operate substantially in the manner and for the purpose specified.

2. In combination with the above, the lateral braces G, as and for the purpose hereinbefore set forth.

3. In combination with the above, the carriage-wheels H H, as and for the purpose shown and described.

107,250. — Marking-Pot. — William H. Green, New York, N. Y., assignor to himself and Frederick McH. Kitching, same place.

Claim.—The combination of the valve D and the handle I, with a marking-pot, when the same are connected together, and arranged to operate substantially as and for the purposes set forth.

107,251. — Permutation Lock.—Martial Hainque, San Francisco, Cal., assignor to himself and Alexander Steiger, same place.

Claim.—The combination of the cam D, the sliding shafts M, and the train of gears having the projecting pins thereon operated by the key O in setting the notched disks, as and for the purpose described.

107,252. — Carriage.—George W. Ham, Parsonsfield, Me.

Claim.—1. The improvement in the union of perch and rear axle, as described, that is, consisting of metal tongue *a*, part *b*, piece *c*, recess *d*, bolts *e f*, and bolt *i*, with its screw-nuts and washer, as described.

2. The improved shafts, as described, composed of the curved metal piece *m*, core *n*, tongues *p p*, bolts *r r*, metal projection *t*, with the shafts and cross-piece *s*, as set forth.

107,253.—Lid-Fastening for Burial-Casket.—William Hamilton, Allegheny City, Pa.

Claim.—The slotted pieces *n* and *o*, in combination with the screws *l* and *m*, for securing the cap *c* on the lid B, as herein described.

107,254.—Gate.—Jacob H. Harnly, Penn township, Pa., assignor to himself and Ellis L. Spickler, same place.

Claim.—The arrangement of a foot-lever, T, operated on two sides of a gate, so as to depress the spring latch S H, and open the gate from you, approached on either side, substantially in the manner and for the purpose set forth and shown.

107,255.—Multiple Tool.—Henry J. Harris, Shreveport, La.

Claim.—1. A socket-wrench, composed of the body C and shank C', provided with an internal socket, D, thumb-screw D', and cross-piece A, which serves as a lever to operate the wrench, these parts being arranged substantially as set forth.

2. A multiple tool, consisting of the socket-wrench C C', having recesses *c* in its outer walls, and hammer A, provided with the groove A^1, stop a^1, and spring A^1, constructed and arranged as set forth.

107,256. — Horse Hay-Rake. — George Hauck, Mechanicsburg, Pa.

Claim.—1. In combination with the lifting-rim on the drive-wheel, the shield or projecting flange *p*, to prevent the hay from falling into and clogging said rim and its spurs, as described and represented.

2. The clearing-sticks *b*, clamped to the axle C by means of the clamp-plate *c* and bolt *d*, so that they may be adjusted on said axle, substantially as and for the purpose described.

107,257.—Revolving Table.—William H. Henderson and Walter S. Jones, Thaxton's Switch, Va.

Claim.—In combination with table A, the revolving center B, wheels *f e*, arm *k*, horizontal shaft *c*, spool *g*, weighted cord h, bevel-wheels *b a*, upright shaft G, arms *k k*, and flaps or brushes *i i*, all constructed and arranged as herein described, and for the purpose specified.

107,258.—Table.—George H. Henkel, Hartford City, Ind.

Claim.—The combination, with a hinged falling leaf, B, of circular pieces E, braces C, and short pieces D, pivoted to the under side of the frame, all relatively arranged with respect to the table, as set forth.

107,259.—Machine for Husking Corn.—Joel Hood, Milwaukee, Wis.

Claim.—The combination, in a machine for husking corn, of the frame D, rollers F, adjustable boxes G, set-screws H, and flange I, when said parts are arranged as described and shown, and for the purpose set forth.

107,260.—Stove-pipe Band and Shelf.—Reuben Hoover, Vernon Centre, Minn.

Claim.—The combination of the band B, braces C C, and shelf D, with the pipe A, when the parts are constructed as described, for the purpose set forth.

107,261.—Bed-Bottom.—Darlington Hoskins, Philadelphia, Pa.

Claim.—A bed-bottom, consisting of the jointed frame A, webbing C, and tightening bar *d*, constructed and arranged to operate together, substantially as and for the purpose hereinbefore set forth and described.

107,262. — Apparatus for Carbureting Air and Gas.—J. Burrows Hyde, New York, N. Y.

Claim.—1. A carbureter, made by securing two or more disks secured to an upright receiving and conducting-tube, the disks having double perforations, one for receiving and holding a spur capillary medium, which is threaded or woven through the disks from top to bottom, and the other holes for allowing the carbureted mediums to pass upward, when the lower part of the capillaries is immersed in the fluid, and escaping as described.

2. The sealing of a carbureting apparatus with glycerine or compounds of glycerine, with or without a mixture of sand, or its equivalent, as described.

3. Surrounding the whole or major part of a carbureter with a sealed recess for atmospheric air, as a non-conductor, or partial non-conductor, of refrigeration, arising from evaporation of the hydrocarbon.

107,263.—Blow-Pipe.—J. Burrows Hyde, New York, N. Y.

Claim.—1. The apparatus described, for the purposes set forth.

2. The use of a blowing contrivance, with two air-conductors, in combination with an air or gas-carbureter, and a blow-pipe or heating contrivance, as described, and for the uses set forth.

107,264. — Trap-Attachment for Gas-Fixtures.—J. Burrows Hyde, New York, N. Y.

Claim.—The construction of a closed safety-drip vessel, attached to a tube or branch, for illuminating or commercial gas, substantially in the manner and for the purpose set forth.

107,265.—Steam-Engine.—William Inglis, Bolton, and John Frederick Spencer, London, England.

Claim.—1. The combination of the ring L^a, disk E^a, locking-bar d^b, cam T, and a spring, substantially as shown and described, and for the purpose specified.

2. The combination, with the elements of the above clause, of the wrist-plate or plates, dash-pot, and adjustable stationary rod 19, all arranged to operate as shown and described

3. The arrangement of the valves 3 3, 4 4, and 5 5, with the high-pressure cylinder 1 and low-pressure cylinder 2, as shown and described, whereby the pistons of the said cylinders move simultaneously in reverse directions, as shown and described.

107,266.—Mold for Drying Cigar-Fillings.—Samuel B. Jerome, New Haven, Conn., assignor to "Samuel Peck & Co.," same place.

Claim.—1. A cigar-holder made of a composition substantially such as described, or other material impermeable to water, and provided with a lining of straw-board or other suitable absorbent for taking up the moisture of the cigar or filling placed in said holder, substantially as set forth.

2. A cigar-holder formed in two sections, of composition impermeable to water, molded in the shape substantially as shown and described, with a lining of straw-board or other absorbent material pressed and united with said section while the composition is in a plastic state, as set forth.

107,267. — Washing-Machine. — Powell Johnson, Des Moines, Iowa.

Claim.—The construction and arrangement of the two series of loose rollers No. 1 and No. 2, in combination with the adjusting frame R, to which rollers No. 2 are attached, and box A, all as shown and described.

107,268.—Carbureting Apparatus.—Moses W. Kiddor, Lowell, Mass.

Claim.—The method, substantially as described, of combining illuminating gas with the vapor or the vaporized products of naphtha or other equivalent liquid, by first heating the gas, and by passing such previously-heated gas into the vapor-chamber or the space above the naphtha, thereby increasing the capacity of each product to combine with the other, and also increasing the illuminating power of the gas, as set forth.

107,269.—Harrow.—Andrew Lewis, Hastings, Minn.

Claim.—An improved harrow, formed by the combination of the short bars A, to which the teeth B are attached, and which are arranged in parallel rows, connecting-rods C, jointed in their middle parts, and tubular washers D, with each other, substantially as herein shown and described, and for the purposes set forth.

107,270.—Saw-dressing Machine.—John Mallory, Penn Yan, N. Y.

Claim.—1. The frame B, circular and adjustable support *d*, frame C, adjustable stop H, and support I, with its adjusting-nut and spring, all constructed, arranged, and operating as shown and described.

2. In combination with the frame B, the segmental frame C, and circular supporting-frame D, constructed and arranged as shown and described.

3. The bar J and posts K, when made, applied, and used as and for the purpose herein specified.

107,271.—Ironing-Table.—John F. Martin and William A. Schaffner, Harrisburg, Pa.

Claim.—The combination of the standards A, board D, the upright bars G, cross-pieces H and I, the hooks L, *b*, *c*, and *d*, constructed as and for the purpose described.

107,272. — Spring Weighing-Scales.—Jean Victor Mathevet, Cleveland, Ohio.

Claim.—The weighted pointer B *b i*, so constructed and fitted to the spindle *c e* that it may retain its vertical position independent of the spindle, and, by a simple adjustment, be made to turn therewith, as and for the purpose described.

107,273.—Reversible Center-Pinion for Watches.—Jean V. Mathevet, Cleveland, Ohio.

Claim.—The ratchet-plate *c*, when formed with teeth *d*, in the manner described, and attached to the pinion B, as and for the purpose specified.

107,274.—Piston-Packing.—Franklin McConnell, Dowagiac, Mich.

Claim.—1. The hollow piston-rod B, having the rod C, with cone-shaped head D, and nut E, in combination with the braces F, plates *a a*, studs H, bolts I, and rings *d d*, as and for the purposes set forth.

2. The combination of the first-claimed parts with the opening L, substantially as and for the purposes hereinbefore set forth.

107,275.—Tight and Loose Pulley.—John G. McCormick, Louisville, Ky.

Claim.—A substitute for the fast and loose pulleys in machinery, composed of the friction rubber B, keyed to the shaft, the pulley F, shaft G, friction-band D, collar H, arms I K, set-screw L, and double crank C, when the band D is attached at one end to the pulley F, and at the other to the crank C, and all the parts are constructed and arranged to operate as and for the purpose described.

107,276.—Lamp.—Francis McDaniels, Philadelphia, Pa., assignor to Charles D. Macqueen.

Claim.—The combination of the annular oil-vessel T, knobs B B^1 and B^2, tubes A A^1 and A^2, center-piece P, cylinder C, openings O O', and N, and screw-cap D, as herein specified, the said parts being constructed substantially as set forth.

107,277.—Lamp.—Rufus S. Merrill, Boston, Mass., assignor to himself, Joshua Merrill, and William B. Merrill, same place.

Claim.—The combination, with the lamp-body and the central draught and wick-tubes of an Argand lamp, of the burner-supporting tube fixed to a screw-cap, which closes the opening in the top of the lamp, substantially as and for the purpose shown and described.

107,278.—Lamp.—Rufus S. Merrill, Boston, Mass., assignor to himself, Joshua Merrill, and William B. Merrill, same place.

Claim.—1. In an Argand or round-wick lamp, in which the removable portion of the burner, used to effect the adjustment of the wick, fits, and is supported upon a tube surrounding the wick tube, the combination, with the said portion of the burner, of a spring locking-device engaging with the same, substantially as described, so as to prevent any upward movement of said portion of the burner upon its supporting tube.

2. In a lamp such as specified, the combination, with said removable portion of the burner, of a spring locking-device for preventing the rotation of said portion of the burner upon its supporting tube, substantially as herein shown and set forth.

3. A spring locking-device, constructed and combined with the said removable portion of the burner, substantially in the manner shown and described, so as to prevent both the upward movement and the rotation of said portion of the burner upon its supporting tube.

107,279.—Lamp-Bracket.—Rufus S. Merrill, Boston, Mass., assignor to himself, Joshua Merrill, and William B. Merrill, same place.

Claim.—A lamp-bracket, provided with lugs and

a spring, for holding securely the lamp in its place, substantially as shown and described.

107,280.—CORN-PLANTER.—Solomon Mickley, York, assignor to himself and Samuel Leathery, Roosville, Pa.

Claim.—1. The wheel C, constructed, as described, with holes through its rim, and provided with headed pins *a a*, levers *b b*, and springs *d d*, all substantially as and for the purposes herein set forth.

2. The notched or slotted disk J, provided with lugs *r r*, in combination with the adjustable ring *p*, having lugs *r' r'*, all constructed and arranged to operate substantially as and for the purposes herein set forth.

3. In combination with the disk J, constructed as described, the plate I, having an annular recess, provided with an opening or outlet directly above the hopper D, substantially as and for the purposes herein set forth.

4. The combination of the corn-dropper C and fertilizer-distributer J, constructed and arranged as described, and adjusted so as to drop the corn and fertilizer either simultaneously, or one in advance of the other, by means of the cog-wheel G, adjusted upon the shaft H, substantially as herein set forth.

107,281.—SASH-HOLDER.—Alonzo D. Millard, Canton, Ohio.

Claim.—The combination of the sliding toothed bar S, provided with the knob F, working in the slot E, in the case-cover D, and the toothed cam H, turning on the axle G, and provided with the coiled spring R, seated in a depression in its face, the several parts being constructed, and all arranged and combined substantially as and for the purpose described.

107,282.—CHIMNEY-CAP.—Benjamin F. Miller and Joseph G. Miller, New York, N. Y.

Claim.—1. The inverted cone surrounding the pivot or spindle, and sustaining the wings or deflectors that are above the flue or chimney, substantially as set forth.

2. A revolving chimney-cap, made of an inverted cone, with curved wings attached to the surface, substantially as and for the purposes specified.

107,283.—WASHING-MACHINE.—Alfred L. D. Moore, La Grange, Texas.

Claim.—1. In combination with a washing-machine, the open revolving cylinder D, arranged and operating substantially as and for the purposes herein shown and described.

2. The corrugated wheels E and G, arranged one in the washing-vessel and the other in the cover, substantially as and for the purposes described.

3. In combination with the cover C, the spring J, and the application of power thereby to the cover, substantially as and for the purposes set forth.

4. In combination with the vessel B, provided with standard N, wheels E and G, and cylinder D, the furnace A, substantially as and for the purposes described.

107,284.—CHURN.—John Moyers, Hillsborough, Ohio.

Claim.—The alternating arrangement of the dasher-blades on the front and rear faces of the respective dasher-arms, substantially as and for the purpose hereinbefore set forth.

107,285.—CUTTING OR LAP-BOARD.—Norman O'Donnell, Cincinnati, Ohio.

Claim.—As a new article of manufacture, the cutting or lap-board herein described, constructed with a body of mill-board, tar-board, straw-board, or analogous thick paper-board, with a cloth or other suitable covering, and formed with a coving or concavity, *a*, all substantially as set forth.

107,286.—REGISTERING WEIGHING-SCALES.—Harvlin Paddock, St. Johnsbury, Vt., assignor to himself and Franklin Fairbanks, same place.

Claim.—1. A self-acting registering mechanism adapted to register the weights of variable loads, in combination with a weighing-scale, when the action is automatic, additive, and self-returning, substantially as specified.

2. The gravity-lever, with pointer E^3 moving backward and forward on the graduation M, for indicating the weight of each separate load at the time while the weighing is being effected, in combination with a separate index and separate graduations or dial, serving to register the sum of the weights of the variable loads, all substantially as herein set forth.

3. The coupling D^1 D^2, made hook-formed and hinged to the part D, and adapted for convenient connection and disconnection between the knife-edges A' upon the beam A and the gravity-lever E and its connections, when the beam A is adapted to weigh by a poise thereon, and the parts are so proportioned that the balance shall be correctly weighed both, in the hooked and unhooked condition, as herein shown and described.

107,287.—EARTH-PULVERIZER.—John W. Pence, Clayton, Ohio.

Claim.—The arrangement of the boxes G, screw-rods H, and nuts I, with the shafts E, cutters F, and frame A C, substantially as shown and described.

107,288.—THREAD-SPOOL.—Chauncey V. Pettibone, Fond Du Lac, Wis.

Claim.—A thread-spool, A, provided with the metallic catch B, constructed and arranged to hold the end of the wound thread in place, substantially as herein shown and described.

107,289.—SHOE.—Joel Putnam, Danvers, Mass.

Claim.—In the shoe, as made with the gore B at the back, the fly C and the separate strap E, as arranged with such gore and the upper, in manner as described.

107,290.—SEAMING THE ENDS OF METALLIC ROOFING-PLATES.—George A. Reynolds, Rochester, N. Y.

Claim.—1. The seam for the ends of metallic roofing-plates, herein described, consisting of the reverse bends *a b*, interlocked, and having the screws inserted therethrough, and having the upper plate then folded back over the screw-heads, to insulate or cover the same, the whole operating in the manner and for the purpose specified.

2. In combination with the above, the cement packing *c*, applied in the manner and for the purpose specified.

107,291.—LATHE-CHUCK.—John Rich, Painesville, Ohio.

Claim.—The collar G and elastic coiled springs *a a*, with their hooked ends *b b*, in combination with the chuck, substantially as and for the purpose as hereinbefore set forth.

107,292.—ANIMAL-TRAP.—James H. Richardson, Westport, Mo.

Claim.—1. The combination of the base A, vertical frame B, box D, shaft F, coiled spring E, top C, shutters G H I, levers *g' h' i'*, connecting-bars J K L, lever M, connecting-bar N, wheel O *o'*, self-adjusting weight R S, levers or triggers P Q, platform T, bait-box U V, lever W, passage-way Y, drop-doors A' B', lever C', and cage D', provided with a door, F', and fastening G', with each other, substantially as herein shown and described, and for the purpose set forth.

2. The combination of the weight N', cord I', pulley J' K' L', and wheel H, with the shaft and mechanism from which the shutters G H I are operated, substantially as herein shown and described, and for the purpose set forth.

107,293.—MARINE STEAM-BOILER.—Thomas Rimmer, South Braintree, Mass.

Claim.—1. The water-chamber B, arranged about the boiler to absorb the heat radiated therefrom, and keep the boiler-room cool, in the manner described.

2. The combination, with a water-elevating power and a supply reservoir, of a water-chamber, B, surrounding the boiler, and having inlet *e* and outlet *g*, arranged as and for the purpose described.

3. The combination, with the water-chamber B, of a door, C, provided with an intermediate chamber, filled with a constantly-recurring supply of water, as and for the purpose specified.

107,294.—MARKING ATTACHMENT TO CORN-PLANTER.—Eli Sawyer, Madison, Iowa.

Claim.—The combination, with the frame of the corn-planting machine, of the oscillating arms C, markers H, and hand-levers F, when the stocks are pivoted to the arms, and all arranged substantially as specified.

107,295.—CLOTHES-DRIER.—Andrew Scheff, Raymondville, N. Y.

Claim.—An improved clothes-drier, formed by the combination of the central block or board A, radial slotted bars or arms B, semicircular bar C, and pivoted bars or arms D, with each other, substantially as herein shown and described and for the purpose set forth.

107,296.—MOWING-MACHINE.—Henry F. Shaw, West Roxbury, Mass.

Claim.—The combination of the shoe B, arm C, short lever I, cross-bar K, rod *c*, crank *f y*, draft-bar N, and rod O, constructed and arranged as described, so that the power exerted by the horse or horses in backing the machine will raise the finger-bar A from the ground, substantially as and for the purpose set forth.

107,297.—FENCE.—Phineas L. Sherman, Genesco township, Iowa.

Claim.—In the construction of fences, the double sockets A, secured to posts or trees by the screws or nails C, and adapted to receive the fencing-wires or rails, in the manner described, for the purpose specified.

107,298.—COLTER.—Henry M. Skinner, Rockford, Ill.

Claim.—The specific device described, consisting of the disk A, shaft B, with collar *b*, collar *c*, with orifice *c'*, when the parts are combined and arranged as described, for the purpose set forth.

107,299.—LAMP-WICK.—P. J. Skinner, Oswego, N. Y.

Claim.—The tag B, attached to a lamp-wick, and in combination therewith, substantially as and for the purpose described.

107,300.—SHOE-STAY STOCK AND MACHINE FOR MAKING THE SAME.—Stephen N. Smith, Providence, R. I., assignor to the Union Eyelet Company, same place.

Claim.—1. The combination, with the lever which carries the feed-pawl and the cam which vibrates the said lever, of the stop or bar L, and mechanism to force, at every alternate revolution of the cam, said stop or bar forward across the path of vibration of said lever, to temporarily cut off its return to the cam, and to then withdraw it therefrom, substantially as and for the purpose described.

2. The improved shoe-stay stock, having the cups formed and arranged as shown in fig. 4 of drawing and for the purpose described.

107,301.—AUTOMATIC CIRCUIT-CLOSER FOR ELECTRO-MAGNETIC BURGLAR-ALARM.—James P. Snyder, Brooklyn, N. Y.

Claim.—1. The combination of springs B B^1, bell-crank L^2, and springs I, as and for the purpose described.

2. The combination of the springs B B^1, connected with the battery and the magnet, as described, the dropping-plate K, lever G G^2, bell-crank L^2, and springs I, the said spring I and the crank L^2 being connected with wires M and N, and through them with the alarm and the battery, all substantially as specified.

107,302.—CORN-PLANTER.—Peter Soule, Windsor, N. Y.

Claim.—1. In a corn-planter, the conical or rounded head O, substantially as and for the purpose specified.

2. In combination with the bristles *r*, arranged as described, the traversing cylinder K, operated by means of the rod A, and by the spring S, substantially as and for the purpose set forth.

3. In combination with the cylinder K, the disk *s* on the rod A, for forming an adjustable cup to receive the seed, substantially as described.

4. The arrangement of the plungers P, openings *u*, and rounded head O, constructed and arranged to operate substantially as described.

107,303.—ATTACHING INSULATOR TO TELEGRAPH-POLE.—Joseph B. Stearns, Boston, Mass.

Claim.—Attaching telegraph-insulators to their sticks or supports, by means of the right-angled grooves D on the one, and the pins C on the other, arranged substantially as herein specified.

107,304.—WRENCH.—Daniel C. Stillson, Charlestown, Mass.

Claim.—My improved screw-wrench, consisting of the fixed and movable jaws B E, the shanks A D, the frame C, and the nut F, the said frame being rigidly affixed to the shank A, and all the parts arranged in manner as shown and described.

107,305.—MACHINE FOR BENDING RAKE-TEETH.—James Sugden, Pittsburg, Pa.

Claim.—1. In combination with the vertically-moving and rotating shaft *d*, the slotted coiling-header *e*, and bevel-faced coiling-plate *g*, constructed and operated substantially as and for the purpose set forth.

2. The combination of the shaft *a*, carrying the slotted header *e*, with spiral gear and nut *d*, and suitable mechanism for rotating said shaft.

3. In combination with the coiling-shaft *a*, nut *d*, and mechanism for releasing it, the spring for producing an abrupt downward motion, substantially as described.

4. The combination of the former H with shaft *a*, and head *e*, and beveled plate *g*, for the purpose described.

5. The former H, in combination with the stop g^2 and die *n*, for the purpose described.

6. In combination with the slotted header *e*, the former H and the stop h^1, the latter being integral with said former H, for determining the length of the straight heel part, e^2, of the tooth, substantially as described.

7. In combination with the former H or H', the oscillating and longitudinally-moving arm *m*, with spring and roller-die, substantially as and for the purposes described.

8. The revolving bending-block *p*, with the mortise i^2 and the bending-die, in combination with the pin i^2 and the former H', for the purposes described.

9. A hook, *q*, in combination with the subject-matter of the last preceding claim, arranged and operated substantially in the manner and for the purposes described.

107,306.—CHURN.—John G. Talbot, Sloansville, N. Y.

Claim.—The herein described arrangement of

the horizontally-adjustable standard D, wheel E, adjustable cross-head H, dasher-shaft I, and detachable guide E, in their relation to the churn-body A, as specified.

107,307. — CIGAR-MACHINE. — Isaac Ten Eyck and John O. Reilley, New York, N. Y., said Reilley assigns his right to said Ten Eyck.

Claim.—The rollers C C^1, provided with the thimbles L L, arranged to be adjusted by hand at any point between the ends of said rollers, substantially as set forth.

107,308.—SAFETY-VALVE.—Nicholas Thomas, Chicago, Ill.

Claim.—1. The valve-chamber or shell A, and the double-seated valve G, constructed and combined substantially as described, for the purpose specified.

2. The valve-chamber A, constructed as described, and suspended within a boiler, substantially as and for the purpose specified.

3. The case K of the safety-valve, consisting of the parts L, L′, and L″, constructed substantially as described, for the purpose specified.

4. The combination of the handle M and yoke N with the double-seat valve G, weighted lever I, and case K, substantially as described, for the purpose specified.

107,309.—HORSE-POWER APPARATUS.—Edward O. Thompson and Charles B. Thompson, Thomasville, Ga.

Claim.—1. The frame, constructed and arranged as described.

2. The combination and arrangement of the operating parts, together and with the frame, substantially as specified.

107,310.—BOOK-HOLDER.—William J. Thorn, Westbrook, Me.

Claim.—The holder A, with the clamp C, block D, joint I, standard G, and base H, as herein described.

107,311.—FLOUR AND GRIST-MILL.—Andrew J. Vandegrift, Covington, Ky.

Claim.—1. Cross-head E, hinged by lugs in the eye of the millstone, on a plane with the center of oscillation on the point of the spindle, substantially as set forth and described.

2. Pivoted cross-head E, with pendants *d d*, constructed and arranged in the manner and for the purposes substantially as set forth and described.

3. A millstone-dress, consisting in the arrangement of a series of curved furrows, *a*, leading from the eye to the periphery of the stone, and one or more series of shorter furrows, *r u*, leading from points of intersection of these to said periphery, with the feather or grinding edge on the convex side of all the furrows, substantially as herein set forth.

107,312. — DEVICE FOR CATCHING AND HOLDING HOGS.—Frederick Voss, John P. Hax, and Henry Krug, St. Joseph, Mo.

Claim.—The combination of the perforated jaw A, the jaw B, formed with the eye *b*, and the rod C, provided with the swivel-eye D, when constructed, arranged, and operating as herein shown and described.

107,313.—MECHANISM FOR OPERATING THE PICKERS OF LOOMS.—Elias A. Wareham and William H. Waggoner, Kirkville, Iowa.

Claim.—The combination, with the picker-staff, provided with the pins G and cam projection H, and supported on a pivot, as described, of the double-hooked and pointed bar K, connected to the lay, all substantially as specified.

107,314. — SNOW-SHOVEL. — William P. Wentworth, Seneca Falls, N. Y.

Claim.—1. The tip B for a snow-shovel, consisting of the front B′, the wings A, and the arms O, provided with holes C, constructed substantially as described and shown.

2. The method described and shown of attaching the tip B to a snow-shovel blade, D, by means of the saw-kerf P and rivets J, substantially as described and shown.

107,315.—CHEESE-HOOP.—Samuel Wilson, Watertown, N. Y.

Claim.—The open hoop A and the covers *l* and *k*, sliding together over the hoop as the cheese is pressed, all substantially as and for the purposes herein set forth.

107,316.—REED-ORGAN.—George Woods, Cambridgeport, Mass.

Claim.—1. The combination, with the ordinary action, of a reed-organ or other similar instrument, of the attachment, consisting of the wind-chest E, sounding-box F, reeds G, valves H, and the operating levers I I′, the said levers being connected to the keys D, and all combined and arranged substantially as specified.

2. The combination, with the jointed levers I I′, of the stop-bar P, substantially as specified.

107,317. — PLATFORM-SCALES. — Henry Wood, Manchester, England.

Claim.—1. The vertical or tipping-lever A, formed in two parts, secured together as described, for the purpose of allowing an adjustment of position of its bearing points, in combination with the horizontal hoop-lever B, and the supporting standard *e*, substantially in the manner herein shown and described.

2. The combination of the vertical and hoop-lever with the standard, having the projections to relieve knife-edges of the bearing and lifting centers, as herein set forth.

107,318.—CONSTRUCTION OF CYLINDERS OF KNITTING-MACHINES.—Charles H. Young, Lake Village, N. H.

Claim.—The knitting-machine cylinder or head, having its top B made separate, removable, and grooved in its under surface for the reception of the shanks of the needles, substantially as and for the purposes herein specified.

107,319. — KINDLING-WOOD. — Merritt T. Arnold, Summit, R. I.

Claim.—1. The furnace herein described, having box A, cylinders B, with removable heads D, fire-places H, central plate *c*, and condensing-pipe K, when constructed and arranged to operate as specified.

2. The kindling-wood herein described, when prepared by the process specified, as a new article of manufacture.

107,320. — PAPER-FEEDING APPARATUS.—John T. Ashley, Brooklyn, E. D., N. Y.

Claim.—1. The construction of a suction-box for a paper-feeder, with a perforated waved bottom, substantially as described.

2. The table of a paper-feeder, provided with an elevating and depressing screw, in combination with devices which will automatically stop the ascent of said table at the desired moment, and also with devices which will allow said table to be again depressed to any desired point, substantially as described.

3. A projection, *t*, on the table J, in combination with an adjustable tooth, *m*, which is applied to a lever that actuates a pawl to stop the upward movement of the said table, substantially as described.

4. The adjustable pointer *r*, applied to the tooth *m*, and to a graduated or scale-lever, R, combined with a paper-feeder, substantially as described.

107,321.—POTATO AND FRUIT PEELER.—Mahlon B. Atkinson, Georgetown, D. C., assignor to himself and James H. Welch, same place.

Claim.—The rotating perforated scraper and holder G, having its axis oblique to the perpendicular, substantially as specified.

107,322.—REFINING IRON AND STEEL.—James E. Atwood, Pittsburg, Pa.

Claim.—The combination of iodide of potassium with the carbons and fluxes used in the manufacture of iron and steel.

107,323.—SIDING FOR BUILDINGS.—Clark Avery, San Francisco, Cal.

Claim.—The above-described siding for buildings, consisting of blocks A, and having its horizontal joints formed by overlapping, and its vertical joints by flat strips, *b*, inserted in grooves, *a*, substantially as described.

107,324.—PROCESS OF OBTAINING GLYCERINE FROM SOAP-MAKERS' SPENT LYES.—Benjamin T. Babbitt, New York, N. Y.

Claim.—The extraction of glycerine from soap-makers' spent-lye, by treatment with caustic alkali, and subsequent boiling with tallow or fat, substantially as herein described.

107,325.—BRACELET.—William H. Ball and Thomas Barnard, Newark, N. J.

Claim.—1. The spring blade *b*, provided with a stop or cross-bar, *k*, in combination with the segments of a bracelet, substantially as and for the purpose described.

2. The construction of a catch-piece, *t*, with its end provided with a blade, *b*, serving as a guide, substantially as and for the purpose set forth.

107,326.—STEERING APPARATUS FOR TORPEDO-BOATS, &c.—John Archibald Ballard, Bombay, India.

Claim.—1. The employment of electricity for actuating the steering mechanism of torpedo-boats, rams, and other vessels, in the manner herein described and set forth.

2. The combination of an electric apparatus with the steering device of a torpedo-boat, ram, &c., substantially as described.

107,327.—POTATO-DIGGER.—Leander Berry, Clyde, N. Y.

Claim.—1. The shovel C, suspended by the adjusting-lever *b* and chains *c*, whereby it is capable of a yielding adjustment, both vertically and to the rear, for the purposes set forth.

2. The combination of an excavating-shovel or plow, an endless carrier-apron, and a revolving screen, operating substantially as and for the purposes set forth.

3. The revolving separator G, in this class of machines, when each alternate slat *n* is detachable, for the purpose of changing the gauge of the screen.

4. The auxiliary plows I, having their rear ends pivoted to the shanks *q*, and their forward ends suspended by vertically-yielding rods or chains *r*, for the purposes set forth.

5. The revolving apron D, in combination with the pivoted chute-boards H and yielding shovel C, when either of the latter are provided with a self-adjusting slack-lifter *h*, arranged to operate substantially as described.

6. The coupling-collar *t*, provided with ratchet-teeth upon each face, in combination with the shafts *f f* and hanger *v*, for the purposes set forth.

107,328.—VINE-PULLER FOR POTATO-DIGGERS, &c.—Leander Berry, Clyde, N. Y.

Claim.—1. In combination with the pulling-rollers B, the clearing-guard H, arranged to operate substantially as set forth.

2. The vertically-adjustable frame *l*, in combination with the rollers B and their supporting-shafts, when provided with the gauge-roller *n*, for the purposes set forth.

3. In combination with the roller-shafts C, the bell-cranks *e*, links *f*, rock-shaft *g*, and lever *i*, arranged and operating substantially as herein set forth.

4. In combination with the conical pulling-rollers B, the stripping-fork *p*, arranged to operate substantially as set forth.

107,329.—MACHINE FOR EMBOSSING CAPSULES.—William Betts, No. 1. Wharf Road, City Road, England.

Claim.—1. The shaft D, its adjustable pinion P, and die F, in combination with the inclined shaft E, its adjustable pinion P, die M, adjustable bearing and wedge X, all constructed and operating as specified.

2. The shaft E, adjustable at both ends, in combination with the shaft D and with pinions P P, adjustable on both shafts, as described.

107,330. — CAR-STARTER. — John Bevan, Hudson, N. Y.

Claim.—1. The combination, with the stop for releasing the sliding draft-bar, to admit of its being drawn forward to operate the starting mechanism or gearing, of the clutch-lever M and clutch L, for operation by said stop, in timely relation to the draft-bar toward the end of its stroke or strokes, substantially as specified.

2. The combination of the projection *i* on the draft-bar C, with the stop D or wedge *k*, of its rod, *e*, and clutch-lever M, essentially as and for the purpose or purposes herein set forth.

3. The combination, with the sliding draft-bar C, of the sliding yoke E, with its racks *h*, the pinions H H and J, the spur-wheel K, and the clutch L, on the shaft G of the running-wheels B B, for operation under control of the driver, essentially as described.

107,331.—POWER-METER.—John A. Bradshaw, William H. Brown, and Darius Whithed, Lowell, Mass.

Claim.—As an improvement upon our invention for which Letters Patent No. 92,780 were granted, the power-meter or steam-engine herein described, having piston-cylinder A, with central ring B, packing-springs *d*, adjustable by means of set-screws *a*, valve-chamber K, ratchet-register *m*, slide-rod *e*, with horizontal arm *g*, spring stops *f f*, coil springs H H, and adjustable catches *v v*, all constructed and arranged to operate in connection with the reciprocating segments T T, in the manner and for the purposes shown and described.

107,332.—BUTTON-HOLE CUTTER.—Talmon Clifford Bush, New Haven, Conn.

Claim.—A button-hole cutter, constructed with a number of cutting-blades, of various widths, formed from a single plate of metal, A, revolving between the guards B, and secured substantially in the manner described, so that one only of said cutting-edges shall be exposed at the same time.

107,333.—AWNING AND FAN FOR HORSES' HEADS. — Harvey L. Byrd, Baltimore, Md.

Claim.—The awning *a*, in combination with the fan *c* and supporting-rods *b*, as and for the purpose described.

107,334. — WIRE-CUTTER.—Frank Carew, South Hadley Falls, Mass.

Claim.—The insertion of the dovetailed shanks of the removable cutters *c*, in the dovetailed recesses *e*, in the approximate surfaces of the jaws B, and the confinement of said cutters in said recesses by screws applied from the lateral surfaces of the jaws, substantially as described.

107,335.—DRAFT-HARNESS.—George Chamberlin, Olean, N. Y.

Claim.—The combined collar and hames, provided with plates *a a*, braces *b b*, joints C C, and bars D D, when hinged to the braces *b b* and connected to the yoke B by the swivel-joints *d d*, all arranged as herein shown and described.

107,336.—BROOM OR MOP-CLAMP.—Eugene Chapman, Lacon, Ill.

Claim.—A convertible broom or mop-clamp, when composed of the conical receiver A, its socket *e*, and serrated lips *a a*, in combination with the clamp B B, substantially as and for the purposes described.

107,337.—ROTARY HARROW.—George Collins, Fremont, Nebraska.

Claim.—The arrangement of coupling-bar B, provided with movable or adjustable braces C C, braces E F and E F, tongue D, having its rear end arranged as described, and pivot-screws *a a* of the harrows A A, substantially as shown and set forth.

107,338. — GRAIN-SEPARATOR. — Hezekiah Cook, Dillsburg, Pa.

Claim.—1. The combination and arrangement of the half sieves B C, the guard-screen G, and the lower screen E, as described and shown, and for the purpose set forth.

2. The combination and arrangement of the half sieves B C, guard-screen G, return-board D, screen E, and riddle-board F, as described and shown, and for the purpose set forth.

107,339.—CHARRING BARREL-HEADS.—Jacob D. Copenhaver, Martinsburg, West Va.

Claim.—1. The method of charring the heads of barrels or casks, substantially as described.

2. The crescet or tube A, provided with a projecting flange, C, on its periphery, and a series of draught-holes, *a a a*, and vent-holes *b b b*, substantially as described.

3. The crescet or tube A, provided with a base, d, openings *a a a* and *b b b*, and projecting flange C, substantially as described, for the purpose herein set forth.

107,340. — PADDLE-WHEEL. — Matthew A. Crooker, New York, N. Y.

Claim.—The tapering buckets, set and arranged with a two fold angulation, (shown by A and A′, fig. 1,) and substantially as described, for the purposes explained.

107,341.—WATER-REGULATOR.—George W. Darby and Amos S. Moon, Blanchester, Ohio.

Claim.—The boiler-regulator, consisting of the pump D, valve-crank *c*, pitman *a*, shaft E, provided with the pin *u*, and float G, lever *m*, and steam-whistle H, all constructed and arranged as set forth.

107,342. — TRANSPOSING MECHANISM FOR ORGAN. — Willard G. Day, Baltimore, Md.

Claim.—1. The combination of the key-board C and catch F with the center-board B and notched plate E, when constructed and arranged substantially as and for the purpose set forth.

2. The combination of the catch F and spring *b* with the notched plate E, when constructed and arranged substantially as and for the purpose set forth.

3. The combination of the catch F and hinged board G, when constructed and arranged substantially as described, for raising the keys D, as set forth.

107,343.—SPOOL SHOW-CASE.—Ira Dimock, Florence, Mass.

Claim.—1. The inclined rods B, arranged loose or free at their lower ends, and provided with stops *d*, to retain the spools in place, with facility for their removal when required, substantially as specified.

2. The combination with the case A, and arrangement therein relatively to its glazed sides or doors *b c*, of the inclined rods B, provided with stops *d*, at their lower ends, substantially as and for the purpose herein set forth.

107,344.—HARROW.—James Dingman, Decatur, Ill.

Claim.—A harrow, constructed of the jointed side pieces B B′, the rigid or jointed center beam A, the adjustable hinge *h*′, vertical standards C C, and the handles D D′, substantially as and for the purposes set forth.

107,345.—SLED.—Charles H. Douglas, Hartford, Conn.

Claim.—1. Constructing a sled with raves, D D, which are directly attached to the rear ends of the runners A A, and to the front ends or bows of said runners, or to the beam G, (either or both,) and which extends forward of runners A A, and rest upon one or more runners B, substantially as set forth.

2. The flexible arms M M, in combination with wheel I, pulley K, and rope N, substantially as and for the purpose specified.

3. The rod T, and rod or bar S, in combination with the arms M and wheel I, for the purpose specified.

107,346.—SAW-TABLE.—Charles H. Douglas, Hartford, Conn.

Claim.—1. The combination and arrangement, in a circular-saw table, of the plates or sockets G G G G, sheave-nuts F F F F, endless chain H, screws E E E E, adjustable frame C, and hinged top B, all substantially as and for the purposes hereinbefore specified.

2. The plates or sockets G G G G, nuts F F F F, and screws E E E E, when arranged and operated in combination with each other and the saw-table top B, as and for the purpose specified.

107,347.—COMBINED FURNACE AND RANGE. Eben Edwards, South Boston, assignor to himself and Ebenezer Sanborn, Boston, Mass.

Claim.—1. The combination of the air-chamber D, having cold air-inlet H and escape I, with an air-chamber, J, in which is an oven or ovens constructed with an air-space connected to the fire-chamber and to the exit-flue, substantially as described, for the purposes specified.

2. In combination with the above, the drum Q, arranged in chamber J, above the ovens, and connected to the air-spaces about the ovens, and to the exit-flue or chimney, substantially as and for the purpose specified.

107,348. — SPRING-BED BOTTOM.—Alexander Hamilton Fatsinger, New York, N. Y.

Claim.—The combination of the hooks *a*, secured to the inner surfaces of the head and foot-rails A, the collars *d* on the slats *c*, with the hooks *f* attached or cast with them, and the India-rubber rings or loops *b*, all constructed and arranged substantially as and for the purposes set forth.

107,349.—MACHINE FOR HULLING COTTON-SEED. — William R. Fee, Cincinnati, Ohio.

Claim.—1. The feed-openings I and the discharge-openings K, extending the whole length or nearly the whole length of the knives, substantially in the manner and for the purposes set forth.

2. The revolving disk C, provided with the complete series of knives F′, in combination with the opposing arch, with its delivery or discharge-spaces Y, and partial series of knives and sectors, substantially as set forth.

107,350. — LOCKING-BOLT.—Henry Feyh, New York, N. Y.

Claim.—1. The bolt B, provided with grooves *e e* and teeth *i i*, to give the bolt a rotating and end-wise motion, substantially as and for the purposes herein set forth.

2. In combination with the bolt B, having grooves *e e* and teeth *i i*, as described, the knob C and stem D, attached to the bolt, substantially as and for the purposes herein set forth.

3. The combination of the bolt B, with the grooves *e e* and teeth *i i*, and the key G, with its flanges *f f*, and grooves *o o*, substantially as and for the purposes herein set forth.

107,351. — SHEET-METAL CUTTING-MACHINE. — Seymour B. Fitch, Walton, N. Y.

Claim.—1. The combination of the base-plate A, arms B, circular knives C, and their shafts *c c*, rest-block D, bed-plate F, slide *d*, and set-screws *e*, when constructed, arranged, and operating in the manner and for the purpose herein set forth and described.

2. In combination with the above, gauge *f* and runner I, when constructed, arranged, and operating as herein described.

3. The improved machine herein described, consisting of the several parts named in the foregoing clauses of claim, the bed M, and alternate devices M and G, and table O, as specified.

107,352.—WOOD PAVEMENT.—Maurice Fitzgibbons, New York, N. Y.

Claim.—A pavement composed of alternate rows of wooden blocks, one row having inclined and the other vertical sides, one or both rows being grooved, for the retention of the filling in the interstices, all as set forth.

107,353.—GRINDING-MILL.—Joseph A. Forsman, Chicago, Ill.

Claim.—1. The arrangement of the runner-stone A, the hoop B, the back-plate C, the projections *a*, the driving-pulley C′, and the spindle D, when constructed as described and shown, and as and for the purposes set forth.

2. The arrangement of the stationary stone F, the case E, the edge *b*, the screw-clamps G, the nuts G′, the tram-screws H, and the set-screws I, when constructed as described and shown, and as and for the purposes set forth.

107,354. — SHUTTER-FASTENER.—Albert L. France, Wilmington, Del.

Claim.—1. The combination of the pivoted and recessed bolt secured upon the window-sill, with the locking-latch and catch-plate furnished with a series of holes, all arranged as and for the purposes set forth.

2. The rotating recessed post and latch, combined with the plate *c*, as and for the purposes set forth.

107,355.—THRASHING-MACHINE.—Matthias Fuos, Castroville, Texas.

Claim.—1. The thrashing-machine cylinder herein shown, composed of the ribs *a*, metal sheathing *b c*, and wood supports B B, the said ribs of the cylinder, with the metal sheathing, being shaped as shown at *c b*, v v^1 v^2, and applied as represented, all for the purpose set forth.

2. A thrashing-cylinder, having its ribs and sheathing constructed as shown and described, in combination with the concave C, provided with ribs *L l l*′, constructed as described, all for the purpose set forth.

3. The ribs L of the concave, constructed as described, and applied as set forth.

4. The ribs L of the concave, when made with an oblique but straight side, *l*, and a convex side, *l*′, as shown and described.

5. The combination, with the concave cap C, made adjustable, as described, of the ribs L, constructed respectively as described.

6. The combination of the spirally-ribbed feed-roller H H^1 h h, ribbed thrashing-cylinder B, ribbed concave C, and spout J, all arranged and operating in the manner herein described.

107,356. — TUBULAR GRATE. — Benjamin Garvin and Rush J. Pettibone, Oshkosh, Wis.

Claim.—1. The perforated pipe J, placed inside of the tube C, substantially as and for the purposes herein set forth.

2. The arrangement of the drum A with stop-cocks B B and D, outside tubes C C, inside perforated tubes J J, connections E G, steam-chamber H, and pipe or pipes I, all constructed as described, and used in combination with a steam-boiler, substantially as and for the purposes herein set forth.

107,357.—CORN-CULTIVATOR.—William Gilman, Ottawa, Ill.

Claim.—The arrangement of the cross-bar A, gangs B, flanges D, axle E, brace I, and tongue C, when constructed and operating together as described.

107,358. — EARTH-CLOSET. — Henry John Girdlestone and John Ward Girdlestone, London, England, assignors to the Earth-Closet Company, Hartford, Conn.

Claim.—A vibratory or swing deodorant-case or hopper, in combination with a stationary tray, *e*, whereby the deodorant may be discharged into the excrement-chamber, substantially as set forth.

Also, in combination with the swinging hopper and stationary tray *e*, an auxiliary tray, *g*, and an exit or opening, *f*, as and for the purpose described.

107,359. — COMBINED CULTIVATOR AND GRAIN-DRILL.—John Giro, Sipton, Ill.

Claim.—1. The arrangement of the frame A B C, axles G H, washers *a a*, bolts *d d*, and nuts *e e*, all substantially as and for the purposes herein set forth.

2. The arrangement of the rod I, with wheel J, ring *b*′, spring *d*′, lever K, and hook *e*′, all substantially as and for the purposes herein set forth.

3. The arrangement of the shoes T T, arms V V, straps *g g*, springs *f f*, shafts W X Z, rod *h*, and lever Y, all substantially as and for the purposes herein set forth.

107,360. — CARRIAGE.—Simon P. Graham, Columbus, Ohio.

Claim.—1. The double reach A, constructed of the U-shaped parts *c d*, substantially as and for the purpose specified.

2. The body-loop B, constructed of the U-shaped parts *c d*, and provided with hollow sockets *f*, substantially as and for the purpose described.

3. The double reach A, constructed with the circular guide-way *b* and limbs *c*, curved inward, substantially as and for the purpose set forth.

4. A ring of inverted U-shaped iron, as shown in fig. 6, substantially as described.

107,361.—HARNESS-PAD.—George W. Graves, Chicago, Ill.

Claim.—The bolt D, whereby the skirting C is firmly secured to the end of the pad-plate A, substantially as and for the purpose specified.

107,362. — SPITTOON-HOLDER. — Chauncey O. Haley, Westfield, Mass.

Claim.—A spittoon-holder, consisting of the two levers *a* and *b*′, having the holes *i i* therein, and pivoted together, said levers terminating in the jaws *a* and *b*, the jaw *b* being wedge-shaped, and having the recess *d* therein, and the jaw *a* being hooked at *n*, and having the recess *c*, all constructed and operating substantially as described, and for the purpose set forth.

107,363, antedated September 5, 1870.—TRIP MOTION FOR PRESSES, &c.—Albert Hamlin, Brooklyn, N. Y., assignor to Mays & Bliss, same place.

Claim.—The combination and arrangement relatively to the plunger B, of the cam L, formed with a reduction, *d*, on its periphery, the rod I, lever J, and spring K, loose driving-pulley F, on the operating shaft E, and the clutches G G', substantially as specified.

107,364.—MEAT-CUTTER.—Thomas Hartley, Bridgeport, Ohio.

Claim.—The combination of the table B with cogged rim C, pinions G G, shafts D D, and knives I I, all constructed and arranged as described, to operate substantially as and for the purposes herein set forth.

107,365.—HAY-TEDDER.—Moses B. Harvey, Stafford, Conn., assignor to himself and Harrison F. Cook, same place.

Claim.—1. The sway-bar *m n*, in combination with connecting-rod *o*, eccentric *s*, and shaft *e*, as specified.

2. The rack *i*, spring *l*, shaft *e*, fork-handles *d*, and bars *c* and *k*, all combined and arranged as described.

3. The shaft *e*, arm *v*, rim *p*, pinions *y q*, shaft *z*, arms *w*, and handles *j*, all combined and arranged as explained.

107,366.—LAMP AND LANTERN.—William Harvie, Glasgow, North Britain.

Claim.—1. A lantern, having an air-space, *a*, at the bottom, communicating with an air-chamber surrounding the lamp, and with an exterior tube extending to the top of the lantern.

2. The semicircular lens C, with its horizontal ribs on the face, and vertical ribs at the back, inclosing a chamber, *f*, containing a lamp, *b*, as set forth.

3. The chambers *m* and *f*, partition *p*, and sliding door *o*, arranged as described.

4. The flue *a*, annular passage *q'*, conical cap *r*, and conical top of the lantern, with its flange *w*, arranged as specified.

5. The combination of the subject-matter of the fourth claim, and the cylinder *u*, as described.

6. The tube *l*, its perforated cap, tube *l'*, chambers *m a*, and tubes *n*, arranged and communicating as set forth.

7. The flange *x*, in its cap *r*, for the purpose specified.

8. The combination of tubes *c* and tube *b*, extending into and through the oil-reservoir, and carrying an external tubular wick, as specified.

107,367.—PRESERVING MEAT.—Francis H. Hatch, New Orleans, La., and Benjamin R. Hawley, Normal, Ill.

Claim.—1. The method herein described of curing meat by the expulsion of the animal heat by means of artificial heat, substantially as set forth.

2. The method herein described of expelling the animal heat from meat, or other animal substances, by means of a continuous current of heated air made to pass through the room in which the meat is placed, for the purposes set forth.

3. The method herein described of reducing the bulk and expelling the air from the meat thus cured, by means of compression, substantially as and for the purpose set forth.

4. The method herein described of packing meat thus cured and compressed, by surrounding the meat inside the package with the melted fat or marrow of the animal, and hermetically sealing the package, substantially as set forth.

5. The method herein described of curing and preserving meat without cooking, by expelling the animal heat by means of artificial heat, compressing it, and then surrounding it inside of a hermetically-sealed package with the melted fat or marrow of the animal, substantially as set forth.

6. As a new article, raw meat put up in hermetically-sealed packages, for the purposes herein set forth, and designated as bovine.

107,368.—PROCESS FOR MANUFACTURING TOBACCO-PLUGS.—Randall D. Hay, Crooked Creek, N. C.

Claim.—The process herein described of manufacturing tobacco-plugs, to wit, drawing a strip of paper from a reel, winding it spirally around a suitable quantity of tobacco, at the same time feeding tobacco into the wrapper as the latter is wound around the plug, and finally pressing the paper-wrapped plug by any ordinary method.

107,369.—MACHINE FOR FASTENING SOLES.—Charles H. Helms, Poughkeepsie, N. Y.

Claim.—The combination of the nail-driver plate M, having the pins L secured therein, for the purposes set forth, with the perforated clamping-plate G, substantially as described, and for the purposes set forth.

107,370.—SEAL FOR METAL STRAPS ON BOXES.—James P. Herron, Atlanta, Ga.

Claim.—1. The seal *e*, in combination with the bands *a*, substantially as and for the purpose set forth.

2. In combination with the foregoing, the depression *b* in the material of the box, made for the purpose of protecting the seal from injury when handled, as set forth.

107,371.—COTTON AND HAY-PRESS.—James P. Herron, Atlanta, Ga.

Claim.—1. The arrangement, herein shown, of the oscillating box B, provided with trunnions *a a* and latch-pins *b*, in the manner and for the purpose set forth.

2. The oscillating box B, constructed and arranged as herein set forth, in combination with a scale-beam, C, and weights, substantially as described.

3. The graduated cogged fusee L and rack M, having teeth, which gradually increase in size and width from line of contact at the end of greatest radius of fusee to same line at the end of the least radius, as herein described, and for the purpose set forth.

4. The cogged fusee L and cam Q, in combination with the rack M, operating substantially as set forth.

5. The cogged fusee and rack, constructed as described, in combination with the pinions F K, wheels G H, shaft E, shipper *f f'*, and clutch *d*, or its equivalent, arranged and operating substantially as and for the purpose set forth.

6. The door P, in combination with the beams *s t* and pivoted box B, arranged and operating substantially as and for the purpose set forth.

107,372.—WIND-WHEEL.—James O. Heyworth, Chicago, Ill.

Claim.—1. The arms *a a'*, extending from shaft A, having pivoted between them the sails B B', in the manner and for the purposes set forth.

2. In combination, the arms *a a'*, the sails B B', rod C, check-studs *c c'*, substantially as and for the purposes set forth.

107,373.—Suspended.

107,374.—UMBRELLA-FRAME.—Algernon S. Hubbell, Providence, R. I.

Claim.—An umbrella, having its top notches *a a* covered by a detachable cap, E, and provided with openings of such size as to admit the passage of the ribs B and their joints, when the several parts are to be folded, and retain their ball ends, when open for use, as shown and described.

107,375.—IRRIGATING-MACHINE.—William W. Hull, Ashland, N. Y.

Claim.—The balance-beam B, the bucket D, counter-weight E, tripper T, pawls K and L, ratchet-wheel M, shaft N, and chute O, constructed, arranged, and operating substantially as and for the purposes described and set forth.

107,376.—PROPELLER.—Robert Hunter, New York, N. Y.

Claim.—The propeller herein described, consisting of blades of India rubber, tapering in thickness, bolted between metallic bars or plates, attached to a shaft, substantially as herein described.

107,377.—Suspended.

107,378.—COMBINED CORN-HUSKER AND SHELLER AND GRAIN-THRASHER AND CLEANER.—James W. Huntoon, Washington, D. C.

Claim.—1. The combination, in the combined field corn-husker and sheller, grain-thrasher and cleaner, herein shown, of the slotted and perforated concave and screen *d y*, constructed as described.

2. The cylinder E, provided with removable teeth *i i*, fan G, shoe H, wheels B and B', cog-wheels *a*, and pinions *h b f*, when arranged to operate in the manner described and for the purposes set forth.

107,379.—HORSE-POWER.—James W. Huntoon, Montgomery, Ala.

Claim.—The slotted and toothed standards K K in combination with toothed journal-boxes *h h* and bolts *i i*, when used in connection with a horse-power, substantially as described.

107,380.—GAS-METER.—Hyam J. Hyams, Pittsburg, Pa.

Claim.—1. The arrangement of three or more diaphragms, and corresponding double system of measuring-chambers A A', substantially as and for the purpose herein described.

2. The additional port *g* provided in the valve-seat for the admission of air, substantially as herein described.

3. The regulating-valves E E, and their seats E' E', constructed substantially as and for the purpose herein set forth.

107,381.—KNITTING-MACHINE.—George Johnstone, Philadelphia, Pa.

Claim.—1. The pattern card, consisting of a perforated plate, to which are secured projections *j*, as set forth.

2. The combination of the reciprocating pattern cards, or their equivalents, having two or more rests, which elevate the needles to different degrees, and sliding cams, having two or more inclined needles, operating edges, to which the needles are directed by the action of the pattern cards, as specified.

3. The vibrating bar K, operated by the jacquards through mechanism, substantially as described, and carrying two or more thread-guides, which, by the movement of the bar K, are brought separately into a position to be moved longitudinally by a sliding bar, *t*, or other device, operating with like effect.

4. A series of weighted hooks, *v*, operated independently of each other by a reciprocating bar, S, or its equivalent, as set forth.

107,382.—ROOFING COMPOSITION.—William H. Jones, Newport, Ky., assignor to himself and D. G. Brumback, same place.

Claim.—The roofing composition, prepared of the ingredients and in the proportions substantially as herein described, and for the purpose set forth.

107,383.—SPRING MATTRESS.—William B. Judson, Poughkeepsie, N. Y.

Claim.—A spring mattress, in which the springs are confined in position by means of strips and rivets, in the manner substantially as shown and described.

107,384.—PROPELLING APPARATUS.—Richard Kearney, Havre De Grace, Newfoundland.

Claim.—1. The guard U, springs *s*, and rod T, in combination with the lever P and paddles R, when constructed and arranged to operate as and for the purposes specified.

2. The clasp *c*, slide *a*, and pins *d*, in combination with the lever P and pitman O, when constructed and arranged to operate as and for the purposes described.

3. The combination and arrangement of the levers K, L, N, and P and pitman O, shafts C and E, and the paddles, as described, substantially as and for the purposes set forth.

107,385.—DEVICE FOR FOLDING AND IRONING SHOE-UPPER EDGES.—Charles A. Keith, Danvers, Jeremiah Keith, Charlton, and Thomas K. Keith, Lynn, Mass.

Claim.—The combination of a work-supporting surface, an edge-folding mechanism, and a fold-compressing and "ironing" or smoothing mechanism, relatively constructed and arranged substantially as described.

107,386.—BUGGY-SPRING.—George W. Kenan, Upper Sandusky, Ohio.

Claim.—1. The rubber balls or blocks K, in combination with the springs A B, substantially as shown and described.

2. The lower section D of the fifth-wheel, formed with the loops C and bar *d*, substantially as shown and described.

107,387.—COATING FOR STEAM-PIPES, BOILERS, &c.—Wladyslaw T. Kosinski, Philadelphia, Pa.

Claim.—The ingredients and proportions of my felt cement, with the ground paint, preventing oxidation, and preparing the surface of the bodies to cause to adhere and hold the said felt cement for covering steam-boilers, steam-pipes, hot or cold-water pipes, refrigerators, &c.

107,388.—PAPERING-MACHINE.—George M. Lane, De Graff, Ohio.

Claim.—1. The paste-box G, provided with lid I, rubber *f*, rubber strips *i i*, and metal plates *h h*, all substantially as and for the purposes herein set forth.

2. The roller E, provided with crevices or indentations around its entire surface, and used in combination with the paste-box G and pliable roller H, substantially as and for the purposes herein set forth.

3. The knife *k*, attached to the end of the roller E, in combination with the movable knife *k'*, held against the end of the roller H, by means of the spring *m*, substantially as and for the purposes herein set forth.

4. The pivoted frame J, with brush K, spring L, and screw *s*, constructed and arranged substantially as and for the purposes herein set forth.

5. The rod *t*, with screw flanges *v v* placed in notches on the frame A, and held by the hooks *x x*, substantially as and for the purposes herein set forth.

107,389, antedated September 3, 1870.—HAT AND CAP-BRACKET.—Theodore Lawrence, Peoria, Ill., assignor for one-half to Romeo Lawrence, same place.

Claim.—The arrangement of the inclined shaft *a* of the hook or bracket A, in combination with the staples *e* and *f*, substantially in the manner and for the purpose as herein shown and set forth.

107,390.—WASHING-MACHINE.—Reuben Lighthall, Brooklyn, N. Y.

Claim.—The combination of the single-bar holder A, the single and slotted bar B, arranged to slide

and swing on a cross-pin, *b*, within a slot, *a*, and between cheeks *c c*, formed on the holder A, and the yoke C, with the rubber frame D, substantially as shown and described.

107,391.—SCREW-CLAMP FOR PIANO-PINS.—Charles M. Lindsay, Forreston, Ill.

Claim.—The stem *f* and cross-bars A, constructed and operating as and for the purpose described.

107,392.—OUTRIGGER FOR ROW-BOAT.—Andrew Jackson Luffbarry, Jr., Philadelphia, Pa.

Claim.—1. An outrigger provided with an oar-lock, and hinged to the gunwale of a boat, so that it can be turned within the latter, or outward, so as to carry the oar-lock to a position beyond the gunwale, substantially as set forth.

2. A hinged outrigger, carrying an oar-lock, in combination with plates H H′, substantially as specified.

107,393.—DITCHER AND GRADER.—John H. Martin and Clinton D. Bradshaw, Danville, Ill.

Claim.—The arrangement, with the hinged sides A A′, wing G, and plow B, of the adjustable rotary colter D, all constructed substantially as set forth.

107,394.—COOKING-STOVE.—James H. McConnell, Beaver Falls, Pa.

Claim.—1. Providing the air-chamber, back of the fire-plate of a cooking-stove, with a flue, which passes over the top plate of the oven, as herein described, and for the purpose set forth.

2. Combining with the above flue and air-chamber the damper *m*, arranged and operating substantially as herein described, and for the purpose set forth.

107,395.—PROVISION-SAFE.—Wait Mead and George E. Starbuck, Chestertown, N. Y.

Claim.—1. The arrangement, within the cylindrical wire-cloth casing A, of the upright shaft C, with circular shelves D D, the upper shelves being cut out, as shown and described, and provided with grating *d* and hooks *a b*, substantially as herein set forth.

2. In combination with the cylindrical wire-cloth casing A and revolving shelves D, the spring bar G, with point *e*, substantially as and for the purposes herein set forth.

107,396.—ROTATING FAN AND FLY-BRUSH.—Oliver Metcalf, Orleans, Ind.

Claim.—The combined fan and fly-brush herein described, consisting of the clock-work A, rotating shaft *d*, with holder *e*, spring clamp *m*, with lugs *a a*, removable arms F, with recesses *z*, and fringed fans G, when adapted to be suspended at any point, in the manner and for the purposes shown and described.

107,397.—SCRUBBING-BRUSH.—Damian Minderle, St. Louis, Mo.

Claim.—The brush-board A, having segment-heads B B′ and narrowed center A′, in combination with the bristle-brushes C, substantially as and for the purpose described.

107,398.—DEVICE FOR SECURING COVERS UPON SEWING-MACHINES.—John H. Mooney, San Francisco, Cal.

Claim.—In combination with the table and cover of a sewing-machine, the above-described device for securing the same together, consisting of the barrel or sheath E, provided with the spiral or inclined slot *a*, the rod F, provided with the pin *d* and lug *b*, and the plate E′, with its key-hole *c*, all arranged as herein described.

107,399.—MACHINE FOR MAKING PAPER COLLARS.—Charles E. Moore, Boston, and Martin L. Wyman, Melrose, Mass.

Claim.—1. The arrangement, as above described, of the feed-rolls and the embossers, so that the paper shall be drawn away from the embossers by the feed-rolls.

2. The arrangement of the feed-rolls between two separate heads, the first of which actuates the embossers, and the second the cutters, as described.

3. The combination of the levers and the two separate heads, substantially as described.

107,400.—CORN-PLOW.—Felix G. Mourning, Bascow, Ill.

Claim.—The double sets of plows, as set forth, for cultivating two sides of a row of plants, when made and arranged substantially as set forth, and having the blocks L M N O and L′ M′ N′ O′, as set forth, on the two connecting parts I and K, for the purpose described.

107,401.—LOCK FOR SEWING-MACHINE CASE.—Herrman O. Nanen, New York, N. Y.

Claim.—The combination of the spring *a*, hook *c*, and cam *d* with the arm C and case D of a sewing-machine, substantially as herein shown and described.

107,402.—CORN-PLANTER.—Henry Austin Nicholls, St. Louis, Mo., assignor to Alonzo B. Pearson, same place.

Claim.—The particular combination of the wheels G and H, the shafts B B and M M, drums D D, cylinders A A, studs C C, leaders E E, covers K K, levers L L, and plungers P P, together with the plows, substantially as set forth, and for the purposes herein specified.

107,403.—APPARATUS FOR CARBURETING AIR.—Henry Oertel, Memphis, Tenn.

Claim.—1. The combination and arrangement of the air-holders B B′, jacket F F′, receiver *c*, and furnace E, when connected as specified and for the purpose set forth.

2. In a portable gas-machine, having air-holders B B′, jackets F F, receiver *c*, and furnace E, and clock-work, as described, the lips *f f′*, tripping-rods *g g′*, triggers *e*, and segmental ratchet-wheels T T′, when constructed and arranged to operate substantially as and for the purpose specified.

3. In a gas-machine, having air-holders B B′, warm-water jacket, and clock-work motor, as specified, the arrangement of the pans H and *j*, and the perforated plate *g′*, when the several parts are constructed and connected as and for the purposes set forth.

107,404.—THILL-COUPLING.—Justin H. Ormsby, Dixon, Ill.

Claim.—The thill-coupling above described, consisting of the arm *a*, shank-head *b*, and clamp D, provided with a set-screw, E, when all are constructed and arranged as specified and shown, and for the purpose set forth.

107,405.—ICE-PRESERVER.—James E. Pilkington, Baltimore, Md.

Claim.—The ice-preserver, having a receiver of wood or tin, A, and an inclosing-case, of felt or other non-conductor, having a fixed and a movable section, B and D, made and used as herein described, as a new article of manufacture.

107,406.—VALVE IN STEAM APPARATUS FOR DRESSING STONE.—Leon Pochet, Vendome, Loir Et Cher, France.

Claim.—In combination with the slide-valve T, the regulating-valve *t*, cam *n*, and rod *m*, substantially as set forth.

107,407.—SAP-BUCKET.—Charles C. Post, Hinesburg, Vt.

Claim.—1. A taper or conical sap-bucket, provided with an indented side, *b*, substantially as and for the purpose set forth.

2. In combination with a conical sap-bucket, constructed as above described, the adjustable crescent-plate C or slide E, or their equivalent, for the purpose herein shown and described.

107,408.—JOURNAL-BOX FOR RAILWAY CARS.—Abijah L. Raplee, Edwin, assignor to Carrie R. Laman, Painted Post, N. Y.

Claim.—In combination with an oiling-roller, C, which is provided with spring-actuated pivot-bearings *g g*, and is frictionally rotated by and with the axle-journal, an independent and removable supporting-frame *d e f f*, constructed substantially as described and for the purpose specified.

107,409.—DOUBLE-SHOVEL PLOW.—Samuel Garret Rayl, Agency City, Iowa.

Claim.—1. The arrangement of the standards B B′, handles C, braces *b*, stirrups *a* and *d*, the bolt *c*, and hook-bolt *e*, when constructed as described and shown, and for the purpose of adjusting said standards.

2. The plow above described, consisting of the beam A, the standards B B′, the handles C, the clod-fender D, the shovels E and F, the stirrups *a* and *d*, bolt *c*, and hook-bolt *e*, when constructed and arranged as described and shown, and as and for the purposes set forth.

107,410.—CORN-SHELLER.—George W. Reisinger, Harrisburg, Pa., assignor to William A. Middleton, same place.

Claim.—1. The hollow journal C, provided with teeth, *a a*, and cranks D D′, substantially as and for the purposes herein set forth.

2. The combination of the hollow journal C, cranks D D′, teeth *a a*, sliding tooth *a′*, and spring *b*, all constructed and arranged to operate substantially as and for the purposes herein set forth.

3. In combination with the hollow-toothed journal C, the detachable ring G, constructed as described, and for the purposes set forth.

4. The combination of the cap-box A, hollow-toothed journal C, cranks D D′, sliding tooth *a′*, and ring G, all constructed and arranged as described, to operate substantially in the manner and for the purposes herein set forth.

107,411.—HORSE HAY-RAKE.—Macedon J. Robinson, Ashley, Ill.

Claim.—The combination of the handle E, hand D, rings C B, and shaft A, the several parts being constructed, arranged, and operated as shown and described.

107,412.—OPERATING THE PICKER-STAFF OF LOOMS.—Wanton Rouse, Taunton, Mass.

Claim.—1. The combination of the connecting-arm, the rocker, the bed, the stop, and the journal and its box, as above described, in order to prevent the endwise motion of the journal in its box when the rocker is in its place, and to allow this endwise motion when the rocker is raised.

2. The combination of the open box, journal, and shoulder, when constructed so that the journal will be locked in its open box, the whole combination being and operating substantially as described.

3. The divided link, constructed and operating substantially as specified, in combination with the rocker and bed.

4. The connecting-arm, when formed with a shoulder substantially parallel with the journal projecting from it, in combination with a projecting box, a portion of the walls of which lie between the journal and shoulder.

107,413.—MORTISING-MACHINE.—David S. Shearer, Waupun, Wis.

Claim.—The combination of the swinging yoke D and revolving cutter G with the clamp A B, and hinge-bar I, substantially as specified.

107,414.—COMBINATION AND REGISTER-PADLOCK.—Henry S. Shepardson, Shelburne Falls, Mass.

Claim.—1. The combination of a register and its actuating mechanism with the hasp B of a padlock, arranged to operate as described, whereby the closing and opening of the hasp shall operate the register, substantially as set forth.

2. The combination of the movable guard *e* and its link *b* with the perforated case A, the register, and the swinging dog C, all constructed and arranged to operate substantially as and for the purpose set forth.

3. The combination of the projecting arm *l′* of the hasp B, with the swinging arm G, having the tumblers mounted thereon, and provided with the shoulder *n*, for disconnecting the tumblers from their operating wheels, to change the combination, as set forth.

107,415.—COMPOUND MACHINE FOR SHEARING, PUNCHING, UPSETTING, AND BENDING METAL.—Wright Sleeper, Coaticooke, Canada.

Claim.—1. The arrangement of the internal gear *b*, on the main lever B, and the pinion C, and hand-lever D, working therewith, so that the hand-lever shall extend forward and be used at the front of the machine by the operator standing there, as described.

2. In combination with the lever B, and with the slide E of the upsetting mechanism, the cogs or teeth *j* and *k*, for moving said slide, as set forth.

107,416.—CULTIVATOR.—George H. Smith, Des Moines, Iowa.

Claim.—The beam A, the handles B B, braces *a a a a*, and loop *b*, arranged as described, and for the purpose set forth.

107,417.—DRIER.—Marshall P. Smith, Baltimore, Md.

Claim.—1. The arrangement of a series of trays, resting in the threads of vertical screws, and receiving a falling or rising motion by the revolution of those screws in a chamber or tower supplied with a current or currents of hot air, substantially in the manner shown and described.

2. The arrangement of a series of trays or platforms, receiving motion from the revolutions of vertical screws in a vertical drying-chamber, when so constructed and arranged that the current of air shall pass over each tray in succession, in the manner and for the purpose substantially as described.

3. The vibrating flanges H, when used in combination with the vertical screws, in the manner and for the purpose substantially as described.

4. The carriers K K^1 K^2 K^4, when used in combination with the vertical screws and flanges, in the manner and for the purposes substantially as described.

5. The vertical screws D, when used in combination with the vertical chamber A, for the purpose of raising or lowering trays, in the manner and for the purpose set forth.

6. The deflectors M M and dampers N N, when constructed in the manner and for the purposes substantially as described.

7. The arrangement of pinions G and G′ and spur F, having one or more teeth removed, when used for the purpose of giving intermitting motion to the vertical screws, in the manner substantially as described.

107,418.—CUPBOARD-LATCH.—William E. Sparks, New Haven, Conn., assignor to Sargent & Co., same place.

Claim.—The latch-head C, constructed with the pivot-point *d*, at one side of the center of the said latch-head, and combined with the reversible knob or lifter E on the plate F, substantially in the manner set forth.

107,419. — SPOON. — George H. Spencer, Cleveland, Ohio, assignor to himself and Joshua B. Glenn, same place.

Claim.—1. The combination, with a spoon, of a nipple, *u*, substantially as set forth.

2. The combination, with the bowl A, of the said nipple *u*, plate *d*, and opening *m*, as described.

3. The combination of the bowl A, handle B, its reservoir X, contracted mouth *x*, and valve *o*, substantially as specified.

4. The sponge *y*, arranged in the bowl of the spoon beneath the plate *d*, and adjacent to the nipple *u*, as described.

107,420.—FINGER-GUARD.—George H. Spencer, Cleveland, Ohio, assignor to himself and Joshua B. Glenn, same place.

Claim.—1. The tube or socket A, provided with a roller, arranged substantially as and for the purpose set forth.

2. The said roller arranged on the tube or socket A, and corrugated, as set forth.

107,421.—CHIMNEY.—Alvah J. Sprague, Springfield, Mo.

Claim.—The chimney A, so constructed as to have the size or diameter of the flue increase from the bottom to the top, substantially as shown and described.

107,422.—LOCK FOR BAGS, &c.—Bernard Steinmetz, Paris, France.

Claim.—1. The combination of the vertical rotating spindles *b*, catch *c*, the spring *r*, bolt *i*, and its hook *i'*, all arranged upon one section of a clasp, and the hook *d* on the other section of a clasp, as set forth.

2. The combination of the above, the double cam *k* on the spindle *b*, the bolts *s s'*, and springs *s s*, as described.

107,423.—CURD-AGITATOR.—Byron G. Swain, Colden, N. Y.

Claim.—1. The construction and arrangement of the agitator as herein described, the same consisting of the shafts *c d*, with arms *e e'* mounted in the removable frame B, and operated by gears *g g'*, or equivalent, in the manner and for the purpose specified.

2. The arms *e e'*, provided with the oppositely-bending fingers *f f'*, operating in the manner and for the purpose specified.

107,424.—CIDER-MILL.—Lewis R. Taylor, Clark township, Ind.

Claim.—1. In combination with the elevating-screw E, having removable follower, the cheese-box C, and the grinding-rollers H' and H, the latter being provided with a female screw-thread, and the parts all constructed and arranged to operate as specified.

2. In combination with the screw E of a cider-press, the fluted rollers H, perforated centrally, and provided with female screw-thread, as specified.

107,425.—WRENCH.—Henry Tregellas, Calumet, Mich.

Claim.—1. In combination with the removable pipe-jaw D, having beveled serrated face *e* and tapering slot, the movable jaw B, having serrated brace *e* and spring *s*, and the tapering bar A, with serrations *a*, and curved handle *m*, substantially as specified.

2. The removable nut-jaw C, with tapering slot, substantially as specified.

107,426. — WATER-ELEVATOR. — Bernhard Vater, New York, N. Y.

Claim.—The improved wheel A, consisting of a continuous spiral, whose several convolutions are made successively wider from the periphery inward to the shaft B and in planes parallel to said shaft, substantially as herein shown and described, and for the purpose specified.

107,427, antedated September 3, 1870.—METHOD OF GRAFTING.—David S. Wagoner, Pultney, N. Y.

Claim.—The herein-described mode of grafting, by making the seat for the scion of a conical form, at right angles or obliquely to the root or branch into which the graft is set, and fitting the graft accurately thereto, in the manner herein shown and described.

107,[illegible], antedated September 5, 1870.—COATING EMBOSSED WOOD.—Sylvester P. Wheeler, Bridgeport, Conn.

Claim.—1. The manufacture of ornamental articles of wood, by first embossing blocks of wood by dies applied to the end grain, and then treating the same with collodion, as described.

2. Embossed imitations of carved or turned wood, subjected to the said treatment.

3. Embossed imitations of carved or turned wood, impregnated with paraffine or with fatty or other matter, and coated with collodion, chloride of sulphar, or its equivalent.

107,429.—SHINGLE-MACHINE.—O. T. Williams, Smithland, Ky.

Claim.—The arrangement, herein described, of the supporting-table, riving-cutter and two shaving and tapering-knives, and rest N, when constructed and operating in the manner and for the purpose set forth.

107,430.—WASHING-MACHINE FOR WASTE, &c.—William F. Witte, Whitemarsh, assignor to Charles Robbins, Philadelphia, Pa.

Claim.—The horizontally-reciprocating box C and supporting-roller B, in combination with the series of vertically-moving beaters D, the said parts being arranged to operate together, substantially as and for the purpose hereinbefore set forth.

107,431. — WASHING-MACHINE. — John B. Woolsey, Bloomfield, Iowa.

Claim.—1. The combination of the tub A B C with bolts D and washers E, and the drum L M with door and internal oblique ribs *a a*, all constructed to operate as set forth.

2. The arrangement, under the inclined bottom of the washing-machine box A B C, of the furnace E, with strap G, recess H, and slotted door I, all substantially as set forth.

107,432.—MECHANICAL MOVEMENT.—Daniel Zeigler, Lewistown, Pa.

Claim.—The combination of the inner cogged stationary wheel B, the outer cogged wheel G, provided with a square projection on its hub, over which is placed the socket I, on the end of the shaft H, provided with the ball J, all constructed and operated substantially as set forth.

REISSUES.

4,117.—BALANCE SLIDE-VALVE.—Thomas M. Herriott and Samuel Myers, South Pittsburg, Pa.—Patent No. 84,278, dated November 24, 1868.

Claim.—The ring B, beveled upon its inner surface, for the purpose of raising and pressing the upper face of a slide-valve against the valve-chamber, cap, or cover, by the lateral exterior pressure of steam, substantially as hereinbefore set forth.

4,118.—CROQUET-TABLE.—Henry R. Heyl, Philadelphia, Pa.—Patent No. 104,151, dated June 14, 1870; antedated May 30, 1870.

Claim.—1. The table, carrying a series of croquet-bridges supported upon the uprights A A, and adapted to be turned or folded on both sides between the supporting frame, substantially as set forth.

2. The combination, with the hinged croquet-board, of the braces B, for holding the board in a horizontal position, and forming the adjusting medium thereof, substantially as set forth.

3. The combination, with a folding croquet-board, of the braces B, hinged at one of their ends to the supporting-frame, and provided at their other end with adjusting screws *c c*, as and for the purpose described.

4,119.—PLOW.—James Vandegrift, Princeton, Ill.—Patent No. 69,867, dated October 15, 1867.

Claim.—1. The within-described arrangement of the beam *d*, the plow *g*, and land-side *h*, arm J, sleeve *k*, and screw-bolt *m*, operating in the manner and for the purpose herein described.

2. The construction and arrangement of the plow-post *g* with its backward-projecting flanges *g'*, when attached to the plow, as herein shown, so as to admit of the adjustment thereto of a plow-beam, in the manner and for the purpose herein described.

4,120.—TOY VELOCIPEDE.—Nathan S. Warner, Bridgeport, Conn. — Patent No. 94,676, dated September 7, 1869.

Claim.—1. The combination, in a toy velocipede, of automatic propelling mechanism, the hind wheels, the front wheel, and the joint in the frame connecting the front and hind wheels, said joint being constructed, as set forth, to permit the front wheel to be set at an inclination sidewise from the perpendicular, as described.

2. The combination of the hind wheels, the front wheel, the joint C between them, by which the front wheel can not only be turned horizontally at an angle to the hind ones, but also inclined sidewise from a vertical line, and the imitation-rider mounted on the front wheel, all these parts being constructed to operate in combination, substantially as herein set forth.

3. The combination of the hind wheels, the front wheel, the joint connecting them, the imitation-rider, and the driving mechanism mounted on the front wheel, substantially as hereinbefore set forth.

4,121.—BOAT FOR TRANSPORTING RAILROAD CARS.—Jesse Wheelock, Lancaster, N. Y.—Patent No. 22,759, dated January 25, 1859.

Claim.—1. The bumper-dock A', with the bumper-beam J, operating as described, in combination with the dock A and slip F, for the purpose and substantially as herein described.

2. The boat S, with the tracks T and the sockets or recesses O O, in combination with the adjustable tracks E C N upon the dock A, substantially as and for the purpose described.

4,122.—MACHINE FOR ROLLING LEATHER.—Joel Whitney, Winchester, Mass.—Patent No. 37,991, dated March 24, 1863.

Claim.—The combination, with the treadle, and mechanism by which the force exerted upon the treadle is imparted to one of the rolls, of mechanism by which one roll may be adjusted with respect to the other roll, independently of the treadle action, whether such adjusting mechanism be arranged to move in conjunction with the treadle and to act upon the same roll as the treadle, or upon the other roll, substantially as and for the purposes specified.

4,123.—MOTIVE POWER FOR SEWING AND OTHER MACHINES.—Jacob Zuckermann, San Francisco, Cal.—Patent No. 87,020, dated February 16, 1869.

Claim. — The motive power, consisting of the frame, spiral spring or springs, or the series of semi-elliptic springs D, connected at their ends by hinge-joints, in combination with the spirally-grooved fusee G, the fusee and the springs being connected by means of the chains, the gear-wheels, shafts, belt, and brake, the whole constructed and arranged substantially as and for the purpose set forth.

DESIGNS.

4,346.—COMBINED TOP PLATE, COMBUSTION, AND AIR-CHAMBER OF A VAPOR-GENERATOR AND BURNER.—Joshua Comly, Philadelphia, Pa.

Claim.—A design for combined top plate and combustion and air-chambers, for vapor-generators and burners, as described and shown.

4,347.—STOVE-PLATE.—George W. Eddy, Waterford, N. Y.

Claim.—A star, A, shaped and arranged upon, and cast with a swelling-panel, B, and forming part of a stove-plate, as herein described and shown.

2. The combination of a star, A, panel-surface, B, beads C, and border-molding D, with or without an intervening molding, E, and plane-surface F, all shaped and arranged together, and cast with a plate or plates of a stove, substantially as shown and described.

4,348.—HANDLE OF SPOON, FORK, &c.—Charles D. Hall, Bristol, Conn., assignor to "the Bristol Brass and Clock Company," same place.

Claim.—The design for a spoon or other handle, as shown and described.

4,349.—COAL AND WOOD COOKING-STOVE.—Conrad Harris and Paul W. Zoiner, Cincinnati, Ohio.

Claim.—The design for a coal and wood cooking-stove, as shown and described.

4,350.—BOX FOR THE TOP OF BUREAUS.—Cheney Kilburn, Philadelphia, Pa., assignor to Kilburn & Gates, same place.

Claim.—The design for boxes for the tops of bureaus, substantially as described, and as represented in and by the accompanying drawing.

4,351.—BOX FOR THE TOP OF BUREAUS.—Cheney Kilburn, Philadelphia, Pa., assignor to Kilburn & Gates, same place.

Claim.—The design for boxes for the tops of bureaus, substantially as described, and as illustrated in and by the accompanying drawing.

4,352.—BOX FOR THE TOP OF BUREAUS.—Cheney Kilburn, Philadelphia, Pa., assignor to Kilburn & Gates, same place.

Claim.—The design for boxes for the tops of bureaus, substantially as described, and as represented in and by the accompanying drawing.

4,353. — BREAST-SLIDE FOR HARNESS.—Henry W. Minnemeyer, Allegheny City, Pa.

Claim.—The design for a breast-strap slide, as described and shown in the accompanying drawing.

4,354.—TRACE-CARRIER FOR HARNESS.—Samuel Reynolds, Allegheny City, Pa.

Claim.—The design for a trace-carrier, as described and shown in the accompanying drawing.

4,355. — CLAMP FOR TRUNK-CORNER.—Thomas L. Rivers, Newark, N. J.

Claim.—The design for clamps for trunk-corners, substantially as herein shown and described.

4,356.—HAT.—Isaac B. Wentworth, New York, N. Y.

Claim.—The improved design for hats, substantially as herein shown.

ISSUE OF SEPTEMBER 20.

PATENTS.

107,433, antedated September 10, 1870.—POTATO-DIGGER.—Sherman E. Anthony, Stillwater, N. Y.

Claim.—The combination of the share-tine B and separator-tines *c c' c''*, on one side of the drag-frame, with the share-tine B and separator-tines *c c' c''* on the other side of the drag-frame, the tines in each series being parallel, and gradually ascending from the share-tine, and the two series being placed with respect to each other in the manner specified, and for the purpose set forth.

107,434.—HYDRANT.—William Bailey, Troy, N. Y.

Claim.—The arrangement of the waste-water chamber I with its aperture *m*, opening near the bottom into the hydrant-chamber or pipe, and the aperture *n*, opening at the top, into the ground, in combination with the waste-water valve H beneath, provided with the inverted cup-shaped packing *d* and annular groove or space *g*, substantially as and for the purpose herein specified.

107,435.—MACHINE FOR DRESSING TILES. George Barney, Swanton, Vt., and Valentine G. Barney, Minneapolis, Minn.

Claim.—1. The combination, with the rotary grinding-disk A, of the horizontally-moving frame F and the vertically-moving frame I, the frames F and I being arranged for holding the tile to be acted upon by the disk, all substantially as specified.

2. The combination, with the frame I, of the shaft M, crank L, link K, and weighted lever O, when arranged for moving the frame I vertically, substantially as specified.

3. The combination, with the vertical holder S, on the frame I, of a clamping-bar, T, and clamping-head, and a presser, when the clamping-head and presser are provided with friction-rollers, to admit of the adjustment of the stone when being clamped up to the vertical support S, substantially as specified.

4. The arrangement of the bar S, for adjustment at its upper end, relatively with the bed A, substantially in the manner described.

5. The arrangement of the presser U, for adjustment on the diagonal bar V, substantially as specified.

6. The combination, with the angle-plate *a b*, of the roller *f* and spring *e*, substantially as specified.

7. The combination, with the bar T, made adjustable as to length, and with the angle-plate *a b*, of the roller *f*, spring *e*, and plate *d*, substantially as specified.

8. The combination, with the block U, of the rollers *g*, substantially as specified.

9. The combination, with the rollers *g* and block U, of the yoke *h*, springs *h* and *i*, all substantially as specified.

10. The combination, with the disk A, of the disk *n*, spindle *p*, clamping-bars *r''*, spring handle *t*, and ratchet-bar *w*, substantially as specified.

11. The adjustable connection of the clamping-bars *r''* with the lever *t* by means of the pins *w* and the spring *y*, substantially as specified.

12. The feeding-trough A', having the adjustable oblique hinged bottom and water-trough, all arranged for operation, substantially as specified.

107,436.—SEED AND GUANO-DISTRIBUTER. Edward Blacklidge, Abbeville, Ala.

Claim.—1. The arrangement, with the slide *d*, of the pivoted lever *f* with the adjusting-screw *e*, working in lugs of said lever and slide, as shown and described, for the purpose specified.

2. The arrangement of the transporting wheel A, agitators *b*, hub B, and separate hopper C, as shown and described.

107,437.—SELF-LOCKING HINGE.—Gustavus Emil Boisselier, St. Louis, Mo.

Claim.—The arm D, when the inclines *d* are higher, relatively, than the inclines *c*, and the blind occupies the same level when open as when shut, and its weight supported, in both positions, upon the continuous bearing *c*, substantially as and for the purpose set forth.

107,438.—BOLT-CUTTER.—James R. Brown, Cambridgeport, Mass.

Claim.—1. The particular construction, and the arrangement relative to one another, of the toothed sectors *d'* and cutter-carrier B, in virtue of which the said carrier, together with the cutter, may be readily withdrawn from the frame A, on turning the handles D D around far enough to disengage the teeth of the sectors from those of the carrier, as set forth.

2. In such bolt-cutter, the combination of the cutter *b*, and its carrier B, with the two screws *c d*, applied to one shank or rod, as set forth.

107,439.—SEAT FOR ROW-BOATS.—Walter Brown, Boston, Mass.

Claim.—The adjustable seat B, arranged substantially as described, and for the purpose set forth.

107,440, antedated September 14, 1870.—STREET-INDICATOR FOR CITY CARS.—William Brown, Duncannon, Pa.

Claim.—1. A revolving cylinder, having a number of plates hinged upon its exterior, said plates being so arranged as to turn over by their own weight on passing a certain point when the cylinder is rotated, thus displaying in succession the names of streets, &c., inscribed upon them, substantially in the manner described.

2. The combination of the cylinder A, hinged plates *b*, circular rack *c*, screw *d*, and shaft B, all constructed and operating substantially as set forth.

107,441.—SOLAR CAMERA.—Norman Bryan, Thomaston, Ga.

Claim.—1. The combination, with the reflector E and wheel-rim D, hinged together, as described, of the extension-brace G G', curved rail K, hooked bar M, and flange L, all substantially as specified.

2. The arrangement of the rail K, eccentrically with the toothed rim D, and for adjustment to or from the vertical plane of the plate B, all substantially as specified.

3. The combination, with the sliding shaft O, catch-bar S, and spring R, of the trip-lever U, pin V, and wheel-rim pinion P, all substantially as specified.

107,442, antedated September 5, 1870.—TOY GUN.—Edward Buckman and Alexander Buckman, Brooklyn, N. Y.

Claim.—1. The arrangement, substantially as specified, of the magazine and handle B, carrying a spring follower, C, with the barrel A of the gun.

2. The combination of the plunger-sections D D', the spring catch *e*, slot *f*, and projection *g*, with the spring or springs *d*, essentially as shown and described.

3. The plunger, constructed with a shelving portion, *k*, at its forward end, in combination with the barrel A and magazine B, substantially as specified.

4. The combination of the pin or screw *h* and groove *i* with the plunger-sections D D', the spring catch *e*, slot *f*, and projection *g*, substantially as described.

107,443.—WASHING-MACHINE.—Edmund L. Bullock, Hartford, Conn.

Claim.—1. In a washing-machine, the combination of the rocking frame *b*, having a rocking motion when the machine is in use, with the pounders *o o' o² o³*, one or more, having an up-and-down motion when the machine is in use, the whole constructed, arranged, and operated substantially as and for the purposes set forth.

2. The combination of the rocking frame *b*, connecting-rod *c*, shaft *g*, pinion *h*, gear-wheel *i*, pinion *k*, shaft *l*, cam-gears *m m m m*, racks *n n n n*, and pounders *o o' o² o³*, the whole constructed, arranged, and operated substantially as and for the purposes set forth.

3. In combination with the parts specified in the clause next preceding, the catches *s s s s*, the whole constructed, arranged, and operated substantially as and for the purposes set forth.

107,444. — HOISTING-GRAPPLE. — John A. Burgess, Plymouth, Mass., assignor to himself and Joshua Standish, same place.

Claim.—The bail A, and the grappling-jaws D D, constructed and arranged to operate in combination, substantially as and for the purposes described.

107,445.—BROOM-CORN SEED-STRIPPER. — George E. Burt and Edwin A. Hildreth, Harvard, Mass.

Claim.—1. In combination with a machine for stripping broom-corn, constructed substantially as described, the auxiliary stationary head *b*, when provided with a beveled edge, as shown, as and for the purpose herein specified.

2. The combination, in a machine for stripping broom-corn, of the cylinder D, shaft E, auxiliary and stationary head *b*, provided with a beveled edge, as shown, and the supporting-boxes B, substantially as described, and for the purpose set forth.

107,446. — CLOTHES-BASKET. — Leander Carman and Alexander C. Carman, McCoy's Station, Ohio.

Claim.—A new article of manufacture, viz., the hereinbefore-described basket and its lid, constructed of strips overlapping and underlapping each other, and arranged at an oblique angle to each other, and held together by center pieces, bands, and rivets, substantially as and for the purpose set forth.

107,447.—REMOVING BURS FROM WOOL.—Peter Casson, San Francisco, Cal.

Claim.—In the process described, the employment of salts of tartar and sea-salt to preserve the wool in the acid-bath, as set forth.

107,448, antedated September 10, 1870.—SAP-FEEDER TO SUGAR-EVAPORATORS.—George D. Chandler, West Concord, Vt.

Claim.—1. The combination, with the nozzle N, of the tube A, and the float of a float-lever made in two parts, arranged for adjustment substantially as specified.

2. The attachment of the float to the float-lever by an adjusting screw, substantially as specified.

3. The tube A of an automatic sap-feeding apparatus, provided with the brackets B and C, and a set-screw, D, for clamping to the top of the kettle or boiling-vessel, substantially as specified.

4. The combination with the tube A, provided with the automatic feed-regulating apparatus, as described, of the flexible tube O and nozzle Q, substantially as specified.

107,449.—FRUIT-JAR.—Thomas A. Clark and Henry C. Mascroft, Worcester, Mass.

Claim.—1. The ventilating and tightening screw G, provided with an aperture or apertures for the escape of air from the jar, and with an exterior screw-thread to engage with the bail or other device used to hold the cover down, substantially as shown and set forth.

2. The combination, with the cover B and yoke C, of the tightening-screw G, spring *e*, valve E, and cap-piece F, substantially as and for the purposes set forth.

3. The jar-rim A and cover B, provided each with a triangular groove, *a*, in combination with the gasket or packing-ring D, which, when the cover is pressed down upon the rim, is received and held in said grooves, in the manner shown and described.

107,450.—SHAVING-MUG.—Frank B. Clock, Boston, Mass.

Claim.—The shaving-mug, made with the water-reservoir, the soap-receptacle, the inclined spout or nose, and one or more draining-passages, to lead either through the side or the bottom of the soap-receptacle, as and for the purpose specified.

107,451.—EARTH-CLOSET.—Lewis G. Clock, Manchester, N. H.

Claim.—The combination and arrangement of the urinal-guard or deflector G, with the seat E, and the receiving-vessel A.

Also, the combination and arrangement of the levers O O, the weight R, one or more connection-bars *s s*, the rocker-frame T, and the two slides U V, with the pivoted seat E, the hopper I, and the chute of the latter.

Also, the combination of one or more slides, N N, with the hopper, pivoted to its supports, as described, and with the levers O O arranged with the seat pivoted to the frame, as set forth.

Also, the combination of mechanism for tipping the hopper, in manner as described, with such hopper, its chute, the two slides N N, and their operative mechanism, arranged with and to be actuated by the seat and a weight, as explained.

107,452.—SECURING HUBS TO AXLES. — George E. Clow, Jeffersonville, Ind.

Claim.—1. The tube *b*, provided with the channels or grooves *k*, and screwed through the hub A and into the journal-box *a*, as and for the purpose shown and described.

2. The axle-journal *c*, box *a*, and hub A, secured together by the screw-threaded oil-tube *b* and key *c*, all constructed and arranged as shown and described, for the purpose specified.

107,453.—BALANCED SLIDE-VALVE.—Orrin Collier and William Henry Masterman, Sacramento, Cal.

Claim.—1. The combination, with the valve A of the cylinder E and piston D, the latter being jointed to the valve A, and the former being open to the steam at one end and the air at the other, and suspended to oscillate in unison with the movements of the valve, all substantially as specified.

2. The combination of the cylinder E, plate F, case I, and rod H, all substantially as specified.

107,454.—KNITTING-MACHINE.—Francis M. Comstock, Cleveland, Ohio.

Claim.—1. The disk or wheel which carries the sliding pins, when provided with a radially-grooved ring for holding the pins in position, and a recess into which the pins pass when being withdrawn, to allow of the passage of the needle past their points, substantially as and for the purpose set forth.

2. The combination, with pins on which the stitches are formed, of a stitch-retainer, substantially as described, when operating as and for the purpose set forth.

3. The driving-wheel, provided with the reversible portion, combined with the feed-wheel and the revolving ring, having pins or projections upon its upper surface, all substantially as and for the purpose set forth.

4. The combination and arrangement of the cam-

wheel, the sliding lever, and the stitch-retainer, when constructed and operating substantially as and for the purpose set forth.

5. The needle and its oscillating guide, operating in connection with the stitch-retaining pins, substantially as and for the purpose set forth.

6. The reciprocating vibratory needle, in combination with the stitch-retainer and the sliding pins, substantially as and for the purpose described.

7. The combination, with the supporting disk, of the reciprocating stitch-holding pins, constructed and operating substantially as and for the purpose set forth.

107,455. — FOLDING OR KNOCK-DOWN CHAIR.—John K. Coolidge and Nathan H. Hill, Cincinnati, Ohio.

Claim.—A rush, cane, or split-bottomed chair, constructed so as to allow the withdrawal of the stretchers and rounds, enabling the chair to be folded and packed, substantially as herein set forth.

107,456. — HORSE-HOE. — Ira Copeland, North Bridgewater, Mass.

Claim.—1. The combination of the clevis K with the housings H H', the notched segments L' M, and the key-piece M', substantially as described, and for the purpose set forth.

2. In a horse-hoe, the bar A A', when bent and arranged, in combination with the clasps E E' and cross-bar F, substantially as described, and for the purpose set forth.

3. The combination of the loop-bolt N' with the bar C C', the cross-bar F, and the pointer Q, substantially as described, and for the purpose set forth.

4. The combination of the loop-bolt N' with the cross-bar F and handle-bracket K K', substantially as described, and for the purpose set forth.

107,457.—CORN-PLANTER.—Joseph Cosand, Russiaville, Ind.

Claim.—1. The combination, with an independent driving-shaft, F, of a fast pinion, N, spur-wheel M, pitman L, and pivoted lever J, to revolve the said shaft to the proper position for actuating the mechanism to drop the first pair of hills.

2. The arrangement, with respect to the movable lever J, of the small lever K and the arc-slotted laterally movable lever I, so that the driver can simultaneously hold the clutch-sleeve G out of connection with shaft F, and revolve said shaft to the point required.

3. The marker G', arranged to dot points in a straight line, parallel to the rows being planted, and in line with the cross-rows, as and for the purpose specified.

4. The arrangement, with respect to a central hopper, of two inclined spouts, S, movable catch-plates U, and guide-tubes W, for the purpose of dropping, in checks, two rows of corn at the same time.

5. The arrangement, in a corn-planter, with respect to clutch-sleeve G and shaft F, of the short shaft R, lever I, and spring H, to connect and disconnect the power at the times specified.

107,458, antedated September 10, 1870.—SOLDERING-MACHINE.—Edward T. Covell, Brooklyn, N. Y.

Claim.—1. The within-described movable dipping-frame B, combined with a pan or vessel, A, to contain molten solder, and arranged to be raised or lowered over and within the same, substantially as herein set forth.

2. The combination, as herein described, of an encircling air-space, m, having an outward vent independent of its upper opening, with the sides of a support for sustaining the bottoms of cans, or other vessels, during the operation of dipping their seams in molten solder, substantially as herein set forth.

3. A hollow guide or bearing-standard, E, left open at each end, for a passage of air through the same, and combined with the movable dipping-frame or support of a soldering apparatus, and with its solder-pan, substantially as and for the purpose herein set forth.

4. A hollow guide or bearing-standard, E', filled or lined with plaster of Paris, or other non-conductor of heat, and combined with the movable dipping-frame or support of a soldering apparatus, and with its solder-pan, substantially as and for the purpose herein set forth.

5. The lever F, combined with the dipping-frame B of my apparatus, to facilitate the elevation and depression thereof, substantially as herein set forth.

107,459. — DEVICE FOR BALANCING FANNING-MILL SHOES.—William Crane, Millgrove, Ind.

Claim.—In combination with the vibrating shoe of a fanning-mill, or other machine for cleaning grain, the counterpoise B and its connecting and actuating mechanisms, when said parts are constructed substantially as shown, and arranged to operate in the manner and for the purpose described and set forth.

107,460. — SIGNAL-BOX FOR FIRE-ALARM TELEGRAPHS. — Sylvanus D. Cushman, New Lisbon, assignor to the Automatic Fire-alarm Company, Leetona, Ohio.

Claim.—1. The combination of the screw-caps K N, elastic switch-plate O, plate P, or its electrical equivalent, press-rod L, and door C, the several parts being arranged substantially as and for the purpose specified.

2. A signal-box, for fire-alarm telegraphs, provided with suitable operating mechanism, and with a switch mechanism, so constructed and arranged as that the closing of the door of the signal-box acts to switch the whole of the operating mechanism out of the main circuit, substantially as is herein specified.

107,461.—COMBINED HARROW AND ROLLER.—Frank A. Dann and James McKibben, Wellsville, Mo.

Claim.—The combined harrow and roller, constructed substantially as described, having spiked belts A' A', and intervening harrow-teeth bars E, attached to a tilting frame.

107,462.—CARRIAGE-BRAKE.—Hiram B. S. Davis, Farmington, Me.

Claim.—The combination, with bolster, sliding front axle, and king-bolt, of the angle-plate K, and slotted plates C I, relatively arranged as described, to regulate the backward and forward throw of the axle.

107,463.—EXTENSION-TABLE AND SETTEE.—Martin Debzell, Wabash, Ind.

Claim.—1. The combination of an extensible table, A A', with an extension-frame made to support and carry a settee, D, substantially in the manner and for the purposes herein set forth.

2. The combination of a hinged or pivoted leg or support, K, with a sliding piece, E, moving in a way formed for it within or upon the under side of the extensible table-top A A', of a convertible extension-table and settee, all substantially as and for the purpose herein set forth.

107,464. — CHURN. — Levi Dederick, New York, N. Y.

Claim.—1. The use of the revolving beater, constructed with boxes C C', and alternate corrugated surfaces D, or their equivalent, substantially in the manner and for the purpose set forth.

2. In combination with the above and the box, the cover, consisting of revolving slats, substantially as set forth.

107,465. — ELECTRIC GAS-LIGHTING APPARATUS. — Charles N. Ealer, Opelousas, La.

Claim.—1. The combination of the cam e, pins d, catch f, and drop H, lever F, and magnet G, as shown and described, for the purpose specified.

2. The armature-lever F, provided with the catch f, and combined with the drop H and cam e, to operate substantially as herein shown and described.

3. The switch M, applied to the gas-lighting apparatus, so that it will change the current from the direct channel to the platina wires, without breaking the circuit, as set forth.

4. The lever n, carrying the cam r, and combined with the ring N and switch M, for operating said switch, in the manner herein described.

5. The combination of the wheel D, pins q and s, lever n, ring N, and switch M, substantially as described.

6. The ring switch M, fitted into the ring N, and held by a spring, j, against the plate J, substantially as herein shown and described.

7. The secondary switch O, applied to a gas-lighting apparatus, for the purpose of changing the current from the negative wire of one machine to the positive of the next, substantially as specified.

8. The combination of pins q' N', wheel D, and secondary switch O, as shown and described.

107,466.—MEAT-CHOPPER.—John A. Eberly, Reamstown, Pa., assignor to himself and Abraham Godshalk, same place.

Claim.—The arrangement and combination of the horizontal springs S, connecting-rods R for hooking onto the chopper-levers L, in combination with arms M, lid O, and revolving removable block and case A, operated substantially in the manner and for the purpose specified.

107,467.—SEED-PLANTER.—Clement R. Edwards, Bowling Green, Ky.

Claim.—The arrangement, in a seed-dropper, of the sliding-plate P, having a series of apertures, adjustable plate R, and cut-off slide E, as and for the purpose described.

107,468. — MOLDING SASH-WEIGHT.—William Ferguson and James Anderson, New York, N. Y.

Claim.—1. The newel A, recessed plates B, plates E, cope H', rod D, patterns G, and bar H, for forming molds for sash-weights, substantially as specified.

2. The combination, with the molds, formed and arranged as above described, of the chills K or L, substantially as specified.

3. A chill for sash-weights, consisting of the plug K and the core l, the said plug being provided with the annular groove a and stud b, all arranged substantially as specified.

107,469.—IRONING-BOARD.—Jacob Fischof, Pittsburg, Pa.

Claim.—1. A hollow ironing-board or table, with finely-perforated top, and a steam-pipe for the supply of steam thereto, substantially as described.

2. An ironing-board or table, with its hollow chamber divided into two or more compartments by one or more diaphragms, d, a steam-pipe to each, and a finely-perforated cover over the whole, substantially as described.

107,470. — WASHING-MACHINE. — Charles Ford and Frank C. Garbutt, Mason, Ill.

Claim.—1. The construction and combination of the frame A, gear C, crank E, arms M, rubber G, and wash-board Q, substantially as and for the purpose hereinbefore set forth.

2. The construction and combination of the weight H, groove R, and India-rubber strips or ridges n and m on the rubber G, with or without the holder F, substantially as and for the purpose hereinbefore set forth.

107,471.—PROPELLER.—John D. Ford, Baltimore, Md.

Claim.—The combination of the sleeve C, provided with the slot F and notches G G' of the shaft B, the stud H, and shifting-lever I, ring K, and the rod M, all substantially as specified.

107,472.—LOCOMOTIVE.—William A. Foster, Fitchburg, Mass.

Claim.—The arrangement, below the fire-grate, of a fire-screen and draught-equalizer, substantially as and for the purposes set forth.

107,473. — BUNG.—Vincent Fountain, Jr., West New Brighton, N. Y.

Claim.—A bung, having an opening through its center, one side of which is applicable for receiving a cork or stopper, G, and the other for receiving a faucet, in the manner and for the purpose set forth.

107,474. — MECHANICAL HAND-MOTOR.—Harvey Fowler, Washington, D. C.

Claim.—1. The combination of a weighted swinging lever or pendulum (supported upon an oscillating standard or arm of the same) with an elastic suspensory cord, said cord being attached to a support above the axis of the said pendulum, and connecting the weighted portion thereof with said point of support, thus constituting a second support for said pendulum, substantially as and for the purpose described.

2. The elastic coil-spring, or equivalent device, in combination with the pendulum, substantially as and for the purpose described.

3. The combination of a vertical weight with a hinged handle, said handle having a claw, to take hold of the suspensory cord connected with the pendulum, substantially as and for the purpose described.

107,475. — MECHANICAL HAND-MOTOR.—Harvey Fowler, Washington, D. C.

Claim.—1. The combination of weighted swinging levers or pendulums, the same being supported upon an oscillating standard or arm thereof, with elastic suspensory cords, substantially as and for the purpose described.

2. The elastic coil springs, or equivalent device, in combination with the pendulum, substantially as and for the purpose described.

3. The combination of the above-described pendulum with an auxiliary standard, hinged and supported upon coil or other springs, for the purpose of extending the reach of said pendulums, and of facilitating their alternating movement, substantially as described.

107,476.—BOX-STEREOSCOPE.—Thomas Fugate, Cincinnati, Ohio.

Claim.—1. The combination, substantially as described, of the rotating shaft D d, cranks or eccentrics F F', rack G, guides I I', conveyer K K', frames L l l' M', lifters R R', and vertically-reciprocating gate S, or its mechanical equivalent, for the purpose described.

2. In combination with the guides or rails I I' and sliding view-conveyer K, the spring or springs J, for the purpose herein explained.

107,477.—COOKING APPARATUS.—John Gallagher, Cleveland, Ohio.

Claim.—The combination of the seething apparatus or vessel C, stop-cock B, and pot-lid A, for cooking purposes, all constructed to operate substantially in the manner as herein shown and described.

107,478.—LUBRICATOR.—John Gates, Portland, Oregon.

Claim.—The hollow glass cylinder A, vessel B, tube D', and pipes F K, all constructed and relatively arranged as shown in fig. 1 of drawing, and for the purpose specified.

107,479. — COMBINED DRESSING-BUREAU AND BATH-TUB.—Jane E. Gilman, Hartford, Conn.

Claim.—1. The improved construction, consist-

ing in the rigid attachment of the tub, mirror, and one end of the bureau to each other, while the other end, to which the front c' is attached, is capable of being moved to one side, as herein described.

2. The herein-described combined bureau and bath-tub, provided with the wash-basin b and supply-cocks, arranged as shown, the sliding towel rack and hinged top h, all constructed and arranged substantially as and for the purposes set forth.

107,480, patented in England, December 17, 1869.—APPARATUS FOR DECORTICATING, SEPARATING, AND DRYING GRAIN.—Anton Joseph Glas, London, England.

Claim.—1. The combination of the cylinder c with the Archimedean screw b and its knives c' and i.

2. The combination of the Archimedean screw g with the disk a, in the manner described.

3. In combination with the wetting stirrer b b', the decorticating cylinders d e, substantially as set forth.

4. In combination with the cylinder d, provided with the screw g and knives d', the cylinder e, provided with knives e' e'' and the screw h, and the perforated jacket cylinder f.

107,481.—PLOW.—Charles M. Gordon, La Porte, Ind.

Claim.—The arrangement of the plows A B, having both handles attached to plow-beam A, coupling-bars a a' a'', adjustable brace-rods d d, and draft-rod C, all combined and arranged substantially as herein shown and described.

107,482.—SHIELD FOR CARRIAGE-STEP.—Charles H. Gould, Boston, Mass., assignor to himself and William Lamb, same place.

Claim.—The shield B, having the lip a thereon, together with the disk or plate C, formed and arranged substantially as described, and secured to a carriage-step, A, in the manner and for the purpose herein specified.

107,483.—FIRE-PLACE GRATE.—Joseph Hackett, Louisville, Ky.

Claim.—1. A basket-grate, composed of three pieces, A, B, and C, substantially as herein shown and described.

2. The front piece, C, of a sectional basket-grate, provided with vertical pieces e and hooks h, for the purpose of locking the entire grate together, substantially as herein shown and described.

107,484.—CULTIVATOR.—James H. Hamilton, Stevenson, Ala.

Claim.—An improved cultivator, formed by the combination of the three parallel beams, A B C, pivoted cross-bars D E, brace-bar or rod F, standards G H I, brace-rods J K L, and M N O, brace-bar P, and brace and gauge-rod Q, with each other, substantially as herein shown and described, and for the purpose set forth.

107,485.—SNOW-PLOW.—Robert Carr Harris, Maple Green, New Brunswick.

Claim.—1. The vertically-extensible screw C, applied to a snow-plow, for elevating the snow, as set forth.

2. The rotary arms f, applied to a snow-plow, in combination with the screw C, substantially as herein shown and described.

3. A snow-plow, composed of the scoop a, screw C, cylinder D, rotary arms f, and box E, all arranged to operate substantially as herein shown and described.

107,486.—GRAIN-SCOURER.—Isaac N. Harshbarger, Bloomington, Wis.

Claim.—The combination of the hollow cylinders A E, hollow arms F, case C, and fan N, said cylinders and arms being roughened, as described, and the several parts named arranged for operation, substantially as and for the purpose specified.

107,487, antedated September 12, 1870.—HARVESTER.—Andrew J. Haswell and John W. Irwin, Circleville, Ohio.

Claim.—1. The shoe K, having upright slides L, for permitting its adjustment, and serving additionally as the means for attachment or anchorage of the tongue, substantially as shown and described.

2. The combination, with the shoe K and guides M, of the cross-bar N, bracket O, and screw P, for the purposes set forth.

3. The combination, with the shoe K and guides M and tongue U, of the cross-bar N, extended as shown, the pivot 12, lever V, link W, rack X, and latch Y, for the purpose stated.

4. The arrangement, in a reaper, of the reel-posts, tongue, and draft-bar, all on the shoe of the cutter-bar, so as to be raised and lowered therewith, as described.

107,488.—WASHING-MACHINE.—Peter Hayden, Pittsburg, Pa.

Claim.—The arrangement of the lower rubber A, the corners K of which are shaved off to fit the inner periphery of an ordinary wash-tub, the angular standards L, upper rubber D, vertical arms E, handles H, slots F, and bearings I, when so constructed that the machine may be fitted firmly within a tub, as described.

107,489.—COMPOSITION FOR PAVEMENT.—Joshua R. Hayes, New York, N. Y.

Claim.—Marl, in combination with bitumen or pitch, prepared as described, to form an asphaltic compound for paving purposes, substantially as described.

107,490.—PREPARATION OF COMPOSITION FOR PAVEMENT.—Joshua R. Hayes, New York, N. Y.

Claim.—1. The application of a sand-bath to a retort containing coal-tar in distillation, so as to obtain therefrom, uninjured by extreme heat, the bitumen or pitch for paving purposes, the heat in distillation for this purpose not exceeding, as the highest point, 325° Fahrenheit, in the manner substantially as set forth.

2. The treatment, by means of the fuming nitrous acid of commerce, to decompose and consume the volatile and odorous elements in the coal-tar during process of distillation, in the manner and for the purpose substantially as set forth.

3. The product made by uniting, chemically the bitumen or pitch thus prepared from coal-tar with any calcareous earth, so as to form an artificial asphalt for paving purposes, in the manner substantially as set forth.

107,491.—SHOEMAKERS' EDGE-PLANE.—Arthur P. Hazard, North Bridgewater, Mass.

Claim.—My improved sole-edge plane, having its movable guard applied to the stock A by means of the screws b b', and the slots c c', as described, the same enabling the said guard to be adjusted with respect to the edge of the cutter and its molding surface, in manner and for the purpose set forth.

107,492.—ADJUSTABLE ARMS FOR WORKING SLIDE-VALVES.—Hubbard Hendrickson, Red Bank, N. J.

Claim.—1. The arc-slotted arm D and slide F c, combined with nut d and straight screw G, as and for the purpose described.

2. The slotted arm D and slide F c, combined with notated plate e and pointer f, as and for the purpose described.

107,493.—STAND FOR CLEANING WINDOW.—Edward Herbster, Chicago, Ill.

Claim.—1. A portable stand for cleaning windows, consisting of the folding steps F, the hinged platform A and its supporting arms, substantially as herein shown and described.

2. In combination with the platform A and arms D, the pendent rack-arms I and hinged adjustable arms L, substantially as described, for the purpose specified.

3. In combination with the folding steps, the adjustable supporting legs G, substantially as described, for the purpose specified.

4. The annular dogs P, in combination with the rod E and arms D of the platform, substantially as described, for the purpose specified.

5. In combination with the arms D and folding steps F, the pendent arms I and strip O, substantially as described, for the purpose specified.

6. The removable angular bars S, in combination with the folding steps, substantially as described, for the purpose specified.

107,494.—EXTENSION LOUNGE.—Nathan H. Hill, Cincinnati, Ohio.

Claim.—1. The brace-levers t b, with the pivots p p, for bracing and operating the opening and folding of the parts A' B, all substantially as herein set forth.

2. The combination of the parts A A', B B', and C, with the pivot-levers b t, to open and fold the lounge by the raising of the seat A', as herein set forth.

107,495.—SMOKING-PIPE.—Charles F. Hitselberger, Libertytown, Md.

Claim.—As an improved article of manufacture, a smoking-pipe, provided with the nicotine-cup G, water-cup I, and saliva-cup N, all combined and arranged substantially as specified.

107,496.—KILN FOR BURNING TILES, PIPES, &c.—John Hornsby, Woodbridge, N. J.

Claim.—In the circular kiln, provided with a perforated floor, F, flues G, central chimney H, and peripheral furnaces A, as herein shown and described, the distinct upright flues D, when constructed and arranged with reference to the other parts named, in the manner and for the purposes herein shown and described.

107,497.—WAGON-HUB.—Jerome B. Hubbell, Naugatuck, Conn.

Claim.—The combination of a mortised wooden hub, with a grooved metal band, having apertures in the bottom thereof corresponding to the several mortises in hub, but slightly larger, to avoid contact of the spokes with said band, all as shown and described.

107,498.—SASH-HOLDER.—Henry C. Hunt, Amboy, Ill.

Claim.—The rotating beveled bolt B, furnished with the projection a, (or its equivalent,) the coil-spring r, and combined with suitable catches on the window-frame, all arranged as and for the purpose described.

107,499.—LIFE-PRESERVING MATTRESS.—Joshua Hunt, Providence, R. I.

Claim.—The cork-filled sacks or pockets C C, united by the apron A, when combined for a mattress and a life-preserver, as above described.

107,500.—COMPOUND MACHINE FOR UPSETTING, PUNCHING, AND CUTTING METAL.—William Hunt, Oskaloosa, Iowa.

Claim.—Jointly, the tire-upsetting mechanism, consisting of the base A, heads A' and B, bar C, and lever G, and the punch and die J K, and pair of cutters L M, said punch and die and cutters being separate and detachable, applicable to the upsetting device, and interchangeable with one another, all substantially as described.

107,501.—DEVICE FOR OPERATING HAND-FAN.—William A. Ireland, New York, N. Y.

Claim.—1. The catch-hinge D, for connecting the block B, to which the fan is attached, with the pivoted block C, to which the power is applied, substantially as herein shown and described, and for the purpose set forth.

2. The S-shaped lever F, the lever G g^1 g^2, and spring H, in combination with each other, said parts being constructed and operating substantially as herein shown and described, and for the purpose set forth.

3. An improved device for operating a fan formed by the combination of the slotted handle E, spring H, lever G g^1 g^2, S-shaped lever F, pivoted block C, hinge and catch D, whether made in one or more parts, and hinged block B, to which the fan is attached, said parts being constructed and operating substantially as herein shown and described, and for the purpose set forth.

107,502.—PLANING-MACHINE.—Anson Judson, Brooklyn, N. Y.

Claim.—1. The combination of the ear N, bed G, carriage F, screw H, toothed cutter-bar D, and lever and pinion A B.

2. The combination with the subject-matter of the foregoing claim, of the joint pieces Q and P, and the screw E.

3. The combination, with the subject-matter of the first claim, of the clamping device u, or its equivalent.

4. The combination, with the reciprocating cutter-bar and feed-screw H, of the ratchet-nut K, adjustable bracket L, and the spring pawl.

107,503.—MUD AND ORE-MILL.—John Kellet, Elizabeth Port, N. J.

Claim.—The arrangement of the revolving pan A with the shovel D, collared sweep E, and pivoted fulcrum F, constructed and operating as herein described, and for the purpose set forth.

107,504.—VALVE-GEAR FOR STEAM-PUMP, ENGINE, &c.—John C. King, New York, N. Y., assignor to himself, George M. Woodward, and George A. Blood, same place.

Claim.—1. The combination of the slide H and roller j with a pivoted lever, so that said lever will be swung to the side, and thereby operate on a valve-gear, and rapidly reverse the position of a valve, substantially as herein shown and described.

2. The lever D, connected with an arm, a, of the piston-rod, and arranged to impart oscillating motion to the lever G, by means of pins h h', substantially as herein shown and described.

3. The lever G, provided with the roller j, and combined with the lever D, slide H, and crank g, to operate substantially as herein shown and described.

107,505.—BALANCED ROCK-VALVE.—John C. King, New York, N. Y., assignor to himself, George M. Woodward, and George A. Blood, same place.

Claim.—The balanced rock-valve, consisting of the heads a a, bridge b, and plate c, substantially as herein shown and described.

107,506.—HARROW-TEETH.—Henry R. Kinney, Portsmouth, Ohio.

Claim.—The harrow-tooth, constructed as described and represented, having a backwardly-curved edge, a penetrating point, and a blunt vertical upper anterior portion, substantially as described and represented.

107,507.—CASTER.—Joseph Kintz, West Meriden, Conn., assignor to himself and P. J. Clark, same place.

Claim.—The combination, with a furniture-leg, A, of a bush or pintle-socket, D, provided with a flange, F, and the screw-cap G, all constructed and arranged as shown and described.

107,508.—CORN-PLANTER.—Martin L. Kissell and Jacob B. Kissell, Springfield, Ohio.

Claim.—The arrangement of holes c in slide D,

and brushes b b and b' b', substantially as shown and described, for the purpose hereinbefore set forth.

107,509, antedated September 8, 1870.—Bedstead and Cot.—Hermon W. Ladd, Chelsea, Mass.

Claim.—The combination of the head and foot-boards B B', the braces or connecting-arms C, or equivalents, frame A, and hinged legs, operating substantially as and for the purpose described.

107,510. — Thrashing-Machine Separator.—Isaac Lebo, Winterville, Pa.

Claim.—The arrangement of the floor D, with its angular strips E E, central opening G, movable floor J, cylinder R, fan S, and incline board H, when combined and operating as herein described, and for the purposes set forth.

107,511. — Locomotive Attachment.—Clark Lewis, Cassville, N. Y.

Claim.—1. The attachment-valve B, interposed between the top slide-valve C and the face of the cylinder A, as and for the purpose described.

2. The slotted link M, or its equivalent, arranged in the machine, as and for the purpose described.

3. The rock-shaft O^1, arranged and operated by any suitable mechanism, combined with the lever E^2, straps D' E^1, and slotted arms F N', to adjust simultaneously the throw of the two valve-rods.

4. The combination of a hand-lever and rod Q^4 Q^5, with the mechanism for adjusting the throw of the valves, and the mechanism for acting upon the throttle-valve, whereby the slide, attachment, and throttle-valves may be all simultaneously operated in the manner described.

107,512.—Bolting-Reel.—Fitch B. Lewis, Tiffin, Ohio.

Claim.—1. The rod D, when bent at f, as shown, so as to form a crank between the eye e and block g, substantially as and for the purpose described.

2. The attaching-block g, adapted to receive rod D, the cranked portion of the hammer-rod, and the set-screw A, substantially as described.

3. The adjustable single and double-acting cam J, (as may be required,) in combination with cranked actuating-rods D, springs S S, and hammers or strikers, substantially as described.

107,513.—Turning-Lathe.—Harvey Locke, Grand Rapids, Mich.

Claim.—1. The construction and arrangement of the grooved feed-spout U U', arms K and K', provided with the forks and springs, when used and operated substantially as above set forth.

2. The arrangement of the arms K and K', shaft O, gauges p p^1, part J, and lever P^2, all constructed and operated as herein described.

3. The spindles s and s', rods R and R', in combination with the forks on the arm K, when constructed, arranged, and operated as described.

4. The springs D and D', in combination with the rods d and d', for the purpose of holding the arms S S^1 upon the pattern-bars 4 and 4', all arranged as described.

5. The construction and arrangement of the levers m and m', n and n', in combination with the cam-wheel M, when used for the purpose of raising and lowering the cutters 3 and 3' alternately, as herein described.

6. The adjustable bearings, provided with the oil-cavity 1 1 opening against the center of the end bearing, substantially as shown in fig. 6, and as above described.

7. The arrangement of the levers A and A', and bar 6, constructed as described, in combination with the friction-pulley F' and pinion g, when used as herein set forth.

8. The arrangement of the collar r, friction-block B, and pulley F', when constructed as described.

107,514. — Lamp.—George Henry Lomax, Somerville, Mass.

Claim.—As an improved article of manufacture, a pressed glass lamp, provided with a ledge or rim formed thereupon, and with respect to the filling-orifice or burner thereof, in manner and for the purpose hereinbefore explained.

107,515. — Egg-Beater.—Thomas Marsh, Pawtucket, R. I., assignor of one-half his right to James Callaghan, same place.

Claim.—The combination of the gear-wheels B, C, b', and c, with the beater D and inside double beaters E E, when constructed and arranged to operate in the manner and for the purpose described.

107,516.—Fruit and Vegetable-Slicer.—William A. Mayhew, Peabody, Mass.

Claim.—The slicer, as composed of the knife B and recessed stock A, the slider D, the box E, the presser G, the spring H, and the handles C F, all combined, arranged, and constructed in manner and to operate as explained.

107,517. — Hedge-Trimmer.—Joseph McAnulty, Bentley, Ill.

Claim.—The arrangement, on the frame B B' D, of the guide-finger L, the curved, stationary, and reciprocating cutters F and F', reel G, and their driving-gear, all being constructed and operating as described.

107,518. — Clothes-Wringer.—John McLaughlin, Steubenville, Ohio.

Claim.—The arrangement of the spring D, with its extension f, flexible brace A, hanger i, driving-wheels l and E, coupling-arm n, and disk J, in connection with rollers B and C, the whole being constructed and arranged as herein described, and for the purpose set forth.

107,519.—Music Leaf-Turner.—James W. Mellor, Philadelphia, Pa.

Claim.—The combination, with the ordinary arbor a, of pivoted leaves B, springs b, and spring-fingers of the horizontal transverse arbor C, cam d, ratchet device h, lever f, rod g, spring lever h i, and treadle D D, all arranged and operating together, as and for the purpose described.

107,520. — Corn-Planter. — William M. Meyers, New Brunswick, N. J.

Claim.—1. The arrangement of the hand-wheel G' with the shaft H and dropping-wheels U, as shown and described.

2. The combination of the clevis L, cams or eccentrics M, shaft N, and lever P with the pivoted bars G, to which the shaft H is pivoted, and with the bars C, for the purpose of raising and lowering the shaft H and hoppers S, to throw the machine out of and into gear, substantially as herein shown and described.

107,521. — Milk-Can. — John C. Milligan, Brooklyn, N. Y.

Claim.—1. The collar, breast, and hoop C, all formed together of one piece of sheet metal, all substantially as specified.

2. The combination, with the cylinder D, having the bottom G of the hoop K and disk L, substantially as specified.

107,522.—Harvester-Dropper.—Thomas C. Moore, Dublin, Ind., assignor to himself and Joshua G. Wickersham, same place.

Claim.—1. The combination of the spiral or screw conveyers with a rack and pinions, so that said conveyers will be rotated simultaneously, and have intervals of rest, substantially as described, and for the purpose set forth.

2. In combination with the spiral conveyers, the dropper D, formed of slats, as shown, so that the stubble may aid in delivering the grain from it, and provided with an adjustable balancing-weight, H, as specified, and for the purpose set forth.

107,523.—Evaporating Salt-Water and other Liquids.—Franklin A. Morley, Syracuse, N. Y.

Claim.—1. A series of evaporators, A^1 A^2 A^3, the steam of the preceding one boiling the next, as described, when arranged in a chamber, K K, between the furnace C and chimney or outlet L, so that the waste heat from the furnace shall pass around the series of evaporators, and prevent radiation or loss of heat from said evaporators or steam-jackets f f.

2. The pipes g^1, to convey the water of condensation from the jacket of one evaporator of a higher temperature to that of the next evaporator, so that more heat can be extracted from the condensation water and applied to the evaporating-surfaces, substantially as described.

3. The salt-boilers A, when made with an upper chamber D and lower chamber E, and said chambers connected with each other by flues a a, and having a steam-jacket, f f, as herein described.

4. The ejector-condenser S, in combination with the last boiler of a series, A^1 A^2 A^3, as herein specified.

5. The combination of the tank or salt-receptacle P with salt-pipes c c, for the purpose specified.

6. In combination with the salt-blowing pipes c, the caps r, for the purpose herein described.

107,524.—Double Piston-Engine.—Albert W. Morrell, Niles, Mich., assignor of one-half his right to Perley Hale, Jr.

Claim.—The combination and arrangement of three pistons in one cylinder, substantially in the manner and for the purpose herein set forth.

107,525.—Folding-Chair.—William Morstatt and Francis Kips, New York, N. Y., Francis Kips assigns his right to William Morstatt.

Claim.—1. The movable stool E, constructed with the legs F and the short legs or projections a a, and arranged, in combination with the stationary chair or stool A, by means of the pivoted connecting-arms G, so as to be self-supported in an upright position, either upon the stationary stool or in front of it, substantially as and for the purpose herein specified.

2. The arms H, pivoted to the back D, and provided with the projections m, arranged so as to hook into the stool E, to hold the back in an upright position, and into the stool A, to hold the back in a reclining position, substantially as herein specified.

3. The levers J, with their adjusting-arms N, operated by the screw P, in combination with the pivoted arms H, for the purpose specified.

4. The arrangement of the foot-board L, provided with projections 5 and arms 2, hinged to the front of the stool E, in combination with suitable holes 8, in the manner and for the purpose set forth and described.

107,526. — Cultivator. — John Neff, Jr., Pultney, N. Y.

Claim.—The arrangement, in a cultivator, of the beam A, the bars F and F, the teeth B, C, D, and E, cutters G, handles H, parts a, b, c, and e, all constructed to operate as described.

107,527.—Floor-Clamp.—David Nettleton, Humbird, Wis.

Claim.—The arrangement of the block A, provided with the projections l l and the ratchet-bar c^1, lever B, pressure-bar F, brace-bar C, and clamp-arm G, all constructed and operating substantially as described.

107,528.—Hame-Fastening.—Sinclair D. G. Niles, Helena, Arkansas.

Claim.—The improved hame-fastening, consisting of the chain A, connected at one end to the hame B, by means of the staple a passing through the perforations in the ends of the metal straps b b, and provided at the other end with the slotted plate c, fitted upon the catch or hook d of the hames C, all as herein shown and described.

107,529.—Ditching-Machine.—Ralph Robert Osgood, Troy, N. Y.

Claim.—1. The digging-wheel E, provided with buckets, which have their working edges in line with the edge of the wheel, as set forth.

2. The pivoted buckets G G, provided with pins e, and combined with the springs d and cams f, to operate substantially as herein shown and described.

3. The colters J, arranged on the ditching-wheel E, as shown and described.

4. The spouts H, hinged to the frame D, and oscillated by means of revolving cams h, as set forth.

5. The chain F, arranged around the ditching-wheel E, and provided with projecting teeth b, substantially as and for the purposes herein shown and described.

107,530.—Track-Rail for Sliding Doors. Emery Parker, New Britain, Conn.

Claim.—The improved track-rail for sliding doors, constructed in the manner substantially as described.

107,531.—Hay-Fork and Hook.—Thomas W. Peirce, Minneapolis, Minn.

Claim.—A combined fork and rake, when comprised of devices constructed to operate together as described; that is to say, the handle A, spring-catch D, perforated ferrule B, fork C, shoulder c, and pointed slide-catch c', when arranged together, as and for the purpose described.

107,532.—Animal Trap.—Lionel Vernon Percival and Joseph Link, United States Army; said Percival assigns his right to said Link.

Claim.—In an animal trap, the combination of the plank A', axle A, sockets B, standards C, platform E, and base F, substantially as shown and described.

107,533. — Fence. — Lester Philips, Eau Claire, Wis.

Claim.—1. The combination of the posts A, boards B, keys K, base-supports C, stakes F, blocks I, and braces H, when all are constructed and arranged substantially as specified.

2. The combination, with the posts A, boards B, and base-supports C, of the corner posts L, when constructed and arranged substantially as specified.

107,534.—Manner of Mounting Hollow Revolving Cylinders. — Leman B. Pitcher, Salina, N. Y.

Claim.—The arrangement of parts herein shown, for supporting one end of the cylinder A on friction-rollers H H', and the other end of said cylinder A on a short or half shaft, B, substantially as shown and described, for the purposes set forth.

107,535.—Process and Machinery for Making Mortar.—Leman B. Pitcher, Salina, N. Y.

Claim.—1. The mechanical process of preparing quick-lime by slaking, liquidising, and sifting therefrom granulates and dregs, substantially in the manner and for the purposes as set forth and described.

2. The arrangement of slaking-vat A with conical or flanged sifting-cylinder D, as herein shown.

3. The combination of conical sifting-cylinder D,

elevator C, and vat A, constructed and operated in the manner and for the purpose herein described and shown.

4. The combination and arrangement of mixing-cylinder O, vat A, elevator C, and conical sifting-cylinder D, substantially as and for the purpose herein shown and described.

107,536.—WAGON-BED.—William H. Porter, Brazil, Ind.

Claim.—1. The combination, with the side boards, end boards, and the bottom boards, of the plates A B and the bars E, substantially as specified.

2. The combination, with the brake-levers L M, of the clevis N, and spring O, substantially as specified.

107,537. — INSIDE SOLE FOR BOOTS AND SHOES.—William E. Prall, Washington, D. C.

Claim.—The construction of inside soles for boots and shoes, by quilting or otherwise fastening feathers between material which will confine them, as shown and described.

107,538.—COVER FOR BOOTS AND SHOES.—William E. Prall, Washington, D. C.

Claim.—A covering for boots and shoes, constructed as shown and described.

107,539. — WRENCH. — Franklin P. Rand, Pawtucket, R. I.

Claim.—The ratchet-wrench, with socket and wrenches, constructed and operating as herein described.

107,540. — SAFETY-VALVE. — William R. Reece, Tremont, Pa., assignor to himself, William Garrett, and Michael Moll, same place.

Claim.—1. The safety-valve lever, attached to a shaft, D, which is tripped by a weighted lever, let fall by the descent of a float in the boiler, whereby the safety-valve is set free, all substantially as specified.

2. The combination, with the safety-valve lever, of the chain-roller, ratchet-wheel, pawl, and the weighted drop-roller, all substantially as specified.

3. The combination, with the weighted drop-lever, of the bell-crank I, rod L, and float M, all substantially as specified.

107,541.—MACHINE FOR TEMPERING SICKLE-SECTIONS, PLANE-IRONS, &c.—Samuel F. Reynolds, Auburn, N. Y.

Claim.—In connection with a stream or column of flowing water, a die, having a holding-surface, a water-passage, and a recessed lip or projection, substantially as described, and for the purpose set forth.

107,542.—PRUNING-KNIFE.—William Richard, Clyde, Ohio.

Claim.—Sweep A, provided with slot a, and cutter b, blade B, and its connection with sweep A, jaw C, with concave edge b', pivoted and arranged as shown and described.

107,543.—CARRIAGE-WHEEL.—Joseph Ridge, Wayne county, Ind., assignor to Stephen S. Strattan of one-fourth his right.

Claim.—The mortised band f, constructed substantially as described, in combination with the adjustable collars b and c, hub a, and spokes, constructed and arranged to operate in the manner substantially as and for the purpose set forth.

107,544.—GLASS LAMP.—Daniel C. Ripley, Pittsburg, Pa.

Claim.—A glass lamp, having having two or more bowls blown onto a center-piece, stock, or bifurcated stem.

107,545.—ALLEY-BOARD FOR BALL-GAME.—Charles Robinson, Boston, Mass.

Claim.—The alley-board herein described, composed of the horizontal part A, pocket B, with its inclined bar b, and the inclined part C, with its support c, or its equivalent, arranged to operate substantially as and for the purpose herein specified.

107,546.—WAGON-TONGUE SUPPORT.—Duportal D. Robinson, Niles, Mich.

Claim.—The combination of the eccentric lever A, or its equivalent, with the connecting-rod G and the bar B D, substantially in the manner and for the purpose above set forth.

107,547. — CHECK-REIN CONNECTOR.—Andrew H. Rockwell, Harpersville, N. Y.

Claim.—An improved check-rein connector, formed by the combination of the semi-tubes A, provided with eyes a', double-looped part B, and buckle-tongue C, with each other, substantially as herein shown and described, and for the purpose set forth.

107,548. — BEE-HIVE. — Hiram F. Rohm, West Providence, Pa.

Claim.—The construction and arrangement of the comb-frames D D, provided with eyes d d, casing A, doors a a', trap c, honey-board E, provided with the hinged cap F, the removable nods c c', when operating as and for the purposes described.

107,549. — ORGAN-TREMULANTS. —Thomas Prentiss Sanborn, Boston, Mass.

Claim.—In combination with an organ-tremulant, the cylinder A, valve D, seat B, regulating-screw G, and vibrating rod H, with the adjustable balls or weights K K, when the same are arranged to operate substantially as and for the purposes herein shown and described.

107,550.—CLASP FOR ELASTIC BAND.—Antoine Scheydecker, Amsterdam, N. Y.

Claim.—An improved clasp for elastic bands, consisting of the cap A, having devices for retaining a plate, B, which is provided with a serrated slot, to receive and hold the ends of the band, substantially as herein shown and described.

107,551.—COMBINED LANTERN AND CANDLESTICK. — Morrill A. Shepard, Fort Branch, Ind.

Claim.—1. The candlestick A, with the pieces of metal B B B, and also the wires D D D, all being fastened to the base A, for the purpose shown, in connection with a glass chimney, as fully described and set forth.

2. The combination of the candlestick A, chimney O, bail E E, rim P, cap S, and catches a a, for the purpose described and set forth.

107,552.—BURIAL-CASE.—George Shilling, Baltimore, Md.

Claim.—The burial-case A, whose body is in one portion, closed by a solid wooden, hinged cover, beneath which is a hinged glass lid, which shuts down upon a gasket within the rabbeted upper edge of the coffin, as described and represented.

107,553, antedated September 5, 1870.—DESULPHURIZING AURO-PYRITES AND OTHER ORES.—Lorenzo Sibert, Staunton, Va.

Claim.—1. The combination of manganese, chloride of sodium, sulphate of magnesia, nitrate of potash, and carbon, in suitable proportions, substantially as herein set forth, as a flux, for the purpose specified.

2. Treating auro-pyrites and the like, when compounded with such flux, in an oven, heated by the waste caloric from a boiler or other furnace, substantially as shown and described, for the purpose set forth.

107,554, antedated September 12, 1870.—SHOVEL FOR SEEDER.—David Slaughter, Mountville, Pa.

Claim.—The arrangement and combination of the prolonged cutter D C and spreading sides A A with the internal ridge-piece B B', turned up behind, so as to form the shovel, in the manner shown, for the purpose specified.

107,555.—MACHINE FOR DOVETAILING WINDOW-SASH.—De Witt C. Smith, Montgomery, Ill.

Claim.—The arrangement of the adjustable table E, detachable bed O, guides F I K, adjustable spring stops H G, and spring guides M, and the saws B C D, mounted upon the horizontal arbor A, all constructed and operating as described, for the purpose specified.

107,556.—TWINE-HOLDER STAND.—James Spencer Smith, Middletown, Conn.

Claim.—The within-described twine-holder stand, having the frame M, revolving adjustably upon the base or foot R, and having an eye or ring, n, arranged as shown, adapted for conducting the twine, or its equivalent, from the said stand and twine-holder, in the manner herein set forth.

Also, the knives P, arranged as shown, in combination with the stand and its connections, and adapted to serve therewith, as and for the purposes herein specified.

107,557.—BLIND-SLAT OPERATOR.—John B. Smith, Samuel A. Greely, and Arthur Campaigne, Chicago, Ill.

Claim.—The forked shackles G M, enlarged at X, in combination with the notched segment-lever E C and pinion B, arranged to operate the blind-slats N, as set forth.

107,558.—FLOWER-POT.—Charles L. Steele, Boston, Mass.

Claim.—In a flower-pot, C, the bottom of which is permanently adjusted above the level of the water in water-pan B, the arrangement of capillary threads D, passing through the hole in the bottom of pot C and dipping into the water in pan B, for the purpose of constantly and regularly supplying water to the requirements of the roots of plants in said pot, substantially as described.

107,559. — BROOM-HANDLE.—Joel Strong, College Hill, Ohio.

Claim.—As a new article of manufacture, the detachable handle C D, for application to brooms in the inclined manner herein described, and for the purpose set forth.

107,560. — GANG-PLOW BEAM.—James W. Surss, San Francisco, Cal.

Claim.—1. The long beam B, short beam C, and brace D, combined with the tongue A, as and for the purpose described.

2. The arrangement of angular brace D, and angle-clip E F, as and for the purpose described.

107,561. — MACHINE FOR TURNING THE HEADS OF BOLTS.—Wilbur F. Swathel, Mount Carmel, Conn., assignor to himself and Walter W. Woodruff, same place.

Claim.—In combination with the holding device for supporting the bolt, the revolving cutter-head, provided with the cutter b and the spindle E, through its center, all constructed and operating in the manner specified.

107,562.—MACHINE FOR BREAKING HIDES AND WORKING LEATHER.—Esau D. Taylor and William Rude, Hornellsville, N. Y.

Claim.—1. Suspending the break-roller G and frame-work F, and all of the power machinery for operating the same, from the joists H, or frame of the building, so that it is detached from the table C', as herein described.

2. The movable table C, as constructed, for operating substantially in the manner and for the purposes set forth.

3. The arrangement of the water-pipes and sprinklers M N, one being connected with the steam-boiler B, in combination with the roller G, as set forth.

107,563. — WIND-WHEEL. — Benjamin C. Terry, Key Port, N. J.

Claim.—1. The combination, with the cranked and revolving vanes, of the shifting-frame L and the cranked shaft M, the latter being turned by suitable gearing a half revolution while the vane-supporting frame makes one revolution, substantially as specified.

2. The combination, with the crank-shaft M, of the pulley N, belt O, and fixed pulley F, the latter being adjustable around the shaft A, substantially as specified.

107,564. — TOOL-REST. — Alfred Thomas, Worcester, Mass.

Claim.—1. The combination, with the rocking cap C and center piece E, of the slide F, the head-block B, and the screw H, substantially as and for the purposes set forth.

2. The movable slide F, provided with an adjusting-block, K, and set-screw J, in combination with the head-block B, rocking cap C, and spindle G, substantially as and for the purposes set forth.

3. The construction of the recess in the head-block, for the accommodation of the bearing-plate or nut, of a depth greater than the nut, in order to obtain space, into which the nut may be forced, as the threads of the screw or nut, or of both, become worn.

4. The combination, with the head-block B, cap-piece C E, and slide F, of the spindles D G, screws H J, adjustable bearing-plate I, and bearing-block K, said parts being constructed and arranged, in relation to each other, substantially as shown and described.

107,565.—RASP.—Ira F. Thompson, Providence, R. I.

Claim.—1. As an improved manufacture, a rasp or file composed of a permanent shank or base, and one or more removable cutting-plates applied to the same, substantially as and for the purpose set forth.

2. The mode of confining the cutting plates of a rasp or file, when made, as before explained, to its shank or base, by means of the projections b and d, or their equivalents, and sectional screws c c', and the latter being enveloped and actuated by the handle of the file, or its equivalent, the whole being in manner and for the purpose substantially as before explained.

107,566.—CENTER PLATE FOR STOVE-TOP. John Thorniley, Fallston, Pa.

Claim.—A center piece for a stove-top, provided with a catch or lug, and pivoted or sliding catch, arranged and operating with relation to the top, substantially as herein described, and for the purpose set forth.

107,567. — RATCHET-FEED MECHANISM.—Andrew Turnbull, New Britain, Conn.

Claim.—The combination of the shaft a, arm f, cam e, spring s, and disk c, the whole constructed, arranged, and operated as described.

Also, the combination of the shaft a, arms f and f', cams e and e', springs s and s', and the disk c, the whole constructed substantially as described, for the purpose set forth.

107,568, antedated September 12, 1870.—WOOD-BUCKET.—Samuel S. Vail, Keokuk, Iowa.

Claim.—The wood-bucket A, constructed of metal, with rectangular sides C C', ends E E', and handle B, as and for the purpose specified.

107,569.—WASHING-MACHINE.—Antoine L. Van Norman, Clinton, La.

Claim.—The combination of the case A B, of the vibrating levers E, roller-frames G and rollers H, the crank-shaft H', and the connecting-rod I, all constructed and arranged substantially as specified.

107,570. — BUTTON-MACHINE. — Christoph Volkert, New York, N. Y.

Claim.—1. The combination and arrangement of the plungers *b* and *c*, dies *h h'*, plunger *m*, with punches *g*, slide *l*, and frame *a*, substantially as shown and described.

2. The combination and arrangement of the plungers *b* and *c* with the lever *d*, cam *e*, shaft *f*, and spring *g*, substantially as and for the purpose described.

3. The combination and arrangement of the shaft *f*, cam *n'*, lever *n*, plunger *m*, and spring *g'*, substantially as shown and described.

4. The combination and arrangement of cam *n'*, lever *s*, slide *l*, spring R, shaft *f*, and die *h*, substantially as shown, and for the purpose specified.

107,571.— CAR-COUPLING.—William Walker, Woodside, Cal., assignor to himself and Robert O. Tripp.

Claim.—The car-coupling described, consisting of the draw-head A, pin B, frame C, sliding bolt E, with projection G, and spring J, when the parts are combined and arranged as described.

107,572, antedated September 5, 1870.—SHOE-FASTENING. — William Powell Ware, New York, N. Y.

Claim.—1. The wings 2 2 of the plate *a*, extending beyond the hook, so as to prevent the base of the hook being drawn into the hole in the leather, through which the hook passes, as set forth.

2. The hook *c d*, spurs *b*, and wings 2, made of a plate of metal, and forming a shoe-fastening, substantially as set forth.

107,573. — PROPELLING CANAL-BOAT.—Edward K. Watson, Shokan, N. Y.

Claim.—The combination of stationary guide-tubes C with movable valved tubes D E working within them, all relatively arranged and operating in a canal-boat, as and for the purpose described.

107,574, antedated September 17, 1870.—CARD-RACK.—Washington Wendell, Milwaukee, Wis.

Claim.—A card-rack, composed of frame A, strings or wires B, holders D, and slots F in them, substantially as described.

107,575.—SASH-HOLDER.—George W. Wheat, Philipsburg, Pa.

Claim.—The combination of the cam *a*, lever-handle *b*, spring C, and hook D, when constructed and arranged as described.

107,576.—BRIDGE.—Isaac H. Wheeler, Scioto-ville, Ohio.

Claim.—In wooden bridges, the combination of chords A B C and posts D, with the diagonal truss-braces E, and short braces F, each relatively arranged, as shown and described.

107,577.—PRUNING-SHEARS.—Frederick A. Will, San Francisco, Cal.

Claim.—The hooked back-plate *a*, and curved knife *a'*, in combination with the segments b^1 and b^2 pivoted to the shank *b*, all arranged to operate in connection with handles *c* and *c'*, as and for the purposes set forth.

107,578.—KNOB-LATCH.—John Theophilus Williams, Chicago, Ill.

Claim.—1. The hub or follower C, with its pins *b b*, in combination with the latch-bolt H, having springs with hooks *p p*, washer G, and socket *u*, substantially as and for the purpose herein set forth.

2. The hub or follower C, with its pins *b b* and *d*, socket *u*, with its cut-away portion *l*, in combination with the latch-bolt H, having spring hooks *p p*, or springs with hooks, substantially as and for the purpose herein set forth.

107,579.—COMPOUND FOR STUFFING AND FINISHING LEATHER.—Theodore Dwight Williams, Chicago, Ill.

Claim.—This compound, which is denominated improved currriers' stuffing and finish for leather, made by combining glycerole of egg with other ingredients, herein specified.

107,580.—BEDSTEAD AND TABLE.—George Wilson, Chicago, Ill.

Claim.—1. The construction and arrangement of the central section A, end sections B, provided with head and foot-boards B', and pivoted together, as shown, the legs C D, bars *e*, and radius bars *e*, substantially as and for the purposes herein described.

2. The combination, with one of the pairs of legs D, of a folding bedstead, constructed as herein described, the standards E and board F, whereby the same may be converted into a table, substantially as described.

107,581.—ADJUSTABLE CHAIR.—George Wilson, Chicago, Ill.

Claim.—The construction and arrangement of the frame A, seat-frame E, legs B, braces *b*, foot-frame C, foot-plate D, frame G, legs K, arm-pieces H, braces N and O, levers J, and rods L, substantially in the manner and for the purpose specified.

107,582. — BOTTLE-CORKING MACHINE. — Julius Wolff, New York, N. Y., and William N. Numsen, Baltimore, Md.

Claim.—1. In combination with the funnel or mouth-piece *f* of a machine for corking bottles, the perforated pipe *f'*, fitting loosely in the neck of the bottle, to allow the air in the bottle to escape during the operation of forcing the cork therethrough, substantially as described.

2. The lever D, carrying the mouth-piece *f*, when hinged to the frame, in combination with the support E, to relieve the bottle of the pressure when the cork is driven down, substantially as and for the purpose set forth.

3. In a machine for corking bottles, the lever D, as described, in combination with the mouth-piece *f* and perforated pipe *f'*, so that the cork is introduced into the neck of the bottle by lifting the lever D and holding down the plunger C, substantially as and for the purpose set forth.

4. In combination with the hinged and controlled lever D, the hinged or swivel-piece F, for carrying the funnel and pipe, as and for the purpose described.

107,583. — PRINTING-PRESS. — Charles D. Wrightington, Fairhaven, Mass.

Claim.—1. The combination of two rotating or oscillating cylinders, E and E', and two alternately-reciprocating type-beds, D and D', substantially, and for the purpose hereinbefore set forth.

2. The combination of two cylinders, E and E', and two alternately-reciprocating type-beds, D and D', moving in an inclined or vertical direction, substantially, and for the purpose hereinbefore set forth.

3. The combination of two cylinders, E and E', and two beds D and D', in such a manner that the beds D and D' shall counterbalance each other, substantially, and for the purpose hereinbefore set forth.

4. The combination of two cylinders, E and E', and two alternately-reciprocating type-beds, D and D', in such a manner that the rotation of said cylinders E and E' shall be derived from the motion

of the beds D and D', substantially, and for the purpose hereinbefore set forth.

5. The combination of two cylinders, E and E', wheels F F^1 F^2, the spring-latches X X X, and the projections X^1 X^2 X^3 X^4 of the cylinders E and E', and the arm G, and the shaft S, the two racks N and N', and the beds D and D', substantially, and for the purpose hereinbefore set forth.

6. The combination of two type-beds, D and D', the racks K and K', and the oscillating or vibrating wheel or segment J, substantially, and for the purpose hereinbefore set forth.

7. The endless apron Y, in a printing-machine, when used for carrying away the ink which may be offset upon the surface of the second impression-cylinder, E', and the rollers W and W', and cylinder E', substantially, and for the purpose hereinbefore set forth.

8. The combination of the nippers O' O' O' O', the cushion-holders O O O O, the shafts P P, the tongue *i*, and the cylinders E and E', substantially, and for the purpose hereinbefore set forth.

9. The combination, in a printing-machine, of the cylinder E, which first takes the paper, and two sets of nippers, substantially, and for the purpose hereinbefore set forth.

107,584. — ADJUSTABLE AWNING. — Louis Yenne, New York, N. Y., and Charles Schneider, Newark, N. J.

Claim.—The ratchet-wheel *c* and pawl E, combined with a self-contracting awning, A, substantially as herein shown and described.

107,585.—LOCK FOR PIANOS, &c.—Herrmann Ahrend, Newark, N. J.

Claim.—The sliding tumbler *c*, provided with a T-head, which engages with the notched ends of two hooks, *b b*, substantially in the manner herein herein shown and described.

107,586.—MAIL-BOX.—Austin W. Allen and Charles Reitz, Indianapolis, Ind.

Claim.—In a mail-box, the arrangement herein shown and described, of the feed and protection plate H and spring *f*, when constructed substantially as described, for the purpose of guiding and holding the mail matter, as specified.

107,587. — REVERSIBLE KNOB-LATCH. — Henry P. Appleton, Norwich, Conn., assignor to William A. Aiken, same place.

Claim.—The single sliding or adjustable bearing-plate H, arranged to support and carry the armed hub F, in combination with yoke E, spring *b*, and reversible latch D, all constructed substantially as and for the purpose described.

107,588.—BRACELET.—John Barclay, Bergen, N. J.

Claim.—1. A bracelet, made of horn or other soft or brittle material, and having its two halves united by a flat link, *d*, rivet *e*, pin *f*, and pivot *g*, substantially in the manner described.

2. The S-shaped latch A, in combination with the bracelet A, as set forth.

107,589.—LATCH FOR GATES.—Ephraim Barks and Lucius H. Emmons, Nobles-ville, Ind.

Claim.—The lever A, constructed as described, one end being weighted, and the other provided with a hook, *d*, and inclined projection, *e*, at right angles to the lever, in combination with the plate B, box or plate C, and stop D, all substantially as and for the purposes herein set forth.

107,590.—PERMUTATION LOCK.—Joseph E. Barnes, Danvers Centre, and Lucius P. Barnes, Fitchburg, Mass.

Claim.—The combination of the catch-shaft E, provided with the operating spring *i*, the tail A, and catches *g*, as described, with the series of latches C C^1 C^2, and their springs *k*, and with the adjustable pins *p*, and the key-plate H, either with or without its slides *q*, and the key-hole plate provided with key-holes, as described.

Also, the combination therewith of the divisions on the lock-plate A, the index-fingers *o*, and the clamp-screws *m*, and nuts *n*, applied to the pins or studs *p p p*, by means substantially as specified.

107,591.—WASH-BOILER.—Joseph W. Bates and Mary Ann Bates, St. Paul, Minn.

Claim.—The combination of the boiler A, outside tubes B B, perforated rim *b*, clothes-support *c*, faucet C, and tube D, all as shown and described.

107,592.—MEAT AND VEGETABLE-CUTTER. Paul Bonfils and John Grossmann, West Hoboken, N. J.

Claim.—1. The combination of pivoted choppers H, the hinged plate I, and screw *j*, or its equivalent, so that the choppers may be turned back, when desired, to permit the ready removal of the chopping-tray and contents, as set forth.

2. The rotating chopping-block B, moved by a worm-gear, C, the pivoted chopping-knives H, stationary scraper J, and the driving mechanism, all constructed and arranged as set forth, and for the purpose described.

107,593.—SAW.—William E. Brooke, Trenton, N. J., assignor to himself and Wm. H. Ivens, same place.

Claim.—The projection *d* in the recess B in the saw plate A, in combination with a corresponding recess in the tooth C, substantially as shown and described.

107,594.—HAND CORN-PLANTER.—George Burson, East Palestine, Ohio.

Claim.—The lever A', the side pieces C, and the back E, when constructed and arranged as shown, so as to form a hopper, D, and a casing for the dropping devices, substantially as and for the purpose specified.

Also, the construction and arrangement of the dropping devices, consisting of the blocks F and N, the strips G and K, the slide H, provided with the cavities *h*, and the cross-bar F', substantially as shown, and for the purpose set forth.

107,595.—HAND CORN-PLANTER.—George Burson, East Palestine, Ohio.

Claim.—The hopper C, constructed as shown, and arranged with reference to the lever B and the dropping devices, substantially as and for the purpose specified.

Also, the valve or slide-box, formed of and within the blocks F and F', and consisting of the ledge *f'*, the projections *f* and *f'*, substantially as and for the purpose set forth.

Also, the valve or slide G, provided with the slot H and the beveled cavities *g g'* and A, substantially as shown and for the purpose described.

Also, the arrangement of the bills, by means of which their contiguous faces are caused to move in opposite directions, when the planter is operated, as is hereinbefore set forth.

107,596.—DEVICE FOR CURLING AND DRESSING HAIR.—Paul Ceredo, Düsseldorf, Prussia, assignor to himself and Thomas Ferguson Miller.

Claim.—The combination of the wire *a*, with hemp *b* wound around it, giving any desired form, and with a suitable cover or envelope, *c*, with or without embroidered ends *d*, all working together substantially in the manner and for the purpose described.

107,597.—BASE-BURNING COAL-STOVE.—Albert C. Corse, Troy, N. Y.

Claim.—1. The arrangement of the coal or fuel-supply cylinder G and G' within the annular chamber D, and intermediate the vertical corner flues E and E', and in combination with the upper annular

chamber H, in the manner and for the purposes substantially as herein described and set forth.

2. A coal or fuel-supply cylinder or reservoir, G, having therein openings h, at or near the top of the same, and suspended at and from the immediate top of the annular and upper surrounding chamber H, and within the upper section of the stove, in combination with the upper annular chamber or flue H, and the upper vertical corner flues E', in the manner and for the purposes substantially as herein described and set forth.

107,598.—FRUIT-JAR.—Edward Croft, Philadelphia, Pa., assignor to himself and Henry Coulter, same place.

Claim.—1. A ball or yoke, E, hinged to the neck of a fruit-jar, so as to turn over the cap of the same, in combination with a spring, G, for depressing the cover.

2. The combination of the said yoke and spring with the projection *m* of the cover.

3. The combination of the wire ring D and its loops *b b* with the annular recess *c* and recesses *h* of the jar.

107,599.—COMBINED FURNACE OR OVEN AND TEMPERING-DIE.—Henry Disston, Philadelphia, Pa.

Claim.—1. The combination of a chamber, F, containing a lower die, A', and upper die A, adjustable vertically, a fire-place, D, arranged below the lower die, and a fire-place, E, communicating with the chamber F, all substantially as described.

2. The die A', supported on spheres or rollers above a fire-place, substantially as specified.

3. The upper die, suspended by a swivel-joint to a rod which passes through the top of the furnace, and which is connected to any suitable mechanism for raising and lowering the said upper die.

4. The shield *g*, arranged within the furnace and around the dies, as set forth.

107,600, antedated September 19, 1870.—APPARATUS FOR ROASTING AND DRYING ORES AND OTHER MATERIALS.—Alfred Duvall, Baltimore, Md.

Claim.—The combination for the purposes intended, as substantially set forth in the aforegoing specification, and shown by the accompanying drawing, or any modification thereof, involving the same general principles of construction and operation.

107,601.—ELECTRO-MAGNETIC RAILROAD-SIGNAL APPARATUS.—Alexander J. Elder, Chicago, Ill.

Claim.—1. A distance-indicator for railroads, consisting of an upright cylinder containing a piston and its rod, located outside or between the rails of a railroad, and in an electrical circuit, when the piston and rod are adapted to be forced rapidly downward by a passing train, and permitted to ascend with a slow or regulated motion, for the purpose of alternately opening and closing the circuit to indicate at a station the distance of the train therefrom, substantially as herein described.

2. In combination with the cylinder, piston, and graduated piston-rod, the air-chambers and passages, and the induction and eduction-valves, substantially as described, for the purpose specified.

3. The indicating piston-rod, constructed substantially as described, for the purpose specified.

4. The combination of the insulating-block T and guide-plate U with the piston-rod R, substantially as described, for the purpose specified.

5. The combination and arrangement of the spiral spring Z, insulated guide-plate U, sliding pin Y, spring W, and the conductors Q R, substantially as described, for the purpose specified.

6. The spring W and sliding pin Y, in combination with the conductor R and insulated plate U, substantially as described, for the purpose specified.

7. The combination of the insulating-blocks 1, &c., with the plate U and sliding pin, substantially as described, for the purpose specified.

107,602.—ART OF MANUFACTURING SPIKES. David Eynon, Richmond, Va., assignor to the Tredegar Company, same place.

Claim.—The method herein described, and illustrated by the accompanying drawing, as an improvement in the art of manufacturing spikes.

107,603.—EXHAUST-NOZZLE.—A. Faber Du Faur, New York, N. Y.

Claim.—1. A steam-nozzle, the discharging end of which presents two or more flat branches, *b b'*, substantially as shown and described.

2. A steam-nozzle, having a circular receiving end, and a discharging end with two or more flat branches, *b b'*, and the area of which gradually increases from its narrowest part toward the discharging end, substantially as set forth.

107,604.—WASHING-MACHINE.—Joseph A. Fletcher, Eyota, Minn.

Claim.—A washing-machine, consisting of the tub A, drum B, with grooved longitudinal slats on its surface, frame C, made of hinged sections, having rollers mounted therein, springs *j*, metallic strap D, and hook E, when constructed and arranged substantially as herein described.

107,605.—EXHAUST-NOZZLE FOR STEAM-ENGINE.—William A. Foster, Fitchburg, Mass.

Claim.—1. The spring E, operating substantially as described.

2. The combination, with the exhaust-nozzle of a steam-engine and its valve, of the two springs E F, for operation substantially as shown and described.

107,606.—PLOW.—Francis M. Franklin, Springfield, Ohio, assignor to himself and Asahel Franklin, same place.

Claim.—1. The method or rule herein described for laying off the mold-board and share of a plow, substantially as herein set forth.

2. The arrangement of the standard S, block X, draft-rod N, eye-bolt *a*, plate V, and beam O, all constructed as described, and operating as and for the purposes herein set forth.

107,607.—LIQUID-METER.—William Henry Fruen, Boston, Mass.

Claim.—1. The combination and arrangement of the cylinder *c*, plunger *t*, arms or levers *p* and *v*, mounted as explained, and the ports or ducts *q*, *r*, and *s*, operating together and in combination with the other features of the instrument, as before explained.

2. The construction of the shaft *l* in its relation to the cam *i*, whereby its tapering portion, before mentioned, deflects the disk *k* from the apex of said cone, in order that the functions of the registering device shall terminate with cessation of flowage of liquid through the instrument.

3. A liquid-meter, in which registering mechanism, the clock-work for imparting movement to the same, and the piston or plunger, with the ports or ducts for the passage of the water, and the devices for varying the movement transmitted from the clock-work to the registering mechanism, are constructed and combined together, and arranged within the meter-case A, in the manner shown and described.

107,608.—PROTECTING DIKES AND EMBANKMENTS AGAINST THE RAVAGES OF ANIMALS, &c.—Smith Gardner, New York, N. Y., assignor to himself and Ephraim Howe, same place.

Claim.—1. The mode herein described for protecting dikes, the same consisting in the introduction into the dike of slabs of concrete, substantially as set forth.

2. The improved slabs for protecting dikes herein described, the same consisting of walls *d d*, inclosing a core or center of concrete or cement, substantially as set forth.

3. A slab for forming dikes, composed of the shoe *a*, the guides *b b*, core of concrete *c*, and mold-boards *d d*, or their substantial equivalents, all arranged and so combined as to operate as described.

4. A concrete core for dikes, in sections or slabs, in the manner described, or in other equivalent manner.

107,609. — NUT-LOCK. — Robert Gilliland, Hudson, Mich.

Claim.—1. The combination of the recessed and toothed washer C and dog or pawl D, constructed and operating substantially as and for the purposes herein set forth.

2. The combination of the bolt A, nut B, recessed and toothed washer C, and dog or pawl D, all constructed and arranged substantially as and for the purposes herein set forth.

107,610.—MACHINE FOR DRILLING AND CUTTING SCREW-THREADS. — John James Grant, Greenfield, Mass., assignor to himself and Luther C. Pratt, same place.

Claim.—The combination of the screw-sleeve H, the revolving mandrel C, the friction-nut L, and sliding collar K, substantially as and for the purpose or purposes herein set forth.

107,611.—CHUTE FOR DELIVERING TIMBER. James W. Haines, Genoa, Nevada.

Claim.—The chute A, of V-form, in cross-section, arranged on an incline in whole or in part, and adapted to receive a flow of water, for the conveyance of timber, as set forth.

107,612. — KILN. — Benjamin R. Hawley, Normal, Ill.

Claim.—1. The combination and arrangement of the kiln A, furnace B, partition *b*, perforated bottom *f*, and chimney or smoke-stack C, all constructed substantially as shown and described, and for the purposes set forth.

2. The method herein described of utilizing the heat of kiln already burned, by introducing cold air below the heated mass, and passing the heated air, as it rises above the body of the heated material at the top of hot kiln A, by openings or connections, into the top of adjoining kiln, filled with green, dried, or not burned material, and passing it downward through said material, substantially as described.

3. The air-chamber D, surrounding the fire-box B, substantially as and for the purposes herein set forth.

4. The arrangement of the four kilns, A A, with the two furnaces, B B, openings *a a* and *e e*, dampers *a' a'* and *e' e'*, and smoke-stack C, all substantially as shown and described, and for the purposes set forth.

107,613.—MACHINE FOR WELDING CHAIN-LINKS.—William B. Hayden, Columbus, Ohio.

Claim.—1. The construction and arrangement jointly of the bed-die, with lateral walls projected upward and outward, similar to those of a funnel, and the counter-die for operating in conjunction therewith, to deliver blows upon the blank in the indirect manner set forth; that is to say, by contact, first, with the inner surface of the wall of the bed-die, at one side of and some distance above the blank, and then, following the inclination of the wall, upon the blank itself, the object being to force that end of the blank which is uppermost, in toward the core or frog of the bed-die, at the moment when the interpenetration of the metal of one end of the blank by that of the other takes place.

2. The arrangement of the bed-die upon the flexible standard, and its location relative to the direction of the movement of the counter-die, as described; that is to say, its axis not coincident with, but a little removed laterally from the plane of movement of the axis of the counter-die.

107,614.—FASTENING FOR EPAULET.—Edward Julius Helwig, Philadelphia, Pa., assignor to R. M. Robinson & Co., same place.

Claim.—A fastening for epaulets, consisting of a tongue or spring, B, secured at one end to the epaulet, adapted to plates upon the wearers' shoulder, and having a hook, *a*, at its opposite end, arranged to be caught upon a hinged link or staple, C, of the epaulet, all substantially as described.

107,615.—DEVICE FOR MOVING BUILDING.—Stephen Inman, Rockford, Ill.

Claim.—1. A truck for moving heavy structures, having double rollers *a a* on each axle, and center bearings above each pair, the two pairs being so connected as to swing together in any desired direction.

2. The adjustable bar A, constructed and applied to the truck, as set forth.

107,616. — DOOR-SPRING.—Melvin Jincks, Wallace, N. Y.

Claim.—The combination of the circular springs C, and straight spring D, constructed and arranged as described, and connected by a rod E, substantially in the manner, and for the purposes herein set forth.

107,617.—LAMP-WICK REGULATOR.—Lemuel W. Leary, Norfolk, Va.

Claim.—The regulator E, in combination with the lamp, the slotted wick-tube B, cup C, and tube D, substantially as and for the purpose herein set forth.

107,618.—BED-RAIL FASTENER.—John Lemman, Cincinnati, Ohio.

Claim.—The fastenings B B', each provided with a diagonal shank, *d*, and adapted, when in place in a bedstead-rail, to lock together, as and for the purpose described.

107,619.—COMPOUND TREADLE.—Orwell H. Needham, New York, N. Y.

Claim.—A compound treadle, formed of a lower foot-plate or plates B and upper foot-plate B', pivoted as at *c*, to the lower plate, for independent action and joint operation with the latter, relatively to the treadle-shaft A, substantially as specified.

107,620. — PRESERVING AND HARDENING WOOD. — Benjamin R. Nickerson, San Francisco, Cal.

Claim.—The method of preparing wood, to harden and preserve the same, by injecting into the cells or pores thereof, successively, the compound solution of sulphate of iron and soluble arsenite, and the solution of common lime, substantially as herein set forth.

107,621.—APPARATUS FOR MIXING, HEATING, AND COOLING SUBSTANCES.—Melchior Nolden, Frankfort-on-the-Main, Prussia.

Claim.—1. The tubular scoops *d*, in combination with the hollow shaft *b* and drum C, substantially as described.

2. The spiral C, with perforated heads D, in combination with the hollow shaft *b* and trough B, substantially as set forth.

3. The compartments III, IV, V, VI, in the trough B, in combination with the spiral C, hollow shaft *b*, and scoop *d*, substantially as described.

4. The combination of two or more sets of tubular scoops, *d e*, with the hollow shaft *b* and spiral C, substantially as set forth.

107,622.—HOOP-SHAVING MACHINE.—Stillman Parker, Altoona, Pa.

Claim.—The arrangement of the plate B, pro-

vided with the adjustable knives D D e e^1, and the elongated apertures f f, feed-rollers E E, shaft F F, levers G G, springs g^2 g^3, pinions e e, and wheels n and n, when constructed and operating together as described.

107,623.—APPARATUS FOR COUPLING CARS. Richard F. Randolph, Jr., East Palestine, Ohio.

Claim.—The arrangement, upon a railway car, A, of the levers G and G', the rod I, the link E, and the draw-head D, when the several parts are constructed as described and shown, and as and for the purpose set forth.

107,624. — WATER-WHEEL CASE. — James Raney, Newcastle, Pa.

Claim.—The arrangement, with the casing A, having chutes B B, of the rim C, suspended by the rollers G, and supported by ascending hooks or cars E E, and provided with the outwardly-curved gates D, all constructed to operate substantially as shown and described.

107,625.—MACHINERY FOR DRESSING SKINS. Herbert P. Reed and Thomas E. Wilson, Peabody, Mass.

Claim.—The cylindrical brush m and the yielding inclined table c, when constructed and relatively arranged and combined, substantially as shown and described.

107,626. — ELECTRO-MAGNETIC APPARATUS FOR MEDICAL USE.—Charles Reitz, Indianapolis, Ind.

Claim.—1. The arrangement of the cross-piece G and pin H in a galvanic-battery, in the manner and for the purpose substantially as specified.

2. The arrangement herein shown and described of the iron cup A, zinc cup B, removable leaves C and D, constructed respectively of iron and zinc, as described, together with the iron and zinc partitions E and F, when the several parts are constructed substantially as and for the purpose specified.

107,627. — WATER-WHEEL. — Theodore H. Risdon, Mount Holly, N. J.

Claim.—1. The adjustable cylindrical gate F and its flange x, adapted to the exterior casing A, stationary guides m, and to the turbine-wheel, substantially in the manner described.

2. The gate F, arranged within the casing, substantially as described, so that water will be admitted to the wheel when the gate is lowered, for the purpose described.

3. The guides m, adapted to slots in the flange x of the cylindrical gate, and secured to permanent ribs, n, of a form corresponding to that of the said guides, and adapted to the said slots of the flange x.

4. The flange f', having an inclined or curved upper surface, in combination with the gate F and its flange x, as specified.

107,628. — BEE-HIVE. — Hiram F. Rohm, West Providence, Pa.

Claim.—The construction and arrangement of the horizontal metallic rods D D, comb-frames C C, provided with projections c c, bars c' c', inner walls E, casing A, trough a, provided with angular openings a' a', and door a, when operating as and for the purposes described.

107,629.—BASE-BURNING COOKING-STOVE. Thomas P. Rossiter, Cold Spring, N. Y.

Claim.—1. The combination of the dome-shaped blind center C, with the surrounding cup-shaped open-work body C' of the grate, substantially as shown and described.

2. The arrangement of the cup-shaped fire-pot E with relation to the cup-shaped grate or body portion C' thereof, to serve as an enlargement of the fire-space and conductor for the ashes to the ash-pan, essentially as specified.

107,630.—DERRICK-BOAT.—Thomas Saulpaugh, Rock Island, Ill,

Claim.—A floating derrick, consisting of the boat A, having the rotating post a, hinged brace b, with the tackle c and d mounted thereon, in such a manner as to dispense with any other guys or braces than those which connect the post a to the boat, substantially as described.

107,631.—CAR-AXLE LUBRICATOR.—Thomas Sayles, Chicago, Ill.

Claim.—1. The combination, with a pad-holding plate, D, of rims or upwardly-projecting flanges c, secured to or cast with the said plate, and forming guards to prevent the pad from accidental lateral or longitudinal displacement, substantially as and for the purpose herein specified.

2. The combination, with the pad-holding plate D, spring G, and wick or conductor c, of a jacket, F, substantially as and for the purposes herein specified.

3. The combination, with a spring, G, plate D, and wick or oil-conductor c, of a sponge, H, or other suitable absorptive material, to act either as a feeder to the wick, or as a barrier or partition across the journal-box, substantially as and for the purpose herein specified.

4. The combination, with the wick or oil conductor c and pad-holding plate D, of a covering, I, to act as a shield for the said wick, substantially as herein specified.

107,632. — GRASS-CUTTER. — Samuel W. Sears, New York, N. Y.

Claim.—A grass-cutter, constructed substantially as described, having a single knife, B, hung in a suitable frame, A, and arranged to move in a curvilinear path, from one side to the other of the machine, over the prongs a a, and passing in the rear of said prongs on its return movement.

107,633.—PORTABLE SPRINKLING PUMP.—William Servant, Providence, R. I., assignor to himself and Josiah A. Whitman, same place.

Claim.—1. My improved portable pump, having a hollow piston adapted to the delivery of water through its upper end, and having a jointed, swiveled, flexible, or otherwise self-adjusting induction-tube, so combined with the lower end thereof as to enable the pump, while being operated, to be held in any desired position, all substantially as herein described.

2. In combination with the subject-matter of the preceding clause of claim, the proportions of the hollow piston D, which enables the tubular handle E to be combined therewith, and a delivery-nozzle, or rose, to be screwed to the upper end thereof, all as herein represented and described.

107,634. — FASTENING FOR NECK-TIES.—Peter J. Shirts, Highland Falls, N. Y.

Claim.—The neck-tie fastening, composed of plates a and b, the one of which is arranged to slide over the other, and constructed to gripe the shank of the stud or button, in combination with the elastic band f, for application to the neck-tie, substantially as specified.

107,635.—ROTARY AIR-WHEEL FOR GAS-CARBURETERS.—James F. Spence, Brooklyn, N. Y., and Lovina D. Towsley, Newark, N. J.

Claim.—1. The cylinder of an air-wheel, constructed with buckets H, and intervening circumferential channels I, in the manner and for the purpose hereinbefore described.

2. The intervening circumferential channels I of the air-wheel, having their continuity interrupted by means of vanes, J, which serve as brakes, to equalize the motion of the wheel, substantially as herein described.

3. The ingress ends e of the air-buckets H, connected to each other by means of oblique vanes, J, for the purpose of directing the air from the circumferential channels I into said buckets, thereby utilizing the intervening spaces, to increase the volume of air to the buckets, substantially as herein described.

4. The external curved buckets H, in combination with the interior radial discharging-tubes K, arranged upon and within a single cylinder, D, substantially as herein described.

5. The arrangement of the radial air-tubes K, in such manner as to discharge the air in a space or chamber, L, immediately around the axis of the wheel, thereby increasing its volume directly in the line of the axial opening G in the discharging end of the cylinder, substantially as herein described.

6. The combination, in a rotary air-wheel, of the external curved buckets H, the circumferential intervening channels I, the oblique division and connecting-vanes J, and the interior radial discharging-tubes K, the several parts constructed, arranged, and operating substantially as herein described.

7. The cylinder of tin, prevented from oxidization by means of zinc receiving-buckets H and oblique vanes J, arranged on the exterior thereof, and radial discharging zinc tubes K on the interior thereof, as described.

107,636.—SLIDE FOR EXTENSION TABLES.—Stephen Stilwell, Waterloo, N. Y.

Claim.—1. The combination, with the slide-bars of an extension table, of an elastic coupling or connection, which will yield with the contraction and expansion of the bars, substantially as hereinbefore set forth.

2. The combination, with the extension bars A A^1, the parts B C of a dovetail coupling, and the screw d of the rubber washer and spring e, arranged with the latter, and operating as hereinbefore set forth.

3. The rebate f, made in the upper side only of the feather or key B of a coupling for extension bars, as and for the purpose herebefore shown and described.

107,637.—METHOD OF SETTING POSTS.—Uriah B. Stribling, Madison, Ind.

Claim.—A bed for the support of fence-posts, composed of borings, filings, turnings, and other particles of iron, when the same is used in connection with an anchor-piece, C, and stay-rods or bolts a a, to secure the post down to the bed, in the manner and for the purposes substantially as shown.

107,638.—GATE.—John J. Toffiemire and Joseph D. Linnell, Rockford, Ill.

Claim.—1. The gates, pivoted as shown, in combination with the double set of levers on both sides of the gate, arranged and operating in the manner set forth, when depressed by any suitable transverse bar across the way, all as described.

2. The gates, levers, and bars C C, when arranged as described, for the purpose set forth.

107,639.—ROTARY-POWER PLOW.—James Tranter, Joseph Kinsey, and John M. Carr, Cincinnati, Ohio.

Claim.—1. The revolving head or heads I J K, armed with the series of movable plows or shares M M', adapted to operate upon the soil, in the manner set forth.

2. The described arrangement of one or more series of plows M or M', rotating head I J K, and fixed cam N, whereby the said plows are subjected, during the advance of the machine, to a continuous rotation, partly in and partly out of the ground.

3. In the described combination, with the elements of the clause next preceding, the described arrangement of adjustable roller O, whereby the penetration of the plow is controlled.

107,640.—GRINDING-MILL.—Amos Verbeck, Sterling, Ill.

Claim.—1. The arrangement upon the face-plate I of the stationary bur H', casing J, spout K, hopper L, and slide M, all constructed and operating as set forth.

2. In combination with plate I and devices thereto attached, screw-bolt g and thumb-nut f, all arranged and operating as described.

107,641. — ROUNDING-UP MACHINE FOR SHOES. — Henry S. Vrooman, Boston, Mass.

Claim.—1. In combination with feed-wheels and a rounding-up knife, a gauge, so arranged that the arm or frame, in which the upper and smooth roll is journaled, controls the position of said gauge.

2. In combination with a rounding-up knife, and with the gauge, and smooth feed-roll, relatively fixed and located as described, a power-spring for producing the pressure upon the sole and pattern-plate between the feed-wheels.

3. In combination with said knife, feed-rolls, gauge and spring, the rod e and lever p, so arranged that the stress of the spring may be reduced by the lever, to separate the rolls for introduction of the sole.

4. In combination with the feed-rolls, edge-guide, and rounding-up knife, a metal pattern-sole or plate, one surface of which is toothed or serrated, substantially as shown and described.

107,642.—FABRIC FOR THE MANUFACTURE OF SHOES, &c.—Enoch Waite, Franklin, Mass.

Claim.—1. The new article of manufacture or fabric, made substantially as described.

2. The process herein set forth of making the said new fabric.

3. A shoe-upper, or other articles, as made of such new fabric, in a wet state, and by means of a mold and heat and pressure, as set forth.

107,643. — RAILWAY.—Charles H. White, Emmett township, Mich.

Claim.—1. The formation of the ridge a on the bed-plate B, so that it shall incline toward the center of the track-way, to fit into a correspondingly-inclined groove in the rail.

2. The construction of the bed-plate B, with the ridge a, either vertical or inclined, as described, and with side ribs r r, which when hammered down secure the grooved rail on the ridge, without other fastening, against vertical as well as lateral displacement.

3. The chair bed-plates B and rails A, constructed and connected as provided in the preceding clauses, in combination with longitudinal wooden bed-sills D and tie-plates E, secured respectively by flanges f and lock-folds e, or in other equivalent and suitable manner, substantially as for the uses specified.

107,644. — MACHINE FOR HULLING AND SCOURING GRAIN, RICE, COFFEE, &c.—Levi H. Whitney, Washington, D. C.

Claim.—1. The combination, in a machine for scouring grain, of the convex wheel E and concave wheel F, when the same are coated with emery and made to revolve in opposite directions, as and for the purpose described.

2. The combination and arrangement of the two emery wheels, E F, of hemispherical or equivalent form, revolving one within the other, in opposite directions, cross-head G, screw-spindles H H, shaft D, and hollow shaft C, all constructed and operating substantially as shown and described, and for the purposes set forth.

107,645.—RECTIFYING AND IMPROVING ALCOHOLIC SPIRITS. — Daniel Worthen, Brooklyn, N. Y.

Claim.—1. The purifying-tank herein described, composed of the chamber a, perforated bottom b, and the several pipes and connections, so as to first aerate the liquid with compressed air, and then discharge it as set forth.

2. The mode herein described for treating alcoholic liquors, the same consisting in passing through

the liquor streams of compressed air, substantially as described.

3. The mode herein described for removing vapors from air used in treating alcoholic spirits, consisting in retaining the air charged with vapor under pressure, so as to separate and condense the vapor, as described.

4. The combination of the vessels *a* and *f*, by means of pipe *g*, as and for the purpose described.

REISSUES.

4,124. — Division A.—HARVESTER.—Rufus Dutton, Yonkers, N. Y. — Patent No. 31,378, dated February 12, 1861.

Claim.—1. The combination of a main frame, A', with upright and curved standards A *a*, to support the gearing above the frame, and provided with journal-bearings for the alternate main axle V, as and for the purpose described.

2. The combination of an alternate main axle, V, and auxiliary driving-wheel IV, with a main frame, A', and main driving-wheel B, as and for the purpose described.

3. The combination of a reel-bearing arm, F, with two reel-standards, E, for three journal-bearings for an overhanging reel, as and for the purpose described.

4,125. — Division B.—HARVESTER.—Rufus Dutton, Yonkers, N. Y. — Patent No. 31,378, dated February 12, 1861.

Claim.—1. A hollow-metal casing-plate, separate and apart from any driving or carrying-wheel, which plate makes one side or main part of a box or case which incloses and protects the secondary gear-wheels of a mowing or reaping-machine, substantially as described.

2. A box or case, made substantially as described, of only two casing-plates, separate and apart from any driving or carrying-wheel, which box or case incloses and protects the secondary gear-wheels of a mowing or reaping-machine.

3. A hollow-metal casing-plate, separate and apart from any driving or carrying-wheel, which plate makes one side or main part of a box or case which incloses and protects the secondary gear-wheels, and which plate also supports a journal of the secondary gear-wheel axle of a mowing or reaping-machine, substantially as described.

4. A box or case, made substantially as described, of only two casing-plates, separate and apart from any driving or carrying-wheel, which box or case incloses and protects the secondary gear-wheels, and also supports the journals of the secondary gear-wheel axle of a mowing or reaping-machine.

4,126.—REVERSIBLE KNOB-LATCH.—Henry H. Elwell, South Norwalk, assignor, through mesne assignments, to the Russell and Erwin Manufacturing Company, New Britain, Conn.—Patent No. 5-1,526, dated March 27, 1866.

Claim.—1. The connecting of the latch-tail D with the arm *a'* of the lever B, by means of the recess *c* and socket *d* of said arm, and the circular end *e* of the slide-latch, and the notches or recesses *g g*, in the top and bottom edges of the same, forming a swivel-joint, substantially as shown and described.

2. The combination, with a swivel-joint reversible latch, D, of a movable stop, E, set in the lock case, and a fixed stop, *i*, on the latch-tail, substantially as described, for the purposes specified.

3. The cylindrical collar *h*, on the slide-latch, in combination with the pins *f* and the slide E, substantially as and for the purpose set forth.

4,127. — POLISHING-MACHINE. — Peter F. Randolph, Jerseyville, Ill.—Patent No. 36,255, dated September 23, 1862.

Claim.—1. The combination of a wheel or drum, having an elastic face or tire, with an endless belt, provided with a polishing-surface, when the polishing-belt is arranged to run over the elastic wheel or drum, as described.

2. The wheel A, consisting of the inflated tube *a*, rim a^1, projection a^2, and clamps A^1, in combination with the belt E, driving-wheel B, and pulleys C, arranged and operated substantially as described.

4,128. — HORSE HAY-RAKE. — Joseph H. Shireman, York, Pa., assignee of George S. Reynolds.—Patent No. 23,943, dated May 10, 1859.

Claim.—1. In combination with the shafts, hinged to the axle, substantially as described, the independently-acting rake-teeth, arranged over and having their hinged ends extending in front of the axle, as set forth.

2. The arrangement of the spaces *k*, arch arms *h*, elastic spring *g*, shoe *d*, strap *i*, frame *r*, and strap *l*.

DESIGNS.

4,357.—BOX FOR TOP OF BUREAUS.—Cheney Kilburn, Philadelphia, Pa., assignor to Kilburn & Gates, same place.

Claim.—1. The design for the shape of a box for the tops of bureaus, substantially as described, and as represented in and by the accompanying drawing.

2. The said box, ornamented as shown and described in fig. 4.

4,358.—SHAWL FABRIC.—Martin Landenberger, Philadelphia, Pa.

Claim.—The within-described design for shawl fabric, as shown.

4,359. — BERRY-BOX. — John W. Leslie, South Pass, Ill.

Claim.—The design for a berry-box, as shown.

4,360.—STOVE-PLATE.—Nicholas S. Vedder, Troy, and Tobias S. Heister, Lansingburg, N. Y., assignors to Nicholas S. Vedder.

Claim.—1. The compound ornament L, cast on and forming part of a plate of a stove, as herein shown and described.

2. The combination of the compound ornament L and ornamental border-molding M, arranged together and cast upon a stove-plate, as herein described and shown.

3. The compound ornament L^1, cast on and forming part of a door or plate of a stove, as shown.

4. The design for the foot L^2, as shown.

EXTENSIONS.

EDWARD PARKER, of Plymouth, Conn.—Letters Patent No. 15,668, dated September 2, 1856.

"Improved Buckle for Wearing Apparel."

Claim.—Swaging or cutting the blank or the bow A, and loop B, entire, or in one piece, from a metal plate, and securing the tongue D in the buckle, by bending or closing the cross-piece C around the shank *c*, substantially as shown and described.

HENRY VOELTER, of Heidenhein, Kingdom of Wiirtemburg, Germany.—Letters Patent No. 21,161, dated August 10, 1858; antedated August 29, 1856; reissue No. 3,361, dated April 6, 1869.

"Improvement in Reducing Wood-Fibers to Paper Pulp."

Claim.—1. Placing the blocks of wood to be reduced with their fibers running parallel to the axle of the stone, or transversely to its face, substantially in the manner shown and described.

2. The arrangement of two or more blocks on the circumference of one and the same stone, one block behind the other, so that the fibers torn off by the action of the stone, from the first block, will be carried under the succeeding block, and again exposed to the grinding-action of the stone, as set forth.

3. The automatic feed-motion, constructed of screw-spindles E, followers P, and jaws Z, in combination with the stone A, substantially as shown and described.

4. The pulleys T and ratchet-wheels *c*, in combination with the jaws Z, screw-spindles E, followers P, and stone A, substantially as described.

5. The separating mechanism, consisting of a series of perforated and rotating cylinders, in combination with the separating-rollers, channels, and troughs, substantially as shown and described.

RICHARD H. GARRIGUES, of Salem, Ohio, administrator of L. A. DOLE, deceased. Letters Patent No. 15,718, dated September 9, 1856.

"Improved Saw-Gummer."

Claim.—Arranging the cam or moving crank below the die, either in or below the die-block, so as to draw down the punch or male die by means of a bar traversing in said die-block, substantially as described.

Also the cam-lever D, with a movable fulcrum, in combination with the opening *c*, so constructed and arranged as to traverse the bar C, with a positive motion in each direction, as the lever is vibrated, substantially as described.

GEORGE JOHNSON, of Marshall, Mich., administrator of JOSEPH D. CAWOOD, deceased.—Letters Patent No. 15,657, dated September 9, 1856.

"Improvement in Repairing Railway Bars."

Claim.—The movable press-block E, having its edge formed to the side of the rail G, in combination with another block, D, with its edge of a similar but reversed form, (the movable blocks to be operated by two cams, or in any other convenient manner,) for the purpose of pressing between them a T or otherwise shaped rail, thereby greatly facilitating the difficult operation of welding and renewing the ends of such rails after they have been damaged, in the manner herein described and set forth.

MICHAEL H. SIMPSON, of Boston, Mass.—Letters Patent No. 16,864, dated March 17, 1857; antedated September 17, 1856.

"Improvement in Machinery for Combing Wool."

Claim.—The combination and arrangement of an extra doffer L and stripper M, or the equivalents therefor, with the main card-cylinder, the combing doffer I and the combing belt N, the whole being substantially in manner and for the purpose hereinbefore specified.

Also, the above-described improved arrangement and construction of the draft-rollers U V, with respect to each other, and the combing belt N.

Also, making the wires of the fringe belt W to extend below the table Z and to run through a passage, *c*, formed between the part Z and the combing belt, or in the table, as specified.

Also, combining with the curved plate R, when such is employed in connection with the doffer I, and the combing belt N, a steam-heating chamber, S, or other suitable means of heating such plate, as set forth.

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PATENTS.

107,646.—PULLEY FOR GATES.—Ephraim S. Axtell, Macomb, Mich.

Claim.—The pulley D, with its supporting frame or block C, when the same is pivoted in the semicircular frame A, so as to adapt itself to any angle of the gate, all constructed and arranged as shown and described.

107,647.—MOUSE-TRAP.—William K. Bachman, Columbia, S. C.

Claim.—An improved mouse-trap, formed by the combination of the box A, wire-grating B, weighted door C, pivoted lever D, pivoting-rod E, uprights F, cord or thread G, and wires H, with each other, substantially as herein shown and described, and for the purpose set forth.

107,648.—TRUSS.—Sir William Baker, Austin, Texas.

Claim.—1. The combination of wires A A, forming a spring, secured in parallel position and in desired distances from each other, by the cross-bars, substantially, and for the purpose hereinbefore set forth.

2. The combination of two plates, with parallel grooves in their surface, into which the wires rest, and secured by being clasped between the two plates, admitting of their removal and replaced by others, substantially, and for the purpose hereinbefore set forth.

3. The stud or stump rising from the center of the disk E, with the concave circular depression on its top, forming a socket to receive the ball G, and also furnished with a male screw, for insertion into the metallic cap H, to secure the ball and its socket, all arranged as described.

107,649. — METALLIC ROOF.—William M. Barry, Nashville, Tenn.

Claim.—The combination of a series of plates, doubly corrugated only on two opposite edges, with a fastening-rod, E, threaded at the ends, and secured to the cornice-pieces by nuts, as shown and described.

107,650.—HEMMER FOR SEWING-MACHINE.—Abel H. Bartlett, Spuyten Duyvil, N. Y.

Claim.—1. The combination of plates I K, with the cord R, for the purpose specified.

2. The combination of cord R with tension-spring S, when relatively arranged in connection with a hemmer, as and for the purpose specified.

107 651. — SHUTTER-FASTENING. — Julius Berbecker, New York, N. Y.

Claim.—The combination, with a hook, B, and clamp-screw *a*, of two cups, *b c*, having intermediate sleeve *d*, to surround said screw, as and for the purpose described.

107,652.—WASHING-MACHINE.—John T. Bever, Lathrop, Mo.

Claim.—The stem B, having pulley-wheel K affixed to the top, or its equivalent, in combination with cord H H, when said cord is attached to hub *e e*, and to lever E, substantially as described, and for the purposes set forth.

107,653.—TOOL FOR CUTTING WOOD-MOLDINGS.—Charles E. Boynton, San Francisco, Cal., assignor to himself and Isaac N. Vosburg, same place.

Claim.—1. The beading-tool F, with one or more different finters or sets of cutting-edges *d d*, substantially as and for the purposes herein described.

2. The face-plate C, with its jaws *a a*, and lip *b*, substantially as and for the purpose described.

107,654.—MACHINE FOR CUTTING MATERIAL FOR BASKETS.—Lewis H. Bridgeman, Rock Stream, N. Y.

Claim.—The cutter C, when made and operated as and for the purpose specified, in combination with the circular saw J, when both are used to cut stuff, substantially as set forth.

107,655.—MELODEON.—John Calvin Briggs, Ansonia, Conn.

Claim.—The valve C, pivoted in the expression-chamber, so that both its arms *c d* are brought into action with opposite sides, as set forth.

107,656. — COUPLING-JACK. — Henry A. Brown and Ethan B. Keith, Galesburg, Mich.

Claim.—A jack, for transmitting motion and power, composed of the gear-shafts E F, intermediate wheel B, circular case A, and adjustable ring-frame D, in combination with each other, and any suitable bed-sills, or other frame, when arranged and operated substantially as and for the purpose set forth.

107,657.—FLUTING-MACHINE.—Samuel G. Cabell, Washington, D. C.

Claim.—1. The frame, consisting of the standards A and A′, the latter having the arm C, and the bar B, with the arm B′ hinged to the standard A, substantially as described.

2. The combination of the arm B′ with the standard A, having the rod n and spring *t* arranged to operate in connection therewith, substantially as set forth.

107,658.—AGING SPIRITS.—Andrew Caldwell, Lexington, Ky.

Claim.—The devices herein described, for agitating spirits by the churning-process, for the purpose specified.

107,659. — FLOOD-GATE.—John Campbell and Addison Watson, London, Ohio.

Claim.—The gate B, with rollers *b b* and board *b′*, when combined with posts A and used with the chain and weight, the parts being arranged as described, for the purpose set forth.

107,660.—HORSE HAY-RAKE.—Guy E. Carleton, Old Town, Me.

Claim.—The combination of foot-bar K, cross-bar M, pin L, rods N, frame H I J, and stop P, all constructed and relatively arranged as specified, to operate in connection with the ratchet-teeth on wheels O, for the purpose set forth.

107,661, antedated September 15, 1870.—WASH-STAND AND TANK.—Henry W. Catlin, Burlington, Vt.

Claim.—In the construction of the stand with its adjustable shelf with guides H, in combination with the water-tank or receptacle C A, its circular support B, handle D, basin G, and slop-receptacle F, all arranged as shown and described.

107,662. — STALK-CUTTER. — Martin Caywood, Peoria, Ill.

Claim.—1. The arrangement of the chains *i i*, rods *e e*, hooks I I, and frame E E, with the levers G and K K, for joint operation, substantially in the manner and for the purpose specified.

2. The foot-levers *l l*, pivoted to the frame-pieces E E, and having their fulcrums under the adjustable plates *l′ l′*, when arranged to operate substantially as and for the purpose specified.

3. The combination and arrangement of the levers K K, cross-bar *k*, guides J J, with the frame E E, the forward end of the levers K K impinging on the incline planes *k′ k′*, all substantially as described, and for the purpose specified.

4. The combination of the lever G, rods *e e*, and rack-bar H, with the frames A A and E E, and foot-levers K K and guides J J, substantially as described, and for the purpose specified.

107,663.—MODE OF INSERTING GLASS IN VAULT-LIGHTS. — Zenas Cobb, Chicago, Ill.

Claim.—1. A vault-light, composed of a metal or other plate, having a series of screw-threaded openings cast or cut therein, and a series of glass plugs or lenses, adapted to screw into said openings, for the transmission of light, substantially as described.

2. The glass plugs or lenses, constructed with peripheral screw-threads, for the purpose specified.

107,664. — TIN ROOFING.—Benjamin Coddington, La Fayette, Ind.

Claim.—1. The combination, with the flanges C and tin or metal groove or channel F, of the crooked wire E, substantially as and for the purpose set forth.

2. The combination, with the flanges C, tin or metal groove or channel F, and crooked wire E, of the grooved shooting-piece D, substantially as and for the purpose set forth.

107,665.—BLOWER.—William S. Colwell, Pittsburg, Pa.

Claim.—1. The case A, divided into two or more chambers by a partition or partitions, and used in combination with the floats F, revolving screen a, and cleaning-arm or arms E, substantially as herein described, and for the purpose set forth.

2. The combination of a revolving screen with the floats or wings of a fan or blower, substantially as herein described, and for the purpose set forth.

3. The combination of the rings B and B′, set-screws *f* and *f′*, grooves *c* and *c′* and flanges 5 and 6, with the supports D and B′, and shaft H and its driving-pulley, substantially as herein described, and for the purpose set forth.

4. The combination of the journal-bearings I with oil-chamber J, supports D and B′, and journals of shaft H, substantially as herein described, and for the purpose set forth.

5. The combination of the set-screw M with the journal-bearing I, oil-chamber J, set-screws X, and shaft H, substantially as herein described, and for the purpose set forth.

6. The combination of the ball-socket K, flange or disk O′, set-screws X′, oil-chamber J, and journal-bearing I with the supports D and B′, and shaft H, substantially as herein described, and for the purpose set forth.

7. The journal-bearing I, provided with grooves 8 and openings *i*, communicating with the interior of the journal-bearing, as herein described, and for the purpose set forth.

8. The combination of the stationary cleaning-arm X″ with the revolving screen a, substantially as herein described, and for the purpose set forth.

9. The floats or wings of a fan or blower, when the plane of their face forms an obtuse angle with a line radial from the axis of the fan-shaft, substantially as herein described, and for the purpose set forth.

107,666.—ROLLER FOR SEWING-MACHINE.—Richard Winn Courts, Russellville, Ky.

Claim.—The hinged hook or catch D, in combination with the notched roller C, and strip of wood B, extending from front to back feet of sewing-machine, substantially as shown and described.

107,667.—WIPING APPARATUS FOR FEED AND OTHER ROLLERS.—Lyman Crawford, Holyoke, Mass.

Claim.—1. The combination, with the feed-rollers D D′ of the wiping-plates A E, having the slots B F, and the concave wiping-faces G, all substantially as specified.

2. The combination, with the roller D, and the slotted wiping-plate A, of the plate C, substantially as specified.

107,668, antedated September 17, 1870.—CARRIAGE-GEARING.—Cornelius Custer, Norristown, Pa.

Claim.—The upright shaft C C, attached to the center of the arch of the arched axle by a pin or bolt G, substantially as shown and described.

107,669.—JOINTED OAR.—Christian Dann, La Crosse, Wis.

Claim.—The combination, with a pivoted handle, blade, and plate, A-B C, of the flexible cord *c*, fastened to the rounded ends of the handle and blade, as and for the purpose described.

107,670. — MACHINE FOR SHAPING THE HEADS OF HORSESHOE-NAILS.—Norman Dexter, Bower Hill, Pa.

Claim.—The improved device herein described, consisting essentially of the frame A, dies *b c*, and lever *f*, combined as and for the purpose set forth.

107,671.—BLIND-SLAT TENONING-MACHINE.—Frank Douglas, Norwich, Conn.

Claim.—1. The disks E E, in combination with frames F F, disks *c c c c*, segment-gears J J and L L, all constructed and operated in the manner and for the purpose herein specified.

2. The spring stops K K, when constructed as described, and operated by segments J J, for the purpose herein specified.

3. The pins *o o o o*, in combination with disks E E and levers P P, for the purpose of throwing the finished slats out of disks *c c c c*, substantially as herein specified.

4. The mechanism for centering the blind-slat, consisting of stop *b*, spring *d*, parallel slot *a*, and disk *c*, all constructed and operating substantially in the manner and for the purpose herein specified.

5. The combination of saw S, plate R, cutters *r r r r*, and spur-plate *t*, when constructed substantially as and for the purpose specified.

6. The bit-socket *i*, when constructed and operated substantially as shown and described.

7. The spring stop 10, in combination with beds 5 and 7, when constructed and operated substantially as described.

107,672. — PENCIL-CASE. — Charles H. Downes, Hudson City, N. J.

Claim.—1. The combination of a spindle or pencil-holder, A B, and a revolving spirally-slotted barrel, C, constructed and arranged substantially as specified, with the short slotted fixed guiding-tube G, substantially as described.

2. The spindle A B, having stud D thereon, tube C, having spiral slots E F, short slotted tube G, combined with case P′, tube M, having slot N, slide K, and pin L, all constructed and arranged with respect to each other, as specified.

107,673.—EGG-BEATER.—Timothy Earle, Valley Falls, Smithfield, and Gilbert K. Dearborn, Pawtucket, R. I., assignors, by mesne assignments, to Timothy Earle and E. D. Goodrich, Boston, Mass.

Claim.—The combination of the revolving-plate E, gears D, C, F F′, and beaters *b b′ c*, all constructed as herein described, for the purpose set forth.

107,674. — KNIFE-SCOURER. — Henry E. French, Unity, N. H.

Claim.—A knife-scourer, consisting of the frame A, scouring-roller D, and spring-roller E, the latter being connected with a slide, F, substantially as herein shown and described.

107,675.—MACHINE FOR SAWING MARBLE. James E. French and James M. Stephenson, Pendleton, Ind.

Claim.—1. The shaft B, when provided with a reciprocating end-play, in combination with two or more saws, substantially in the manner and for the purposes set forth.

2. The combination of the cam D, shaft B, and pulleys E, substantially in the manner and for the purposes set forth.

3. The adjustable saw-guides F, in combination with the frames I and saws, substantially as set forth.

107,676.—PLOW.—David Fulton, St. Helena, Cal.

Claim.—The arrangement and relative position of the parts hereinafter named, to wit, the curving standard D, the slotted plate C, the beam, and the mold-board, as shown and described.

107,677.—SEWING-MACHINE.—Charles W. Godown, Lambertville, N. J.

Claim.—1. The combination, with the presser-foot bar A, arranged to swing back and forth, and the notched needle-bar of the holding and tripping lever, and the spring K, the said tripping lever being provided with a stud, L, substantially as specified.

2. The arrangement, with the presser-bar, of the holding and tripping lever G, pivoted on adjustable plate J, as and for the purpose described.

107,678.—MACHINE FOR JOINTING STAVES. Solomon S. Gray, Boston, Mass.

Claim.—In a machine for jointing staves suitably for forming barrels, or other vessels with a bilge, the combination, with oppositely-inclined saws, of a double curved guide and conveyers, *d e*, operating in continuous succession, substantially as described.

Also, in combination with the curved guide and saw, the spring-pivoted guide or gauge.

Also, yielding pressers, in combination with the matter first claimed.

107,679.—EAR-RING.—Gottfried Haberland, Bloomington, Ill.

laim.—As an improved article of manufacture, the ear-drop A, constructed with wire, of the form shown, to adapt it to be applied or removed by compressing the lower loop *c*, and having the opposite ends of its jaws *b* provided with plates *a*, as and for the purpose specified.

107,680.—WHEAT-STEAMER AND DRIER.—Cyrus T. Hanna, Keokuk, Iowa.

Claim.—1. The combination of two steam-chambers, B F, with an intermediate chamber, K, through which the grain flows, as and for the purpose described.

2. The arrangement, in the midst of a grain-steaming chamber, J, of a cone, I, to automatically feed the grain, by its own gravity, into a chamber below, as shown and described.

3. The combination of the steam-chambers H and C with perforated walls, and the steam-chambers F and B with close walls, with each other, to form the steaming-chamber J and drying-chamber E, substantially as herein shown and described, and for the purpose set forth.

4. The combination of a series of pipes, K L G *d¹ d² d³*, or their equivalent, with the steam-chambers B F H C, for the purpose of introducing, circulating, and removing the steam, and carrying off the condensed steam, substantially as herein shown and described.

5. The combination, with a grain-steaming apparatus, of the funnel-shaped, double-walled chamber O, placed thereunder, as and for the purpose specified.

107,681.—WASHING-MACHINE.—Elijah S. Harper, Sutherland Springs, Texas.

Claim.—An improved washing-machine, formed

by the combination of the open or ribbed roller F f' and handles G g' g', with the box A B and perforated false bottom E, substantially as herein shown and described, and for the purpose set forth.

107,682.—CARPET-LINING.—John R. Harrington, Brooklyn, N. Y., assignor to George Eliot Harrington, same place.

Claim.—A carpet-lining, formed of the envelope A, the edges of which are connected by a woven fabric, C, glued or cemented thereto, and the interior sheets or thicknesses of paper, or like material, B, when the same shall be constructed as herein described.

107,683.—DUMPING-CAR.—Edward C. Hegeler, La Salle, Ill., assignor to "F. W. Matthiessen and Hegeler," same place.

Claim.—The sloping car-box C, eccentrically curved rockers E, rails B, and chains F, all combined and arranged together and with the truck of a car, all substantially as specified.

107,684.—WAGON-SEAT.—Charles F. Hollenbeck, Kirkville, Mo.

Claim.—1. The improved wagon or other springs, consisting of the parts A A, clamping plates B C, clamping bolts, and the metal bands H, all combined and arranged substantially as specified.

2. The combination, with the above, of the boards F G and the cleats K, substantially as specified.

107,685.—CHAIR AND FURNITURE-TIPS.—Francis H. Holton, Brooklyn, N. Y.

Claim.—The combination of the India-rubber pad, fig. 3, with the metallic ferrule or cap, figs. 2 and 5, by vulcanizing the rubber with the ferrule or cap, all substantially as and for the purposes described.

107,686. — APPARATUS FOR PREPARING PARCHMENT OR WATER-PROOF PAPER.—E. P. Hudson, New York, N. Y., assignor to New York Water-proof Paper Company, New York City.

Claim.—The cooling-bath B, around the acid-bath A, for the purpose herein specified.

107,687.—MANUFACTURE OF RUBBER-COATED PARCHMENT PAPER.—E. P. Hudson, New York, N. Y., assignor to New York Water-proof Paper Company, New York City.

Claim.—1. Treating paper previously subjected to the acid and glycerine processes, with India rubber and sulphur, and then to the action of heat, substantially as herein specified.

2. As a new article of manufacture, the material thus produced.

107,688. — BALING-PRESS. — William Iler, Shreveport, La.

Claim.—1. The clutches D D, constructed as described, combined with cord *e*, windlass *f*, and pawl and ratchet *g*, to form a locking device for the follower, as set forth.

2. The locking devices D *e f g* and fulcrum clutches E E, links A *i*, and levers F, combined with the projecting follower B, as and for the purpose described.

3. A clutch for presses, having the biting point *k* higher on the outer than the inner side, as and for the purpose described.

107,689.—METHOD OF PRESERVING FRUIT. George Jáques, Boston, Mass.

Claim.—1. The method of preserving fruit by means of sulphur in its pure or uncombined form, substantially as described.

2. The method of preserving fruit by means of sulphur in a pulverulent form, substantially as described.

3. The method of preserving fruit by means of pulverized sulphur and pulverized charcoal, combined substantially as described.

4. The method of preserving fruit by means of pulverized sulphur and pulverized cork, or any finely-divided dry vegetable material, combined substantially as described.

5. A box, cask, or any other receptacle for fruit, coated on its inner surface with sulphur, or impregnated with the same, as and for the purpose set forth.

107,690.—COMPOSITION OF MATTER FOR PRESERVING FRUITS FROM DECAY.—George Jáques, Boston, Mass.

Claim.—The composition of matter, consisting of paper impregnated with flowers of sulphur, or pulverized sulphur, for the uses and purposes as above described.

107,691. — SASH-HOLDER. — William F. Kells, San Francisco, Cal.

Claim.—The combination of the bolt B and key *d e*, with its arm or lever, *f*, at right angles to it, all constructed as described, and arranged with the plate A and ears *a b*, and operating with the rack-bar D, substantially as and for the purposes herein set forth.

107,692.—ATTACHING DRAFT TO PLOWS.—George W. Kidwell, Elwood, Ind.

Claim.—The slotted and end-perforated beam A, bolt D, and rubber E, combined with a clevis, C, having the inwardly-projecting pins *F F*, as and for the purpose specified.

107,693.—CHEWING-GUM.—Weston W. Kilbourn, Sanford, N. Y.

Claim.—A tobacco antidote or chewing-gum, composed substantially as above described, and for the purpose set forth.

107,694.—CHIMNEY-ATTACHMENT.—Albert H. Lanphear, Atchison, Kansas.

Claim.—The herein-described chimney-attachment, consisting of the face-plate A, flange B, hinged cover C, and drawer D, having the catches *a a*, all constructed and arranged as set forth and shown.

107,695.—HAY-ELEVATOR.—James Linderman, Bullville, N. Y.

Claim.—1. In a hay-elevator, the movable track C, in combination with the endless belt D, or its equivalent, and truck E, substantially as and for the purpose set forth.

2. The brace H, secured to the beams of the building, in combination with the hinged catch E of the truck, and its releasing-lever, substantially as shown and described.

3. The inwardly-projecting curved bar N, in combination with the releasing-lever L and its pawl, constructed and operating substantially as described.

107,696. — HEATING-STOVE. — Adolphus Lotze, Cincinnati, Ohio.

Claim.—1. The exposed water-tank K *h* L, forming the top and discharge of the shell or casing of the stove, substantially as shown and described, for the purposes set forth.

2. The relative arrangement of the air-discharge L, closable by a damper or register, R, and the exposed water-tank K, as and for the purpose described.

3. The combination, with the air-discharge L, arranged in the top of the shell or casing D, of the deflecting-plate or disk W, arranged over the said air-discharge, for the purpose stated.

107,697.—VALVE-COCK.—John C. Macdonald, St. Louis, Mo.

Claim.—The combination, with the ordinary body A, and valve-seat B, of the valve C, threaded and collared stem E F, and the cap-nut I, when all are constructed and relatively arranged as and for the purpose described.

107,698. — POTATO-DIGGER. — George M. Marks, Half Moon, Pa.

Claim.—1. The inclined platform C, point E, and screen or perforated platform L, arranged to operate substantially as and for the purposes described.

2. In combination with the handles A, the triangular pieces B, substantially for the purposes described.

3. In combination with a potato-digger, the vibrating screen L, substantially as and for the purpose set forth.

107,699.—LAMP-BRACKET.—Riverius Marsh, New York, N. Y.

Claim.—A telescopic lamp-bracket, constructed, arranged, and operated in a manner substantially as and for the purposes set forth.

107,700.—WASHER-CUTTER.—Patrick McCormick, Newark, N. J.

Claim.—The combination, with a shank-threaded centering-spindle, A, and flat-headed cutters *b* B of the vertically-slotted tool-holder *a a*, and centrally-threaded clamp C, as and for the purpose described.

107,701.—PEPPER-SAUCE.—Edmund McIlhenny, New Iberia, La.

Claim.—1. The pepper-sauce prepared of the ingredients herein set forth, substantially in the manner specified.

2. The herein-described process of preparing pepper-sauce from the ingredients, in about the proportions set forth.

107,702, antedated September 17, 1870.—FRICTION-LOCOMOTIVE.—Thomas S. Minnis, Meadville, Pa.

Claim.—1. The entire combination of shaft, adjustable pulleys, wheels, belts, and brakes, making a locomotive, which is propelled, turned, directed, checked, and lightly upborn, without the use of a guide-wheel, substantially as described.

2. The belt, with its V-shaped track, constructed in the manner and for the purpose hereinbefore set forth.

3. The wheels C C, with rims of various diameters, constructed as and for the purpose set forth.

4. The combination of the hollow shaft K, adjustable Vs, H, E, and I, pins F F F, nuts P P P, and screw O, substantially as and for the purpose set forth.

5. The cam-headed lever-brake D, constructed and operated substantially as and for the purpose set forth.

6. The combination of the shaft K, beam M, and axles L L, substantially as and for the purpose set forth.

107,703, antedated September 17, 1870.—GRAIN-BINDING ATTACHMENT FOR HARVESTER. — Thomas S. Minnis, Meadville, Pa.

Claim.—1. In combination with the harvester-platform K M, the crane A, claws D, springs E, cords J, and pulleys F, all constructed and operating substantially as described.

2. The combination of the arms V V, springs W W, cord Q, treadle R, and bearers P P, substantially in the manner and for the purpose set forth.

107,704.—NUT-LOCK. — James Moorcroft, Newport, R. I.

Claim.—The split bolt A, combined with the conical screw B, for the purpose of locking the nut C, substantially as herein shown and described.

107,705. — PLOW.—David Morris, Bunker Hill, Ill.

Claim.—The arrangement of swiveled beam A, standard B *b'*, bolts G I, slotted bracket H, and handles E F, as and for the purpose described.

107,706, antedated September 17, 1870.—SCAFFOLD-BRACKET. — Charles Mudge, Ovid, Mich.

Claim.—A scaffold-bracket, constructed as described, and supported by the socket B and hinged clamps, all made and arranged to operate as and for the purpose set forth.

107,707. — WASHING-MACHINE. —Abraham Muterabaugh, Lowinsville, Va.

Claim.—1. The adjustable wash-board H, arranged as shown and described.

2. The concavo-convex beater E, formed with longitudinal slots, in combination with the adjustable wash-board H, as shown and described.

107,708.—FOLDING CHAIR.—Julius Nicolai, Boston, Mass.

Claim.—In combination with folding cross-legs or frames and a folding seat, a back-frame, F O, S S, when arranged relatively to the parts B B', substantially as shown and described.

107,709.—CORN-PLOW AND PLANTER.—Henry Clay Osborn, Clark county, Ohio.

Claim.—1. The arrangement of, in a convertible frame for a sulky corn-plow and planter, tongue A, hounds *b*, axle-bow B, bolt *a'*, cross-piece *c*, rods *f e d*, and plate-clevis *g*, substantially as described, for the purpose hereinbefore set forth.

2. The arrangement of, in convertible frame for a sulky corn-plow and planter, tongue A, hounds *b*, axle-bow B, cross-piece *c*, pins *p p*, planting-frame G, guide-way E, and bolt *a'*, substantially as described, for the purpose hereinbefore set forth.

107,710. — DITCHING-MACHINE.—Jason C. Osgood, Troy, N. Y.

Claim.—1. The wheels A A, with buckets A' A' A' A' attached, and combined with shafts C C and D D, all so constructed and arranged, with reference to one another, that the two pairs of buckets may be at such angle with each other that they will cross each other's tracks in the ditch, as herein described and set forth.

2. The construction and arrangement of the buckets A' A' A' A', substantially as stated, and for the purposes set forth

3. The arms C C and D D, bar I, wheels A A, and shafts B B, arranged as described, in combination with chains and shaft F, and drums H H, substantially as set forth, and for the purposes described.

4. The arrangement of springs M' M', combined with arms D D or wrists *b b*, so as to close and fasten the doors K' K' K' K', whatever the position of the machine.

5. The arrangement of aprons L and L', wrist *b*, bar *l*, and frame N, substantially in the manner and for the purpose described and set forth.

6. The drum Q, and ratchet-wheel Q', combined with sway-bar V, arms V' V', ratchet *v*, rod W, and wheel U', all constructed and operating substantially in the manner and for the purpose set forth and described.

107,711.—TREATING TIN SCRAP FOR THE MANUFACTURE OF STANNATE OF POTASH, &c.—Adolph Ott, New York, N. Y.

Claim.—The process for the preparation of compounds, denominated stannate of soda, stannate of potash, and the production of wrought-iron and steel from tinned sheet-iron, substantially as described.

107,712.—FURNACE FOR SMELTING SCRAP-IRON.—Adolph Ott, New York, N. Y.

Claim.—1. The combination of a generator-furnace, *g*, with a reverberatory-furnace, having the hearths or sumps *a a' a''*, substantially as and for the purpose hereinbefore set forth.

2. The combination of the nozzles or blast-pipes

f f f with the reverberatory-furnace, substantially as and for the purpose hereinbefore set forth.

107,713.—TANNING.—Charles F. Panknin, Charleston, S. C.

Claim.—The use of carbolic acid in the process of tanning, substantially as described.

107,714.—IRONING-MACHINE.—Charles F. Parker, Greenfield, assignor to Joseph Parker, Goodhope, Ohio.

Claim.—1. The combination of a smoothing-iron with a rectilinear reciprocating arm, F, and a pivoted guide, J, for said arm, substantially as described.

2. The combination of a pressure device, with a reciprocating arm, F, carrying on one end a smoothing-iron, substantially as described.

3. The relative arrangement of treadles D^1 and N, with an ironing-table, a reciprocating smoothing-iron, and a pressure device, substantially as described.

4. The combination of a vertically-movable guide-block, J, a reciprocating arm, F, carrying on one end a smoothing-iron, and a pressure device, substantially as described.

5. The pressure-rod K, supported upon a spring, *s*, and adapted to support the arm F, by means of a stirrup, *k'*, substantially as described.

107,715.—FURNACE-GRATE.—Abraham L. Pennock, Upper Darby, Pa.

Claim.—In combination with the grate-bar, the slots D and the locking-pieces B and C, when the same are constructed and arranged to operate substantially as and for the purposes herein shown and described.

107,716.—CAR-VENTILATOR AND REFRIGERATOR.—William E. Phelps, Elmwood, Ill.

Claim.—The tanks C, when constructed as described, with partitions D, bottoms E, and perforations *d* and *e*, and combined with the car-box A, provided with bonnets or caps B and B', and holes *b*, as herein described, for the purpose specified.

107,717.—TREADLE FOR SEWING AND OTHER MACHINES. — Benjamin Charles Pole, Washington, D. C.

Claim.—1. The vibrating elastic treadle A, and springs D D, stops C C, pivots *a a'*, with its bed-plate B, ears *b b*, springs D D, stops C C, and attachments K, all combined and operating substantially as and for the purposes described.

2. The elastic connecting-rod G, the pins I, the fixed head or strap H, the elastic spring *d d*, and stops *c c*, all combined and operating substantially as and for the purposes described.

3. The bed-plate B, with the rotating shaft E, and attachment for the connecting-rod G, the stops C C, springs D D, and ears *b b* to receive pivot, forming the lower plate, all combined and operating substantially for the purpose described.

4. The whole combination between the rotating shaft E and crank F, operating substantially as and for the purposes described.

107,718.—MACHINE FOR ORNAMENTING THE SURFACE OF WOOD, &c.—Thomas Thompson Ponsonby, Nottingham, England.

Claim.— 1. The hollow engraved cylinder *e*, mounted upon the mandrel or shaft *c*, at one end, and supported at the other end by the stationary disk *f*, substantially as set forth, so that the tubes for introducing the heat to the cylinder may pass through said disk, substantially as set forth.

2. The hollow engraved cylinder, heated by a stream of melted metal flowing through the same, in combination with mechanism for pressing the surface of wood or other material to the said cylinder, for the purposes and substantially as set forth.

3. The case surrounding the upper portion of the cylinder *e*, and heated by a stream of melted metal flowing through the same, in combination with the engraved cylinder *e*, as and for the purposes set forth.

4. The arrangement of the weighted lever and treadle *p*, to press the roller *b* and material to be ornamented to the cylinder *e*, substantially as specified.

107,719.—STEERING APPARATUS.—Turner C. Purington, Vallejo, Cal.

Claim.—1. The toothed cylinder E, substantially as described and for the purpose set forth.

2. The toothed cylinder E, in combination with the wheels Q, substantially as described and for the purpose set forth.

3. The cylinder E, wheels Q, pinions P, and toothed segment D, combined and arranged substantially as described and for the purpose set forth.

4. The employment, in the steering apparatus of ships, of India-rubber springs or cushions J, substantially as described and for the purpose set forth.

5. For the purposes hereinbefore set forth, the toothed segment D, constating substantially of the arc E, rim F, arms G, springs I, plates L, screws K, and pins H, as described, or their equivalents.

107,720. — SHUTTER-FASTENING. — Joshua Pusey, Philadelphia, Pa.

Claim.—The combination of the button D and the bar B, provided with the slot C, and a series of notches or openings, *e*, and an opening, A, the latter opening only being of a size large enough to allow the button D to pass through it, all constructed, arranged, and operating substantially as described.

107,721.—HARVESTER-RAKE.—Amos Rank, Salem, Ohio.

Claim.—1. The switch, constructed as described, to oscillate horizontally on its pivot, and with a flange, *g'*, to hold the rake down upon the platform while sweeping the gavel therefrom, as hereinbefore set forth.

2. The combination of the single cam, constructed as described, with the switch constructed as described, to oscillate horizontally on its pivot, to hold down the rake while sweeping the gavel from the platform, and automatically to be closed by the direct action of the rake, as hereinbefore set forth.

3. The combination of the cam, the switch oscillating horizontally on its pivot, and automatically closed by the direct action of the rake, the crank-arm pivoted directly to the switch, and the rock shaft, for opening the switch, passing through the axis of rotation of the rakes, all these parts being constructed to operate in combination, substantially as hereinbefore set forth.

4. The combination of the roller on the rake-arm, the cam, and the horizontally-moving oscillating switch automatically closed by the direct action of the rake while raking off its gavel, substantially as set forth.

5. The combination of the roller on the rake-arm, the cam, the switch automatically closed by the direct action of the rake, and the latch to return the rake to the upper side of the cam, substantially as set forth.

107,722.—COVER FOR STOVE-PIPE HOLES.—Joseph A. Read, Philadelphia, Pa.

Claim.—1. A metallic ring, A, having the cavity B and flange C, constructed and arranged in relation to each other, substantially as for the purpose hereinbefore set forth.

2. The metallic cover for closing the central opening in the ring A, the said cover having a tongue, D, and catch E, constructed and arranged to operate in combination with the ring A, substantially as and for the purpose hereinbefore set forth.

107,723. — STEAM-ENGINE. — William F. Richardson, Pittsburg, Pa.

Claim.—1. The engine herein described, consisting of a cylinder, with two pistons moving in opposite directions, and having their rods attached to cross-heads at their outer ends, the motion from the rear cross-head communicated to the main one by means of the levers and connecting-rods, substantially as described.

2. In combination with the above, the valve with its ports and slide, constructed as herein described.

107,724. — HINGE FOR SCHOOL-DESK.—Albert E. Roberts, Des Moines, Iowa.

Claim.—The addition of the projection and socket *e e* to the frame and hinge, together with the movable cover *d d*, substantially as described, and for the purposes specified.

107,725.—TUYERE.—Joseph Rogers, Detroit, Mich.

Claim.—Jointly, with the perforated and notched hearth-plate D, for use severally and interchangeably therewith, the bars E, the conical perforated plug or nozzle F, and the tubular perforated plug or nozzle G.

107,726.—ELEVATOR.—Theodore H. Rudiger, Lawrence, Kansas.

Claim.—1. The spout A, pivoted at its lower end to the frame, and connected at its upper end, with the slotted tilting-lever F, and slotted curved guides D, arranged to operate as and for the purpose specified.

2. The combination, with the drum-shaft I, of the elevator, and with the swinging spout A, of the cam H, lever F, and rod C, all substantially as specified.

107,727.—HORSE-DETACHING DEVICE.—Anton Schmitt, Cincinnati, Ohio.

Claim.—The combination, substantially as described, of bearings D D', rock-shaft E, pins F *f*, springs I or I', arm J *j*, cord K, pulley E, retaining device N *n*, and stud O, for the object explained.

107,728.—HEAD-BLOCK FOR SAW-MILLS.—George Selden, Erie, Pa.

Claim.—1. The combination of the operating lever C, the ratcheted wheel B, the pawls C^1 D', double cam H, and shipping-lever I, constructed and operating substantially as set forth.

2. The lever I, provided with shoulders i^1 i^2, in combination with arm F' and tripping-shaft F.

3. The lever I, provided with shoulders i^1 i^2, in combination with tripping-shaft F, arm F', latch I', and arm A', provided with shoulders *a a'* and stops *f* f^1, for locking the tripping-shaft, substantially as set forth.

4. The combination of lever I, latch I', arm A', provided with shoulders *a a'* and studs *f* f^1, the arm F', and cam H, for locking the cam, as set forth.

107,729.—PROCESS OF UNITING RUBBER WITH WOOD.—Frank B. Shearer, Columbus, Ohio.

Claim.—The process herein described, of mechanically uniting compound rubber with wood, metal, or other hard substances, by means of pressure in a mold, and, while thus under pressure, vulcanizing the rubber, so as to give to the finished article the appearance of solid vulcanized rubber.

107,730.—COTTON-SEED PLANTER.—Fletcher Sloan, Bolivar, Tenn.

Claim.—1. The endless-belt carrier H, formed of a continuous strip of sheet-steel bent into proper form to form the teeth or flanges *h'*, substantially as herein shown and described, and for the purpose set forth.

2. The combination of the bars S with the arms R and agitator P, substantially as shown and described.

3. The combination of the arm U and connection T, whether one or both be elastic, with the agitator P, shaft Q, arms R, bars S, hopper L, and axle B, substantially as herein shown and described, and for the purpose set forth.

4. The pivoted clevis-block K, and adjusting-wedge F, in combination with the main frame of the planter, substantially as herein shown and described, and for the purpose set forth.

107,731.—METALLIC TUBING.—Charles G. Smith, Chelsea, assignor to American Metallic Tubing Company, Boston, Mass.

Claim.—As a new article of manufacture, lap-jointed metal tubing, having the joint-forming edges locked together by spurs or projections, substantially as shown and described.

107,732.—BEE-HIVE.—Jonathan L. Smith, Liberty Centre, Ill.

Claim.—The described hive, having inner lower box, with inclined perforated floor, lower spaces, and surrounding air-spaces, and rear door, and with the convertible boxes above, hinged cover, and honey-frames, the whole being constructed and arranged as set forth.

107,733. — SAW-SET.—William A. Smith, Dresserville, N. Y.

Claim.—The improved saw-setting tool, having the mortise B, wall C, notch E, oblique wall F, gauge-spring, and screw, all arranged substantially as specified.

107,734.—MANUFACTURE OF HYDROCARBON OIL. — William Spears, Jamestown, N. Y.

Claim.—An illuminating oil, manufactured by distilling a chemical combination formed of benzine and tar, in the manner specified.

107,735.—KILN.—Peter C. Taylor, San Antonio, Texas.

Claim.—1. The improved arrangement in a lime-kiln, of the diagonal braces or tie-rods *k*, with the beams *i*, brace *c*, and straps *n*, as and for the purpose specified.

2. The combination of the serrated head *r*, levers *s*, and funnel *e*, as and for the purpose set forth.

3. The arrangement, in the fire-chambers *a a*, of the kiln A, the same diverging radially, or nearly so, from opposite sides of the chamber *b*, and proceeding thence outwardly, in parallel lines to the front of the kiln, of the spaces or intervals *h*, and pillars *f*, all constructed substantially as and for the purpose specified.

107,736.—STEM-WINDING AND SETTING ATTACHMENT TO WATCH. — Fritz Robert Theurer, Chaux De Fond, Switzerland.

Claim.—The combination, with the post B, of the chain-drum, the gear-wheel on the center-post, and the revolving stem of the wheels A, C, and P, the bar E, and spring L, when arranged for operation, substantially in the manner described.

107,737.—VAPOR-BURNER.—William Thompson, Cleveland, assignor to himself, Jeremiah S. Bollman, and Michael H. Kline, Mansfield, Ohio.

Claim.—The tube A, chamber B, tube D, small tubes *b* and *a*, outer tube E, burner *j*, and thumb-rod *h*, all combined, arranged, and operating substantially as and for the purposes set forth.

107,738.—SNAPPER-CLEAT.—John T. Thomson, Southport, Me.

Claim.—A snapper-cleat, which is provided with snappers *b*, springs *c*, and screws *d*, by which it is capable of adjustment when worn, as and for the purposes described.

107,739.—LUBRICATOR.—Ernest Von Jeinsen, San Francisco, Cal.

Claim.—1. The lubricating device herein described, consisting of the springs D, the piece of wood B, and the felt A, or the equivalent of these

parts, when secured together, and arranged to operate in a manner substantially as and for the purpose herein described and set forth.

2. The lubricating device herein described, when provided with guides H, or their equivalents, as described.

107,740.—Oyster-Tongs.—Edward Ward, Smyrna, Del.

Claim.—The combination of levers A B, pulleys F F, cords E G, slotted sliding bar H, and toggle I I, with the open-work jaws C D, constructed as described, to form a pair of oyster-tongs.

107,741. — Vapor-Burner.—Henry Wellington, Chicago, Ill.

Claim.—1. The supplemental wick-tube, adapted to be applied to and removed from the main tube A, by means of the nipple E, substantially as described, for the purpose specified.

2. In combination with the supplemental wick-tube, the nipple E, substantially as described, for the purpose specified.

3. In combination with the main tube of a vapor-burner, the supplemental wick-tube and the nipple, substantially as described, for the purpose specified.

4. The combination of the lateral mixing-chamber with the deflector and nipple, or deflector and main tube, when the deflector is constructed substantially as described, for the purpose specified.

107,742.—Brush.—John L. Whiting, Boston, Mass.

Claim.—The connection or tenon T with the expander C, as shown, in combination with the handle A, cap or head a, ferrule B, and bristles D, all as constructed and represented.

107,743.—Gas-Carbonizing Attachment for Street and other Lights.—Samuel Whitney, Newark, N. J.

Claim.—1. The combination, with a street gas-lamp and carbonizing attachment, of the surrounding chamber C, filled with plaster, or other non-conducting substance, as and for the purpose described.

2. A spun metal jacket, B, for gas-carbonizers, silvered around its upper surface to arrest the downward rays of light, reflect them outwardly, and utilize the same.

3. The combination of non-conducting material in chamber C, and the reflecting surface around the upper part of jacket B, to prevent the temperature of the carbonized gas in chamber P from being affected by the light.

107,744.—Fastening for Neck-Tie.—William A. Wicks, Baltimore, Md.

Claim.—The tubular stud or hollow shirt-button, with its center piece A, oval plate B, hollow head C, slot D, and aperture F, for the purpose of fastening a neck-tie by means of the connecting devices in figs. Nos. 1, 2, 3, and 4, as herein described and set forth.

107,745.—Mill-Pick.—Stephen G. Williams, Trumansburg, N. Y.

Claim.—The combination of the head H, having socket-projections d d, and holes *f f*, the blades *e e* having grooves or notches *e e*, and slots or cross-grooves *s s*, and the fastening-pins *p p*, all arranged substantially as and for the purpose herein specified.

107,746.—Automatic Cut-off for Steam-Engine.—Daniel A. Woodbury, Rochester, N. Y.

Claim.—1. The swinging eccentric A and auxiliary eccentric B, in combination with a suitable automatic governor, for the purposes set forth.

2. The eccentric A, swung from a center outside of the crank-shaft of an engine, when such center is adjustable forward or backward of the center line of the crank, and radially to said eccentric, either or both, for the purposes set forth.

3. The governor-weight or weights D, when attached to a disk or hub secured to the crank-shaft, or to an arm of the fly-wheel, by means of suitable counteracting and suspending springs, for the purposes set forth.

4. The within-described arrangement of the weights D with relation to their points of suspension *s* and the center of the crank-shaft, when they precede such suspending points in the direction of motion, for the purposes set forth.

5. The hanger *h*, when provided with an eccentric axis, whereby the pivoting-point of the main eccentric A may be adjusted radially, or shifted to the reverse position, for the purposes set forth.

107,747.—Curtain-Fixture.—William P. Yates, Elmira, N. Y.

Claim.—In combination with a curtain-roller, the clock-work *c*, the arm A, and the crank *i*, arranged and operating substantially as and for the purposes described.

107,748. — Steam-Engine Condenser.—Harrison Anderson, Peoria, Ill.

Claim.—The combination of a series of pairs of condensing-cylinders B, C, D, E, F, and G, constructed and arranged substantially as described.

107,749.—Knit Fabric.—Charles J. Appleton, Cohoes, N. Y., assignor to himself, Earl L. Stimson and S. Edward Stimson, same place.

Claim.—Welted, seamless, tubular knit fabrics, as a new article of manufacture.

107,750.—Knitting-Machine.—Charles J. Appleton, Cohoes, N. Y., assignor to himself, Earl L. Stimson, and S. Edward Stimson, same place.

Claim.—1. In a circular knitting-machine, having two sets of needles, mechanism substantially such as described, which will admit of automatically adjusting one set of needles out of operation at pleasure, and producing plain work on the other set.

2. A circular knitting-machine, having two sets of needles or loop-formers, and provided with contrivances, substantially such as described, which will automatically effect the change from ribbed knitting to plain knitting, and back again to ribbed knitting.

3. The automatically adjustable dam-cone F, in combination with mechanism, substantially such as described, for producing welts on tubular-knit fabric.

4. The combination of an adjustable beard-presser *e*, with the adjustable cam-cone F, said parts working together, substantially as described.

5. The arm G, applied to the shaft of the adjustable cam-cone F, and acted upon by a spring, S, in combination with devices, substantially as described, which are controlled by the movements of the plate A, and adapted to operate said arm and cam, as set forth.

6. The arrangement of finger *i* in the relation shown to the rib-needles *g*, the yarn-guide *h*, and presser *e*, for the purpose stated.

107,751.—Feeding Device for Carding-Machine.—Joseph W. Barbour, Winooski Falls, assignor to himself and William Earl, Nashua, Vt.

Claim.—1. The studded elevating-belt *a'*, fluted rollers *b b*, picker D, and guard G, combined and operating substantially as described.

2. The rollers *b b*, picker D, and rotating doffing-blade *f*, in combination with the elevating-belt *a'*, and the guard G, substantially as described.

3. The packing-box P, in combination with the picker D, doffing-blade *f*, and feed-roller E, substantially as described.

4. The endless feed-apron *a'*, arranged below the picker D, doffing-blade *f*, and feed-roller E, and forming the floor of the packing-box P, substantially as described.

107,752.—Rolled Sheet-Iron.—Silas Barker and Henry S. Pratt, Hartford, Conn.

Claim.—As a new article of manufacture, sheet-iron, the surfaces of which are indented, substantially in the manner and for the purpose set forth.

107,753.—Show-Case.—Milo M. Belding, Brooklyn, N. Y.

Claim.—The arrangement of the inclined drawers C, within the case A, and the inclined front of the case, and its glazed lid or door B, essentially as shown and described.

107,754.—Cultivator-Plow.—Victor Bolis, St. Mary's parish, La.

Claim.—The hoe-plows A, when mounted on a diagonal front bar of a frame, B, the said frame being provided with a cutter-blade, C, in combination with the frame, consisting of the longitudinal bars D D', a sufficient number of cross-bars, and the standards E E', when said frame is provided with the adjusting elliptical runners G G', and those latter are operated by a yoke-frame, H, and a lever, I, and all the parts are constructed, arranged, and operated substantially as described, for the purpose set forth.

107,755. — Reed-Board for Organ. — Riley Burdett, Chicago, Ill.

Claim.—1. The arrangement, in a single reed-board, of the principal set A, the celeste set B, and the sub-bass C, substantially as described.

2. The arrangement of the sub-bass set C in the principal reed-board, so that the air-passages of both may be controlled by a single set of valves.

3. The reeds of the sub bass set C, all located within a single cell in the reed-board, substantially as and for the purpose set forth.

107,756.—Cement-Walk, Pavement, and Road. — Charles Burgess, Rochester, N. Y.

Claim.—1. Guards or fenders of composition extending downward into the ground on each side of the road-bed, below the frost-line, substantially as specified.

2. The composition herein described, when compounded of the ingredients, in the manner, and of the proportions specified, and applied for use as and for the purpose mentioned.

107,757.—Plane.—Timothy O. Callahan, Boston, Mass.

Claim.—A carpenter's plane, when provided with wheels or rollers and an elongated handle, K, all constructed in the manner and for the purpose herein specified.

107,758.—Saddle for Spinning-Machine, &c.—James S. Casey, Voluntown, Conn.

Claim.—An adjustable saddle for spinning-machines, provided with a spring and set-screws, or their equivalents, to vary the pressure on the middle roll, or relieve it entirely therefrom, substantially as specified.

107,759. — Fanning-Mill. — Greville E. Clarke, Racine, Wis.

Claim.—1. The combination of the slotted sliding ratchet-bars *f f*, secured by the bolts and nuts *g g*, with the pawls and shoe E, all constructed and arranged substantially as set forth.

2. The combination of the sides A A, with its slots *h h*, with the shoe E, with its slots *i i*, to receive the ends of the springs H H, all arranged substantially as set forth.

3. The double eccentric or cam *k k*, on the fan-shaft, operating in combination with the slotted bar *m*, pins *o o*, and shaker-rod *p*, all constructed and arranged substantially as and for the purposes herein set forth.

4. The combination of the guard *n*, slotted and hooked as shown, with the rod *p*, all as and for the purposes set forth.

5. The arrangement, with the double eccentric or cam *k k* and bar *m*, of the face-plate *s*, for changing the shaker-rod *p* from the double shake to the single shake, as herein set forth.

107,760.—Corn-Cultivator.—Jesse Clements, Blooming Grove, Ind.

Claim.—1. The arrangement, in a cultivator, of the forked shanks G G, provided with the pivoted clevises H H, carrying the shovels I I, and the V-shaped irons *f f*, with their cutters *i i*, all hinged to the rod *a*, and connected to the roller J, substantially as set forth.

2. The combination, in a cultivator, of the wheels A A, axle B, frame C, tongue D, shanks G G, clevises H H, shovels I I, roller J, latch-wheel K, planter M N O, seat L, cutters *i i*, and with or without the gauge S, all constructed and arranged as described, to operate substantially in the manner and for the purposes herein set forth.

107,761, antedated September 21, 1870.—Corn-Sheller, &c.—George S. Coleman, Alexandria, Va.

Claim.—1. The combination and arrangement of the rollers *a b* and brushes *s* with the cast-iron sieves K K, hinged together at W, when all these parts are constructed and operating as herein described, and for the purposes set forth.

2. The arrangement with the above, the elevator L, provided with adjustable bearing N, and eye-bolts P P, when constructed and operating as herein set forth.

107,762.—Adjustable Stop for Caster for Stove-Leg. — William Coughlin, Clarksville, Ohio.

Claim.—The attachment for a stove-leg herein described, consisting of the caster B, chuck *v*, and spring *y*, when arranged for attachment by the screw *c*, substantially as and for the purpose specified.

107,763.—Clothes-Drier.—Lewis Cutting, San Francisco, Cal.

Claim.—The described rack, as made, combined with its rack-bars, and having separate pieces *a* and *b*, with open-ended slots, as set forth, and united with each other by the screw-threaded axis *d*, and nut-threaded piece, so as to clamp the rack-bars at will in any position.

107,764.—Curtain-Fixture.— John Doyle, Hoboken, N. J.

Claim.— The combination of the adjustable wedge C, shell or case A, provided with the parallel flanges *b b*, having a space or opening, *c*, between, and provided with inclined outer edges, the slide B and the cap D, all constructed and arranged substantially as and for the purpose set forth.

107,765. — Splint-Plane. — Philander N. Drake and David Drummond, McGregor, Iowa.

Claim.—The combination, with the stock A, of the flat-laid tool D, channel-plates *a b d*, stirrup E, nut G, and screws I I, all constructed to operate substantially as set forth.

107,766.—Ingot-Mold.—Z. S. Durfee, Troy, N. Y.

Claim.—Cluster or compound molds, constructed and operated substantially as herein described, and shown in the accompanying drawings.

107,767. — Removable Shoe-Lining. — Henry A. Everts, Cedar Falls, Iowa.

Claim.—A lining for shoes, constructed of sheep-

skin, when composed of the quarters *c*, upper *b*, and sole *a*, and arranged within a shoe, as described.

107,768.—GRINDSTONE OR TOOL-SHARPENER.—Uriah Faris and Abraham Miller, Red Rock, Iowa.

Claim.—1. The carriage C, moving upon the adjustable guides B B, and provided with groove *c* and holes *i i*, substantially as and for the purposes herein set forth.

2. In combination with the carriage C, the stone D, resting in a recess upon said carriage, and adjusted by means of the set-screws *b b*, substantially as and for the purposes herein set forth.

3. The arrangement of the hook or stirrup *d* and button *f*, for connecting the carriage C and pitman K, substantially as shown and described.

4. The combination of the adjustable guides B B, carriage C, adjustable stone D, adjustable tool-rest E, and a mechanism for giving the carriage a reciprocating motion, substantially as and for the purposes herein set forth.

107,769.—LIQUID-METER.—Wilhelm Fischer, Essen, Prussia, assignor to Fischer & Stiehl, same place.

Claim.—The combination and arrangement, substantially as specified, of the horizontal revolving drum A, of close construction at its inlet end, but open at its outlet end, and provided with internally-disposed spiral wings D, the inlet branch or spout B, and the overflow chamber E.

107,770.—SETTING OF FENCE-POSTS.—William Fulkerson, Three Rivers, Mich.

Claim.—The setting or stub for fence-posts herein described, consisting of the ribbed foot D, cut away at *f*, to receive and steadily support the post, the ring-socket C, open below, to admit air to the foot of the post, and the cover *e*, adapted to the form of the post, substantially as specified.

107,771. — COPPER-ROASTER.—Harlow M. Gilbert, Ada, Ill.

Claim.—The conical top B, having door B^1, agitator $C\,C^1\,C^2$, collar *b*, and hooks b^1, in combination with the skillet A, having the flange A, all constructed and arranged substantially as described.

107,772.—PICKER-COLLAR.—James M. Gotham, Blackstone, Mass., assignor to himself and Lewis Devlin, Central Falls, R. I.

Claim.—The metal collar C, with the slots *c*, in combination with the wedge D, having the ears *a*, all constructed and operating together as described, and for the purposes specified.

107,773. — SASH-HOLDER. — Prentice W. Greenwood, Peterborough, N. H.

Claim.—In combination, the recess C, covering-plate E, having the oblique convergent slots *s s*, the spring *s*, operating in connection with the upper roller, and the rollers *p p*, when constructed and arranged to operate substantially as shown and described.

107,774. — BEDSTEAD CLAMP. — Thomas Briggs Gregory, Champaign, Ill.

Claim.—The adjustable clamp, consisting of plates C and D, constructed as described, and combined and arranged to operate with the bearers G G and the side rails B B of a bedstead, substantially as described, and for the purpose specified.

107,775.—PERMUTATION-LOCK. — William N. Hall, Springfield, Texas.

Claim.—1. The axial locking-bolt G, arranged within the fixed stem B, so as to be withdrawn partially or entirely therefrom, through the screw-cap C, when released from the sleeves to unlock the door-bolts, substantially as described.

2. The fixed stem B, secured within the door, so as to prevent it from turning therein, by means of the angular collar E, secured upon the inner angular end of the stem B, and within a recess in the door, by means of the nut D, substantially as herein described.

3. The operating cogged spindle M, constructed with shoulders *e e*, in such manner as to embrace the cogged ends of the door-bolts I I', and thus prevent said spindle from being forced either in or out of the door, and also to form guides to said bolts, as herein described.

4. In a permutation-lock, the combination and arrangement of the fixed stem B, the axial bolt G, the notched and toothed sleeves *a b c d*, the toothed permutation-rings *l m n o*, having positive and negative letters and figures arranged in divisions, the screw-caps C D and collar E, the transverse slot H, with the door-bolts I I', having a slot, J, and the cogged spindle M, by which the door-bolts are operated, the several parts being constructed, arranged, and operating, substantially as herein described.

107,776.—SLED.—Benjamin E. Heminway, Portland, Me., assignor to himself and William L. Prince, same place.

Claim.—A sled combining the jointed arms *c d*, pivoted to the cross-bars *b b'*, with guides *i j*, cylinders *m m'*, plungers *o*, springs *n*, brake *r*, operated by the spring *u* and arm *s*, and foot-rests *w w*, all arranged and operating substantially as set forth.

107,777. — CULTIVATOR. — Louis Homrighouse, Baltimore, Ohio.

Claim.—An enlarged bearing-wheel, H, combined with the draft-beam A of a cultivator-plow, about midway of its length, to carry and support the machine, all substantially as herein described.

107,778, antedated September 26, 1870.—LOCKING-CAP FOR BOTTLE.—James T. Hough, New York, N. Y.

Claim.—The stopper *k*, formed with the cylinder *4*, flange 5, and lugs *6*, in combination with the socket *a*, fastened upon the bottle, and the combination-rings *d e*, as and for the purposes specified.

107,779.—SELF-ACTING TILT FOR BARREL.—Isaac Hudson and William Minshall, Stockport, Great Britain.

Claim.—The lever *d*, weight *g*, and retaining device *k*, in combination with the chain *h* and hooks *i k*, the whole being adjustable above a barrel, *b*, substantially as and for the purpose described.

107,780.—GRATE FOR FURNACE.—Reuben A. Hutchinson, Bergen, N. J.

Claim.—1. The rod C, composed of the overlapping sections *c* and *c'*, substantially as and for the purpose specified.

2. In combination with the grate-bars A and the rod C, the washer D, substantially as and for the purpose shown and described.

107,781. — CONVERTING CAST-IRON AND CAST-IRON ARTICLES INTO STEEL.—Richard A. Jackson, Alliance, Ohio, assignor to himself, William Reynolds, Hugh Bleakly, Henry P. McIntosh, Frank M. Ott, and Peter Keplinger, same place.

Claim.—A converting compound, consisting of about ninety-five (95) parts wood charcoal, about three (3) parts of calcined or pulverized oyster-shells, and about two parts of soda, said ingredients being prepared and treated substantially as herein described, and for the purpose set forth.

107,782. — THILL-COUPLING. — J. Henry Jenings, New Bedford, Mass.

Claim.—1. In combination, the thill-iron A, movable piece E, axle-iron D, rubber cushion F, and rubber block H, substantially as shown and described.

2. The movable piece E, consisting of the horizontal plate *a a'*, connected by the concavo-convex partition *b*, slotted centrally, substantially as specified.

107,783.—CARRIAGE-AXLE.—Henry Killam, New Haven, Conn.

Claim.—In combination with the axle A, box B, and flexible washer *c*, the nut *d*, when the said nut is constructed or provided with a device for adjusting or fixing its position on the axle, substantially in the manner herein set forth.

107,784.—HARVESTER-CUTTER HOLDER FOR GRINDER. — Theodore E. King, Cleveland, and George C. Dolph, West Andover, Ohio.

Claim.—The herein-described harvester-cutter holder, or rest, consisting of the bar D, and leaves F and H, as arranged and operated substantially in the manner as described, and for the purpose set forth.

107,785. — WHIFFLETREE HOOK. — Judson Knight, Newark, N. J.

Claim.—The clasp *a*, when operated through the lever *b*, by means of the spiral spring C, said spring being arranged transversely within the case A, the whole being inclosed or not, by plate D, substantially as herein shown and described.

107,786.—SPOOL-HOLDER.—John C. Koch and Bernard J. Beck, Brooklyn, assignors to Koch Sons & Co., New York, N. Y.

Claim.—The spool-holder, made of a box with a perforated swinging cover, combined with contractile springs, and the rod for carrying the spools, as set forth.

107,787.—MANUFACTURE OF SPIRITS FROM STARCH.—Herrmann Koehler, New York, N. Y.

Claim.—The within-described process for manufacturing whisky, consisting of treating a thin mash of starch with an acid, and then evaporating, fermenting, and distilling the same, substantially as described.

107,788.—PITMAN-HEAD.—Joel L. Kretser, Tusten, Wis.

Claim.—A pitman-head, made with parts A, B, and C, whole or in parts, in combination with the part D, sunken below caps C C, jaws E, to receive the head of a pitman, and jaws G, to fasten a saw to, said jaws E and G projecting in front of caps C C, substantially as for the purpose specified.

107,789. — WATER-WHEEL.—Dennis Lane, Montpelier, Vt,

Claim.—1. The annular gate D, moving exteriorly upon the guide *k* and between the wheel and the chutes *e*, substantially as specified.

2. In combination with the annular gate D, descending within the circle of chutes, and the sleeve *l*, the arms *h'*, passing entirely without the case, as specified.

3. The water-wheel herein described, consisting of the basin-shaped casting F, connected with the circumscribing band K by the buckets H, inclined from the lower edge of the casting downwardly and outwardly to the band, as specified.

107,790.—WRENCH.—Orange C. Lawbaugh, Shanesville, Ohio.

Claim.—The hereinbefore-described implement, consisting of a monkey-wrench, pincers, claw, hammer and screw-driver, when constructed and arranged substantially as and for the purpose specified.

107,791. — MUSIC-STAND. — Carl Lehnert, West Roxbury, assignor to Benjamin F. Richardson, Cambridge, Mass.

Claim.—The combination and arrangement of the folding desk *a*, as provided with the clasp *b*, running upon the screw *d*, and the rod *e* and tube *f*, in combination with the cap *g*, legs *h h h*, and clasp *k*, the whole being combined and arranged as and for the purpose specified.

107,792. — BEE-HIVE.—Joseph Leffel and Edward Harrison, Springfield, Ohio.

Claim.—A hive, the body of which is divided into two sections by a vertical plane, when the sections are hinged together, at the bottoms thereof, as and for the purposes described.

2. Fitting the comb-guides under the cross-bars of the comb-frames, as herein described and shown.

107,793. — WASHING-MACHINE. — Gottlob Lieb, Coeyman's Hollow, N. Y.

Claim.—The arrangement and combination of the wash-board C, rubber D, connecting-stud E, rod F, spring H, adjusting-nut I, and shaft G, and box A, with the uprights, connecting-rods, shafts, and gears, to give motion, as shown and described.

107,794.—APPLE-CORER AND QUARTERER.—Bernard J. McFeely, Chestnut Springs, Pa.

Claim.—The arrangement of the slide-bar E, provided with the centering-pin *c*, the cutter F, side plate *e*, sliding core-guide G, vertical pressure rod H, and spring *s*, substantially as shown and described.

107,795.—MACHINE FOR RULING AND COPYING.—Green McHenry, Louisa, Ky.

Claim.—1. The carriage C and copy-frame E, operating in connection, substantially as herein set forth.

2. The sliding guide-bar I, operating in connection with the copy-frame E, in substantially the manner described.

3. The combination of the sliding bars G and I, with their connections, substantially as described.

4. The combination of the ruler-bar G, carriage C, frame E, cords J, bar I, and gauge or scale M, substantially as shown.

107,796. — PLANTER AND DISTRIBUTER.—Duncan McKellar, Selma, Ala.

Claim.—1. The reciprocating slide F, gate V, coverer L, and roller H, combined, arranged, and operating substantially as described.

2. The suspended gate V, forming the bottom of the discharge-chamber T, when arranged and operating in connection with the slide F and spring Y, substantially as and for the purpose set forth.

3. The arms K, carrying the coverer L, and jointed to the bars J, which carry the roller H, in combination with the notches P on the handles, when constructed and operated substantially as described.

4. The cutters Q and R, in connection with the hopper and the slide, substantially as and for the purpose described.

5. The adjustable back board *e* of the discharge-chamber T, substantially as and for the purpose described.

107,797.—GRAIN-BINDER.—Daniel McPherson, Caledonia, N. Y.

Claim.—1. The cross-head D and guides *a*, in combination with the sweep-rake B, substantially as and for the purposes shown and described.

2. The plate *i*, having the sinuous slot H, in combination with the crank *g* and reciprocating cross-head D, the parts being arranged to operate substantially as and for the purposes set forth.

3. The sweep-rake B, in combination with the wire-bar I, operated conjointly by the crank C, segmental gear M, connecting-rods *e*, *s*, and *w*, and

walking-beam or bell-crank lever *f*, substantially as shown and described.

4. The hinged retaining-latch e'', in combination with the brace e', and post d, for the purposes set forth.

5. In combination with the above, the stationary tripper f'', as and for the purposes set forth.

6. The pivoted rake-bar B'', provided with the ratchet-teeth h'', in combination with the brace e', arranged to operate substantially as described.

7. In combination with the hinged brace e' and rake-bar B'', the elevating lug g'', for the purposes specified.

8. The spring latch m', having its vertical movement controlled by an irregular slot n'', in combination with the pivoted rake-bar B'', operating substantially as set forth.

9. In combination with the latch m', the tripping-dog p'', for the purposes set forth.

10. The wire-bar I, constructed and operating as described, in combination with the segmental gear M, crank C, and connecting-rod *u*, operating substantially as described.

11. The combination of the compressing arm T, wire-bar I, and rake J, arranged and operating substantially as set forth.

12. The slide R' and spring b' on the compressing arm T, in combination with the operating cord or chain d'' and spring b'', for the purposes set forth.

13. The spring latch i'', on the slide R', in combination with the incline 2 on the guide w'', for the purposes set forth.

14. The reciprocating wire-bar I, arranged to operate the twisting devices, substantially as described.

15. The friction-latch g', at the lower end of the wire-bar I, operating substantially as described.

16. In combination with the reciprocating wire-bar I, the oscillating lever B, provided with the spur f', arranged to operate substantially as described.

17. The lever B', in combination with the guide g', when arranged to act as a clamp for the wire, substantially as set forth.

18. The segmental gear C', in combination with the lever B', for operating the twister D', substantially as described.

19. The pivoted clamping jaw l', and cam w', in combination with the hook j' upon the twister, for the purposes set forth.

20. The yielding tripping-dog p', in combination with the cam n' arranged to operate substantially as described.

21. The gathering-hook *u*, in combination with the twister D', and cutter q' and r', for the purposes set forth.

22. The sheaf-discharger, composed of the revolving chain-belt u'', provided with one or more spurs y'', arranged to operate as and for the purposes set forth.

23. The combination of the wire-bar I, slide v', bent arm w', and gathering-hook u', substantially as herein set forth.

24. The automatic rocking stripper s', in combination with the reciprocating wire-bar I, for the purposes set forth.

25. The pivoted cutter or knife r', operated by the oscillating cam-plate f', substantially as and for the purposes set forth.

26. The lever G, in combination with the sliding base-plate *t* of the sweep-rake B, for the purposes set forth.

107,798.—Railway-Rail.—Richard Montgomery, New York, N. Y.

Claim.—The combination of an extended capping-plate or bar with a longitudinally-grooved or corrugated beam, substantially in the manner and for the purpose herein set forth.

107,799.—Earth-Closet.—William Harrison Newton, Newport, R. I.

Claim.—1. An earth-closet or commode, in which the discharge of earth upon the fecal matter takes place through the privy-seat, and is effected by the movement of the seat-cover or earth-receptacle, as herein shown and described.

2. The combination, with the earth-closet or commode, of a seat-cover, hinged to the same, and provided with a hopper and discharge-tube or tubes, arranged substantially as described, so that, at each raising and lowering of the cover, a certain quantity of earth in the hopper will be caused to pass through the said tube and the seat into the pan containing the excreta.

3. The combination, with the hinged earth-receptacle and seat-cover, of the hinged frame, for supporting the same when thrown back from the seat, substantially as shown and set forth.

4. A commode or dry-earth cabinet, composed of two sections hinged together, the lower section containing the pan and seat, the upper section the dry-earth receptacle and discharge-conduit for the same, the said parts being so formed that, when the commode is not in use, the upper section may be turned down so as to cover and rest upon the lower section, substantially as and for the purpose shown and set forth.

107,800.—Dyeing Furs.—Philip Norden and Hermann Mischo, New York, N. Y.

Claim.—The process, substantially as herein described, of ornamenting furs, by applying with a brush, in any desired pattern or shape, to their surfaces, suitably prepared coloring-matter, or applying a lye to the fur before laying on said matter, substantially as specified.

107,801.—Automatic Gate.—Michael Orewiler, Bucyrus, Ohio, assignor to John R. Aucherman, same place.

Claim.—The combination of the pitman D, bent lever E, shaft F, levers I, rods J, rail K, and springs S, when arranged and operating as shown and described.

107,802.—Bird-Cage.—George R. Osborn, Bridgeport, Conn.

Claim.—1. The combination of the ring and plate A B, bolt D, shells E and G, grooved ring F, and ring-nut H, when constructed and arranged as herein described, and for the purposes specified.

2. The combination of the spring-clasp P and feed-cup O, as and for the purpose specified.

107,803.—Cover for Cooking Utensils.—Luman B. Oviatt, Brooklyn Village, Ohio.

Claim.—The application to vessels used for cooking, &c., of covers of tin or other metal, as hereinbefore described, and for the purposes set forth.

107,804. — Harvester-Reel.—Charles N. Owen, Salem, Ohio.

Claim.—In combination with a harvester-reel, the coiled spring G, arranged within the shell F, the stud-shaft F', vibrating arm E, and pulleys D' D, these parts being arranged for joint operation, substantially as set forth.

107,805. — Water-Wheel.—Ezra Parker, Beverly, Ohio.

Claim.—The inductor A, to be used in combination with any water-wheel of the kinds hereinbefore mentioned, substantially as and for the purpose hereinbefore set forth.

107,806, antedated September 21, 1870.—Heating Stove.—Nathan Parrish, Kalamazoo, Mich.

Claim.—1. The combination of the outer shell or casing E, the inner chamber or cylinder C, top-plate H, provided with boiler-holes, flues E E, and flues D, substantially as and for the purpose set forth.

2. The removable plate H, provided with boiler-holes, in combination with chamber C and shell or casing E, substantially as set forth.

107,807. — Hoisting-Machine. — Nathan Parrish, Kalamazoo, Mich.

Claim.—1. The combination of the frame, the shafts, and gearing, and the lazy-tongs, the latter connected to cross-bar B by means of staple and double-joint, to the shafts H and I by means of straps or chains attached to levers F F, the whole arranged as and for the purposes set forth.

2. The extension of the two bars of the lazy-tongs to any desirable length beyond their attachment with the next two bars below, said bars serving as levers, substantially as and for the purposes set forth.

107,808. — Saw.—John Phillips, Chicago, Ill.

Claim.—The removable planing-bits E and blocks F, in combination with the circular-saw plate A, substantially as herein described, for the purpose specified.

107,809, antedated September 24, 1870.—Manufacture of Illumination Gas.—Erasmus A. Pond, Goldsbury H. Pond, and Mark S. Richardson, Rutland, Vt.

Claim.—1. A pipe, descending and terminating in the bath of fused metal or metals, for the purpose of conducting and conveying steam into the bath of fused metal, for the purpose of superheating and decomposing the steam, to mix and unite with the gases generated in the retort.

2. Mixing steam with illuminating gas, by means of a metal bath, in the process of generation in the retort, substantially as described, for the purpose set forth.

107,810. — Manufacture of Friction-Match Cigar-Lighter.—William Porter, St. Stephen, Canada.

Claim.—The composition above described, prepared and applied substantially as and for the purpose set forth.

107,811. — Liquid for Galvanic Battery. — Emil Prevost, New York, N. Y.

Claim.—A liquid for electric batteries, made of the ingredients herein set forth, and mixed together in about the proportion above described.

107,812.—Bedstead-Fastening. — Calvin D. Purdy, La Porte, Ind.

Claim.—The socket-piece D, having the beveled end or key-seat *s*, in combination with the semi-cylindrical key *s*, as set forth.

107,813.—Spring-Hinge for Door, &c.—Andrew Rankin, Philadelphia, Pa.

Claim.—1. The combination, with the chain I and spring G of the recessed plate E, its plate *b* carrying rollers *f f*, slotted plate F, and plate D, and its detachable bar J, extending into the slotted plate F, as set forth.

2. The two rollers *f f*, arranged on a detachable plate adapted to the plate E of the hinge, as set forth.

107,814.—Car-Coupling.—Bennett R. Rose, Kansas City, Mo.

Claim.—The arrangement of the recessed drawhead A A^1, coupling-pin or block B, spring B^1, stop B^2, button B^3, yoke C', and apron C, all arranged to operate as shown and described.

107,815. — Manufacture of Asphaltic Composition for Pavement, Road, &c.—Albert Ruttkay, New York, N. Y.

Claim.—The composition of gravel, or broken and pulverized stone mixed, litharge, chalk, and linseed-oil, as herein set forth, for paving or roofing-material.

107,816.—Vapor-Generating Burner for Stove.—Daniel Edward Ryan, St. Louis, Mo.

Claim.—1. The generating-chamber A A, as located, attached to the outer edge, and forming, in one piece or casting, an inseparable part of the plate C C.

2. The bent tube F, as located, in connection with the generating-chamber A A, plate C C, and the combined drip-cup and nipple E E, all constructed in the manner shown and described, and for the purposes set forth.

107,817. — Kitchen-Boiler. — William B. Scaife, Pittsburg, Pa.

Claim.—A new article of manufacture, viz., a kitchen-boiler, with the ends or top and bottom constructed of wrought-iron, and each forming a section of a sphere, substantially as herein described, and for the purpose set forth.

107,818.—Saucepan. — Fridolin Schifferle, St. Louis, Mo.

Claim.—The saucepan or kettle herein described, having the removable earthen vessel A, secured in the sheet-metal jacket B, in the manner and for the purpose shown.

107,819.—Spring-Hinge for Door, &c.—Albert F. Schiffling, Evansville, Ind.

Claim.—The section A with its tube *d*, flanges d^1 d^2, and pin *a*, in combination with the section B and its cam B', and with the sliding plate C, operated by a spring, as set forth.

107,820.—Stone-Working Machine.—Carl Friedrich Schlickeysen, Berlin, Prussia.

Claim.—1. The combination of the slide K, the revolving toes *d*, and sledges H, carrying their cutters *c*, substantially as specified.

2. The combination of the independently-adjustable sliding boxes *h*, which carry the revolving toes or shaft operating the same, with the slides K and the sledges H, essentially as described.

107,821.—Refrigerator.—Samuel R. Scoggins.—Baltimore, Md.

Claim.—A refrigerator, constructed substantially as described; that is to say, having the double case of metal, *n*, composed of the cases *j* and *k*, provided with the downwardly-converging bottoms *h* and *j*, the pipes *i* and *l*, and partitions *o*, the frames *p*, one or more chambers *q*, and the inclosing wooden case *a*, provided with holes *b* and *c*, all constructed and combined substantially as and for the purpose hereinbefore specified.

107,822.—Extension Ladder.—John William Scott, Philadelphia, Pa.

Claim.—The sections A B, &c., sliding one within the other, and guided by pins *c* projecting into longitudinal slots or grooves, as described, in combination with bars *f*, against which the rear edges of all the sections bear, as set forth.

107,823.—Grain-Binder.—Gilman A. Scribner, Rochester, N. Y.

Claim.—1. A band-twister, composed of the cylinders B and D, constructed and arranged to operate substantially as described.

2. The revolving cylinder B, provided with clamps *l* and *m*, for holding the ends of the band, and a knife for severing the same, all the parts being constructed to operate substantially as and for the purposes set forth.

3. The segmental gear C and pinion *f*, in combination with the reciprocating band-carrier A, when arranged to operate conjointly with the twisting-cylinders B and D, for the purposes set forth.

4. The hollow reciprocating band-carrier A, in combination with the twisting-cylinders B and D, operating substantially as set forth.

107,824.—Shield for Gas-Burners.—Ira W. Shaler, Brooklyn, N. Y.

Claim.—1. An adjustable shield, of glass, or other transparent or translucent material, having its body and upper edges, or top, shaped as herein

shown and described, in combination with a gas-burner, substantially as and for the purposes set forth.

2. An adjustable shield, for gas-burners, having its body and upper edges, or top, shaped as herein specified, and its sides made convex upon their inner and outer surfaces, as and for the purposes shown and set forth.

107,825. — STOVE-PIPE SHELF. — James H. Shaut, of Andover, N. Y.

Claim.—In combination, the adjustable collar B, shelf A, and brace D, when used in the manner and for the purposes herein described and shown.

107,826. — LUBRICATOR. — Levi F. Smith, Philadelphia, Pa.

Claim.—1. The combination of the bowl A, cup B, standards C C, and base E, with strainer G, passages *a a*, and valve-seat *d*, all constructed and arranged substantially as and for the purposes herein set forth.

2. The arrangements of the hollow screw H, with cap I, stem *e*, and valve *b*, all substantially as shown and described.

3. The hollow sleeve P, provided with valve *m*, wrench R, and lever S, and used in combination with the stem J and rock-shaft D, substantially as and for the purposes herein set forth.

4. The combination of the disk L, lugs *h h*, handle M, nut N, cap O, and rim *m*, all constructed and arranged substantially as and for the purposes herein set forth.

5. In combination with the hollow sleeve P and lever S, the finger *p* and graduated edge of the cup B, substantially as and for the purposes herein set forth.

6. The combination of the valve-chamber or box V, with two valve-seats opposite each other, as described, double valve *s*, stem *t*, and nut *v*, all constructed and arranged to operate substantially as and for the purposes herein set forth.

7. The combination of the bowl A, base E, tubes T T, valve-chambers V V, with their seats and double valves, and the gauge W, all constructed and arranged substantially as and for the purposes herein set forth.

107,827. — SHOVEL. — William H. Smith, Jackson, Pa.

Claim.—The herein-described construction of the shank A, edges *a b*, and socket *d*, with the blade C, having the shoulders *f f* where it is inserted in the groove in the flattened end of the shank, and secured together by the rivet *e*, all as shown and described.

107,828.—PLOW.—Cyrus Snyder, Middletown, Ill.

Claim.—The combination of the shovel C C, slotted rod D, nuts *a a*, and bolts *d d*, substantially as and for the purpose specified.

107,829.—GANG-PLOW.—Naaman Spencer, Jr., Eagle Point, Ill.

Claim.—1. In a gang-plow, the vibrating platform C, in combination with draft-beam or plank E, bolt-standards *c'*, and adjusting-nuts, substantially as set forth.

2. The combination of the adjustable draft-beam E, disk-coulters H, standards H^1, and draft-rods I, substantially as set forth.

3. The combination of the coulters H, standards H^1, connecting-rod H^2, and draft-rods I, substantially as set forth.

107,830. — DEVICE FOR ACTUATING THE VALVE OF FLUID-METER.—D. Brainerd Spooner, Syracuse, N. Y.

Claim.—1. The combination of the yoke *b* and arms *c c*, when permanently united, so that the arm shall not only move the yoke, but hold said yoke to the valve-plate, and prevent it from rising, substantially as and for the purpose described.

2. The combination of the compressible washer or spring *a* with the yoke *b* and arms *c c*, as and for the purpose specified.

3. The arrangement of the spindle and roller *e* entirely within the frame of the yoke, substantially as hereinbefore described.

4. The friction-rollers *g g*, in combination with the spindle *f* and roller *e*, as and for the purposes specified.

5. The partition *b''*, in the valve-seat, in combination with the valve A, as and for the purposes set forth.

6. The projections *a a*, in combination with the valve A, constructed as and for the purposes specified.

7. A flexible partition separating the arm-port from the measuring-chamber, substantially as herein described.

107,831. — CORPSE-PRESERVER. — Samuel Stockton and John Schepler, Lambertville, N. J.

Claim.—1. The cooling-board C, when adjusted by means of screws D D, substantially as and for the purpose set forth.

2. The combination of the head-rest E, foot-rest G, cooling-board C, and screws D D, substantially as and for the purpose described.

107,832. — HORSE HAY-RAKE.—Joshua C. Stoddard, Worcester, Mass.

Claim.—1. The combination, with the axle, rake-head, and clearer finger-bar, of the open bearing-arms or supports for the rake-head, finger-bar, and clearing-fingers, when the same are constructed, arranged, and applied as herein shown and described.

2. The arrangement, with relation to the shaft G, of the lever J and the spring S, and pin L, whereby the engagement and disengagement of the gearing are effected.

3. The combination and relative arrangement, with the main frame and supporting-wheels of the driver's seat, the rake-head, open bearing-arms, supporting the rake, the clearers, shaft G, lever J, and connections R V, all being constructed and arranged with relation to each other, and for the purpose set forth.

4. The combination, with shaft G and pin L, of spring S, made in the form and applied in the manner described

5. The combination of the rake hinged behind the axle, the open bearing-arms or supports for the rake and clearing-fingers, and the operating mechanism, composed of the shaft G, with arm R, connecting-rod V, gear C, attached to wheel B, toothed wheel F, recessed rim-wheel *w*, spring S, pin L, with roller *s* and the treadle J, all constructed and arranged to operate substantially as herein shown and described.

107,833, patented in England, August 6, 1869.—SEPARATING ANIMAL FROM VEGETABLE FIBERS.—James Stuart, London, England.

Claim.—The process of separating animal from vegetable fibers, by the destruction of the latter by means of a solution of chloride of aluminum, obtained substantially as described.

107,834. — MILK-PAIL. — Church Tabor, Craftsbury, Vt.

Claim.—1. A funnel, having the lowest end of its tube closed, and the sides of the tube provided with one or more strainers, substantially as and for the purposes herein set forth.

2. The combination of the spring G and ratchet-bar H, when constructed and used on a milk-pail, substantially in the manner and for the purposes herein set forth.

3. The combination of the pail A, lid B, inverted funnel C, with ratchet-bar H, funnel E, tube D, having its lower end closed, and its sides provided with one or more strainers, and the spring G, all substantially as and for the purposes herein set forth.

107,835.—LANTERN.—Church Tabor, Craftsbury, Vt.

Claim.—The hooks D D and adjustable bars E E, with bumpers G G, constructed and arranged substantially as and for the purposes herein set forth.

107,836. — PAPER-FILE. — Church Tabor, Craftsbury, Vt.

Claim.—A paper-file, constructed of one piece of metal or wire, so bent as to form the arms *d c*, loop *a*, and prong *c*, substantially as described.

107,837.—CAR-COUPLING.—George B. Terry, Pittsford, and Warren G. Hawley, Gorham, N. Y.

Claim.—The toggle *c* and spring *s*, combined with the lever D, chain or cord E, pulley C, and coupling-pin G, the whole arranged as described, and operating in the manner and for the purpose specified.

107,838. — WATER-PIPE. — John F. Ward, Jersey City, N. J.

Claim.—As a new article of manufacture, a wood-lined metal pipe, as set forth.

107,839. — MEAT-HOOK.—Samuel Weaver, Pottstown, Pa.

Claim.—The hereinbefore-described meat-hook, consisting of the disks A and E, the jaws C and C', the screws D and F, and the hooks G, constructed and arranged substantially as and for the purpose shown.

107,840. — STEAM-GENERATOR. — William Weston, William R. Weston, Nathaniel Weston, and Burt Brett, Stevens' Point, Wis.

Claim.—1. In combination, the horizontal tubes F and vertical tubes G, surrounding the fire-box, and disposed in front, rear, and intervening sections, substantially as described.

2. In combination with the foregoing, one or more series of horizontal tubes F', forming combustion-chambers or a serpentine flue, substantially as described.

3. In combination with the foregoing, the metallic inclosure, constructed substantially as and for the purpose set forth.

107,841.—PUMP-VALVE.—James T. Whipple, Chicago, Ill.

Claim.—Facing C, when composed of any elastic substance and applied to the inclined or curved surface of the metal portion of valve A, substantially as and for the purpose specified.

107,842.—CARDING-MACHINE TOOTH.—William H. Whiting, Willington, Conn., assignor to himself and Marcus M. Johnson.

Claim.—A carding-machine tooth, having its points flattened and hardened back to or about to the bend *a*, and its body or crown cylindrical, substantially as and for the purpose set forth.

107,843.—HARNESS SADDLE-TREE.—Philip H. Wiedersum, New York, N. Y.

Claim.—The hook C, having a square socket on the upper side of its shank, and fitted into the plate A, as described, in combination with the countersunk screw and nut D, fitted to the plate B, in the manner set forth.

107,844, antedated September 17, 1870.—ANIMAL-TRAP.—John J. Wood, North Manchester, Ind.

Claim.—The combination and arrangement of the compartments A B C, bottom D, treadle E, rod G, casing I, flue L, door K, and gates H J M, all constructed as described, substantially as and for the purposes herein set forth.

107,845.—WHIP-SOCKET CLASP.—Alva Worden, Ypsilanti, Mich.

Claim.—As a new article of manufacture, the whip-holder clasp *a g b*, made separate from the socket, as herein set forth.

107,846. — WOOL-WASHING MACHINE.—John Yewdall and William Yewdall, Philadelphia, Pa.

Claim.—1. In a wool-washing machine, the combination of a rake, operating substantially as described, with a revolving cradle, having any appropriate number of ribs and concavities, when the movement of the rake and cradle are so timed that the former will move a mass of wool into each concavity of the latter, as herein set forth.

2. The cradle H', so suspended and arranged in respect to the rollers that, as it revolves, it will receive a swinging or vibrating motion, as described.

3. The roller D, arranged with its bearings below the surface of the water, and operating, in combination with the cradle, substantially as described.

4. The combination of the rake M, revolving and vibrating cradle H', and rollers D and D', the whole operating substantially as described.

5. The perforated partition B, arranged in respect to the fork M, cradle H', and roller D, as set forth.

107,847, antedated September 26, 1870.—MACHINE FOR CUTTING STONE.—Hugh Young, Middletown, Conn., and James L. Young, New York, N. Y.

Claim.—1. The improved tool for cutting stones, consisting of the combination of the twin cutters B B', the debris-plows C^1 and C^2, and the blade A, arranged so as to operate substantially in the manner and for the purpose set forth.

2. The debris-plow C, constructed so as to straddle and be hung to the blade A in such a manner as to plow through the cut and push before it any debris left in the said cut when moving outward, while in moving in the opposite direction it will ride over any such debris, or other impediment, substantially in the manner herein specified.

107,848, patented in England, April 6, 1870.—MANUFACTURE OF ILLUMINATING GAS.—William Young, Magdalen Bridge, and Peter Brash, Leith, Scotland.

Claim.—1. The manufacture of illuminating gas, as herein described, from the tar or tars resulting from the purification of paraffine and such like hydrocarbon oil.

2. The manufacture of illuminating gas, as herein described, from the acid and alkaline tars resulting from the purification of paraffine, and such like hydrocarbon oil, mixed together and treated, substantially as set forth.

3. The manufacture of illuminating gas, as herein described, from a compound of coal or other substance yielding gas of low illuminating power, and the tar or tars resulting from the purification of paraffine, or such like hydrocarbon oil.

REISSUES.

4,129.—TANNING AND STUFFING LEATHER. William B. Brittingham, La Fayette, Ind.—Patent No. 98,916, dated January 18, 1870.

Claim.—1. In the process of stuffing leather, the use of a compound composed of glycerine and tallow, with or without any of the fixed oils, substantially as set forth.

2. The process of tanning and stuffing leather herein set forth, by first treating the raw hides with a compound, composed of the ingredients and in the proportions specified, and afterward stuffing the tanned hides by another compound, composed of such ingredients as herein described.

4,130.—COPPER-MILL.—Thomas W. Brown, Boston, Mass., assignor to Charles Parker, Meriden, Conn.—Patent No. 105,545, dated July 19, 1870.

Claim.—The combination of the base B and runner-chamber C, cast in one and the same piece of metal, with the vertical runner F, either with or without the hopper E.

4,131.—LUBRICATOR.—Henry A. Daniels, Waterbury, Conn., assignor to the Daniels, Nichols & Gaylord Manufacturing Company, same place.—Patent No. 92,283, dated July 6, 1869.

Claim.—The conical valve D, constructed, as described, upon the upper end of the stem *a*, in combination with the adjustable shank B, carrying the oil-cup, whereby, when the shank B is sufficiently elevated above the journal-box, the valve is seated, and the supply of oil cut off, substantially as herein shown and described.

4,132.—FURNACE FOR ROASTING ORES.—Edward P. Hudson, New York, N. Y., assignor to the Hudson Ore-refining Company.—Patent No. 78,456, dated June 2, 1868.

Claim.—1. An ore-roasting furnace, constructed so as to introduce air in excess of that required for the combustion of the fuel, but regulated in quantity, into the ore, through the fire-chamber or chambers, over the fire or fires, so as to be heated thereby before passing through the ore, substantially as herein specified.

2. Introducing air in excess of that required for combustion, but regulated in quantity, into the ores, through the fire-chamber or chambers, over the fire or fires, so as to be heated thereby before passing through the ores, substantially as herein specified.

3. In ore-roasting furnaces, one fire-chamber, arranged higher than the other, or another, substantially as and for the purpose herein specified.

4. An ore-roasting furnace, constructed to admit air through or at the bottom of the roasting-chamber, so as to hasten the cooling of the ore already roasted, and to be itself heated thereby, for the purpose herein set forth.

4,133.—REIN-HOLDER FOR CARRIAGES.—Elias C. Patterson, Rochester, N. Y.—Patent No. 62,879, dated March 12, 1867.

Claim.—A rein-holder, constructed of spring wire, having elastic jaws A B, for clasping the reins between them, and capable of attachment to the dasher in any suitable manner, substantially as specified.

4,134. — COMPOSITION FOR COVERING STEAM-BOILERS, STEAM-PIPES, &c. — John Riley and Charles W. Bissell, Troy, N. Y., assignors, through mesne assignments, to the United States and Foreign Salamander Felting Company, same place.—Patent No. 95,517, dated October 5, 1869.

Claim.—1. A composition or cement, composed of lime-putty, combined as described, with the ingredients herein named, or their equivalents, when used for the purposes specified.

2. A composition or cement, composed of paper-pulp, made in the manner set forth, combined as described, with the ingredients herein named, or their equivalents, when used for the purpose specified.

3. A composition or cement, composed of lime-putty, combined as described, with paper-pulp or other suitable fibrous non-conducting material, and with the other ingredients herein named, or their equivalents, when used for the purposes specified.

4. The employment of lime-putty, when combined with paper-pulp, or any other suitable fibrous non-conducting substance, as a material for preventing radiation from heated surfaces, or as an ingredient in any composition used for such purposes.

4,135.—MILLSTONE DRESS.—Joseph Sedgebeer, Painesville, Ohio. — Patent No. 35,858, dated July 8, 1862.

Claim.—1. In a dress for grinding-plates, radial lines of hollow teeth, having points *c* and cutting-edges *b* oblique to the radii of the plate, and so arranged as to provide continuous radial zigzag channels for the passage of the grain, substantially as specified.

2. In a dress for grinding-plates, the continuous zigzag channels *d*, bounded by cutting-edges *b*, oblique to the radii of the grinding-plate, substantially as specified.

4,136.—SOLAR CAMERA.—W. H. Masters, Princeton, Ill.—Patent No. 59,917, dated November 20, 1866.

Claim.—1. A camera-stand, constructed with three independent adjustments, for the purpose of enabling the instrument to follow the path of the sun by a single motion, substantially as shown and described.

2. The adjusting-screws *d* and *h*, the disks *c* and *e*, and the pivots *a* and *b*, in combination, substantially as and for the purpose set forth.

3. The shielding cone *v* and diaphragm *w*, or their equivalents, between the lenses *t* and *u* of a solar camera, for the purposes set forth.

4. The indicator E', arranged and operating, in connection with a gauge-mark, F', as and for the purpose set forth.

DESIGNS.

4,361. — BLOWER-HOLDER.—Frederick W. Brocksieper, New Haven, Conn., assignor to Sargent & Co., same place.

Claim.—The design for blower-holder, as shown.

4,362.—FIRE-SET HOLDER.—Frederick W. Brocksieper, New Haven, Conn., assignor to Sargent & Co., same place.

Claim.—The design for a fire-set holder, as shown.

4,363.—FIRE-DOG.—Frederick W. Brocksieper, New Haven, Conn., assignor to Sargent & Co., same place.

Claim.—The design for a fire-dog, as shown.

4,364.—DOOR-PULL.—Frederick W. Brocksieper, New Haven, Conn., assignor to Sargent & Co., same place.

Claim.—The design for door-pull, as shown.

4,365. — COOK-STOVE.—Henry H. Culver, Kansas City, Mo.

Claim.—The design for a cook-stove, as shown.

4,366.—CORSET.—David H. Fanning, Worcester, Mass.

Claim.—The design for a corset, as shown and described.

4,367.—CORSET.—David H. Fanning, Worcester, Mass.

Claim.—The design for a corset, as herein shown and described.

4,368.—FIGURE OF A MECHANICAL TOY.—William C. Goodwin, Hamden, Conn.

Claim.—The design for figures for mechanical toys, as described and shown.

4,369.—MECHANICAL TOY FIGURE.—William C. Goodwin, Hamden, Conn.

Claim.—The design for figure for mechanical toys, as described and shown.

4,370.—FIGURE OF A MECHANICAL TOY.—William C. Goodwin, Hamden, Conn.

Claim.—The design for a figure for mechanical toys, as described and shown.

4,371.—CRADLE-PLATE OF GATE-LATCH.—Job Johnson, Brooklyn, N. Y.

Claim.—The design of the shape and configuration of the cradle-plate, substantially as shown.

4,372.—BADGE.—William Riker, Newark, N. J.

Claim.—The design for a badge, containing a shield, which projects from the back, as shown.

4,373.—PUNCH-DRAWER.—Alonzo Hovington Rowe, Newburyport, Mass.

Claim.—The design for a punch-drawer, as shown.

4,374.—STOVE-PLATE.—Nicholas S. Vedder and Francis Ritchie, Troy, N. Y., assignors to Nicholas S. Vedder.

Claim.—1. The compound central ornament A, as herein described and shown.

2. The design for the open-work cover B, as shown.

3. The design for the lower top plate C, as shown.

4. The ornamentation of the lower upright section D by the figures and moldings *e f g*, as shown and described.

5. The form and configuration of the raised and inclined ash-pit cover H, as shown.

6. The design for the foot I, as shown.

ISSUE OF OCTOBER 4.

PATENTS.

107,849.—COOKING-RANGE.—James Albee, Chelsea, assignor to Moses Pond & Co., Boston, Mass.

Claim.—1. The arrangement and combination of the diving-flues L L, the partitions M M and K K, the horizontal flues D H, and the vertical flues I I and G, disposed relatively to the two ovens E F, in manner substantially as explained.

2. The arrangement and combination of the flue N, the diving-flues L L, partitions M M and K K, the horizontal flues D H, and the vertical flues I I and G, disposed relatively to the two ovens E F, in manner substantially as explained.

3. The arrangement and combination of the valve O, with the two ovens E F, and the flues I I, D G, H L, and the partitions M M K K, disposed with the said ovens, as explained.

4. The arrangement and combination of the valve *d*, and its escape opening or openings *b*, with the two ovens E F, the flues N, H, and D, the flues I I, and the diving-flues L L, the whole being as specified.

5. The arrangement and combination of the opening *g* and door A, with the two ovens E F, and the flues I I, D, G, H, L, and N, arranged with the ovens, as explained.

107,850.—FEED-WATER HEATER.—Harrison Anderson, Peoria, Ill.

Claim.—1. The combination of the troughs H H, &c., with the shallow heating-troughs K K, &c., as arranged, and substantially as and for the purpose described.

2. In combination with the troughs H H, &c., and the heaters K K, &c., the float F acting on the cut-off valve *b* in the induction water-pipe E, substantially as described.

3. The combination of the box B, with its tray B, with the troughs H H, &c., and heating-troughs K K, &c., the shells A A A A, with ledges *m m*, steam induction-pipe C, water induction-pipe E, and its valve *b*, float F, lever *g*, axle *h*, lever *f*, rod *i*, and lever *o*, and water eduction-pipe D, all substantially as described.

107,851. — PAPER-FEEDING APPARATUS. — John T. Ashley, Brooklyn, E. D., N. Y.

Claim.—1. A suction-box, G, provided with fingers *n n*, which has both a vertical and horizontal movement, and is constructed to pick up the sheets itself and afford a continued support across the whole width of the box and fingers, such box being adapted for application to the extremities of a flexible tube of a suction apparatus, substantially as described.

2. In a paper-feeding machine, constructing the suction-box with flexible sides, which allow the bottom of the box a freedom to rise and fall independently of the top thereof, so as to accommodate its under surface to the surface of the paper, substantially in the manner described.

3. The suction-box, or pneumatic picking-up device, made with a jointed bottom, R R, or the equivalent thereof, the ends of which are capable of rising, while its intermediate or central portion remains in a given position, substantially in the manner described.

4. Frictional stripping-devices, formed of a series of fingers arranged one above another on a paper-feeding machine, at the sides, or both at the sides and front thereof, substantially as described.

5. In a paper-feeding machine which has a vertically and horizontally-guided suction-box, or pneumatic picking-up device, a combination of mechanism which will, in imparting to said suction-box or pneumatic picking-up device, the vertical and horizontal movements, allow said box or picking-up device to remain stationary for a short period, substantially as and for the purpose set forth.

6. The picking-up fingers, extending out from the suction-box, in combination with annularly-grooved feed-rollers H H, or their equivalents, substantially as described.

7. Diagonally-arranged pushing-devices, applied above the feed-table, substantially as described.

8. A suction-box, which itself picks up the sheets, supported directly upon vertically-movable sashes S S, and applied directly to horizontal guides F, which are upon the vertically-movable sashes, substantially as described.

107,852.—DIAPHRAGM STOP-COCK.—William E. Banta, Springfield, Ohio.

Claim.—In combination with the body of a stop-cock, a spring metal diaphragm, externally applied thereto, forming a cover to the interior parts, and secured to the periphery of the body, or exterior, so that, by the action of the thumb-screw, it may be made to close and open the passage through the cock, substantially as and for the purpose described.

107,853. — GAS-CARBURETER. — John L. Bartlett, Stockton, assignor for one-half his right to William Biven, San Joaquin county, Cal.

Claim.—1. The fan-blower D, consisting of two cylinders connected by spiral channels *m*, open to the air at one end, and discharging the air into the interior cylinder at the other, constructed as and for the purpose described.

2. In gas-machines, the floats K, arranged in air-receiving chambers A B, as and for the purpose specified.

3. The air-receiving chamber N, having radial perforated arms O arranged in the hydrocarbon chamber A, as and for the purpose described.

107,854.—PROCESS FOR SEASONING LUMBER.—Henry H. Beach, Rome, N. Y.

Claim.—The process, which consists in subjecting of lumber to the action of steam under a pressure, and for a time sufficient to produce the results, substantially as hereinbefore set forth.

107,855.—Handle for Milk-Can.—Alvin C. Beekwith and George H. Graham, Oriskany, N. Y.

Claim.—The plate B *b* and handle A *c*, with the shaft and hoisting-eye *a* D, all constructed and arranged as and for the purpose herein described.

107,856.—Grain - Separator.—Frederick A. Begole, Jackson, Mich.

Claim.—In the grain-separator herein shown, the improved arrangement of parts, consisting of the frame-work A, the fan-shaft rotated by the gear B, the pinion C, the crank-shaft D and pinion D', the pitman E, the shoe F, the feed-slide G, the hopper H, the chess-board I, the screen J, the shoe K, the screen-frame L, straps *a a'*, and link *b*, bell-crank *c*, and rod *d*, the case L', and spout *e*, the screens M and N, and grain-drawer O, when arranged in the manner and for the purpose herein shown and described.

107,857.—Corn-Planter.—Henry C. Beahler, Berrysburg, Pa.

Claim.—1. The hollow drums C, for dropping the seed, constructed and connected with the shaft D, substantially as herein shown and described, and for the purpose set forth.

2. The combination of the shield or guards F G with the hollow drums C, hopper H, dropping-drums C, and conductor-spouts H, substantially as herein shown and described, and for the purpose set forth.

3. The combination of the spring J with the inner shield or guard G and hollow dropping-drum C, substantially as herein shown and described, and for the purposes set forth.

107,858.—Roll for Crushing and Pulverizing-Machine.—Edward S. Blake, Pittsburg, Pa.

Claim.—The combination, in the rolls for crushing and pulverizing-machines, of the body A and surface C, when secured by a filling, B, substantially as herein described, and for the purpose set forth.

107,859.—Snap-Hook.—David J. Blasir, Western, N. Y.

Claim.—The combination, with the hook, provided with the shank B and rivets E, of the spring D and clasp F, all substantially as specified.

107,860. — Grain and Seed-Cleaner.—Newton M. Bowen, Knightstown, Ind.

Claim.—1. The screen-frame E, carrying screens *f f' f''*, in combination with the notched support *g* *g'*, wheel A, and notch *h'*, and spring *n*, substantially as and for the purpose specified.

2. The screen-frame E and screens, when supported and operated in the manner specified, in combination with fan C, as and for the purpose described.

3. The screen-frame E and screens, when supported and operated in the manner described, in combination with the canvas apron *l*, for the purpose specified.

107,861.—Circular-saw Mill.—William Bowman, Etna Green, Ind.

Claim.—In arranging a circular-saw mill for loading and turning logs on a carriage, the combination of the shaft O, pulleys U Y, friction-roller E, drum R, wheel G, rod *p*, lever T, adjustable sheave-block B, and rope F, as set forth.

107,862.—Combined Plow and Harrow.—James F. Braucher, Lincoln, Ill.

Claim.—The arrangement, in a combined plow, harrow, and marker, of the central frame D, wings A, axle-tree G, wheels I I I, forked standard F, posts H H and C, lever E, shovels K K, and teeth L, operating as described.

107,863. — Slide-Valve. — George Bailey Brayton, Boston, Mass.

Claim.—The combination, with the slide-valve and recess or well formed in the same, of the plunger fitting said recess, the shaft G, or other device for supporting the plunger, as described, and the central plates or rocking bearings H, said parts being arranged for joint operation within the valve-chest, as shown and set forth.

107,864. — Manufacture of Boots and Shoes.—William N. Brookhouse, West Danvers, Mass.

Claim.—1. The duplex sole, as composed of the larger and lesser sole-pieces A B, placed one on the other, cemented together, and having their edges arranged in parallelism, as set forth.

2. As an improved manufacture, a shoe as made, with its vamp arranged and combined as explained, with a duplex sole, made as described.

107,865. — Reed-Setting Machine. — Joseph Browning, Philadelphia, Pa.

Claim.—1. The slide *e* and feed-bar *f*, or their equivalents, combined and operating as described, to remove a split from an old reed and place it between the ribs of a new one.

2. The stops *p p'*, cam *s'*, and rack P, or their equivalents, for actuating the clamping-piece *q'*, substantially in the manner and for the purpose set forth.

107,866.—Manufacture of Salt.—Joseph R. Buchanan, Louisville, Ky.

Claim.—1. The process of the production of salt from brine by high-pressure concentrators, and the combination therewith of low-pressure evaporators, constructed substantially as described.

2. The evaporation of brine, for the production of salt, in high-pressure boilers, at temperatures between 300° and 600° Fahrenheit, and the transmission of the caloric, by successive evaporations and transfers, from these high temperatures down to temperatures below 150° Fahrenheit.

3. The construction of the vertical boilers and vertical system of tubing in combination, substantially as described, to produce rapid and unobstructed evaporation of brine.

4. The construction of the purifier and its associate parts substantially as described, whereby to produce the removal of the sulphate and carbonate of lime at the temperature of about 300° with but a small expenditure of heat.

5. The construction of the evaporators, substantially as described, with interior steam-tubes and exterior steam-spaces, to produce evaporation.

6. The combination of brine-pumps with the high and low-pressure salt-boilers, in such a manner as to inject the brine automatically by the same movement which removes the water of condensation, substantially as described.

7. The combination, with the low-pressure evaporator, or with the high-pressure boiler, which evaporates by heating-tubes, but may be promptly relieved of its pressure, of a detachable salt-carrier, connected by a sliding joint, and moving on wheels, substantially as described.

8. The use of purified petroleum-tar, and its combination with alkalies or their equivalents, as a medium for transmitting heat from a furnace to a boiler.

9. The combination of a pressure-chamber with a system of high-pressure and low-pressure brine-boilers, substantially as and for the purposes described.

10. The reduction of superheated brine-vapor in a condensing steam-heater to saturated steam by forcing it through the water of condensation, and the combination of the metallic diaphragm *m d*, or any equivalent device, with the condensing-vessel to effect that object.

11. The use of high-pressure steam-condensing tubes, and the combination of a series thereof, to produce successive evaporations of brine by transfer of the same caloric at temperatures above the ordinary boiling point.

107,867.—Casting Valve-Chamber and Seat.—John K. Burke, Rochester, N. Y.

Claim.—The method of casting the shells of valve-chambers by means of a core, upon which is placed an annular metallic seat or seats, to be left in such shells, for the purposes set forth.

107,868. — Hoisting Apparatus. — Levi Burnell, Milwaukee, Wis.

Claim.—The arrangement of the counterpoise weight E, cord C, pulley D, ladder A, and hod-car B, all constructed as shown and described, for the purpose specified.

107,869.—Nursery Footstool.—Levi Burnell, Milwaukee, Wis.

Claim.—A nursery stool, composed of the base-plate A, and top D, hinged together, provided with the springs, and all arranged substantially as specified.

107,870.—Hose-Bridge.—Walter E. Cameron, Taunton, Mass.

Claim.—In a hose-bridge, an opening on the top, provided with a hinged cover, for the reception of a hose, substantially as described and shown.

107,871.—Wrench.—Daniel Campbell and William Saul, Elizabeth, N. J.

Claim.—1. As an improvement in adjustable wrenches, making the body of the wrench hollow, thereby reducing the weight, and providing a receptacle for oil, lead, &c., substantially as herein described.

2. The arrangement and combination of the ferrule F, for the handle, and the socket E, for the screw, in two parts, substantially as and for the purpose described and specified.

3. The combination and arrangement of the stem A, provided with rib *b*, jaw B, screw *d*, socket E, ferrule F, and washer *f*, fitting the groove in the shank *g*, substantially as described and specified.

107,872. —Saw-Filing and Setting-Machine.—Hiram D. Chance and Daniel Rishe, Llewellyn, Pa.

Claim.—1. The edge-beveled guide-plates G G, placed on top of and combined with the jaws A A in a saw-filing machine, as and for the purpose described.

2. The slide-rest H, working loosely on guide-plates G, and having yokes M M combined with treadle-hooks N, as and for the purpose described.

3. The plate V L, perforated at several points, and the movable lug L', combined as described, with the centers and handles, to adapt the device to a greater or lesser length of file.

4. The combination, with the above, of the bridge I, pawl A', screw E', and jam-nuts F', all substantially as specified.

5. The combination, with the holder O, of the adjustable bearings R and clamping-screws S, substantially as specified.

6. The combination, with the clamping-bars A and gauge-plates G, of the slide-block or rests L'' K, and the lever *a*, all arranged substantially as specified.

7. The combination, with the block L'', of the spring *i*, substantially as specified.

107,873.—Vise.—Julius Chavanne, Porrentray, Switzerland.

Claim.—The vise, constructed as described, viz., with the adjusting screw-bolts E E' and nuts *n a*, the rotary shaft *c*, the eccentrics *d d*, or such and the handle *i*, and the jaws A C, arranged and combined substantially in manner and so as to operate as set forth.

107,874.—Stove-Leg.—Stillman E. Chubbuck, Boston, Mass., assignor to himself, Isaac Y. Chubbuck, and Stillman E. Chubbuck, Jr., copartners, same place.

Claim.—The construction of stoves and their legs or feet, with the hooked lug *e* or *i*, and the wrist *b* or *f*, arranged in combination, to operate substantially as and for the purpose set forth.

107,875. — Machine for Drilling Carriage-Shackles. — James B. Clark, Plantsville, Conn.

Claim.—The revolving frame C, when provided with clamps *c c c c*, and arranged between two series of revolving drills and taps *a a a a*, substantially as and for the purpose described.

107,876.—Range for Heating and Cooking.—John S. Clark, Philadelphia, Pa.

Claim.—In a range of the class specified, the gradually enlarging up-flue *b''*, in combination with the combustion-chamber *b'*, and the horizontal flue beneath the elevated oven *a'*, substantially as and for the purpose hereinbefore set forth.

107,877.—Medical Compound.—Hiram W. Cloud, Evansville, Ind.

Claim.—The above-described medical compound, substantially as and for the purposes set forth.

107,878.—Manufacture of Fertilizers.—John Commins, Charleston, S. C.

Claim.—The black salt-marsh grass, prepared as described, for use with phosphates or animal matter.

107,879.—Fence.—James Comstock, Greenfield, Ind., assignor to himself and John W. Comstock, same place.

Claim.—1. As an improvement in movable fences, a detachable panel, having the rails C attached and extending to the middle of two broad posts B D, as shown and described.

2. The tie-bar F, blocks G, and key H, arranged and adjusted with respect to the panels and braces, as shown and described.

107,880.—Water-Cooler and Refrigerator.—Levi Richardson Comstock, Keokuk, Iowa.

Claim.—A combined water-cooler and refrigerator, with top and bottom pivots K and L toward one side, so as to turn under a cover, M, to close, and out to open, substantially as set forth.

107,881.—Parlor-Bedstead.—Mark Crosby, Boston, Mass.

Claim.—1. The stops S S' attached to the upper part of the end pieces B B' of the base, and the shouldered ends P P' of the side rails D D' E E', and the legs L L' L'' L''', all constructed and arranged as shown, for the purpose specified.

2. The side rails D D' E E', so cut out and hinged to the base A B B' as to form vertical side openings for the admission and passage of air when folded or brought together in a vertical position, all as herein shown and described.

107,882.—Roulette.—Archibald H. Crozier, Oswego, N. Y., and Martin Taylor, Hartford, Conn.

Claim.—The combination of the glass dome E, provided with an opening through the top, with the stand A, pivoted disk B, shaft D, and ball I, when constructed and arranged to operate substantially as herein set forth.

107,883.—Portable Fence.—Wells Crumb, Coloma, Mich.

Claim.—The hinged props F, in combination with the uprights B B', C and C', and the splices E, for supporting a fence or gate, constructed and arranged substantially as described and shown.

107,884, antedated September 21, 1870.—Street-Lamp.—Gustavus Cuppers, New York, N. Y.

Claim.—1. The reflecting-dome D, provided with the flat transparent portion *g*, substantially as and for the purpose described.

2. The cone B and its frame A, consisting of flange *a*, socket *a'*, base ring *b*, and bars *c*, in combination with the dome D, with frame C, lugs *e*, and arm *f*, substantially as and for the purpose described.

3. The top ring *a*, formed with a semi-cylindrical socket, *a'*, and an opening, in combination with the cylindrical lug *e*, and the arm *f* extended therefrom on the frame C, substantially as and for the purpose described.

4. The conical air-tube *k*, supported by studs radiating from the burner or the pipe to which said burner is attached, substantially as herein set forth.

107,885.—BARREL-HEAD.—Reuben De Bare, Philadelphia, Pa.

Claim.—The barrel-head herein described, composed of the sections C C and E E, bolt or lock H, and ping M, all constructed and combined in the manner specified.

107,886.—SAW-MILL.—Jesse A. Dorr, Williamsport, Pa.

Claim.—1. The trucks G, constructed as described and shown, in combination with the top and bottom pieces C and D, and the screws K, for the purposes set forth.

2. The combination of the trucks G, the top and bottom pieces C and D, the screws K, and the sawgate A, substantially as described and shown, for the purposes set forth.

107,887.—MACHINE FOR FELTING AND HARDENING HAT-BODIES.—John T. Earle, Danbury, Conn.

Claim—1. The combination of the rotating corrugated cylinder, the flexible slatted apron, and the elastic straps, suspending the apron around the cylinder, substantially as described.

2. In combination with the rotating corrugated cylinder, flexible slatted apron, and elastic straps, the circular plates or fenders *f f*, at the ends of the cylinder, substantially as and for the purpose described.

3. In combination with the rotating corrugated cylinder, flexible slatted apron, and elastic straps, the movable bar, to which the apron is suspended, with adjusting screws, or their equivalents, to regulate the pressure between the cylinder and apron, substantially as described.

107,888.—VELOCIPEDE.—John Eggert, New York, N. Y.

Claim.—1. The foot-lever J, connected by the rods *l l* with the driving-rollers I I, in combination with the hand-lever L, which is, by a rod, *m*, connected with the same rollers, all operating as set forth.

2. The brake M, combined with the lever *o* and bell-crank N, and with the spring *p* and catch *r*, all arranged to operate as set forth.

3. The seat F, fitted upon the frame-arms P, and supported by means of springs *u*, substantially as herein shown and described, the said springs being fitted around the arms P, as set forth.

107,889.—HEMMER FOR SEWING-MACHINES.—John V. D. Eldredge, Detroit, Mich.

Claim.—The hemmer B, hinged to the pressure-foot, so as to have lateral adjustment, and provided with the spring *a*, the tongue *b*, the spring *c*, the elastic holding-plate *e*, and the stud *e'*, when the several parts are constructed and arranged as described and shown, and as and for the purposes set forth.

107,890.—WEIGHING-ATTACHMENT FOR CARDING-MACHINE FEEDER.—Philip Charles Evans, Brimecombe, England, and Henry James Hogg King, Glasgow, Scotland.

Claim.—1. In an apparatus for supplying material to carding and other machines, a self-discharging scale, substantially as described, operating as and for the purpose set forth.

2. In an apparatus for supplying material to carding and other machines, a scale, operated substantially as described, to automatically cut off the supply when it begins its discharge.

3. The toothed wheels 15, in combination with the weighing and discharging device S, and rod 14, substantially as and for the purpose described.

4. The supply cut-off, consisting of the catch-lever 31, pin 34, and rod 32, in connection with the scale, substantially as and for the purpose described.

107,891.—STUMP-PULLER.—James M. Ferguson, Summit, Miss.

Claim.—1. The combination of the nut E, rotating plate F, balls H, supporting-plate D, and screw-rod M, arranged to operate substantially as shown and described.

2. The screw-rod M, crank O, spherical nut E, flange L, ring-plates F and D, notch K, balls H, frame A, base-beams B, brace-rods P, and sleeves Q, all constructed and arranged as and for the purpose set forth.

107,892.—LUMBER-DRIER.—Robert E. Ferguson, Chicago, Ill.

Claim.—1. The condensing-chamber B, when separated from the drying-chamber by a floor or partition, so constructed as to admit of the free passage of the steam unto the condensing-chamber, but not admit the water or condensed steam to flow back, substantially as and for the purposes above specified.

2. The combination of the pipe J and trough I with the condensing-chamber, provided with a water-retaining floor, when constructed and operated substantially as and for the purposes described.

107,893.—CLOTHES-WRINGER.—Robert E. Ferguson, Chicago, Ill.

Claim.—The pulleys E and F, having adjustable bearings C, in combination with the elastic belt H, constructed and arranged substantially as specified and shown.

107,894.—KNIFE-GRINDING MACHINE.—Edward S. M. Fernald, Saco, Me.

Claim.—The combination and arrangement of the supporting-rail K and carriage I, and the driving-shaft L, and traversing mechanism, substantially as described, with the rotary grinder H and mechanism as set forth, for sustaining and moving, or for supporting, adjusting, and moving, the knife relatively to the grinder, in manner as explained.

107,895.—SAFETY-LATCH.—J. Ward Fifield, Franklin, N. H.

Claim.—1. In combination with the latch B, the orifice A, and key-pivot C, whereby the latch may be operated from the outside, by means of a key, substantially as described.

2. Operating a spindle safety-latch from the outside of a door, by means of a key.

107,896.—MACHINE FOR POLISHING THE EYES OF SEWING-MACHINE NEEDLES.—Thaddeus Fowler, Tottenville, N. Y., assignor to "Excelsior Needle Company," Wolcottville, Conn.

Claim.—1. In combination with the clamp G, for clamping and holding the butts of a series of needles, the vibrating frame B, carrying a series of threads, to pass through and polish the eyes of said needles, substantially as described.

2. In combination with the clamp, vibrating frame, and series of threads, the series of springs *d*, for keeping said threads taut, and, at the same time, allow them to yield, without breaking to any undue strain, substantially as described.

107,897.—MOP-HEAD.—Oliver S. Garretson and Joel G. Garretson, Buffalo, N. Y.

Claim.—1. The flanged pivot-bearing H, immovably riveted to the cross-head, and arranged with the contracted opening of the tubular screw B, substantially as and for the purpose hereinbefore set forth.

2. The arrangement, in a mop-head, in which the movable jaw is operated by the threaded shank of the handle, which screws through the nut or yoke that connects the ends of the movable binder, of serrations *m m*, formed, respectively, in the cross-head or stationary jaw and end of the said threaded shank, as and for the purpose hereinbefore described.

3. The arrangement of the bead or stop *s* at the outer end of the threaded shank B, and with the cross-head C the nut and yoke E, and movable binder D, as and for the purpose hereinbefore set forth.

107,898.—MANUFACTURE OF ICE.—John F. Gessner, West Farms, N. Y.

Claim.—1. The cases A D, pipes *a* F, and troughs E, combined and arranged substantially as specified.

2. The arrangement of the horizontal connecting-pipes *a* and the vertical pipes F with the cases A, to maintain the liquid at the requisite height therein, substantially as specified.

3. The combination, with the frost-ovens A D, arranged substantially as described, of the exhaust-reservoir G and exhaust-pipe H, substantially as specified.

4. The combination, with the frost-ovens and the exhaust-reservoir G, of the tubes K L M, substantially as specified.

107,899.—GRATE.—Francis Glick and Uriah Keck, Allentown, Pa.

Claim.—The sliding detachable section B, *f*, *d*, *g*, *h*, and stationary section A, *a*, *b*, *c*, *b*, constructed and arranged as shown and described.

107,900.—WATER-METER.—John Warner Groat, New York, N. Y.

Claim.—1. The elbow D, forming part of the case of the water-meter, provided with the chamber G around the stuffing-box, the said chamber being formed by the flanges E F, the doors H, and a case, T, for containing the registering apparatus, substantially as specified.

2. The cross-bar P, fitted in the slots in the end of the tube A, provided with the screw-threads, and secured by the elbow or union screwing on the said part A, all substantially as specified.

3. The combination, with the spiral plate I and the tube A, of the tube N, provided with the flaring ends O, reduced to thin edges and fitted to the said tube A, all substantially as specified.

107,901.—MACHINE FOR MAKING CLEVIS.—John S. Hall, Pittsburg, Pa.

Claim.—1. In combination with a supporting-frame and the table G, the shaping and bending-dies, consisting of the former X, holder *u*, jaws 1 and 2, and the backer 3, arranged and operated substantially as described.

2. The construction, jointly, with the arrangement relative to one another on the table G, of the creasing and folding-dies, and the punching apparatus.

3. The arrangement, relative to one another on the table G, of the creasing and folding-dies, the punching apparatus, and the shaping and bending devices, substantially as set forth.

107,902.—ADJUSTABLE WINDOW-SHADE.—E. Warren Hastings, Boston, Mass.

Claim.—The combination of rod *c*, sheaves *d d*, and bearings *b b*, with the cords *e e*, hangers *f f*, as constructed, with the guides *o o*, and roller *g*, provided with the shade *i*, when the several parts are constructed and arranged to operate in the manner and for the purpose herein described.

197,903.—MACHINE FOR FINISHING WHEELS FOR WATCHES.—James L. Hathaway, Norfolk, Va.

Claim.—1. The combination of the slotted and divided cutter *a*, collars *k*, and adjusting-screw *d*, arranged substantially as specified.

2. The combination, with the subject-matter of the first claim, of the wheel-support and centers G H, substantially as specified.

3. The combination of the rotating support Q R and hollow stud, with support K, and set-screw S, substantially as shown and described.

4. The combination, with the subject-matter of third claim, of the series of interchangeable collets, substantially as specified.

5. The combination with the supporting-table, of the slide E, support F, feed-screw M, stud N, and nut O, arranged substantially as shown and described, for the purpose specified.

107,904.—PRESERVING WOOD.—Joshua R. Hayes, Washington, D. C.

Claim.—1. The process of introducing the vapors of tannin, or its equivalent, through the fibers of the wood to be preserved, by means of which a chemical union is effected with the gelatine of the wood, thereby rendering that portion of the wood of a leathery consistence, and, therefore, insoluble, in the manner substantially as set forth.

2. The process of subjecting wood to be preserved to the vapors of superheated steam, to drive off moisture therefrom, in combination with the vapors of tannin, or its equivalent, when the latter is applied as described, to bring the wood to that condition as to receive the vapors of superheated steam without injury, in the manner substantially as set forth.

3. The process described, of the combination of tannin and superheated steam with tarry compounds, to render wood durable and insusceptible to decay, in the manner substantially as set forth.

107,905.—HORSE-COLLAR TOP.—Isaac Hicks, Hartford, Wis., assignor to himself and James O. Kendall, same place.

Claim.—Top B, staples C, hooks D, and plate G, substantially as described.

107,906.—STUMP-EXTRACTOR.—Johnson Higgins, Friendship, N. Y.

Claim.—1. The frame A, constructed with the bars F and K, as herein described, for the purpose specified.

2. The staple M and metal plate N, arranged with relation to the bars F and K, to receive the hook of the lever E, as herein described, for the purpose specified.

3. The pulley or block S, in connection with the draft-rope or chain H, arranged to operate the lever E and frame A, as herein described, for the purpose specified.

4. The caster-wheel V and adjustable hooks J, in combination with the lever E, substantially as described, for the purpose specified.

107,907.—NECK-TIE.—John G. Hitchcock, New York, N. Y.

Claim.—The box-casing, arranged as shown, relatively to the lever jam-buckle, and the guide and support G, with suitable silken or other fabric, forming the body of the tie, all substantially as herein set forth.

107,908.—CORN-PLANTER.—Hezekiah R. Holland, Wilmington, Va.

Claim.—The seed-slide *a*, provided with the flange A, and combined with the elbow *e*, provided with the loaded arm *d*, when the loaded elbow is so arranged that it may be turned back away from the slide, so as to render the latter inoperative, substantially as described.

107,909.—PROJECTILE.—James G. Hope, Topeka, Kansas.

Claim.—1. The curved and flattened piece or

guide B, formed upon the base of a projectile, substantially as herein shown and described, and for the purpose set forth, whether the curved and flattened point C be used or not.

2. The curved and flattened point C, formed upon the forward end of a projectile, when used in connection with the curved and flattened guide B, formed upon the base of said projectile, substantially as herein shown and described, and for the purpose set forth.

107,910.—CEMENT FOR PAVING AND BUILDING.—Joseph Eves Hover, Philadelphia, Pa.

Claim.—The composition of resin and coal-ashes, with or without the admixture of grease, substantially as described.

107,911.—MACHINE FOR TENONING SPOKES.—John W. Huffman, Fremont, Ind.

Claim.—The cross-heads C C', the wedge D, the standards B B', and screw-rods b and c, with the spring H, the yoke G, the chisels E E', the templets I I', the rod d, treadle F, and guide J, all in connection with a table, A, when constructed and arranged as described and shown, and as and for the purposes set forth.

107,912. — LIFE-BOAT. — Robert Humble, Milwaukee, Wis.

Claim.—1. An improved life-boat, constructed with the exterior hollow water-tight shell A A, made in any desirable shape or form, and of any suitable materials, with bearings and stuffing-boxes B B and C C at each end, and with the internal structure I I, to which, at each end, is firmly attached the hollow trunnions T T and air-pipes F F.

2. The combination of a water-tight shell or case, A, provided at each end with bearings or stuffing-boxes B C, with an internal structure or frame, I, mounted therein on its trunnions T T, substantially as described, for life-boat purposes, as set forth.

3. The tubular passage F F, in combination with the hollow trunnions T T, when constructed and arranged substantially as described, for the purpose of admitting air, as well as for entering and leaving the boat, as set forth.

4. In combination with a life-boat, consisting of the outer case A and inner structure or frame I, as described, the ratchet-wheels a and g, and pawl-levers P P, or other suitable mechanism for operating the outer case, as set forth.

107,913. — MACHINE FOR MAKING FAN-STICK.—Edmund S. Hunt, Weymouth, Mass.

Claim.—1. The combination of the adjustable bed-wheels F G, bed-guides L M, and edge-guides H H' K K', with the cutter-stock B, and one or more feed-wheels, g, the pressers C D, and the table or bench A, the whole being arranged substantially in manner, and so as to operate together, as and for the purpose as explained.

2. The combination of the gauge I with the frame F, the feed and bed-wheels, the cutter-stock, the pressers, and the edge and bed-guides, arranged with the table or bench, and to operate together, as set forth.

3. The combination of the adjustable bearers h h with the front spring-presser, when combined with the rear presser, the cutter-stock, the feed and bed-wheels, and guides, as set forth.

107,914.—WAGON-LOCK.—Sidney S. Hurlbut, Cardova, Ill.

Claim.—1. The toothed eccentric segment B, in combination with a sliding spring-pawl block, C, and levers for moving the latter, substantially as described.

2. The spring-pawl block C, constructed and applied substantially as described.

3. The fulcrum guide-pin i and the pin f, applied to the tilting spring-pawl block C and the levers D E, substantially as described.

4. The spring d, applied to the pivoted block C and segment B, so as to operate on said block, and also on the levers D E, substantially as described.

107,915. — GRAIN-DRILL. — Joseph Ingels, Milton, Ind.

Claim.—1. In combination with a one-horse grain-drill, constructed as specified, the ground-wheel K and ratchet-wheel K', operating the mechanism by means of a spring-pawl, k, which ceases to operate in backing the machine, substantially as and for the purpose described.

2. In combination with a one-horse grain-drill, operated by a wheel, K, the bevel-gear wheels l and m, when so constructed with a central square opening, that they can be used interchangeably on the main and driving-shaft of the machine, substantially as and for the purpose specified.

3. In combination with the round or square shaft M, used to drive the mechanism of a one-horse drill, the adjustable slotted sleeve-box and sleeve n, when supporting said shaft, substantially as and for the purpose set forth.

4. In combination with a grain-drill, in which interchangeable gears are used, and with the gear-wheels l and m, operating as described, the projecting hub formed on them, so as to operate with an adjustable sleeve-box, n, and to dispense with a separate sleeve, substantially as specified.

5. In combination with a one-horse drill, the arrangement of the three equal-sized, combined bevel and square gear wheels N O Q, with the small intermediate gear P, for the purpose of rotating the shafts in opposite directions, substantially as and for the purpose described.

6. In combination with the cylindrical hoe of a seed-drill, the box g, with clevis g', and the plates A and A', with pin A² attached to either of the plates A A', or to the box g, for the purpose of staying the hoe in a fixed position, substantially as and for the purpose set forth.

7. In combination with the cylindrical hoe of a grain-drill, the lower portion of the concave H, formed as a socket to receive the upper end of the hoe, so as to admit the grain directly into the hoe, substantially as and for the purpose described.

8. In combination with the main beam A and converging arms B of a one-horse grain-drill, the angular or curved plates b, placed above and under the frame, and united by the king-bolt a, so as to bring the pivot nearer to the central hoe, and the distances between the hoes nearly equal, substantially as described.

107,916.—MAINSPRING-BARREL OF WATCH.—Henry B. James, Trenton, N. J.

Claim.—1. The combination of the mainspring-barrel, provided with a small holding-flange, and the main wheel, provided with a corresponding recess, constructed substantially as and for the purposes specified.

2. The combination of the stop c connected with the main wheel, and the stop d connected with the barrel, operating as and for the purposes specified.

107,917.—SURGE-RELIEVER.—John E. Jones, Wiretown, N. J.

Claim.—In combination with the cable of a ship, steamboat, or other marine vessel, the frame D, with the follower J, saddle-roll K, and springs L, constructed, arranged, and operating substantially as and for the purposes described.

107,918.—MACHINE FOR TURNING OR PLANING THE INSIDES OF BELL, OR OTHER CASTING.—Octavous Jones, Troy, N. Y.

Claim.—1. The combination of the rotating cutter-carrying shaft and the fixed journal-bearing, to hold the same in position, and to prevent any lateral or endwise play thereof, the cutting or planing tool m, mechanism to impart feed-motion to said tool, to adjust it to describe circles of greater or lesser diameter, and to graduate the depth of the cut, and the spring S, or equivalent device, connected to the tool-holder, or some part connected directly thereto, to force the tool up to its work, and at the same time leave it free to adjust itself, as it traverses the surface of the bell or other article, to the gradually-increasing or diminishing diameter of the bell or other article.

2. In combination with the cutter m, block G, rest E, and shaft D, arranged as described, the vertical screw J, sliding block P', horizontal tappet-head, J', striker f, substantially in the manner and for the purpose described.

3. In combination with the tool m, block P', block G, rest E, and shaft D, the adjusting-screw P o, substantially in the manner and for the purpose described.

4. In combination with the tool m, block P', block G, rest E, and shaft D, the wheel w, (following the cutter,) screw n, and spring S, substantially in the manner and for the purpose described.

5. The arrangement of the bell-centering and confining chucks g, step e, central cutter-carrying shaft D, block G, rest E, and block P', cutter m, and wheel w, substantially in the manner and for the purpose described.

6. The combination of the base A, adjustable standards K, adjustable holding devices f g g', and step e, substantially as described.

7. The improved machine herein before described.

107,919.—CORN-SHELLER.—Elbert Jordan, Pickens county, Ala.

Claim.—The arrangement of the wheel b, provided with nails c, shaft b', pivoted block e, spring d, set-screw f, and trough a', all constructed and operating as shown and described, for the purposes set forth.

107,920.—HAIR-CURLER.—John W. Kenny and John H. Adams, Albany, N. Y.

Claim.—1. The tube A, closed at B and internally threaded at C, combined with a handle, E, correspondingly threaded, and having the heating-rod D thereto attached, as and for the purpose described.

2. The combination, with a curling-iron tube A, of the loose hair-holding tube G, arranged as and for the purpose described.

107,921.—TREADLE FOR SEWING AND OTHER MACHINERY.—George Byron Kirkham, New York, N. Y.

Claim.—1. The arrangement of the wheel B, friction-pawl C, and spring E, arranged substantially as and for the purpose set forth.

2. The wheel D, with its accessories, E and d d, and belts F and J, with the treadle H, and springs I and L, as described, and for the purpose set forth.

107,922.—COTTON-OPENER.—Richard Kitson, Lowell, Mass.

Claim.—1. The upper trunk H, as described, when arranged to convey the cotton from the upper beater through the side of the lower trunk K, and to the cylinder-screens, as set forth, for the purpose of mixing or doubling laps of cotton of different colors or grades, substantially in the manner specified.

2. The plate J, in combination with the trunks H and K, and with the cylinder-screens, in the manner and for the purpose set forth.

3. The combination, substantially as described, of two cotton-pickers, opening and cleaning-machines, arranged one above another, and each consisting of a separate and independent feed-apron, a feed-roll or rolls, a beater, a rack, and a seed-chamber, and each provided with a separate and independent spout or trunk, H and K, and both with a plate, J, arranged to direct the cotton onto one pair of cylinder-screens, whereby cotton may be opened, cleaned, and formed into a lap or bat, or doubled and mixed, or lapped together in different colors or grades, in the manner and for the purpose substantially as specified.

4. The two cotton-opening and cleaning-machines, having beaters and separate trunks or spouts, H and K, arranged as specified, in combination with, and presenting the material as described, to a single pair of screen cylinders, substantially as set forth.

107,923. — BARK-MILL. — Charles Korn, Wurtsborough, N. Y.

Claim.—1. The combination, in the ordinary bark-mill A F G, of cylinder B, and upwardly-convex rotating sieve C, to separate the coarse from the fine bark, and transfer the former over its annular edge, as described.

2. The combination, in the ordinary bark-mill A F G, with cylinder B and rotating upwardly-convex sieve C, of the sharp-toothed grinding-rings D E, arranged and operating as described.

107,924.—ROCKING OR TILTING-CHAIR.—James Lamb, Hubbardston, Mass.

Claim.—The rocking or tilting-chair, as described, as made with the front and back stops f g, and with the two pairs of serpentine springs, arranged at the opposite parts or sides of the seat and leg-frame, and with the springs of each pair disposed relatively to each other, as explained and represented.

107,925.—MOLD-BOARD FOR PLOW.—John Lane, Chicago, Ill., assignor to Hapgood & Co., same place.

Claim.—A plow mold-board, having the greatest thickness at the point, and the thickness gradually decreasing along the land-side (or shin) end of the mold-board, when made substantially in the manner herein set forth.

107,926.—CAR-PUSHER.—Rufus Lane, Freeport, Ill., assignor of one-half his right to W. G. Moore, same place.

Claim.—1. The extensible pusher for railroad cars, consisting of the tube A and rod B provided with the wedge m, the jaws C, crank-shaft, and suitable gear, substantially as herein shown and described, and for the purpose specified.

2. The jaws C, bolt b, slot a, and wedge m, combined and arranged substantially as specified.

107,927.—CIGAR-MACHINE.—Johan Lauritzen, Newark, N. J.

Claim.—The piston e, case d, springs h and i, and set-screws j and k, constructed and combined substantially as and for the purpose set forth.

107,928. — HOT-AIR ENGINE. — Charles P. Leavitt, New York, N. Y.

Claim.—1. The tank of isolated hot liquid in the lower part of the cylinder of a high-pressure hot-air engine, substantially as described.

2. The tubular arrangement or heater for imparting to the liquid in the cylinder heat derived from another liquid, gas, or vapor, circulated in the heater, constructed substantially as described.

3. The arrangement of a sprinkler above the piston, in combination with a heater below the piston, for heating and cooling the air, substantially as described.

4. The combination, with the liquid-heating chamber, below the piston, and sprinkling cooling-chamber above, of the regenerator G, all arranged for operation substantially as described.

5. The vertical slot in the shield T on the piston F, for allowing the passage of the air into the cylinder above the surface of the heating liquid, as described.

6. The prolongations B B of the piston, in combination with the hot liquid, in which they dip, for the purpose set forth.

7. The arrangement of the sprinkling-cups S S S between the vertical laminæ or prolongation of the piston, for the purposes described.

8. The combination, with the hollow working piston of a hot-air engine, of the valve f, the flexible diaphragm g, and the cup-leathers e e, in connection with a cooling liquid above the piston, to establish a liquid packing capable of being tightened by alternating pressure above and below.

9. The receiver, composed of the inner and outer cylinders or vessels A U, with their connections and communications, substantially as and for the purpose set forth.

10. The construction of the joints where the pipes P and Q enter and leave the working cylinder and tank L, substantially as described.

11. The cup-leather and liquid-packings to the stuffing-boxes of the piston-rods and valve-stems of a high-pressure hot-air engine, in combination with a high-pressure reservoir, and the pipes e e', connecting them, substantially as and for the purpose described.

12. The combination of the flap-valve I with the slide-valve H, essentially as and for the purpose specified.

107,929. — Hammer-Strap. — William J. Lewis, Pittsburg, Pa.

Claim.—A rolled ribbed hammer-strap, made substantially as described.

107,930.—Rack for Wagon-Brake.—William J. Lewis, Pittsburg, Pa.

Claim.—A rolled rack for wagon-brake, made substantially as described.

107,931.—Blank for Hammer-Strap for Wagons.—William J. Lewis, Pittsburg, Pa.

Claim.—A hammer-strap blank, rolled ready for finishing and punching, of the form substantially as described, and shown in fig. 1.

107,932.—Meat and Vegetable-Slicer.—Peter H. Lindsey, Lockport, N. Y.

Claim.—The slat E, the groove G, the fixed nut D, and the removable nut B, and the knife A, when all are combined, constructed, and arranged, as herein set forth, for the purpose specified.

107,933. — Grain-Binder.—William Lottridge, Charles City, Iowa.

Claim.—1. The combination of the twisting-spindle, the belt L, and straw-carrier rollers, substantially as specified.

2. The combination, with the twisting-spindle K, of the adjustable straw-guide O, substantially as specified.

3. The tucker a^4, provided with the lifting-hook a^5, constructed and operating substantially as specified.

4. The combination of the tucker and twister, constructed and operating as specified.

5. The combination, with the rope-holder and its pinion W^1, of the spring-holder W^2 and rack-bar X, substantially as specified.

6. The combination of the jaws P P^1 and reel H, and endless carrier, constructed, arranged, and operating substantially as specified.

7. The combination, with the reel and turning arms X^2, of the arm X and projection X^1, substantially as specified.

8. The combination and arrangement of the jaw P^1 and extension u thereon, twister-spindle V, shaft V^1, arm V^2, and gears y, substantially as specified.

9. The combination, with the tucker-shaft a^1, of the cord b^1, lever b^2, crank D, and spring b^3, substantially as specified.

107,934.—Water-Indicator and Alarm.—Mirabeau N. Lynn, New Albany, Ind.

Claim.—1. The glass or transparent plate C, in combination with a valve, d, which will close the opening covered by said plate in the event of the latter becoming broken, substantially as described.

2. The valve D, and its perforated tube a, applied to the steam-whistle pipe P, in combination with a lever, L l, and a tripping float, substantially as described.

3. The combination of the valve-stop S, with the valve-lever L, substantially as described.

107,935.—Flour-Bolt.—John Mallin, Chicago, Ill.

Claim.—The arrangement and combination of the reels B C, conductors J I, conveyers F, E, and D, slides U A', spouts a b c d, and chest A, when such chest is constructed as described, with ventilators R L, and cloth doors P, substantially in the manner as set forth and for the purpose specified.

107,936.—Water Cut-off for Cisterns.—Jacob R. Manny, Chicago, Ill.

Claim.—The slotted pipe F, in combination with the pivoted section E, inlet-pipe B, and outlet-pipes C D, operating substantially as specified.

107,937. — Guano-Distributer.—William E. Martin, Oconee, Ga., assignor to James D. Barber, same place.

Claim.—An improved guano-distributer, formed by the arrangement of the side-bars A, cross-bars B, legs C, wheel D, standards E, frame F, hopper G, shoe H, flexible suspending-straps I, cord J, belaying-pin K, or equivalent cams or inclines L, wheel M, pulley N, band O, and enlarged hub or pulley P, all constructed substantially as herein shown and described, and for the purposes set forth.

107,938.—Sulky-Plow.—Henry W. Mason, Hagerstown, Md.

Claim.—The bar i, provided with the slotted flanges i, the plow-beam A, the plates b, provided with the lugs e and the pin f, arranged together as described.

107,939.—Paint-Mill.—John W. Masury, Brooklyn, N. Y.

Claim.—1. The combination, with a movable bed-stone, G, of an upper fixed metallic plate, A, having an annular space hollowed out of the upper part thereof, around which a constant stream of fluid is caused to flow for regulating the required temperature of the stones in paint-grinding mills.

2. The combination, with stones A G, of a series of scrapers, K, and discharge-spouts I, correspondingly arranged and constructed to prevent the drip of viscid paint over the curb H, and the consequent obstruction of the running-stone, all as described.

107,940.—Ironing-Table.—Henry McCheney, Buffalo, N. Y., assignor to himself and Joseph W. Clark, same place.

Claim.—The spring E, combined and arranged with the bed A, hinged leg or legs B, and bearing C, provided with catch-pin i, or its equivalent, substantially as and for the purpose hereinbefore set forth.

107,941. — Stair-Rod.—William T. Mersereau, Orange, N. J.

Claim.—A thin struck-up metal stair-rod fastening, having the ends cut out, so as to form eyes for fastening to the stair, and ends formed up to clasp the rod, as set forth.

107,942, antedated September 24, 1870.—Manufacture of Purified Cast-Iron from the Ore.—John W. Middleton, Philadelphia, Pa.

Claim.—1. The combination, with a blast-furnace, of the hot-chamber B and the receiving-vessel D, arranged to operate substantially as and for the purpose hereinbefore set forth.

2. The process, consisting in the employment of heated air or other aeriform or gaseous fluids, or the intense heat of a special furnace, or both together, driven into the blast-furnace through a hot chamber, containing a pool or cavity for the reception of the fluid iron and slag from the said furnace, and a vessel for receiving the same from the pool or cavity, and separating the slag and iron by gravitation therein, substantially as and for the purpose hereinbefore set forth.

3. The process consisting in the forcing of a blast into the upper portion of the furnace, and downward through the same into a hot chamber, provided with a pool or cavity for receiving the fluid iron and slag, and a vessel for separating the same by gravitation, substantially in the manner hereinbefore set forth.

107,943. — Cutter-Head for Planer.—John More, New York, N. Y.

Claim.—The cutter-head A, herein described, in combination with corresponding cutters B and feeding mechanism B^1 B^2, arranged for joint operation, as and for the purposes herein set forth and described.

107,944.—Feather-Renovator.—Matthias K. Morris, Council Bluffs, Iowa.

Claim.—1. The metal cylinder or reservoir A, for containing feathers to be renovated, pivoted freely within a stationary casing or steam-jacket, H, substantially as and for the purpose shown.

2. The pivoted metallic cylinder A, for containing feathers, provided with hollow journals B' and C', and having portions of its periphery perforated and covered with suitable slides D D, for the purpose of controlling the admission of steam from the surrounding jacket to the feathers, substantially as shown and specified.

3. In combination with the cylinder A, constructed as described, the head or cover B, of the full diameter of said cylinder, and made removable, for the purpose of introducing and withdrawing the feathers, substantially as shown.

107,945.—Balanced Slide-Valve.—George Frederic Morse, Portland, Me.

Claim.—1. The packing-wedge p' in the packing-ring p, where the packing-ring is subjected to external pressure, or is contracted in order to make the joint tight for which it is used.

2. The corner pieces p', for making a tight joint at the ends of the packing-strips, where said strips are required to be placed in a rectangular valve, or in an angular position.

107,946.—Expanding Tap.—Frank Murgatroyd, Cleveland, Ohio.

Claim.—The rings D and D', keys d and d', the pin C, and the cutters g g, in combination with the mandrel A and drill B, substantially as and for the purpose set forth.

107,947. — Piano-Lock. — John Murphy, Roslindale, assignor to Oren J. Faxon, Boston, Mass.

Claim.—The interlocking bolts A B, constructed and arranged on separate pivots, a b, as described, and combined and arranged, as set forth, with the cam C, constructed and provided with the retaining spring D, all being substantially as hereinbefore explained, and as represented in the accompanying drawing.

107,948.—Damper-Regulator.—James H. Murrill, Baltimore, Md., assignor to himself and Lewis R. Keizer, same place.

Claim.—1. Pivoting the flaps by knife-edges at or near the vibrating points of the diaphragm, substantially as described.

2. The grooved plug and connecting-rods, for transferring the motion of the diaphragm and flaps to the lever, substantially as described.

107,949. — Ice-Cream Pail. — George A. Nash, Niles, Mich.

Claim.—As a new article of manufacture, an ice-cream pail, consisting of the pail a, provided with the cover b, in which the receptacle c, having the cover d, is placed, and permanently secured to the bottom of the pail a, as herein shown and described.

107,950. — Railway-Car Coupling.—Nathan Norris, Buchanan, Mich.

Claim.—1. The coupling-bars B, provided each with the claw b, and connected and operated by the spring C, in connection with the draw-heads A and A', when constructed as described, and for the purpose set forth.

2. The combination of the draw-heads A A', the coupling-bars B, spring C, block D, lever D', bars E, and lever E', substantially as and for the purpose set forth.

107,951.—Apparatus for Drawing and Measuring Oil.—Person Noyes, Lowell, Mass.

Claim.—The tank A, provided with a float and register, in combination with a pump, C, delivery-tube E, fountain F, provided with a faucet, H, and index S, and a waste-pipe, K, when all are arranged to operate substantially as set forth.

107,952.—Tie for Bags, Grain, &c.—George W. Osborn, Parkville, Mich.

Claim.—As a new article of manufacture, the tag a, when struck up from sheet metal, and provided with the tapering curved slot d, and hole b, as herein shown and described.

107,953.—Wire.—James S. Parsons, Windham, assignor to himself and Arthur S. Winchester, South Windham, Conn.

Claim.—As a new or improved article of manufacture, the wire as made of the nickle alloy, drawn and heated and suddenly cooled, in manner and by means substantially as hereinbefore explained.

107,954. — Cultivator. — Horatio Nelson Pease, Toledo, Ohio.

Claim.—1. The arrangement of the tappets a, rack-bar N, spring O, dropper K, plug f, and pinion M, in connection with the wheel B and seed-box J, when constructed as described and shown, and as and for the purposes set forth.

2. The arrangement of the radius bars E, quadrant F, arms G, and shovels H, constructed as described and shown, and as and for the purpose set forth.

107,955.—Friction-Roller for Railway-Car Trucks.—Jethro Pencille, Lockport, N. Y., assignor to himself and Cornelius Hood.

Claim.—The rollers b, provided with the grooves f, holes e, and the separate fixed axles d, in combination with, and saddled upon the truck-axle D, substantially in the manner as and for the purposes set forth.

107,956, antedated September 10, 1870.—Curtain Fixture.—Frederick G. Peoble, New York, N. Y.

Claim.—The slotted arm a, provided with a pin, f, in combination with the serrated or notched plate a, made substantially as described.

107,957.—Apparatus for Washing Ores and Minerals.—Edwin Platt, Charleston, S. C.

Claim.—1. The process of cleansing ore by subjecting it to the action of jets of water, which carry it upward through an inclined pipe into a chamber having a slanting bottom, and thence downward through a trough provided with a perforated bottom, through which water may escape, in which trough the ore passes through a second washing operation, substantially as described.

2. The inclined pipe b, provided with the nozzles c; the inclined chamber d, provided with the perforated barrier e; the inclined trough f, provided with a perforated bottom and the lips l; and the trunk k, opening, by apertures k, into the trough

when all these parts are arranged with relation to each other, as described.

3. The arrangement of the trunk A, apertures h, lips i, and trough f, as set forth.

107,958.—Machine for Washing Ores and other Mineral Substances.—Jacob B. Platt, Augusta, Ga.

Claim.—1. The arrangement, in connection with a stationary inclined exterior cylinder or jacket, B, of a revolving interior screen, C, and inlet and exit water or steam-pipes, hopper E, and chute F, as and for the purpose herein described and represented.

2. In combination with the washing-cylinder, revolving screen, and their inlet and exit-passages, the elevating case or chamber, and elevators l therein, for taking away from the chute F and carrying off the washed material, by which construction the operation of the machine may be continuous, as described and represented.

107,959.—Washing-Machine.—Charles M. Powers and Thomas L. Robinson, Flushing, N. Y.

Claim.—1. The combination of the rollers e e, endless belt d, and independent oscillating bearings D D, with the cylinder B, substantially as and for the purposes set forth.

2. The spring slats E E, in combination with the cylinder B, box A, and oscillating rollers e e, and their adjuncts, substantially as set forth.

107,960.—Tree and Plant-Protector.—D. R. Prindle, East Bethany, N. Y.

Claim.—As a new article of manufacture, a tree or plant protector, A, constructed of one or more thin, flexible sheets or shavings cut from wood, and saturated or prepared with an application of petroleum, or its equivalent, or not, as may be desired, substantially as herein specified and described.

107,961.—Hull of Vessels.—Leman P. Rider, Pittsburg, Pa., assignor to himself, William Yagle, and A. Ward, same place.

Claim.—The cut-water C and its reversed counterpart D, combined with central chamber E, as and for the purpose described.

107,962.—Manufacture of Ice.—Moritz Rosenstein, Boston, Mass.

Claim.—The combination of the hinged bevel-gears, the central shaft C, the attached freezing-cases E, and the wings Q, substantially as described.

107,963.—Device for Spreading Circular-Saw Teeth.—William H. Rudolph, Clarksville, Tenn.

Claim.—The plate A, with the anvil B, ears C C and E E, pin F, and gauge-screw D, when applied to a saw, substantially as and for the purposes herein shown and described.

107,964.—Hand-Stamp.—Henry W. Safford, New York, N. Y.

Claim.—The arrangement of the cutting and the piercing-dies b', and their springs C, within the cylinder A, in combination with the spring plunger D, and the supporting-frame and platform E, substantially as and for the purpose hereinbefore set forth.

107,965.—Link Connecting the Handles and Valve-Rods of Pumps.—Samuel Selden and Matthew Griswold, Erie, Pa.

Claim.—The part of the link of the pump-handle and valve-rod a b c d, constructed, with the bolt f b and pin c d, of wrought-iron, and the surrounding part e e of cast-iron, substantially as described, for the purpose specified.

107,966.—Head-Block for Saw-Mill.—Franklin W. Shelley, Muncie, Ind.

Claim.—1. The reciprocating bars C C, operated by the lever D, and combined with the perforated levers E E and head-block A, for feeding the latter, as set forth.

2. The levers E, combined with the springs e and jointed, as described, for the purpose of communicating forward motion to the head-block from the reciprocating bars C, as set forth.

3. The wedge F and lever G, arranged on the head-block, for the purpose of throwing the levers E out of gear, as set forth.

107,967.—Roofing.—George Shove, Yarmouth Port, Mass.

Claim.—The roof constructed of fabric, cement, and water-proof coating, as described, the cement being interposed between the fabric and the coating, as set forth.

107,968.—Temporary Paper-Binder.—Fillmore M. Smith, Syracuse, N. Y.

Claim.—1. The combination of the slot d in a metallic plate, and the bridge or support b, and the slot c in the bridge, substantially as and for the purpose hereinbefore set forth.

2. The combination of the metallic plates f f, substantially as hereinbefore described, with the elastic band, strap, or cord e, substantially as and for the purpose hereinbefore set forth.

107,969.—Reading-Glass.—J. Hyatt Smith, Brooklyn, N. Y.

Claim.—The reading instrument, adapted for the purposes herein described, consisting of a glass pivoted to legs, and which glass is adjustable, both in height and inclination, by means substantially as described.

107,970.—Adjustable Time-Table.—Loyst J. Smith, New York, N. Y., assignor to himself and H. D. Blake, same place.

Claim.—The arrangement, in a plate, A, having rows of quadrangular recesses and side grooves, of the ribbed reversible blocks a b, notated on two opposite sides, and detachably held in place by the slides B, as shown and described, and for the purpose specified.

107,971.—Car-Coupling.—Loyst J. Smith, New York, N. Y., assignor to himself and H. D. Blake, same place.

Claim.—The suspended buffer C, plate e, jaws D D, jointed arms g g, and lever i, all combined, constructed, and relatively arranged, and for the purpose described.

107,972.—Corn-Harvester.—Menzo A. Smith, Middlefield, N. Y.

Claim.—1. The incline cap C and knife 18, in combination with the spur-belt 5 and spur-pulley 6, all constructed and arranged as described, for the purpose specified.

2. The spring caps E E, in combination with the slatted apron D and spur-cylinder 16, constructed and arranged as described, for the purpose specified.

3. The arrangement of the apron D, spring caps E E, spur-cylinders 16, gauge 23, saw P, husking-belt G, and hopper Y, all constructed and operating as described, for the purpose specified.

107,973.—Plow.—Charles W. Snead, Milledgeville, Ga.

Claim.—The arrangement of the standard e, horizontal arms h, link or shackle c, and wedge b, as shown and described, and for the purpose set forth.

107,974, antedated September 24, 1870.—Device for Attaching Steels to Corsets.—William A. Starrett and Helen E. Starrett, Lawrence, Kansas.

Claim.—The corset-steel A, provided with the loops d, and combined with the key a, in the manner and for the purpose set forth.

107,975.—Guano-Distributer.—Edwin R. Stedman, Sparta, Ga.

Claim.—As an improved article of manufacture, the improved guano or plaster-distributer, constructed and arranged substantially as herein described.

107,976.—Construction of Steam-Boilers and Tanks.—Henry Julius Stein, Hannibal, Mo.

Claim.—In the construction of steam-boilers, tanks, and other vessels, the shims B, when interposed between the overlapping seams thereof, and caked, as set forth, for the purpose specified.

107,977, antedated September 26, 1870.—Steam-Pump.—Charles L. Stevens, Galesburg, Ill., assignor to himself, Albert A. Dentan, and D. G. Dentan.

Claim.—1. The construction of the wooden air-tight tanks, with bolts a'' a'' a'' passing through the heads and staves, substantially as described, and for the purpose set forth.

2. The arrangement of the rod C, with the cocks D D', for opening and closing alternately the steam-passage in the pipes B' B'', and controlling the admission of the steam to the tanks A A', substantially as described, and for the purpose specified.

3. The combination and arrangement of the rod C, cocks D D', cranks E E, links F F, rods G G, collar H, float J, and tubes U U with the tanks A A', substantially as described, and for the purpose set forth.

4. The blow-off pipe S, with the three-way cock R, arranged as described, and operated by the arm A, rod C, and crank P, when combined with the tanks A A', substantially as described, and for the purpose specified.

5. The tubes N N', with valves n n', when combined with the tanks A A', substantially as and for the purpose specified.

6. The construction of the non-condensing diaphragm, with the buoy K, sheeting K', flange e, and welt e', substantially in the manner and for the purpose specified.

107,978.—Shaft-Coupling.—Timothy F. Taft, Worcester, Mass., assignor to Aurin Wood and Joseph F. Light.

Claim.—The combination, with the shafting A A' of the sleeve C, cored out on one side and fitting around the shafting on the other, and the clamp-piece D, fitting in the recess formed in the sleeve, and held in place upon the shafting, substantially in the manner shown and described.

107,979.—Mechanism for Operating Comber-Boards.—John Stewart Templeton, Glasgow, Great Britain.

Claim.—The comber or hole-boards, made to act on separate sections of the threads, and guided by the vertical rods 4, in combination with a cam for lifting the rods 7, which elevate the boards with the cloth-pieces 8 and slide bolt 9, and its spring, with the cord 10 passing around the guide-pulley 11, and operating in connection with the jacquard, substantially as described, for the purpose specified.

107,980.—Grain and Seed-Drill.—George M. Thirkittle, Belleville, Mich.

Claim.—1. In seed-drills, the construction and arrangement with the frame C, of the slotted bar M, yoke M', eccentric F, rod N', and levers N², as and for the purpose set forth.

2. The seed-shaft F, disks J, and cups K, in connection with the seed-box D and conductors L, substantially as described, for the purpose specified.

3. The construction and arrangement of the seed-box D, having its shaft F rotating in the trunnion-bearings a, oscillating in the brackets b b', with the standard c', screw c, pinion E', driving-gears E, and lever G, as and for the purpose set forth.

4. The construction and arrangement of the frame C, seed-box D, provided with the inner shell or apron D' and trunnions a, the brackets b b', standard c', screw c, seed-shaft F, pinion E', driving-gears E, lever G, shafts H and I, gears H' and I', swivel-nut I', disks J, cups K, conductors L L', slotted bar M, yoke M', eccentric N, rod N', levers N², drag-bars O, keys e, colter-teeth P, seed-spouts Q, windlass R, hand-wheel R', pawl f, ratchet g, chains h and i, and the levers S, T, and U, when arranged and operating substantially as herein described and shown, for the purposes specified.

107,981.—Machine for Lasting Shoes.—Charles H. Trask, Lynn, Mass.

Claim.—1. The combination and arrangement of the last-supporters E F, or their equivalents, the heel and toe-jaws G H, one or more pairs of lateral jaws O O, and the mechanism for operating or opening and closing the jaws of each of the pairs, substantially in the manner and for the purpose as set forth.

2. The combination of the series of jaw-carriers N, and the mechanism for adjusting them at different distances apart, with the series of two or more pairs of lateral jaws O, arranged and combined with the heel and toe-jaws G H, and the mechanism for opening and closing all such jaws, as set forth.

3. The combination of each jaw with its supporter by means by which such jaw may be adjusted to different altitudes, as and for the purpose set forth.

4. The peculiar combination for operating or opening and closing the heel, and toe, and lateral jaws, the same consisting mainly of the levers I I, toggles K K, pitman L, pedal M, spring s, bar l, springs m m, levers m' m', applied and to operate as specified.

5. The pitman L, of such jaw-operative mechanism as formed of the two parts t t, connected by screws, as and for the purpose specified.

6. The combination of the frame or box A, and the lasting mechanism thereof, with the stand B, by means described, so as to be capable of being revolved relatively to the stand, as set forth.

107,982.—Drier.—Edmund Trowbridge and James M. Jones, Detroit, Mich.

Claim.—The dry-kiln described, wherein the chamber A, the boilers J, the engine D, the blower C, the hot-air pipes E, and steam-pipe I, are constructed and arranged as described and shown, and as and for the purposes set forth.

107,983, patented in England, March 18, 1868.—Locomotive.—James Millar Ure, Glasgow, Great Britain.

Claim.—1. A locomotive, provided with a steam-cylinder and lever-connection so arranged as to lift the driving-wheels when required, substantially as hereinbefore described.

2. The combination of levers with the lifting appliances and the leading and trailing-wheels, substantially in the manner and for the purpose hereinbefore described.

107,984.—Rotary Bake-Oven.—Joseph Vale, Beloit, Wis.

Claim.—1. The fire-places or furnaces L, constructed with open sides, substantially as described, in combination with a bake-oven, constructed with no partition or division between the furnaces and baking-chamber, but the furnaces arranged directly within the baking-chamber or space, substantially as and for the purposes specified.

2. The collars h', shaft h, arms H, provided with

an upward projection at the inner end, as described, and braces *k*, when all are constructed and arranged substantially as described.

107,985.—GRINDER FOR HARVESTER-CUTTER.—Silas O. Vaughan and Phineas W. Vaughan, De Kalb, Ill.

Claim.—The combination of the forked rest M', frame E E', track B, pulley and block A C, and chain D, arranged to operate as and for the purpose set forth.

107,986. — THRASHER AND SEPARATOR.—Albert A. Walker, Sparta, Wis., assignor to William C. Leyburn, and George A. Fisk, same place.

Claim.—In the grain-separator herein shown, the improved arrangement of parts, consisting of the casing A, cylinder B, concave C, fan D, vibrating screen E, shoe E', grain-board F, drums G and G', carrying-belts H, and slats H', apron I, reel J, rake K, drums L and L', and apron M, when arranged in the manner and for the purpose herein shown and described.

107,987. — FURNACE-GRATE. — Abner B. Weeks, Rockland, Me.

Claim.—The arrangement, with the journals D, of the revolving grate-frames, the same being provided with projections G of the notched pivoted bar E, and the spring catch H, as and for the purpose specified.

107,988.—RAILWAY-CAR COUPLING.—George W. Wheat, Philipsburg, Pa.

Claim.—An improved car-coupling, formed by the combination of the projection C, pivoted tongue or plate D, angle-lever E, slide F, lever G, pivoted bar or block H, and pivoted rod or bar I, with each other, and with the bumper-head A, said parts being constructed and operating in connection with the coupling-link B, substantially as herein shown and described, and for the purposes set forth.

107,989. — CORRUGATED METALLIC PAVEMENT.—George Wilkes, New York, N. Y.

Claim. — The corrugated metallic street-pavement, composed of alternate parallel ridges and grooves, the ridges being notched, as set forth.

107,990. — COMBINED HORSE-POWER AND BALING-PRESS.—Charles A. Wright, Rodney, Miss.

Claim.—1. The arrangement, with respect to the belt *b* of the winding-shaft E, bevel-gear *d d'*, and windlass F, as and for the purpose described.

2. The arrangement of the shipping-lever G and bevel-pinion *d'* with respect to the winding-shaft E, to simultaneously disconnect the power, and act as a brake thereto, thus preventing a too rapid descent of the follower.

107,991. — WASHING-MACHINE. — George Wright, Savannah, Mo.

Claim.—The cylinder *a*, provided with the rows *b* of orifices, the external hoods, arranged over alternate rows of the orifices, and the internal flanges, placed between the rows of orifices, all constructed and arranged as described.

107,992.—TYPE-PLANER.—Walter Sumner Wright, Chicago, Ill.

Claim.—1. The cutter-frames F, provided with vertical cutters *a*, and the cutter-frames G, provided with vertical cutters *c*, in connection with the belts D and drums C C, when constructed and arranged as described, and for the purpose set forth.

2. The endless belt D, in combination with the stop-guide J and drums C C, arranged as described, and for the purpose set forth.

3. The table I, provided with the groove *e* and flange *f*, in combination with the drums C C, belts D, and guide-plate or stop-guide J, when constructed and arranged as described, and for the purpose set forth.

4. The improved type-planer herein described, consisting of the frame A, shafts B, drums C, belts D, gearing E, cutter-frames F G, cutters *a c*, table I, bed A, and stop-guide J, constructed, arranged, and operating as and for the purpose set forth.

107,993, antedated September 24, 1870.—ELECTRO-MAGNETIC SAFE-LOCK.—Charles O. Yale, New York, N. Y.

Claim.—The mode herein described of insulating the connection from a magnetic-battery, or its equivalent, on the exterior of a safe, to the helices M M, or their equivalents, on the interior, when the latter are adapted to operate on electro-magnets, and thereby to aid in securing the door, all substantially as and for the purposes herein specified.

107,994. — THRASHING-MACHINE. — Joseph Allonas, Mansfield, Ohio.

Claim.—1. The combination of the fingers E and spiral rib E', with the revolving screen C, substantially as set forth.

2. The combination of the fingers D D with screen C, forming an extension thereof, substantially as set forth.

3. The combination and arrangement of table F, shafts F' G, screen C, cogged rim C', pinion G', and connecting devices for operating both table F and screen C, from shaft F', as set forth.

4. The arrangement of friction-rollers *c c'*, relatively to cogged rim C' and screen C, as described, whereby said rim C' serves not only to rotate the screen, but to support it against end-thrust, substantially as described.

5. The arrangement of wings I I', relatively to screen C, table F, and riddle K, substantially as and for the purpose set forth.

107,995.—SPRING-BED.—Lewis Andersen, Chicago, Ill.

Claim.—The spring bed-bottom, consisting of the two folding parts, each provided with the springs C, secured to their seats by the strips of metal E, and the bolts and nuts F G, arranged substantially as described, for the purpose specified.

107,996.—CLOTHES-RACK.—Herman Bauman and Urban Mueller, Canton, Ohio.

Claim.—The metal bearings for the bars, composed of the parts G H H, the pivot-pins *b b*, either with or without the hooks I and N, in combination with the openings E E in the wings F F, with their slots *b b*, constructed and operated substantially as and for the purpose described.

107,997.—COMPOUND FOR COLORING PAPER AND OTHER FABRICS.—Frederick Beck, New York, N. Y.

Claim.—A compound for coloring paper, and other materials, made substantially as herein described.

107,998.—NUT-LOCK.—Jonathan Bell, New York, N. Y.

Claim.—The combination of a bolt, A, having the slot C, and enlarged cavity T, with the anchor O, the whole arranged so as to operate in the manner and for the purpose set forth.

107,999. — FEATHER-RENOVATOR. — Elias Bickell and Michael F. Noraconk, Milton, Pa.

Claim.—1. The combination of the hinged outer vessel H, perforated inner vessel I, plate *g*, shaft M, and arms N N, all constructed and arranged substantially as and for the purposes herein set forth.

2. The perforated lid *h*, tube *n*, and pipe *p*, leading into the smoke-stack E, all substantially as and for the purposes herein set forth.

108,000.—AUXILIARY TABLE-ATTACHMENT. James Blake, Scranton, Pa.

Claim.—An auxiliary table, having one or more brackets or arms, provided with a pin, *a*, co-ordinated with the beak or rest C, for the purpose of holding such table either in a horizontal or pendent position at will, as specified.

108,001. — RADIATOR. — Edward Bourne, Pittsburg, Pa.

Claim.—1. So shaping the sheets, at their point of contact around the rivets, as that the cones *f*, formed in the one sheet, *d*, will enter and rest within the conical portion *e* of the other sheet, *e*, and clamping the said parts together by means of washers *a* and rivets *b*, substantially in the manner shown and set forth.

2. The annular depression *c*, with its corresponding-shaped washer *a*, in combination with the cones *e* and *f*, arranged and clamped together by the rivet *b*, substantially in the manner shown and set forth.

108,002. — SUBSOIL-PULVERIZING ATTACHMENT FOR PLOW.—Luther E. Burdin, Paris, Ky.

Claim.—The subsoil-pulverizing attachment herein described, consisting, essentially, of the parts *a a'*, *c c*, *d*, and *d*, when constructed to operate substantially in the manner and for the purpose described.

108,003, antedated September 30, 1870.—KNITTING-MACHINE.—W. W. Burson and John Nelson, Rockford, Ill.

Claim.—1. The arrangement of the loop-supporting hooks, constructed as described, in two parallel rows, which are segments of two concentric circles, substantially as set forth.

2. The combination of the swinging arm B, carrying a knitting mechanism, with the two parallel rows of loop-supporting hooks, the whole arranged to operate substantially as specified.

3. The combination of the curved feed-rack C, loop-supporting hooks *a a a*, and vibrating arm B, provided with knitting devices, operating substantially as described.

4. The looper I, constructed as described, in combination with the wheel F and the two parallel rows of loop-supporting hooks, substantially as specified.

5. The combination and arrangement of the cam-grooves *d d'* in driving-wheel F, looper-hooks *n n'*, and two parallel rows of loop-supporting hooks, the whole arranged and operating substantially as described, and for the purpose set forth.

6. The combination, construction, and arrangement of the irregular wormer H, eccentric J, cam-groove *d*, and looper I, operating as a loop-depresser, substantially as specified.

7. The combination of the looper I, cam-grooves *d d'*, and switch K, constructed as shown, for the purpose of changing the working-hook, substantially as set forth.

8. The yarn-carrier L, composed of the parts *g g'*, arm *h*, stud *h'*, and having the opening *r*, the whole constructed and arranged to operate as described.

9. The combination of the yarn-carrier L with the stud *p* on the looper I, acting in the cam-opening *r* of the yarn-carrier, and the spring *m*, the whole arranged and operating substantially as set forth.

10. The combination and arrangement of the looper-hook *n*, hooks *a a a*, yarn-carrier L, and cam-grooves S, the whole arranged to operate substantially as specified.

11. The combination of the yarn-carrier L, the groove S, and switch *t*, constructed as described, and operating in such manner that the part *g'* shall follow out the looper-hook *n*, substantially as set forth.

12. The combination and arrangement of the cam-groove S, switch *t*, yarn-carrier L, looper I, and cam-grooves *d d'*, the whole constructed and operating substantially as described.

13. The combination and arrangement of the yarn-carrier L, having the cam opening *r*, with the stud *p*, looper I, and switch K, the whole arranged and operating substantially as specified.

14. The combination of latch-lever P, reversible wormer H, and wheel F, constructed and operating substantially as set forth.

15. The combination and arrangement of reversing-stops No. 1 and No. 2 with the feed-rack C and a traversing knitting device, all constructed and operating substantially as specified.

16. The reversing-stops No. 1 and No. 2, constructed and operating substantially as and for the purpose described.

17. The combination and arrangement of the reversing-stops No. 1 and No. 2, feed-rack C, wormer H, looper I, and loop-supporting hooks *a a a a*, all constructed and operating substantially as described, and for the purpose set forth.

18. The reversing-stop No. 3, when constructed and operating substantially as set forth.

19. The reversing-stop No. 4, constructed and operating substantially as specified.

20. The combination of the reversing-stop No. 3, feed-rack C, latch-lever P, and wormer H, the whole constructed, arranged, and operating substantially as specified.

21. The combination and arrangement of the reversing-stops No. 3 and No. 4, feed-rack C, and a traversing knitting device, the whole arranged and operating as specified.

22. The combination of the reversing-stops No. 1, No. 2, or No. 4, with the feed-rack C, wormer H, switch *t*, groove S, and yarn-carrier L, the whole arranged to operate substantially as set forth.

23. The arrangement of the looper I, switch K, grooves *d d'*, and wormer H, as specified, and operating for the purpose set forth.

108,004.—PLOW.—Manlove Butler, Vernon, Ind.

Claim.—1. The plain perpendicular mold-board D, when its lower edge is in one horizontal plane with the cutting-edge of the share and the sole of the land-side, substantially as set forth.

2. The combination of the mold-board D and the share B, when arranged with reference to each other, as described, so as to leave a space between the upper edge of the share and the face of the mold-board, for the purpose set forth.

108,005. — APPARATUS FOR CARBURETING AIR AND GAS.—Henry A. Chapin, New York, N. Y.

Claim.—The combination of the carbureting-vessel D, the spring E, or its equivalent, the valve F, and the reservoir *b*, essentially as shown and described, whereby the weight of the hydrocarbon liquid in said vessel D is made to automatically regulate the supply thereto, as herein set forth.

108,006, antedated September 26, 1870.—LIFE-PRESERVER.—Edward M. Crandal, Marshalltown, Iowa.

Claim.—The combination of a flexible band, A, tube C, and straps B B, all arranged to operate substantially as and for the purpose described.

108,007. — VEGETABLE-CUTTER. — Francis Curtis, Brattleborough, Vt.

Claim.—The board A, with its circular opening and angular flanges B B, through which slides the board C, having flanges *a a* and two-edged knife D, operating under the circular opening, all substantially as set forth.

108,008. — CLOTHES-DRIER. — William A. Daggett, Landis township, N. J.

Claim.—The brackets A A with their bearings *c c*, and hooks *f f*, in combination with bars D D and supports B B, all constructed and arranged as shown, and for the purpose described.

108,009.—Gas-Retort.—Darius Davison, New York, N. Y.

Claim.—1. The cylindrical return-pipe B, combined with the retort A, by means of the web *b* and pipe *a*, substantially as and for the purpose set forth.

2. The adaptation of the stand-pipe C to the return-pipe B, by means of a socket-connection, *c*, provided with a cover, *d*, arranged substantially as and for the purpose specified.

108,010.—Clapboard-Gauge.—Abram Deyo, Rockford, Ill.

Claim.—The gauge described, consisting of the strip A, handle B, and stop C, when constructed and arranged as described, for the purpose set forth.

108,011.—Saw.—Henry Disston, Philadelphia, Pa.

Claim.—The eyelet *b*, in combination with a detachable saw-tooth, and with the saw-blade, as herein described, and for the purpose specified.

108,012.—Brick-Machine.—David P. Dobbins and James Sangster, Buffalo, N. Y.

Claim.—1. The arrangement, with relation to each other, of the double set of molds N^5, the intermittently-moving brick-trays X, and guide-way Q, as hereinbefore set forth.

2. The arrangement of the reciprocating rock-shaft V^5 and pawl W^1, or equivalent feeding mechanism, beyond the main frame of the machine, and below the guide-way Q, in manner set forth, so that the trays may be conveniently presented to its action, and pushed forward, the one by the other, through the machine, without the necessity of coupling them together.

3. The trays X, when provided with the apertures Y, in combination with the pawl W^1, reciprocating and rocking-shaft or cross-head V^4, when said parts are constructed and arranged to operate as and for the purpose hereinbefore described.

4. The combination and arrangement of the drop-piston S^1 with the charger N^4, substantially as hereinbefore set forth.

5. The combination, with the delivery-followers P^3 and levers B^1, of the double lever P^4 and single lever Q^2, and the adjusting-bolts R^3 E^3, as hereinbefore set forth.

6. The part 7 of the cam, for actuating the delivery-followers P^3, whereby a slight additional movement is imparted to said followers, after the mold opens, substantially as hereinbefore set forth.

7. The part *a b* of the cam for actuating the sliding mold-box, whereby the velocity of the mold-box during the first part of the pressing movement is increased, substantially as hereinbefore set forth.

8. The combination, with the reciprocating mold-box, of the links E, radius arms F, and cam rollers G, arranged and operating substantially as hereinbefore set forth.

9. The deflecting plates U^3, combined and arranged with the brick-carrier, as described.

108,013.—Machine for Milling Carriage-Spring Heads.—William Evans, New Haven, Conn.

Claim.—The combination of the two jaws *a a*, right-and-left screw *d*, with the two cutters C C and the adjusting-screw G, the whole constructed and arranged in the manner herein set forth.

108,014.—Flue.—Nelson Fouché, New Orleans, La.

Claim.—A plurality of flues, leading from the same main flue into the smoke-stack, when said flues increase in their cross-sectional area, proportionally as they recede from the fire-place, as set forth and described.

108,015.—Machine for Scraping Chair-Backs.—Erastus S. French, Westminster, Mass.

Claim.—1. The swinging-frame C, constructed specifically as described, with its bars c^4 and knife c^5, as set forth.

2. The machine described, consisting essentially of the frame A, uprights B B B' B', swinging-frames C C', provided with knives, operated as described, and adjustable supporting-blocks D, when curved as described, for the purpose set forth.

108,016.—Rotary Engine.—Samuel Gibson, Lancaster, assignor to himself and L. W. G. Wierman, York, Pa.

Claim.—The combination of the wheel E, with its casing D and buckets *a a*, stationary steam-tubes *b b*, and heads *d d*, all constructed and arranged substantially as and for the purposes herein set forth.

108,017.—Bolt for Barn-Doors, &c.—Melvin R. Green, Warwick, N. Y.

Claim.—The arrangement of the toggles C C' and staple D, in combination with a single or double door, and sill, or equivalent, provided with the mortise *b*, substantially as and for the purpose set forth.

108,018.—Bed-Bottom.—Benjamin Gregg, Bennington, Vt.

Claim.—The bed-bottom with springs between the bearers *a* and slats *c*, the inclined ends *e* of the springs being placed parallel or nearly so to each other, and provided with saddles, *d*, as and for the purposes set forth.

108,019.—Washing-Machine.—Luke Hale, Hollis, N. H.

Claim.—1. In combination, the vertically-slotted cheek-pieces *b*, horizontal levers F, arms H, concave bed of rollers C' C', and oscillating rubber I, with convex corrugated under surface, substantially as specified.

2. In combination with the elements of the first claim, the wringing-rolls E L, when arranged as specified.

108,020.—Sewing-Machine.—Thomas J. Harper, Atlanta, Ga.

Claim.—1. The arrangement, upon the shaft C, of the driving-wheel D and eccentric E with wrist-pin *a*, operating the needle-arm G, connecting-rod J, pivoted shuttle, carrying-arm K, and bars O O', all constructed and operating substantially as set forth.

2. The combination of the shuttle-lever K, pivoted eye-bolt *f*, and circular needle A, all substantially as and for the purposes herein set forth.

108,021.—Meat-Mangler.—James T. Harvey and William Dixon, Marysville, Pa.

Claim.—The combination of the inclined planes A A and lance-toothed rollers D D, when constructed substantially as and for the purpose specified.

108,022.—Revolving Fire-Cracker Pistol.—James H. Hawes and Orville W. Brock, Monroeton, Pa., assignors to James H. Hawes.

Claim.—1. The pistol A B C F H I, for discharging fire-crackers, all its parts being constructed and operating substantially as shown and described.

2. The sliding casing C around the chambers of the cylinder, substantially as and for the purposes described.

3. In combination with the hammer and ratchet-wheel, the spring I, arranged to operate substantially as and for the purpose specified.

108,023.—Trip-Hammer and Anvil-Stock.—John C. Higgins, Skowhegan, Me.

Claim.—1. The trip-hammer head herein described, provided with notch C and key D, longitudinal channel H, and transverse channels F F, having their beds at different levels, and otherwise arranged, as described, so that the dies can be secured in their seats by separate wedges, or all fastened by a single wedge, as specified.

2. The anvil-stock herein described, having compressing lever S, slot Q, and catch I, longitudinal and transverse channels N P, having their beds at different levels, and adapted to hold the lower dies in place, in the manner and for the purposes specified.

3. In combination with the transverse and longitudinal dies, the wedge and plate Z, for securing them in position in the slot of a common anvil, as specified.

108,024.—Snap-Hook.—Asahel A. Hotchkiss, Sharon, Conn.

Claim.—1. The spring B, passing over the front of the collar C and through the loop of the hook, and clamped on the back of the shank of the hook by said collar, substantially as herein shown and described.

2. The guards *c c*, formed on the collar C, extending above the bottom of the loop, as and for the purpose herein set forth.

108,025.—Beer-Faucet.—Christian Jakob, New Orleans, La.

Claim.—The arrangement, herein described, of the removable air-pump A, faucet G, and removable coupling K, when said air-pump is provided with perforated diaphragm I and female screw-thread E, and said faucet has a male screw-thread, F, substantially as specified.

108,026.—Molding-Cutter.—Nicholas Jenkins, New York, N. Y.

Claim.—1. The cutters, provided with the base C, so as to be interchangeably arranged upon the spindle, when the said base is provided with a pin, *d*, and perforations *f*, for the purpose of adjusting the cutters relatively to each other, substantially as set forth.

2. In combination with the several cutters, constructed as herein described, and arranged upon the same spindle of the last cutter F, constructed so as to form the nut for binding the several cutters upon the spindle, as described.

108,027, antedated September 24, 1870.—Paneling-Machine.—Nicholas Jenkins, New York, N. Y.

Claim.—1. The form I, constructed in several parts, and the said parts secured together by the plate *i*, so as to be bent or curved into the desired form, substantially as set forth.

2. The shaft C, provided with cylinders E, and combined with the cylinders F and G G and a curved or irregular form, so as to give to the work a transverse movement, substantially as set forth.

3. In the construction of the cylinders G, the elastic cylinder *f*, substantially as described.

108,028.—Toy Torpedo.—Thomas Jefferson Johnson, Cincinnati, Ohio, assignor to H. P. Diehl & Co., same place.

Claim.—The combination of a readily-exploded fulminate with a less explosive one, so as to obtain a loud-reporting torpedo without the excessive explosive force and danger incidental to the use of large amounts of powerful detonating-compounds.

108,029.—Gas-Regulator.—Peter Keller, New York, N. Y.

Claim.—1. The arrangement of a cup-shaped valve fitting into a nozzle, which is provided with a shoulder to receive the bottom edge of said valve, while the valve is provided with a projecting rim, to rest on the top edge of the nozzle, both the valve and the nozzle being perforated with holes, substantially in the manner herein shown and described.

2. The arrangement of a perforated screen, in combination with the cup-shaped valve and nozzle, constructed and operating as set forth.

108,030.—Composition for Destroying Worms in Fruit-Trees.—Solomon Kepner, Pottstown, Pa.

Claim.—The hereinbefore-described composition, substantially as and for the purpose specified.

108,031.—Gate.—Solomon Kepner, Pottstown, Pa.

Claim.—1. A farm-gate, sustained by and balanced upon a single pivot, extending downward from and fitting into a suitable socket, substantially as shown and described.

2. In combination with the folding, balanced gate, above described, the means employed for securing the gate to and in line with the fence, consisting of the sliding jointed bar F, engaging with a suitable slot within the post G, and with the catch *h*, pivoted to or upon the post H, substantially as shown and specified.

108,032.—Plow and Planter.—Peter Kling, Springfield, Ill.

Claim.—1. The disk P, formed with a concavity on one side and a series of openings, *p'*, and carrying the pivoted fingers S and springs *t*, and operated by the pin or stud *i*, substantially as described, for the purpose set forth.

2. The bevel-wheel X, mounted on the shaft V, carrying the standard C, provided with arms or spikes *a' a'*, in combination with the disk P and stud *i*, substantially as described.

3. The axle N, journaled within bearings attached to the frame A, with the wheel L, chain F, wheels K and X, and shaft O, in combination with the standard C, disk P, stud *i*, and hopper B, the whole arranged and operating together, substantially as described.

108,033.—Sewing-Machine.—Albert Komp, New York, N. Y.

Claim.—1. The arrangement of the cam *b* on the shaft C, arm *a*, presser-foot F, nose *c*, cam *d* on the needle-slide, and spring E, all as shown and described.

2. The braid-guide *f* and the hinged lever G, in combination with the throat-plate *g* and presser-foot F, all constructed and arranged substantially as set forth.

108,034.—Putting up Medicine.—Frederic Kraus, Cincinnati, Ohio.

Claim.—1. The method of preparing medicines in the manner substantially herein described.

2. Medicines or drugs put up in gelatinous tablets, which are divided into equal doses, in the manner substantially as herein described.

3. The slates, shown in figs. 1 and 2, for preparing gelatinous medicine-tablets, substantially as herein described.

108,035.—Churn.—Alexander Ladd, St. Lawrence, N. Y.

Claim.—The hollow shaft B, when provided with the hollow arm D, substantially as and for the purposes specified.

108,036.—Hominy-Mill.—John K. Leedy, Maurertown, Va.

Claim.—1. The triangular knives D, when provided with a hexagonal rise on the sides, and central openings, substantially as set forth.

2. The combination of the cylinder C, having on its inner surface a series of sharp, diagonal, or winding ridges, and the triangular knives D, constructed as described, revolving upon one shaft, all substantially as and for the purposes herein set forth.

3. The revolving cylinder I, provided with the buckets *n n* and holes *i i*, in combination with the

fan J, revolving within and independently of the cylinder, substantially as for the purposes herein set forth.

4. The combination of the cylinder C, knives D, screen E, cylinder I, and fan J, all constructed and arranged as described, to operate substantially as and for the purposes herein set forth.

108,037.—CULTIVATOR.—James R. Little, Galesburg, Ill.

Claim.—Securing the standards B to the beams A by means of the eye-bolt C and adjustable double socket G H, substantially as described, and for the purpose set forth.

108,038. — ADDRESSING-MACHINE. — James McFatrick, Lena, Ill.

Claim.—The combination of the spring *e* and adjustable collar *e'* on the vertical rod C, with the lever D, slotted crank-lever E, and removable slide F, with its notch for the reception of the end of the lever, when the parts are arranged as described, for the purpose set forth.

108,039. — BUSTLE. — Donald McInroy, Brooklyn, E. D., N. Y.

Claim.—The bustle, formed of separate springs, having bows *a b*, clasped at *c*, as set forth, in combination with the band *e* and lacings *f h*, as and for the purposes set forth.

108,040.—SAW.—William F. Milliman, Philadelphia, Pa., assignor to Henry Disston & Son, same place.

Claim.—The saw A, having groups of teeth B and B', separated by recesses *a*, each group being composed of teeth *d*, *d'*, and *e*, all constructed and arranged as shown and described.

108,041. — ELECTRO-PHOTO DAMASKENING AND ENAMELING.—Arthur Guy Morvan, New York, N. Y.

Claim.—The process of electro-photo damaskening and enameling, substantially as described.

108,042.—METAL PLATE OF IRON AND STEEL.—James Myers, Jr., Williamsburg, N. Y.

Claim.—Homogeneous plates or sheets of steel and iron, the interior or core of which shall be wrought of malleable iron, and exterior, for any desired thickness, steel, formed from homogeneous plates or sheets of wrought or malleable iron, by the conversion of the outer portion of said plates or sheets into steel by chemical processes, substantially as and for the purpose herein described and set forth.

108,043.—CUSHION, MATTRESS, &c.—Thomas H. O'Brien, Providence, R. I.

Claim.—In combination with the sacks of a cushion or mattress, with or without a fibrous filling, the air-springs B, provided with the projections E, and connected together substantially in the manner described.

108,044.—CORN-PLANTER AND MARKER.—Floyd Ogden, Fisherville, Ky., assignor to himself and J. T. Rose, Utica, Ind.

Claim.—1. The cam-wheel N, secured to the axle C, and acting in combination with the roller *k*, bars K K, and foot L, for the double purpose of operating the planting mechanism and marking the ground, substantially as herein set forth.

2. The combination of the foot L, rod *f*, shaft M, and arm A, constructed and arranged as described, for the purpose of operating the slide H, substantially as herein set forth.

3. The combination of the frame A B D, shaft C, wheel E, hoppers G, slide H, conductors I, runners J, bars K, foot L, shaft M, cams N, tongue O, and levers P R, all constructed and arranged to operate substantially as and for the purposes herein set forth.

108,045.—MILLSTONE-BUSH AND BEARING.—Andrew Ortlip, East Vincent, Pa.

Claim.—1. The combination, with the spindle J, of a millstone bush, H, secured in the lower stone, a series of wedges or tapering blocks, fitted to the bush and to the spindle, and an adjustable yoke, F, connected to the said wedges or bearings, so as to operate all the same simultaneously, substantially as set forth.

2. The combination of the said wedges or blocks, the adjustable yoke F, and rods K', connected to the blocks and to the yoke, so as to be adjustable on the latter, as set forth.

3. The combination of the adjustable yoke F, rods D D, and cross-piece C, as described.

108,046.—SHOW-STAND.—Joseph R. Palmenberg, New York, N. Y.

Claim.—The combination, with the upright bars or rods A hinged to the bottom plate S, the hinged rods or braces C, or their equivalent, and the brackets E, provided with hinged arms J and screws *c*, arranged and operating together, in the manner and for the purpose substantially as described and specified.

108,047.—SHOVEL-PLOW.—Peter B. Parcell, Ashmore, Ill.

Claim.—The arrangement of the beams A A', hook B, screw-rod C, handles D D', round E, braces G G', plows H H', bolts *a a'*, nuts *b b*, bolts *c c'* and *h h'*, and set-screws *f f'*, all constructed substantially as and for the purposes herein set forth.

108,048.—FRUIT-DRIER.—Oliver P. Pence, Des Moines, Iowa.

Claim.—The case A A, the metal base B B B, the perforated plates C C, the movable drawers D D D, the pipe E, the heat-distributers *c c* and *d d*, all made, combined, and operated, substantially as described, and for the purposes specified.

108,049.—FANNING-MILL.—Christian Peterson, Red Wing, Minn.

Claim.—In a fanning-mill, constructed as herein shown, and having graduated cylinder H, the arrangement of the plate T, block *t*, lever *z*, and post *v*, when arranged substantially as specified.

108,050. — WATER-HEATER. — James Raisbeck and Thomas A. Raisbeck, New York, N. Y.

Claim.—1. The hexagon jacket A, inclosing a water-space, and a series of fire-flues, and a water-crown, substantially as described.

2. The top and bottom sheets E E, and flues D D, in combination with the surrounding water-space C, smoke-box F, water-crown H, heating-pipe I, and escape-flue G, forming together an improvement in water heaters, as set forth.

3. The corrugated heating-pipe I, forming receptacles for water, to supply the requisite amount of moisture, substantially as described.

108,051. — SEED-PLANTER.—Blachman Asbury Ramsey, Trenton, Tenn.

Claim.—The combination and arrangement of the adjustable colter N, adjustable shoe *b*, planting-wheel F, case K, trough *c*, angular drag M, and roller E, when constructed substantially as and for the purpose set forth.

108,052. — SHUTTER-FASTENER. — Andrew Rankin, Philadelphia, Pa.

Claim.—1. The slotted and notched plates B and B', secured to the shutters, in combination with the hinged arms D and D' and their headed pins *e*.

2. The combination, substantially as described, of the projection *n* on one of the said hinged arms, with the turn-buckle *n* on the other arm.

108,053. — WHEELBARROW. — Reuben M. Reynolds, East Saginaw, Mich.

Claim.—The mode of construction herein described, by which the side pieces B, arms C, and handles D, are made to serve as a body-rest, wheel-journal, legs, and handles of a wheelbarrow.

108,054. — WASHING-MACHINE. — Abner Riggs, Frostburg, Md.

Claim.—The combination of the box A, frame B C D, rollers E G H, springs *b b*, and clasps *d d*, all constructed and arranged substantially as and for the purposes herein set forth.

108,055. — COMPOSITION FOR COVERING STEAM-BOILERS, AND FOR OTHER PURPOSES.—John Riley, Troy, N. Y., assignor to the United States and Foreign Salamander Felting Company.

Claim.—1. The composition, herein described, for covering steam-boilers, pipes, and the like, made by combining ground gypsum or plaster and any suitable fibrous material by means of lime-putty or equivalent cement.

2. Roofing and roofing-tiles, made by combining either paper-pulp, vegetable fiber, hair, asbestos, or other suitable fibrous material with lime-putty, substantially as described.

3. The improved composition, herein described, for lining and coating metallurgic and other furnaces, made by combining asbestos, lime-putty, and plaster, or its equivalent, as described.

4. The improved fire-brick, herein described, made by combining asbestos and ground gypsum by means of lime-putty, or other calcareous cement.

5. The compounds herein described, made by combining the materials named, in the manner and substantially in the proportions set forth, and for the purpose specified.

6. The combination of oil with ground gypsum, lime-putty, and fibrous materials, substantially as specified.

108,056.—FIELD-ROLLER AND FURROWING-MACHINE.—Moses M. Robbins, Centerville, Ind.

Claim.—1. The combination, in a rolling and marking-machine, of two sets of markers, arranged upon a roller, in such a manner that, by being moved in the proper direction, the distances between the rows shall be marked, and, at the same time, the distances between the hills in the rows, substantially as described.

2. The combination of the roller B, with its markers B^1 and B^2, and the side markers C C, substantially as and for the purpose set forth.

108,057.—LAND-ROLLER.—Irving W. Searles, Tiffin, Ohio.

Claim.—The frame-pieces A A', B, and E E', as constructed and arranged with the rollers C C and D, as and for the purpose specified.

108,058, antedated September 24, 1870.—MANUFACTURE OF IRON AND STEEL.—Lorenzo Sibert, Staunton, Va.

Claim.—1. The arrangement of the slag-dam C, and shoot D, on the opposite side of the reducing-furnace from the floss-tap or trough G, and the elevation of the hearth above the floor-level, substantially as and for the purpose set forth.

2. The arrangement of a series of refining-fires, E, for producing shear or cast-steel direct from the reducing-furnace, without reheating, as shown and described.

3. The arrangement and combination of the refining-fires E and F, with the reducing-furnace A, substantially as and for the purpose or purposes specified.

108,059.—SAW.—John Smith, Philadelphia, Pa., assignor to Henry Disston and Hamilton Disston, same place.

Claim.—The projection *b* on the blade A, and the projection *d* on the tooth B, abutting therewith, as described.

108,060. —TANNING-VAT.—John E. Smith and Charles L. Smith, South Dedham, Mass.

Claim.—1. Providing a tanning-vat with a horizontal revolving wheel, near its bottom, as and for the purpose set forth.

2. The combination of wheel D with the vat A, triangular projections B, and inclined plates B', substantially as set forth.

108,061. — EARTHEN TEA-POT. — Thomas Smith, Jr., Boston, Mass.

Claim.—1. A tea-pot, constructed of an earthen body, with a spout or handle, or both, made of metal, and suitably applied to the earthen body, substantially as and for the purpose described.

2. The combination of a metallic bottom plate with an earthen tea-pot, substantially as described, for the purpose specified.

108,062.—SHAFT-COUPLING FOR VEHICLE.—John Steele, Sheldon, Ill.

Claim.—In a thill-coupling for vehicles, the divided eye *a a* and divided strap B, the latter being a continuation of the longitudinal division of the former, and constructed either partially split or divided, substantially as described.

108,063. — BUTTON-HOOK AND HANDKERCHIEF-HOLDER COMBINED. — George D. Stevens, New York, N. Y.

Claim.—1. A button-hook and handkerchief-holder combined, as a new article of manufacture.

2. The guide-ring *e*, in combination with the chains *b b*, jaws B B, and hook A, substantially as set forth.

108,064.—LANTERN.—Peter Sweeney, New York, N. Y.

Claim.—1. The horizontal spring lugs or catches K, arranged upon the lamp L, in combination with the slotted flange I of the body C of the lantern, substantially as described.

2. The guards A A continued beyond the flange B in to hooks X, in combination with the slotted flange V of cap U, substantially as and for the purpose described.

108,065.—CORN-PLANTER.—Nathan Swigart, Richfield, Ohio.

Claim.—The arrangement of the rectangular frame C, axle B, seed-wheels G, hoppers E F, openers J, and coverers K, with thills M and handles I, all as and for the purpose set forth.

108,066.—TONGS FOR FORGING THE ARMS ON FIFTH-WHEELS.—Wales Terrell, Ansonia, Conn.

Claim.—The herein-described improved tongs, in which the jaw A extends up forward of and at right angles to the jaw C, so that the blank may be clamped between the two said jaws, and the jaw A serve as a guide or form for turning or shaping the projections on the blank, substantially in the manner and for the purpose set forth.

108,067.—METALLIC BINDING FOR TEXTILE FABRICS.—James Twamley, New York, N. Y.

Claim.—A metallic binding for textile fabrics, united thereto by means of "barbs" turned toward the fold of the metal, substantially as and for the purposes set forth.

108,068.—TILES FOR ROOFING, &c.—William Utley, Troy, N. Y.

Claim.—The sections A of tiling, made with recesses *a* and rebates *b*, so that, when laid together as herein shown, they will overlap, match, and break joints each with its adjoining neighbor, in the manner and for the purpose set forth.

108,069.—HARVESTER.—Ausbert H. Wagner, Chicago, Ill.

Claim.—1. In combination with the driving-axle and cutter-bar of a harvester or mower, air-compressing and air-actuating devices, substantially as and for the purpose specified.

2. The valve-box L, provided with the induction-port M, and eduction-ports *r r*, in combination with the rotary valve S and the axle B, substantially as and for the purpose shown and described.

3. The combination of the axle B, provided with the crank B', the cylinders D and M, the valve-boxes F and L', the valves *s* and S, the plunger G, the rods H and *o*, the connections K and Q, and the piston O, substantially as and for the purpose shown.

108,070.—SAUSAGE-STUFFER.—Henry Whaler, Henry Metz, and Ludwig Heinzle, Freeport, Ill.

Claim.—1. The curved rack-bar H, having the piston I attached thereto, when the parts are arranged, relatively to each other and the cylinder and gearing, as described, for the purpose set forth.

2. The sausage-stuffer described, consisting of the table, bed-plate, cylinder, tube, gearing, rack-bar, piston-rod, and piston, when the parts are arranged as described, for the purpose set forth.

108,071.—CAP FOR HORSE-COLLAR.—James F. Walsh, Hazel Green, Wis.

Claim.—The improved detachable collar-cap, herein described, consisting of a flexible metal stiffening-plate, covered with leather, turned up around the edge, all as shown and described.

108,072.—RENDERING LEATHER IMPERVIOUS TO HYDROCARBON LIQUIDS.—Albin Warth, Stapleton, N. Y.

Claim.—The within-described process for rendering leather impervious to hydrocarbon liquids, by boiling the same in melted beeswax until its entire body is permeated by the wax, as herein set forth.

108,073.—LETTER-BOX.—Edwin Clarence Weld, New York, N. Y., assignor to himself and Theodore C. Glazier, same place.

Claim.—The general construction and relative arrangement of the box A and B, provided with the opening I, the cylinder D, provided with the journals E, the overbalances F, and the opening H, and the disk G provided with the opening H and the stud K, substantially as and for the purpose set forth.

108,074.—SEWING-MACHINE TABLE.—John J. Wheat, Wheeling, West Va.

Claim.—A sewing-machine table, composed of the top with sinking part A, and the box *c*, with the three leaved hinges *d*, all arranged to fold up and throw back, as shown in fig. 3, and constructed substantially as herein described.

108,075.—SECTIONAL STEAM-GENERATOR.—Harry Whittingham, New York, N. Y.

Claim.—1. A sectional steam-generator, composed of zigzag-shaped upright tubes B, and horizontal or inclined water-pipes A, substantially as set forth.

2. The plugs or caps *d*, in combination with the external thimbles of the upright pipes, and with the concentric fire-flues C and water-pipes, substantially as set forth.

108,076.—HAY-KNIFE.—Daniel H. Wile, New Pittsburg, Ohio.

Claim.—The hay-knife herein described, having the V-shaped blade C, with concave cutting-edges *d*, and beveled upper edge *e*, shank A, bent toward the operater, near its upper end, and handle B, welded between the shank-rods below the bend substantially as specified.

108,077.—UMBRELLA.—Robert C. Williams, Frankfort, Ky.

Claim.—The shaft *d*, catch E, sleeve *e*, spring *f*, and plate P, pin *c*, and spring B, when constructed, arranged, and combined, as and for the purpose described.

108,078.—LAMP-BURNER.—Samuel R. Wilmot, Bridgeport, Conn.

Claim.—1. The railing F, composed of an annular series of legs, *g g*, constructed substantially as herein described, to diagonally brace each other, and the entire structure or burner.

2. The deflector G, provided with a series of elastic wings, *h*, arranged to lap one another at their opposite edges, substantially as specified.

108,079.—JOURNAL-BOX.—Eliza Dexter Murfey, New York, N. Y., assignor to Manhattan Packing Manufacturing Company.

Claim.—A journal-box and bearing, consisting of a hollow block of wood, containing a lining, *z*, of material substantially as described, and adapted to a journal, as set forth.

108,080.—JOURNAL-BEARING.—Eliza Dexter Murfey, New York, N. Y., assignor to Manhattan Packing Manufacturing Company.

Claim.—1. A bearing for journals, consisting of the material herein described formed into a tube, adapted to a journal and journal-box, as set forth.

2. The said bearing, of flexible material, having at one end a flange, *a*, for the purpose set forth.

108,081.—JOURNAL-BOX.—Eliza Dexter Murfey, New York, N. Y., assignor to Manhattan Packing Manufacturing Company.

Claim.—1. The combination of the box A, its bearing *z*, and an elastic medium arranged between the bearing and the box, substantially as described.

2. The combination, with the box A, of a detachable carrier B, for holding the bearing, as specified.

3. The ring or cap *c*, securing the flanged bearing to the box, as set forth.

REISSUES.

4,137.—Division A.—DEODORIZING APPARATUS FOR CLOSET.—Earth-Closet Company, Hartford, Conn., assignee of Henry Moule and Henry John Girdlestone.—Patent No. 91,474, dated June 15, 1869.

Claim.—1. A vibratory or movable hopper, constructed and operating substantially as and for the purposes described.

2. A swinging distributer or chucker, arranged to operate substantially in the manner and for the purposes set forth.

3. The deflector-plate C', in combination with the chucker, operating as and for the purpose set forth.

4,138.—Division B.—EARTH-CLOSET.—Earth-Closet Company, Hartford, Conn., assignee of Henry Moule and Henry John Girdlestone.—Patent No. 91,474, dated June 15, 1869.

Claim.—In combination with the depressible seat and the described earth distributing device, a mechanism for working the distributer, substantially as described, and actuated alternately by the seat and by a counteracting weight or spring.

4,139.—Division A.—HARVESTER.—Rufus Dutton, Yonkers, N. Y.—Patent No. 31,705, dated March 19, 1861; reissue No. 1,762, dated September 13, 1864.

Claim.—1. A single metal casing-plate, separate and apart from any driving or carrying-wheel, which plate supports the journals of the crank-wheel axle, and a journal of a secondary gear-wheel axle, and also makes one side or main part of a box or case, which incloses and protects the secondary gear-wheels of a mowing or reaping-machine, substantially as described.

2. A single metal casing-plate, separate and apart from any driving or carrying-wheel, which plate makes one side or main part of a box or case, which incloses and protects the secondary gear-wheels, and which plate also, practically, makes the main frame of a mowing or reaping-machine, substantially as described.

4,140.—COCK.—Joseph P. Gallagher, St. Louis, Mo.—Patent No. 48,673, dated July 11, 1865.

Claim.—1. The valve B, with two faces, *f* and *f'*, and arranged to move between and operate in connection with two seats, substantially as set forth.

2. The disk G, with a flange, *c*, and groove *b*, and having a seat-surface, to make a water-tight joint with the valve B *f'*, substantially as set forth.

3. The tube F, arranged relatively to the body A of the cock or faucet, and the chamber or barrel D and the valve B, in connection with the flange *c*, disk G, and escape-spout H, substantially as and for the purpose described.

4. The groove *b*, in the periphery of the disk G, when used in connection with the parts specified in the third claim, substantially as and for the purpose set forth.

4,141.—WASHING APPARATUS.—John T. Grose, Upper Sandusky, Ohio, assignor to himself and William E. Kinnear, same place.—Patent No. 98,585, dated January 4, 1870.

Claim.—1. The tub D, provided with the pipes F *f' f' f'*, arranged and operating substantially as shown and described.

2. The arrangement of one or more tubs D, the steam-pipe F *f' f' f'*, and pipes C and E, with reference to each other, and the boiler B, and furnace A, substantially as herein shown and described.

4,142.—MACHINE FOR BUNDLING WOOD.—William L. Williams and Thomas J. O'Connor, New York, N. Y., assignees of William L. Williams.—Patent No. 26,147, dated November 15, 1859.

Claim.—1. The follower *e* and receptacle *p*, in combination with the trough *b*, and operating in substantially the manner and for the purposes specified.

2. The ring-separator or knife *p*, applied to separate from the mass of kindling-wood a bundle, substantially as described and shown.

3. The arrangement of the follower *e*, ring-separator or knife *p*, trough *b*, and mechanism, as described, for actuating the follower and knife, substantially as set forth.

4. Arranging the receiving and compressing mechanism, as specified, so as to act contiguous to the place where the cord or wire is to be applied to the bundle, for the purposes specified.

5. The compressing-levers *n n*, in combination with the jaws or slides *h h*, substantially as and for the purposes set forth.

6. The twisting-jaws or pincers *i i'*, constructed as specified, to receive the wire, and twist the same, as specified.

7. The weight *l*, hung on the levers *m m*, and applied in the manner specified, to bring the wood into position endwise, as set forth.

4,143.—Division A.—POST-OFFICE POST-MARKING AND CANCELING HAND-STAMP. Marcus P. Norton, Troy, N. Y., assignor to Helen M. Ingalls, same place.—Patent No. 38,175, dated April 14, 1863; reissue No. 1,748, dated August 23, 1864; reissue No. 3,586, dated August 3, 1869.

Claim.—1. The postage-stamp-canceling device cylinder or tube C, containing a die or type, G, made of cork, wood, or other suitable material, or any equivalent for said cylinder or tube C, or for the said canceling die or type G, whereby to efface, cancel, or destroy the postage-stamp with indelible or other ink, in the manner and for the purposes substantially as herein described and set forth.

2. The canceling device cylinder or tube C, with cork, or wood, or any substantial equivalent thereof, forming the die or type G therein, in combination with the cross-bar or piece B, and with the post-marking device D, substantially as and for the purposes herein described and set forth.

3. The post-marking of letters, envelopes, and packets, and the cancellation of the postage-stamps thereon with ink, at one and the same blow or operation of the instrument, in the manner and by the means substantially as herein described and set forth.

4. The employment and combination of a post-marking device with a postage-stamp-canceling device, both being operated by one and the same handle, for the post-marking of letters, envelopes, or packets, and for the cancellation of the postage-stamps thereon, with indelible or other ink, in the manner substantially as herein described and set forth.

4,144.—Division B.—HAND-CANCELING STAMP.—Marcus P. Norton, Troy, assignor, by mesne assignments, to the "Secombe Manufacturing Company," New York, N. Y.—Patent No. 38,175, dated April 14, 1863; reissue No. 1,748, dated August 23, 1864; reissue No. 3,586, dated August 3, 1869.

Claim.—In an internal-revenue stamp-canceling device or machine, the arrangement and combination of cutters or knives, (or cutting-canceling device,) with the dating, printing, or forming-type or device, substantially as shown and described, so as to cancel revenue stamps by cutting, puncturing, or piercing the same, and by the printing or forming the date thereon, in the manner substantially as herein specified and set forth.

4,145.—FRUIT-BASKET.—Lauren Carpenter, St. Joseph, Mich.—Patent No. 102,488, dated May 3, 1870.

Claim.—The elevated platform-top A, applied as and for the purpose described.

4,146.—TABLE-LEAF SUPPORTER.—George L. Gerard, New Haven, Conn.—Patent No. 106,353, dated August 16, 1870.

Claim.—The arrangement of the bracket A upon the under side of a swinging leaf, combined with a stop, C, constructed so as to catch and hold the bracket when the leaf is raised, substantially as described.

4,147.—COAL-HOD.—Edwin A. Jeffery, New Haven, Conn.—Patent No. 52,856, dated February 27, 1866.

Claim.—A coal-hod, the body of which is in shape the frustum of a cone, the base or larger end closed, the smaller end serving as a conductor for discharge of the coal, and an opening formed upon the top for the introduction of coal into the hod, substantially in the manner set forth.

4,148.—MANUFACTURE OF RUBBER OR GUTTA-PERCHA HOSE.—Edward L. Perry and Charls Manheim, New York, N. Y., assignors to the Combination Rubber Company and the Gutta-Percha and Rubber Manufacturing Company.—Patent No. 92,353, dated July 6, 1869.

Claim.—1. The mode herein described for protecting the ends of rubber or gutta-percha hose, the same consisting in inclosing the canvas part of the India-rubber or gutta-percha hose at the ends, either by folding over the said ends extensions of the lining, or extensions of the exterior covering, or by the application of rubber or gutta-percha washers, so as to cover the ends of duck or canvas, all substantially as specified.

2. The combination of a washer, of rubber or gutta-percha, with the ends of vulcanized hose, so as to protect the same, substantially as set forth.

3. As a new manufacture, vulcanized India-rubber hose provided with a rubber-coated covering over the ends of the duck or canvas, substantially as set forth.

DESIGNS.

4,375.—CLOCK-FRONT.—John H. Bellamy, Charlestown, Mass., assignor to Samuel D. Niles and Benjamin A. Ward of three-fourths of his right.

Claim.—The design for a clock-front, herein set forth.

4,376.—STOVE-PLATE.—Luther W. Harwood, Troy, N. Y., assignor to Fuller, Warren & Co., same place.

Claim.—1. The design for the leg A, as described and shown.

2. The design for the bottom plate D, as shown and described.

3. The design for the top plate H, as herein set forth.

4. The design for the cover L, as described and shown.

5. The particular form or configuration of the damper-chamber P, as specified and shown.

6. The form or configuration of the combination of the ornament *u v w* with the damper-chamber, as shown.

7. The design for the door-frame X, as shown and described.

4,377.—IRON RAILING FOR HORSE-STALL.—James L. Jackson, New York, N. Y.

Claim.—The design of the ornamental shape and configuration of the railing, substantially as described and represented.

4,378.—IRON RAILING FOR HORSE-STALL.—James L. Jackson, New York, N. Y.

Claim.—The design of the ornamental connections between the bars of an iron railing, as described and represented.

4,379.—IRON RAILING FOR HORSE-STALL.—James L. Jackson, New York, N. Y.

Claim.—The design of the configuration and ornamentation of the iron railing, substantially as described and represented.

4,380.—LID OF A FEED-CUP IN BIRD-CAGE.—Otto Lindemann, New York, N, Y.

Claim.—The design for the lid of a feed-cup in bird-cages, as shown and described.

4,381.—MEDALLION OR CAMEO.—Leopold Salomons, London, England, assignor to J. W. Chisholm and K. Chisholm, New York City.

Claim.—The design of the relief figure of Charles Dickens, shown and described.

4,382.—SPOON AND FORK-HANDLE.—Bernhard D. Beiderhase, New York, N. Y.

Claim.—The design for the handles of spoons, forks, &c., as shown.

4,383.—COLLAR-BOX.—Alfred L. Elliot, Boston, Mass.

Claim.—The design for a collar-box, in the form and style of a valise, substantially as set forth.

4,384.—BOX FOR HOLDING AND DISPLAYING BRAIDS, TAPES, &c.—Simon B. Fleisher, Philadelphia, Pa.

Claim.—The design for "Alpaca Braid-Box," as shown.

4,385.—PLATE FOR PITCHER-STAND.—Hugo O. Fritsch, New York, N. Y.

Claim.—The design for a plate, as shown and described.

4,386.—KNITTED FABRIC.—Edmund Grenaly, Philadelphia, Pa.

Claim.—The design for the knitted fabric described, and illustrated in and by the accompanying drawing.

4,387.—COFFIN.—Edward T. Smith and Joseph S. Winston, New York, N. Y.

Claim.—The design for a coffin end, as shown.

4,388.—DRESS-GOODS.—Matthew Townsend, Canton, Mass.

Claim.—The design for dress-goods, as shown.

ISSUE OF OCTOBER 11.

PATENTS.

108,082.—COVER OF CULINARY BOILER.—Paschal J. Abbott and Job Abbott, Dexter, Me.

Claim.—1. The counterbalanced boiler or vat-cover B, provided with the pipe B', and valve D, as set forth.

2. The boiler or die-vat cover, as counterbalanced as described, and provided with the neck or intercepting flange *e*, or its equivalent, to extend into the boiler or vat A, or arranged to direct therein the steam that may condense in or run down on the inner surface of the cover.

3. The combination of the intercepting flange *f*, or its equivalent, with the pipes C B', and the counterbalanced lever B, arranged substantially as specified.

108,083.—MEAT AND VEGETABLE MASHER.—George A. Anderson and Charles J. Baker, Albany, N. Y.

Claim.—A potato or meat-pounder or masher, constructed of a metal piece, A, provided with the perforations *a a* and projections *c c*, placed alternate, and arranged substantially as and for the purpose set forth.

108,084, antedated October 8, 1870.—CRUCIBLE FOR MELTING IRON AND STEEL.—James E. Atwood, Pittsburg, Pa.

Claim.—A crucible for melting iron, steel, and other metals, when constructed with a flux-ring, as herein described, and for the purpose set forth.

108,085.—GEARING FOR WAGON.—John B. Augur, Poughkeepsie, N. Y.

Claim.—1. The herein-described method of equalizing the action of springs of vehicles, and distributing the weight of the load.

2. The combination of the pivoted links with a rod connecting the same, the rod compelling both links to move in unison, as and for the purpose described.

3. An axle or bolster having its under side cut away or arched, as and for the purposes described.

4. In combination with an axle or bolster having such an under side, a wooden bed, arched or A-shaped on its upper side, to adapt it thereto.

5. A fifth-wheel, constructed as shown and described; that is, with a concave under side on its upper part or "circle," and with a continuous convex upper side on its lower part or "circle," the two having an unbroken or continuous bearing-surface, one upon the other, and operating together, as and for the purpose set forth.

6. The combination, with a fifth-wheel, of the lugs *m m* and *n*, connecting-bolts, and rubber pad, or its equivalent, as and for the purpose set forth.

7. The combination of the bracket K and its lug with the fifth-wheel and its lugs *m m*, bolts, nuts, and rubber pad, or its equivalent, substantially as shown and described.

8. The combination, with the bolster and reaches D D, of the braces F F, as and for the purpose set forth.

108,086.—BAKE-OVEN.—Adam A. Aull and John A. Aull, Bellefontaine, Ohio.

Claim.—1. The arrangement of two furnaces or fire-places at opposite ends of the oven, one furnace being located below the hearth and the other above it, substantially as described.

2. The construction of a hearth, of a soapstone imperforated portion, G, and a grating portion, J, substantially as described.

108,087, antedated September 20, 1870.—COMBINED PUMP AND SIPHON.—John D. Averell and George A. Higgins, New York, N. Y., and Thomas Gordon, Shrewsbury, N. J., assignors to George A. Higgins.

Claim.—The pump *c d e* and valves *f* and *o*, combined with the siphon *a b*, and arranged substantially as specified, so that the piston *d* will act as a stop to the siphon, and the siphon can also be used as a pump, substantially as set forth.

108,088.—PROCESSES FOR THE MANUFACTURE OF CARBONATE OF SODA, HYDROCHLORIC ACID, &c.—Haydn M. Baker, Washington, D. C.

Claim.—The employment or use of hydrated alumina, or other hydrates, for the purpose of decomposing the alkaline or earthy chlorides, substantially as described.

108,089.—MANUFACTURE OF ALUMINATE OF SODA.—Haydn M. Baker, Brooklyn, E. D., N. Y.

Claim.—Alumina, in conjunction with coal or other substances, for the purpose of decomposing the sulphate of potash and sulphate of soda or saltcake at exalted temperatures, in the manner herein described, for the production of aluminate of potash and aluminate of soda.

108,090.—MANUFACTURE OF NITRIC ACID.—Haydn M. Baker, Williamsburg, N. Y.

Claim.—The process herein described for manufacturing nitric acid, the same consisting in treating an alkaline nitrate with alumina, substantially as herein set forth.

108,091.—SHEARS FOR CUTTING FLOWERS.—Joseph W. Barbour, Winooski Falls, Vt., assignor to himself and Elisha Allen, same place.

Claim.—The shears containing the elastic plates or pieces C, for retaining the flowers or other things cut by them, substantially as set forth.

108,092.—BUFFING APPARATUS FOR FINISHING SPOONS.—Harry Barrett, Brooklyn, N. Y.

Claim.—A buffing or polishing attachment for lathes, consisting of the large buffing-wheel A, the spindle P, and the small wheel C, all constructed and arranged substantially as specified.

108,093.—POTATO-DIGGER.—Abner L. Bausman, Minneapolis, Minn.

Claim.—The arrangement and combination of the bent wires *e e*, each forming two tines of the potato-digger, the guard-rail A, clamp D, and pendent fulcrum C, having the broad foot *a'*, when constructed to operate substantially as shown and described.

108,094.—HORSE HAY-FORK.—Stewart Bebout, Waterford, Ohio.

Claim.—1. The combination of the side plates B B with the spur-rests or guides J J and the slots G and G and the shoulder L, and the piece of iron F, and the lance D, and the latch E, substantially as and for the purpose hereinbefore set forth.

2. In combination with the elements recited in the first clause of claim, the suspender A A, bar K, and spurs C C, all arranged to operate substantially as and for the purpose hereinbefore set forth.

108,095.—PLOW.—Bengt C. Blomsten, Waupaca, Wis.

Claim.—The plow described, consisting of the beam A, handles *a*², mold-board *a*, point, colter, brace-rod *b*, and draft-attachment E, when combined as described, for the purpose set forth.

108,096.—DEVICE FOR OPENING AND CLOSING FANS.—George Bordes, New York, N. Y.

Claim.—The sliding slotted rack-bar G, pinion F, and pivot-rod E, combined as described, with a fan, A B C D, for the purpose set forth.

108,097.—MANUFACTURE OF BISCUIT.—Charles D. Boss and Charles D. Boss, Jr., New London, Conn.

Claim.—The composition for flour-biscuit, composed of the materials in the proportion and compounded in the manner substantially as specified.

108,098.—LOCK.—James Brady, Branford, Conn., assignor to "The Branford Lock Works," same place.

Claim.—The arrangement of the bolt-operating portion D of the follower and body-portion D', carrying the tumblers H, and revolving within the independent escutcheon F, made adjustable relatively to the portion D, for operation substantially as and for the purpose herein set forth.

108,099.—LOCK.—James Brady, Branford, Conn., assignor to "The Branford Lock Works," same place.

Claim.—The tumblers S, provided with lips *f* and locking-wings *g*, in combination with the key I, having one or more tumbler-adjusting perforations *m* therethrough, for operation essentially as shown and described.

108,100.—MACHINE FOR BRUSHING YARN.—John Brady, Fall River, Mass.

Claim.—1. The guiding-bars D, combined with the brushes A A, traveling on endless chains B B, for the purpose of preventing undue pressure, as described.

2. The yokes E F, spring catch F², and bar F¹, combined as described, for readily attaching and detaching the brushes.

3. The brush-carrying apparatus, mounted on supports having vertical adjustment, substantially as specified.

4. The said brush-carrying apparatus, arranged substantially in the manner described, for tilting, to vary the pitch, substantially as specified.

108,101.—Chock for Holding Ropes.—Dominick D. Brown, Oswego, N. Y.

Claim.—1. The combination and arrangement of the corrugated cam C, sliding block H, and dog m, when constructed and operating as and for the purpose specified.

2. In combination with the cam C and sliding block H, the pitman D and the spring n, when constructed and operating as and for the purpose specified.

108,102.—Manufacture of Semolina and Flour.—Gustav A. Buchholz, Regent's Park, London, England.

Claim.—1. The successive ripping and cutting-rolls B B^1 B^2 B^3, (more or less in number,) combined and placed at different elevations around a common center, and having intervals between them for the sieves.

2. The combination of spur-wheels C^1 C^2, and pinions b b^1 b^2, when relatively arranged and applied to the ripping and cutting-rolls, as described.

3. A series of pairs of ripping-rolls, each of which is provided with an independent frame, adjustable on the main frame to and from the central gearing, as described.

108,103.—Manufacture of Semolina and Flour.—Gustav Adolph Buchholz, Regent's Park, London, England.

Claim.—The runner E, composed of recessed face-plate, cutting-surfaces b b', ratchet-ring a, and cutter-ring c, combined with the stationary disk A', having reversed cutting-edges, as and for the purpose described.

108,104, antedated September 30, 1870.—Mouse-Trap.—Edward Buckman and Alexander Buckman, Brooklyn, N. Y.

Claim.—1. The combination of the automatic setting-lever E and spring or elastic saddle C with the strap or loop D, constructed and arranged to operate as herein described, for the purpose specified.

2. In combination with the above, the stop d and bait-hook B, as and for the purpose specified.

108,105.—Stove-Fastener.—James C. Burdin, Ladoga, Ind.

Claim.—1. The fastening-plate A, constructed substantially as and for the purpose specified.

2. The combination of said fastening-plate A with the walls, top plate, and bottom plate of a sheet-metal stove, substantially as described.

108,106.—Lamp.—Orange M. Chamberlain, New York, N. Y., assignor to himself and George Moore, same place.

Claim.—The wick and filling-tube E, constructed with a screw-thread at its top to receive the burner, as set forth, combined with the tube B, as set forth, and for the purpose described.

108,107. — Railroad-Ticket.—Charles A. Chamberlin, Pittsburg, Pa.

Claim.—1. A ticket and tab, folded against or lapping onto each other, and one slit or cut away so as to uncover a portion of the other, whereby both may be stamped by a single imprint, substantially as described.

2. A ticket and tab, the one containing the names and the other the numbers of stations, such names and numbers being correspondingly arranged on the two, and one being slotted or cut away so as to uncover a portion of the other, substantially in the manner and for the purposes hereinbefore set forth.

108,108.—Brush.—Richard Jaques Combs, Bergen, N. J.

Claim.—A brush having a scraper, B, pivoted thereto, as herein shown and described, for the purpose of being adjusted for use or turned out of the way, as set forth.

108,109, antedated October 5, 1870.—Candlestick.—Francis C. Cone, San Francisco, Cal.

Claim.—Forming shoulders, as at b, adapted to hold a chimney or screen, and twisting together the several wires, so as to form a firm central column for the support of the candle-holder and candle above, substantially as described.

108,110, antedated October 8, 1870.—Fountain Pen.—Francis C. Cone, San Francisco, Cal.

Claim.—1. Opening and closing the supply-aperture a, by means of an elastic strip C, substantially as herein described.

2. The combination, with the elastic valve C, of the slide D, and clasp d, for operating the same, substantially as described.

108,111.—Syringe.—George Conover, Mott Haven, N. Y.

Claim.—The removable stop-plate H, tube I, chamber K, and orifices J J, combined as described, with the valve D, for the purpose set forth.

108,112.—Iron Fence.—Sommers Crowell, Philadelphia, Pa.

Claim.—The clasps B, formed as described, with ring portion c, in combination with the pales A, having the slots e and horizontal groove or depression a adapted to the form of the rail or rod D, which passes through the ring c, all constructed substantially as described.

108,113.—Machine for Setting up Barrel.—Amos Cutter, Boston, Mass.

Claim.—1. The curved clamp-jaws F, hinged to slotted levers E, constructed and arranged to operate in the manner shown and described.

2. The table B, when constructed to be adjusted with relation to platform A, in the manner and for the purpose shown.

3. The combination of the clamp-jaws F, arranged to operate as described, with the adjustable table B, for the purpose shown.

108,114.—Machine for Cutting Lock in Hoops.—Amos Cutter, Boston, Mass.

Claim.—1. The foot-treadle F and bent lever E, in combination with the two frames a sliding in head-blocks B and B', and having the revolving cutters e and e' and f and f', constructed and operating substantially as described.

2. The transversely-adjustable head-block B, having the revolving cutters e and f in a frame sliding in curved slots, in combination with the laterally-adjustable table C, constructed in the manner described.

3. The longitudinally-adjustable table C', having the transversely-adjustable part c'' c''', in combination with the longitudinally-adjustable head-stock B', having the revolving cutters e' and f' in a frame sliding in curved slots therein, in the manner described.

4. The levers I and I', pivoted levers 2 and 2', in combination with the bent clamps 5 and 5', when constructed and arranged to operate substantially as described.

5. The hoop-lock cutting-machine herein described, when the parts are constructed, arranged, and combined to operate together in the manner set forth.

108,115.—Machine for Making Barrel-Heads.—Amos Cutter, Boston, Mass.

Claim.—1. The treadle or hand-lever I, inclined levers h h, notched horizontal arms g g', eye-rings b^3 b^3, in combination with the hollow, revolving, and reciprocating shafts b b and cutter-heads D D, having cutters E E, in the manner and for the purpose shown.

2. The treadle or hand-lever I, inclined lever h, spring notched arm g, with inclined end, pin g'', eye-ring b^3, hollow, revolving, and reciprocating shaft b, and cutter-head D, having cutters E arranged to operate upon the outside of the barrel-head, in combination with the inclined lever h, notched and rigid arm g', eye-ring b^3, hollow, revolving, and reciprocating shaft b, and cutter-head D, having cutters E arranged to operate upon the inside of the barrel-head, and cut the same in the manner described.

3. The guide-rods b^4 b^4, having springs b^5 b^5, in combination with the hollow, revolving, and reciprocating shafts b b, and revolving cutter-heads D D, and cutters E E, in the manner described.

4. The adjustable table C, in combination with the adjustable revolving cutters E E, in the manner described.

5. The treadle e, bar d, connecting-levers a^4 a^4, a^3 a^3, a^2 a^2, in combination with the sliding rods a a and disk-clamps a^1 a^1, in the manner and for the purpose described.

6. The herein-described machine for cutting the heads of barrels, when the several parts are combined and arranged to operate in the manner and for the purpose described.

108,116, antedated September 24, 1870.—Machine for Blocking and Stretching Hats.—Joseph De LaMar, Brooklyn, N. Y., assignor to himself and John De Vries Eckhoff, New York City.

Claim.—1. The within-described arrangement of levers d d^2, and their connections, adapted for stretching a hat-body by clamping and forcing outward, substantially as and for the purposes herein set forth.

2. The within-described arrangement of levers d d^2 and f f^2 in two sets, adapted, the one for clamping and stretching the brim, and the other for clamping and stretching the tip of a hat-body, as herein specified.

3. The hinged jaws, arranged, as represented, on the outer ends of the clamping and stretching-levers, for the purposes herein specified.

4. The within-described arrangement of the two sets of clamping and stretching-levers d d^2, f f^2, with a fixed band-ring, for the purposes herein set forth.

108,117.—Potato-Digger.—William Dillon, Sonoma, Cal.

Claim.—1. The combination of the beam A, gauge-wheel C, adjustable bent bar D, cross-beam E, land-sides F, plow-plate or scoop G, suspended screen H, adjustable chains I, bars J, triangular plate or lever L, and adjustable pitman M, with each other, substantially as herein shown and described, and for the purpose set forth.

2. The combination of the beam A, gauge-wheel C, adjustable bent bar D, cross-beam E, land-sides F, plow-plate or scoop G, suspended screen H, adjustable chains I, bars J, triangular plate or lever L, adjustable pitman M, adjustable arms Q, wheels R, pivoted arms S, wheels T, catch-levers V, and springs W, with each other, substantially as herein shown and described, and for the purpose set forth.

3. The combination of the beam A, gauge-wheel C, adjustable bent bar D, cross-beam E, land-sides F, plow G, suspended screen H, adjustable chains I, bars J, triangular plate or lever L, pitman M, crank or crank-wheel N, shaft O, and drive-wheel P, with each other, substantially as herein shown and described, and for the purpose set forth.

108,118.—Feed-Cutter.—Carles R. Donner, Sonora, Cal.

Claim.—The combination, with the shaft K, having the arms g g and the arm d, working in the groove or cam e, of the bar L, rods h, and adjustable toothed plate P, when arranged to operate substantially as and for the purpose described.

108,119. — Tobacco-Cutter. — Jurins G. Dreher, Pine Grove, Pa.

Claim.—The tobacco-cutter herein described, having serrated slotted bed-block A, provided with a gauge, F, and pivoted curved blade D, provided with the toothed arc a, gearing with the serrated end of the operating lever E, in the manner and for the purposes herein substantially shown and described.

108,120. — Grain-Separator. — Anthony Duus, San Francisco, Cal.

Claim.—1. The relative arrangement of the two sets of screens, E and F, and I K, and M, in combination with the cranks N, P, and S, and connecting-rod O, arranged, as described, to give motion in opposite directions to the two sets, directly from the shaft of the fan, substantially as set forth.

2. The device for holding open the mouth of the bag, consisting of the bars r and u, and the brace t, constructed and arranged substantially as specified.

108,121.—Machine for Felting.—Rudolf Eickemeyer, Yonkers, N. Y., assignor to John T. Waring, same place.

Claim.—1. The concave jigger, composed of roughened rollers, in combination with the felting-cylinder of a felting-machine for felting cloth, substantially as described.

2. In combination with the concave jigger and the weighted levers, the rocking cam-shaft, with its cams and lever, whereby the jigger is relieved from the action of the weights, when desired.

3. The combination and arrangement of the rocking frame and connections with the jigger, and the crank-shaft which imparts motion thereto, substantially as described.

4. In combination with the felting-cylinder, the take-up mechanism, operated by a wiper, and regulated by a weight, substantially as described.

108,122. — Adjustable Pillow. — Henry Eilers, Cincinnati, Ohio.

Claim.—The combination and arrangement of the endless cord D, pulleys 1, 2, 3, and 4, frame A, support C, and pillow-frame B, when constructed and operating together, as and for the purpose described.

108,123, antedated September 26, 1870.—Apparatus for Bending Railroad-Rail.—George D. Emerson, Calumet, Mich.

Claim.—1. The combination of the lever-beam A, the eccentric f, hand-lever B, slotted plates g, and the grasping-clutch, when arranged for joint operation, substantially as set forth.

2. The clutch G, consisting of the hooked arms n n, head p, adjusting-screw o, link m, with or without the set-screw s.

3. The side-plates k with cross-pieces j, forming a socket for the handle B, in combination with the slotted plates g, when all are arranged and turn on the axis of the eccentric f, by which the beam is operated, substantially as described.

108,124.—Car-Coupling.—Lewis A. Evans, Chester, Pa., assignor to himself and W. C. Boatwright, same place.

Claim.—1. The link B, provided with the flat head s and rib v, and the arrow-shaped head t, in combination with the swiveled draw-heads a, as shown and described.

2. The combination of the draw-head a with the disk k, by means of the connecting-rod h and bar f substantially as set forth.

108,125. — Washing-Machine. — Franklin Feasel, Lacon, Ill.

Claim.—The combination of the arms d, spiral

springs A, rollers c, apron d, and rubber b, all constructed and arranged to operate as described.

108,126.—Hand Corn-Sheller.—John E. Finley, Memphis, Tenn.

Claim.—As a new article of manufacture, the hand corn-sheller herein shown, consisting of the flexible back D, plates A A A, serrated as shown, the rivets B B B and loop C C, when all such parts are constructed as described, and arranged for operation, in the manner and for the purpose set forth.

108,127.—Device for Starting Street-Car.—George P. Frick, Baltimore, Md.

Claim.—1. In connection with a car-starting or holding mechanism, the jointed and hinged treadle, arranged on the platforms, as described, to allow the driver, by his foot, to throw said mechanism into or out of action, substantially as described.

2. In combination with the treadle and its connections, for operating a holding and releasing-pawl *p* or *p'*, a combined ratchet-wheel and eccentric wheels on each side of it, as and for the purpose described and represented.

3. In combination with the ratchet and eccentric wheels, a chain connecting the first to the draft, and the second to the mechanism that turns the car-axle, whether that mechanism be a draw-pawl and ratchet or a clutch and draw-chains, as described and represented.

4. In combination with the united ratchet and eccentrics, and their chains, the draw-bar and sheath, when so arranged that said draw-bar will always re-enter the sheath with its hook up, as shown, and for the purpose described.

5. In combination with a draw-bar and with the united ratchet and eccentrics, and their flexible attachments, a spring for taking up the slack of the chains, and a pawl for holding it when taken up, substantially as described.

108,128.—Spring Mattress.—Charles Fulton, New York, N. Y.

Claim.—The sleeps *a*, straps *b*, and frames *c*, combined with a series of triangular springs A, as and for the purpose described.

108,129.—Composition for Welding and Restoring Steel. — Thomas Fyans, Taunton, Mass., assignor to himself and A. T. Thomson, same place.

Claim.—The composition for welding and restoring cast-steel herein described.

108,130.—Car-Roof.—John Garry, Cleveland, Ohio.

Claim.—The strip B, provided with a flange, C, in combination with the sheets E, having an under lap, F, embracing the flange C, forming a lock-joint, in the manner substantially as described, and for the purpose set forth.

108,131.—Sash-cord Fastener.—Christian Gies, New York, N. Y.

Claim.—The combination, with a window-sash, of the knee or angle-iron C, having a thimble or sheave on one end, for the reception of the knot of the cord D, by which the sash is suspended, as and for the purpose specified.

108,132.—"Sole-sewing Machine."—John P. Greely, Boston, assignor to himself, Joseph B. Leonard, Chelsea, and Benjamin Greely, Dedham, Mass.

Claim.—1. The arm C, provided with the slot C^1, the arm B, provided with the slots b B', the intermediate piece C^1, and the eccentric *a*, all arranged as specified.

2. The cast-off *d* and sliding arm E, operated by spring H', rods *e* F', and springs *g g'*, in combination with needle-arm C and needle D, substantially as described.

3. The presser-foot bar I, in combination with plate X, having slot *s* and plate Y, having arm or bar *z*, and needle-arm C, arranged and operated substantially as described.

4. The pivoted curved plate K', having the curved slot M, in combination with the thread carrier L, connecting-rod *m*, and lever U, all arranged as described.

5. The feed-bar P, in combination with carriage P^1, disk O', cam O, lever *r*.

108,133.—Neck-Tie.—Louis A. Grill, New York, N. Y.

Claim.—A neck-tie, consisting of two sections, A B, connected by a loose slide, C, retained by stops *e f* and *e' f'* at the reverse ends, substantially as shown and described.

108,134. — Permutation Lock. — Henry Gross, Cincinnati, Ohio.

Claim.—1. The case G, provided with the opening *d* and stop *k*, in combination with the rotating guard F, provided with the opening *e* and stops *i*, the yoke C provided with the fingers A and lug *c*, and the notched operating wheel H, all constructed and arranged to operate substantially as described.

2. The combination of the tumblers E, the operating wheel B, provided with the notch *f*, having its rear face inclined, the yoke C provided with the corresponding lug *c*, and the dog D, substantially as described.

108,135. — Cane-Stripper. — Constantine Alexander Hege, Friedberg, N. C.

Claim.—The combination of the two semicircular cutters B and C, so arranged as to accommodate themselves to the size of the cane as it is being passed through as acted upon by lever E, which communicates with spring or weight H and treadle I.

108,136.—Trunnion for Steam-Engine and Calender.—Thomas Hill, Vallejo, Cal.

Claim.—The combination, with a trunnion, A, provided with arms *a* and spaces *b*, of the sleeve B, substantially as and for the purpose specified.

108,137. — Valve-Gear for Steam-Engine.—Thomas Hill, Vallejo, Cal.

Claim.—1. The device for operating both valves from one rock-shaft, consisting of the double arm N, the rods O O', with their transverse links P and the arms R on the valve stem, substantially as herein described.

2. The link I, and either one or more eccentrics and rod or rods L, in conjunction with mechanism, as described, for operating the valve-gear of connected engines, substantially as set forth.

108,138.—Composition for Welding, Puddling, and Brazing Metals.—Anthony J. Hindemeyer, Philadelphia, Pa., assignor to Samuel C. Collins, same place.

Claim.—The compound, substantially as herein described, as a flux for welding or brazing iron and steel, and for cleansing and purifying iron in the process of puddling.

108,139.—Apparatus for Finishing Terret.—Constantine Hingher, New Brunswick, N. J.

Claim.—The grooved, bossed, and shouldered stock A B C, feed-screw D, nut and collar D' E, and tool F, combined and applied as and for the the purpose described.

108,140.—Swaging-Machine.—George M. Hinkley, Milwaukee, Wis.

Claim.—1. A swaging-machine, with swage-point B and die C, arranged relatively to each other, as shown and described.

2. Mandrel K, frame L, and movable piece R, substantially as and for the purpose described.

108,141.—Butcher's Knife.—Peter Houseman and Calib C. Campbell, Rural Retreat, Va.

Claim.—The butcher's knife A and hinged thumb-support B, combined, constructed, and relatively arranged as shown and described, and for the purpose specified.

108,142.— Railway-rail Joint.— George Augustus Huddart, Brynkir, Wales.

Claim.—The coupling A, constructed as shown and described, and so applied to the reduced ends of the rails B and C that the upper edges of its sides shall form a portion of the bearing-surface of said rails, substantially as specified.

108,143.—Hinge.—Abraham Huffer, Hagerstown, Md.

Claim.—1. The eccentric D, constructed with the sharp edge *b*, as described, and employed in connection with the spring C and pintle *p*, in the manner and for the purpose specified.

2. The cross-ribs or flanges *f f*, inclosing the spring C, either with or without the cross-bar A, to keep it in place, and formed with projections to insure the free play of said spring when fitted to the wood, as described.

108,144.—Window-Washer and Scrubbing-Pad.—Joseph Clark Hull, Meadville, Pa.

Claim.—A cushion, of sponges, or other material, covered with perforated leather or other suitable material, with a wooden or metallic back, arranged for permanent or removable handle, all arranged and constructed in the manner and for the purposes specified.

108,145. — Composition for Printing-Roller.—Israel G. Husted, Brooklyn, N. Y.

Claim.—The described compound or mixture for printing-rollers, composed of the proportions substantially as specified.

108,146.—Water-closet Hopper.—Alfred Ivers, New York, N. Y.

Claim.—The overflow-horn *g* and primary and secondary openings *e* and *h*, introduced into and combined with the water-closet hopper *b*, and supply-water ring *a*, in the manner specified, so that water, in washing the closet, passes into the opening *h*, for the purposes specified.

108,147.—Machine for Manufacturing Chair-Seat.—Edwin S. Jackson, Bethel, Vt.

Claim.—The arrangement of the rotating hollower G with bits *a*, and the polisher F, the lever *h* L, stop *k*, spring *s*, and holders C, substantially as shown and described.

108,148.—Rotary Engine.—Henry Jamieson, Williamsburg, N. Y.

Claim.—The arrangement of the sliding rod E, springs *h i*, and arm *g*, to reverse the shaft and valve, as set forth.

108,149.—Plow.—John R. P. Jett, Knoxville, Tenn.

Claim.—The arrangement of the point I and seat H *h'* for the reception of the mold-boards J or L, as desired, substantially as and for the purpose set forth.

108,150. — Embroidering-Attachment for Sewing-Machine.—Albert W. Johnson, Middletown, Conn.

Claim.—1. The parallel and longitudinally-reciprocating needles *d* and *c*, constructed as described, combined with the presser-foot frame, and operated substantially as and for the purposes set forth.

2. The combination of the needles *d* and *c*, one or both, with the lever A, the whole constructed, arranged, and operated substantially as and for the purposes set forth.

3. The combination of the parallel needles *d* and *c*, the lever *h*, frame *a*, barrel *b*, and cross-arm *g*, the whole constructed, arranged, and operated substantially as and for the purposes set forth.

4. The combination of the needles *d* and *c*, one or both, with the lever A, the said lever being attached to the regular needle of a sewing-machine, the whole constructed, arranged, and operated substantially as and for the purposes set forth.

108,151.—Umbrella.—Frederick Johnson and William Hatchman, London, England, assignors to Thomas C. Morton Paton, N. Y.

Claim.—An umbrella, with a covering of silken fabric, in which, at the parts where the gores or portions between the several ribs are folded, the silken fabric is made stronger by the introduction of a weft of cotton or other vegetable fiber, as herein set forth.

108,152.—Cooking-Stove.—John H. Jones, Memphis, Tenn.

Claim.—The combination and arrangement, with the stove, having a lower and upper combustion-chamber with ovens between, of a burner, L, applied to each oven and pot-hole, and the drip-troughs H K, all substantially as specified.

108,153.— Permutation-lock Faucet.— William F. Jones, Baltimore, Md., assignor to himself and C. A. Edmondston, Halifax, N. C.

Claim.—The bolts *k k*, connected with the locking-key *j m* by the cap *i*, and with the perforated plates *d* and *c*, to allow or prevent the rotation of the plug *b* by the adjustment of the notched tumblers *f* on the slotted tube *o* and said key *j*, all said parts being constructed and arranged as shown and described.

108,154.—Feeding Device for Fanning-Mill.—Nathan Kibler, Milton, Ill.

Claim.—The winged rotary feeder F, spring plate G, and hopper E, relatively arranged in a fanning-mill, as shown in fig. 1 of drawing.

108,155. — Sash-Holder. — George King, Frederick, Md.

Claim.—1. The angular support *g g* of the case C, and the rounded bearing *e* of the plate *g'*, in combination with the lever-dog E and finger-piece D, substantially in the manner shown and described.

2. The combination of the case C, spring S, rod G, and dog E, constructed, arranged, and operating substantially as described.

3. The pivoted pendent rod G, (free at its lower end,) in combination with the spiral spring S, dog E, and case C, substantially in the manner described.

108,156.—Steam-Engine.—Frank E. Kirby, New York, N. Y.

Claim.—1. In combination with the cut-off valve of a steam-engine, the auxiliary cylinder S, piston T and valves *y y*, for varying the position of the cut-off valves, substantially as described.

2. The valve-gear, composed of the lever *a*, arm *a*, and connections *e* and *g*, when the same are arranged to operate in connection with the governor and piston T, substantially as and for the purposes described.

108,157. — MANUFACTURE OF POTTERY-WARE.—Isaac W. Knowles, East Liverpool, Ohio.

Claim.—1. In machines constructed for the manufacture of earthen-ware, the combination of the socket or box *c*, pivoted below its lower face, as at *d'*, and removable handle *f*, provided with the operating rib *f'*, substantially as and for the purpose set forth.

2. In combination with the socket of box *c*, and trunnions *d'*, the slots *e* and adjustable slides *m*, for determining the length of such slots, substantially as described.

3. In combination with the socket or box *c*, pivoted as set forth, the set-screw *h'*, or equivalent adjusting-device, when arranged so as to bear against the frame of the machine, substantially as described, and for the purpose set forth.

108,158.—APPARATUS FOR PRECIPITATING GOLD AND SILVER FROM SOLUTIONS.—William S. Laighton, Norwich, Conn.

Claim.—1. The combination of the hydrometric float O in the vessel A with the pan *b* arranged in the vessel B, for the purpose of delivering automatically a precipitant into a metallic solution, substantially as described.

2. The combination of the siphon *a* and knee-lever *g* with the hydrometric float, substantially as and for the purpose set forth.

3. The combination of the vessel A, constructed with a float, O, siphon *a*, and knee-lever *g*, with the vessel B, constructed with the pan *b*, and inverted vessel C, substantially as described.

108,159.—COTTON-CULTIVATOR.—Peter R. Leatherman, Woodville, Miss.

Claim.—1. The scrapers E E and plows G G, arranged in connection with the hinged plate H, so as to be raised above the surface of the ground by means of the cord K, as shown and described.

2. The wheels B C, with inclined faces, arranged to run in the paths formed by the scrapers, substantially as specified.

108,160.—MAT.—Samuel Lewis, Williamsburg, N. Y.

Claim.—An improved mat or flexible rack, formed by stringing the wooden slats A upon wire cords B, rubber blocks C being strung upon the said wire cords, and interposed between the said slats, substantially as herein shown and described.

108,161.—FEATHER-RENOVATOR.—William G. Lumbard, Georgetown, Ill.

Claim.—The feather-renovating chamber D, made in two sections, provided with the flanched passage-way *b*, having slide *c*, and having perforated partition *d*, and partition *k*, dividing its bottom into two chambers, *g k*, having openings, *n e*, designed to admit steam thereto from the shifting steam-pipe C, in the manner and for the purposes shown and described.

108,162.—GOVERNOR FOR STEAM-ENGINE.—John D. Lynde, Philadelphia, Pa.

Claim.—1. The adjusting-ring and arm J J.

2. The combination and arrangement of the unequal weights A and B and shaft C, whereby the motion of the weights shall act in harmony on the shaft C, substantially as herein described.

3. The combination of the cam D, arm E, hinge H, bracket I, and valve-rod G, substantially as set forth.

4. The construction of the valve K, case N, arranged with reference to each other, and their respective openings and seats, substantially as herein made known.

5. The annular passage P, when constructed with reference to the immediate co-ordinate parts, substantially as described.

108,163.—HEATING-STOVE.—William Magill, Port Deposit, Md.

Claim.—1. The hanging, self-closing door *a*, hood *f*, chute *m*, and cylinder *g*, all arranged as specified.

2. The cap *p*, provided with the opening *q* and guards *r* and *s*, and the cylinder *g*, provided with the hood *f* and guards *t*, arranged together as described.

3. The cylinders *d f g*, flues *k*, magazine *c*, and fire-chamber *a*, arranged together as set forth.

108,164.—SUBSOIL-PLOW.—Lucian V. B. Martin, Tuscaloosa, Ala.

Claim.—The shank and shovel, formed in one piece, when applied to the inclined or beveled stock A, and provided with the cutting-edges *d* and *e*, all constructed and arranged in the manner described, to operate as specified.

108,165.—PILE FOR CORRUGATED BEAMS.—Richard Montgomery, New York, N. Y.

Claim.—A wrought-iron pile for beams, composed of two or more bars, grooved longitudinally, and of such shape that, when put together, they constitute a pile of the configuration herein described.

108,166, antedated September 24, 1870.—TRUNK-LOCK. — Joseph Morgan, New York, N. Y.

Claim.—The triangular arrangement of the revolving tumblers F, and their adjustable dials G, in combination with the T-shaped bolt H, provided with the wedge projection *g*, and the locking-hooks I I, substantially as shown and described.

108,167.—TRAY FOR GAS-PURIFIER.—Peter Munzinger, Philadelphia, Pa.

Claim.—The strips A and blocks B, of any transverse section, in combination with the riveted binding-rods C and the washer D, substantially as and for the purpose shown and described.

108,168.—WASHING-MACHINE.—George R. Nebinger, Philadelphia, Pa.

Claim.—The washing-machine, consisting of cylinder A, provided on its interior with longitudinal corrugated rubbers B, when constructed and arranged to operate as herein shown and described.

108,169, antedated October 1, 1870.—APPARATUS FOR EVAPORATING SORGHUM JUICE, COOKING FEED, &c.—Thomas J. Newby, Richmond, Ind.

Claim.—1. The combination of the corrugated plate *a*, the plate *b*, and fire-box D, when so arranged that the corrugations form fire-flues, substantially as set forth.

2. The combination of the plates *a* and *b*, fire-box D, and convergent pipes H H', when said fire-box is located centrally, and a division of flues is made, substantially as described, and for the purpose set forth.

3. The combination of the tube or tubes F, surrounding the furnace-pipe or pipes, the reservoir B and tube I, substantially as described, and for the purpose set forth.

108,170.—COLORTROPE.—Oscar Nicholson, New York, N. Y.

Claim.—1. The arrangement of the two cords B C with the base disk A of the toy, substantially as herein shown and described, and for the purpose set forth.

2. An improved toy or colortrope, formed by the combination of the heavy disk A, cords B C, and disks or wheels D E with each other, said disks or wheels and cords being constructed, arranged, and operating substantially as herein shown and described, and for the purpose set forth.

108,171.—SASH-FASTENER.—John G. Nicolay, Springfield, Ill.

Claim.—The hook A, hinged to the plate B, and the knob or button C, or their equivalents, placed at intervals, to sustain the sash at different heights, and behind the projections on which buttons or knobs the hook A impinges and securely holds it in its descent or ascent, all operating together, and for the purpose substantially as herein described and set forth.

108,172.—UNIVERSAL-JOINTED TREADLE.—Alfred Nielson, New York, N. Y.

Claim.—1. The combination of the treadle F with the socket C and center pin D, or equivalents therefor, substantially as described, and for the purposes set forth.

2. The treadle F, working on a universal joint, as set forth, in combination with the pulley H, or equivalent device for obtaining rotary motion, substantially as set forth.

3. The bent or curved form of the treadle F, substantially as set forth, when arranged to operate parallel with the axis of the pulley or crank-shaft, as a double-acting treadle, as hereinbefore described.

4. In combination with the treadle F, the stirrups I, substantially as described.

108,173, antedated October 1, 1870.—TRANSMITTING-POWER APPARATUS. —Richard W. Norwood, Courtland, Ala.

Claim.—The combination of the shaft A *m*, lever *a*, connecting-rods *d k*, rock-shaft A, and arms *e i*, in the manner and for the purpose specified.

108,174.—STEAM-GENERATOR.—Samuel B. B. Nowlan, New York, N. Y.

Claim.—1. A generator, I, having a series of sieves arranged one above another, and each covering its whole horizontal area, combined with a water-supply pipe, *s*, as and for the purpose specified.

2. The combination, with a generator, I, having gauze sieves, of a main water-pipe, *m*, auxiliary inlet-pipe, *n*, and auxiliary outlet-pipe S, all arranged and operating to feed the cold water, and take off the water of condensation, as described.

108,175.—MACHINE FOR FORMING HAT-BODIES.—Isaiah Nutt, Newark, N. J., assignor to himself, John Wharton, and Abraham C. Wheaton, same place.

Claim.—1. The combination, with the cone, of an exhaust apparatus and a blast apparatus, the latter introducing a forced current of air within its upper part of the cone, and the former producing an exhaust current within the base or lower portion thereof, substantially as and for the purpose herein specified.

2. The arrangement around the cone or cone-table of upright and perforated or slotted blast-pipes E and wind-guides F, essentially as described.

3. The blast-pipes E and wind-guides F, constructed in sections, so as to be capable of opening and closing, for the purpose of increasing or diminishing the space formed by said pipes and guides, to suit various-sized cones, substantially as herein set forth.

4. The combination of the upright blast-pipes E and wind-guides F with the exhaust-fan C, blast-pipe D, and cone-table A, essentially as shown and described.

5. The combination of the water-trough S with the cone-table A, constructed to form a water-joint, substantially as and for the purpose herein set forth.

6. The combination of the sectional shell or back L with the picker-cylinder K and feed-rollers I and J, substantially as specified.

108,176.—COMBINED PLOW AND SCRAPER FOR ROADS.—Thomas B. Parker, Linesville, Pa.

Claim.—In a combined plow and scraper, the arrangement of the plow-frame and platform D D D, W W, and P, standards S S, bevel-gearing K L, wheels M M, catch-levers R R, lever *i*, and rod J, carriage C, tongue F, and lever G, all constructed as and for the purpose set forth.

108,177.—MANUFACTURE OF PAPER.—Henry Pemberton, Allegheny City, Pa.

Claim.—The preparation of precipitated sulphate of lime from the secondary and impure products of other manufactures, substantially as described.

108,178.—HORSE-POWER.—Lewis A. Peter, Neffs, Pa.

Claim.—The combination, with the mechanism of horse-powers, constructed substantially as described, and drive-shaft D, loose spur-wheel E, ratchet and pawl F G, spur H, countershaft I, and band-wheel J, of the fly-wheel K, arranged as and for the purpose described.

108,179.—THREE-HORSE EQUALIZER.—John Casper Pfeil, Arenzville, Ill.

Claim.—1. The rock-shaft F B G, when used in combination with the draft-tongue A, for the purpose of equalizing the draft of the center horse and outside horses, and obtaining two points of draft on the tongue, substantially as specified.

2. The combination of the rock-shaft F B G, draft-tongue A with slide-plate J thereon, long draft-lever K with pulley N thereon, and stay-chain L, the single-trees C D E being combined with said parts, as shown, and the several parts being arranged as specified.

108,180. — FIRE-PLACE.—Thomas Phillips, Cadiz, Ohio.

Claim.—1. In combination with the usual grate-bars C C, the additional bars D D, constructed and arranged substantially as and for the purposes herein set forth.

2. The combination of the stove A, plate or hood B, grate-bars C C, and additional bars D D, all constructed and arranged substantially as and for the purposes herein set forth.

3. The upper grate-bar, provided with a concave fender, *d*, substantially as and for the purposes specified.

108,181.—WOOD PAVEMENT.—A. Warner Platt, New York, N. Y.

Claim.—The arrangement of the wedge-shaped keys B, in the angular recesses *a c* of the blocks A, so as to form passages *c* below said keys, for ventilation and drainage, and spaces *d* above them to receive gravel or cement, as set forth.

108,182. — WINDOW-BLIND.—Stephen Pocock, Woodstock, Canada.

Claim.—The combination of the slats A, the strips of braid B, the top bar C, the rollers F G, the bottom rail E, and the cord D, substantially as and for the purpose hereinbefore set forth.

108,183.—COMBINED ELEVATOR AND CONVEYER. — Thomas J. Powell, Naples, N. Y.

Claim.—The pawl H, resting loosely in its seat, and having a free movement forward and back and up and down, as described, when combined with the pulley E, chain G, and lever D, or their equivalents, in the manner and for the purpose specified.

108,184. — PARLOR-SKATE. — John Pollitt, Indianapolis, Ind., assignor to himself and Lyman Martin, same place.

Claim.—1. The bent axles E, substantially as and for the purpose set forth.

2. The bent axles E and rollers A B, in combination with the hinged hanger D, all constructed and arranged substantially as set forth.

108,185.—AUTOMATIC VENTILATOR.—Benjamin F. Prentis, Benwood, West Va.

Claim.—The combination of the vane D, shaft B, cam *b*, ring E, rods *d*, bars *e*, and slats C, all arranged as shown and described.

2. The grooved ring E, fitted upon the cam *b*, for the purpose of connecting the same with the slats, substantially as herein shown and described.

108,186.—GATE.—Simon Regan and Edward Meusy, Lamotte, Iowa.

Claim.—The fence-post A, vertical beam *a*, sliding bands *c* inclosing the beam *a* and forming part of the hinges, gate-post *d*, angle-plates *e* partially inclosing the gate-post and forming the remaining parts of the hinges, all these parts being constructed and arranged as described.

108,187.—EXTENSION TRUNK.—James Rice, Middletown, Ind.

Claim.—1. The part B of a trunk, having spring catches *f f*, in combination with the part A, when provided with the slotted plates *a a*, substantially as shown and described.

2. The spring catches *f f*, arms D D, and lever E on the part B, in combination with the slotted plates *a a* on the part A, as shown and described, and for the purpose specified.

3. The wedge G, in combination with the lever E, arms D D, and spring catches *f f*, substantially as shown and described.

108,188.—PISTON-ROD PACKING.—Edwin Adison Richmond, San Francisco, Cal., assignor to himself and Charles Watson, same place.

Claim.—As an improvement on Johnson's packing-gland, herein mentioned, the application of an additional set of rings at the outer end of the gland, said rings being "set up" with springs, as shown, and to operate in combination with the inner set of rings, as and for the purpose as set forth.

108,189.—MACHINE FOR DRESSING FELLIES.—William H. Rodeheaver, Miamisburg, Ohio.

Claim.—1. The vertical cutter and shaft C, in combination with the adjustable step c^2, pivot-box D, and adjustable pivot E, when the parts are arranged as described, for the purpose set forth.

2. The vertical feed-shaft G, in combination with the pivoted bar *f*, spring f^2, and screw-rod *g*, as described.

3. The horizontal feed-roller shaft F, with F', lever *e*, and thumb-screw, all the parts being combined and arranged as described, for the purpose set forth.

108,190, antedated September 30, 1870.—CURTAIN-FIXTURE.—Franklin Root, Hartford, Conn.

Claim.—1. The metal frames *f* and *f'*, constructed as herein described, and provided with the pulleys *i n o* and *m k r*, as and for the purpose specified.

2. The weight A, containing the pulley *a*, in combination with the flat piece *t*, and attached to the same, in the manner and for the purpose set forth.

108,191.—REMOVING GREASE FROM WASTE LEATHER.—John P. Rust, Peabody, Mass.

Claim.—The process described of treating old or waste leather, for the purpose of extracting from it the grease contained in it, such process consisting in subjecting the leather to the action of dry steam and pressure, substantially as explained.

108,192.—APPARATUS FOR WATER-PROOFING FABRICS WITH GUTTA-PERCHA.—Ernst A. Schuette, New York, N. Y.

Claim.—The heater *c* and rollers *b c d*, arranged and acting in the manner specified, to unite and render water-proof two fabrics by gutta-percha, as set forth.

108,193.—CASTER FOR TRUNK.—Morris Schwerin, Newark, N. J.

Claim.—The cleat A, roller B, the plate and cars C, and the strap D, combined, arranged, and operating substantially as and for the purposes described.

108,194.—SASH-FASTENER.—Philip T. Share, Baltimore, Md.

Claim.—The combination of the socket *c*, the set-screw *b*, recess *f*, rectangular opening *a*, and projection *d*, all arranged as described, and permitting the fastening of a rectangular bolt, which will not itself rotate

108,195, antedated September 26, 1870.—FLOWER-TRELLIS.—Philo B. Sheldon, Bath, N. Y.

Claim.—The post and arms, in combination with the pendants, substantially as and for the purpose hereinbefore set forth.

108,196.—FERTILIZER DISTRIBUTER.—Joseph J. Singleton, Forsyth, Ga.

Claim.—1. The horizontal disk F, arranged under the hopper, to discharge the contents of the same into the tube H, substantially as herein shown and described.

2. The adjustable gate *f*, applied to the hopper, in combination with the disk F and scraper *e*, substantially as herein shown and described.

108,197.—COMBINED CORN-HARVESTER AND HUSKER.—Augustus Smith, Pontiac, Ill.

Claim.—1. The cylinders K, when constructed with slats *n*, spurs *g*, springs *o*, cams *m*, and apertures *i*, and arranged to operate substantially as described.

2. The cylinder P, when constructed with slats A, springs *r*, and cams *q*, and arranged in a husking-machine, substantially as set forth.

3. In a husking-machine, the combination of the cylinders P and K, guide E, guard T, and endless belt *s*, substantially as specified.

108,198.—PURIFYING BRINE FOR THE MANUFACTURE OF SALT.—Fillmore M. Smith, Syracuse, N. Y.

Claim.—The process of superheating brine, under pressure, in closed vessels, in connection with the use of the chemical substances specified, or their equivalents, substantially as and for the purposes described and set forth.

108,199.—WASH FOR THE CURE OF SCAB IN SHEEP, &c.—Hugh Smith, San Francisco, Cal.

Claim.—A wash for sheep, made of the ingredients herein specified, and mixed and compounded substantially as set forth.

108,200.—CARPET-FASTENER.—John H. Stanton, Franklin, Ohio.

Claim.—The moldings A and hooks B, for securing a carpet to the floor, said moldings being constructed and applied substantially as herein shown and described.

108,201.—SAW-MILL.—Fred. T. Stevens, Columbia, N. H.

Claim.—1. The pivoted lever L, united with the slide A, that holds the adjustable shaft G, and combined with the weight *m* and slide M, substantially as herein shown and described, to operate as set forth.

2. The slide M, provided with a pin, *o*, to be set by the log-carriage, and with the wedges *r* and *s*, for releasing the lever L from the notches *v* and *u*, substantially as herein shown and described.

3. The weighted pawl-lever R, combined with the spring-pin *z*, track *y*, and wedge or wedges *x*, to operate the head-block, substantially as herein shown and described.

4. The adjustable stop *b'*, applied to the carriage H, in combination with the pawl-lever R, substantially as and for the purpose herein shown and described.

108,202.—APPARATUS FOR HEATING AND VENTILATING BUILDINGS.—Joel Stover, Richmond, Ind.

Claim.—1. The independent chambers 1, 2, 3, and 4, in combination with the furnace G and the chimney H, as and for the purposes herein set forth.

2. The double flue W, the ventilating-openings F F, the register-boxes N N, in combination with the chimney H and the chambers 3 and 4, substantially in the manner and for the purposes herein set forth and described.

3. The pipes L L, as shown, the ventilating-boxes M M, the division-plates O O and the register-boxes N N, when arranged, combined, and operated in the manner and for the purposes herein set forth and described.

4. The arrangement and combination of the furnace G, the air-chambers 1, 2, 3, and 4, the valve *b*, the opening *c*, and the chimney H, in the manner and for the purposes set forth.

5. Constructing a furnace surrounded with air-chambers 1, 2, and incased in fire-proof covering of any desired material, by which the furnace is disconnected from any outside inflammable material, in the manner and for the purposes herein set forth and fully described.

108,203.—EGG-BEATER.—Daniel M. Swartz, Lewisburg, Pa.

Claim.—1. The arms Q, tube P, and spindle L provided with the square end R, all constructed and arranged as shown and described.

2. The supporting-plate M, in combination with the wheels and spindles, and fitted to the support A for adjustment thereon, and to be clamped thereto, substantially as specified.

3. The improved egg-beater, formed of the support A B E F, plate M, wheel I, pinion K, spindle L, tube P, and arms Q, all constructed and arranged to operate as specified.

108,204.—SASH-HOLDER.—Hiram B. Swartz, Milton, Ohio.

Claim.—The combination of the two rocking-lever bolts B and C with the shaft S and lugs E, when the bolts are pivoted on the shaft which carries the operating-lugs E.

108,205.—ADJUSTABLE TUYERE.—Peter Sweeney, New York, N. Y.

Claim.—1. The adjustable discharge-pipe C, in combination with the pipe B and the hearth A, substantially as described.

2. The adjustable pipe C, in combination with the packing-chamber M, pipe B, and hearth A, substantially as described.

108,206.—SLEIGH-LOCK.—Freeman Talbot, Cleveland, Minn.

Claim.—The hinged locking-frame A, whether constructed with one or more joints or hinges, substantially for the purposes described.

108,207.—SHUCK-HACKLING MACHINE.—William H. Tappey, William C. Lumsden, and Alexander Steel, Petersburg, Va.

Claim.—In combination with the cylinder provided with longitudinal rows of teeth, the toothed concaves E and F, and revolving rake G, arranged substantially as herein shown and described.

108,208.—PRESS.—William I. Tate, Philadelphia, Pa., assignor to himself and Henry R. Mitchell, same place.

Claim.—1. The combination, with a bed, A, shafts C and D, the follower B, of the pulleys E, F, and G, and the chain K, all constructed and arranged substantially as and for the purpose specified.

2. In combination with the pulleys E, F, and G, and the chain K, the pulleys H and J, and the chain or cord I, arranged to operate substantially as described.

3. In combination with the pulleys E, F, and G, and the chain K, the gears L and pinion N, for operating the same, substantially as described.

108,209.—WATER-WHEEL.—Albert P. Teachout, Madison, Ohio.

Claim.—A water-wheel, when constructed with an inverted conical hub or core B, spirally curving wings or buckets E, and top or cover E', substantially in the manner as described, as and for the purpose set forth.

108,210.—SASH-FASTENER.—William H. Thomas, Brooklyn, N. Y., assignor to Turner, Seymour & Judds, Wolcottville, Conn.

Claim.—The plate *l*, sliding laterally above the plate *d* of the sash-fastener, in combination with the lever *h*, pin *t*, and slot *n*, as and for the purpose specified.

108,211.—COOKING-STOVE.—Edgar L. Thomson and Abraham Hursh, Philadelphia, Pa., assignors to Hattie B. Thomson and Abraham Hursh, same place.

Claim.—1. The combination of the rear wall or inner side of the magazine or fire-box B, the partition F, the intermediate air-space between the wall B and the partition F, the damper D, and the ash-pit E, or their several equivalents, arranged, constructed, and operating in the manner and for the purposes substantially as described.

2. The combination of the partition F, the inlet-flue H, the griddle-hole or aperture I, the damper Q, the conduits K K, the horizontal flue L, the flue-strip M, the reverse eduction-flue N, the outlet O, and the orifice or vent P, and their several equivalents, arranged, constructed, and operating in the manner and for the purposes substantially as described.

3. The combination of the magazine or fire-box A, the hot-air chamber C, the oven G, bisected by a transverse flue that conducts, diffuses, and circulates heated air from the hot-air chamber throughout each compartment of the oven, and the water-tank R, fabricated, arranged, and operating in the manner and for the purpose substantially as described.

108,212.—HEATING-STOVE.—Alvah Traver, Troy, N. Y.

Claim.—1. The double annular inner casing F G within the walls of the stove or heater, and below the top of the fire-pot, and joined or adjacent or near thereto, constructed and arranged for the purpose as herein described and set forth.

2. The interior chambers H and I, formed by said double annular casings, arranged and operating in the manner and for the purpose substantially as described and set forth.

3. An annular surrounding chamber formed entirely around the fire-pot E, combustion cover C, gas-consuming chamber B, and interior exit-pipe T, arranged and operating substantially as described and set forth.

4. Openings K, dampered or not, in the bottom plate of a stove, arranged and operating for receiving atmospheric air into the chambers H and I, for the purpose as herein described and set forth.

5. The fire-pot E, smoke and combustion-chamber, formed by the cone C, gas-consuming chamber or cupola B with interior exit-pipe T, all in com-

bination and operation, substantially as herein described and set forth.

6. The cupola-shaped dome R, or its equivalent, and perforated cover S, operating substantially in the manner and for the purpose described and set forth.

7. Smoke and combustion-chamber, formed by the cone O, gas-consuming chamber or cupola R, with interior exit-pipe T, and chute or coal-feed P, all in combination and operation substantially as described and set forth.

108,213.—SEED-PLANTER AND GUANO-DISTRIBUTER.—William L. Trayuham, Warrenton, Ga.

Claim.—The combination of the conducter-spout E, hopper F, vertical shaft G, stirrer J K, pulley L, band M, pulley N, and drive-wheel O, with each other and with the beam, standard, and handles of an ordinary plow, substantially as herein shown and described, and for the purpose set forth.

108,214. — GANG-PLOW. — James Willson Treadway, Crown Point Centre, N. Y., assignor to Oliver A. Whittemore, Denver, Colorado.

Claim.—1. The combination of the beams D, plows G, adjustable gauge-wheels I, pivoted draft-bars J, uprights K, pivoted guard-bars K, and perforated bar L, with each other, and with the frame B, axle-tree A, and wheels C, substantially as herein shown and described, and for the purpose set forth.

2. The cam-levers N *n'*, ropes or chains O, and U, and S, crank-drum V, drum T, and roller R, with the plow-beams D, all arranged substantially as shown and described, whereby said beams may be singly or collectively elevated.

108,215, antedated September 26, 1870.—STEAM-TRAP. — Seth D. Tripp, Lynn, Mass.

Claim.—1. An improved steam-trap, consisting of a weighted lever, B, fulcrumed on post C, a vessel, A, having valve and valve-seat H I K attached thereto, and a vertical hollow guide, E, having outlet F therein, all supported upon the same stand D, as shown and described.

2. The spherical water-vessel A, and the sleeve M, having valve-seat located above the bottom thereof, combined and arranged as and for the purpose specified.

3. The combination of the valve-seat tube H with the vertical hollow stud E, having outlet F therein, when applied to a steam-trap, as and for the purpose specified.

108,216, antedated October 1, 1870.—LEATHER-BUFFING MACHINE.—Seth D. Tripp, Lynn, Mass.

Claim.—The combination of sliding rods *d*, arms *e*, set-screws *b f*, and grooved boxes I, all relatively constructed and arranged, as and for the purpose specified.

108,217. — DITCHING-MACHINE. — Henry Vannatta, Jefferson, Ill.

Claim.—The combination and arrangement of the beam B, standards *a*, hinged bars *b*, windlass C and *d*, and frame A, provided with an extended front beam, A', with the adjustable frame A, chains or rod *f*, and a plow, substantially as and for the purposes specified.

108,218, antedated October 1, 1870.—HANDLE FOR CANES AND UMBRELLAS.—Albert Wanner, Hoboken, N. J.

Claim.—The combination, with a cane or parasol having hollow and perforated head, with pin D thereon, of the vibrating cup B, pivoted at C, and having arc-slot E therein, as and for the purpose described.

108,219.—COOKING-STOVE.—Leroy D. Webber, La Porte, Ind.

Claim.—In combination, the vertical flues C, located in front of the oven, the double sliding damper E, rod G, and the horizontal flues M, substantially as specified.

108,220. — COOKING-STOVE. — Alexander Wemyss, Philadelphia, Pa.

Claim.—1. Dividing the flue on the top of the lower oven into the flues E G, by the dividing-plate F, substantially as shown.

2. The dampers L M, substantially for the purpose shown and described.

3. The dampers S T, substantially for the purpose shown and described.

4. The hearth-plate N, in combination with the dividing-plate Q, forming the flues P R, substantially as shown and described.

5. The flue 5, in front of the lower oven, substantially for the purpose shown.

108,221. — LANTERN.—William Westlake, Chicago, Ill.

Claim.—1. The removable plate or disk H, when provided with the rim C, resting upon the base, substantially as specified.

2. The spring *e*, when provided with the pin *d*, and applied to the cylinder D, in combination with a sliding globe, substantially as described.

3. The combination and arrangement of the sliding globe G, with the cylinder D, disk H, and base A, substantially as and for the purposes specified.

108,222. — LANTERN.—William Westlake, Chicago, Ill.

Claim.—1. The removable vertical guard-wire *a*, when connected with the lantern, substantially as set forth.

2. The door D, in combination with the guard-wire *a*, spring *e*, dome C, and base A, substantially as specified.

108,223.—NUT-LOCK.—Shepherd H. Wheeler, Dowagiac, Mich.

Claim.—The combination of the wedge D, spring E, recess C, nut B, and bolt A, substantially as and for the purposes hereinbefore set forth.

108,224. — TOY LOCOMOTIVE. — James E. Wickham, Hartford, Conn.

Claim.—1. The combination of the shaft *b'*, clutch *f*, spool *d*, and rubber spring *e*, the whole being arranged, constructed, and operated as described, for the purpose set forth.

2. The combination of the shaft *b'*, loose spool *d*, clutch *f*, rubber spring *e*, and pulley *f*, the whole arranged, constructed, and operated substantially as described, for the purpose set forth.

108,225.—MACHINE FOR MAKING NAILS.—Alonzo P. Winslow, Cleveland, Ohio.

Claim.—The serrated edged cutters J K, as arranged in relation to each other, and in combination with the oscillating beam A and bed K', when operated in the manner substantially as described, and for the purpose set forth.

108,226.—WASH-BOILER.—Harvey T. Woodman, Dubuque, Iowa.

Claim.—The arched and laterally-perforated false bottom B, supported by the flanges *c* on the plates *a*, and provided with shoulders *e*, for supporting the slotted plate C, all as shown and described.

108,227.—FENCE.—Nathan Woolsey, Ottawa, Ill.

Claim.—The wrought-iron post A, in combination with the cast-iron socket D and the hooked bolts F F F, substantially as and for the purpose described.

108,228, antedated October 1, 1870.—STONE-CUTTING MACHINE. — Hugh Young, of Middletown, Conn., and James L. Young, New York, N. Y.

Claim.—1. The combination of the cutter A', with the blade B, in the manner and for the purpose set forth.

2. The combination of the frame K K' K K' and frame F with one or more blades B, carrying the cutter or cutters A', substantially in the manner and for the purpose specified.

3. The bridges D, having their rollers E, blocks L L L, &c., or equivalent guides, in combination with the blade or blades B, when said bridges are adjustable by means of ways, the whole constructed to operate in the manner and for the purpose described.

4. The combination of the platform C, slides C', screws J, wheels M with the tool A' and blade B, the whole arranged so as to give a feed-motion of the stone to the tool A, working in the manner set forth.

5. As a new means of cutting stone, a tool, consisting of one or more diamonds, or other hard stones, mounted upon a rectilinear-moving blade, operated in such a manner, in relation to the stone to be cut, that said tool will plow a channel into said stone, and pass out at either end of said channel at each complete stroke of the blade and tool, substantially in the manner herein set forth.

6. The bolts *b*, having heads *a*, in combination with the bolts *b'* and blade or blades B, bearing the cutter A', or cutters A', arranged substantially as and for the purpose specified.

7. The sieve R, when used in combination with the horizontal rectilinear-moving diamond-tool A', or tools A', and blade or blades B, substantially in the manner and for the purpose set forth.

108,229. — LEATHER-CUTTING MACHINE.—Abram L. Zent, Roanoke, Ind.

Claim.—1. In a leather-cutting machine, the roller G, when arranged in a swinging frame, and combined with the spring K, sliding blocks *r*, and thumb-screws *w*, substantially as and for the purpose specified.

2. In combination with the roller G, arranged in a swinging frame, the removable and adjustable knives *v*, when arranged with the slots *s*, substantially as and for the purpose specified.

108,230.—PROPELLING VESSELS.—Jean Lucien Arman, Bordeaux, France.

Claim.—The within-described boat of circular draught and quadruple propulsion, or a circular boat having four screws or propellers secured to the opposite ends of, and driven by two shafts, which cross each other at right angles in the center of the boat, the said propellers being operated substantially in the manner described, so that the boat may be navigated in any direction without deflection or leeway.

108,231.—ANVIL-LAST.—David Bainbridge, Philadelphia, Pa.

Claim.—The combination, substantially as described, of the stand B and reversible anvil-last A.

108,232.—CHURN-DASHER.—Silas E. Bauder, Birmingham, Ohio.

Claim.—The hollow perforated conical churn-dasher, herein described and shown, having the downwardly-inclined attached hoods *v v*, covering each perforation, substantially as and for the purpose specified.

108,233.—APPARATUS FOR SPINNING HEMP, FLAX, AND OTHER FIBROUS SUBSTANCES. Ernest Bazin, Paris, France.

Claim.—1. The rotating flier A', carrying a case, *b*, rounding-rollers *c c*, and eccentric twisting-roller *g*, in combination with drawing-rollers, substantially as described.

2. The combination, with the rotating cylinder and twisting-roller *g*, of rounding-rollers *c c*, carried by elastic arms, and adapted to each other, as specified.

3. The combination of the rounding-rollers *c c*, clasping the sliver, and a twisting-roller arranged above, but out of a line with the rounding-rollers, the whole being carried by the rotating flier A, as described.

4. The combination of the rollers *c c* and *g*, carried by the rotating flier A and roller h, with the hollow spindle of the flier.

5. A polisher, *i*, constructed substantially as described, and arranged for the reception of the twisted yarn between the spinning and drawing devices, as set forth.

6. The cone-pulley *x'*, adapted to the smaller cone *x'*, and controlled by a spring and screw, all substantially as described.

108,234.—CURLING-IRON.—Jeffrey O. Bentley and James Jackson, Philadelphia, Pa.

Claim.—The curling-iron, consisting of tube A, punctured with gas apertures, central rod B, and hollow handle C, constructed and arranged in relation to each other, substantially in the manner and for the purpose above set forth.

108,235. — EXTRACTING IRON FROM THE SLAG OF BLAST-FURNACE. — Edward James Bird, Frostburg, Md.

Claim.—1. The method of obtaining iron by applying the heat carried off by slag from a blast-furnace to smelt iron ore, or slag containing iron, substantially as specified.

2. Jets of blast or gas applied to fluid slag, to more effectually mix iron, or oxide of iron with it, to facilitate the separation of the iron formed by the mixture, substantially as specified.

108,236.—SPRING FAN.—Otto Brueck, New York, N. Y.

Claim.—The spring coiled round the supporting pin *a*, and extending throughout the entire length of the same, or nearly so, as shown, in combination with the plates *b c*, and the leaves of a fan, all as set forth.

108,237.—PUMP-VALVE.—David W. Clark, Tidioute, Pa.

Claim.—The combination, with a flat valve, A, tube B, and spring guiding-stem C D, of a brass spring-jacket, E, cup-ring H, leather rings G, and nut F, all relatively arranged as and for the purpose described.

108,238.—ROAD-SCRAPER AND DITCHER.—George Clark, Dover, assignor to himself, Franklin B. Ives, Tiskilwa, and R. L. Dean, Dover, Ill.

Claim.—The combination of the adjustable mold-board A, brace-rod C, and clamp *f g*, with the bar B constructed with a point, *b*, and flange E, employed to guide the mold-board A, in the manner described.

108,239.—CORN-PLOW.—William C. Clifton, Elk River township, Iowa.

Claim.—The particular arrangement of the five shovels A, B, C, D, and E in an iron corn-plow, located as described, with the adjustable slotted bar F, when constructed and arranged substantially as and for the purpose above set forth.

108,240.—COOK-STOVE.—William C. Davis, Cincinnati, Ohio.

Claim.—The forwardly-dumping grate G, in the described combination with the bonneted projection D and door E, and hearth-plate F, substantially as and for the objects set forth.

108,241.—DISINTEGRATING FIBROUS MATERIAL FOR PAPER-PULP, &c.—August Hermann Franz Deininger, Berlin, Prussia.

Claim.—1. The within-described process of dis-

integrating vegetable fibrous material, by subjecting the same to the action of a weak alkaline solution, under a superatmospheric pressure, and at a temperature of not more than 212°, so as to avoid the formation of steam in the disintegrating-vat, substantially as herein set forth.

2. The within-described apparatus for treating fibrous materials, under superatmospheric pressure.

108,242.—WATER-ELEVATOR.—Isaiah Dekle, Thomasville, Ga.

Claim.—The combination, with the spool G, of the shaft A, with flange E and with screw threads *b b*, hollow sleeve I, with flange J and crank K, and the ratchet C at one end and spring *d* at the other end of shaft A, all constructed to operate substantially as set forth.

108,243.—PLOW.—Isaac Eastwood, Lanark, Ill.

Claim.—The adjustable revolving hub or disk C, having projecting radial arms or cutters c, in combination with the adjustable backwardly-inclined colter B', when both are attached to and adjusted upon the beam A of a plow, in the manner and for the purpose shown.

108,244. — BEE-HIVE. — Charles Embrey, Williamsport, Md.

Claim.—Strips B B, extending between the upper and lower bars of a comb-frame, A, on each side thereof, to hold between them pieces of comb, and to guide the bees in filling the frame, substantially as herein set forth.

108,245.—CASTING DENTAL PLATE.—John U. L. Feemster, Greencastle, Ind., assignor to George W. Scott, same place.

Claim.—1. The method of casting plates described, consisting of the employment of deoxidising gas in connection with the molten metal, as and for the purpose set forth.

2. The retort C, constructed specifically as described, with its stuffing-box d^2, rod d^1, cone *d*, and gauge d^3, pipe *e*, with cock e^1, reservoir B, with rod *b*, and flask A, when the parts are arranged as described, for the purpose set forth.

108,246.—FLOUR-BOLT.—Jacob Fickinger, Kingsville, Ohio.

Claim.—1. The combination of two or more transverse centrally-perforated or annular partitions C C, with the interior of a bolting-reel, A, to retard the passage of flour through the same, substantially as herein set forth.

2. The combination of the conical flaring valves P P, with the central openings *m*, in the transverse partitions C C, and the lower head-plate B of a sectional bolting-reel, to close and control said openings, substantially as herein set forth.

3. The concentric apertures or feed-ways E E, formed in the head-plate B' of a flour-bolting reel, for distributing the flour delivered within the reel upon and against the bolting-cloth covering the same, substantially as herein set forth.

4. The combination of a conical cap, F, protected by a sieve, G, with the concentric feeding-apertures E E, in the head B' of the reel A, substantially as herein set forth.

5. The longitudinal stripe or "fall-boards," *t t*, combined with the ribs *a a* of a bolting-reel, substantially as and for the purpose herein set forth.

6. Radial guide-stripe R R, projecting from the upper side of each partition C, and the lower head B of a sectional bolting-reel, in combination with flaring valves or cones P P, suspended over or against the central openings *m*, in said partitions and head, substantially as herein set forth.

7. The combination, substantially as herein described, of a hollow journal-arm, N, secured to and supporting the lower head B, of a sectional bolting-reel, the rod Q connecting and controlling the valves closing the apertures *m* in its interior partitions C, and the journal-arm N', secured to the upper end of the reel.

108,247, antedated October 1, 1870.—PLOW. Asahel Franklin and Francis M. Franklin, Springfield, Ohio.

Claim.—The combination of the beam J, draft-rod P, with shoulder *f*, upright K, brace *e*, angular brace N, handles O O, forked sheath I, and ratchet-plates *b d*, all constructed and arranged substantially as and for the purposes herein set forth.

108,248.—DITCHING-MACHINE.—Samuel F. Gard, New Orleans, La.

Claim.—1. The curved T-shaped axle D, moving in the guide C, which is adjusted by means of the screw-rods *b b*, substantially as and for the purpose herein set forth.

2. The arrangement of the braces G and M, cross-bar J, shaft I, arm K, and rod L, all substantially as shown and described, and for the purposes herein set forth.

3. The shaft I, provided, at its lower extremity, with ditching-tool H, in combination with miter-wheels *f* A, pulley O, and screw-wheel N, all arranged to operate substantially as and for the purpose set forth.

4. A ditching-machine, consisting of the frame A, with wheel B and curved guide C, the T-shaped axle D, wheels E, shaft I, ditching-tool H, and mechanism for rotating and raising and lowering the same, all substantially as and for the purposes herein set forth.

108,249.—FEED-CUTTER.—Frank E. Garner, Cornwall, Conn.

Claim.—1. The arrangement of the knife C, guides *a a*, slotted bar D, screw *f*, and the knuckle-joint *b* E *d*, all substantially as shown and described, and for the purposes herein set forth.

2. The combination of the arm G, levers H J, shaft I, rod A, arms *k k*, levers *n n*, and inclined planes *m m*, all constructed and arranged as described, to operate the feeder K, substantially as herein set forth.

108,250.—SAW-MILL.—David G. Gay, Eugene City, Oregon.

Claim.—The adjustable wheel *d*, combined with two shafts, F F, which connect with the head-blocks, substantially as herein shown and described, all constructed and arranged to operate as set forth.

108,251.—MAIL-BAG FASTENER.—David G. Gay, Eugene City, Oregon.

Claim.—A mail-bag fastener, composed of the bar A, eccentric B, and arms *b c*, all arranged to operate substantially as herein shown and described.

108,252.—TRUSS.—Jacob Geiss, Belleville, Ill.

Claim.—The rupture-ball or pad B', of the constructive form, as shown, and made adjustable by link *c'*, attached to the shank C, and used in combination with the spring A, substantially as set forth.

108,253.—TRUSS.—John Goodier, Philadelphia, Pa.

Claim.—1. The pressure-pad or lever A, provided with a supplemental pad or projection, turning on a pin arranged eccentric to the point of projection, as described.

2. The combination, substantially as herein described, with the lever and its adjustable nut C, of a shield, B, adjustable laterally on said lever, in the manner described.

108,254.—CAR-COUPLING.—William F. Grasler, Muncy, Pa.

Claim.—1. The within-described draw or buffer-head, having in its outer end an elongated aperture, its transverse or greatest diameter or length being placed at a right angle to the platform or body of the car to which it is attached, it being provided with a series of plates or bars of metal, pivoted at a point below the lower surfaces to the

head, and so arranged that, when the coupling-pin is withdrawn, their outer ends will fall downward, and thus cause the upper plate of the series to form a support for said pin to rest upon, the parts being constructed and arranged substantially as and for the purpose set forth.

2. The combination of the spring B' and the pivoted series of plates B B, substantially as and for the purpose set forth.

108,255.—ROCKING-CHAIR. — Charles Grawitz, Buffalo, N. Y.

Claim.—1. In combination with a rocking-chair, the horisontal revolving platform B and case A, when constructed and operating as described.

2. In combination with a rocking-chair, the curved rocker-beds C and guides D, for the uses and purposes set forth.

108,256. — SHUTTER-FASTENER. — Henry Grow, Philadelphia, assignor to himself and William Grow Smith, Norristown, Pa.

Claim.—1. A shutter-fastening device, consisting of a spindle arranged to turn in the shutters, and having at one end an arm, *d*, or other operating attachment, and at its opposite end a hook, *f*, adapted to a hook, *f'*, secured to the wall, all substantially as described.

2. The spindle C of the fastener, made of two revolving sections, one having a projection extending into a slot in the other, as set forth.

3. The arms *d d*, secured to spindles revolving in the two shutters, and adapted and arranged for direct connection to each other, as described.

108,257. — ELECTRO-MAGNETIC BURGLAR-ALARM.—William B. Guernsey, Jersey City, N. J.

Claim.—1. The combination, in an electro-magnetic alarm, of a continuous circuit or circuits with a sufficient resistance or resistances, and an alarm or alarms, when the said combination is so arranged that the severing or interrupting of the said circuits, or of either of them, shall cause the said alarm or alarms to sound; and also, that the short-circuiting or diverting the course of the electrical current in said circuit or circuits around or past the said resistance or resistances shall sound an alarm; this when the whole arrangement is properly combined with a sufficient battery, and with "connections" or contrivances at points to be guarded, which will, upon the doing of certain acts, or the happening of certain things, short circuit the said electrical current or currents past or around the said resistance or resistances, and so give the desired alarm.

2. In a burglar or fire-alarm, the combination of an open and a closed circuit, substantially as set forth.

108,258.—BAKE-OVEN.—James Hall, Cincinnati, Ohio.

Claim.—A revolving reel bake-oven, constructed with an open fire-place or furnace, G, back flue J, top flues H H *h*, and chimney F, constructed and arranged substantially in the manner and for the purpose specified.

108,259.—BELT-GEARING.—George B. Hamlin, Willimantic, Conn.

Claim.—1. The improved belt-gearing herein described, consisting of the driving-pulley A, auxiliary pulley B, and driven pulley C, combined and operated by the belt-connection D, arranged to embrace the driven pulley at opposite peripheries, for the purposes specified.

2. The pivoted bearings H, in combination with elastic cushions arranged to bear with pressure in opposition to the tractile force, substantially as described, for the purpose specified.

108,260.—CULTIVATOR.—Venendo P. Harris, Greensburg, Ind.

Claim.—1. The combination of the pole A, cross-bar C, and axle B, secured together as described, with the equalizer-bar E, chains *d d* and *w*, and pulley *v*, all constructed and arranged substantially as set forth.

2. The combination of the rod G, with arms V V, having flanges *r r*, lever W, cords or chains *s s*, windlass X, and rods *t t*, with the axle B, and cultivator-beams H H, all constructed and arranged substantially as shown and described, and for the purposes herein set forth.

3. The combination of the plow-beams H J, adjustable double stocks S S, and double braces T T, and the shovels U, with flanges *p*, all substantially as set forth.

4. The arrangement, upon the rear end of the draft-pole A of a cultivator, of the double hinge *g g'*, for adjusting and holding the seat R, substantially as herein set forth.

5. The combination, with the beams H H, the arms V V, with flanges *r r*, and connected to the rod G, all as shown and described.

6. The combination of the beams J J, uprights M M, cross-piece N, double T-shaped bars L L, on the bar I, and swivels K K, all substantially as and for the purposes herein set forth.

108,261.—REVERSIBLE KNOB-LATCH.—Albert M. Hill, New Haven, Conn.

Claim.—The double inclined lugs *f g*, formed upon the arms of the yoke E, combined with the follower B, so as to be set onto the said follower, substantially as set forth.

108,262.—GUANO-DISTRIBUTER AND SEED-SOWER. — Benjamin F. Hinkley, Baltimore, Md.

Claim.—1. The combination of a receptacle, A, of any suitable form, and a reciprocating piston, C, provided with barbs or jags *c*, by which the fertilizer or seed is driven out at the aperture, as specified and set forth in the specification.

2. The piston C, with its barbs or jags *c*, and a button, D, or its equivalent, which suddenly arrests the motion of the piston, so as to give an expulsive action which tends to clear the piston, substantially as described.

3. A shiftable nozzle, B, admitting of the adaptation of spouts with apertures of varying sizes, in combination with the receptacle A and the piston C, substantially as and for the purpose described.

108,263.—DRY GAS-METER.—Perry Hodge, Seneca Falls, N. Y.

Claim.—The rock-lever I, rod K, crank-arm L, lever M, spring rod *w*, and balance-wheel N, when combined with the valve E, in the manner and for the purpose specified.

108,264.—PUMP.—David O. Holman, Adams, N. Y., assignor of one-half his right to J. P. Saunders, same place.

Claim.—The rock-shaft G, having the vertical wing *b* and the lateral wings *a*, suction-head *c*, longitudinally grooved, in combination with a cylinder, R, provided with a stationary partition, L, extending from the floor thereof to the rock-shaft, substantially as specified.

108,265.—PUMP.—David O. Holman, Adams, N. Y.

Claim.—1. The force-pump, herein described, having removable cylinders A A, connecting-plate H, flanges G G, air-chamber L, forked conduits *s* and *s*, cap *a*, provided with lugs *l*, leather piece *q* and valves *c*, when the same are constructed, arranged and combined substantially as specified.

2. In combination with the valve-seats *n n* and the leather plate *q*, bearing the valve-blocks *c c*, the plate *a*, provided with the lugs *l l*, constructed and arranged to operate as specified.

108,266. — WASHING-MACHINE.—Benjamin Illingworth, Freeport, Ill.

Claim.—The combination of the two cylinders E E with the tub A, when said cylinders are corru-

gated as described; that is to say, are composed of India-rubber, with teeth *a a* and *i i*, and secured upon polygonal-shaped rollers, D, and adjustable within the center of the wash-tub, to operate as specified.

108,267. — AUGER-HANDLE. — William A Ives, New Haven, Conn.

Claim.—1. In combination with the socket A, a fixed handle, B, and adjusting-screw D, the cylindrical cam F, operating in the manner and for the purpose substantially as described.

2. In combination with the subject-matter of the first clause, the self-adjusting jaw *a*, when made so as to be self-adjusting against the shank of the auger, and whether made to grasp below the shank or not, substantially in the manner as herein set forth.

108,268.—DOOR-SPRING.—William F. Kells, San Francisco, Cal.

Claim.—The combination of the box C, spring D, shaft *b*, ratchet-wheel *m*, pawl A, chain or wire *d*, box E, rollers *e e*, plate G, and pin *f*, all constructed as described, and arranged to operate substantially as and for the purposes herein set forth.

108,269. — MACHINE FOR CLEANING AND DITCHING RICE-FIELDS. — Samuel M. King, Lancaster, Pa.

Claim.—The adjustable scoop C, in combination with the trough B, screw-rod H, and wheel J, as described.

108,270.—HOLDER OF SPINNING-RING.—George W. Knight, Hopedale, Mass., assignor to George Draper & Son, same place.

Claim.—A spinning-ring supporter, made as described, with its peripheral cut or cuts arranged obliquely to the circumference of the supporter, and relatively to the direction of the motion of the traveler, substantially in manner and for the purpose as hereinbefore explained.

108,271.—MANUFACTURE OF BLACKING.—Joseph L. Lucas, Saratoga Springs, N. Y.

Claim.—As a new article of manufacture, solid rolls of blacking wrapped in a thin film of metallic foil, substantially as and for the purpose set forth.

108,272.—SHOVEL-PLOW.—Luppe Luppen, Pekin, Ill.

Claim.—The clamp herein described for attaching shovels to the standard of a plow, composed of two brackets secured to the back of the shovel, and having recesses in their opposing faces, for the reception of the standard, which is clamped between them by means of a bolt and nut, substantially in the manner set forth.

108,273.—SHOVEL-PLOW.—Luppe Luppen, Pekin, Ill.

Claim.—The arrangement, with reference to each other, of the plow-beams A A, sockets C C', draw-bar D, and bolt E, substantially as and for the purpose set forth,

108,274.—SHOVEL-PLOW.—Luppe Luppen, Pekin, Ill.

Claim.—1. The clamp, composed of the plates G^1 G^1, which are constructed with central pins and annular flanges surrounding the same upon their opposing faces, in combination with the axle-socket F, to form a coupling, substantially as set forth.

2. The arrangement, relatively to each other, of the axle-socket F, clamp G^1 G^1, draw-bar G, socket G^2 G^2, and plow-beams G^3 G^3, substantially as set forth.

108,275.—SHOVEL-PLOW.—Luppe Luppen, Pekin, Ill.

Claim.—1. A shovel-fastener, consisting of the block A, cap B, bolts C, and tightening-nuts C', substantially as shown and described.

2. In combination with the elements in the preceding clause, the fillets D, substantially as and for the purpose set forth.

108,276.—SHOVEL-PLOW.—Luppe Luppen, Pekin, Ill.

Claim.—1. The socket D, having upon its side one or more projections D^1, substantially as and for the purpose set forth.

2. The combination of the socket D, shims D^2 and D^3, and beam or draw-bar A, substantially as and for the purpose set forth.

3. The combination of the socket C or beam A, brace F, and socket D, substantially as and for the purpose set forth.

108,277.—RAILWAY-CAR AXLE-BOX.—George F. Lynch, Milwaukee, Wis.

Claim.—1. The removable steel or hardened metallic lining K, in combination with a railroad-car axle-box, as herein shown and described, and for the purpose set forth,

2. In combination with a set-screw, H, or its equivalent, the head or washer-plate F, when provided with collar *d* and shoulders, as herein shown and described, for the purpose of bearing against the ring-head E and axle B, as set forth.

3. In combination with a pedestal and axle-box, arranged, as herein described, to move independent of each other, the rubber springs P, whether attached to the pedestal or to the axle-box, as and for the purpose set forth.

4. The combination of the pedestal N with a car-axle box-case, provided with flanges L, a spring and friction-plate, when constructed and arranged substantially as herein described, and for the purpose set forth.

5. A car-axle box, consisting of the case A, with lining-plate K, set-screw H, plates *a* and M, with the intervening leather packing *b*, washer F, ring G, ring-heads E, and rollers C, all constructed and arranged to operate substantially as described.

108,278.—WORK-BOX.—James E. Marvel, Seaford, Del.

Claim.—The arrangement of the box A, lid B, drawer D, compartments E G H, slide I, mirror J, needle-case K, cushions L M, spool-posts O O, corresponding thread holes and bar P, with cutters *a a*, all substantially as and for the purposes herein set forth.

108,279. — HARROW. — John Mellinger, Greensburg, Pa.

Claim.—1. The construction and relative arrangement, as described, of the carriage, the hinged, symmetrical, sectional harrow-frame, suspended and braced between the wheels, but projecting beyond them, both in front and rear, the flexible connections, and the lifting-levers.

2. The construction and arrangement of the carriage, the hinged, sectional harrow-frame, the lifting-levers, and the adjustable driver's seat, as set forth.

108,280. — TREE-BOX. — Harry Merrick, Brooklyn, N. Y.

Claim.—1. A tree-box, composed of sections B, built up of semicircular plates C, two or more, and wires D, the sections being united to each other by means of the overlapping ends of their plates C, substantially as described.

2. The semicircular plates F F, formed with arms G G and slotted plates H H, adjustably connected to the slotted bars I I by means of a screw and nut, and secured to the plates C C by the same bolt that unites their overlapping ends, all combined, arranged, and operating substantially as described.

108,281.—LOOM.—John Miller, Eldridge, Ill.

Claim.—1. In combination with the heddle-frames M M, constructed as described, and operated by

means of the friction-rollers *b b*, on the wheels *a a*, the cords or wires *d d*, and springs *e e*, arranged and operating substantially as and for the purposes herein set forth.

2. The arrangement of the picker-staffs N N, and the batten E, the staffs being pivoted or hung in front of the batten so as to be operated by the back and forward motion of the batten, substantially in the manner and for the purposes herein set forth.

3. The arrangement of the picker-staffs N N, spring *f*, straps *i i*, arms *h h*, and rods *g g*, operated by means of the crank on the end of the shaft I, substantially as and for the purposes herein set forth.

4. In combination with the above, the bars *k k*, shuttle-drivers R R, pins *m m*, and central bar *n*, all arranged and operating substantially as and for the purposes herein set forth.

108,282.—KING-BOLT.—Francis B. Morse, Plantsville, Conn.

Claim.—1. The king-bolt B, with the clip-arms *a*, when the said bolt is of a decreasing diameter from its intersection with the clip-arms toward the point, substantially as set forth.

2. In combination with the bolt B, the collar C, of suitable metal, so that the collar may be forced on the bolt for the purpose of adjustment, the metal yielding for such purpose, substantially in the manner and for the purpose set forth.

108,283.—DIE FOR SWAGING CARRIAGE-CLIP.—Francis B. Morse, Plantsville, Conn., assignor to H. D. Smith & Co., same place.

Claim.—The improved dies, constructed as herein described, for forging carriage-clips.

108,284.—IMPREGNATING FIBROUS MATERIAL FOR PACKING, &c.—Eliza D. Murfey, New York, N. Y.

Claim.—1. The process of impregnating hemp, or other rope or sliver, with insoluble materials, by passing a sliver through melted paraffine, or equivalent material, holding the powder in suspension, and then removing the paraffine, so as to leave the powder among the strands, as specified.

2. The process of removing the paraffine, or other vehicle, by simultaneously heating and twisting the rope, as set forth.

108,285.—SATURATING FIBROUS MATERIAL WITH POWDERED SUBSTANCES, FOR BEARINGS AND PACKING.—Eliza D. Murfey, New York, N. Y.

Claim.—The within-described process of impregnating a mass of fibers with insoluble substances, that is to say, saturating the mass with melted paraffine, or equivalent material, holding the powdered substance in suspension, and then removing the paraffine by heat or pressure, or both.

108,286. — MATERIAL FOR PACKING AND BEARINGS.—Eliza D. Murfey, New York, N. Y.

Claim.—1. A material for packing, &c., consisting of felt impregnated with comminuted substances or compositions, as described.

2. A material for bearings, &c., consisting of the said impregnated felt condensed under pressure.

108,287. — MANUFACTURE OF STEEL. — Charles Motier Nes, York, Pa.

Claim.—1. The manufacture of cast-steel, in a converting-furnace, from pig-iron and the ore herein specified, substantially in the manner set forth, with or without the use of electricity, as described.

2. The manufacture of steel, from pig-iron and the ore herein specified, in a forge-fire, substantially in the manner set forth, with or without the use of electricity, as described.

3. A fettling or fix for puddling-furnaces, composed of equal parts of mill-cinder, hammer-slag, and scrap-iron, substantially as described.

108,288.—APPARATUS FOR COOKING AND EVAPORATING. — Thomas J. Newby, Richmond, Ind.

Claim.—A liquid-chamber, connected with the fire-box, as described, in combination with the pipes *a*, *b*, and *b'*, and reservoir B, substantially as and for the purpose set forth.

108,289.—FRUIT-DRIER.—Joseph B. Okey, Indianapolis, Ind., assignor of one-half his right to Ferdinand A. Lehr.

Claim.—1. The formation of a ventilating throat within the tray itself, as shown, and the multiplication of these indefinitely, at alternate ends, as and for the purposes shown.

2. The combination and arrangement of a ventilating base-section with the throated trays and graduated openings in the top of my fruit-drier, all as shown, and for the purposes described in my specification.

108,290.—MOLD FOR SHAPING AND DRYING CIGAR BUNCHES.—Adolph Pearl, New York, N. Y.

Claim.—The combination of the longitudinally-divided, externally-taper porous mold, and the perforated table, rack, or stand, substantially as and for the purpose herein set forth.

108,291. — MANUFACTURE OF VINEGAR.—Paul Plodeck, Cleveland, Ohio.

Claim.—The combination and arrangement of the canvas sheets C C C, rounds B B B, and troughs D D D, in a suitable box A, substantially in the manner described, and for the purpose set forth.

108,292.—LOOM.—William J. Porter, New York, N. Y., and William Cross, Jersey City, N. J., assignors to Edward H. Faulkner, New York City.

Claim.—1. The treadles I J, operating both the warp mechanism and the filling-book, as shown, when the crank-pin *h*, on the rocking-shaft H, travels in the curved slot *m'*, in the hook-slide M, so as to induce the proper periods of rest and motion, all substantially as herein set forth.

2. The catch T and treadle J, combined with the trap-board, or its equivalent, for governing the harness mechanism, and operating as represented, to open the shed rapidly in advance of the return motion of the treadles.

108,293. — BOX-OPENER.—Nathan Purdey, Providence, R. I.

Claim.—A combined claw-hatchet and hammer, constructed in the manner substantially as herein shown and described.

108,294.—GRAIN-DRILL. — John L. Riter, Brownsville, Ind.

Claim.—1. The conductors P P, cast upon the feed-boxes L L, substantially in the manner and for the purpose described.

2. The slotted chutes N N, substantially as and for the purposes set forth.

3. The slotted chutes N N, constructed and arranged, in combination with the feed-boxes L L and hoes M M, substantially as and for the purposes herein set forth.

4. The feed-wheel K, provided with arms *i i*, sloping alternately from side to side, substantially as and for the purposes herein set forth.

5. The combination of the hopper H, feed-boxes L L, feed-wheels K K, chutes N N, and hoes M M, all constructed and arranged substantially as and for the purposes herein set forth.

6. In combination with subject-matter of foregoing clause, the frame A, side-beams C C, wheel B, shaft J, lever I, wheels O O, straps D D, with lever *a*, shaft *b*, handle *d*, and brace E, all substantially as and for the purposes herein set forth.

108,295.—FEEDING MECHANISM FOR WOOD-SCREW MACHINERY.—Charles D. Rogers, Utica, N. Y.

Claim.—The vibratory blank-hopper, a receptacle having a slotted bottom and tilting back, and operating substantially as described, in combination with the inclined feeder or conduit.

108,296.—MITER-MACHINE. Leander W. Rosecrans, Marshalltown, Iowa.

Claim.—1. The cylinder-frame B, provided with the tenon *a* and circular shoulders or bearings *b b*, said frame being hinged to the bed or frame A, and braced by the scale-brace I, substantially as and for the purposes herein set forth.

2. The combination of the hinged cylinder-frame B with indicator-plate *d*, pivoted cylinder C, with needle-point *i*, longitudinally-grooved rod D, having the slotted guide-bars H H attached to its upper end, all substantially as and for the purposes herein set forth.

3. The frame or bed A, provided with posts J M and board N, substantially as and for the purposes herein set forth.

4. The combination of the bed A, cylinder-frame B, cylinder C, rod D, guide-bars H H, scale-brace I, posts J M, and board N, all constructed and arranged to operate substantially in the manner and for the purposes herein set forth.

108,297.—CHURN.—Henry Saggan, Newark, N. J.

Claim.—The arrangement of the oval cream-receptacle A, having partitions D D D, with the rockers B B, having notches *e e*, cross-bar *d*, and ways C C, all constructed to operate as described.

108,298.—COAL-VAULT GRATE.—George W. Scott, Greencastle, Ind.

Claim.—The vault-cover described, consisting of the parts A B C D, when constructed and combined as described, for the purpose set forth.

108,299. — TRUNK-CLAMP.—Albert J. Sessions, deceased, Bristol, Conn., by Ellen L. Sessions, administratrix, assignor to John H. Sessions, same place.

Claim.—As a new article of manufacture, the herein-described corrugated trunk-clamp, consisting of wrought sheet metal, whereby the clamp is sufficiently flexible to be readily formed to fit either right or obtuse-angled corners, as described.

108,300.—CASTERS FOR TRUNK.—Albert J. Sessions, deceased, Bristol, Conn., by Ellen L. Sessions, administratrix, assignor to John H. Sessions, same place.

Claim.—The herein-described trunk-roller, the frame of which is formed from a square sheet-metal blank, cut or incised at the junction of the plate A and ears B B, said ears being bent up from two opposite corners, so as to leave the points *c c c c*, substantially as described.

108,301.—WELL-TUBE.—Andrew J. Shirley, Plymouth, Ind.

Claim.—The arrangement of the pipe A, provided with longitudinal grooves *a a*, perforations *i i*, and screw-threads *b b*, the point B, with shoulder or offset *c*, the pin *d*, and wire C, all substantially as shown and described.

108,302. — APPARATUS FOR GENERATING GAS FOR HEATING.—Levi Stevens, Washington, D. C.

Claim.—1. The arrangement of a pipe conveying hydrocarbon within a pipe conveying steam, the outer pipe being subjected to heat, so that while the steam vaporizes the hydrocarbon, the steam itself is superheated preparatory to the admixture of the two vapors to form a new gas, substantially as described.

2. The combination of the compound vaporizing and superheating-coil with the chamber E, for receiving and mixing the steam and hydrocarbon-vapor within the furnace, substantially as described.

3. The combination of the mixing-chamber E with its tube *f* and valve *g*, arranged to operate substantially as described.

4. The burner, consisting of the grate G, perforated tube R, and deflector *m*, arranged substantially as set forth.

5. The grate G, provided with the annular water-chamber *l*, substantially as described.

6. A gas-generating apparatus, consisting of a steam-boiler, B, with a fire-chamber, having a vaporizing-coil, a mixing-chamber, and burner, located therein, and an oil-tank connected thereto by pipes, substantially as and for the purpose set forth.

108,303.—CRUTCH.—John Wentworth Tuttle, Newton, Mass.

Claim.—1. The combination and arrangement of the screw, disk, or annulus *f*, with the sole *g*, the case *e*, and ball *a* and socket *b* thereof.

2. The combination of the elastic hood *l* and its fastenings *n o* with the ball *a* and its shank *c*, the case *e*, and the socket or cup A, for supporting the ball.

3. The arrangement and combination of the annular spring or springs *i*, the disk or annulus *f*, the sole *g*, the cup A, the ball *a*, and its shank *c*, and the case *e*, all as described.

4. The combination and arrangement of the sole *g*, the annulus *f*, the cup A, the case *e*, the ball *a*, and its shank *c*, and the elastic hood *l*, all made as explained.

5. The sole *g*, the annulus *f*, the case *e*, the spring or springs *i*, the cup A, the ball *a*, and its shank *c*, and the elastic hood *l*, all constructed, combined, and arranged substantially as and to operate as described.

108,304.—MOP-HEAD.—William Pierce Valentine, Buffalo, N. Y., assignor to himself and John Robert Drake, same place.

Claim.—1. The mop-head made from a single piece of wire, so bent as to produce an unbroken wedge-shaped loop, B, for the shank, and overlapping-lock *b c*, for the junction of the ends, as herein shown and described.

2. The ferrule E, with its bracing-arms *d d* and conical opening in the center, substantially as and for the purpose hereinbefore set forth.

3. The unbroken wedge-shaped shank B, connected directly with the wood of the handle G, resting in a similarly-shaped socket in the wood, and held by the cross-armed ferrule or collar E, arranged as described, and operating in the manner and for the purpose specified.

108,305. — PLANING-MECHANISM. — Claus Van Haagen, Philadelphia, Pa., assignor to himself and Anthony Van Haagen, same place.

Claim.—The two arms G and G', with their toothed segments and pins *d d'*, and the right and left-handed worm H, the whole being combined and adapted to the slotted hub E', substantially as described.

108,306.—TURNING AND BORING MECHANISM.—Claus Van Haagen, Philadelphia, Pa., assignor to himself and Anthony Van Haagen, same place.

Claim.—The arm G, and its toothed segment *p*, the pin *d*, and worm H, all combined and adapted to the slotted hub E, substantially as set forth.

108,307.—MACHINE FOR SAWING STONE.—Luther Ward, Trenton, N. J.

Claim.—1. The combination and arrangement of the swinging rods D and weights E resting thereon, for the purpose of securing a uniform and automatic downward pressure upon the saw, substantially as specified.

2. The adjustable feed-box, when provided with slots Q Q Q Q, screw R, spiral rod T T, and gearing U U, with the ratchet V, when arranged, constructed, and combined substantially as herein shown and represented, for the purpose set forth.

108,308. — HEAD-REST. — Mahlon Warne, Philadelphia, Pa.

Claim.—A head-rest, consisting of rods B B, band A, and strap *i*, when the said band is detachable from the rods, and each of the latter consists of two sections, united by a detachable coupling, *m*, as specified.

108,309.—NECK-TIE.—Hiram P. Wetmore, Elizabeth, N. J., and John G. Hitchcock, New York, N. Y.

Claim.—A neck-tie, having a spring-clamp, n adapted to receive and permanently hold one end of the tie T, in combination with the socket *a*, and with means *b* for conveniently connecting and disconnecting the parts for subsequent use, all combined and operating substantially as herein set forth.

108,310. — BORING APPARATUS. — Jerome Wheelock, Worcester, Mass.

Claim.—1. Jointly, the construction of the groove *q* in the cutter-bar with beveled sides, the construction of the lug V with beveled sides corresponding with the sides of the groove, and a screw-gib or gibs, arranged with relation thereto, by the operation of which the wear between the cutter-head and bar may be compensated, and the sides of the lug kept in close relation with the sides of the groove, substantially as shown and described.

2. The location of the cutter-blocks in the cutter-head upon journaled axes lying parallel to the axis of the cutter-bar, in order that they may be slightly oscillated on and in a plane transverse to said axes, substantially as described.

3. In combination, as described, with the bar A, the slotted sleeve H, the griping-collar J, and the bushing I, as and for the purposes set forth.

4. In combination with the cutter-bar A, the sleeve H, bushing I, collar J, bushing *b*, and spindle-bearing *c*, as and for the purposes specified.

5. In combination with the cutter-bar A, feed-screw *f*, and pinion K, the series of gear-wheels and pinions for imparting motion to said bar and screw, arranged in relation thereto and to one another, between the plates B B', substantially as described.

6. In combination with the cutter-head G, the feed-screw *f*, and the nut *e*, provided with the threaded gib *z*, and set-screw for holding said gib, as and for the purposes specified.

7. In combination with the centering devices, feed-screw, cutter-head, and gearing of a boring-machine, the cutter-bar A in two parts, as and for the purposes set forth.

REISSUES.

4,149.—HOT-BLAST STOVE FOR BLAST-FURNACE, &c.—James Henderson, New York, N. Y., and Jasper M. Lawford, Philadelphia, Pa., assignees of John Player, deceased.—Patent No. 65,599, dated June 11, 1867; patented in England, April 21, 1866.

Claim.—1. The combination, in a hot-blast stove, of a fire-place in which solid fuel is burned; a combustion-chamber separate from, but having free communication with, the fire-place; a blast-heating chamber, separate from both the fire-place and the combustion-chamber, but communicating with the latter; and conduits for the blast within the blast-heating-chamber, but removed from the action of the ignited gases in the combustion-chamber, substantially as described.

2. The combination of a blast-furnace, a hot-blast stove, and a jet or jets of steam, substantially as and for the purposes described.

4,150. — APPARATUS FOR HEATING THE BLAST FOR FURNACES USED IN SMELTING IRON, &c.—James Henderson, New York, N. Y., and Jasper M. Lawford, Philadelphia, Pa., assignees of John Player, deceased.—Patent No. 65,600, dated June 11, 1870; patented in England, March 25, 1865.

Claim.—The combination, in a hot-blast stove, of a combustion-chamber in which the waste gases from a furnace are received, ignited, and consumed, substantially as described; a separate blast-heating chamber, from which flame is excluded, substantially as described, and communicating with the combustion-chamber only through numerous narrow openings; and conduits for the blast within the heating-chamber, but removed from the action of the flame or ignited gases, substantially as and for the purposes described.

4,151.—BRUSH.—James McQuide, Lansingburg, N. Y., assignee of John Marchbank.—Patent No. 59,850, dated November 20, 1866.

Claim.—1. In a brush, the combination of the ferrule C, of kegging form, with the handle A and bristles B, substantially as and for the purpose set forth.

2. The coiled-wire ferrule C, enlarged at its center, and adapted to admit of the insertion of the bristles B and handle A from its partings at the bilge, substantially as and for the purpose set forth.

4,152.—PRINTING-TELEGRAPH.—George M. Phelps, Brooklyn, N. Y.—Patent No. 89,887, dated May 11, 1869.

Claim.—1. The type-wheel, rotated by means of a rotary magnetic motor, applied to a shaft that is connected with the type-wheel, substantially as set forth.

2. The adjustable circuit-breaker and centrifugal governor, in combination with an electro-magnetic motor, substantially as specified.

3. The mechanism, substantially as set forth, for giving an impression upon the type-wheel by the lever *k'*, and type-wheel actuated by the revolution of the shaft *l*.

4. The mechanism, substantially as specified, for closing and breaking the circuit to an electro-magnet, in combination with mechanism for effecting the impression, and stopping and liberating the type-wheel, the type-wheel and circuit-closing mechanism being detained the same integral portion of a revolution as the actuating-shaft, substantially as set forth.

5. The slides *v*, collar 33, and mechanism, substantially as set forth, for directing the current of electricity to the magnet c^3, as set forth.

6. The combination of the circuit-breaking lever *f* with the locking-lever and type-wheel, substantially as described.

7. The lever f^1 and friction-plate f^2, in combination with the stops 25 and 26, and type-wheel, substantially as and for the purposes set forth.

8. A type-wheel, having a progressive movement in one direction, and arrested at a given integral portion of a revolution of a motor, while the printing is being effected, so that more time is allowed for the action of the magnets, substantially as specified.

9. A type-wheel and its motor, in combination with a unison stop that receives its movement, for locking the type-wheel, from the parts that move the type-wheel, substantially as set forth.

10. A type-wheel, revolved in one direction, in combination with a stop that arrests the movement of the type-wheel at a zero or dash-point, and a connection from such stop to the printing mechanism that withdraws the said stop, to allow the type-wheel to proceed in its movement when the printing mechanism is actuated, substantially as specified.

4,153.—MANUFACTURE OF CAST-STEEL.—Louis La Brecho-Viger, Montreal, Canada, assignor to William W. Averell, Bath, N. Y.—Patent No. 96,358, dated September 28, 1869; reissue No. 3,835, dated February 15, 1870.

Claim.—1. The admixture, in predetermined and definite proportions, of pulverized plumbago, compressed or not, with pulverized iron ores, oxide of iron, carbonate of iron, iron-sand, or iron, to make cast-steel of any desired quality in one operation.

2. The admixture, in predetermined and definite proportions, of pulverized anthracite or bituminous coal, coked, or in the natural state, compressed or not, with pulverized iron ores, oxide or carbonate of iron, iron-sand, or iron, to make cast-steel of any desired quality in one operation.

3. The admixture, in predetermined and definite proportions, of pulverized plumbago, pulverized anthracite or bituminous coal, pulverized coke, compressed or not, with pulverized iron ores, oxide or carbonate of iron, iron-sand, wrought-iron, iron scraps, shavings, chips, and sponge, in a crucible, or in a reverberatory furnace, or reheating or puddling or air-furnace, or in what is called and known as a Siemens' furnace, or in any furnace heated by gas, to make cast-steel of any desired quality in one operation, the said mixture, if used in a furnace, to be covered, or not, with a flux of glass or blast-furnace or other furnace-cinders, or with glass-making materials, or with slabs of soapstone, or with tiles or fire-bricks; or if the ore or carbon used contains earthy matters the slags or scorias which they will furnish may render other covering unnecessary. In a furnace heated by gas, if a neutral flame, neither oxidizing nor carburizing can be produced, no covering is required.

4. The admixture, in predetermined and definite proportions, of powdered charcoal, compressed with pulverized iron ores, oxide or carbonate of iron, iron-sand, and wrought-iron, or metallic iron of any description in a crucible, to make cast-steel of any desired quality in one operation.

5. The admixture, in predetermined and definite proportions, of pulverized charcoal, compressed or not, with iron ores, oxides or carbonates of iron, iron-sand, or with metallic iron of any description, in any of the furnaces, and with or without the covering mentioned in No. 3 of this claim, to make cast-steel of any desired quality in one operation.

6. The above admixtures, in the following proportions, viz: from two-tenths of one per cent. to thirty per cent., and even thirty-five per cent. of said carbons, in weight, of the ore used, or of the oxide of iron, or carbonate of iron, or iron, according to the purity of the oxide or carbonate of iron, and of the carbon used, and according also to the quality of the cast-steel to be produced.

7. The above admixtures, either in a loose or compressed state, with a coating of plumbago or other carbonaceous matter, in the manner and for the purpose substantially as set forth in the foregoing specification.

4,154.—GUN-CARRIAGE.—John Wall Wilson, New York, N. Y.—Patent No. 100,482, dated March 1, 1870.

Claim.—1. The combination of compresser-cams G G with the compressers E E, for operation in relation to the carriage, and with the compresser-bars F F, substantially as specified.

2. The combination of the eccentrically-hung rollers H H and rubber blocks or springs J J, operating to force them down or outward, with compressers arranged so that their lift causes the carriage to be borne down on the slides, or in a reverse direction to the thrust of the springs, essentially as herein set forth.

3. The elastic inclined cushions or compressible spring-like devices, arranged to form backward continuations of the slides on which the gun-carriage works, substantially as specified.

4. In the construction of said elastic cushions or compressible spring-like devices, the combination of the sliding or removable quoins *g g* with the springs *f f*, and the upper slides or slide continuations *e e*, essentially as described.

5. The combination of the brakes *l l* with the gun-carriage, for operation upon or against the slides D D, substantially as specified.

6. The combination of the brakes *l l*, racks *k k*, and pinion *i*, with the gun-carriage, essentially as shown and described.

DESIGNS.

4,389. — STOCKING. — Thomas Appleton, Lake Village, N. H.

Claim.—The design, represented and described, for a stocking.

4,390.—BLACK-BOARD ERASER.—Joseph H. Atwater, Providence, R. I.

Claim.—The design or configuration for a black-board eraser, as described and shown.

4,391.—ADVERTISING-DESK.—Albert Brummel, Indianapolis, Ind.

Claim.—The peculiar form and construction of the advertising-desk herein shown and described.

4,392.—TYPE. — Robert Bruce, Brooklyn, N. Y., assignor to David Wolfe Bruce, New York City.

Claim.—The design or pattern for printing-types herein set forth.

4,393.—TYPE.—Wallace Bruce, Brooklyn, N. Y., assignor to David Wolfe Bruce, New York City.

Claim.—The design or pattern for printing-types herein set forth.

4,394.—CARPET-PATTERN.—Robert R. Campbell, Lowell, Mass., assignor to Lowell Manufacturing Company, same place.

Claim.—The configuration of the design hereunto annexed, when made by being inwrought into two-ply, ingrain, or other carpeting, in the form similar to the photographic print accompanying this specification.

4,395.—CARPET-PATTERN.—Robert R. Campbell, Lowell, Mass., assignor to Lowell Manufacturing Company, same place.

Claim.—The configuration of the design hereunto annexed, when made by being inwrought into two-ply, ingrain, or other carpeting, in the form similar to the photographic print accompanying this specification.

4,396.—CARPET-PATTERN.—Robert R. Campbell, Lowell, Mass., assignor to Lowell Manufacturing Company, same place.

Claim.—The configuration of the design hereunto annexed, when made by being inwrought into two-ply, ingrain, or other carpeting, in the form similar to the photographic print accompanying this specification.

4,397.—CARPET-PATTERN.—Robert R. Campbell, Lowell, Mass., assignor to Lowell Manufacturing Company, same place.

Claim.—The configuration of the design hereunto annexed, when made by being inwrought into two-ply, ingrain, or other carpeting, in the form similar to the photographic print accompanying this specification.

4,398.—CARPET-PATTERN.—Jonthan Crabtree, Philadelphia, Pa., assignor to John Gay, same place.

Claim.—The design for a carpet, as shown.

4,399.—OIL-CLOTH PATTERN.—Leonce Francis Dandre, Paris, France.

Claim.—The design for oil-cloth, composed of

stripe of equal width, imitating the wood, oak and black-walnut, alternately, as described and shown.

4,400.—STOVE.—John D. Flansburg, Philadelphia, assignor to Seymour Raymond and Joseph Campbell, Middletown, Pa.

Claim.—1. The design for the combined casing *c*, offset *d*, and door *e*, as herein shown.

2. The design of the shell *a*, as herein shown.

4,401.—TYPE.—Julius Herriet, New York, N. Y., assignor to David Wolfe Bruce, same place.

Claim.—The design or pattern for printing-types herein set forth.

4,402.—TYPE.—Julius Herriet, New York, N. Y., assignor to David Wolfe Bruce, same place.

Claim.—The design or pattern for printing-types herein set forth.

4,403.—OIL-CLOTH PATTERN.—James Hutchison, Newark, N. J., assignor to Thomas Potter, Son & Co., Philadelphia, Pa.

Claim.—1. Irrespective of the ornamentation of the tablets A, an oil-cloth pattern, composed of a series of the said tablets A, formed and arranged in respect to each other and the figures B, as set forth.

2. Tablets A, ornamented as shown.

3. The design composed of the ornaments *e*, ornamented tablets A, and figures B.

4,404.—OIL-CLOTH PATTERN.—Henry Kagy, Philadelphia, Pa., assignor to Thomas Potter, Son & Co., same place.

Claim.—The design for an oil-cloth pattern, consisting of tablets A and B, ornamented as shown in and by the accompanying drawing.

4,405.—OIL-CLOTH PATTERN.—Henry Kagy, Philadelphia, Pa., assignor to Thomas Potter, Son & Co., same place.

Claim.—1. The design consisting of oblong bordered tablets, arranged as shown in fig. 1, each tablet having an oval figure.

2. The tablet B, ornamented as shown in fig. 2.

3. The tablet A, ornamented as shown in fig. 3.

4,406.—OIL-CLOTH PATTERN.—Henry Kagy, Philadelphia, Pa., assignor to Thomas Potter, Son & Co., same place.

Claim.—1. Irrespective of any ornamentation, an oil-cloth pattern, consisting of square tablets A, oblong spaces B, and square figures D, formed and arranged in respect to each other, in the manner illustrated in outline.

2. The tablets A, ornamented as shown.

3. The oblong spaces B, ornamented as illustrated in the drawing.

4. The square figures D, ornamented as shown.

4,407.—HINGE.—Amasa C. Kasson, Milwaukee, Wis.

Claim.—The design for a hinge, substantially as shown and described.

4,408.—INKSTAND.—David Merritt, Philadelphia, Pa.

Claim.—The design for pen-rest and inkstand, herein set forth.

4,409. — FLOOR OIL-CLOTH PATTERN.—Charles T. Meyer, Newark, N. J., assignor to Edward C. Sampson, New York City.

Claim.—The design or pattern for floor oil-cloths, carpets, or other fabrics, shown and described.

4,410. — FLOOR OIL-CLOTH PATTERN.—Charles T. Meyer, Newark, N. J., assignor to Edward C. Sampson, New York City.

Claim.—The design or pattern for floor oil-cloths, carpets, or other fabrics, shown and described.

4,411.—CARPET-PATTERN.—Elemir J. Ney, Dracut, assignor to Lowell Manufacturing Company, Lowell, Mass.

Claim.—The configuration of the design hereunto annexed, when made by being inwrought into two-ply ingrain, or other carpeting, in the form similar to the photographic print accompanying this specification.

4,412.—CARPET-PATTERN.—Elemir J. Ney, Dracut, assignor to Lowell Manufacturing Company, Lowell, Mass.

Claim.—The configuration of the design hereunto annexed, when made by being inwrought into two-ply, ingrain, or other carpeting, in the form similar to the photographic print accompanying this specification.

4,413.—CARPET-PATTERN.—Elemir J. Ney, Dracut, assignor to Lowell Manufacturing Company, Lowell, Mass.

Claim.—The configuration of the design hereunto annexed, when made by being inwrought into two-ply, ingrain, or other carpeting, in the form similar to the photographic print accompanying this specification.

4,414.—CARPET-PATTERN.—Elemir J. Ney, Dracut, assignor to Lowell Manufacturing Company, Lowell, Mass.

Claim.—The configuration of the design hereunto annexed, when made by being inwrought into two-ply, ingrain, or other carpeting, in the form similar to the photographic print accompanying this specification.

4,415.—OIL-CLOTH PATTERN.—James Paterson, Elizabeth, N. J., assignor to Thomas Potter, Son & Co., Philadelphia, Pa.

Claim.—An oil-cloth pattern, consisting of a series of bordered stripes, arranged in respect to each other, as set forth.

4,416.—OIL-CLOTH PATTERN.—James Paterson, Elizabeth, N. J., assignor to Thomas Potter, Son & Co., Philadelphia, Pa.

Claim.—1. An oil-cloth pattern, composed of the tablets A and B and figures D, formed and arranged in respect to each other in the manner illustrated in outline in the accompanying drawing, irrespective of their internal ornaments.

2. The tablets A, bordered and ornamented as shown and described.

3. The tablets B, bordered and ornamented as shown and described.

4,417. — SHOW-CASE.—William H. Reiff, Philadelphia, Pa.

Claim.—A show-case, having its top and bottom parallel and its front and sides or ends inclined, as shown and described.

4,418.—TEA AND COFFEE SERVICE.—Elizur G. Webster, Brooklyn, N. Y.

Claim.—1. The design and configuration of the body of either vessel or piece in the service, as shown and described, with reference to the portions *a*, *d*, and *f*.

2. The design and configuration of the legs *g*, as shown and described.

3. The design and configuration of the handle or handles *h*, as represented and specified.

4. The design and configuration of the spout *k*, with its nozzle or base portion *m*, and ornamental projections *s s*, as shown and described.

EXTENSIONS.

ETHAN ROGERS, Cleveland, Ohio.—Letters Patent No. 15,778, dated September 23, 1856.

"Improved Hydraulic Brick-Press."

Claim.—The employment or use of two pumps, with the mechanism for working the same under different pressures, when arranged to operate in relation to each other, and mold C, for the purpose of pressing and removing the brick, in the manner above described.

SOPHIA A. MORN, of Stamford, Conn., and PHILIP L. MORN, of Worcester, Mass., administrators of the estate of AUGUSTUS R. MORN, deceased.—Letters Patent No. 14,323, dated February 26, 1856; reissue No. 367, dated April 8, 1856.

"Improved Mode of Constructing Walls and Floors of Cellars."

Claim.—The mode herein described of forming walls and floors by combining into one mass the water-cement and asphaltum, or its equivalent, by means of the solid building materials, as herein fully set forth, by which the asphaltum, or its equivalent, is caused perfectly to adhere to the bricks or stone of the wall built with a water-cement, which also adheres to the same stone or brick, as above described.

HOSEA BALL, of New York, N. Y.—Letters Patent No. 15,753, dated September 23, 1856; reissue No. 3,666, dated October 12, 1869; reissue No. 4,026, dated June 14, 1870.

"Oven."

Claim.—1. One or more swinging bread-holders, suspended from the arms or end plates of a rotating reel, in combination with a furnace so arranged and connected that the products of combustion will pass into or through the chamber within which the bread-holders move.

2. In combination with a rotating reel and swinging bread-holders, a flue on one or more sides of the chamber in which the reel rotates, communicating with said chamber through apertures in the wall between them.

3. In combination with a swinging bread-holder, revolving in an oven, a discharging-chute and tripping device, by which the bread is delivered from its platform and into the chute, substantially as and for the purposes described.

EMILY J. LAMSON, of Weymouth, Mass., executrix of the estate of DANIEL LAMSON, deceased. — Letters Patent No. 15,768, dated September 23, 1856.

"Improved Machine for Notching Hoops."

Claim.—The knife E, attached to the reciprocating frame B, in combination with the inclined plate D, attached to the frame A, substantially as described, for the purpose specified.

SAMUEL THOMAS, of Hokendaunqua, Pa.—Letters Patent No. 15,827, dated September 30, 1856.

"Improved Ore-Washer."

Claim.—In combination with a stationary inclined box, the double shafts with spiral flanges thereon, and turning in opposite directions, for lifting up and carrying forward the ores to the delivery, in the manner set forth.

CALEB C. WALWORTH, of Boston, Mass.—Letters Patent No. 15,802, dated October 7, 1856.

"Improved Vise."

Claim.—The arrangement of two vises so as to revolve about a common center, and locking the same in any desired position by means of the lever G, and notches or any other suitable device, substantially in the manner and for the purpose set forth.

WILLIAM LEWIS, of Brooklyn, N. Y., and WILLIAM H. LEWIS, of New York, N. Y.—Letters Patent No. 15,854, dated October 7, 1856.

"Plate-Holder for Photographic Cameras."

Claim.—1. Forming the glass or vitrified corners A, with a flanch or rim in one solid piece, the said flanch or rim taking the edges of the photographic glass or other plate, substantially as and for the purposes specified, and irrespective of the manner in which the said vitrified corners are attached to the frame.

2. The receptacle d below the glass or other plate to catch any drippings from said plate substantially as specified.

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PATENTS.

108,311. — GANG-PLOW. — Carell Atwood, Lebanon, Ill.

Claim.—1. The combination of the levers *e e*, bolts *d' d'*, rock-shafts *g g*, bolts *l l* with the plow-standards, constructed to operate in the manner and for the purpose substantially as described.

2. The slotted plates C C, with bolt or bolts *a'*, for adjusting the draft right or left, substantially as and for the purpose hereinbefore set forth.

108,312, antedated October 11, 1870. — FEED DEVICE FOR POWER-PRESS. — Phineas E. Austin, New Haven, Conn., assignor to himself and Leander Buell, same place.

Claim.—The combination of the eccentric rolls N N, crank J, slide I, rod H, and crank F, substantially in the manner herein set forth.

108,313.—DUMPING-CAR.—Andrew J. Ballard, Cohoes, N. Y.

Claim.—The combination of the bed, hinged to the carrying-frame at one side, the rock-shaft, mounted in bearings on the other side of the bed, the frame vibrating around said shaft, the friction rollers, and the vibrating hand-lever, all these parts being constructed to operate in combination, substantially as hereinbefore set forth.

108,314.—FOLDING CHAIR.—Emil Bartels, New York, N. Y.

Claim.—1. The arms H, constructed and connected with the posts A and seat F, substantially as herein shown and described, and for the purpose set forth.

2. An improved folding chair, consisting of the long posts A, cross-bars B C, rear legs D, cross-bar E, hinges G, arms or bars H, catch-pin I, flexible arms or straps J, triangular blocks K, and flexible back L, said parts being constructed, arranged, and operating substantially as herein shown and described, and for the purpose set forth.

108,315.—COMBINED COLLAR AND CUFF-BOX.—Jacob C. Bauer, New York, N. Y.

Claim.—An improved collar and cuff-box, formed by the combination of the body A *a'*, partition D, with its upper edge projecting above the sides of the box, rectangular compartment B, two cylindrical compartments E, and hinged cover G, made in two parts, with each other, said parts being constructed and arranged substantially as herein shown and described, and for the purpose set forth.

108,316.—DOME-TOP STOVE.—Philo D. Beckwith, Dowagiac, Mich.

Claim.—The curved and rounded sliding damper *b*, applied to the under side of the dome D, substantially as and for the purpose described.

108,317.—VIADUCT.—Charles Bender, Phœnixville, Pa.

Claim.—1. A truss-bridge, in which the pier is rigidly connected to the truss at two or more points, as and for the purpose set forth.

2. The ties or braces *g g* or *h h*, arranged and operating as set forth.

3. In the described bridge, the piers *x x x' x'*, when constructed to act either under tension or compression, whether anchored to the foundation or not, as set forth.

4. In the described bridge, the bearings S S S, applied to piers, composed of two or more columns or shafts.

5. Underneath the piers of the described bridge, friction-rollers, or their equivalents, applied as and for the purpose set forth.

6. The intermediate truss *a a a' a'*, fig. 5, connecting two table-spans, in the manner set forth.

7. In combination with the table-spans, the struts *u*, extending from movable to immovable legs, as set forth.

108,318. — LIQUID-COOLER FOR COOLING LIQUIDS UNDER PRESSURE. — Edmund Bigelow, Springfield, Mass.

Claim.—1. A cooler, having a metallic shell and inner walls of sufficient strength to resist the pressure of fermented or artificially aerated liquids, and so arranged by means of the relative size of the shell and interior walls, and by means of a thread raised on the interior wall or the inside of the shell, or a wire wound substantially as set forth, that the liquid to be cooled shall be carried spirally in a thin sheet around the interior wall and in contact with the inside of the shell, substantially as described.

2. A cooler, having a metallic shell, and within the shell a series of cups arranged substantially as hereinbefore set forth, the whole being of sufficient strength to resist the pressure of fermented or artificially aerated liquids.

3. As a part of apparatus for drawing fermented or artificially aerated liquids, or liquids in any way charged with carbonic acid gas, a cooler constructed with a cylinder or a series of cylinders, made with either, or any, or all of the arrangements of the interior of the cylinders hereinbefore described.

108,319.—MACHINE FOR BOARDING LEATHER.—Milton B. Bishop, Whitingham, Vt.

Claim.—1. The machine, constructed substantially as described, viz., with the adjustable concave bed A, and with the rotary convex boarder D, arranged together as represented, and with the latter combined with currying-arms *f f*, and springs *g g*, by bars *d d*, studs *c c c c*, and slots *e k*, or their equivalents, all arranged as explained, such arms being projected from a rotary shaft or head, and the whole being to operate as and for the purpose hereinbefore specified.

2. In the above-described machine, the boarder and the bed, as made with the differential curved surfaces *b o g r*, as arranged and described.

108,320.—COTTON-PRESS.—Sinclair Booton, Seguin, Texas.

Claim.—1. The upper follower H, connected by removable pins *e* with the nuts *c*, substantially as herein shown and described, to be detachable, as specified.

2. The gear-wheels D E E, arbor C, clutches *b*, right and left-hand screws F F, cars *a a*, followers H and I, provided with nuts *c c*, and the braces *f*, all constructed and arranged with reference to the case provided with hinged sides, as shown and described.

108,321, antedated October 1, 1870.—BOX-SCRAPER. — James Richardson Brown, Cambridgeport, Mass.

Claim.—The arrangement, as described, of the cap C, (projected from the shank *a*,) the stock A, (provided with the mouth *c*, and made separate from the cap C,) the cutter B and the screw E, the said parts, with the handle, constituting an improved box-scraper, for use as specified.

108,322.—BOX OR CASE TO CONTAIN BACON, HAMS, SIDES, &c.—Morgan W. Brown, New York, N. Y.

Claim.—As a new article of manufacture, a box or casket, made of straw or pasteboard, rendered impermeable to air and liquids by suitable coatings, for the purpose of containing cured hams, shoulders, and joints of pork and beef, substantially as herein described.

108,323. — ELASTIC SHAFTING. — Robert Brown, Detroit, Mich.

Claim.—The combination, with the shaft A and gear-wheel B, of the hollow cylinder C, rings D D, secured to the cylinder by means of screw-bolts, conical bearings E E, bands F, with their clamp-screws, inner-chambered cylinder G *g'*, rubber blocks H H, and metallic blocks I, each of said parts being constructed and all relatively arranged as shown and described.

108,324. — ELECTRIC BLASTING-FUSE. — Charles A. Browne and Isaac S. Browne, North Adams, Mass.

Claim.—An electric fuse, formed of a primer provided with wires or metallic bands, arranged in an outer groove, and of a charged cap, through the sides of which the main wires of a battery are inserted, the primer and cap being fitted together, as shown and described, whereby metallic communication is made between their respective wires, substantially as and for the purpose specified.

108,325.—LATHE-DOG.—Charles Buss, Marlborough, N. H.

Claim.—The double lathe-dog described, provided with opposite braces F, an elongated central aperture, D, and opposite jaws or saddles B, having each a shank, E, arranged as specified, and adjustable by set-screws, to press and hold the shaft, substantially in the manner and for the purpose set forth.

108,326.—TRIP-HAMMER.—John C. Butterfield and James Hay, Chicago, Ill.

Claim.—1. The oscillating frame D, provided with sockets G B, in combination with rubber springs J C, clamp *b d*, beam H, provided with sockets I A, and hammer P, as and for the purpose set forth.

2. Combination of frame L, standard *g*, eccentrics V Y, sleeve-crank R U, and frame D, as and for the purpose set forth.

3. Combination, with subject-matter of first claim, of the sleeve-crank R U, eccentrics V Y, shaft *n*, frame L, standard *g*, and anvil M N, as and for the purpose set forth.

108,327, antedated October 4, 1870.—ROTARY GRATE-BARS.—David Byard, Sharon, Pa.

Claim.—1. The construction and arrangement of the ring A, with notches *a a* and lugs *b b*, as shown and described, and for the purposes set forth.

2. The combination of the shaft *d*, arms *e e*, and bearing-bars *f f*, when all are made in one piece,

substantially as and for the purposes herein set forth.

108,328.—SUPERHEATER FOR GAS-WORKS, &c.—Mills L. Callender, Brooklyn, N. Y.

Claim.—A superheater for steam or gas, constructed with an iron frame-work, protected, both externally and internally, by fire-clay, or other refractory material, substantially as and for the purposes set forth.

108,329.—SUBSOIL PLOW.—Leonard Carleton, Pomeroy, Ohio.

Claim.—The combination, with a subsoil plow-iron, I, of the sole K and the two adjustable standards J L, constructed and relatively arranged as and for the purpose described.

108,330.—WRENCH.—James F. Cass, L'Original, Canada.

Claim.—1. The combination, with a socket-wrench, C A, of one or more sleeves, D H, either divided or whole, and a centering-pin, K, substantially as specified.

2. The combination, with the sleeves and the stock A, of the springs G I, substantially as specified.

108,331, antedated October 15, 1870.—FORMING CIGAR-TIPS.—Seth L. Cole, Brooklyn, N. Y.

Claim.—The flexible diaphragms A and A', standard or axis B, with adjustable set-screws and slots *s s*, all constructed, arranged, and operating with the other parts of a cigar-machine, in the manner and for the purpose set forth.

108,332.—CONSTRUCTION OF WATCHES.—Daniel G. Currier, Waltham, Mass.

Claim.—1. The above-described plate B, when its face is left flush, or nearly flush, with the dial-seat, in order to dispense with the third bridge, substantially as described.

2. A pin or pins, formed in a recess, from the substance of the plate itself, substantially as set forth.

3. The above-described boss or projection *m*, when formed by swedging or forcing up the thin metal, substantially as specified.

4. The under-cut or beveled edge, on the under side of the barrel-opening of the top plate, to facilitate the removal of the barrel, substantially as set forth.

108,333, antedated October 4, 1870.—SECTIONAL STEAM-GENERATOR.—Byron Denemore, New York, N. Y.

Claim.—1. The combination of the sections *a* and tubes *b*, substantially as set forth.

2. The combination of the sections *a* and the pipes D D and E E, substantially as specified.

3. The combination of the pipes D D and E E and L L L L, substantially as set forth.

108,334. — ROOFING FABRIC.—Drake W. Denton, Ithaca, N. Y.

Claim.—A roofing batting, made of flax-waste, and made impervious to water by asphaltic or plastic substances, substantially as described.

108,335.—VISE.—Alexander Dick, Buffalo, N. Y.

Claim.—1. The form, described and shown, of the part V, and, jointly with said part, the bolt B, connected thereto by casting the part V upon and around the head of said bolt, as set forth.

2. The combination of the clamping devices *x y* with the nut N, washer W, and bolt B, substantially as described.

108,336, antedated October 15, 1870.—FLUTING-MACHINE.—Charles Dion, New York, N. Y.

Claim.—The tongued fluting-plates A B, pieces C D, hinged plates *d'*, and handle F, all combined, arranged, and relatively constructed to operate with heaters E, as and for the purpose described.

108,337. — FINISHING COPPER PLATES.—Benjamin F. Dudley, Boston, Mass.

Claim.—The above-described process of finishing a copper plate, the same embracing the employment of heat, the composition, and means, as set forth, or the equivalent thereof, for condensing the composition and forcing it into the pores of the metal, and finally treating the condensed surface with oil, all substantially as specified.

2. As an improved manufacture, a copper plate finished by the process as above explained.

108,338. — SNOW-PLOW.—Alexander Dunbar, New York, N. Y.

Claim.—The combination, with the box A, constructed as above specified, of the screw B C and the winged beater D *a*, constructed and arranged as set forth.

108,339.—LAMP.—John Dunn, New York, N. Y., assignor to Holmes, Booth & Haydens, Waterbury, Conn.

Claim.—The clasp D, made with the slots *a* and *c*, and teeth, and attached to the lower part of the burner contiguous to the wick-tube, as and for the purposes specified.

108,340. — MECHANICAL MOVEMENT.—Augustus Eckert, Trenton, Ohio.

Claim.—1. The arrangement of the shaft B and frame A, the fixed ratchet D, loose drum C, pawl *a*, cord *b*, spring F, chain *c*, and treadle-lever G, as and for the purpose set forth.

2. The arrangement of the shaft B and frame A, the fixed ratchets D, loose drums C, pawls *a'*, provided with pins *e*, the springs *f*, chains or cords *c*, treadle-levers G, reversing-cord *b'*, and pulley H, as and for the purpose set forth.

108,341. — WHEELBARROW.—James Ennis, Columbus, Ga.

Claim.—The wheelbarrow hereinabove described, when the legs *a a*, and braces *a' a'*, are constructed and attached to the hand-bearers A A in the manner and for the purpose shown.

108,342.—RAILWAY-TRACK.—John N. Farrar, Pepperell, Mass., and Jacob Stone, Belvidere, N. J.

Claim.—1. As an article of manufacture, the improved metal stringer B, constructed wide enough to extend beyond both sides of the rail, and having upward flanges *c c*, to detain the cars if they should run off the track, all as shown in figs. 1 and 2 of drawing.

2. The combination of two parallel stringers B *c*, with the cross-ties C C, lapping around their upper edges, as and for the purpose described.

108,343, antedated October 15, 1870.—SOCKET FOR LOCK-SPINDLE. — Owen Gallagher, Boston, Mass.

Claim.—1. The spindle A B, when provided with one or more water-ways, *c d*, arranged to serve, in connection with a water-receptacle, for the purpose set forth.

2. The combination of the double cone-shaped hub C D C' D', with the plates or series of plates K K', and the spindle A B, substantially as described, and for the purpose set forth.

108,344. — WATER-METER. — Othniel Gilmore, Raynham, Mass.

Claim.—1. In a meter in which a flexible tube is used, and over which tube fluid pressure drives a roll or rolls, the combination of such tube and roll or rolls, with a spiral rest, which supports the tube and receives the pressure of the roll or rolls, substantially as described.

2. In a meter in which the arrangement of the flexible tube is substantially that shown in the drawing, the combination of a conical roll or rolls with said tube, the rolls having their bearings in a frame, pivoted upon an arm, substantially as set forth.

3. The combination with the driven piece *o* of a water-meter, serving to impart the movements to the indicating mechanism of the segments *n n*, arranged to be adjustable one upon the other, to vary their operative surface, substantially as specified.

4. A circular pipe, made of flexible material, in which the edges are secured by fastenings inserted in two rows, one row being wide spaced and placed innermost to give strength, and the other being closely spaced and placed outermost to prevent leakage.

108,345, antedated October 15, 1870.—SAFETY-VALVE. — Henry A. Goll, Chicago, Ill.

Claim.—1. The small valve, arranged to operate in the chamber of the larger valve, in combination with said valve, cap-nut, steam-ways, and spiral spring, to open or close the communication between the plate A and the chamber above said valves, substantially as and for the purpose set forth.

2. The combination of cock G, cylinder B, lever J, valve *b*, and weight P, for the purpose as set forth.

108,346, antedated October 8, 1870.—MATCH-SAFE.—Charles Goldthwait, South Weymouth, Mass.

Claim.—The match-safe A, constructed with the cover E, compartments C and D D, and the friction-surface B B, and arranged to hold the matches in an upright position, substantially as shown and described.

108,347. — CLOVER-HULLING ATTACHMENT TO THRASHING-MACHINES. — Jacob H. Golladay, New Lisbon, Ohio, assignor to himself and J. W. Whidden, Rockford, Ill.

Claim.—1. The combination, with the cylinder of the ordinary thrashing-machine, of the concave perforated sheet-metal plate A, roughened on the inside, and covering all the discharge-space behind the cylinder, except at F, as and for the purpose described.

2. The combination, in a thrashing-machine, of the concave A, constructed as described, with the obliquely-transverse incline G, arranged as shown, and for the purpose specified.

108,348.—WINDOW AND DOOR-SCREEN.—David Goodwillie, Chicago, Ill.

Claim.—A frame, formed of two parts, A B, combined, as described, with wire-cloth C and rails D, to form a screen.

108,349.—COTTON-SEED AND GUANO-DISTRIBUTER.—James T. Graves, Wilson, N. C.

Claim.—1. The plow-point or device J, constructed as shown, for forming a smooth groove or channel, in which to deposit cotton-seed, guano, or other fertilizers, and, as an auxiliary for covering the same, the drag K, as shown and described.

2. The spoons or blades H, secured to the stationary shaft G, as arranged within the revolving distributer D, and in combination therewith, for operating substantially in the manner as and for the purposes herein set forth.

108,350.—CORPSE-PRESERVER. — Howard V. Griffith, Altoona, Pa., assignor to himself, D. W. A. Belford, and J. M. Hileman, same place.

Claim.—1. In combination with the traveling bier I, the arrangement of the ice-chamber in relation to the corpse-chamber and the door, substantially as set forth.

2. In combination with the traveling bier I, the ice-chamber entirely surrounding it, and not communicating therewith, and the door E, substantially as set forth.

108,351. — HAND-STAMP. — Henry H. H. Groskopf, Philadelphia, Pa.

Claim. — The elastic legs C, supporting the stamp, and forming the spring therefor, substantially as and for the purpose described.

108,352. — FIRE-ALARM THERMOMETER.—Augusta Guest, Brooklyn, N. Y.

Claim.—1. The sealed bulb or thermometer, combined with two wires, so that by the bursting of said bulb a metallic connection between the wires and a consequent electric circuit will be established, substantially as herein shown and described.

2. The spring or springs E, combined with the bulb or thermometer, to aid in parting the same when broken, substantially as herein shown and described.

3. The vessel B, containing the bulb or thermometer A, and the ends of the wires C D, for operating substantially as herein shown and described.

108,353.—SELF-RELEASING DAVIT-RINGS.—Augustus Guild and William H. Pierce, Middletown, Conn.

Claim.—The described ring, consisting of the base A, with ring *a*, having the projection *a'*, and parts B B, arranged as and for the purpose set forth.

108,354.—COMBINED EAVES-TROUGH AND LIGHTNING-RODS.—James W. Hankenson and Winslow Baker, Minneapolis, Minn.

Claim.—1. The eaves-trough A, when constructed of one continuous strip of copper, with the inside surface coated with tin, or other non-corrosive substance, and connected with water-pipe B, made of same material, substantially as and for the purpose described.

2. The combination, with rod C, of the copper eaves-trough and pipe A B, whereby the latter is made to serve the additional purpose of lightning-conductor, substantially as and for the purpose described.

3. The combination with the electrical conducting-pipe B, of non-conducting pipe G, for the purpose of carrying the water from the copper conductor of the cistern, substantially as and for the purpose described.

108,355.—TOBACCO-CASING MACHINE.—Edward Holbrook, Jr., Louisville, Ky.

Claim.—The rolls H H, stands D D, sliding boxes F F, set-screws E E, frame G, table I, sliding trough J, stationary trough K, chain P P, elevating-cups M M, chain-pulleys L and N, guides and clevis O, thumb-nut Q, table R, box B, inclined bottom C, case A, and covering S S, all combined and arranged substantially as and for the purpose set forth.

108,356.—SPINNING-MACHINE.—Warren D. Huse, Gilford, N. H.

Claim.—1. The combination, with the longitudinally-adjustable spindle C, provided with the beveled friction-disks *f g* of the pulley E, provided with corresponding beveled and concentric driving-surfaces *d e*, all arranged and operating as and for the purpose described.

2. The arrangement, as shown and described, of the frame A, sliding spindle C, and spring lever *a b* D, all constructed as and for the purpose described.

108,357. — WHIFFLETREE - COUPLING. — James Ives, Mount Carmel, Conn.

Claim.—The two parts A and B, cast separately, and jointed by means of the hub *g* on one part, which has its end expanded into a flaring hole through the other part, substantially as described.

substantially as and for the purposes herein set forth.

108,328.—SUPERHEATER FOR GAS-WORKS, &c.—Mills L. Callender, Brooklyn, N. Y.

Claim.—A superheater for steam or gas, constructed with an iron frame-work, protected, both externally and internally, by fire-clay, or other refractory material, substantially as and for the purposes set forth.

108,329.—SUBSOIL PLOW.—Leonard Carleton, Pomeroy, Ohio.

Claim.—The combination, with a subsoil plow-iron, I, of the sole K and the two adjustable standards J L, constructed and relatively arranged as and for the purpose described.

108,330.—WRENCH.—James F. Cass, L'Original, Canada.

Claim.—1. The combination, with a socket-wrench, C A, of one or more sleeves, D H, either divided or whole, and a centering-pin, K, substantially as specified.

2. The combination, with the sleeves and the stock A, of the springs G I, substantially as specified.

108,331, antedated October 15, 1870.—FORMING CIGAR-TIPS.—Seth L. Cole, Brooklyn, N. Y.

Claim.—The flexible diaphragms A and A', standard or axis B, with adjustable set-screws and slots *s s*, all constructed, arranged, and operating with the other parts of a cigar-machine, in the manner and for the purpose set forth.

108,332.—CONSTRUCTION OF WATCHES.—Daniel G. Currier, Waltham, Mass.

Claim.—1. The above-described plate B, when its face is left flush, or nearly flush, with the dial-seat, in order to dispense with the third bridge, substantially as described.

2. A pin or pins, formed in a recess, from the substance of the plate itself, substantially as set forth.

3. The above-described boss or projection *m*, when formed by swedging or forcing up the thin metal, substantially as specified.

4. The under-cut or beveled edge, on the under side of the barrel-opening of the top plate, to facilitate the removal of the barrel, substantially as set forth.

108,333, antedated October 4, 1870.—SECTIONAL STEAM-GENERATOR.—Byron Denamore, New York, N. Y.

Claim.—1. The combination of the sections *a* and tubes *b*, substantially as set forth.

2. The combination of the sections *a* and the pipes D D and E E, substantially as specified.

3. The combination of the pipes D D and E E and L L L L, substantially as set forth.

108,334. — ROOFING FABRIC.—Drake W. Denton, Ithaca, N. Y.

Claim.—A roofing batting, made of flax-waste, and made impervious to water by asphaltic or plastic substances, substantially as described.

108,335.—VISE.—Alexander Dick, Buffalo, N. Y.

Claim.—1. The form, described and shown, of the part V, and, jointly with said part, the bolt B, connected thereto by casting the part V upon and around the head of said bolt, as set forth.

2. The combination of the clamping devices *s y* with the nut N, washer W, and bolt B, substantially as described.

108,336, antedated October 15, 1870.—FLUTING-MACHINE.—Charles Dion, New York, N. Y.

Claim.—The tongued fluting-plates A B, pieces C D, hinged plates *d'*, and handle F, all combined, arranged, and relatively constructed to operate with heaters E, as and for the purpose described.

108,337. — FINISHING COPPER PLATES.—Benjamin F. Dudley, Boston, Mass.

Claim.—The above-described process of finishing a copper plate, the same embracing the employment of heat, the composition, and means, as set forth, or the equivalent thereof, for condensing the composition and forcing it into the pores of the metal, and finally treating the condensed surface with oil, all substantially as specified.

2. As an improved manufacture, a copper plate finished by the process as above explained.

108,338. — SNOW-PLOW.—Alexander Dunbar, New York, N. Y.

Claim.—The combination, with the box A, constructed as above specified, of the screw B C and the winged beater D *a*, constructed and arranged as set forth.

108,339.—LAMP.—John Dunn, New York, N. Y., assignor to Holmes, Booth & Haydens, Waterbury, Conn.

Claim.—The clasp D, made with the slots *a* and *c*, and teeth, and attached to the lower part of the burner contiguous to the wick-tube, as and for the purposes specified.

108,340.— MECHANICAL MOVEMENT.—Augustus Eckert, Trenton, Ohio.

Claim.—1. The arrangement of the shaft B and frame A, the fixed ratchet D, loose drum C, pawl *a*, cord *b*, spring F, chain *c*, and treadle-lever G, as and for the purpose set forth.

2. The arrangement of the shaft B and frame A, the fixed ratchets D, loose drums C, pawls *a'*, provided with pins *e*, the springs *f*, chains or cords *c*, treadle-levers G, reversing-cord *b'*, and pulley H, as and for the purpose set forth.

108,341. — WHEELBARROW.—James Ennis, Columbus, Ga.

Claim.—The wheelbarrow hereinabove described, when the legs *a a*, and braces *a' a'*, are constructed and attached to the hand-bearers A A in the manner and for the purpose shown.

108,342.—RAILWAY-TRACK.—John N. Farrar, Popperell, Mass., and Jacob Stone, Belvidere, N. J.

Claim.—1. As an article of manufacture, the improved metal stringer B, constructed wide enough to extend beyond both sides of the rail, and having upward flanges *c c*, to detain the cars if they should run off the track, all as shown in figs. 1 and 2 of drawing.

2. The combination of two parallel stringers, B *c*, with the cross-ties C C, lapping around their upper edges, as and for the purpose described.

108,343, antedated October 15, 1870.—SOCKET FOR LOCK-SPINDLE. — Owen Gallagher, Boston, Mass.

Claim.—1. The spindle A B, when provided with one or more water-ways, *c d*, arranged to serve, in connection with a water-receptacle, for the purpose set forth.

2. The combination of the double cone-shaped hub C D C' D', with the plates or series of plates K K', and the spindle A B, substantially as described, and for the purpose set forth.

108,344. — WATER-METER. — Othniel Gilmore, Raynham, Mass.

Claim.—1. In a meter in which a flexible tube is used, and over which tube fluid pressure drives a roll or rolls, the combination of such tube and roll or rolls, with a spiral rest, which supports the tube and receives the pressure of the roll or rolls, substantially as described.

2. In a meter in which the arrangement of the flexible tube is substantially that shown in the drawing, the combination of a conical roll or rolls with said tube, the rolls having their bearings in a frame, pivoted upon an arm, substantially as set forth.

3. The combination with the driven piece *o* of a water-meter, serving to impart the movements to the indicating mechanism of the segments *n n*, arranged to be adjustable one upon the other, to vary their operative surface, substantially as specified.

4. A circular pipe, made of flexible material, in which the edges are secured by fastenings inserted in two rows, one row being wide spaced and placed innermost to give strength, and the other being closely spaced and placed outermost to prevent leakage.

108,345, antedated October 15, 1870.—SAFETY-VALVE. — Henry A. Goll, Chicago, Ill.

Claim.—1. The small valve, arranged to operate in the chamber of the larger valve, in combination with said valve, cap-nut, steam-ways, and spiral spring, to open or close the communication between the plate A and the chamber above said valves, substantially as and for the purpose set forth.

2. The combination of cock G, cylinder B, lever J, valve *b*, and weight P, for the purpose as set forth.

108,346, antedated October 8, 1870.—MATCH-SAFE.—Charles Goldthwait, South Weymouth, Mass.

Claim.—The match-safe A, constructed with the cover E, compartments C and D D, and the friction-surface B B, and arranged to hold the matches in an upright position, substantially as shown and described.

108,347. — CLOVER-HULLING ATTACHMENT TO THRASHING-MACHINES. — Jacob H. Golladay, New Lisbon, Ohio, assignor to himself and J. W. Whidden, Rockford, Ill.

Claim.—1. The combination, with the cylinder of the ordinary thrashing-machine, of the concave perforated sheet-metal plate A, roughened on the inside, and covering all the discharge-space behind the cylinder, except at F, as and for the purpose described.

2. The combination, in a thrashing-machine, of the concave A, constructed as described, with the obliquely-transverse incline G, arranged as shown, and for the purpose specified.

108,348.—WINDOW AND DOOR-SCREEN.—David Goodwillie, Chicago, Ill.

Claim.—A frame, formed of two parts, A B, combined, as described, with wire-cloth C and rails D, to form a screen.

108,349.—COTTON-SEED AND GUANO-DISTRIBUTER.—James T. Graves, Wilson, N. C.

Claim.—1. The plow-point or device J, constructed as shown, for forming a smooth groove or channel, in which to deposit cotton-seed, guano, or other fertilizers, and, as an auxiliary for covering the same, the drag K, as shown and described.

2. The spoons or blades H, secured to the stationary shaft G, as arranged within the revolving distributer D, and in combination therewith, for operating substantially in the manner as and for the purposes herein set forth.

108,350.—CORPSE-PRESERVER. — Howard V. Griffith, Altoona, Pa., assignor to himself, D. W. A. Belford, and J. M. Hileman, same place.

Claim.—1. In combination with the traveling bier I, the arrangement of the ice-chamber in relation to the corpse-chamber and the door, substantially as set forth.

2. In combination with the traveling bier I, the ice-chamber entirely surrounding it, and not communicating therewith, and the door E, substantially as set forth.

108,351. — HAND-STAMP. — Henry H. H. Groeskopf, Philadelphia, Pa.

Claim. — The elastic legs C, supporting the stamp, and forming the spring therefor, substantially as and for the purpose described.

108,352. — FIRE-ALARM THERMOMETER.—Augusta Guest, Brooklyn, N. Y.

Claim.—1. The sealed bulb or thermometer, combined with two wires, so that by the bursting of said bulb a metallic connection between the wires and a consequent electric circuit will be established, substantially as herein shown and described.

2. The spring or springs E, combined with the bulb or thermometer, to aid in parting the same when broken, substantially as herein shown and described.

3. The vessel B, containing the bulb or thermometer A, and the ends of the wires C D, for operating substantially as herein shown and described.

108,353.—SELF-RELEASING DAVIT-RINGS.—Augustus Guild and William H. Pierce, Middletown, Conn.

Claim.—The described ring, consisting of the base A, with ring *a*, having the projection *a'*, and parts B B, arranged as and for the purpose set forth.

108,354.—COMBINED EAVES-TROUGH AND LIGHTNING-RODS.—James W. Hankenson and Winslow Baker, Minneapolis, Minn.

Claim.—1. The eaves-trough A, when constructed of one continuous strip of copper, with the inside surface coated with tin, or other non-corrosive substance, and connected with water-pipe B, made of same material, substantially as and for the purpose described.

2. The combination, with rod C, of the copper eaves-trough and pipe A B, whereby the latter is made to serve the additional purpose of lightning-conductor, substantially as and for the purpose described.

3. The combination with the electrical conducting-pipe B, of non-conducting pipe G, for the purpose of carrying the water from the copper conductor of the cistern, substantially as and for the purpose described.

108,355.—TOBACCO-CASING MACHINE.—Edward Holbrook, Jr., Louisville, Ky.

Claim.—The rolls H H, stands D D, sliding boxes F F, set-screws E E, frame G, table I, sliding trough J, stationary trough K, chain P P, elevating-cups M M, chain-pulleys L and N, guides and clevis O, thumb-nut Q, table R, box B, inclined bottom C, case A, and covering S S, all combined and arranged substantially as and for the purpose set forth.

108,356.—SPINNING-MACHINE.—Warren D. Huse, Gilford, N. H.

Claim.—1. The combination, with the longitudinally-adjustable spindle C, provided with the beveled friction-disks *f g* of the pulley E, provided with corresponding beveled and concentric driving-surfaces *d e*, all arranged and operating as and for the purpose described.

2. The arrangement, as shown and described, of the frame A, sliding spindle C, and spring lever *a b* D, all constructed as and for the purpose described.

108,357. — WHIFFLETREE - COUPLING. — James Ives, Mount Carmel, Conn.

Claim.—The two parts A and B, cast separately, and jointed by means of the hub *g* on one part, which has its end expanded into a flaring hole through the other part, substantially as described.

108,358.—Self-Adjusting Rotary Cotton-Chopper.—Stillman A. Jefferson, Franklin, Tenn.

Claim.—The combination of the sliding head-block N, curved guides O, shafts G H, wheel E F, and lever S, all arranged substantially as shown and described, for the purpose specified.

2. The combination of the adjustable gauges R with the bar or yoke Q, sliding head-block N, shaft G, and cutter-wheel or drum E F, substantially as herein shown and described, and for the purpose set forth.

108,359.—Gun-Charger.—Herman Kahn, Troy, N. Y.

Claim.—1. The hollow tube or cylinder C, in combination with the stock A, substantially as and for the purpose described and set forth.

2. The funnel F, in combination with the cylinder C, substantially as and for the purpose described and set forth.

108,360.—Combination Lock.—Friederich B. Kalkbrenner, Clinton, Mo.

Claim.—In a permutation lock, the V-shaped plates A, V-shaped rings G, and correspondingly-constructed disks B B, combined, and adjusted together, as and for the purpose described.

108,361.—Guard-Bolt for Latches.—Edward H. Kent, New York, N. Y.

Claim.—The combination of the locking-pin E F and spring G with the guard-bolt B C D and keeper A, substantially as herein shown and described, and for the purpose set forth.

108,362.—Striking Movement of Clock.—Friedrich Kienast, Ansonia, Conn.

Claim.—1. The striking attachment described, consisting of the cam J, lever F, wheels I, H, and B, constructed as described, with their connections, when the parts are combined and arranged as described, for the purpose set forth.

2. The wheel I, with its pin, in combination with the wheel H and pointer-shaft, as described.

108,363.—Alarm-Lock for Money-Drawers.—George Kimball, Cleveland, Ohio.

Claim.—1. The disk-wheel C, having radial bars D permanently attached to it, which disk is secured to the same shaft holding the knob, and arranged in relation to the letters J, substantially as and for the purpose set forth.

2. The arm Q and lug U, in combination with the disk C and lever N, as and for the purpose substantially as set forth.

108,364.—Mop and Scrubber-Head.—William H. Kline, Jersey Shore, Pa.

Claim.—A mop and scrubbing-head combined, formed of the jaws A and C, and provided with cams or fastening devices F and G, constructed, arranged, and operating substantially as herein shown and described.

108,365.—Pump.—Adam Knecht, Ilchester, Md., assignor to Michael Knecht, Alleghany county, Md.

Claim.—1. The combination, with a pump having the valves a e, of the air-chamber B, partitioned cylinders C g, double pistons E F, passages f h i l, all relatively arranged and provided with valves, as described.

2. In a pumping apparatus, the combination of partitioned cylinder C g, pistons E F, and passages f l, provided with the valves and openings specified, as and for the purpose described.

108,366.—Brake for Land Conveyance.—Wladyslaw Theodore Kosinski, Philadelphia, Pa.

Claim.—1. The arrangement of the disk-rod y, pivoted between the disks s s, eccentrically at b, and the disks s s y, also pivoted eccentrically to the bracket R by means of a bolt passing through the disks and brackets, the bolt being provided with a crank, c z.

2. The arrangement of the brake-shoes, applied circumferentially upon the axles or hubs by means of lever D, spring brake-shoes, secured at one end to the brackets L, and on the other to the connecting-rods F E E', and the latter and the chain connect the brake and operating mechanism, substantially as described.

3. The mode of connecting the brake-shoe and lever to the beams running under the body of the vehicle, said brakes to be applied either to axle-hubs or additional friction-wheels upon the main wheels, and operated by the eccentric, substantially as described.

108,367.—Boring Tool.—William P. Lathrop, West Winsted, Conn.

Claim.—The reciprocating device described, consisting essentially of the pitman D and tool E, in combination with the carriage F, as described.

108,368.—Gate.—Francis Livings, East Enterprise, assignor to himself and Peter Wycoff, Cross Plains, Ind.

Claim.—1. The rocking-bar C, provided with hand-levers a a, T-piece b, and slotted piece c, when used in the manner substantially as shown, and for the purposes set forth.

2. The device for securing the gate to the post when closed, consisting of the slotted piece c, vertical forked sliding-bar d, pin and roller k, and spring-catch e, when arranged to operate together in the manner substantially as shown, and for the purpose specified.

3. The toothed segment G G, when arranged to operate in connection with a supplementary stile, D, substantially in the manner as shown, and for the purposes set forth.

4. In combination with the rocking-bar C and its levers, hanging stile E, linked rods g g, and segments G G, the supplementary stile D, when arranged to operate in the manner substantially as shown.

108,369.—Fertilizing Compound.—Joseph M. Lowenstein, New Orleans, La.

Claim.—A fertilizing compound, prepared in the manner described, from night-soil pulverized, unslaked lime, and sulphuric acid.

108,370.—Sawing-Machine.—George W. Lombard, Westminster, Mass.

Claim.—The guide-rollers C D, combined with bevel-grooved driving-rolls B B, rotated in the manner described, to operate a circular saw.

108,371.—Medical Compound or Liniment.—John D. Love, Harrisburg, Oregon.

Claim.—The above-described medical compound or liniment, substantially as and for the purposes set forth.

108,372.—Turbine Water-Wheel.—William V. Martin, Waverly, Ohio.

Claim.—The combination, with the buckets B and the bottom D, of the wheel-case, of the band E and flange F, substantially as specified.

108,373.—Bakers' Table.—Alonzo S. Maxwell, Dixon, Ill.

Claim.—1. A table provided with a dough-holder and heat-reflector under the top, substantially as specified.

2. The arrangement, with the dough-holder and the casings C D therefor, of the plates E I, of the reflector, for holding up against the bottom of the holder, all substantially as specified.

108,374.—Drill and Holder.—Ira McLaughlin, East Arlington, Vt.

Claim.—1. The table A, having the ears f and e, together with the drill-shaft C, combined with the frame F, which has the ear h and the screw J, all constructed substantially as described.

2. The centering device G H, with its set-screws and other appliances for use conjointly with the drilling device, interchangeable with the frame F, as described.

108,375, antedated October 8, 1870.—Producing Castings Direct from the Blast-Furnace.—John W. Middleton, Philadelphia, Pa.

Claim.—1. Running the iron and scoria of ore-reducing furnaces directly into deep narrow receivers or molds, made either in vertical or inclined positions, below the level of the hearth, substantially as and for the purpose hereinbefore set forth.

2. The employment of a deep portable receiving and purifying primary vessel, fig. 1, provided with outlet-tubes, a a, at different heights from its lower end, and fitted with stop-gates or slides, so that the iron, scoria, and slag run into it directly from an ore-reducing furnace will be separated therein by gravitation, and the pure iron can be run out at the bottom of the vessel, and the scoria and slag overflowed into a secondary or other suitable vessel, fig. 2, or drawn off, through the upper tube a, into any suitable mold, substantially as hereinbefore set forth and described.

3. The stopping and regulating device, fig. 4, consisting of the plate c, wedging-stop d, and regulating slide e, in combination with any of the outlets of the vessel, substantially as and for the purpose hereinbefore set forth.

108,376.—Weather-Board Gauge.—Jonathan M. Milhollin, Champlin, Minn.

Claim.—The improved bracket, as above described, consisting of bar A B C D, lever G, pivoted in ears H, spike I, and adjusting-screw F, each shaped and relatively arranged as shown in figure 1 of drawing.

108,377.—Combined Tool.—George H. Miller, Dyersburg, Tenn.

Claim.—An improved tool, consisting of the handle A, shank B, constructed as described, hammer-head C, detachable screw-driver point D, screw-holder E, piece G, and awl H, said parts being constructed and operating substantially as herein shown and described, and for the purpose set forth.

108,378.—Water-Closet.—David Morrison and John D. Smith, New York, N. Y.

Claim.—The combination of the lever E with its bracket K, for carrying the pin Z, the lever L L, axis M, and arm N, for operating the valves of a water-closet, as described.

108,379.—Belt-Shifter.—Joseph E. Mutchler, Grand Rapids, Mich.

Claim.—The belt-holder, consisting of the plates e and rollers f, arranged in connection with the shifting mechanism, consisting of the plate h, lever k, bar m, and guides n, as described.

108,380.—Pneumatic Street-Car.—David Myers, Chicago, Ill.

Claim.—1. The combination and arrangement in a street-railway car of the air-tanks E, pipes F, provided with valves I, air-chamber H, pipes J, and engine-cylinders K, when constructed and operating substantially as and for the purposes set forth and shown.

2. The combination and arrangement of the cut-off rod U, vibrating piece W, and piston-rod O, when constructed and operating substantially as and for the purposes described.

108,381.—Nut-Fastening.—Frederick Myers, New York, N. Y.

Claim.—The bolt O, constructed as shown, and provided with the grooves D, in combination with the nut E and key-piece A, substantially as shown and described.

108,382.—Nut-Fastening.—Frederick Myers, New York, N. Y.

Claim.—The key-piece B, provided with projections c c c c, the hole D, in combination with the bolt A, constructed and operated substantially as shown and specified.

108,383.—Screw-Driver.—Abner Newton, Darby Creek, Ohio.

Claim.—The hinged jaws F, in combination with springs H H, and with the main attaching sleeve G, and swivel-sleeve g, arranged substantially as represented, so as to permit the driver B b to turn freely within the said sleeves G and g, and jaws E E, in the manner described.

108,384.—Cultivator.—Cicero P. Norton, Prairie City, Iowa.

Claim.—The arrangement of the runners E, plows F H K, rods M, blocks L, wedges O, tongue B, and jointed double-tree frame A C D, as shown and described, for the purpose set forth.

108,385.—Cooking Utensil.—Elizabeth L. Packard, Stoughton, assignor to Lucius H. Packard, Boston, Mass.

Claim.—The combined ham and egg-frier, constructed as described, viz., with its bottom formed with the plane portion D, and the portion E thereof provided with the series of chambers a a, &c., the whole being as described and shown, and for the purposes set forth.

108,386.—Refrigerator.—Augustus H. Phelps, Trenton, assignor to Phineas E. Saunders and Mary E. Phelps, same place, and Joseph Cook, Detroit, Mich.

Claim.—1. The improved ice-receptacle or pocket D and flue E, combined and arranged substantially as specified.

2. The combination of the ice-receptacle D and flue E with the cases of a refrigerator, substantially as specified.

108,387.—Machine for Making Rope.—William G. Pike, Philadelphia, Pa.

Claim.—1. The rotary bobbin-disk carrier b, the three or more bobbin-disks d, each of the latter being provided with bobbins and a perforated guide-plate, h, said disks being contained within said carrier and so arranged that each has an independent rotary motion on its own axis in a direction which is contrary to the direction of motion of the central shaft e, in combination with the shaft e, substantially as set forth, to twist the several strands intended to form the rope.

2. The above-claimed mechanism, in combination with the frame or plate c', and its perforations, the guide-plate c' and guide f', eye t', and rollers k^1 k^2, to draw and deliver the rope and hold it while the strands receive their final twist and are united into a rope, substantially as set forth.

3. The disk-carrier b and bobbin-disks d, in combination with the gears j and k, to give said disks an independent rotary motion in a direction which is contrary to the direction of motion of the central shaft e.

4. The combination of the cone-pulley r', gear k, and disk-carrier b, with their intermediate gearing for securing control over the independent rotary motion of the bobbin-disks.

108,388.—Aging Alcoholic Liquors.—Hiram Purdy, Burlington, Iowa.

Claim.—The process for aging or improving liquors by commingling them thoroughly with

heated air (or with oxygen gas) in a closed vessel, the air or gas serving to both heat and oxygenize the liquor, substantially as described.

108,389.—OVEN.—John Rainey, Brooklyn, N. Y.

Claim.—1. The outlet-passages D and discharge-flue E, combined with the two arches at the top of the baking chamber, as and for the purpose specified.

2. The furnace B, channels C, outlets D D, and flue E, combined with a reel, H, all constructed and relatively arranged as and for the purposes specified.

108,390.—BALANCE-PENDULUM FOR CLOCK. Richard Robley Ramsdell and George Albert Whitcomb, Marlborough Depot, N. H.

Claim.—In a clock-balance, the combination, with the adjusting-rods A and weights, of the springs E, and conical adjusting-ring G, substantially as specified.

108,391.—GRAIN-SEPARATOR.—William M. Redd, Hazel Green, Wis.

Claim.—1. The arrangement of the air-passages K O N, air-chamber P, air-chamber S, fan-chambers T, and fans U, in combination with each other, substantially as herein shown and described, for the purpose of removing the chaff, dust, &c., from a stream of falling grain, as set forth.

2. The combination and arrangement of the opening B′ and C′ with the air-passages K O N, air-chambers P S, and fan-chambers T, substantially as herein shown and described, to regulate the force of the blast of air passing through said passages and chambers, as set forth.

108,392.—CULTIVATOR.—Thomas M. Reed, Germantown, Ohio.

Claim.—The arrangement of plows *e e* with roller J, and their operating mechanism, in combination with the suspended harrow H, substantially as and for the purpose specified.

108,393.—WASHING-MACHINE.—Charles W. Reeder, Trenton, Mo.

Claim.—The combination and arrangement of cylinder E, bars D, rollers *b*, springs A and *f*, and sliding-bar G, when constructed substantially as and for the purpose specified.

108,394. — STEAM GENERATOR AND HOT-WATER APPARATUS.—James Rigby and Philip A. Palmer, Marietta, Ohio.

Claim.—1. The boiler B, constructed specifically as described, of the parts b^1 and b^2, connected by the nipper b^3, and having the diaphragms b^3 b^4, as set forth.

2. The combination of the boiler, constructed specifically as described, with the furnace A, the boiler and furnace being both provided with inclined sides above and below, as set forth.

3. The apparatus described, consisting of the furnace A, boiler B, tank C, reservoirs D and E, with their various connections, when constructed and arranged substantially as described, for the purpose set forth.

108,395.—APPARATUS FOR THE SUPPORT OF SKATERS.—Philip Jacob Schopp, Louisville, Ky.

Claim.—1. The combination of the socket *e e′*, braces A A′, brackets G G′, runners *a a′*, and bearers *c c′ c″ c‴*.

2. The combination of bearers *c c′ c″ c‴*, flange E E′, fork D D′, and foot-board F.

3. The combination of braces A A′, bearers *c c′ c″ c‴*, hinge *e*, braces *b b′*, with parallel runners *a a′*, substantially as and for the purpose hereinbefore set forth.

108,396.—EARTH-CLOSET.—Hamilton Sherman, Waverly, Pa.

Claim.—The mechanism, consisting mainly of the arms G G, bars H H, rods L L, shaft M, (with the arms N and P,) lip O, and springs R, by means of which the spent E is made to discharge the earth or deodorizing material by simply raising and lowering the cover C, substantially as described, and for the purposes set forth.

108,397.—TAMPING DEVICE FOR BLASTING PURPOSES.—John Shoemaker, Putneyville, Pa.

Claim.—1. A tamping device provided with expansible dies, constructed and operating substantially as shown and described.

2. A fuse-tube or needle-hole, protected by an outer cylinder, constructed and operating substantially as shown and described.

3. The scroll C, in combination with the sectional dies, substantially as shown and described.

4. The supporting-plate or washer K, with its ribs or tongues *k*, in combination with the sectional dies formed with notches or grooves *n*, substantially as shown and described.

5. A tamping device, made and operating as above, in combination with a cartridge, substantially as shown and described.

108,398, antedated October 12, 1870.—CULTIVATOR.—Henry M. Skinner, Rockford, Ill.

Claim.—The machine described, having the longitudinal center beam A, transverse end beams B B, supporting-wheels C C′, hinged side loaves E E, and teeth I, when combined and arranged as described, for the purpose set forth.

108,399, antedated October 1, 1870.—DESK, BUREAU, AND CHURN-POWER.—James J. Slater, Nicholsville, Ohio.

Claim.—The described combination of desk, bureau, and churn-power.

108,400, antedated October 1, 1870.—DUMPING-CAR.—Eben C. Smeed, Lawrence, Kansas.

Claim.—1. The combination, with the platform A of a car, of the tilting platform B, hinged to the other or not, and the hoisting-drums E and chains D, substantially as specified.

2. The combination, with the tilting platform B, drums E, and drum-shaft, of the hoisting-chain H, guide-pulleys K, spring J, and stop M, substantially as specified.

108,401.—GYMNASTIC APPARATUS. — John Smith, St. Paul, Minn.

Claim.—1. The combination of the arm H, guide *g*, platform F, chains M and I, with the spring P and cross-bar N, all arranged as shown and described.

2. The springs E E, clamped to the tube D, and applied to the table for supporting the platform F, substantially as described.

3. The spring P, suspended with its lower arm from the chain I, while its upper arm is connected with the beam E, as set forth.

4. The cross-bar N, combined with the chain I and spring P, substantially as herein shown and described.

108,402.— RAILWAY-CHAIR AND CLAMP.—Loyst J. Smith, New York, N. Y., assignor to himself and Henry D. Blake, same place.

Claim. — The combination, with wedge *f* and chair C, of the plates A B, having arms *a*, flanges *b*, pins *d*, and lips *e*, constructed and relatively arranged as shown in drawing, and for the purpose described.

108,403.—MEAL-CHEST OR BIN.—William B. Smith, Oskaloosa, Iowa.

Claim.—The pivoted bins A D, drawers E G, and counter B, constructed and arranged together, as and for the purpose described.

108,404.—CAR-COUPLING.—Warren B. Snedaker, Phœnix, N. Y.

Claim.—The coupling-pin D, provided with the flange *d*, the shaft E, crank-arms *e*, and weighted arms *f f*, combined with the slotted draw-head A, provided with stops *g*, all constructed and arranged in the manner shown and described.

108,405. — HANGING MILL-STONE.—Henry P. Straub, Cincinnati, Ohio.

Claim.—1. In combination with the runner mill-stone A, the iron bush *a*, built into its center, and having a flange, *a′*, and key-seat *b*, on its under side, substantially as and for the purpose described.

2. In combination with the runner mill-stone A, the bush *a*, spindle B, key *c*, and packing of molten metal *c*, as and for the purpose described and represented.

108,406.—TABLE.—Joseph Taft, Rockville, Conn.

Claim.—The stands, composed of the base D and rods or tubes A B C, arranged as described, in combination with the tops, composed of two or more parts hinged together and provided with the notches F, all substantially as specified.

108,407. — MACHINE FOR WASHING AND CLEANING COPPER.—Samuel Thompson, Baltimore, Md.

Claim.—1. The combination of the cylinder B, provided with the brushes M, with water-pipe C and steam-pipes D, constructed and arranged substantially as shown, and for the purpose set forth.

2. The apparatus herein described, consisting of the cylinder B, sieves G, brushes M, water-pipe C, steam-pipes D and E, fly-wheel H, and pulleys K and J, when all constructed and arranged substantially as shown, and for the purpose set forth.

108,408.—CUTTING AND ENGRAVING STONE, METAL, GLASS, &c.—Benjamin G. Tilghman, Philadelphia, Pa.

Claim.—1. The cutting, boring, grinding, dressing, engraving, and pulverizing of stone, metal, glass, pottery, wood, and other hard or solid substances, by sand used as a projectile, when the requisite velocity has been artificially given to it by any suitable means.

2. The artificial combination of a jet or current of steam, air, water, or other suitable gaseous or liquid medium, with a stream of sand, as a means of giving velocity to the sand when the sand is used as a projectile as a means of cutting, boring, grinding, dressing, engraving, and pulverizing stone, metal, glass, pottery, wood, and other hard or solid substances.

3. The combination of a rotary fan, centrifugal machine, and other machines capable of giving direct mechanical impulse, with a stream of sand, as a means of giving velocity thereto when the sand is used as a projectile as a means of cutting, boring, grinding, dressing, engraving, and pulverizing stone, metal, glass, pottery, wood and other hard or solid substances.

4. As a new manufacture, articles of stone, metal, glass, pottery, wood, and other hard or solid substances, which have been cut, bored, ground, dressed, engraved, or pulverized by sand used as a projectile, when the requisite velocity has been artificially given to the sand by any suitable means.

5. As a new manufacture, articles of stone, metal, glass, pottery, wood, and other hard or solid substances, which have been cut, bored, ground, dressed, engraved, or pulverized by sand used as a projectile, to which the requisite velocity has been artificially given by a jet or current of steam, air, water, or other suitable gaseous or liquid medium.

6. As a new manufacture, articles of stone, metal, glass, pottery, wood, and other hard or solid substances, which have been cut, bored, ground, dressed, engraved, or pulverized by sand used as a projectile, to which the requisite velocity has been given by a rotary fan, centrifugal machine, or other machine capable of giving direct mechanical impulse.

7. When a jet or current of steam, air, water, or any other suitable gaseous or liquid medium is employed to give velocity to sand used as a projectile, as a means of cutting, boring, grinding, dressing, engraving, or pulverizing stone, metal, glass, pottery, wood, and other hard or solid substances, the use of the following devices for introducing the sand into the jet of steam, air, water, &c.: First, the suction produced by the jet of steam, air, water, &c.; second, a strong, close vessel, or sand-box, into which the pressure of the steam, air, water, &c., is introduced, and through which, when desired, a current of it may be made to pass.

108,409, antedated October 12, 1870.—SHUTTLE. — Hamilton E. Towle, New York, N. Y.

Claim.—The combination, with the shuttle of the spring, the lever, and the barrel for regulating the strength or tension of the spring, when constructed and combined substantially as described, so that the force of the spring and lever may be varied to produce a uniform tension of the shuttle-thread, notwithstanding the decreasing size of the bobbin.

108,410.—COOKING-STOVE.—Alvah Traver, Troy, N. Y.

Claim.—1. Tubes *m*, with inlet and outlet openings communicating through the bottom of the stove, thence into chambers *n* and *o*, as arranged and set forth.

2. The combination of communicating chambers *n* and *o*, tubes *m*, and fire-pot *i*, constructed and arranged as set forth.

3. The opened and communicating chambers *p* and *p′*, with partitioned plate *f′*, extending nearly to the top of said chambers, and chamber *f*, all in combination, as arranged and set forth.

4. The auxiliary chamber *q*, or its equivalent, with ingress and egress openings, in combination with the bottom plate of the stove, tubes *m*, or chamber *p*, constructed, arranged, and operating in the manner substantially as described and set forth.

5. The flue-strips *u*, in combination with the fire-pot *i*, top oven-plate *q*, jamb *e*, with openings *r*, substantially as described and set forth.

6. The tubes *m*, chambers *n* and *o* with apertures dampered or not, the hot-air chamber *f*, or their equivalents, and fire-chamber *i*, all in combination and operation, as described and set forth.

7. The chamber *q*, tubes, or their equivalent, *s*, each with ingress and egress openings, dampered or not, in combination with hot-draught chambers *p* and *n*, all communicating and operating substantially as described and set forth.

8. The communicating chamber *p* and *f′*, with opened partitioned plate *f′*, and chamber *o*, as constructed and arranged, all in combination and operation, for the purpose set forth.

108,411.—STRAW-CUTTER.—Melzer Tuell, Penn Yan, N. Y., assignor to himself and Sylvester Bowers, same place.

Claim.—1. The cutters E, with one edge made smooth, and in the form of the segment of a circle that has a radius extending from the edge to the pivot of the lever D, and the other edge of the cutters formed angular, and made to cut substantially as and for the purpose specified.

2. The cutter-bar D, gauge F, guide G, treadle H, and spring I, when constructed and arranged as specified, and used in combination with the cutters E, substantially as herein set forth.

108,412.—ROTARY STEAM-ENGINE.—William P. Vickery, East Auburn, Me.

Claim.—The combination, in a rotary steam-engine, of the two independent pistons F F, the cams N N, each operated in its separate cylinder, with the spring slides K K, the reciprocating slotted rod T, having the two pins shown on the shaft A, so as to be alternately driven by the cam V in a horizontal direction on each side thereof, as and for the purpose set forth.

108,413, antedated October 1, 1870.—HEATING-TABLE FOR SILVERING GLASS.—Henry Balen Walker, New York, N. Y.

Claim.—1. Making rigid or metallic steam-connections with the heating-box or table, substantially as and for the purposes described.

2. Arranging a double set of steam-pipes under the heating-tables, one set for the steam originated in the still and one for the steam originated in the ordinary steam boiler, substantially as and for the purposes above described.

108,414.—LIFTING-JACK.—Lorenzo D. Warren, Havana, Ill.

Claim.—The combination, with a T-shaped vibrating lever, B, and lifting-bar C, of a fixed fulbrum, resting on the bed A a, and the adjustable hook-arm D, all constructed and relatively arranged as and for the purpose specified.

108,415.—COTTON-PLANTER AND FERTILIZER-DISTRIBUTER.—Beverly H. Washington, Columbia county, Ga.

Claim.—1. The hollow hopper H, constructed and operated as described.

2. The hopper H, on frame A, combined with furrow-opener C, coiter D, coverer F, and block G, and arranged and operating as described.

108,416.—SAFETY DEVICE FOR LAMP.—Henry Wallace Macrae Washington, Green Plains, Va.

Claim.—The combination and arrangement of the parts D, A, and C, with a lamp, D, placed at a suitable distance from the burner, as and for the purpose set forth.

108,417.—FLOUR-BOLT FEEDER.—Edward J. Weaver, Sterling, Ill.

Claim.—The bridge-tree E, the hinged wings F F, and horizontal stationary wings F F, combined and arranged near the top of tube B, as and for the purpose described.

108,418.—HORSE-COLLAR FASTENING.—Edward L. Welbourn, Union City, Ind.

Claim.—The notched projections F G, H I, corresponding sockets L M, and the double-acting overbalanced catch-bar N, combined in a tubular collar fastening, as and for the purpose described.

108,419, antedated October 8, 1870.—WAGON.—John W. West, Saylorville, Iowa.

Claim.—The suspending of a box on a carriage by a series of rods, as described, or their equivalents, for the purposes set forth.

108,420.—PAINT-BRUSH.—John Lake Whiting, Boston, Mass.

Claim.—1. The arrangement and combination of the strengthener B, the capped ferrule A, the tapering handle D, and the mass of bristles or stock C, all as described.

2. The ferrule, as formed with one or more grooves, arranged within the periphery of its chamber, substantially in manner as set forth, in combination with the strengthener and tapering handle, or equivalent means of expanding the bristles, the whole being as specified.

108,421.—THRASHING-MACHINE.—Hazen Whittier, West Roxbury, Mass.

Claim.—The combination of the pivoted arms or flails D D^1 D^2 D^3 with the cam-disk B, arranged and operating substantially as described, and for the purpose set forth.

108,422.—MILLSTONE-DRESS.—John P. H. Wohlenberg, Lyons, Iowa.

Claim.—The millstone dress herein described, consisting of the tangential furrows D D, branch-furrows N N, and air-chambers or recesses a a, all constructed and arranged as shown, and for the purpose set forth.

108,423.—BOILER-FEEDER.—Augustus R. Young, Red Wing, Minn.

Claim.—The combination, with a boiler, K, and feed-water chamber B, of the waste-steam chamber C, applied to a locomotive, as and for the purpose described.

108,424.—STONE-CUTTING MACHINE.—Hugh Young, Middletown, Conn., and James L. Young, New York, N. Y.

Claim.—1. The table C, susceptible of being moved away from and toward the platform B, in combination with the blade A and cutter or cutters *i*, operating substantially as and for the purposes set forth.

2. The blade A′ mounted substantially in the manner described, so as to have beside a go-and-come motion, a motion from and toward the stone to be cut, for the purpose specified.

3. The combination of the platform B with the table C and blade A, substantially in the manner and for the purpose specified.

4. The combination of the platform B′ with the blade A′, substantially in the manner and for the purpose specified.

5. The cutter or cutters *i*, mounted in such a manner in relation to the stone to be cut thereby, that said cutters will have, besides a reciprocal motion in the line of the cut to be made in the stone, a positive motion away from and toward said stone, or that the stone itself will have a corresponding positive motion away from and toward the cutter or cutters, so as to operate substantially in the manner and for the purpose set forth.

108,425, antedated October 2, 1870.—TOOL FOR CUTTING STONE.—Hugh Young, Middletown, Conn., and James L. Young, New York, N. Y.

Claim.—1. The pendulum-tool B bearing or protected by two distinct diamonds or clusters of diamonds, or other hard stones, arranged and set so that the tool will cut in two directions; in the one direction with the one diamond or cluster of diamonds, and in the opposite direction with the other diamond or cluster of diamonds, substantially as herein set forth.

2. The combination of the pendulum-tool B with the blade A, substantially in the manner and for the purposes specified.

108,426, antedated October 8, 1870.—STEAM-ENGINE.—Hugh Young, Middletown, Conn., and James L. Young, New York, N. Y.

Claim.—1. The combination of the piston H, piston-rod K, piston H′, and hollow piston-rod G, having the pin I, or its equivalent regulating and holding device, with the cylinder A of a steam or compressed-air engine.

2. The combination of the piston-rod S, having a regulating and fastening device in the cross-head F, or other piece of machinery to be moved by said piston-rod S, with the expansive pistons H and H′, so as to work in the manner set forth.

3. The expanding piston, substantially as described, in steam-engines or compressed-air engine, for working the same at different lengths of stroke,

without the loss of steam or compressed air, as herein set forth.

108,427.—TREADLE MOTION.—Arthur M. Allen, New York, N. Y.

Claim.—1. The foot-pendulums C, in combination with the double crank-shaft B, substantially as shown and described.

2. The brackets *e* and rods or supports *f*, in combination with the rod which forms the fulcrum of the foot-levers, substantially as set forth.

3. The arrangement of a hinge-joint in the foot-pendulums, to allow of spreading or closing up the pedals, as described.

108,428.—TRUSS.—Horace R. Allen, Indianapolis, Ind.

Claim.—The combination of the soft-rubber pad A, its interior metallic support B′, the stem B, and the corrugated metallic edges I and I′, for the purpose substantially as herein set forth.

108,429.—METHOD OF FORMING BIFURCATED END OF RAILWAY-CROSSINGS.—Joseph Armstrong, Brinsworth, England.

Claim.—The improvement in the method of constructing railway-crossings, herein described, which consists in casting the rectangular bar with the ends split, and, while the metal is still in a heated state, inserting a wedge in the split or slot in the ends of the bar, and spreading them to the extent desired, substantially as described.

108,430.—LANTERN.—Charles S. S. Baron and Alfred L. Baron, Bell Air, Ohio.

Claim.—1. A wire-guard for lantern, made of a continuous piece, as described.

2. A continuous wire-guard, secured to the shade-band by segmental bearing-branches F, so as to serve as braces to said band and to the several sections of the guard, as described.

3. A continuous wire-guard, made so as to form vertical sections, open and closed at the top and bottom of said sections in alternate order, so that each section must act as a brace to the other, as described.

4. The catch J and its check or stop K, constructed in one piece, in combination with the spring-guard E, with which it locks, for the purpose described.

5. The reflector and dome, hinged directly to the opposite angles of the open sections of a continuous guard, in the manner described.

6. The combination of a reflector, B, and dome C, hinged to the opposite angles of the open sections with a continuous guard, E, and catch J, as described.

7. The combination of a continuous guard, E, made as described, with the shade-band H, the hinged reflector B, dome C, and locking-catch J K, the several parts constructed and arranged as described.

108,431.—CLOTHES-LINE OPERATOR.—Charles Baron, La Fayette, Ind.

Claim.—The combination of the vertically-moving slide or support B with the central post A, and with two or more cords or lines H H stretched from opposite posts G G to intersect the same, substantially as and for the purpose herein set forth.

108,432.—APPARATUS FOR CARBURETING AIR AND GASES.—Abraham Bartholf, New York, N. Y.

Claim.—1. The combination of the irregularly-shaped cam E and spring-pressure pad F with the crank through which motion is communicated to the bellows of the apparatus, substantially as specified.

2. The combination and arrangement, essentially as described, of the detached spring D with the expanding and contracting air-reservoir C.

3. The bellows A, constructed with a movable center head, *c*, in combination with the vibrating arm *d*, the pitman *f*, and crank *g*, substantially as specified.

4. The carbureter, constructed essentially as described, of a perforated air-chamber, G, with its top J, and carbureting-chambers, composed of stacks H of perforated and corrugated cones or plates *q q*, arranged outside of the air-chamber and relatively to each other, with absorbent material or materials in between them, essentially as specified.

108,433.—TREATING THE ORES OF LEAD AND ZINC FOR THE MANUFACTURE OF PIGMENTS, &c.—Eayre O. Bartlett, Birmingham, Pa.

Claim.—The process of treating ores of lead and zinc by continuously throwing a thin shower or stratum of pulverized ore onto a bed of ignited fuel, and collecting the products, as above described.

108,434.—APPARATUS FOR LIGHTING AND EXTINGUISHING GAS BY ELECTRICITY.—Frank Bean, Somerville, assignor to Edwin C. Bean, Boston, Mass.

Claim.—1. A mechanism, connected with the valve which controls the admission of gas to the burner, and operated simultaneously therewith by pneumatic power, for making and breaking the electric circuit, and thereby producing sparks for igniting the gas, substantially as described.

2. In combination with the air-pipe or pipes, one or more valves operated by pneumatic power, and so constructed and arranged as to allow the air to pass successively from one apparatus to another, substantially as described.

3. The toothed wheel O′ and the bar P, with its point *r*, or their equivalents, when applied to the burner A, for producing sparks during the passage of an electric current to ignite the gas, substantially as described.

4. The bar N with its wheel O′, and the bar P with its point *r*, when so arranged that they can be raised and lowered, as and for the purpose set forth.

5. The bar P, with its non-conducting strip Q, operated by pneumatic power, in combination with the spring R, for making and breaking the electric circuit at the required time, substantially as described.

6. A pneumatic apparatus for operating the valve which admits the gas to the burner, in combination with an electrical apparatus for igniting the gas, substantially as described.

108,435.—MACHINE FOR CUTTING SOLES, &c., FOR BOOTS AND SHOES.—Joseph H. Bean, Mariotta, Ohio.

Claim.—1. The revolving die-plate H, constructed as described.

2. The double lever G, constructed specifically as described, and combined with the pivot-frame F, for the purpose set forth.

3. The standards d^3, washers d^3, and sockets d^4, in combination with the toggle-joint d d^1, as described.

4. The combination of the adjusting devices d^3 d^4 with double lever G and pivoted frame E, as set forth.

108,436, antedated October 15, 1870.—TURBINE WATER-WHEEL.—Edwin R. Beardsley, Aroma, Ill.

Claim.—1. The conical breakwater S, constructed as described, and combined with the wheel to lessen the pressure of water and prevent leakage, as set forth.

2. The annular flanges on the outer periphery of the gate W, to operate inside of the dome J, in combination with the ports *b*, the whole being arranged to balance the gate as against its own gravity, as and for the purpose shown and specified.

108,437.—MANUFACTURE OF OIL-CLOTH.—William Berri, Jr., Brooklyn, N. Y.

Claim.—1. The process of manufacturing oil-cloths by forming ornamental faces on both sides, substantially as described.

2. As a new article of manufacture, a double-faced oil-cloth.

108,438.—SASH-HOLDER.—George W. Bishop, Saratoga Springs, N. Y.

Claim.—The lock H, in combination with the re-

crosses *u* and *v*, and the locking-dog E pivoted in the casing, and held from the window by the spring G, when the same are constructed substantially as and for the purpose specified.

108,439.—Machine for Dressing Spokes. Ralph H. Boynton and Horace S. Boynton, Oshkosh, Wis.

Claim.—1. The adjustable endless chain C' and shaft E, when arranged to operate substantially as shown and described.

2. The two endless feed-chains C and C', in combination with two sets of rotating cutter-heads, *i i i i*, when arranged to operate together, substantially as shown and described.

3. The arrangement of cam *n*, lever O, spring T, rocker-shafts F F, and cutter-heads *i i i i*, substantially as shown and described, and for the purposes set forth.

108,440.—Blinds for Harness-Bridles.—John L. Brown, Connellsville, Pa.

Claim.—Hinging the blinds or winkers to the cheek-straps of a bridle, substantially as herein described, and for the purpose set forth.

108,441.—Hubs for Carriages.—Norman Bryan, Thomaston, Ga., assignor to himself and Wilson Sawyer, same place.

Claim.—The flanges B B', constructed as described, each with a circular ridge, *a*, (or *a'*,) on its inner side to fit in notches or recesses made in the spokes, and used in combination with the box A, having shoulder *a*, axle C, with its collar *b*, and the nuts D G, all substantially as and for the purposes herein set forth.

108,442.—Attachment to Mills.—Norman Bryan, Thomaston, Ga., assignor to himself and William Sawyer, same place.

Claim.—The combination and arrangement of the rollers F F, gearing B H *c c*, shaft C, arms *a a*, and bars A A, substantially as shown and described.

108,443.—Window.—Thomas Bullivant, Ledbury Road, Bayswater, England.

Claim.—The guides *c c*, covered with thin sheet-metal, *c'*, fitting and filling grooves in the sash and frame, the sash and guide being held together by the pin *d*, and the sash being retained in any position by means of the thumb-screw *i*, taking into and giving motion to traveling nuts l^1 and projections l^2, acting against one side of the guides *c c*, all constructed, and arranged, and operated as set forth.

108,444.—Plow.—William Thomas Bunn, Humboldt, Tenn.

Claim.—The arrangement of the draft-beam *f* with the plow-beams *a a*, the latter being composed of the sections *b* and *c*, which are connected by the coupling *d*, and so arranged that the length of the beam *a* may be varied at pleasure, for the purpose of placing the shank A either abreast or in rear of the shank *A'*, the shanks A *A'*, and the adjustable slats *k*, when all these parts are constructed and arranged to operate as described.

108,445.—Cotton-Seed Planter.—Miles S. Burns, Memphis, Tenn.

Claim.—The seed-holder D and encircling slotted band E, when constructed and arranged to operate substantially as shown, and used in connection with a rotary distributer, F, in the manner shown, and for the purposes set forth.

108,446.—Hoisting-Block.—Joseph A. Burt, Brooklyn, N. Y., assignor to Burt & Co., New York City.

Claim.—The metallic end piece E, secured to the hook or fastening F of a pulley-block, as shown, and for the purposes described.

108,447.—Bed-Bottom.—Edwin L. Bushnell, Poughkeepsie, N. Y.

Claim.—1. The arrangement, in connection with the bed-springs having the eyes or loops, of the riveted clasps for uniting and holding the springs in position, substantially as shown and described.

2. The metallic strips E, arranged across the springs, and secured at their ends to the loops of the springs or to the clasps that unite the springs, to prevent the springs from spreading open, and forming a support for the mattress or clothing, substantially as herein set forth.

108,448.—Milk and Liquid-Cooler.—A. P. Bussey, Westernville, N. Y.

Claim.—1. In combination with a cooling or heating vessel, the funnel *j*, closed at the point *m*, and provided with the waist-flanch *k*, and immediately above it a circle of perforations or wire-cloth, substantially as shown and described.

2. In combination with the cooling-vessel B, herein described, having false bottom *e* and tubes *f*, the flexible conduits *x*, when constructed and arranged to operate as specified.

108,449.—Work-Table.—Fannie M. B. Clark, Wilmington, Vt.

Claim.—1. The combination and arrangement of the two leaves *b b*, the auxiliary legs *m m*, and the slides *n n*, with the main body or portion A of the table, all being applied together as explained.

2. The said body A, as made with the work and drawer-receptacles *c d*, the series of spool-cavities *e* provided with thread-passages *f* and cover or lid *i*, all arranged as set forth.

108,450.—Cotton-Bale Tie.—Michael R. Clark, Columbia, S. C.

Claim.—The main loop *a*, provided with the rail *a'*, and combined with the lever *b*, provided with the plates *c c'* and rail *c*, in the manner and for the purpose specified.

108,451.—Composing-Stick.—Augustus F. Cloudman, Brooklyn, N. Y., and George W. Coffin, Charlestown, Mass.

Claim.—1. The pawl-lever F, constructed, arranged, and operating substantially as described, for the purpose specified.

2. The clasp E, the movable jaw D, and the groove *a*, all constructed and arranged as set forth, in combination with any suitable clamping device substantially as described.

108,452.—Steam Fire-Engine.—Edward R. Cole and Henry S. Cole, Pawtucket, R. I.

Claim.—The water-tight bed-chamber F, in combination and in connection with the eduction-ports of a forcing-pump and suitable air-chamber, substantially as described.

108,453.—Medical Compound for Hog-Cholera.—Thomas L. Cotten, Madison county, Miss., assignor to Martha J. Cotten, same place.

Claim.—A medicine or ointment for the cure of measels or cholera among hogs, composed of the ingredients named in about the proportions herein set forth.

108,454.—Boat-Detaching Apparatus.—John C. Cottingham, Philadelphia, Pa.

Claim.—1. The arrangement of the body A, catch C, steady-pin P', hook H, provided with lugs L and L', notch E, slot N, and pin P, so as to operate as and for the purpose specified.

2. The arrangement of the body A', lug G, catch C', steady-pin P', hook H', provided with a hook, D, notch E', slot N', and pin P', so as to operate substantially as and for the purpose specified.

108,455.—Pen.—Germond Crandell, Washington, D. C.

Claim.—1. Increasing the depth of the nib of ordinary elastic metallic pens, when such increased depth is produced by forming edges on the under parts of the nib, running back from the point toward the heel of the pen, substantially as and for the purposes set forth.

2. The improved pen, as described, in combination with the slide A, or its equivalent, substantially as and for the purposes specified.

108,456.—Wash-Board.—Aylett R. Crihfield, Lincoln, Ill.

Claim.—In combination with the frame A, the metal surface C, composed of a series of diamond-shaped elevations, *a*, made in cross-rows *x* and *y*, as described, and forming the oblique channels *d d*, all as shown and described.

108,457.—Folding Bedstead.—Mark Crosby, Boston, Mass.

Claim.—The hinge composed of pieces *m m*, connected by the bar I and pins *i i*, when said plates *m m* are provided with the flange *i*, arranged and operating substantially as and for the purpose described.

108,458.—Machine for Ornamenting and Lettering Looking-Glasses, Signs, &c.—William M. Davis, Brook Haven, assignor to himself and Sidney S. Norton, Brooklyn, N. Y.

Claim.—The within-described ornamenting and lettering-machine, which cuts out the design of letter from what is afterward to serve as a field or background, by means of the revolving scraper, guided by templets or patterns, substantially as herein set forth.

108,459.—Heating-Stove.—Isaac De Haven, Allegheny City, Pa.

Claim.—The arrangement of the chambers D C *e*, register *i*, and flues *f i* and chamber *x*, constructed, arranged, and operating as herein described, and for the purpose set forth.

108,460.—Car-Starter.—David A. Dickinson, Baltimore, Md.

Claim.—The combination of the ring *a* and lever *c*, both constructed as described, with the springs, cords or chains, and levers connected therewith, for operating the same upon the axle of the car, as herein set forth.

108,461.—Cotton-Picker.—Bartholdt I. Dreeson, Marion county, Texas.

Claim.—A cotton-picker having the casing A, lapping seams on the lines *s*, adjusting-rod 23, and pin *i*, constructed as described, in combination with the pulley-wheels D E, belt *c*, and knives *d d*, *e e*, all arranged and operated substantially as and for the purpose set forth.

108,462.—Treating Copper Pyrites.—Cypren Marie Tessié Du Motay, Paris, France.

Claim.—The process, herein described, for treating copper pyrites, consisting of a simultaneous pneumatic mixing of the melted ore by means of the alternate compression of air or oxygen, with or without the presence of combustible gas, substantially in the manner herein set forth.

108,463.—Table-Cutlery.—Edward G. Durant, Northampton, Mass.

Claim.—1. As an improvement in cutlery, the handle B, having a longitudinal slit or groove formed in it, with the tang A therein the entire length of the handle, substantially as described.

2. In combination with a handle constructed and applied substantially as herein described, the bolster C cast thereon, as herein set forth.

3. In combination with a handle constructed and applied substantially as herein described, the tip D cast thereon, substantially as set forth.

108,464.—Ventilator.—Edward J. Durant, Lebanon, N. H.

Claim.—The withdrawal of the impure air from the floor portion of a hall or apartment, and at the same time letting pure air into the upper portion of the same by means of the combined use of the vertical air-tubes *g g* with the horizontal air-passages *A h*, and the chimney ventilating-flues *j j*, acting conjointly with the vertical air-tube *e* and the horizontal air-distributing passages *f f*, substantially in the manner herein set forth; but this only when the apparatus for warming an apartment forms a portion of my said combination for ventilating the same.

108,465.—Hoe.—Augustin Ellis and Oliver Albertson, Salem, Ind.

Claim.—The combination of the concavo-convex bar B, forked or slotted, and the slotted plano-convex washer D, when arranged for adjustment, by a nut and screw, upon the shank of a hoe or rake, substantially as and for the purpose specified.

108,466.—Key for Door, &c.—Henry H. Elwell, South Norwalk, Conn.

Claim.—The herein-described key, consisting of the spindle A, bit C, and bow B, formed from different pieces of metal, united by closing or striking the spindle down onto the bow and bit, they being first prepared in the manner substantially as described.

108,467.—Self-acting Mule, &c., for Spinning.—James Entwistle, Conshohocken, assignor to himself and John Parkinson, Philadelphia, Pa.

Claim.—1. The carriage B, carrying a series of spindles, and operated by the rotating wheel F, through the medium of the pins *f f' f''*, vibrating lever H, its projections *s s'*, and the cross-levers *p p'*, all substantially as described.

2. The combination of the said system of cross-levers and a rotating wheel, E, having three pins *f*, *f'*, and *f''*, with the yoke-like arm H, having projections *s s'*, and vibrating on a pin, *i*, substantially as described.

108,468.—Corn-Planter.—Robert Erdly, Selin's Grove, Pa.

Claim.—1. The arrangement of the beams P P, adjustable bars R R, with wheels S S, bent bars O O, and shovel or plow N, all constructed and arranged substantially as and for the purposes herein set forth.

2. The bar T, hinged to the frame A, and operating for the double purpose of raising the wheels S S and plow N out of the ground, and of raising the rear end of the frame E, to throw the corn-dropping mechanism out of gear, substantially as herein set forth.

3. The arrangement of the hopper G, with perforated plate K, sponge L, spring *d*, and cog I, upon the hinged frame R, with the frame A, hinged bar T, shaft C, with cog J, and chain *f*, connected to the rear end of the bars P, all as shown and described.

108,469.—Manure-Distributer and Seed-Sower.—Spencer Lee Fraser, West Town, N. Y.

Claim.—1. The combination of the adjustable series of spring slats *f f* and guards *a a* with the spiked cylinder C, box B, and driving-gear D', for distributing coarse manure, substantially as set forth.

2. The arrangement and combination of the curtain *h* and lever *g* with the bar *k* and spring slats *f f*, substantially in the manner and for the purpose set forth.

3. The broadcast sower, consisting of the box E, with concave perforated bottom *m* and slide *n*, le-

ver *p*, and agitator F, operated by the driving-gear D', substantially as described.

4. The broadcast sower, consisting of the box E, with concave perforated bottom *m* and slide *n*, lever *p*, agitator F, screen or grating *q q*, and driving-gear D', the whole combined, arranged, and operating substantially as set forth.

108,470.—BED-BOTTOM.—Safford B. Freeman, Burlington, Iowa.

Claim.—1. The springs C C, constructed and arranged as described, and regulated by means of the bolts *b b* and nuts *d d*, substantially as and for the purposes herein set forth.

2. The combination of the slats A A, cross-bars B B and D D, springs C C, bolts *b b*, and nuts *d d*, all constructed and arranged substantially as and for the purposes herein set forth.

108,471. — CULTIVATOR. — Julius Gerber, Rockford, Ill.

Claim.—A ring for holding standards, when used in connection with a bolt and bearing-block, and so constructed as to be capable of a turning movement in the bolt, as described, for the purpose set forth.

108,472.—BEDSTEAD FASTENING.—Edward F. Gilbert, Lyons, N. Y.

Claim.—A wedge or key, with a flange on the under side running lengthwise in a slot across the rail, and with a groove on the opposite side, in combination with a slot and small flange on the hook, for the purpose of a bed fastening.

108,473.—CHAIN.—John Good, Brooklyn, N. Y.

Claim.—The combination of the links A and B, with their sleeves *a* and *b* and the rods C, arranged in relation to each other to form a belt, composed of endless chains and transverse rods, free to turn in said chains, substantially as specified.

108,474.—COPPER PAINT FOR SHIPS' BOTTOMS, &c. — Thaddeus F. Griffin and Robert Tarr, Jr., Gloucester, Mass.

Claim.—The improved mixture called copper paint, herein described, when compounded of the materials and in the manner and proportions, substantially as specified.

108,475.—CHANGEABLE-GAUGE CAR-WHEEL. Jonas Hamilton and George F. Morse, Portland, Me.

Claim.—The bushing *b*, having the two sets of apertures, in combination with the car-wheel, and the axle, having a hole to receive the gib and key, and the gib and key *g h*, as herein described.

108,476.—COTTON-PLOW AND PLANTER.—John H. Hannon, Halifax, N. C.

Claim.—1. The suspended vibrating hopper F, in combination with the spring *m* and lugs A, when arranged and operating substantially as herein described.

2. The spring jaws *e e* at the bottom of the hopper, when combined and operating in connection with spring *f*, above said jaws, and the arms or spikes *g*, substantially as described.

3. The coverer I, acting both as a coverer for the seed and a scraper for the wheels, substantially as described, for the purpose set forth.

108,477.—SPRING CUSHION FOR CAR-SEATS. William B. Hatch, Elmira, N. Y.

Claim.—In a cushion for car-seats, the wire-cloth bed A and conical springs C, having their smaller ends extended spirally and horizontally, and secured as described, said cushion being arranged in a suitable frame, substantially as specified.

108,478. — ADJUSTABLE HARROW. — Abraham Havens, Trenton, N. J.

Claim.—The triangular frame A, consisting of a center-piece, *a*, and hinged-toothed bars *b b'*, in combination with the curved-toothed sections C E E', all constructed and connected as set forth.

108,479.—MACHINE FOR MARKING CARPENTERS' SQUARES.—Albert M. Healy, Berlin, Conn., and Charles H. Raymond, Woodstock, Vt., assignors to the Southington Cutlery Company, Southington, Conn.

Claim.—The impression-roll C', constructed with a shoulder, *a*, combined with a second roll, and whether the said second roll be provided with a corresponding shoulder or not, when one or both of the said rolls are provided with figures or other devices for marking the surface of squares, substantially as herein set forth.

108,480, antedated October 8, 1870.—WEATHER-STRIP.—Coleman Hicks, Lancaster, Ky.

Claim.—The spring rod *r*, with its catch-pin *i*, pieces *d* and *f f*, knob K, and hooks A A, in combination with the bed-piece *c*, weather-strip S, and section C of the carpet-rill, all constructed, arranged, and operated substantially as and for the purpose described.

108,481.—PERMUTATION-LOCK.—Julius C. Hintz, Jr., Cincinnati, Ohio.

Claim.—1. In combination with wheel C and cam C', the pinion J', wheel J, clamp J'', and bolt J''', when constructed and arranged for operation as herein described.

2. In combination with wheel C and cam C', the yokes D, provided with slots S, and mounted on pins D'' D'''.

3. The yokes D, provided with slots S and arms D', and arranged to move laterally on pins D'' D''', in combination with the projecting pin B' and bolt B.

108,482.—WATER-WHEEL.—David O. Holman, Adams, N. Y.

Claim.—1. The removable bucket B, bounded by two cylindrical walls, of which the axes are oblique to each other, in combination with the cylindrical body A, having the perforations *s*, substantially as specified.

2. The cylinder-shaped concavo-convex gate I, having its bearings in the projecting ears upon the axial line of the cylinder of formation, substantially as specified.

3. In combination, the cylinder-shaped rotating gates I I, and the adjustable slotted bearing-plates *b b*, substantially as specified.

4. The casing G, having the centrally-depressed top L, supporting cylinder E, and flanches *a*, provided with the semicircular recesses *m*, substantially as specified.

5. In combination with the gates I, ears *d*, and pivots *e*, the arms *f*, rods A, ring *k*, and a rack and pinion mechanism for operating the same, substantially as specified.

6. The combination of the wheel A B, casing G, cylinder-shaped rotating gates I, and the ring *k*, with the mechanism for regulating the adjustment of the gates, as specified.

108,483. — LADDER.—John Hughes, New Berne, N. C.

Claim.—1. In combination, the ladder A with grooves *n n*, the pulleys D D, braces H H, and endless ropes *o o*, as specified.

2. In combination with a ladder with grooved side bars, the endless ropes *o o*, pulleys D D, and braces H H, the removable carriage K K, so arranged as to present a support for articles, whether ascending or descending, in front or in rear of the ladder, as specified.

108,484, antedated October 15, 1870.—CORN-HUSKING MACHINE.—Milton C. Jeffers, New York, N. Y.

Claim.—1. The hopper *n*, guides *o*, and feeding-apron *m*, in combination with the inclined husking-rollers H H, as and for the purposes specified.

2. The revolving shaft *t* and projections *s*, receiving motion from the internal gear *t'*, in combination with the husking-rollers H, as and for the purposes specified.

108,485. — SUBSOIL-PLOW. — John Harvy Johnson, Bentonville, Arkansas.

Claim.—1. The standards *d* and *e*, provided with depressions *i* and holes *j*, respectively, and the plowshares *g* and *h*, arranged relatively one to the other, and to the beam *a*, in the manner and for the purpose hereinbefore specified.

2. The bar *o*, ratchet-toothed spring *r*, and harrow and packer *p q*, arranged relatively to each other and to the plow-beam *a* and standard *e*, in the manner described, for the purpose specified.

108,486.—RUFFLING-ATTACHMENT FOR SEWING-MACHINE.—Allen Johnston, Ottumwa, Iowa.

Claim.—The combination of the bed-plate A with its turned-up slotted edges *a a*, slide B, spring C, arms D *d*, spring *f*, and screw A, all constructed and arranged to operate as and for the purposes herein set forth.

108,487.—MANUFACTURE OF PAPER STOCK. Morris L. Keen, Jersey City, N. J., assignor to himself and Samuel A. Walsh, New York City.

Claim.—1. The process of treating the material by a succession of stages, pure steam, and water and steam at a high temperature being employed at one stage, and caustic alkali, at a lower temperature, at another stage.

2. The percolation of steam downward through the mass of partially-treated fiber, so as to hasten the removal of the chemical, as specified.

3. The triple treatment, first, with pure steam, and water and steam, at about two hundred pounds pressure per square inch; second, with caustic alkali, at twenty or thirty pounds per square inch; and third, with steam or water again at or near its previous high pressure; the several operations being combined and made to succeed each other in the manner and for the purposes herein set forth.

4. The process of treating wood and analogous material for making pulp by steam and water alternately, substantially in the manner described, and for the purpose set forth.

5. The process of treating the stock by high steam and hot water prior to discharging the same out of the boiler, so as to aid in perfectly cleaning the fibers of all coloring matter.

6. The caustic alkali in weak solutions, in the proportions of twenty to twenty-five per cent. for wood pulp produced, and eight to ten per cent. of straw pulp produced, either at low or high temperatures, when used in connection with steam and hot water process.

7. The process of treating wood or straw, or analogous material, in caustic alkali, under pressure as named, as a first process, and subsequent treatment of the stock by steam and hot water, as described.

8. The process of treating wood or straw, &c., by steam and hot water at a high temperature, as described; then the process of treating the stock in open vessels in caustic alkali, as described, and the subsequent process of treating the same stock with hot water and steam, as described.

9. The process of treating the stock with chloride of soda, in the manner and at the stage of the treatment herein set forth.

108,488.—PLOW.—Horace M. Keith, Commerce, Mich.

Claim.—The edger H and colter I, constructed as described, and arranged upon the side of the plow-beam A, or plow-standard, to be longitudinally adjustable, substantially as and for the purpose set forth.

108,489.—INSTRUMENT FOR CLIPPING OR SHEARING HORSES, &c.—Henry Knight, Ryde, Isle of Wight, England.

Claim.—1. The arrangements or combinations of parts hereinbefore described and illustrated in figs. 1 to 8, both inclusive, of the accompanying drawing, and the modifications represented in figs. 9, 10, 11, and 12, for giving a reciprocating motion to the movable cutting-plate or cutter of the said instruments or apparatus; that is to say, the combination of levers and the method of connecting them to the said cutting-plate or cutter and case, or fixed cutting-plate of the instrument respectively, so that by opening the handles affixed to the said levers the movable cutting-plate or cutter is moved in one direction on the fixed cutting-plate, and by closing the said handles a reciprocating motion of the said movable cutting-plate or cutter is produced in the opposite direction, the act of clipping being thus performed by working the handles of the instrument in a manner similar to that by which a pair of ordinary shears are worked, substantially as described and illustrated.

2. The cutting-plates, having the shape shown in figs. 8, 10, 11, and 12, and provided with the slots A *i* and the blocks c^1 *p* and c^2 *n*, as and for the purpose specified.

108,490. — POTATO-DIGGER. — Melvin W. Knox, Sheridan, N. Y.

Claim.—1. The pivoted and extended map D, when constructed and arranged to operate substantially as and for the purpose specified.

2. The pivoted forearm of the elbow-lever P, in combination with the shaft and crank *y*, when constructed and arranged in a potato-digger, substantially as and for the purpose described.

3. In combination with the shaft H, crank *c*, and pitman *n*, the pivoted lever *m*, to operate the shaker of a potato-digger, when constructed and arranged substantially as specified.

108,491.—SHOE-FASTENING.—Harvey T. Lee, Marysville, Cal.

Claim.—A knob or spring-stub, *e*, for fastening shoes or other articles, made by bending and swaging one end of the plate, which forms the shank or tang of the device, into the form of a goose-neck, substantially as shown and described.

108,492.—RUFFLER FOR SEWING-MACHINE. Arthur M. Leslie, Chicago, Ill.

Claim.—1. The spring-plate ruffler, when provided with the means herein described for attachment to the presser-foot of a sewing-machine.

2. The spring-plate ruffler for sewing-machines, having its upper plate provided with the guide-slot *q*, serving to guide both the cloth and band, as described, and for the purpose specified.

3. In combination with the plate B', the spring plate A', when constructed with the bulge V, substantially as described, for the purpose specified.

4. In combination with the plate B', the plate A', constructed with the bulge V, the cloth and band-guide *q*, and the projection W, substantially as described, for the purposes specified.

5. In combination with the plate B', the plate A', constructed with the bulge V, and the projection W, substantially as described, for the purpose specified.

108,493.—STRAP-BOLT FOR WAGON-BED.—William J. Lewis and Henry W. Oliver, Jr., Pittsburg, Pa.

Claim.—A strap-bolt, consisting of a round, flat, and semi-oval part, as indicated at the points marked A, D, and K, as herein described, and for the purpose set forth.

108,494.—IRON SAFE.—Lewis Lillie, Clinton, N. J.

Claim.—1. The rings *a*, constructed as and for

the purpose shown and described.

2. The hardened steel rods, as and for the purpose hereinbefore set forth.

3. The method of casting the door and safe in relation to each other, as described.

108,495.—ARRANGEMENT OF ELECTRICAL CIRCUITS FOR AUTOMATIC TRANSMITTING INSTRUMENT.—George Little, Rutherford Park, N. J.

Claim.—The arrangement of the two separate batteries relatively to the automatic transmitting and receiving instruments and their connections, in substantially the manner specified, so that when the transmitting circuit is broken the other circuit acts with a reverse circuit through the transmitting battery, substantially as set forth.

108,496.—CHEMICAL TELEGRAPH.—George Little, Rutherford Park, N. J.

Claim.—1. A branch circuit connected with the main line and the earth, in which is placed the chemical telegraph and a resistance between that and the main line, substantially as and for the purposes set forth.

2. A branch-circuit and resistance, connected from the main line to the earth, for clearing the wire of surplus electricity substantially as set forth.

108,497.—WALL PROTECTOR.—Benjamin K. Maltby, Cincinnati, Ohio.

Claim.—The construction of a shield, with a groove or water-receptacle on the lower edge, in the manner and for the purposes above set forth.

108,498.—EGG AND CAKE-BEATER.—Harriet S. Maltby, Cincinnati, Ohio.

Claim.—The wheel B, having inclined or sloping blades, a jointed shaft, and a perforated flange, in combination with its semi-cylindrical bed, constructed in the manner and for the purpose above described.

108,499.—APPARATUS FOR SEPARATING GAS-TAR AND AMMONIACAL LIQUOR.—Edwin D. McCracken, New York, N. Y.

Claim.—In combination with a gas-main, a double trap, substantially as herein described, so as to separate the tar and ammoniacal liquor, as set forth.

108,500.—COTTON-GIN.—Robert McKenna, White's Station, Tenn.

Claim.—The roller or shaft *f* and flanges *g g*, when combined and arranged as specified.

108,501, antedated October 8, 1870.—SLIDE-DOOR FOR HEATING AND PUDDLING-FURNACE.—Samuel McLaughlin, Philadelphia, Pa.

Claim.—The flanged fire-bricks B B B B B B B, in combination with the set-screws *c c*, the nuts *d d*, and the face-plate *e*, arranged substantially in the manner and for the purpose as set forth.

108,502.—DIE FOR SWAGING WRENCH.—Thomas Meikle, Louisville, Ky.

Claim.—The within-described dies, having in their faces cavities for swaging clevis-wrenches, substantially as shown and described.

108,503.—MORTISING-MACHINE.—Lowell G. Merrill, Angels, Cal.

Claim.—1. A vertically moving carriage, K^2, provided with supporting-fingers 21 22, and arranged between rotary scoring-cutters, and below mortising devices, substantially as described.

2. The follower K, applied on the vertically-reciprocating carriage K^2, and operated substantially as set forth.

3. The pivoted griping-jaws 26, applied on the carriage K^2, in combination with the vibrating arms C^3 C^3, substantially as described.

4. The movable spikes A A, applied to the arms C^3 C^3, and operated substantially as described.

5. The vibrating feed-arms C^3 C^3, in combination with a vertically-movable carriage, K^2, and mortising devices, substantially as described.

6. The combination of rotary scoring-cutters with mortising-chisels, which are constructed substantially as described, said parts being arranged so that the operation of scoring will immediately precede the operation of mortising, substantially as described.

7. The adjustable connection G^2 between the feed-arms C^3 C^3, substantially as described.

8. A discharging-carrier, X, in combination with the carriage K^2 and mortising devices, arranged substantially as described.

9. The combination of the adjustable rotary cutters *i* with adjustable mortising devices *f*, and a carriage, K^2, having supporting-fingers 23 applied to it, substantially as described.

10. The rods H H, applied above to a lifting-strip, J^2, and below to the vibrating rods P^4 P^4, in combination with the stops *p p* and follower K, which is applied on a vertically-movable carriage, K^2, substantially as described.

108,504.—MEDICINE.—Ezra Miller, New York, N. Y.

Claim.—The new medicines herein described, made from "wahoatch," or "brush-plant," as set forth.

108,505.—MANUFACTURE OF CONFECTIONERY.—George Miller and Charles B. Miller, Philadelphia, Pa.

Claim.—1. The method of packing confectionery, &c., as herein described and shown.

2. A box of confectionery, jewelry, or other similar articles, arranged, as described, in layers, one over the other, and separated by intervening covers of pasteboard, as described.

108,506.—BOTTLE-STOPPER.—William Morgenstern, New York, N. Y., assignor to himself and Franz Otto, same place.

Claim.—The slotted plate *c*, in combination with the stopper B, button *f*, and its lugs *g*, substantially as described, for the purpose set forth.

108,507.—BOAT-DETACHING APPARATUS.—Milton V. Nobles, Elmira, N. Y.

Claim.—In combination with a detaching apparatus for boats, the water-proof tube or casing D, having the flexible covering attachments Z at each end, when arranged to operate as and for the purpose shown and described.

108,508, antedated October 8, 1870.—MEDICAL COMPOUND.—William W. Oglesby, Benton county, Oregon.

Claim.—The manufacture or preparation of a compound which I denominate Oregon mountain-balm, of the ingredients, in the proportions, and for the purposes set forth.

108,509.—MANUFACTURE OF PAPER.—Charles Edward O'Hara, New York, N. Y.

Claim.—1. In combination with paper-making machinery an electro-magnet, or a series of electro-magnets, placed within a box, trough or other suitable receptacle through which the paper-pulp passes, for the purpose of depriving the pulp of iron and other mineral substances, as set forth.

2. The combination of the loose magnets with the fixed helices and paper-making machinery, substantially as and for the purpose set forth.

108,510.—COATING THE INTERIOR OF PIPES, TUBES, &c., WITH SILVER OR OTHER METAL, BY THE ELECTRO-DEPOSITING PROCESS.—Dubois D. Parmelee, New York, N. Y.

Claim.—1. The method herein described, for the local and progressive electro-plating of the interior of pipes, as and for the purposes set forth.

2. An anode, held concentrically within the pipe by suitable insulating devices, so as to be propelled or moved by hand or machinery, substantially as and for the purposes set forth.

3. Lead or other metal pipe or tubing, the interior of which is coated or lined, in the manner and by the means substantially as herein described, with silver, nickel, or other metal suitable for protecting the pipe from oxidation, and for other purposes.

108,511.—BRICK-MACHINE.—Zelora Phillips, Osseo, Mich.

Claim.—1. The combination of the frame E, gibs G H, and set-screws I, all constructed and arranged substantially as and for the purposes herein set forth.

2. In combination with the frame E and gibs G H, the gate D, with wires *a a*, and the movable table C, substantially as and for the purposes herein set forth.

108,512.—FASTENING FOR SHOVELS FOR CULTIVATORS AND PLOWS.—Joshua Pierpont and Sidney S. Tuttle, La Harpe, Ill.

Claim.—The combination of the eye-bolt D and the wooden pin E with the standard A and the shovel-holder C, made and constructed substantially as and for the purpose hereinbefore set forth.

108,513.—SWITCH FOR GALVANIC BATTERY.—Edward M. Pierson, Newark, N. J., assignor to Edwin D. McCracken, New York, N. Y.

Claim.—1. The combination of two batteries, a circuit-breaking and closing device, and a clock-movement, with a telegraph line or other electric circuit, whereby the two batteries are alternately and at regular or definite intervals brought one into and the other out of the said circuit, substantially as and for the purpose herein specified.

2. The combination of two batteries, an electro-magnet worked by a separate local battery and a switch, so worked by the armature of such magnet, substantially as herein described, between portions of the two circuits of such batteries as to produce the closing of each of the two circuits in turn, one being opened while the other is closed.

3. The combination of the two batteries B^1 B^2, the local battery, electro-magnet E, armature D, levers F F, supports G G, posts J^1 J^1 J^2 J^2, rotary circuit-breaker Q, spring R, and their several connections, substantially as and for the purpose herein described.

4. The springs *r r*, in combination with the switch or armature levers F F, and the set-screws A^1 A^1 A^2 A^2, or other equivalent portions of the two battery-circuits, substantially as and for the purpose herein described.

108,514.—MANUFACTURE OF SUGAR.—Juan Poey, Havana, Cuba.

Claim.—1. The improved process, consisting in the acidulation of the juice of the cane prior to the introduction of the alkaline substance, as and for the purpose set forth.

2. The decantation of the material into separate vessels after carbonization, and prior to the final clarification, as and for the purposes hereinbefore described.

108,515.—BACK-LASH FOR MILL-GEARING.—John L. Post, Ashley, Ill.

Claim.—1. The spring-case E, provided with the sleeve G, projecting above the driving-plate to form a bearing for the loose pinion B, as an improvement in machinery for preventing back-lash, as specified.

2. The semicircular springs H, connected by the coupling-slides K, and each provided with the set-off *e* at about its middle portion, in combination with the transversely-rectangular spring-chamber F, having the slotted partition A, and with the driving-plate A provided with the forked lugs *d*, substantially as shown and described, and for the purposes specified.

108,516.—GANG-PLOW.—Joseph L. Purcell, Thompson, Ill.

Claim.—The arrangement, in a gang-plow, of the slotted platform W, clamps J, screw-rod K, beams B, rods *g* N, ratchet-lever *c j*, rack Y, rod T, crank-lever P S, and standards O O, as and for the purpose set forth.

108,517.—BAKERS' OVEN.—John Rayney, Brooklyn, N. Y.

Claim.—1. The baking-chamber B, constructed as described, of side metal plates *b b* and bottom plates A A A′, the middle one, A′, of which latter is loose, and made to overlap the adjacent plates A A, in combination with the heat-radiating chambers C C and furnace D, essentially as specified.

2. The combination of the lever *k* and bars *m* with the sectionally-constructed bottom A A, and A′ of the baking-chamber.

3. The combination of the dampers *e e* with the side chambers C C, the metallic sides *b b*, and sectionally-constructed metal bottom A A A′ of the baking-chamber, the draught-openings *d d*, controlled by dampers *f* and *g*, the fire-place D, and the rod E, substantially as specified.

108,518.—COTTON AND CORN-CULTIVATOR.—Moses Reed, Little Rock, Arkansas.

Claim.—1. The combination of the arms *d* and staples G, when arranged in a cotton-cultivator, substantially as and for the purpose specified.

2. The combination of the harrow A, segment E, set-screw *y*, and handle H, when constructed substantially as described, and for the purpose mentioned.

108,519.—CONSTRUCTION, JOINTLY, OF FIRE-BEDS AND TUYERES.—Philander H. Roots and Francis M. Roots, Connersville, Ind.

Claim.—1. A metallic fire-bed for forges, made in the form herein shown and described, for the purpose of giving shape or form to the body of the fire, as set forth.

2. A combined metallic fire-bed and tuyere for forges, when made in one entire piece, and in the form herein shown and described.

3. The fire-bed A, with its perforated bottom *c*, tuyere B, and vertical passage *d*, all made in one entire piece, with gate D, pivoted at the lower end of the passage *d*, the whole constructed and arranged as shown and described, and for the purposes set forth.

108,520.—BROOCH-FASTENING.—William Sackermann, New York, N. Y.

Claim.—The arrangement of a bell-shaped slot, *a*, with flaring edges, in the back plate of a brooch, and of retaining-pins or projections *b* at or near the circumference of said back plate, as and for the purpose shown and described.

108,521.—MANUFACTURE OF WROUGHT-IRON.—Charles Sacré, Manchester, Stanhope Perkins and William Smellie, Gorton, Kingdom of Great Britain.

Claim.—The process of manufacturing wrought-iron or malleable metal by melting wrought or malleable iron scrap, with or without an admixture of pig-iron, in a suitable furnace, and then taking the metal thus reduced, while molten or when cold, to a puddling-furnace to be puddled in the ordinary manner, with or without (but by preference with, in each case) the common pig-iron of commerce, substantially as hereinbefore described.

108,522, antedated October 15, 1870.—STOP-VALVE.—Robert Safely, Cohoes, N. Y.

Claim.—The soft metal faces P, in combination

with the rivet-holes O and grooves N, substantially as described.

108,523.—DYEING WOOLEN GOODS.—William W. Sanborn, Lewiston, Me., assignor to himself and Arthur A. Sanborn, same place.

Claim.—The improvement in the process of dyeing woolen and piece-goods herein described, namely, the process of excluding the goods from the air, or subjecting all portions equally to atmospheric influence, as described.

108,524. — KITCHEN-BOILER.—William B. Scaife, Pittsburg, Pa.

Claim.—A new article of manufacture, viz., a kitchen-boiler, having the ends first secured in it by rivets, and the joints around the rivets and ends of the boiler subsequently immersed in a bath of muriate of zinc, and then in a bath of molten solder, and finally soaking the joints with soft solder, as herein described, and for the purpose set forth.

108,525. — VEGETABLE CUTTER. — Henry Seib, New York, N. Y.

Claim.—The cog-wheels F G, in combination with the drum D and knife-carrier E, constructed and operating substantially as herein shown and described.

108,526, antedated October 8, 1870.—CHILDREN'S DINING-CHAIR.—Addison Smith, Perrysburg, Ohio.

Claim.—A movable elevated seat for children at the table, capable of attachment by suspension to the back of an adult's chair by standards *a*, ferrules and hooks *b*, and screws *c*, substantially as above described.

108,527. — LAMP-CHIMNEY CLEANER.—Alpheus D. Smith, Grafton, Ohio.

Claim.—The arrangement and construction of the buff-rods B C, by which the inside and outside of the chimney may be cleaned by one operation, in the manner shown and described.

108,528. — VAPOR-BURNER. — Charles E. Smith, Columbus, Ohio.

Claim.—1. A vaper-burner tip, constructed with two inclined sides nearly meeting in a straight line at the top, and diverging downward from each other on their inner faces, and having lateral outlets converging upward, as shown at *f f g*, all as and for the purpose set forth.

2. In combination with the burner, constructed as stated in the preceding claim, a wick-tube, the upper end of which is incased within the burner, and is closed at its top, with the exception of a minute outlet or outlets therein, as and for the purpose described.

108,529.—WATER-WHEEL.—Ira W. Snyder, Dryden, N. Y.

Claim.—1. The wheel C, with two or more partitions J J', parallel to each other, and making two or more spiral scrolls, with two or more complete circuits about the axis of the wheel, as described.

2. The outer case K, over the partitions J J', making two spiral chambers in the wheel, and the said case tapering from the mouth to the vents of the wheel, as described.

3. The combined wheels, consisting of the shaft A, the flume E, tapering shell K, two spiral scrolls J J', the spiral chambers made by the case and the partitions, the gathering-lips G G', and open vents I I', arranged and operating as set forth.

108,530.—MACHINE FOR MAKING HORSE-SHOES.—John H. Snyder, Troy, N. Y.

Claim.—1. A machine constructed and operating substantially in the manner described, in which the blank is first shaped or rolled out straight and then bent up and finished.

2. The employment, in combination with a double-acting cutting-off device, of two feeding mechanisms for alternately operating to carry to the rolling dies the blanks cut off successively.

3. The cut-off described, so arranged and operating as to also perform the functions of a carrier to and guide in the feeder, as described.

4. The automatic carrier for taking the rolled blank to the bending mechanism, constructed and operating substantially as described.

5. A bending and finishing mechanism, composed of a "former" having a reciprocatory motion, in combination with two oscillatory cams between which said "former" passes, the whole constructed and arranged to operate in substantially the manner described.

6. A machine having two sets of rolling dies and two bending mechanisms, the whole constructed as shown, and so arranged and operating that while one set of dies is preparing a blank for the bending mechanism which works in conjunction with said set of dies, the bending mechanism which works in conjunction with the other set of dies shall be bending up and finishing a blank, as hereinbefore set forth.

7. A compound reciprocatory "former," constructed and operated as described, and so that while its parts move together during the bending operation, they separate and close for griping and releasing the blank and finished shoe, as hereinbefore described.

8. The employment, in combination with the bending mechanism, of centering or registering gauges d^2, for insuring the proper placement of the blank, substantially as set forth.

9. The combination of the pinions O P, and their racks *n*, with the driving-racks *m*, and double vibratory sector X, substantially as and for the purpose set forth.

10. The combination, with the bending mechanism described, and cutting-off mechanism, of a single rock-shaft, R, which is actuated by the cutting-off mechanism, and operates the bending mechanism.

11. In combination with the carrier which feeds the rolled blank to the bender, an automatic locking device for clamping the blank and insuring its delivery to the bending mechanism, as described.

12. In combination with a vibratory carrier, I, provided with a pinion, i^2, a sector-arm, 9, and finger, 10, for lifting and holding up said carrier, and a suitable spring device for insuring its descent.

108,531.—STEAM-HEATER.—Daniel E. Somes and Frank C. Somes, Washington, D. C.

Claim.—1. A heater or radiator, consisting of a steam-chamber gradually enlarged, or enlarging from the bottom toward its top, and presenting an outer surface, against which the air continually impinges, increasing in pressure or velocity, and encountering increased heat and heating-surface in its ascent.

2. The radiator C, with a tablet or disk, *d'*, having a border projecting downward from its outer edge, as and for the purpose set forth.

3. Our improved radiator, when provided with a roof or cover, *d'*, having an opening, *f*, as shown at D, fig. 2.

4. The combination of a radiator with a cover or roof, *d'*, when the latter is supported on the former, by means of wood or other non-heat-conducting material, substantially as described.

5. The radiator E, provided with the supply-pipe *e*, extending into and opening near its center, and the discharge or return-pipe *e'*, as shown in fig. 2.

6. A steam-heater or radiator, having its top plate or cover depressed, so as to form a bowl, substantially as and for the purpose set forth.

7. A double radiator, constructed and arranged as shown in fig. 10.

108,532.—SEPARATING ATTACHMENT FOR HUSK-HACKLING MACHINE.—George B. Stacy, Richmond, Va.

Claim.—The combination, with a "husk-hackling machine," of a separator, arranged to receive the hackled husk directly therefrom, and constructed to operate substantially as herein described, for the purpose set forth.

108,533. — FRICTION-PULLEY. — Joseph Steger, New York, N. Y.

Claim.—1. The arrangement of two cone-seats in the opposite sides of a pulley or cog-wheel, fitting on disks *b b'*, which are capable of moving toward and from each other, without being allowed to revolve independent of the shaft on which they are mounted, substantially as described.

2. The springs *d*, on their inner surface of one of the disks *b* or *b'*, in combination with bolts *c* and a pulley, B, fitting on said disks, substantially as set forth.

108,534. — DEVICE FOR HOLDING OPEN DOORS.—Jerome B. Sweetland, Pontiac, Mich.

Claim.—1. The plate or casting D, provided with post E and cam *a a*, in combination with the pallet G and spring H, constructed and arranged to operate substantially as and for the purposes herein set forth.

2. In combination with the plate D, post E, pallet G, and spring H, the plate I, attached to the door, for the purposes herein set forth.

108,535.—CHUCK.—John F. Thomas, Ilion, N. Y.

Claim.—A chuck, consisting of the shank A, having the conical flange *c* at its front end, in combination with the jaws C, having the inclined groove *c*, with the nut B and sleeve D, all constructed and operating substantially as described.

108,536.—BEE-HIVE.—Edward B. Turnipseed, Columbia, S. C.

Claim.—The hive described, consisting of the wooden frame A *a a' a²*, the drawers B B^1 B^2, (the drawer B having the wire bottom *b*,) and the enamelled-cloth siding C, attached by the buttons *c*, for the purpose of affording easy access to the hive, all constructed and arranged as and for the purpose specified.

108,537.—POTATO-DIGGER.—Nicholas Vandenburgh, Schuylerville, N. Y.

Claim.—1. The slotted arms B B, connecting the flange *b* and rim C, and forming guides for the rakes *d e*, in which the same are moved out and in, substantially as and for the purposes herein set forth.

2. The combination of the shaft *a*, flange *b*, slotted arms B B, rim C, pins A A, lever D, spring E, and cams or flanges G G and H, all constructed and arranged to operate substantially as and for the purposes herein set forth.

108,538.—SINK.—Samuel Walsh, New York, N. Y.

Claim.—A sink, cast with the trap, in one piece, in the manner shown and described.

108,539. — ADJUSTABLE GEAR-WHEEL. — William H. Ward, Auburn, N. Y.

Claim.—The separate toothed rims, secured upon the same fixed seat, adjacent to each other, so that they may be adjusted to compensate for the wear of the teeth, and to prevent back-lash, without the aid of a fixed toothed rim or wheel upon the same seat, substantially as described.

108,540.—MANUFACTURE OF SOAP.—Alexander Warfield, Philadelphia, Pa.

Claim.—A compound for soap, consisting of soap, lye, pearlash, borax, glycerine, turpentine, benzole, and ammonia, or their chemical equivalents, with or without a perfume, and with or without an absorbent, substantially as herein set forth.

108,541.—MACHINE FOR CLEANING AND SEPARATING GRAIN. — Frederic Wegmann, Naples, Italy.

Claim.—1. The method of washing grain, and of extracting stones, earthy matter, &c., from the same, substantially as herein described; that is to say, floating the grain in water, through which the heavier particles descend, and then, as soon as said particles are separated from the grain, instantly removing the latter, and drying the same.

2. The case M, having compartments *m m²* supplied with a constant stream of water, and arranged beneath a chamber for the passage of grain, in combination with a drying apparatus communicating with the said compartment m^3, and provided with a perforated screen, all substantially as and for the purpose described.

3. The said case M provided with a plate, *n*, arranged in the compartment *m*, as set forth.

4. The case M, its compartments *m* m^3, and inclined partition *e*, arranged as specified.

108,542.—MANUFACTURE OF BOX, CARTRIDGE-CASE, &c. — Charles S. Wells, Springfield, Mass.

Claim.—1. The composition or tempered pulp, substantially as herein described and set forth.

2. The manufacture of boxes, cartridge-cases, and other articles, when molded or pressed up in the manner substantially as herein described.

3. The above, when molded or pressed up, and having paper or other material attached either inside or outside, or both, substantially as and for the purposes herein described.

108,543.—CARTRIDGE.—David E. Williams, Davenport, Iowa.

Claim.—The conical chamber *c* in a cartridge-shell, made by rolling up a tapering strip of paper and inserting it within the shell A, substantially as described.

108,544.—TIRE-SETTING MACHINE.—John H. Williams, Pleasant Hill, Ohio.

Claim.—The arrangement of the piles B, rotating bar C, lever E, support H, shaft *e*, wheel *m*, rod *y*, wrench *z*, and trough P, when constructed substantially as and for the purpose specified.

108,545. — SLED-BRAKE. — James Willis, Mifflin, Wis.

Claim.—The combination of the dogs C C, tongue or coupling-rod B, staples D D, connecting-rods *b b*, and rock-shaft G, all substantially as and for the purposes herein set forth.

108,546.—SEPARATOR OF THRASHING-MACHINE. — Aaron Wissler, Brunnerville, Pa.

Claim.—1. The arrangement of the two pairs of hangers D E and spring levers or connections F G, in combination with vibrating bottoms B C, for the purpose of giving an opposite vertical motion to said bottoms.

2. The arrangement of the links H, attached to screen K and crank-head of lever F, for the purpose of giving an opposite vertical motion to screen K and bottom C, as herein described.

108,547.—MECHANICAL MOVEMENT.—Jacob Woolf, Burr Oak, Mich.

Claim.—The combination of the levers I, curved or bent, to adapt them to pass the fulcrum of each other and the end of the shaft C, two or more wheels E E^1 revolving on the said shaft, two or more annular weights H K, eccentric each to the other and to the shaft C, and each revolving on its own axis while traveling around the said central shaft; the connecting-cranks G J and the shaft N, with a toothed wheel, belt, and pulley, or other device, which will accomplish the purpose of holding the weights H and K from the shaft N, so as to

keep the said weights in the eccentric position above specified.

108,548, antedated October 13, 1870.—TIME-TABLE INDICATOR.—Leander Wright, Rochester, N. Y.

Claim.—1. In combination with the movable time-table D, the fixed station and distance-tables *c* and *d*, when the latter are provided with a longitudinal adjustment, substantially as set forth.

2. The brake *g*, bearing upon the rollers A and B, in combination with the clamp-screw *h*, arranged substantially as and for the purposes set forth.

108,549.—COMPOSING-STICK.—Robert Clark Young, Middletown, Conn., assignor to Oliver Franklin Grover, same place.

Claim.—The fangs D of the stick A, formed with a groove, E, its edge being of a dovetail form, arranged to operate in connection with the clamp F fitted in the socket G of the limb C of the knee B, said clamp being constructed as described, and operated by the vertical screw I, substantially as set forth.

108,550. — TREATING SHELLAC. — August Zinsser, New York, N. Y.

Claim.—The within-described process of treating or maturating shellac, by first softening the same in hot water, or otherwise, and then passing it through between rollers, substantially as set forth.

REISSUES.

4,155.—HYDRANT.—William Bailey, Troy, N. Y.—Patent No. 45,504, dated July 4, 1865.

Claim.—1. The detachable valve-chamber E, with its discharge-pipe M, inlet-valve seat G, and screw-operated inlet-valve A, in combination with the fixed supply-pipe O, united to the said valve-chamber by the joint N, and arranged in the hydrant-box Z, substantially as and for the purpose herein specified.

2. The valves A and B and screw C, all fast together, in combination with the stationary screw-nut D, valve-chamber E, inlet-passage F, discharge-pipe M, waste-opening I, and valve-seats G and J, as and for the purpose herein described.

4,156.—AUGER.—William A. Ives, New Haven, Conn.—Patent No. 95,803, dated October 12, 1869.

Claim.—In auger-bits, the combination of the curved edge gouge-shaped floor-lips C C′, with their respective side or vertical cutters *a a*, connected and arranged substantially as shown and described.

4,157. — COOKING-STOVE.—Silas Hoffman La Rue, Allentown, Pa. — Patent No. 103,204, dated May 17, 1870.

Claim.—1. The shelves *a a* and turning grate E E′, in combination with the fire-chamber A, substantially as described.

2. The combination and arrangement, in a cooking-stove, of the turning grate E E′, pipes C D, and oven O, with an aperture in the latter communicating with a hot-air pipe, and a door provided with a damper, substantially as described.

4,158. — PRESERVING AND HARDENING WOOD.—John Lewis Samuels, for himself and Benjamin F. Josselyn, William B. Lake, George G. Burnett, Henry S. Dent, Mary A. Stirling, George W. Dent, Joel S. Josselyn, and Benjamin R. Nickerson, San Francisco, Cal., and Frederick T. Dent, Washington, D. C., and Henry J. Stone, New York, N. Y., assignees of John Lewis Samuels.—Patent No. 60,784, dated January 1, 1867.

Claim.—The method of preparing wood, to harden and preserve the same, by injecting into the cells and pores thereof, successively, solutions of sulphate of iron and of common lime, substantially as herein set forth.

4,159. — OCHERS FOR PAINTS.—David S. Wood, Tiskilwa, Ill.—Patent No. 106,643, dated August 23, 1870.

Claim.—1. The black and brown siennas, prepared as set forth, and used separately or combined as a paint.

2. An umber, compounded and prepared from the various colors set forth.

DESIGNS.

4,419.—ORNAMENTATION OF GLASS-WARE.—Charles Ballinger, Pittsburg, Pa., assignor to "McKee & Brothers," same place.

Claim.—1. The flying dragons, as represented at A.

2. As an ornament for the knob-portion of the glass cover, a shell, B, as described and represented.

4,420.—CARPET-PATTERN.—Jonathan Crabtree, Philadelphia, Pa., assignor to John Gay, same place.

Claim.—The design for a carpet, as shown.

4,421.—CLOCK-CASE.—Robert Dunn, Brooklyn, N. Y., assignor to the Waterbury Clock Company, Waterbury, Conn.

Claim.—The design for a clock-case, as shown.

4,422.—CLOCK-CASE SASH.—Samuel B. Jerome, New Haven, Conn., assignor to Samuel Peck & Co., same place.

Claim.—The design for the front or sash of a clock-case, as herein represented.

4,423.—BOX FOR BUREAU.—Cheney Kilburn, Philadelphia, Pa., assignor to Kilburn & Gates, same place.

Claim.—A box for the tops of bureaus, having its ends formed on straight lines, tangential to the curve upon which the front of the box is formed, all substantially as described, and as represented in and by the accompanying drawing

4,424.—SHOE.—George Henry Maynard, Berlin, Mass.

Claim.—The design for a boot and shoe, as herein shown.

4,425.—FIRE-PLACE STOVE.—John Robbins Rose and Edward Caley, Philadelphia, Pa., assignors to Samuel B. Sexton, Baltimore, Md.

Claim.—1. The form of the frame *a*, substantially as represented.

2. The form of the base-plate *b*, substantially as represented.

3. The form of the body *c* or walls of the combustion-chamber, substantially as represented.

4. The form of the top rim *d*, substantially as represented.

5. The form of the rim *e*, substantially as represented.

6. The form of the center ornament *f*, substantially as represented.

7. The form of the doors *g*, substantially as represented.

8. The form of the fender *h*, substantially as represented.

9. The form of the water-vases *i*, substantially as represented.

4,426.—BUCKLE.—John E. Smith, Waterbury, Conn.

Claim.—The design for ornamentation of suspender-buckles, as shown and described.

4,427.—KEY-RING TAG.—Nelson Stafford, Brooklyn, N. Y.

Claim.—The design of the tag, substantially as represented.

ISSUE OF OCTOBER 25.

PATENTS.

108,551.—HORSE HAY-FORK.—Charles N. Baldwin, Willington, Conn.

Claim.—1. The combination of the bar *a*, the pivoted tine *f*, connecting-rod *h*, rocking bar *i*, connecting-rod *j*, sliding-bar *k*, connecting-rod *l*, connecting-rod *m*, and lever *n*, the whole constructed, arranged, and operated substantially as and for the purposes set forth.

2. In combination with the bar *a* and tine *f*, operated by the parts specified in the immediately preceding clause, the bar *b* and tine *g*, operated by a precisely similar mechanism, the whole constructed, arranged, and operated substantially as and for the purposes set forth.

108,552. — BORING-MACHINE.—Charles N. Baldwin, Willington, Conn.

Claim.—1. The ratchet-and-pawl device described, consisting of the shaft *c*, notched cylinder *p*, loose arm *s*, pawls *u w*, weight *v*, and treadle *t*, when the parts are arranged as described, for the purpose set forth.

2. The combination of the device above claimed, with the gear-wheel *n*, and rack-bar *m*, as described.

108,553, antedated October 12, 1870.—METALLIC FISH-NET, &c.—William Beck, New York, N. Y.

Claim.—The flexible metallic net or screen, as herein described, as a new article of manufacture.

108,554, antedated October 20, 1870.—STEAM-PUMP.—George F. Blake, Boston, Mass.

Claim.—1. The described arrangement of ports, in combination with a hollow valve or plunger, by which exhaust steam can be discharged, by the operation of one valve, from two ports at the same time, as set forth.

2. The hollow plunger-valve, constructed as set forth.

3. The spring packing-ring *w*, constructed and arranged as described.

4. The tappet-arm T, constructed in halves, and arranged as described.

5. The recess or cup in the tappet-nuts, constructed and arranged as set forth.

108,555. — COMPASS FOR MINING.—Johan Blomgren, New York, N. Y.

Claim.—1. The needle *f*, hung upon horizontal pivots *i i* in the yoke *e*, in combination with the ring *n* and disk *m* on the pivot *c*, substantially as and for the purposes specified.

2. A conical hollow glass bearing, *d*, over which the yoke *e* is suspended, in combination with the vertical pivot *c*, and horizontal pivots *i i*, for the compass-needle *f*, as set forth.

108,556. — FLASK FOR CASTING STAMP-SHOES FOR CRUSHING-MILLS. — Henry Bolthoff, Central City, Colorado Territory.

Claim.—A flask, constructed and arranged as described.

108,557. — WINDOW-BLIND. — James P. Boyd, La Porte, Ind., assignor to himself and Aaron H. Miller, same place.

Claim.—1. The slats of the window-blind, hung by hinges at the edge to a rebate in the blind-frame, substantially as and for the purpose specified.

2. The feathering-rod C C′, connected to the slats B by the curved staples *e*, and working in the recesses D D′, when combined and operating with the spring *d*, or its equivalent, substantially as and for the purpose specified and shown.

3. The combination of the slats B, feathering-rod C C′, with the frame A and spring *d*, or its equivalent, substantially as and for the purpose specified.

108,558. — APPARATUS FOR DEODORIZING AND IMPROVING ALCOHOLIC AND VINOUS LIQUORS.—Leverett Bradley, Jersey City, N. J.

Claim.—1. The electrodes, composed of separated wires *c d*, wound spirally, at any required distance apart, around a post or posts, C, and connected with opposite poles of a battery or other apparatus for obtaining electricity, for operation, substantially as specified, in a vessel containing the liquid to be treated.

2. The arrangement of the electrodes *c d*, or posts C carrying the same, upon a false bottom or base, B, having attached to it wires which convey the electrical currents to the electrodes, essentially as and for the purpose herein set forth.

108,559. — HORSE-COLLAR FASTENINGS.—August Bratnober, Webster county, Iowa.

Claim.—The loops *e e*, holes *m m*, in combination with the locking-rivet *n*, spring *o*, and set-screw S, when applied to a hinged collar, substantially as and for the purpose described.

108,560.—MELODEON.—Thomas Brett, Geneva, Ohio.

Claim.—1. The compartments G H, when said compartments are separated from each other by a valve-partition in the manner described, bellows B C, and receivers C′, all arranged to operate in relation to each other in the manner as described, and for the purpose specified.

2. The valves J K, as arranged in relation to the compartments G H, substantially as and for the purpose specified.

3. The valves R S, bellows B C, receivers C′, and compartments G H, all arranged in relation to each other in the manner as described, and for the purpose set forth.

4. The stem B′, wedge G′, tongue E′, pin B′, and lever I′, as arranged to operate the valves J K, substantially as and for the purpose set forth.

108,561. — PERMUTATION-LOCK.—Edward W. Brettell, Elizabeth, N. J.

Claim.—The pallet *f*, having catch *v* at one end and projection *w* at the other end, and pivoted near its center to the vibrating arm *d*, in combination with the stop *k*, driving-wheel *h*, and bolt *e*, substantially as and for the purpose set forth.

108,562. — HAT-POUNCING MACHINE. — James B. Brown, Danbury, Conn.

Claim.—The arrangement, with the spindles A and form B, of the independent driving-shafts D E, the pulleys thereon, and driving-belts G, the driving-belt I, and shifting-levers L N, all substantially as specified.

108,563. — OIL-CLOTH PRINTING MACHINERY. — Alexander Fordyce Buchanan, East Newark, N. J.

Claim.—1. The combination of the set of frames carrying the rollers, with the side supports and rail-tracks, and rack attached to the table, the wheel running in the rack and connections for driving the rollers equal surface velocities with the distances moved, the elevating-frame, all attached to and resting upon the long table, sub-

stantially as described for the purposes above mentioned.

2. The tightening apparatus, comprising the stretcher-bars, marked *s s s*, the racks *t t*, and the pawls *r r*, fig. 1, in connection with the long table for stretching and holding the oil-cloth during the process of printing, substantially as described.

108,564.—LINK FOR ENDLESS-CHAIN HORSE-POWER. — George E. Burt, Harvard, Mass.

Claim.—1. The wheel W, in an endless-chain horse-power when held in position on the link A by means of a bolt so arranged that it cannot be unscrewed without first removing the tread from the link, substantially as described and for the purpose set forth.

2. The brace E, provided with a boss, D, in combination with a horse-power tread and link constructed and arranged substantially as described.

3. The seat *c'*, in combination with the axle C, the bolt *g*, and wheel W, arranged substantially as described, for the purpose set forth.

4. The flange *b*, in combination with axle C, and link A, to hold the axle in position, substantially as set forth.

5. The nut *f* and bolt *g*, or their mechanical equivalents, when arranged and held in position by the tread B, substantially as described, for the purpose set forth.

6. The double pivoted connection for the links, a hollow axle having a square or irregular chamber, and bosses, all held in position by a wrought-iron or steel bolt, so constructed and arranged that the tread, when fixed to the link, will hold the nut of said bolt positively in place.

108,565.—SNOW-PLOW.—Albert M. Butts, Waterbury, Conn.

Claim.—The combination of the curved scraper D, having a projection, *c*, with the lever B and car A, having guides H H, provided with projections *e e*, as set forth.

108,566.—ASPHALT PAVEMENT.—Alonzo C. Campbell, New York, N. Y.

Claim.—1. The combination of mortar and melted asphalt, or asphaltic preparation, the mortar being composed principally of water and any finely-divided mineral matter.

2. The removal of the water from the combined asphalt and mortar by the several methods, substantially as herein described.

3. The improved paving material, whether in bricks or other form, prepared and applied substantially as herein set forth, as an improved article of manufacture.

108,567.—SHIRT.—William H. Carroll, Columbus, Miss.

Claim.—The combination, with the woven, knit, or other shirt, of the ribbed elastic part B, arranged and applied substantially in the manner specified.

108,568.—FAUCET.—William F. Class and Leo W. Sapp, Cleveland, Ohio.

Claim.—The case A, having a chamber B divided by the partition *b*, the valve C, arm *d*, and lever *g*, all constructed, combined, and operating substantially as and for the purpose set forth.

108,569.—WORK-HOLDER.—Nicholas Clute, Schenectady, N. Y., and Oliver W. Marshall, Hartford, Conn.

Claim.—1. The work-holder herein described, when constructed and arranged to operate in the manner and for the purpose set forth.

2. The stirrup E, constructed in the manner and for the purpose described.

3. The combination of the stirrup E, strap D, cylinder *c*, coiled spring *g*, ratchet *d*, pawl *e*, with the holding and feeding-rollers *b b* in the manner and for the purpose described.

108,570. — STAMP BATTERY. — George D. Crocker, Virginia City, Nevada.

Claim.—The stamps D, in combination with the curved rods or arms C, provided with hubs F, fulcrum *a*, springs *e*, blocks *f*, and cams *b*, upon shaft E, when constructed and arranged for operation substantially as shown and described.

108,571.—MANUFACTURE OF WHITE LEAD. Charles W. Dwelle, St. Louis, Mo.

Claim.—1. A cistern, consisting of tubs A and B, when constructed and arranged one within the other, substantially as and for the purpose set forth.

2. The arrangement of the blast-tub B, sliding screens E, reaction water-mill F, cover G, hinged doors H, when combined with the exterior tub A, having rim-flanges *h*, cloth covering *h'*, substantially as set forth.

108,572.—DEVICE FOR OPERATING SKY-LIGHT. — William Dyatt, New York, N. Y.

Claim.—The combination, with a sky-light, A, of the segment B, worm-wheel *d*, pin or friction-roller *n*, wheels *o* and *m*, pulley *w*, and cord *z*, operating together substantially as and for the purpose hereinbefore set forth.

108,573. — PENCIL-HOLDER. — Charles A. Eaton, Minneapolis, Minn., assignor to himself and George F. Bolles, same place.

Claim.—The slide *a*, shaped in the manner shown, and having parallel slots running obliquely in the opposite sides, and the combination of such slide with the edge of a slate-frame, or any substance to which it may be applicable as a pencil-fastener, all substantially as and for the purpose described.

108,574.—COMBINED STEAM AND GAS-ENGINE.—Joel A. H. Ellis, Springfield, Vt.

Claim.—1. A condenser, E, for steam and vapor-engines, divided by a false bottom, *c*, into a water-chamber above and a hydrocarbon-chamber below, combined with vapor-pipe coils *d*, as and for the purpose described.

2. The boiler B, having a smoke-stack, G, provided with hydrocarbon-chamber *l* and flues *k*, as and for the purpose described.

108,575.—CLOTHES-DRIER.—John Emmert, Dunleith, Ill.

Claim.—1. In combination with the standard *a* and revolving reel *g*, the angular arm *b c*, connecting-rod *d*, pivoted arm *e*, and the handle *f*, with its locking-pin, substantially as described, for the purpose specified.

2. The double-acting pawl device *h*, in combination with ratchet-teeth on axle-plate *h'*, for the purpose specified.

108,576.—STEAM-ENGINE.—Philip Estes, Leavenworth, Kansas.

Claim.—A variable cam, formed of two parts S T, arranged and operating to move the cut-off point forward or back, in the manner described.

108,577. — GRAIN-SEPARATOR. — John G. Evans, Orrville, Ohio.

Claim.—In a grain-separator, constructed substantially as herein described, the interposed imperforate cylinder L, in combination with the conical perforated cylinders F and G, as and for the purposes herein set forth.

108,578.—JEWELRY-PIN.—Isrnel Farjeon, New York, N. Y., and William H. Horton, Jersey City, N. J.

Claim.—1. An ornament or jewelry pin-tongue provided with a compound universal joint, admitting of rotation in every direction, substantially as described.

2. Providing the pin-tongues of jewelry ornaments with a revolving socket, into which the pin-tongue is pivoted, the socket being fastened into a swinging hinged joint with a shoulder-stop, substantially as described.

3. The pin-tongue B, the revolving socket and the swinging hinge C, so arranged, as described, that, in combination, the whole can be moved in any direction, and which, in combination with the shoulder-stop D, form a new fastening for jewelry ornaments, substantially as described.

108,579.—GAS-BURNER.—Charles S. Ford, Philadelphia, Pa., assignor to Charles Young, same place.

Claim.—The recess A in the side of the central screw-hole *c* of the pillar A, in combination with the opening *g* of the screw-stem *d* of the cap B, the said parts being constructed and arranged in relation to each other, substantially as and for the purpose set forth.

108,580.—COTTON-PLANTER.—Abraham G. W. Foster, Franklin, Ga.

Claim.—1. The cross and connecting-bars F F, the circular and perforated plate G, and bifurcated standards E E, all constructed and arranged as shown and described.

2. The plows H, made with a notch, h^1, at their upper end, and a slot, h^2, made larger at its upper end and dovetailed at its lower end, to adapt them for convenient attachment to the standards E, substantially as herein shown and described, and for the purpose set forth.

108,581. — SKATE-FASTENING. — Bernard Gallagher, St. John, New Brunswick.

Claim.—1. The lever F, slotted bar G, and double crank H, combined, as described, with clamps E E and jaw R, for the purpose set forth.

2. The lever F, combined with the bar G, having right-angled slot *g*, both applied together on a skate, as and for the purpose described.

108,582.—WOOD PAVEMENT.—Carol Gaytes, Chicago, Ill.

Claim.—A street pavement, composed of wooden blocks chamfered on opposite sides at both their upper and lower ends, and driven into the ground in contact with each other, the spaces between their upper ends being filled with concrete, substantially as described, and for the purposes specified.

108,583.—GAS-HEATER.—Richard George, Kilburn, England.

Claim.—1. The improved arrangement or construction of gas-stoves, for warming and ventilating apartments and buildings, in which the combustion of the gas is effected in a closed chamber, *a*, of thin sheet metal, the interior of which chamber has no communication with the atmosphere of the room, the air to support the combustion of the gas being drawn through a pipe, *h*, from a flue or chimney, *i*, into which the products of combustion from the stove are also conducted by a pipe, *k*, substantially in the manner herein described and shown in the accompanying drawing.

2. The application to gas-stoves constructed according to my invention, for heating and ventilating, of a pipe or passage, *c*, of thin sheet metal, for conducting a current of air from the outside of the apartment or building to the interior thereof, such air being warmed in its transit through the pipe or passage *c*, substantially in the manner herein described and shown in the drawing hereunto annexed.

108,584, antedated October 8, 1870.—PUTTING UP SOAP.—William Freeman George, New York, N. Y.

Claim.—The strengthening plate or piece A, inserted in the cake or ball of soap, substantially as herein shown and described.

C P O———53 70

108,585.—PREVENTING THE DEVIATION OF SHIP'S COMPASS.—John Ward Girdlestone, No. 37 Norfolk street, Strand, England.

Claim.—1. The process of treating iron, steel, or composite ships or vessels to correct and prevent compass deviation by polarizing, on the regulated system herein specified, such parts of the ships or vessels as may be requisite.

2. The employment of soft iron, in conjunction with my system of polarization, for the purpose of correcting compass deviations.

108,586. — PLANE. — Winslow B. Glover, Boston, Mass.

Claim.—1. The lever or key G, pivoted to the bed-plate, and arranged to engage with the cap-iron E, thereby regulating the bite of the plane-bit, as specified.

2. The slide C, operated by means of the lever or key D, in combination with the bed-plate B, having an inclined plane, *e*, all constructed and arranged to regulate the size of the throat of the plane, as specified.

3. Attached to the bed-plate A, the cam-lever K, in combination with the semicircular inclined planes *f f* of the bent binding-plate H, all constructed and arranged to operate as specified.

4. The slide C, having tongue *c'*, in combination with a bed-plate having an inclined slot, *l*, as specified.

5. The combination of the levers D, G, and K, plates B, E, and H, and slide C, all constructed and arranged to operate as specified.

108,587.—GAME.—D. Frank Hale, Chicopee, Mass.

Claim.—The implements of the above-described game, consisting of stand and base, *a b*, and a series of different-sized hoops, *c c'*, &c.; said standards and hoops having different colors and numbers marked thereon, as and for the purpose herein specified.

108,588, antedated October 21, 1870.—FASTENING ARTIFICIAL TEETH TO METALLIC PLATE.—Heman B. Hale, Rockford, Ill.

Claim.—1. The improved form of attachments for securing teeth to dental-plates with a suitable combining material, by making the projections from the plate about the lingual side of the teeth smaller at their bases than at their ends, as described.

2. In combination with the fastenings about the lingual side of the teeth, the application of attachments about the borders of dental-plates, substantially as described, for the purposes mentioned.

108,589.—CARPET-BEATER.—William H. Hankinson, New York, N. Y.

Claim.—1. The combination, in a carpet-beater, of the adjustable wire beaters D D, rock-shafts B C, cranks *e*, disk *e*, pins *d*, springs *h* and *j*, cranks *g*, and brush-shaft F, all arranged substantially as shown and described.

2. The springs *h*, combined with the cranks *g* and compensating springs *j*, for the purpose of actuating the carpet-beaters, substantially in the manner herein shown and described.

108,590, antedated October 11, 1870.—EXTENSION HAT-RACK.—Nathan Hayden, Chicago, Ill.

Claim.—The combination of the glass frame C, arranged with cleats H H or their equivalent, with an extension hat-rack, A B, as and for the purpose set forth.

108,591. — POTATO-PLANTER. — Theodore Herbert, Philadelphia, Pa.

Claim.—1. The cylinder B, valves C D, crank-shaft F, and the connecting or valve-rods J, when combined and arranged as shown.

2. The hopper A, cylinder B, and the valves C D, when constructed, arranged, and operated substantially as shown and described.

3. The hopper A, cylinder B, and the shut-off valve K, when combined and arranged substantially as shown and described.

108,592.—FLOWER-CASKET.—John M. Hess, Philadelphia, Pa.

Claim.—The inner case or holder C, arranged in the interior of the outer casing A, and provided with sliding handles H and H', wire gauze or screen E, or tube T and sponge *s*, as and for the purpose specified.

108,593, antedated October 8, 1870.—WIND-WHEEL.—James O. Heyworth and Herman E. Fessel, Chicago, Ill.

Claim.—1. A wind-wheel, having its sails C constructed convex on one side and concave on the other, hung upon arms B passing through them at a point above the center, and ballasted by weights D, attached to the bottom of each sail, substantially as and for the purposes set forth.

2. In combination with the above, the second series of arms E, projecting from the shaft A, arranged and operating as and for the purposes set forth.

108,594.—MACHINE FOR SECURING HEADS TO METALLIC KEGS.—William Hill, Pottsville, Pa.

Claim.—1. The wheels G, H, J, and K, acting in combination, substantially as described, to secure the head to a revolving keg.

2. The wheels K, G, and J, acting in combination, substantially as described, to secure a head to a keg, as represented in fig. 8.

3. The wheels G and H, combined as described, so that each wheel may do the work required of it without interfering with the other.

4. The wheel K, having a shoulder to act in combination with the wheel G, and a bevel to act in combination with the wheel H, substantially as described.

5. The wheel K, arranged so that it serves as a guard to the rim of the cylinder to prevent the wheel J from forcing the rim outward, substantially as described.

6. The carriage R, spindle *g*, and lever M, acting in combination, substantially as described, to control the position of the wheel G or H, or both.

7. The carriage V, spindle *k*, and lever O, substantially as described, for the purpose described.

8. The three carriages R, T, and V, as described, to determine the relative position of the edge-turning instruments, as desired.

108,595.—THREAD-SPOOL.—Isaac L. Hoard, Bristol, R. I.

Claim.—A thread-spool, molded from plaster of Paris, or any earthy substance, mixed with any desired glutinous solution to render it of sufficient hardness.

108,596. — POCKET-CUTLERY. — Daniel R. Hundley, Mountain Home, Ala.

Claim.—1. A hollow pocket-knife handle, composed of two parts, A and B, hinged together and provided with a locking-slide, *g*, substantially as described.

2. The arrangement of the recess *t* for slide *g*, alongside of the recess *r*, whereby the locking device holds together the ends of the parts A B, and, at the same time, locks an instrument in place, substantially as described.

3. The locking slide *g*, the rod *b'*, and the finger-piece *b*, combined and applied to the handle section, substantially as described.

4. The pin *c*, in combination with the finger-piece *b* and with the longitudinally-divided knife-handle, substantially as described.

5. The construction of a rivetless pocket-knife handle of two longitudinally-divided parts, A B, hinged together, the part A having partitions applied within it, substantially as described.

108,597. — REIN-HOLDER. — Davis Hurd, Lockport, N. Y.

Claim.—1. The shoulder *b*, with its bracket, forming a rest and resistance for the back action of the coil *d* of the spring-holder C, substantially as described.

2. The combination of the holding-fork C, provided with the coil *d*, shoulder *b* upon the bracket, with or without the guard D, substantially as described.

108,598. — CAR-COUPLING. — George W. Irish, Memphis, N. Y.

Claim.—In car-couplings, the head-block B, having shoulders b^1 b^2 combined with connected blocks D E, respectively, hinged and pivoted, as and for the purpose described.

108,599.—HAY AND COTTON-PRESS.—Joseph H. Johnson, Griffin, Ga.

Claim.—1. The rack *a*, shaft *b*, with or without the spool *f* and ratchet *e*, but provided with the pinion *d* and ratchet *e*, plate *i* having the detent *j*, lever D provided with the pawl *r*, and thumb-lever *s*, all arranged as described, for the purpose specified.

2. The pendulum-lever E, provided with the pawl *u*, thumb-lever *v*, and weight *f'*, ratchet *e*, and detent *w*, arranged relatively to each other and to the shaft *b*, provided with a pinion, *d*, substantially as and for the purpose specified.

3. The pendulum-lever E, provided with the pawl *u*, thumb-lever *v*, and weight *f'*, ratchet *e* and detent *w*, arranged relatively to each other and to the shaft *b*, provided with the pinion *d*, in combination with the lever D, provided with the pawl *r* and thumb-lever *s*, ratchet *e*, plate *i*, and detent *j*, arranged relatively to each other and the shaft *b*, substantially as described, for the purpose set forth.

4. The combination of the shaft *b* and spool *f*, with brake *l* and lever B, arranged as and for the purpose specified.

5. The lever H, wire *x*, and detents *j* and *w*, in combination with the ratchets *e* and *e*, when arranged as and for the purpose specified.

108,600.—COTTON-BALE TIE.—Edward P. Jones, Sun Flower county, Miss.

Claim.—1. The employment, in a bale-tie, of the converging slanting cleft C, when the same is so formed that its narrowest point of entrance shall be at its inner end, substantially as shown and described, and for the purpose set forth.

2. The improved bale-tie herein shown and described, consisting of the rectangular metallic plate A, provided with triangular openings B B', placed in reverse position, as shown, the diagonal brace D, and the inwardly-converging and slanting cleft C, when constructed, combined, and arranged for operation in the manner specified and set forth.

108,601, antedated October 15, 1870.—KNIFE-HOLDER AND GUIDER FOR HEEL-CUTTING MACHINE.—Samuel Keen, East Bridgewater, Mass.

Claim.—1. The combination of the knife C and the double flange E F, substantially as described, and for the purpose set forth.

2. The combination and arrangement of the knife C, the double flange E F, and the guide D, substantially as described, and for the purpose set forth.

108,602. — GALVANIC BATTERY. — Jerome Kidder, New York, N. Y.

Claim.—1. The platinum or other negative metal D, arranged within the battery in the form of a coil or coils around a central core, *c*, suspended from the cover, substantially as and for the purpose specified.

2. The zinc rods C C and the platinum or other negative metal coils D, rigidly attached with air-tight connections to the elastic plug B, substantially as herein described.

3. The tube E, in combination with the plug B, substantially as and for the purpose herein described.

108,603.—MEDICAL COMPOUND FOR FOWLS. Jacob H. Kipp, Millerstown, Pa.

Claim.—The combination of the ingredients herein mentioned as a remedy for diseased fowls, substantially as described.

108,604.—STEAM-GENERATOR. — Truckson S. La France, Elmira, N. Y.

Claim.—1. The dome E, chamber *g*, and pipes *h*, combined and arranged with water-space *b*, as specified.

2. The combination of steam-chambers E *g* and smoke-chamber *c*, when relatively arranged as and for the purpose described.

3. The fire-space B, water-spaces *a b*, pipes C, smoke-spaces D *e*, and superheating spaces E *g h*, all combined and relatively arranged as and for the purpose described.

108,605.—MACHINE FOR CUTTING HEELS OF BOOTS AND SHOES.—Richard C. Lambart, South Abington, assignor to David Whittemore, North Bridgewater, Mass.

Claim.—1. A center-guide, substantially as described, for the purpose described.

2. A device for registering the position of a shoe operated upon in a heel-trimming machine, substantially as described, that shoes of the same pattern thereafter operated upon may be trimmed in the same manner and to the same extent.

3. The piece containing the pattern and cam-groove, when secured to the jack by dowel-pins, that it may be readily removed from the machine and another substituted in its place.

4. A detachable heel-rest, or pattern and cam-groove, in combination with a center-guide, substantially as described, to adapt the machine for shoes of any size.

5. The improved device for releasing and fixing the center of oscillation of the jack, as described.

108,606. — METHOD OF COOLING BEER-WORTS, &c.—Oscar P. Lewis, Cincinnati, Ohio.

Claim.—1. The process of cooling beer and beer-worts, in the manner herein described, by means of the cool-ship stack D E F, tube or shaft A B, apertures G G', and screens C C'.

2. The process of cooling beer and beer-worts, in the manner herein described, by means of a volatile-liquid evaporator, with vapor-chambers or pipes beneath the fluid-chamber, connected with a pump, N, condensing-coil motor O, and loaded valve and connecting-pipes, arranged as herein described.

3. The process of cooling the normal air by compressing it in a receiver under the pressure of a loaded valve, said receiver being set upon a cooling-chamber, forming the base and containing pipes surrounded by normally cool running water, and allowing the air so compressed to expand, after it passes said loaded valve, in the pipe or room to be cooled.

108,607.—WAGON-AXLE.—William A. Lewis, Joliet, Ill.

Claim.—1. The hollow tapered case-hardened spindle *d*, formed on the axle *a*, and being a prolongation of the hollow axle *a*, so as to dispense with a separate skein, as described and shown.

2. The combination of the clip *m*, bolts *o*, king-bolt *f*, and axle *a*, constructed and arranged substantially as and for the purposes set forth.

3. The combination of the collar *c*, hinge *r*, and axle *a*, constructed and arranged as and for the purposes set forth.

108,608.—WAGON-AXLE.—William A. Lewis, Joliet, Ill.

Claim.—1. The bearings *m* and *n*, and plug *c*, in combination with the swaged tube-axle *a*, constructed and operating as set forth.

2. The metal saddle *x*, attached to the axle *a* by means of the bolt *o*, for the purpose of holding the hound, as shown.

108,609.—WAGON-AXLE.—William A. Lewis, Joliet, Ill.

Claim.—The combination of the hollow tapered spindle B and ping C, with the hollow tapered axle A, bent to give the necessary pitch and gather to the spindle B, constructed and arranged as and for the purposes set forth.

108,610. — TONGUE-BRACE AND BALANCE FOR WAGONS.—Andrew J. Mapes, Independence, Mo.

Claim.—1. The friction-sleeve, suspended from a wagon or other vehicle, and connected with the tongue, pole, or shafts by means of a brace, for the purpose of supporting said tongue, pole, or shafts, substantially as herein shown and described.

2. The shaft A, carrying the disks *b* and nut D, and combined with the sleeve C, disks *a*, ratchet-wheels *d*, and brace E, all arranged to operate substantially as herein shown and described.

108,611.—MOSQUITO-BAR.—Theophile Masac, Good Hope Plantation, La.

Claim.—The combination of the hoops B C D, cord *b*, and spring *c*, when all are relatively arranged and adjusted as and for the purpose described.

108,612.—HUB FOR CARRIAGE.—James A. Maynard, Newtonville, Mass.

Claim.—The axle-box or central portion B of the wheel, made in two parts, each tapering, and provided with a flange, *c*, and ribs *d*, in combination with the wheel A, with its grooves *a*, and the elastic packing *b*, all constructed and operating substantially as described.

108,613.—NUT-LOCK.—Henry W. McAuley, Sterling, Wis.

Claim.—The combination of the two nuts B and C, provided with grooves *a a'*, spring *b*, and slots or apertures *d d'*, and bolt A, constructed as herein set forth.

108,614.—CART-SADDLE.—William B. McClure, Alexandria, Va.

Claim.—The cart-saddle A, with groove *a*, flanges *a'*, rollers *b*, and boxes *c*, when the parts are combined and arranged as described, for the purpose set forth.

108,615.—COPYING-INK FOR PRINTING.—Charles McIlvaine, Philadelphia, Pa.

Claim.—The manufacture of printers' ink (that will press-copy) containing pigments or coloring-matter of different shades, soluble in water, or pigments or coloring-matters that are insoluble in water, but which, when mixed with soluble gum, can be conveyed by such gums, said ingredients used therewith being in or about the proportions herein specified, in order that the compounds resulting therefrom may accomplish the purpose set forth.

108,616.—DRIER.—Charles A. Moffatt, Indianapolis, Ind.

Claim.—1. The hexagonal heat-generator G, suspended by means of the pipes *e f* within the drum D, and provided with curved flanges *h h*, all substantially as and for the purposes herein set forth.

2. The revolving rack J *m*, constructed as described, and suspended from the cross-bar H, in combination with the boxes K K, provided with slots *n n*, all substantially as and for the purposes herein set forth.

3. The combination of the casing A with door B, perforated bottom C, drum D, furnace E, generator G, rack J *m*, boxes K, and lid L, all constructed

and arranged substantially as and for the purposes herein set forth.

108,617.—ORE-PULVERIZER.—Frederick C. Morse, Buckskin, Colorado Territory.

Claim.—The arrangement with the stationary convex bed-stone A and rotary concave stone B, of the step D and driver E, provided with arms *a a*, all as shown and described.

108,618, antedated October 20, 1870.—LOW-WATER INDICATOR.—Adolphus F. W. Neynaber, Philadelphia, Pa.

Claim.—1. The construction of bracket E, substantially as and for the purpose hereinbefore set forth.

2. The mode to connect my indicator with a steam-boiler, substantially as and for the purpose hereinbefore set forth.

108,619.—CANCELING-STAMP.—George G. Noyes, Worcester, Mass.

Claim.—1. The combination, with the spindle C, provided with a universal joint, I, of the canceling-cutter E, substantially as described.

2. The combination, with the head D and face-plate K, of the rotating cutter E, provided with a flange, *m*, substantially as and for the purposes set forth.

3. The combination, with the handle A and shank B, provided with nut *c*, of the holding-bolt or screw G and flange *a*, substantially as and for the purposes set forth.

108,620.—CLOTHES-WRINGER.—Abiel O'Dell, Napanee, Canada.

Claim.—The combination and arrangement of the cams M, the standards *e e*, and the base-piece T of the tub-holder, and the springs *c* and *f*, bars Q, slides *i* and K, and rollers W, and the carriage D, wire *w*, and standards A, constructed as shown, and for the purpose described.

108,621.—CHAIN-LINK AND BAR.—David A. Peloubet, Hudson City, N. J., assignor to Warren, Spadone & Co., New York City.

Claim.—1. The improved chain-link and bar, herein described, composed of a center support-collet, and sectional bars, combined and held together substantially as set forth.

2. The combination of the center support, screw-nuts, and slotted collet, as set forth.

3. The combination of the sectional bars, with shoulders, the collars, and screw-nuts, substantially as set forth.

108,622.—BED AND BED-BOTTOM.—J. William C. Peters and William A. Le Row, Chicago, Ill.

Claim.—The bed-frame, with suitable angle-irons combined with woven metallic wire, the wire being set in rubber or cement at the ends, an adjustable bolster, regulated by a rod, and pawl, and shaft, and cord, as and for the purpose specified.

108,623.—PAPER-FILE.—Simon E. Pettee and Clarence A. Wolle, Bethlehem, Pa.

Claim.—The combination of the hinged back with spring bands, which retain it in the open and also in the closed position, as described.

108,624.—MACHINE FOR DRIVING NAILS.—Samuel W. Phelps, Sandusky, Ohio.

Claim.—1. The lever D with its pivoted bearing *n*, the rod *d* and the driver *f* connected therewith by a hinge-joint, the grooved plate *r*, guide *i*, and bench C, when combined and operated substantially in the manner and for the purpose set forth.

2. The frame A A A, the upright B and its pulleys P, the wheel H, and the foot-piece *h*, strap *l*, rod *e*, strap *j*, and pulley T, and elastic band *m*, when combined substantially in the manner set forth and described.

108,625, antedated October 13, 1870.—MAP-STAND.—William F. Phelps, Winona, Minn.

Claim.—A portable rotary map-stand, consisting of a base, A, with a vertical stem, B, attached thereto, on which is mounted a hollow rotating shaft, C, having disks or plates D and E, provided respectively with concaves *c* and spring clips *f*, the whole constructed and arranged substantially as herein described.

108,626, antedated October 11, 1870.—PADDLE-WHEEL.—John W. Post, Castile, Pa.

Claim.—1. The paddles F, when provided with double roller-arms, *a*, constructed substantially as described, and operating in the grooves *w y z*, for the purposes substantially as set forth.

2. The arrangement of the grooves *w y z*, substantially as and for the purposes set forth.

108,627.—REMOVING SOLUBLE SALTS FROM ARTIFICIAL STONE.—Ernest Leslie Ransome, Greenwich, England.

Claim.—A current of steam in removing soluble salts from, and in washing, the Ransome and other artificial stone.

108,628.—GATE.—Charles D. Reed, Polo, Ill.

Claim.—1. The double latch *i*, hooks *j j*, levers *k*, and ropes *l l*, all applied together upon a gate, as and for the purpose described.

2. The unlatching device *i j k l* and the opening device *E c f g* applied together to a corner-pivoted gate A *a*, as and for the purpose described.

108,629, antedated October 15, 1870.—CIGAR-MACHINE.—John O. Reilley, Baltimore, Md., assignor to himself, William Wallace Perkins, and Calvin C. Chaffee.

Claim.—1. The lever L, in connection with the slotted arms G', for the purpose of elevating the roller D, substantially as herein shown and described.

2. The slotted bar K, in connection with the arms G' and arms I, and operated by the lever L, substantially as described, and for the purposes set forth.

3. The arrangement of the rollers D D' D'' relatively to each other, substantially as shown and described, so that they will operate to crowd the cigar into or against the headers E E E.

108,630.—INKING APPARATUS FOR COLOR-PRINTING.—Israel L. G. Rice, Cambridge, Mass.

Claim.—The employment of inking-tables D E, rollers H^1 H^2 H^3, and movable and fixed blocks J^1 J^2, for printing lines of type, and a border around them, in several colors, and by the same impression, when locked within a single form, a different-colored ink being upon the border from that upon any of the lines of type, if so desired, substantially as shown and described, and for the purpose specified.

108,631, antedated September 30, 1870.—CHURN.—James C. Richardson, Prairie Du Chien, and Lemuel Taylor, Jordan, Wis.

Claim.—1. The removable cylinder B in combination with churn A, as and for the purpose set forth.

2. The combination of churn A, cylinder B, and dasher C, all constructed and arranged to operate in the manner and for the purpose described.

108,632. — DUMPING-CAR.—William Riley, Jr., Terre Haute, Ind.

Claim.—The dumping-wheels F and axle, combined as described with stops K, hook-levers M R, rod *c*, bell-crank P, arms N, rod R', and levers T', for the purpose set forth.

108,633.—ELECTRO-MAGNETIC RAILROAD-SIGNAL.—William Robinson, Brooklyn, N. Y.

Claim.—1. A circuit-closer, arranged for operation by a moving train, in combination with a switch, draw-bridge, or device operating to break connection with the main track, and a signal or signals, substantially as and for the purpose or purposes herein described.

2. The circuit-breaker E, so arranged with reference to the circuit-closer I that a vehicle or train moving in one direction will leave the circuit closed, but moving in the other direction will leave the circuit broken, substantially as herein specified.

3. The combination with a switch or device operating to break connection with the main line of an independent circuit-closer and breaker, D, the points *a a* in the circuit, a circuit-closer and breaker, E, and I, operated by the train when in motion, and arranged in advance of the switch, and visible and audible signals, or either, substantially as specified.

4. The combination of an additional circuit for operating the bell or alarm, or additional signal, with the primary circuit under control of the train, essentially as herein set forth.

5. The circuit-breaker and closer E and I, or either, provided with irregularly-spaced keys or projections, *m* and *n*, and arranged for operation substantially as and for the purposes herein described.

108,634. — TIRE-MACHINE.—Samuel Roe, Jr., Boonville, Mo.

Claim.—The combination of the clamps C C', links F', lever E, ways B B', and spring F, all constructed and operating as described.

108,635.—WRITING-DESK.—Ernest Scheel, New York, N. Y.

Claim.—The flexible cover B, of a writing-case or desk, connected with the drawer C, so that its position will be controlled by the said drawer, in combination with shelves *b*, as shown and described.

108,636.—SPRING.—John M. Schmidt, New Albany, Ind.

Claim.—The leaves or washers F F, in combination with the inner springs B B, the bolt E, and the sleeve D, the outer springs A A at their ends by bolts *c c*, substantially as and for the purpose hereinbefore set forth.

108,637.—AUTOMATIC FAN.—John Schnell and Peter Schmitt, Waterloo, Ill.

Claim.—The arrangement of the adjustable fan attachment I, bearing-shaft I', carrying the fans J, when constructed to operate with clock-work machinery, substantially as set forth.

108,638.—REIN-HOLDER.—Francis B. Scott, Lancaster, N. Y., assignor to himself and C. S. S. Lennox, Townsend, Mass.

Claim.—The self-retaining elastic or semi-elastic rein-holder B, composed of two or more loops *b b*, connected together in one piece, constructed substantially as hereinbefore set forth.

108,639. — AWNING.—Louis G. Sert and Christian L. Schurt, Baltimore, Md.

Claim.—1. The combination of the lazy-tongs *b*, links *c*, and metal bars *a*, constructed and operating as and for the purpose specified.

2. The arrangement of the shaft *i*, sheave *k*, cord *l*, pulleys *m n*, drum *o*, shaft *p*, ratchet *s*, pawl *t*, arm *w*, and case *r*, in the manner and for the purpose specified.

108,640.—CALIPERS.—William A. Sharpe, Syracuse, N. Y.

Claim.—Calipers with movable points, constructed and formed substantially in the manner as shown and described.

108,641. —PLATES AND BARS FOR CONSTRUCTION OF PLOWS, CULTIVATOR-TEETH, &c.—William H. Singer, Pittsburg, Pa.

Claim.—A plow-share, mold-board, or cultivator-tooth, when made of solid recarbonized cast-steel, whereby it has a mild center, substantially as hereinbefore described.

108,642.—SASH-HOLDER.—Emerson D. Slater, Greenville, N. Y.

Claim.—The locking-levers *b x* and *f y*, pivoted and arranged within the case *a*, and provided with a single spring, in the manner shown and described, whereby they are adapted to be operated by alternately pushing and pulling the bar *j*, connected with their outer or free ends, as specified.

108,643. — COTTON-SEED PLANTER.—Andrew C. Smith, Roaring Falls, Tenn.

Claim.—An improved seed-planter, formed by the combination of the frame-work A B C D d^1 d^2, handles E, tongue-piece F, opener G, opening-wheel H, shaft I, hollow cylinder J, shaft K, adjustable bands L M, pulleys N P, band O, coverer Q, and spring R, or equivalent with each other, said parts being constructed and operating substantially as herein shown and described, and for the purposes set forth.

108,644.—LAND-MARKER FOR CORN-PLANTING.—Arthur C. Smith, Joyner's Depot, N. C.

Claim.—An improved marker, formed by the combination of the standard E, pivoted bar F, adjustable marker-bar G H I, adjustable supporting brace J K L, and adjustable arms with each other, substantially as herein shown and described, to adapt it for attachment to a plow-beam, as and for the purpose set forth.

108,645.—CIDER-MILL.—James K. P. Smith, Jeffersonville, Ind., assignor to himself and L. S. Shuler, same place.

Claim.—1. The combination of the hopper or shell A, the cylinder D, with the sections H and H', and the carrier-cylinder J, arranged and operating substantially as and for the purposes herein shown and described.

2. In combination with the hopper A, the inclined wings B, constructed as described, for guiding the fruit downward as the cylinder is revolved, substantially as described.

108,646. — WASHING-MACHINE. — Stephen M. Smith, Canal Dover, Ohio.

Claim.—The above-described arrangement and combination of the rubbers H and I, the levers K, pitman G, and shaft C, as set forth and shown.

108,647.—MOLDING-PIPE.—William Smith, Pittsburg, Pa.

Claim.—1. The pipe-molding pits, constructed with a passage around and below the level of the tops thereof, said passage having perforations in the side, substantially as described and set forth.

2. The conical annular thimble C, as described, in combination with the hinged door A^1, substantially as and for the purpose described and set forth.

108,648, antedated October 15, 1870.—MACHINE FOR SHAVING THE HEADS OF SCREW-BLANKS. — James F. Starrett, New York, N. Y.

Claim.—1. The combination of the series of jaw-

stocks, each of which has a flattened surface, mounted upon the carrying-wheel, and the belt for holding said stocks in position by contact with said flattened surfaces, substantially as described.

2. The combination of a continuously-revolving carrying-wheel, with jaws mounted thereon, as described, first, with rotating jigs, emery-wheels or grind-stones; second, with stationary files; third with cutters, which, while in action, progress with the blanks; these three combinations being and acting substantially as set forth.

3. The combination of a pusher, having a definite and precise range of motion with a yielding gauge not attached to or moving with a nippers, and these in combination with a supporter, and also with a ways for holding a column of screw-blanks, these three combinations being and acting substantially as hereinbefore described.

4. In combination with a continuously-revolving carrying-wheel, with jaws mounted thereon, and revolving as described, an introducing apparatus, the combination being substantially such as set forth.

5. In combination with revolving jaws mounted on a continuously-revolving carrying-wheel, cutters and cutter-stocks, and cams acting to throw cutters in and out of action, and also the combination of jaws, mounted, as described, upon a revolving carrying-wheel, with files, mounted and brought up to their work by a spring, so as to yield in case of necessity, these combinations being substantially such as set forth.

108,649.—CARRIAGE-SPRING.—Sidney Steward, Trenton, N. J.

Claim.—The carriage-spring herein described, composed of semi-elliptic spring H and diagonal spring-braces A and B, substantially as set forth.

108,650. — SPRING BED-BOTTOM. — Philip Stovall, Newman, Ga.

Claim.—The slats A, springs B, and the bars C and D, combined and arranged substantially as and for the purposes herein shown and described.

108,651.—CARPET-CLEANER.—Robert Terry, and Frederick W. Hafkemeyer, Chicago, Ill.

Claim.—1. The rotating fan G, when provided with a series of beaters, H, and arranged to operate substantially as and for the purpose specified.

2. The adjustable apron D, arranged to operate substantially as and for the purpose set forth.

3. The adjustable boxes 1 2 3 4, in combination with the cylinders B, B^2, and B^1, the whole arranged substantially in the manner and for the purpose specified.

108,652.—PUMP-SIPHON.—Thomas J. Trapp, Williamsport, Pa.

Claim.—A pump and siphon combined, substantially in the manner and for the purpose specified.

108,653. — PISTON-PACKING. — Lawrence Turner, New Orleans, La.

Claim.—1. The adjustable springs F, held in slotted plates *b c*, and combined with the spring D and adjustable wedge G, substantially as herein shown and described.

2. The chafing-plates *e e*, interposed between the adjusting-springs F F and the expanding spring D, substantially as herein shown and described.

3. The vertically-adjustable wedge G, suspended from the screw-bolt H, for the purpose of expanding the rings of the piston, substantially as herein shown and described.

108,654.—SCALE-BEAM.—John H. Usher, Buffalo, N. Y., assignor to "The Buffalo and Niagara Scale-works Company," same place.

Claim.—The key D, formed with upturned ends *d d*, in combination with the pivot-pin B and separate key-seat *c*, as hereinbefore set forth.

108,655.—MACHINE FOR ASSORTING POTATOES.—Benjamin D. Vanderveer, David A. Vanderveer, and Tunis Denise, Freehold, N. J.

Claim.—The box C C C, provided with the double sieves H^1 and H^2, operated by means of the rods F F F F, working upon the V-shaped rails G G G G and the bar K, when arranged, constructed and combined substantially as herein shown and represented for the purposes set forth.

108,656. — CORN-PLANTER. — George B. Vaughan, Marshall, Mo.

Claim.—1. The tubes D, fitted upon the axle E and provided with arms *c*, that have teeth *f* for locking into the toothed bands *b* of the wheels C, substantially as herein shown and described.

2. The crescent-shaped bar F, connected with the seed-gauge *l* and slide *m*, to operate the same by the action of the rotating arms *c*, substantially as herein shown and described.

3. The combination of the vibrating vertical bars *j*, slides *l* and *m*, reciprocating slotted bar I, hand-lever J, and seed-tube G, substantially as shown and described.

108,657.—PRESS FOR REMOVING LIQUID MATTER FROM VARIOUS SUBSTANCES.—Jason Waters, West Sutton, Mass.

Claim.—1. The case H, constructed as set forth, viz., of the two foraminous body portions, combined together and having vertical ribs and horizontal bands applied thereto, the whole being as described and represented.

2. The cross-head of the press, and its movable standard C, as pivoted together, and with the latter pivoted to the base A, as explained.

108,658.—HYDRAULIC MINING APPARATUS.—Thomas Watson, Nevada City, Cal.

Claim.—1. In combination with the hemispherical head *b*, provided with a flange or rim, *d*, the corresponding cap or socket B, connected to it by the bars *g*, provided with pivots *i i*, working in the traversing slides F, substantially as described.

2. The flange on the top of the head *b*, in combination with the lip or flange on the inside of the socket B, to limit the motion of the socket on the head, substantially as described.

108,659.—PRESERVING WOOD.—Ezra Webb, New York, N. Y.

Claim.—1. The combinations of the products distilled from coal-tar, such as carbolic acid, with products distilled from wood-tar, such as pyroligneous acid, in the preservation of wood.

2. Chloride of barium, in combination with the products of distillation of coal-tar, or with pyroligneous acid or salts thereof, or with both.

3. The method of preserving timber by forming a longitudinal chamber extending nearly from end to end of the timber to be preserved, and furnished with lateral apertures or leads, through which any preservative liquid may be introduced, in the manner and for the purposes specified.

108,660.—DIE FOR MOLDING BUTTONS.—William M. Welling, New York, N. Y.

Claim.—The divided die *a d*, with the recesses for the shanks of the button, in combination with the die *a*, having a recess, *b*, and the flanges *g*, substantially as and for the purposes set forth.

108,661.—CEMENT FOR COATING AND PROTECTING WOOD.—Henry M. Westman, East Boston, Mass.

Claim.—The compound or preparation, denominated tar-cement, of the ingredients, in the proportions and for the purposes set forth.

108,662.—SKATE.—Corydon Wheat, Geneva, N. Y.

Claim.—As an article of manufacture, the continuous skate-runner A, formed with two or more separate bearing-surfaces *a a*, by bending the same upward, as shown and described.

108,663.—TUBULAR BRIDGE.—George H. White, New York, N. Y.

Claim.—1. A tubular bridge, forming a perfect circle at any cross-section, but gradually enlarging in diameter from each end toward the center, as shown and described.

2. In combination with ordinary spiral ribs J, the arc-ribs G, chord-ribs B, and vertical ribs C, arranged to co-operate in the support of the structure, as set forth.

3. In a tubular bridge, arched ribs G, supported in heavy frame-work K at each end, as shown and described.

108,664. — UTILIZING SEWAGE. — George William Wigner, London, England.

Claim.—1. The addition, as hereinbefore described, of sulphate of alumina, sulphate of iron, sulphate of lime and alumina, or of crude alum containing these substances, or any of them, to the substances hereinbefore cited, as included in the specification of my patent.

2. The construction and use of a catch-pit, with a mud-channel and well, as and for the purpose hereinbefore described.

3. The improved mixing apparatus, hereinbefore described and illustrated in figs. 1, 2, and 3 of the accompanying drawings, that is to say, a revolving shaft, having radial arms furnished with tangs or teeth, which work between stationary tangs or teeth, as and for the purpose described.

4. The improved construction and arrangement of precipitating apparatus, hereinbefore described and illustrated in figs. 1, 2, 4, and 5 of the accompanying drawings, that is to say, tanks having sloping bottoms and mud-channels, for collecting the sediment or mud precipitated from the sewage or sewage-water passing through the said tanks, and also a well or wells, into which the said sediment or mud passes from the said channels, essentially as described.

5. The improvement, hereinbefore described and illustrated in figs. 1, 2, and 6A of the accompanying drawings, in the construction of filters used for filtering sewage-water, that is to say, stretching over that which, in filters of the ordinary construction, is the top layer of filtering substance, a sheet of canvas or other similar permeable material, and spreading a layer of sand over the said canvas or other material, as and for the purpose described.

6. The improved apparatus, hereinbefore described and illustrated in figs. 7 to 12, both inclusive, of the accompanying drawings, to be applied to hydro-extractors for the purpose of removing therefrom the substance dried therein; that is to say, a suitable cutting-tool, carried by sliders, working in brackets, the said slides being so arranged and worked as to give to the said tool the horizontal and vertical motions necessary to enable it to remove the mud or other substance accumulated around the side of the revolving basket, the said mud or other substance being discharged from the said basket either by means of an endless belt or an endless chain of buckets, or through a pipe attached to the cutting-tool.

108,665.—SAW-MILL.—William M. Wilkin, Kalamazoo, Mich.

Claim.—1. The arrangement, in a saw-mill, of one or more muley-saws with the muley-heads in which such saw or saws reciprocate, whereby they can be set to the log to saw lumber of the same or different dimensions, instead of setting the log to the saw, in the manner and by the means herein described.

2. The reciprocating guide-rod *b'*, lower muley-heads d, saw D, and its connecting devices with the guide-rod, in combination with the pitmen *b b*, having the slide-blocks and the slide-plates *b'' b''*, all constructed and arranged to operate in the manner described.

3. The spring sliding guide-keeper F, when constructed and applied to muley-heads d, in the manner and for the purpose specified.

4. The slide-blocks *f*, pins *f'*, muley-heads d, having inclined slots *d''*, in combination with the spring sliding-keeper F, as herein described for the purpose set forth.

5. The upper and lower muley-heads d, carrying saws D in combination with the setting-screws E, guide-rods *e'*, gear-wheels *e*, and setting-shaft *e''*, in the manner and for the purpose described.

6. The log-carriage, when constructed with the sides K K, cross-girts *k*, inwardly-projecting head-blocks *k' k'*, supporting wheels *m*, and bearing upon track *l'*, in the manner and for the purpose described.

108,666, antedated October 8, 1870.—ROOFING-CEMENT. — James T. Wilkinson, Lockport, N. Y.

Claim.—The use of the article known in commerce as "pitch," a product, in a modified form, of the pitch-pine of the southern States of the United States, in combination with anthracite coal, gypsum, tan-bark, coal-tar, and India rubber, or other substances substantially the same, and which will produce the same effect, combined in the manner and for the purposes as above set out, or in a manner the equivalent thereof, and producing like effects.

108,667.—LAMP-BURNER.—Samuel R. Wilmot, Bridgeport, Conn.

Claim.—1. The lamp-cap or screw A, having its points *a a*, by which it is united to the base, so arranged and spaced, and of such depth, width, and number, that, when combined with the base, two of the spaces between said points form covered bearings for the ratchet-wire outside of the wick-tube, and in proper relation thereto for the operation of the ratchets, substantially as specified.

2. The base B, constructed with a central dome, an annular depression, and an outside swell, substantially as specified, in combination with the cap A, constructed with points and spaces between the points, as herein set forth.

108,668.—BARK-SHAVING MACHINE.—Martin Winger, Ephrata, Pa.

Claim.—The series of rolls 1, 2, 3, 4, 5, and I, in combination with the cutters N and their adjusting mechanism, as shown and described.

108,669.—MANUFACTURE OF QUERCITRON-BARK.—Martin Winger, Ephrata, Pa.

Claim.—1. The improved method of treating and manufacturing quercitron-bark by submitting the previously-crushed bark to the rubbing action between a pair of horizontal stones, substantially in the manner and for the purpose specified.

2. The soft fibrous product of quercitron-bark, manufactured substantially in the manner herein specified.

108,670.—RAILWAY GATE.—Edwin Woodbury, Sharon, Pa.

Claim.—The combination of the centrally-pivoted gate C *c'*, coiled spring E, bent stop-levers H, lever G *g'*, rods J, whether arranged in pairs or singly, and pivoted blocks or bumpers I with each other, substantially as herein shown and described, to adapt them for use on a railway track, as and for the purpose set forth.

108,671, antedated October 7, 1870.—PLOW-HANDLE.—William E. Wyche, Brookville, N. C.

Claim.—The sleeve B, having two sockets at right angles to each other, combined with a handpiece, C C, and plow-handle A, each relatively constructed, and all arranged to form an improved attachment for plows, as shown and described.

108,672.—PLANTING AND FERTILIZING-MACHINE.—Samuel Leeds Allen, Cinnaminson, N. J.

Claim.—1. The annular slide G, adapted to the

exterior of the reservoir A, having openings corresponding to the openings *b* in the same, in combination with the spring *d*, for securing the slide in any position to which it is adapted, all substantially as described.

2. The plow H, pivoted to the frame F of the machine and controlled by a lever, J, also hung to the frame of the machine, and adapted to the rear edge of the plow, all substantially as specified.

3. The perforated conductor *k*, arranged in respect to the reservoir A, substantially as herein described.

4. The combination, with the said conductor, and with the curved short arm of the lever J, of the receptacle L.

5. The receptacle L, pivoted to the frame of the machine, and arranged to be tilted, substantially as described.

6. The combination, with the perforated conductor *k*, of a spreading-plate, T.

7. The lever J, connected at the extremity of its long arm to a roller, R, and having a curved short arm adapted to the three-fold purpose of supporting the plow H, of serving as a conductor for the seed or fertilizer, and as a medium for the attachment of the spreading-plate T.

8. In combination with the within-described machine, the adjustable and detachable marker S.

9. The combination of a plow, and a flanged wheel or wheels, as described.

108,673.—Lubricating Device for Bolt-Threading Machines.—William Armstrong, Kent, Ohio, assignor to himself and Ezra Miller, New York City.

Claim.—The adjustable oil-feeder B, applied to the cutter-carrying head of a bolt-cutting machine, to operate substantially as described.

108,674.—Wringing-Machine. — Elbridge G. W. Bartlett, Providence, R. I.

Claim.—1. A catch and latch-lever compress, substantially as described, in combination with the cross-bar H and the boxes of the upper squeezing-roller, as herein specified, for the purposes set forth.

2. The thumb-screw I, nut or hollow shank J, and pressure-pad K, all in combination substantially as described.

108,675.—Machine for Felling Trees.—Henry J. Beard, New Sharon, Me., assignor to himself and James Hawes, Jr.

Claim.—The tree-feller, consisting of the screw A, rounded at its lower end, which rests in the socket of a detachable step, C, and carrying a nut, B, having two radial arms corrugated and beveled upon their upper edges, all combined and operating substantially as and for the purpose specified.

108,676.—Paper-Cuff.—Sumner A. Bemis, Albert E. Foth, and James W. Goodrich, Springfield, Mass.

Claim.—As a new article of manufacture, a paper, or paper and cloth cuff, consisting of two parts or half-cuffs, A B, having coinciding curved inner edges, flexibly united by a straight band of textile material, so as to provide a space between their edges and adapt them to be folded and packed, all substantially as set forth.

108,677.—Machine for Heeling Boots and Shoes.—Horace H. Bigelow, Worcester, Mass.

Claim.—1. A spring holding-die, for retaining the heel in proper position while it is being secured to the boot or shoe, substantially as set forth.

2. The combination, with the holding-die G, of the driving-stud I, provided with a head-plate, *c*, substantially as and for the purposes set forth.

3. The combination, with the holding-die G and driving-stud I of the spring *d*, substantially as and for the purposes set forth.

4. The combination, with the holding-die G and driving-stud I, of the relieving-spring device M M' M², and adjusting-screws N' and *g*, substantially as and for the purposes set forth.

5. The combination, with the driving-stud I and disk F, of the adjusting-screw *g*, substantially as and for the purposes set forth.

6. The combination, with a series of holding-dies, G, and driving-studs I, of the rotating plate or disk F, substantially as and for the purposes set forth.

7. The combination, with the spring-die G, of the depressing-lever Q, rod S, and treadle T, substantially as and for the purposes set forth.

8. The combination, with the holding-die G, driver-stud I, and operating plunger E of the swinging jack-spindle L, substantially as and for the purposes set forth.

9. The combination, with the jack-spindle L, of the hand-lever L' and handle L², substantially as and for the purposes set forth.

10. The combination, with the operating plunger E and power-dog H, of the bell-crank shipping-lever H², connecting-rod O, and treadle P, substantially as and for the purposes set forth.

11. A machine for heeling boots and shoes, the parts of which are constructed and combined together, substantially as shown in the drawing and herein described.

108,678.—Machine for Finishing Heels on Boots and Shoes.—Horace H. Bigelow, Worcester, Mass.

Claim.—1. The arrangement of the shaft A, and the fan-wheel and finishing emery-wheels mounted on the same, and the casing constructed to cover and surround said fan and emery-wheels, without inclosing the said shaft, as herein shown and described.

2. The arrangement in the ends of the casing and opposite the emery-wheels of the doors H, provided with the openings K, substantially as and for the purposes shown and set forth.

108,679. — Detachably-Tipped Whip.—Pardon Boyden, Amsterdam, N. Y.

Claim.—An improved whip, when the tip is secured to the lower joint by the elongated tapering tube A, with slotted end and exterior screw-threads, and the inner threaded ferrule D, all as shown and described.

108,680.—Reeling-Machine.—John Briggs, Higganum, Conn.

Claim.—The combination of the shaft B, wheels or pulleys C C, hinged arms D D, reels G H, provided each with one pivoted pin, *b*, guide-bar I, spring bars L L, and pins *h h*, all constructed and arranged substantially as and for the purposes herein set forth.

108,681.—Fan.—Otto Brueck, New York, N. Y.

Claim.—As a new article of manufacture, a folding-fan, provided with sliding handles B, secured to the cheeks A by means of loops *a*, which have spurs *b*, the whole constructed and operating substantially in the manner herein shown and described.

108,682.—Piston.—Isaiah Davis Buck, Conshohocken, Pa.

Claim.—1. The stock A, its flange *a*, and recesses *i*, in combination with the follower F, fitting against the head of the stock, the rings C D D', and wedges H, immovably confined between the follower and flange *a*, as and for the purpose described.

2. The said stock, recessed at *i*, in combination with the said wedges, recessed near their outer ends, as and for the purpose specified.

108,683.—Bracelet.—Henry Carlisle, Jr., Philadelphia, Pa.

Claim.—1. The application, to the joint of a bracelet, of a spring, substantially as and for the purpose described.

2. An elastic strip, applied to a bracelet, and constituting its hinge and spring, substantially as set forth.

3. The strip C, arranged within the bracelet, forming its joint and hinge, and having its ends constitute the catch or fastening, substantially as and for the purpose described.

4. The bracelet A B B', in combination with an inclosed strip, C, substantially as and for the purpose described.

108,684.—Horseshoe.—Jesse K. Christopher, Dayton, Ohio.

Claim.—1. An elastic and flexible horseshoe, composed of "vulcanized" India-rubber, for the purpose set forth.

2. An elastic and flexible horseshoe, composed of "vulcanized" India-rubber combined with a non-elastic foundation of leather, fibrous or other suitable material, as and for the purpose set forth.

108,685.—Coupling Attachment for Piano.—John Clark, Philadelphia, Pa., assignor to himself and Alfred Adamson, same place.

Claim.—1. The arrangement above the keys of a piano of a series of independent arms and levers, H and F, and devices, substantially as described, whereby any desired portion of the series of arms and levers may be caused to operate together, substantially as described.

2. The combination, with the said arms and levers, of a roller or cylinder, I, for the purpose specified.

3. The said roller, with its plain portion *y* and spiral enlargement *z*, when one or both edges of the latter are formed into stops *s*, as set forth.

4. The said roller, controlled by a pedal, or its equivalent, and spring, as specified.

108,686.—Cutting Apparatus for Harvesters.—Thomas J. Clark and George M. Clark, Higganum, Conn.

Claim.—The combination of the curved finger-bar A, hollowed finger D, and leger-plate B, connected in a groove in the finger, and extended over and down the inner side of the finger-bar, all substantially as set forth.

108,687.—Machine for Skiving Leather.—John P. Crooks, Hopkinton, assignor to George E. Franklin, Natick Mass., assignor to Leonard Morris, same, place.

Claim.—1. The curved knife-carriage G, provided with knives or cutters *d*, and curved gauge-bars *f*, and having a rectilinear reciprocating motion between curved guides F, as described, and operated by a cam, E, a' driving-lever, B, and a connecting-rod, P, pivoted to swivel-studs E', substantially in the manner and for the purpose set forth.

2. In combination with the curved knife-carriage operating as described, the curved clamps H, and cross-heads I, and yielding lever-connections, as set forth, and operated by a cam, E, and levers L and M, substantially in the manner and for the purpose specified.

3. The lever connections N, constructed as described, and combined with the cross-heads by yielding socketed springs *m*, in the manner and for the purpose set forth.

4. The cam E, constructed as described, and provided with a pin or stud, *e*, whereby it is adapted for operating the driving-lever B and the roller-lever L, and their specified connections, substantially as described, and for the purpose specified.

5. The driving-lever B, constructed as described, with a roller-groove, *b*, and provided with a swivel-stud, E', and connected with the ends A by a shaft-C, and with the curved knife-carriage, and operated by the cam E, in the manner and for the purpose specified.

6. The combination, substantially as described, of two branches or sets of operating elements, one branch consisting of the cam E, lever B, swivel-studs E', connection P, and curved knife-carriage G, provided with cutters and guides; the other branch or set of elements consisting of the cam E, roller-lever L, levers M, connections N, cross-heads I, curved clamps H, and connections *e*, all arranged to effect the objects herein set forth.

108,688.—Self-acting Mules for Spinning.—John Cumnock, Salmon Falls, N. H.

Claim.—The combination, with the cam-shaft A, of the intermittently-toothed bevel-gear B, the bevel-gear C, its shaft D and spring-bearing *l*, driving-wheels E F, escape-wheel H and its spring I, and escape-lever *p*, all arranged and to operate as hereinbefore described.

108,689. — Washing-Machine.—Ezra Davis, Keokuk, Iowa.

Claim.—The combination and arrangement of each of these parts to form a washing-machine, to wit: The foot-lever F, the pitman-bar G, the hand-lever H, the pitman E, cylinder B, box A, fly-wheel C, peculiarly-formed rollers N N N, part I, and concave K, all substantially as shown and set forth.

108,690. — Harrow. — James Dawson, Greenwood, Ill.

Claim.—The coupling, consisting of the hinges *b d* and swivel *c*, the swivels being arranged on opposite sides of the harrow-sections, as and for the purposes herein set forth.

108,691. — Cooking-Range. — Royal E. Deane, New York, N. Y.

Claim.—The combination with the oven-door, provided with the stops of the weighted uprights, when the same shall be constructed and operate substantially as and for the purposes set forth.

108,692.—Rotary Disintegrator.—Henry Ducsh, Baltimore, Md.

Claim.—In the disintegrating-mill, such as described, the arrangement of clearers P, between the casing B and cylinder-head or heads D D', substantially as and for the purpose described.

108,693.—Concrete for Pavement, &c.—George Hugh Sinclair Duffus, Baltimore, Md., assignor to himself and Henry J. Davison, New York City.

Claim.—The combination of the residuum of petroleum with rosin, ashes, and gravel, all being prepared in the manner and in the proportions specified, for the purposes set forth.

108,694.—Hollow-Wick Lamp-Burner.—John W. Emerson, Milbury, Mass.

Claim.—The case or cap B, inclosing the wick-raising devices, and carrying the outer wick-tube C, in combination with the stationary tube D and lamp-top or collar A, as shown and set forth.

108,695.—Retort-Furnace.—Adolph Faber Du Faur, Newark, N. J., assignor to himself and Edward Balbach, Jr.

Claim.—1. The combination of a furnace supported by gudgeons with a retort, substantially in the manner herein shown and described.

2. The arrangement of a smoke-flue, *g'*, projecting from the rear wall of a furnace supported by gudgeons, said flue being capable of turning off from or up against the mouth of the flue leading to the chimney, substantially in the manner set forth.

108,696.—Pavement.—Lewis S. Filbert, Philadelphia, Pa.

Claim.—The improved composition for pavements and other purposes, as above described and set forth.

108,697.—Wood Pavement.—Lambert T. Follansbee, Washington, D. C., assignor to himself and George W. Linville, same place.

Claim.—A pavement, consisting of parallel rows of oblong rectangular blocks A, with their upper side corners beveled, having interposed at suitable intervals parallel wedging rows of diagonally bisected blocks *b c*, with their upper outer side corners beveled, said blocks having their sides coated with tar, and the whole arranged as herein described.

108,698.—Railway-car Coupler and Buffer.—Perry G. Gardiner, New York, N. Y.

Claim.—1. The above-described arrangement of the buffer and coupling-hook, in which the outer face of the buffer projects beyond the inner face of the coupling-hook a greater distance than the range of motion of the draw-spring, and the range of motion of the buffer-spring is greater than the distance which the outer face of the buffer projects beyond the inner face of the coupling-hook.

2. The coiled spring, projecting into the slots of the plates *f f*, so as to relieve the guides *f' f'* from the strains produced by the draft or the bumping together of the cars.

3. The coupling-hooks, constructed with the grooves 4, operating as described, and with the faces to which the draft is applied perpendicular to the line of draft when the cars are coupled and moving in a straight line.

4. The combination, operating as described, of the hand-wheel, spindle, crank, and chain, with the coupling-hook, and also with the spring *k* and pusher, or their equivalents.

108,699.—Plow.—Martin L. Gibbs, Canton, Ohio.

Claim.—1. The standard C, constructed with the raised flanges *k l m n o p r*, in combination with the cast-iron mold-board P and share U, having the countersunk grooves *k' l' m' o' m' m' p'*, and *r'* formed in their bearing-faces, whereby either the cast-iron mold-board or share may be replaced by a cast-steel mold-board or share, without changing other parts, or affecting the form or position of the wearing-faces of the plow, substantially as before specified and shown.

2. The combination of the plow-standard C provided with the countersunk holes g^2 g^2, land-side H, provided with raised bolt-hole flanges g^1 g^1 and handle-flange K, beam-handle B, beam A, the several parts being constructed and arranged substantially as described.

3. In the construction of plows, the handle-fastening L M N, consisting of the flat head-plate L, and the bent clamping-bolts M N, and the several parts constructed and arranged substantially as described.

108,700.—Wooden Box.—William Gilbert, Catskill, N. Y., assignor to N. K. Fairbank, Chicago, Ill.

Claim.—As a new article of manufacture, a wooden box with a bottom of sufficient thickness to secure and hold nails, in combination with a veneer partially cut crosswise and bent around and secured to said bottom-piece, substantially as described.

108,701.—Evaporating Apparatus.—Samuel D. Gilson, Syracuse, N. Y.

Claim.—1. The hollow dripping-pipes, formed with a slot or opening, and operating substantially as described.

2. The hollow rotary evaporating steam-chamber or cylinder, provided with an opening, H, for the passage of condensed steam, substantially as described, for the purpose set forth.

3. A hollow rotary steam-evaporating cylinder, in combination with an evaporating-pan or reservoir, substantially as described.

4. The combination of a knife or scraper with a dressed or undressed revolving steam-cylinder, substantially as set forth.

5. The dripping-pipes E E, steam-chamber or cylinder C, in combination with the evaporating-pan or reservoir A and the knife G, substantially as described.

108,702.—Railroad-Car Heater.—Pierre Grandjean, Paris, France.

Claim.—1. An apparatus for heating and ventilating carriages and boats, constructed with an air-chamber, I, a series of pipes, J, and a distributing-chamber, I'', substantially as shown and described.

2. The combination of the fire-box P with the air-chamber I, pipes J, and distributing-chamber I'', substantially as set forth.

3. The shaking lever T, in combination with the grate P', said lever being actuated by the motion of the car, as set forth.

108,703.—Sectional Steam-Generator.—John Griffith and George W. Wundram, New York, N. Y.

Claim.—1. The circulation-pipes M, protected by and situated between the wall O and the furnace-crown, in combination with the top row of the front heads E, with the drum K, and with the rear heads E' of a sectional steam-boiler, substantially as shown and described.

2. The air-chambers P Q, in combination with the circulation-pipes J M, substantially as set forth.

3. The air-chamber Q, in combination with the smoke-flue I and with a steam-boiler furnace, A, constructed and operating substantially in the manner shown and described.

4. The partition-wall O, protecting the circulation pipes M against the direct action of the fire, substantially as described.

108,704.—Balance Slide-Valve.—Thomas J. Hamer and Martin Walla, Sunbury, Pa.

Claim.—The combination of the perforated grooved plate C, with packing-ring or joint D F, of any shape, supported above the valve A by the studs or bolts B B, all substantially as and for the purposes set forth.

108,705.—Pump.—George Hibberd, Wheeling, West Va.

Claim.—The within-described pump, consisting of chamber A, pipes B D, adjustable nozzles E F, said nozzle F being provided with aperture S for the escape of waste or surplus water, all constructed and arranged to operate in the manner shown and for the purpose described.

108,706.—Square-Sail for Fore-and-aft Vessel.—Armine A. Holling, Pultneyville, N. Y.

Claim.—The combination of the yard A with the traversing half-sail B, when the latter is bent thereto by the means described, for the purpose specified.

108,707.—Cooling Buildings.—Theodore Krausch, New York, N. Y.

Claim.—1. The pipe E, inclosed within the air-trunk C, and communicating with the latter as described, with the air space *f*, surrounding the ice-chamber B, said air-space and ice-box being arranged in the top part of the building, and operating in connection with the lower rooms, substantially as and for the purpose described.

2. The vertical air-trunks *k k'*, central pipe E inclosed within the air-trunk C, in combination with the air-space *f* surrounding the ice-chamber B, and operating with reference to the lower rooms, as herein shown and described.

3. In combination, the air-space *f* surrounding the ice-chamber B, arranged in the top of a building, and the central pipe E of a steam-jet apparatus and operating as herein set forth.

4. The pipe *m*, with openings *n*, in combination with the stand-pipe *p* of the waste-water chamber for the purpose of cooling the incoming currents of air.

108,708.—Door and Alarm-Bell.—Gasway O. Lackey, Akron, Ohio.

Claim.—1. The wheel P Q, provided with the plate P, having two or more radial slots *r s* formed therein, as described, in combination with the shaft R and crank or knob S, substantially as and for the purpose specified.

2. The hammer-arm U and rod W, with sliding washer X, or its equivalent, in combination with the wheel P Q, provided with the radial slots *r s*, substantially as and for the purpose specified.

3. The combination of the crank-shaft R with crank or knob S, wheel P Q with radial slots *r s*, rod W with sliding washer X, hammer-arm U with hammer T, bow-spring V, and gong M, the several parts being arranged and operating substantially as and for the purpose specified.

4. The liberating piece D, provided with the counterweight E, and having the slot *d* and notch *e* formed therein, substantially as and for the purpose specified.

5. The latch-piece C, having the notches *c* and *a* formed therein, as shown, substantially as and for the purpose specified.

6. The combination of the latch-piece C with notches *c a*, liberating piece D, with counterweight E, slot *d*, and notch *e*, cord *b*, lever F, arm *h*, alarm mechanism H L I N J K, and gong M, the several parts being arranged and operating substantially as and for the purpose specified.

108,709.—Drawing and Twisting-Head for Spinning-Machine. — Samuel W. Lawrence, Philo Walden, and Joseph W. Huntoon, West Eaton, N. Y.

Claim.—1. The fissured rotating shaft A and stop *b c*, in combination with the slotted disk C, bearing the drawing-rollers G G, which are rotated by the pinion *l* and the spur-wheel *s*, engaging with the stationary gear-wheel or trundle *z*, as and for the purposes specified.

2. In combination with the fissured rotating shaft A, the cleft bearings D D, fissured pulley B, and beveled rollers G G, having double motion or rotation, as and for the purposes shown and described.

3. In combination with the tube A and drawing-rollers G G, having a double rotary motion, the adjustable plate *m*, slotted disk C, pinion *l*, spur-wheel *s*, and stationary wheel *z*, as and for the purposes specified.

4. In combination with the rollers G G, the slotted bearing-plate D D, cleft rotating disk C, coiled spring *h*, and partition *r*, substantially as shown and described.

108,710. — Steam Atomizer. — Isaac P. Leete, Philadelphia, Pa.

Claim.—1. The boiler A, provided with the retort B, in combination with the receiving-chamber C, substantially as and for the purposes herein set forth.

2. In combination with the boiler A and chamber C, the chambers D D, arranged substantially as shown and described, and for the purposes herein set forth.

3. The atomizer E within the receiving-chamber C, substantially as and for the purposes herein set forth.

108,711.—Vapor-Burner.—Daniel Leonard, Chicago, Ill.

Claim.—The burner, above described, consisting essentially of the stem A and the cap C, having the holes *c c n n*, and so constructed as to leave a space, *s*, between it and the stem, substantially as and for the purposes specified.

108,712, antedated October 15, 1870.—Combined Stalk and Weed-Cutter and Land-Roller. — William Leslie, Fort Madison, Iowa.

Claim.—1. The frame, formed of the side-beams A A, center-beam A', bars C C, cross-bars B B, and platform D, all constructed and arranged substantially as shown and described.

2. The runners I I and I', connected by the cross-bar J, in combination with the screw-rods K K, substantially as and for the purposes herein set forth.

3. The arrangement with the frame constructed as herein described, and provided with the runners I I and I', bar J, and screw-rods K K, rod O and colters M M, all constructed to operate substantially as set forth.

4. The arrangement, upon the rear part of the frame as constructed, of the two shafts E E, provided with circular cutters G G, and box H, said shafts being removable, as set forth.

108,713. — Apparatus for Preparing Lakes and Colors.—John Lucas, Philadelphia, Pa.

Claim.—1. The mixer B, any desired number of vessels A, and a mixing-vessel, E, with their cocks and pipes, the whole arranged substantially as described.

2. The combination of the mixer B, vessels A, and reciprocating sieves *b'*.

3. The vertical shaft D, in combination with the vessel E and sieves *b'*.

4. The combination of the receivers *e'* with the vessels A and E.

5. The vessel E with its mixer or agitator, and series of cocks *f* and spout F'.

6. The combination of the vessel E, spout *g'*, and vessel H.

7. The combination of the mixing vessel H, any desired number of vessels E, and any appropriate number of vessels A with pipes and spouts, arranged substantially as described.

8. The combination, with the vessel H and its agitator, of the pump herein described, or any equivalent pump, and the within-described press or presses and system of pipes, all arranged substantially as described.

9. The safety-valve *l* in the pipe leading from the force-pipe to the vessel H.

108,714.—Stop-Valve.—Henry G. Ludlow, Troy, and Jabez Stone, Waterford, N. Y., assignors to Henry G. Ludlow.

Claim.—1. An indicator for determining and regulating the position of a stop-valve or valves, operated by the revolving motion of the stem from which the valve derives its opening and closing movement, as herein described.

2. The combination, substantially as described, of the revolving stem or sheath G of a stop-valve, the worm L, and indicator J, for the purpose of indicating the position of said valve.

3. The combination of the valve-box A, the valve E, with its carrier F, the suspending screw-stem H, the revolving stem or sheath G, and the indicating device J and L, the several parts being constructed, arranged, and operating as herein described.

108,715.—Machine for Sizing and Felting Hat-Bodies. — George A. Mandeville, Newark, N. J., assignor to himself and Abram C. Wheaton, same place.

Claim.—1. The machine for sizing and fulling hat-bodies, constructed as herein described, with the concave bed B, adjusting supports C, and swinging presser J, with yielding and adjustable bearings, all substantially as set forth.

2. The inclined supports C C and the lever E, or other equivalent device for adjusting the same, for supporting the bed B at any height.

108,716. — Harvester.—William Thomas Miller, New Geneva, Pa.

Claim. — The whiffletree L, provided with an elongated slot in which the bolt *i* works, and connected by means of the stay *f* to the tongue K, and by the draft-bar *h* to the axle outside of the wheel

nearest the cutter-bar, substantially as and for the purposes herein set forth.

108,717.—CORN-COVERER.—Isaac N. Monroe, Bridgeport, Ill.

Claim.—The arrangement of the A-shaped frame A, its widest portion being in front and suspending the roller B, and provided with obliquely placed harrow-teeth *a a*, and scraper *b* on its rear, said scraper and rear part of the frame operated upon the earth while its front is elevated by the roller, as set forth, and for the purposes described.

108,718. — STEAM-ENGINE.—James Montgomery, New York, N. Y.

Claim.—1. The combination of the duplex steam-chests D^1 D^2 and valves E^1 E^2, arranged and operating substantially as described, so as to insure that the steam will be expanded twice in the same cylinder.

2. In a steam-engine constructed with a trunk or hollow piston-rod, the piston constructed substantially as herein described, with means for attaching the pitman removably to its central part, and with a wedge-shaped ring on its periphery for packing or tightening it within the cylinder, in the manner explained.

3. The combination of the pitman I with a removable part, J, either attached to or constituting the center of the piston G, substantially as and for the purposes set forth.

4. The combination of the double steam-chests D^1 D^2, and valves E^1 E^2, arranged to operate substantially as described.

5. The shield L, applied substantially and for the purposes set forth.

6. The peculiar packing-ring, in combination with the set-screws *j j*, shown in fig. 1, all as and for the purpose made known.

108,719. — PEG-BOX FOR PEGGING-MACHINE. — Albert Worthington Moore, East Brimfield, Mass.

Claim.—1. The pressure-plate G, employed to confine peg-wood and severed pegs of any thickness, when combined with a feed-roller, F, and with a peg-box fed from the end, substantially as set forth.

2. The removable cap K, constructed with a groove, *k*, to receive a driver of any required size corresponding with the thickness of wood being worked.

108,720. — CARRIAGE-CLIP. — Francis B. Morse, Plantsville, Conn., assignor to himself and H. D. Smith & Co., same place.

Claim.—1. A carriage-clip, in which the bolt portion extends onto clip, and is divided into branches to the right and left, substantially in the manner set forth.

2. A carriage-clip, in which a recess, C, is formed in the body dividing it into the two portions B B, as and for the purpose described.

108,721. — MACHINE FOR CUTTING AND SMOOTHING THE ENDS OF PENCILS.—Teile H. Müller and Henry C. Benson, New York, N. Y., assignors to Joseph Reckendorfer, New York City.

Claim.—1. The combination, in the pencil feed-hopper, of parallel partition-boards, and rollers with an elastic surface, whether indented or not, and composed of rubber, bristles, or other like substance, the rollers being arranged in relation to the partitions, and operating in connection therewith, substantially as described, so as to remove excess of pencils from the throat of the hopper or channel, and allow free delivery of the pencils to the feed-apron and cylinder.

2. The endless feed-chain, composed of links united, substantially as described, each of said links being provided with a transverse trough on top, and a recess on the side for the teeth of the driving-wheel to engage in or with, as and for the purposes set forth.

3. The combination of the two endless feed-chains, the chain-tightening roller, and the roller or cylinder, grooved continuously with the trough in the chains, and provided with gear or toothed heads for carrying the chain, substantially as shown and described.

4. The construction of the grooved pencil-carrying cylinder with a correspondingly grooved steel face, so that the same, in connection with the cutter, may produce a scissors or double draw cut, substantially as herein shown and set forth.

5. The combination, with the feed-chain, of the supporting platform gauge, arranged between the carrying-roller and tightening-roller, whereby the chain is prevented from slacking between the rollers, thus insuring the regular delivery of the pencils on the feed-apron.

6. The combination, with the feed-chain, of the inner gauge, placed at the point where the pencils drop from the hopper into the trough in the chain, for determining the depth to which the pencils shall enter the trough, substantially as shown and set forth.

7. The combination of the feed-chain and its rollers with the hopper, made adjustable in relation to the said feed-chain, substantially as and for the purpose set forth.

8. In combination with the feed-chain and carrying-roller, one or more elastic rollers arranged immediately over the carrying-roller, whereby the pencils are firmly held in the grooves of the cylinder or carrying-roller and the troughs of the chain-links during the cutting operation, as set forth.

9. When two or more elastic rollers are combined with the carrying-cylinder and feed-chain, as set forth, the arrangement of said rollers with intermediate spaces, substantially as shown and described, so as to allow for the lateral expansion of the rubber when subjected to pressure.

10. The circular, flat, or plane-surfaced knife or blade, set at an angle, both vertically and horizontally, in reference to the plane which passes at right angles through the axes of the pencils to be operated on by said knife, substantially as and for the purposes set forth.

11. The combination of the adjustable knife and its axis or shaft with the bracket for supporting the same, adjustable by means of a ball-and-socket or universal joint, substantially as and for the purposes set forth.

12. The combination, with the circular plane-surfaced blade or knife, of the grinding-wheel, supported upon a shaft whose upper bearing is laterally adjustable upon the vertically-adjustable frame or standard which holds the cutting apparatus, as set forth.

108,722. — MATERIAL FOR JOURNALS AND BEARINGS.—Eliza D. Murfey, New York, N. Y., assignor to the Manhattan Packing Manufacturing Company, same place.

Claim.—1. A bearing for journals, &c., consisting of a sheet of fabric, or other material, to which rubber and a bearing material are applied, substantially as set forth.

2. A rubber-coated sheet, the bearing face of which consists of a bearing material worked into the face of the rubber, as described.

3. The combination of a bearing material with a perforated sheet, as set forth.

108,723. — EARTH-EXCAVATOR.—John W. Myers, Lyons, Iowa.

Claim.—The combination, in the manner herein set forth, of the central plunger G, with the inclosing spades H H H, and with the levers E C B, for operating the same.

108,724.—GANG-PLOW.—William Newlin, Attica, Ind.

Claim.—1. In combination with the axle A, the clevises H H, connected by the strap-joints *e d*, and securing the plow-beams I I, all substantially as set forth.

2. The combination of the bent axle A, tongue D, bearing-bar C, cogged staple G, and bar L, with slips *n* and set-screws *o o*, all as shown and described.

3. In combination with the strap-joint clevises H H, the plow-beams I I, the front ends of which are curved as described, and provided with the lugs *i i*, substantially as and for the purposes herein set forth.

4. The spring-ring K, for connecting the rear ends of the plow-beams, substantially as and for the purposes herein set forth.

5. The arrangement of the shaft *g*, with its bearings in the tongue D and bar *f*, the lever A and chains or rods *k*, substantially as shown and described, and for the purposes set forth.

6. The stay or side rods *m m*, connecting the plow-beams with the axle, substantially as and for the purposes herein set forth.

108,725. — ROSETTE FOR BRIDLE.—James O'Brien, Cedar Rapids, Iowa.

Claim.—In combination with the disks A and B, provided with the screw C, the angular rods G, substantially as and for the purpose specified.

108,726. — FLUE-CLEANER FOR COOKING-STOVES.—Henry L. Palmer, Stillwater, N. Y.

Claim.—1. The flue-scrapers F F F, when combined with a three-flue cooking-stove in the manner herein described, with guides of any suitable form.

2. The ribs E E, supporting the flue-strips D, and extended to the front of the stove, in combination with the flue-scrapers F F F, arranged to operate as specified.

3. The combination, in a three-flue cooking-stove, of the scrapers F G, guides E, and openings H H', both at front and rear, as and for the purposes set forth.

108,727.—DRAFT-EQUALIZER.—William M. Perkins and Theodore F. Vandergift, La Fontain, Ind.

Claim.—The combination and arrangement of the whiffletree A, pulleys E E E, equalizing-strap C, and pivoted plates D D, as specified.

108,728.—PORTABLE PRIVY.—William H. Pulver, Schuylersville, N. Y.

Claim.—1. The funnel-shaped cover B, provided with the perforated U-shaped collar C, substantially as and for the purposes herein set forth.

2. The combination of the vessel A with flange *a*, cover B with rim *b*, perforated collar, C, valve *d*, seat D, and lid E, all constructed and arranged substantially as and for the purposes herein set forth.

108,729.—BEDSTEAD.—Henry B. Ramsey, Rockville, Ind.

Claim.—1. The combination of the segmental spring-boards D and cord or cords E, substantially as and for the purpose set forth.

2. The combination and arrangement of the slides G, pawls G', and segmental spring-boards D, substantially as and for the purpose set forth.

108,730.—PLOW.—George W. Ream, Canton, Ohio.

Claim.—The plow-standard A, having the triangular depression *h* on its share side, and the depression E with its narrow front bearing-face *d*, and the small rear bearing-face *e*, on the land-side, arm F, and the cast-iron share B, with the raised piece *b* cast on its under side, when each is formed and constructed substantially as described, and all are combined as set forth.

108,731.—MACHINE FOR BUNDLING WOOD.—John Rushworth, New York, N. Y.

Claim.—1. The platform G, with its opening H, suspended from and moving with the plunger B, carrying the box J, combined and operating with the hollow knife I, supported in the frame A, and operating together, substantially as herein shown and described.

2. The plunger B, moving in guides F F on the frame A, carrying the suspended platform G, and box J, operated by the connecting-rod C, eccentric D, and shaft E, when combined and operating with the vertical hollow knife I, having its bearings upon the bottom of the frame A, substantially as shown and described.

3. The box J, divided into compartments of suitable diameter for joint operation with the punch or knife I, substantially as and for the purpose described.

108,732.—REFINING SUGAR BY STEAM.—Francis Schleifer, San Francisco, Cal.

Claim.—1. The method described of regulating the temperature of steam employed in refining sugar, liquids, and syrups, by the introduction of atmospheric air with the steam, substantially in the manner and for the purpose described.

2. The pipes A and B, connected by the ground-joint B', and the screw-coupling H', the latter being adapted to raise or lower the pipe B, substantially as and for the purpose described.

108,733.—HOT-AIR FURNACE.—Samuel B. Sexton and George W. Beard, Baltimore, Md.

Claim.—The combined arrangement of the central magazine, the annular radiator, the casing F, and the deflecting flanges S S, substantially as shown and described, for the purposes set forth.

108,734.—CURTAIN-FIXTURE.—William E. Scranton, New Haven, Conn.

Claim.—The bracket for curtain-fixtures, constructed with the chamber F, closed by the head G, and provided with the slot *a*, and combined with bearing D, to which the ribbon or tape is attached, so as to operate substantially in the manner described.

108,735.—MACHINE FOR MAKING STAPLES.—James Curtis Stead, Jersey City, N. J.

Claim.—The combination of the feed-rollers M M', cutters G H, rotary bender E, fixed bearings *k k'*, and the slotted stop Y, all constructed and arranged in the manner substantially as and for the purpose set forth.

108,736.—COOKING-RANGE.—David Stuart and Lewis Bridge, Philadelphia, Pa., assignors to Stuart, Peterson & Co., same place.

Claim.—1. In a single-oven range the fire-place A, oven D, and flue E F G G', arranged as described, so that the products of combustion, after passing beneath the first four openings *y*, pass entirely round the oven and beneath the remaining holes.

2. The oven D directly beneath the four rear openings *y*, in combination with the plate *d'* extending from the fire-place beneath the central openings, as specified.

3. The plates *k*, bent at their inner ends, sliding in guides on the plate *d'*, and secured by pins *q*, as set forth.

108,737, antedated October 15, 1870. — NEEDLE.—Hannah G. Suplee, San Francisco, Cal.

Claim.—The needle described, provided with the hooks *e f*, inclined passages *d d'*, and slit *c*, when arranged as and for the purpose set forth.

108,738.—WRENCH.—George C. Taft, Worcester, Mass.

Claim.—The wrench herein described, consisting of the handle A, stationary jaw C, sliding jaw D, having stop *s'* and ratchet *s*, and spring-pawl *c*, op-

erated by the serrated rosettes *a a*, as and for the purposes specified.

108,739. —HARNESS-HOOK. — William H. Taylor, Baldwinsville, N. Y.

Claim.—The snap-hook A B C, constructed substantially as described, with the curves 1 2 3 and projections *b b*, for the purpose set forth.

108,740.—HANDLE OF TABLE-KNIFE.—John Albert White, Philadelphia, Pa.

Claim.—A table-knife in which the tang is secured to the handle by cast-metal pins fitting transverse openings extending through the handle, and smaller openings in the tang, coinciding with those in the handle, substantially as set forth.

108,741.—HORSE-HOE.—John T. Whitlock, Bridport, Vt., administrator of Cyrus Whitlock, deceased.

Claim.—The beam A, with projections *a a*, adjustable legs B B, plow-point D, hinged to the sole-piece C, and the pivoted wings E E, braces *d d*, and bolt *e*, all constructed and arranged substantially as set forth.

108,742.—MACHINE FOR MAKING UMBRELLA-CONNECTIONS.—Edwin Wight, Philadelphia, Pa.

Claim.—1. The particular devices upon the rolls B B', as indicated by the letters C D E G, and their counterparts, for molding and notching a strip of metal, for the purpose herein set forth.

2. The mode herein set forth of manufacturing umbrella-connections by first preparing a strip or ribbon of metal of the proper width and thickness, then passing it successively through the several shaping-rolls, and finally dividing the said strips into sections, as that shown in fig. 8.

108,743.—ELECTRO-MAGNETIC ALARM-GONG. Charles Williams, Jr., Somerville, and Jerome Redding, Charlestown, Mass.

Claim.—1. A striking apparatus, having a rotary hammer turning always in the same direction and making one or more entire revolutions, the hammer being so hung or suspended that it can be thrown in contact with a bell or gong by a cam or its equivalent, and drawn back by a spring or its equivalent after each stroke, substantially as described.

2. In combination with the striking apparatus herein described, the electrical connections of the battery with the magnet, its armature and the armature-lever, by means of the spring H or its equivalent, the wires and the key, substantially as herein specified.

108,744. — HORSE HAY-RAKE. — James E. Wisner, Friendship, N. Y.

Claim.—1. In combination with the segmental gear-wheel and the clutch-sleeve and pinion, a shipping-lever operated from the rake-head, substantially as described, for the purpose specified.

2. The clutch-operating lever M, constructed with an adjustable cam, substantially as described, for the purpose specified.

3. In combination with the rake-head, the shaft F operated by gearing from the wheels of the rake, the segmental gear-wheel J, the clutch-sleeve and pinion, and shipping-lever, substantially as described, for the purpose specified.

108,745.—SPRING FOR VEHICLES.—Henry E. Wolcott, Elbridge, assignor to himself and Russell B. Wheeler, same place, and Ezekiel B. Hoyt, Skaneateles, N. Y.

Claim.—The combination of flanged and perforated rubber springs, secured, by means of bolts and nuts, to the sockets, and attached to the bolster and bed-plate, substantially as described, for the purpose set forth.

108,746.—PAPER-FILE.—William L. Woods, Washington, D. C.

Claim.—The combination of a file-box with a pigeon-hole, the said parts being provided with hooks and eyes or their equivalents, arranged as described, so that in the act of withdrawing the box from the pigeon-hole the box shall be caught and suspended, substantially as described.

108,747.—WRENCH.—Edward J. Worcester, Worcester, Mass.

Claim.—1. The screw-ferrule and step G G', provided with a removable or adjustable pintle or bearing for the lower end of the rosette-screw, in combination with the wrench-bar A, substantially as and for the purposes shown and described.

2. The combination, with the shoulder *d* on the wrench-bar, the rosette D', and the projection G' on the ferrule G, of the pintle-screw I, substantially as and for the purpose herein set forth.

108,748. — SHINGLING-BRACKET. — Edward J. Worcester, Worcester, Mass.

Claim.—The combination, with the bracket-pieces A B C, of the foot-piece D, clamping-screw G I, and nut K, substantially as and for the purposes herein set forth.

REISSUES.

4,160. — METHOD OF ORNAMENTING TIN, &c.—Louis Fitzmaier, New York, N. Y., assignor to Atwater, Benham & Company.—Patent No. 67,184, dated July 30, 1867.

Claim.—1. The process, substantially as described, of transferring any desired drawing from a lithographic stone on paper, and from thence on tin or other metal.

2. Ironing prepared paper on its back side by means of a hot plaiting-iron, for the purpose of obtaining a straight and glossy appearance of the same, substantially in the manner and for the purpose described.

3. The use of a composition consisting of lithographic varnish and chrome-yellow, substantially in the manner and for the purpose described.

4. Rolling over the moist side of the paper by a wooden flannel-covered hand-roller, whereby a uniform impression of the drawing is produced on the tin, &c., substantially as described.

4,161.—WATER-RESERVOIR FOR COOKING-STOVES.—Chauncey O. Greene, Troy, N. Y.—Patent No. 88,160, dated March 23, 1869.

Claim.—1. In combination with a cooking-stove or range, the location and suspension of a hot-water reservoir or tank, B, from below or under the hearth-plate E, and next to or adjoining the oven H or heating-chamber *d*, in manner substantially as hereinbefore described and shown, for the purpose set forth.

2. In cooking-stoves or ranges, the combination and attachment of the water-reservoir or tank with and to the hearth-plate E, when extended outward from below the fire-grate or fire-place I, in manner so as to form a covering for the top of said reservoir B, and also to hold and support the same in permanent suspended position from thereunder, substantially as herein set forth.

3. The opening or openings G, or their equivalent, through the hearth-plate E, to give access to the interior of the reservoir or tank B, provided with suitable covers or valves F, for closing the same when required.

4. Forming the end wall or side of a cooking-stove or range below the hearth-plate E and ash-pit C, and next the oven H, or heating-chamber *d*, by means of a water-reservoir or tank side J, when arranged in combination, substantially as described and shown.

5. As arranged with a diving-flue cooking-stove or range, the combination of the hearth-plate E and water-reservoir or tank B, when suspended therefrom as described, with the heating-chamber *d*, oven H, and oven bottom flue-space K, in manner as herein shown and for the purpose set forth.

4,162.—Division A.—HOLDER FOR NECK-TIES.—William H. Hart, Jr., Philadelphia, Pa. — Patent No. 76,186, dated March 31, 1868.

Claim.—The holder for neck-ties or cravats, consisting of the card A, provided with one or more pairs of tongues, the outer side of one tongue facing in opposite direction to that of the other tongue, and operating substantially as and for the purpose described.

4,163.—Division B.—BOX FOR PACKING NECK-TIES.—William H. Hart, Jr., Philadelphia, Pa.—Patent No. 76,186, dated March 31, 1868.

Claim.—The box-body or frame D, constructed with ledges or supports, *d*, to adapt the show-card or holder to be used as bottom to the box, substantially as described.

4,164.—CHAIR-SEAT.—Osmore A. Bingham, Ashburnham, Mass., assignor to George C. Winchester.—Patent No. 94,553, dated September 7, 1869; reissue No. 3,890, dated March 22, 1870.

Claim.—1. A chair-seat, having its web or seating secured to the frame by a continuous bent web-retaining strip or splint.

2. The strip C and web B, so arranged and applied to the groove *e* that the web covers and conceals the strip, substantially as shown and described.

4,165. — Division A. — RESERVOIR FOR WELLS.—R. H. Dewey and Eliphalet N. Tillotson, Chicago, Ill., assignor to Eliphalet N. Tillotson and William E. Tillotson.—Patent No. 53,584, dated April 3, 1866.

Claim.—In its application as a buried water-reservoir in the bottom of a well, the filter, consisting of a perforated cylinder or cylinders, the central space forming a chamber into which the water is filtered and from which the water supply is drawn by an ordinary elevating device, as described.

4,166. — PRINTING-TELEGRAPH. — Thomas A. Edison, Newark, N. J., assignor, by mesne assignments, to the Gold and Stock Telegraph Company.—Patent No. 91,527, dated June 22, 1869.

Claim.—1. A circuit-changer, in combination with an electro-magnet and the type-wheel, and an electro-magnet and the printing mechanism, substantially as set forth, whereby the current is directed through either magnet, according to the polarity of the current, substantially as set forth.

2. A polarized bar, permanent magnet or circuit-changer, and an electro-magnet to move the same, in combination with an electro-magnet placed in the same circuit, and brought into or thrown out of that circuit, according to the polarity of the current and the consequent position of the said permanent magnet, substantially as set forth.

3. The combination of a polarized bar or circuit-changer with two electro-magnets, operated by a main circuit, substantially as specified, whereby either of the two electro-magnets may be brought into action at pleasure, by the use of a positive or a negative current, the other electro-magnet being at the same time inoperative, substantially as set forth.

4. Two or more printing telegraph instruments placed in one main circuit, and operated simultaneously by pulsations of electricity, the type-wheel being set by pulsations of one polarity, and the printing being effected by pulsations of the opposite polarity, substantially as set forth.

4,167.—WATER-SUPPLYING APPARATUS. — John C. Hagan, Nashville, Tenn., assignor of one-half interest to James Walker, Isaiah D. Walker, and Ivan N. Walker.—Patent No. 104,019, dated June 7, 1870.

Claim.—1. An ascending pipe, provided with a valve, in combination with the pipe B and a pump or pumps, adapted and arranged to deliver water under varying pressures as required, substantially as herein explained.

2. The reservoir C, in combination with a pump or pumps, an ascending-pipe or pipes, the pipes B and B', and a check-valve, to prevent the reflux of water from the pipe B' into the reservoir C, as explained.

3. The combination of a safety-valve, I, and an air-chamber or air-chambers with the pipe or pipes B B', one or more pumps A, and a discharging plug or plugs of any suitable construction.

4. The valves F, I, and M, and air-chamber K, in combination with the pipe B and hydrant D, when constructed and arranged to operate substantially as herein set forth.

4,168.—MANUFACTURE OF GAS FROM HYDROCARBONS.—Joshua Kidd, New York, N. Y.—Patent No. 106,699, dated August 23, 1870; patented in England January 5, 1864.

Claim.—1. The method described of constructing an automatic apparatus for generating gas or vapor for a number of burners by heating the oil from or at the top of its vertical column, under pressure, in a retort made vertical, or nearly so, and having its supply-pipe at the bottom, and arranged, without any stop-cock, between the retort and the supply-tank, for adjusting the supply of oil to be vaporized, so that the body or supply of oil may be balanced, and freely oscillate between the pressure in the retort and the pressure on the liquid in the supply-tank.

2. The combination of a gas-regulator with a retort having an outlet at the top and an inlet at the bottom, substantially as described.

3. A retort, made vertical or nearly so, for generating gas or vapor automatically, having its outlet at the top and its feed-pipe connected, and open from its lowest part to the supply-tank, so that, when the pressure increases in the retort, it will drive the liquid back to the tank, and *vice versa*.

4,169.—SELF-REGULATING WIND-MILL. — The Continental Wind-Mill Company, New York, N. Y., assignees of Addison P. Brown.—Patent No. 13,156, dated July 3, 1855.

Claim.—1. The arrangements of the weights on the wind-wheel, substantially as described, so that their position on the wind-wheel shall be effected by a centrifugal force in combination with hinged sails, substantially as described and for the purpose specified, so that the inclination of the sails relatively to the direction of the wind shall be increased by the increased velocity of the wind-wheel.

2. In combination with the weights, connected with the sails to shift their inclination by centrifugal force, the means, substantially as described, for shifting the inclination of the sails by the direct pressure of the wind, as set forth.

3. The arrangement of the gearing for communicating motion from the wind-wheel shaft to the driving-shaft, by interposed reversing cog-wheels, substantially as described, in combination with the turn-table or equivalent, and the vane for holding the wind-wheel to the wind, as set forth.

4. A weight, or its equivalent, in combination with and to resist the centrifugal action of the weights which shift the inclination of the sails, substantially as described.

DESIGNS.

4,428.—MATCH-SAFE.—Frederick W. Brocksieper, New Haven, Conn., assignor to Sargent & Co., same place.

Claim.—The design for match-receiver, as shown.

4,429.—KEEPER FOR DOOR-LOCKS.—Henry H. Elwell, South Norwalk, Conn.

Claim.—The design for keeper for door-locks, as shown in the drawing and described.

4,430.—FACE-PLATE FOR LOCKS.—Henry H. Elwell, South Norwalk, Conn.

Claim.—The design for lock-front, as shown in the drawing and described.

4,431.—FACE-PLATE FOR LOCKS.—Henry H. Elwell, South Norwalk, Conn.

Claim.—The design for lock-front, as shown in the drawing and described.

4,432.—KEEPER FOR DOOR-LOCKS.—Henry H. Elwell, South Norwalk, Conn.

Claim.—The design for keeper for door-locks, as shown in the drawing, and described.

4,433.—COOKING-STOVE.—William Hailes, Albany, N. Y.

Claim.—The design for a cooking-stove, herein shown and described.

4,434.—PARLOR-STOVE.—William Hailes, Albany, N. Y.

Claim.—The design for a heating-stove, as herein shown and described.

4,435.—CARRIAGE-BED.—Henry Killam, New Haven, Conn.

Claim.—The design for carriage-bed, as herein described and shown in the accompanying photographic illustration.

4,436.—HEAD-BAND.—Walter S. Mingis, New York, N. Y.

Claim.—The design for a head-band, as shown.

4,437.—TABLE-CASTER.—William Parkin, Taunton, Mass., assignor to Reed & Barton, same place.

Claim.—The design for a table-caster, as herein described and shown.

4,438.—CASTER-BOTTLE.—William Parkin, Taunton, Mass., assignor to Reed & Barton, same place.

Claim.—1. The design for caster-bottles, consisting in forming them square, as shown and described.

2. The design for the side ornament *c*, as shown and described.

3. The design for the cover of the mustard-pot, as shown and described.

4,439.—DRILLING-MACHINE.—Francis A. Pratt, Hartford, Conn., assignor to the Pratt & Whitney Company, same place.

Claim.—The design for a single spindle vertical drilling-machine, substantially as shown and described.

4,440.—FRUIT-STAND.—Herman Vasseur, Wallingford, Conn., assignor to Simpson, Hall, Miller & Co., same place.

Claim.—The design for fruit-stand, as shown and described.

4,441.—TEA-SET.—Herman Vasseur, Wallingford, Conn., assignor to Simpson, Hall, Miller & Co., same place.

Claim.—The design for tea-set, as shown and described.

4,442.—GROUP OF TOOLS, MACHINERY, &c. Edward A. Ellsworth, Washington, D. C.

Claim.—The design for ornamenting envelopes, cards, letter-heads, circulars, &c., as shown.

4,443.—DRESS-TRIMMING.—Martin Landenberger, Philadelphia, Pa.

Claim.—The design for dress-goods, as shown and described, that is, with a knotted fringe woven with the goods on both edges thereof, as set forth.

4,444.—FLOOR OIL-CLOTH PATTERN.—Jeremiah Meyer, Kearney, N. J., assignor to John Jewett & Sons, New York City.

Claim.—The design for a floor oil-cloth, as shown.

4,445.—TOY-CARRIAGE.—Frederick W. Porter, Springfield, Vt.

Claim.—The design for a toy carriage-body, substantially as shown and described.

TRADE MARKS.

No. 1.—LIQUID PAINT.—Averill Chemical Paint Company, New York, N. Y.

2.—MUSTARD.—J. B. Baldy & Co., Toledo, Ohio.

3.—RETAIL COAL.—Ellis Branson, Philadelphia, Pa.

4.—FISH.—Tracy Coit, New York, N. Y.

5.—OYSTER PACKING.—William Lanfair Ellis & Co., Baltimore, Md.

6.—WROUGHT-IRON PIPE.—Evans, Clow, Dalzell & Co., Pittsburg, Pa.

7.—SNUFF.—W. E. Garrett & Sons, Philadelphia, Pa.

8.—CAR-WHEEL.—William G. Hamilton, New York, N. Y.

9.—SOAP.—John K. Hogg, Frederick, Md.

10.—WOOLEN HOSE.—Abraham P. Olzendam, Manchester, N. H.

11.—HAM.—William Ryan, Dubuque, Iowa.

12.—DRY GOODS.—Dale, Ross & Co., Philadelphia, Pa.

13.—POLISHING-PREPARATION.—The Buffalo Magic Polishing Company, Buffalo, N. Y.

14.—YEAST-POWDER.—H. K. Thurber & Co., New York, N. Y.

15.—WHISKY.—Horace K. Thurber & Co., New York, N. Y.

16.—FERTILIZING COMPOUND.—J. J. Turner & Co., Baltimore, Md.

EXTENSIONS.

CYRUS CHAMBERS, Jr., of Philadelphia, Pa. Letters Patent No. 15,842, dated October 7, 1856; reissue No. 4,079, dated July 26, 1870.

"Improvement in Paper-Folding Machines."

Claim.—1. The register-pins I I′, located in the line of the first fold, and in such position as to be acted upon by the first folding device.

2. The register-pins I I′, adjusted and retained in adjustment by means of the slides *o o′* and screws 1 and 2, substantially as set forth.

3. The combination of the register-pins I I′, bars Q Q′, and stops S, for correctly presenting the paper in position to receive the second and succeeding folds, substantially as described.

4. The combination of bars Q Q′ and stops S, for the guiding and retaining the paper in position for receiving the various folds.

5. Giving the folding-blades E, F, G, and H, a motion equal to or greater than the surface-motion of their respective folding-rollers, by the shape of the cams 6, 8, and 10, actuating said knives, substantially as shown and described.

6. The mechanism described, or its equivalent, for arresting at will the moving part of the folding device, the same consisting of the treadle 21, shaft 20, and levers 19 and 18.

7. The confining-bars Q Q′, in a paper-folding machine, substantially as and for the purpose set forth.

DAVID P. ESTEP, of Pittsburg, Pa.—Letters Patent No. 15,880, dated October 14, 1856.

"Improvement in Making Ax-Polls."

Claim.—The manufacture of ax-polls by compressing one-half only of the ax-poll, at each operation, between dies or swages of the shape described, projecting from the face of the rolls in which they are set, so that the ax-poll can be inserted and withdrawn without coming in contact with the rolls, in combination with the use of the adjustable guide *g*, either attached to the dies or separate therefrom, for the purpose of applying the pressure necessary to form the ax-poll in such a manner as to leave any excess or deficiency of iron in the head of the ax-poll, thus securing exact uniformity in the two sides of the ax-poll, and enabling axes of various size to be made from the same dies by simply adjusting the distance of the rolls and the gauge, substantially as hereinbefore described.

GEORGE THOMPSON, of Philadelphia, Pa.—Division A.—Letters Patent No. 15,957, dated October 21, 1856; reissue No. 654, dated February 1, 1859; reissue No. 2,569, dated April 16, 1867.

"Improvement in the Manufacture of Caustic Alkali."

Claim.—Caustic alkali inclosed in an integument or casing of anti-corrosive impervious fabric, substantially as above described.

GEORGE THOMPSON, of Philadelphia, Pa.—Division B.—Letters Patent No. 15,957, dated October 21, 1856; reissue No. 654, dated February 1, 1859; reissue No. 2,570, dated April 16, 1867.

"Improved Process of Putting Up Caustic Alkali."

Claim.—The process of putting up caustic alkali in metallic casing or integument, by pouring the molten caustic alkali into the casing, substantially as above described, and then closing up the top of the case.

GEORGE THOMPSON, of Philadelphia, Pa.—Division C.—Letters Patent No. 15,957, dated October 21, 1856; reissue No. 654, dated February 1, 1859; reissue No. 2,571, dated April 16, 1867.

"Improvement in the Manufacture of Caustic Alkalies."

Claim.—Caustic alkali incased or enveloped in a tight metallic integument or metallic casing, substantially as above described.

ISSUE OF NOVEMBER 1.

PATENTS.

108,749.—FRICTION-PULLEY.—Edwin F. Allen, Providence, R. I., assignor to himself, Charles Campbell, and Elmer A. Beaman, same place.

Claim.—1. The disk D, having attached to and connected with it the friction-spring E, which friction-spring E forms a part of said disk D.

2. The disk D, having attached to and connected with it the friction-spring E, which friction-spring E forms a part of said disk D, in combination with the griping-bars F F, or their equivalent, operating together, substantially as described, and for the aforesaid purposes.

3. The combination of the disk D, having the friction-spring E attached to, connected with, and forming a part of said disk D, with the griping-bars F F, and the shipper-sleeve G, and taper-bar M, and a pulley having an outer and an inner rim, or their equivalents, operating together substantially as described, and for the purposes specified.

108,750.—RECLINING CHAIR.—Emil Bartels, New York, N. Y.

Claim.—1. The self-raising spring back I B, hinged to the seat, and applied to the arms E F, as and for the purpose described.

2. The bush-pieces H, combined with the spring catches G, hollow jointed part E, and sliding notched part F, as and for the purpose described.

108,751.—COMBINED HYDRANT AND FIRE-PLUG.—Frederick Bauschtliker, Washington, D. C., assignor to himself and Frederick Gentner, Philadelphia, Pa.

Claim.—The arrangement and combination of the cylindrical hydrant and fire-plug with their cylinders B and C, discharge-openings N, keys P, R, S, and T, operating as herein described and for the purposes set forth.

108,752.—CURTAIN-FIXTURE.—Richard Beal, Commerce, Mich.

Claim.—The arrangement of the eye-bolts *a b c* and cords E, with relation to the spools C′ of the roller C, attached to the lower edge of a window-shade, and a weighted tassel, D, as and for the purpose set forth.

108,753.—CHEESE-PRESS.—George B. Boomer, Thomas G. Morse, and Rufus E. Boechert, Phœnix, N. Y.

Claim.—A cheese-press, composed of the double frame A *a* A′, the press-beam B A H, sliding standards G G, double levers C C, nuts *c*, and the screw D, with a hand-wheel, F, and square end *d*, all constructed, arranged, and operating substantially as described.

108,754.—HOT-AIR FURNACE.—Royal F. Brown, Chicago, Ill.

Claim.—The improved construction and arrange

ment of the several parts of the furnace described, consisting of the base A, casing B, ash-pit C, door C', bracket D, grate E, handle E', and hook a, fire-pot F, feed-door G, plate H, smoke-chamber I I', air-pipes J, diaphragm K, plate I', radiator L, and plate L', smoke-ducts M, flues N N', damper O, with arm b, bell-crank c, and rod d, chamber P, and detachable gas-burner Q.

108,755.—MUFF, COLLAR, AND CUFF-BOX.—John C. Budd, New York, N. Y.

Claim.—The muff-box, when the cylinder A is placed within the rectangular box B, touching only one of its sides and one end, the surrounding space being left for the collar and cuffs, and when said box and cylinder are closed by one and the same cover, as herein shown and described.

108,756.—COMPOUND FOR TREATING WOOL.—Hagop H. Capamagian, Pittsburg, Pa.

Claim.—The improved mucous compound composed of the ingredients and prepared substantially in the manner described.

108,757.—WATER-WHEEL.—Joel T. Case, New Hartford, Conn.

Claim.—1. The wheel A, constructed as shown and described, so as to give full and free discharge of water alternately under the wheel and from its inner edge, substantially as set forth.

2. The rotating gate H, in combination with the case G, constructed, as set forth, with the shaft i, gear k, segment g, as and for the purpose set forth.

108,758. — THREAD-WINDING MACHINE. — Dwight Madison Church, Holyoke, Mass.

Claim.—1. The pivot-pin *a* and spur, or equivalent device or devices, on the end of the driving-shaft, and the pivot-pin *b* and sliding guide-ring *l*, or equivalent device or devices, on the end of the tail-stock, (for clamping between them the opposite ends of the bobbin,) in combination with a thread-winding mechanism, and designed to clamp therein a solid bobbin to be wound, substantially as described.

2. A driving-shaft of a thread-winding machine, constructed with the type or bobbin-marking letters or figures on its end, substantially as described.

3. The revolving shaft *b*, provided with the thread-end retaining-slit or groove *t*, or pin *s*, on its front end, substantially as set forth.

4. The movable tail-stock, formed with a device substantially as described, for clamping a shuttle-bobbin between it and the pivot-pin on the end of the driving-shaft.

5. In combination with the sliding tail-stock the lever *m*, for forcing it upon the bobbin, and the spring catch *o*, and pin *p*, for locking it in position, substantially as shown and described.

6. The tubular guide *l*, provided with the cutting-tooth *s*, substantially as described.

108,759. — PRINTERS' CHASE.—Thomas A. Clements, Little Rock, Arkansas.

Claim.—The sectional chase A, provided with the right-and-left screws B B, to be adjustable, substantially as herein shown and described.

108,760. — PRINTERS' CHASE. — Thomas A. Clements, Little Rock, Arkansas.

Claim.—The chase A, composed of two L-shaped sections which are adjustable by screws *a* in the corners, substantially as herein shown and described.

108,761.—CURTAIN-FIXTURE.—William C. Clover, Brooklyn, N. Y., assignor to Henry E. Clover, same place.

Claim.—The set-screw and sliding bridge-wheel, in combination with the nut and wire spring, as and for the purpose hereinbefore set forth.

108,762.—TINSMITHS' FURNACE.—Michael Conner, Plymouth, Mich.

Claim.—In a tinsmith furnace, the grate E and flu F constructed and arranged with relation to the cylinder A, cover B, and hearth C, as described and shown, and as and for the purposes set forth.

108,763.—SLIDING DOOR.—Leeds A. Cook, Concord, Mich.

Claim.—The construction and arrangement of the cam-plate E, cam-guide F, bar G, provided with a friction-roller, *c*, working between said plate and guide, radius-bar H, guide-rod *b*, and suspension-rod O, with relation to the door D and its frame, as and for the purpose set forth.

108,764. — GATE. — John S. Covell, Salt River, Mich.

Claim.—The arrangement, between the fixed post F and swinging post A', having straps B, of the auxiliary and laterally-swinging post D, having rods C and hooks E thereon, as and for the purpose specified.

108,765.—SOAP-DISH AND BRUSH-RACK.—Archibald Crawford, Albany, N. Y.

Claim.—The combination of the receptacle B with the soap-receptacle A, substantially as and for the purpose set forth.

108,766.—LINE AND WIRE-TIGHTENER.—Theophilus Crosby, Manchester, Iowa.

Claim.—The wire-tightener above described, consisting of the shoulders A A', the shaft B, the pin C, the opening *b*, and the holes *b'*, when the several parts are constructed and arranged as described and shown, and as and for the purposes set forth.

108,767.—LOCK FOR SLIDING DOOR.—John Davidson, Albany, N. Y.

Claim.—1. In the shank H of a key, the bar *g*, when constructed and arranged to throw across the bore of the said shank H from side to side, in the manner described, for the purpose set forth.

2. The combination of the spring *s* and key-bar *g*, when constructed and arranged to throw across the shank H, as described, for the purpose set forth.

3. Operating the screw C by means of a key-bar, *g*, pivoted to a shank, H, of a key, and throwing through a slot, *a*, made in the head of the said screw-bolt C, and having its bearings or supports at their ends, substantially in the manner described, for the purpose set forth.

108,768.—BROILER.—Alexander Dick, Buffalo, N. Y.

Claim.—1. The device A A B B, substantially as and for the purpose hereinbefore set forth.

2. The device C C D D, substantially as and for the purpose hereinbefore set forth.

108,769.—MACHINE FOR BREAKING STONE.—Andrew Dietz, New York, N. Y.

Claim.—1. In a stone-breaking machine, the cylinders A and B, constructed and arranged substantially as described, having projecting or radial arms for crushing the stones, with surfaces formed with unequally projecting points or portions, for the purposes set forth, in combination with mechanism for imparting a rotary motion to such cylinders.

2. The combination, in a stone-breaking machine, of the cylinders A and B, constructed and arranged as described, with mechanism for revolving them, and with one or more fly-wheels, the whole being and operating substantially as set forth.

108,770, antedated October 28, 1870.—LOCK.—Charles C. Dickerman, Boston, Mass.

Claim.—The combination of the nuption C, trunnion D, dog-tumbler G, bolt E, short stud *g*, and key B, when constructed and operated substantially as and for the purpose described.

108,771.—PLOW-JOINTER.—Daniel Dillenback, Galesburg, Mich.

Claim.—The combined arrangement of curved

standard *a*, with cutting-blade *c*, reversible landslide *d*, and draw-rod *n*, substantially as described, and for the purpose hereinbefore set forth.

108,772.—BALING-PRESS.—George Duncan, San Francisco, Cal., assignor to himself and William Blackmore.

Claim.—1. The purchase-plate R, worked by a hand-bar, T, hinged as described, and provided with a link, S, working in a hook, V, arranged and operating substantially as described, to overcome the pressure on the inside of, and to securely close or release, the door B.

2. The lever E, hinged to the follower D, and provided with a movable fulcrum by means of pin J, friction-roller K, working in guides L, all constructed and arranged as shown, and for the purpose set forth.

3. The combination, in a baling-press, of the follower D when operated by the lever E with the cover B when operated by the rope N, windlass O, purchase-plate R, and link S, all constructed and arranged as described, and for the purpose set forth.

108,773. — FERMENTING ALCOHOLIC LIQUORS FROM GRAIN.—Joshua Ellingwood, Owensborough, Ky.

Claim.—1. The process of applying lime or other material to the ferment at the stages of that process, and for the object and purposes substantially as described and set forth.

2. The mode, manner, and process of applying and uniting the diastase in the malt with the starch, for the object substantially as described and set forth.

3. The described process of conducting alcoholic fermentation and distillation as a whole, substantially as described and set forth.

108,774.—OIL-CAKE ENVELOPE.—Cyrus Eskrett and Henry Searle, Hull, England.

Claim.—The improved "envelopes" or "hairs," formed of corrugated boards or pieces of boards united together, and provided with the leather or hair edges, the said corrugations running transversely, all substantially as specified.

108,775.—MACHINE FOR GRINDING SAW-BLADES.—Charles J. Gardner, Philadelphia, Pa.

Claim.—1. The arrangement of the stones D D, substantially as shown and described, so that the saw-blades may be ground between their flat surfaces, as specified.

2. The grindstones D hung on shafts C, which hang in swiveled and adjustable bearings *a b*, substantially as herein shown and described, so that the grinding-surfaces can be adjusted at any desired angle, as specified.

3. The combination of the outer bearings *b* with the rock-shaft E, by means of which the shafts C are adjusted, as specified.

4. The slide G, arranged for holding the hand-saws, and connected with the rock-shaft H, substantially as herein shown and described, to operate as set forth.

5. The vertically-adjustable shoe I, combined with the reciprocating saw-blade and with the oblique grinders, substantially as herein shown and described.

108,776. — CLOTHES-LINE HOOK.—James Garvey and Matthew H. Kimball, San Francisco, Cal.

Claim.—The clothes-line hook, consisting of the knob A, vertical stem B, and lips D D, as illustrated in fig. 2 of drawing, as and for the purposes set forth.

108,777. — SPRING-SEAT FOR RAILWAY-CARS. — Thomas J. Gifford, Salem, Mass.

Claim.—The combination of the seat S, the base B, post C, spiral spring D, rubber spring E, and rod F, constructed and arranged substantially as and for the purpose described.

108,778.—SASH-FASTENER.—William Gorman, New Britain, Conn., assignor to Russell & Erwin Manufacturing Company.

Claim.—1. The plates A and B of a window-sash fastener, provided with the corresponding longitudinal lips *c*, as and for the purposes specified.

2. In combination with the bar and plates of a window-sash fastener, the spring washer C and adjusting head E, as and for the purposes specified.

108,779.—MACHINE FOR MOLDING EARTHENWARE. — Thomas Goodwin Green, Church Gresley Pottery, England.

Claim.—1. The receptacle and charger A, constructed as set forth, and provided with openings B, as and for the purpose herein shown and described.

2. The charger A, provided with hinged rack M, with its elastic keeper-blocks, and the securing device K^1 K^2 L, when constructed and operating substantially as and for the purpose set forth.

3. The combination of pivoted charger A, tank D, and flexible duct C^*, as and for the purpose shown and described.

108,780. — MILK-WAGON. — Benjamin B. Gudge, Chicago, Ill.

Claim.—1. The wagon-body C, made lower in the rear, and of the ordinary height in front for the turning of the front wheels thereunder, in combination with the cranked axle A, for the purpose of bringing the wagon-box low and at the same time to admit the wheels to pass beneath, as specified.

2. The wagon-bed or body C, of the different heights specified, having the reach attached rigidly to the rear part thereof, and said reach extending forward and pivoted to a lug, *a*, in rear of the front axle.

3. The spring, when secured to the sides of the wagon-box, and resting on the crank-axle, as described, so that the wagon-box can rest on springs and still be let quite down to the axle, as specified.

4. The combination of the reach D, king-bolt E, and fifth-wheel *e*, when constructed and arranged as set forth and shown.

108,781.—TESSELLATED FLOOR. — Lavinus B. Hamilton, Boston, Mass.

Claim.—1. For covering floors and other surfaces, assemblages of blocks of various kinds or colors of wood with the grain or fiber thereof disposed substantially as described, when such blocks are united to a backing common to all the blocks of such assemblage or group, for the purpose specified.

2. As a new manufacture, blocks of wood in which the grain is substantially square to the surface presented to view, when inlaid with plugs or fillings of wood with the grain thereof disposed in the same direction with the grain of the blocks, said plugs or fillings extending through the entire thickness of the blocks, substantially as and for the purpose described.

108,782.—LEATHER-SCOURING MACHINE.—Hector C. Havemeyer and David P. Burdon, New York, N. Y.

Claim.—1. The yielding bed E, supported by springs *e*, and guided by jointed pins *d*, substantially as herein shown and described.

2. The sheet G, stretched over the concave surface of the adjustable bed E, to constitute an elastic cushion therson, substantially as herein shown and described.

3. The scouring-cylinder containing the stones and brushes in alternate rows, the stones being secured by the blocks *a*, to which the brushes are fastened, substantially as herein shown and described.

108,783.—Leather-Scouring Machine.—Hector C. Havemeyer and David P. Burdon, New York, N. Y.

Claim.—1. The adjustable bed C, hinged at one end and held against the scouring-cylinder by springs fitted under the other end, substantially as herein shown and described.

2. The hinged table D, made adjustable by means of levers or equivalent mechanism, and combined with the hinged spring-bed C, substantially as herein shown and described.

108,784.—Vise.—Royall S. Hildreth, South Adams, Mass.

Claim.—1. The combination of the longitudially and annularly-grooved sleeve, levers B, nut C, and pins *g*, substantially as described.

2. The improved vise, consisting of the slotted base *a*, standard A, levers B, jaws F, nut C, sleeve E, pins *g*, and hand-wheel D, constructed and arranged substantially as described.

108,785. — Printing-Press. — Richard M. Hoe and Stephen D. Tucker, New York, N. Y.

Claim.—1. The method of driving the bed of a printing-machine, consisting of a crank, T, connecting-rod U, and a toothed wheel, I, gearing into a fixed rack, 4, and movable rack 48, when the axle to which the connecting-rod is attached is arranged eccentrically in said wheel so as to give a differential movement to the bed, substantially as described and specified.

2. So arranging the pinions on the inking-roller shafts that they will have a rotary motion independent of the shaft, whereby the rollers will change their position on the form at each movement thereof, substantially as described and specified.

3. The bearing-straps *l*, applied to the ways 57, in combination with the bearing-wheels *k* upon the inking-rollers, to admit of adjusting the pressure of the rollers upon the form, substantially as described and specified.

4. Controlling the fly so that its movements shall coincide with the movement of the impression-cylinder by the mechanism, and substantially in the manner described and specified.

108,786.—Gate.—William C. Hooker, Abington, Ill.

Claim.—1. The straddle-frame A, relatively pivoted at B to fixed posts and at C to the gate, for the purpose of giving longitudinal movement to the latter, as set forth.

2. The posts D D on opposite sides of the gate, and the cords E, combined with a vibrating straddle-frame A, as and for the purpose described.

108,787.—Ruffler for Sewing-Machine.—Charles W. Howard, Philadelphia, Pa.

Claim.—1. The spur *a''*, attached to a sewing machine, for the purpose of supporting the pressure-foot, so as to allow the free passage of a piece of fabric, *x*, to the needle without receiving any pressure from said foot, while other pieces of fabric, *y*, are being gathered and bowed to the said first-named piece *x*, when the said spur is constructed and applied to operate substantially as described.

2. The combination of the screw *a⁴* with the nipper *b''*, for the purpose of gauging the extent of motion communicated to the nipper, substantially as hereinbefore set forth.

3. The combination of the spring *a⁴* with the nipper *b''*, for the purpose of producing the ruffling movement in the nipper, by causing it to draw backward the under piece of fabric *x* while the upper piece *y* is held fast by the pressure of the foot, substantially as hereinbefore described and set forth.

4. The combination of the spur *a''* on the plate A and lever B, and the nipper *b''*, and set-screws and gauges, when arranged to operate together, substantially as and for the purpose hereinbefore set forth.

108,788. — Apparatus for Drying and Pressing Lard-Scraps. — Albert Kilbern Howe, New York, N. Y., assignor to himself, H. E. Donor, and Edward Purdy, same place.

Claim.—The combination of the perforated cylinder A with the annular space *e*, chamber *f*, pipes E, and piston I, all arranged to operate substantially as herein shown and described.

108,789. — Railway-Car-Axle Lubricator.—Charles Hyatt, Buffalo, N. Y., assignor for two-thirds of his right to Joseph N. Milcham and Erhard Schlenker, same place.

Claim.—The roller D, constructed substantially as described, with grooves *d*, and provided with tufts or wipers E, as and for the purpose specified.

108,790. — Hot-Air Furnace.—William James and William James, Jr., Montreal, Canada.

Claim.—1. The combination of the plate A, arms D, ring-plate C, plate E, door F with its draught-openings, plate G, dished ring-plate I, air-pipes J, plate K with its door M, ring-plate N, pipes O, drum P with its air-pipes Q and door R, drum S with its air-pipes U and door T, pipes V, drum W with its air-pipes X, box Y, and door A', smoke-pipe Z, and outer case B', provided with one or more hot-air pipes C', with each other, said parts being constructed and operating substantially as herein shown and described, and for the purpose set forth.

2. The cone *w'*, projecting downward above the fire-chamber of the furnace, in combination with the other parts of the furnace, substantially as herein shown and described, and for the purpose set forth.

3. The drums P S W, one or more, provided with their smoke-pipes, and with their air-pipes and passages, in combination with the other parts of the furnace, substantially as herein shown and described, and for the purpose set forth.

108,791.—Street and Station-Indicator.—George A. Jenks and John J. Fawcett, Chicago, Ill., assignors to themselves and Joseph Hampson, same place.

Claim.—The arrangement and combination of the rollers M H I, placed parallel with each other, the middle roll being the largest, and having attached to one end a ratchet-wheel, N, for ringing the bell D, and to the other end a wheel, T', which is provided with pawls *y y* and cam-lugs W W, a ratchet, A, curved spring *t p*, a semi-disk, *m*, an eccentric, V', and crank V, for reversing the motion, and lugs *r r*, which strike against a lug, *z*, on the end plate K', for regulating the distance that the center roll is to move, a spring-lock, Z X, and the coil springs H' I'', for taking up the belt, as and for the purpose set forth.

108,792. — Time-signaling Apparatus for Railroad.—John Garner Johnson, Coombe Fields, England.

Claim.—1. The combination, with lever D, rod U T, and weighted lever S Q, of notched arm N, rod M, arm L, shaft E, drum F, weighted arm B H, case I, and cover K, all constructed and relatively arranged to form an improved signaling apparatus.

2. The improved signaling apparatus above described, in combination with arm V *d*, pawls *a b*, friction-disk *c*, ratchets *f g*, pins *h i*, spring *k*, and a clock mechanism, all relatively arranged as and for the purpose described.

108,793.—Apparatus for Evaporating and Concentrating Bark-Extracts, &c.—Thomas W. Johnson, Jr., and Anthony W. Goodell, New York, N. Y.

Claim.—1. The buckets *d*, applied to and combined with the revolving disks *b*, as and for the purposes set forth.

2. The arrangement of the heating-stove, casing *c*, air-passage ways, vessel *a*, revolving disks *b*, and escape-flue or opening *m*, substantially as and for the purposes set forth.

108,794.—Carriage-Wheel.—Thomas M. Jones and Charles W. Fillmore, Chicago, Ill.

Claim.—1. The inwardly-curved braces C C, applied to the hub of a vehicle, as and for the purpose described.

2. The inwardly-curved braces C C, combined with solid spokes, wedge-formed at the end, and touching in the socket, or having keys between them, as described.

108,795.—Bridle-Bit.—Friederich B. Kalkbrenner, Clinton, Mo.

Claim.—The half-bit A and check-rein levers C C, combined as described, with the half-bit B, and pivoted levers D D, for the purpose set forth.

108,796.—Grate-Bar and Bearer.—William Kearney, Belleville, assignor to himself and A. D. Graham, Newark, N. Y.

Claim.—1. The brace, constructed and connected with a grate-bar, as shown and described.

2. The bearer, constructed as shown and described.

108,797. — Sawing-Machine. — George W. Kearns, Lilleyville, Pa.

Claim.—The arrangement and combination of the balance-wheel F with its pivoted saw G and spring H, when constructed and operating as herein described, and for the purposes set forth.

108,798.—Drip-Catch for Umbrella, — Hugh Keenan, Worcester, Mass.

Claim.—1. The water-proof extension-tube D, applied to the upper part of an umbrella for the purpose of collecting the drippings, substantially as herein shown and described.

2. The cup C and ring E, combined with the flexible extension-tube D, substantially as and for the purpose herein shown and described.

108,799.—Divider and Calipers.—George W. Lane, Plantsville, Conn., assignor to Elisha R. Newell, same place.

Claim.—The combination of the disk A, slots *a b*, thumb or set-screws *f* and B, bolt *h*, thumb-nut *i*, spring *k*, pin *m*, and divider or caliper-legs C C', all substantially as described, whereby the spring leg, when adjusted, may be firmly fixed in place.

108,800.—Shipping and Unshipping Screw-Propeller.—George Leach, Leeds, England.

Claim.—1. The mode, herein set forth, of mounting the propeller on its shaft so that it can be easily detached therefrom and hauled in-board, or adapted to the shaft, and secured thereon, as described.

2. The combination of the propeller with the hollow shaft *b*, and the ropes *d* and *e*, and the sleeve-shaft *f*, together with the devices herein set forth, or their equivalents, for holding the propeller securely on the shaft.

3. A propeller provided with a ball-and-socket joint and hauling-rope to the end of a jointed or hinged shaft, which is capable of being moved longitudinally in its bearings, for the purpose of unshipping the propeller, as herein set forth.

108,801. — Planing-Machine. — Thomas Llewellyn, London, England.

Claim.—1. The hollow spindle B, provided with a stud, and expanded at the lower end, and the screwed rod B', in combination with the saw A, all constructed and arranged as and for the purpose shown and described.

2. The rod B', spindle B, strap or link G, screw H and adjusting nuts, and the arm C, and guides E E, all constructed and arranged as shown and described, to form an improved planing-machine.

3. The hollow spindle B provided with fixed collars, the strap or link G, and screw H, arranged with the arm or frame C, as and for the purpose specified.

108,802.—Fix for Puddling-Furnace.—Charles S. Lynch, Boston, Mass.

Claim.—A fix, as composed of fine or disintegrated or powdered iron ore and a solution of alkaline silicate, as set forth, such being for the purpose or use as hereinbefore described.

108,803, antedated October 29, 1870.—Machine for Jointing Stair-Rails.—John B. Margeson, Lynn, Mass.

Claim.—1. The face-plate B, having knives O and L, projections P P, and recesses S T, the whole being constructed as shown and described, and for the purpose specified.

2. The face-plate B, constructed as described, in combination with the sliding dog E and table A, substantially as and for the purpose set forth.

108,804.—Liquid-Meter.—Gideon B. Massey, New York, N. Y.

Claim.—1. The valves K and L, weight I, and wing G, combined, arranged, and operating substantially as and for the purposes described.

2. The water-chamber O, divided into two compartments by means of a fixed partition-plate, J, and an oscillating wing, G, by which the water is received and discharged alternately therefrom, substantially as described.

3. The cam Y, pawl X, and ratchet U, by means of which motion is imparted to the registering mechanism, all arranged substantially as described.

108,805.—Apparatus for Giving Form to Wood.—George Radford Mather, Wellingborough, England.

Claim.—1. The improved wood-forming machine herein described, all its parts being combined, constructed, and arranged to operate substantially as shown and set forth.

2. The detachable attachment of the stone to the mandrel by means of the conical bush *n*, conical collar *q*, key *r*, and collar and pin *b*, substantially as specified.

3. The combination, with the stone or other forming material E, of the oscillating center-supporting arms, feeding segmental arm, driving-wheels H I I', *j*, all substantially as specified.

4. The combination, with the segmental arm W and shaft D, of the worms *h g f*, shaft *e*, worms *d c*, cone-pulley *b*, and worms X Y, all substantially as specified.

108,806.—Manufacture of Gold-Foil for Dental Purposes.—Urial K. Mayo, Boston, Mass.

Claim.—1. Arranging two or more sheets of foil together with their flat surfaces in contact and between sheets of mica or their equivalent, and next heating the pack so as to anneal the foil, all as set forth.

2. As an improved manufacture, gold-foil annealed in the improved manner, as described.

108,807. — Weighing-Scale. — William H. McCormick, Muncie, Ind., assignor to himself and John T. Williams, same place.

Claim.—1. The combination of one or more graduated dials, *l*, and pointers *k*, and the segment, pinion, and shaft by means of which they are operated, with the levers B B', connection *c*, platform A, rod *o*, and receptacle *p*, all constructed, arranged, and operating substantially as herein described.

2. The construction of the gauge *m*, and its al-

plication substantially as shown and described with relation to the dial or dials, as and for the purpose set forth.

3. The arrangement of the suspended levers B D', connection *c*, weighted segment *i*, pinion *j*, and shaft, with one or more indicators, one or more graduated dials, *k*, gauge *m*, rod *o* and receptacle *p*, and platform A, all within and upon a casing, C C', and operating substantially as described.

108,808. — BLEACHING TOBACCO. — Hugh Mearns, North Fork, Ky.

Claim.—The herein-described improved process for bleaching tobacco, substantially as specified.

108,809.—MEAT-CHOPPER.—George H. Mellen, New York, N. Y.

Claim.—1. The arrangement of the adjustable spring *n*, screw *o*, bar *c*, and blade *d*, as specified.

2. The arrangement of the block *a*, ratchet *t'*, pawl *t*, elbow-lever *s s'*, springs *u t''*, and spur-wheel *k*, as described.

3. The arrangement of the bar *c*, arm *i*, spur-wheel *k*, and adjustable spring *n* and screw *o*, as set forth.

4. The arrangement of the block *a*, vessel *b*, blade *d*, bar *c*, spur-wheel *k*, spring *u*, elbow-lever *s s'*, pawl *t*, and ratchet *t'*, as explained.

108,810. — DUMPING-CAR. — William Merrington and Nathan Kirkwood, McKeesport, Pa.

Claim.—The double-tip boxes *a a*, hinged near their center *b b*, open at the inner ends, and tipping toward the middle of the car, between the boxes and trap-doors *d d*, the whole constructed substantially as described and for the purposes set forth.

108,811.—MEDICINE OR PAIN REMEDY.—John J. Mills and William Perry, Frederick's Hall, Va.

Claim.—The medical compound composed of the ingredients in the proportions specified.

108,812. — SEWING-MACHINE TABLE.—Edward L. Morgan, Rivesville, West Va.

Claim.—The application to the table-foot *a* of a sewing-machine, of the thumb-screw B *b*, as and for the purpose described.

108,813.—MACHINE FOR PREPARING STEREOTYPE-MATRICES. — William T. Morgans, Youngsville, assignor to himself and Isaac Anderson, Jeffersonville, N. Y.

Claim.—1. The printing-types or dies D, secured to swinging arms or holders which are attached to slides, as set forth.

2. The levers *f*, having ears *i j*, combined with the wedge-shaped projections on slides E, as and for the purpose specified.

3. The rods F and springs *e*, applied to the type-slides for the purpose of carrying the same to the printing-block, in the manner specified.

4. The cars *m m*, arranged on the frame for holding the type-shanks upright, as set forth.

5. The springs *u*, on the slides E, for throwing the type-shanks into horizontal positions, as set forth.

6. The frame M, provided with fingers *t*, for elevating the type-shanks preparatory to distribution, substantially as herein shown and described.

7. The sliding frame L, arranged to swing the frame M and push the rods F and slides E, substantially as herein shown and described.

108,814. — PILE FOR ENGINEERING PURPOSES.—Thomas W. H. Moseley, Boston, Mass.

Claim.—1. The hollow metallic pile, provided with spiral flukes or flanges for carrying it into the soil, in combination with an interior sub-pile passed downward through the hollow screw-pile, and with a concrete filling, substantially as set forth.

2. The combination of the hollow screw-pile A, the sub-pile G, and the concrete-filling S, when arranged as herein represented and described, so that the concrete S will fill the bore of the hollow pile, rest on the top of the sub-pile, and sustain the pressure thereof.

3. The pilot P, having a socket, Q, for the reception of a center-pin, and lugs by which it is turned by the screw-pile when the latter reaches it, substantially as described.

108,815.—SCREW-CUTTING DIE.—Nels Nelson, Galesburg, Ill.

Claim.—For the purposes of preventing the dies from turning and for supporting the pivots on which they turn, the plate H and key E, interposed respectively between the die-plate C' and the end of the screw B, and between the die-plate C and the shoulder *a*, substantially as set forth.

108,816.—MANUFACTURE OF ICE.—Sidney James Newsham, Mont Clair, and William H. Haines and William S. Henson, Newark, N. J.

Claim.—1. Canvas or felt bags and frames of suitable material, for holding water for freezing into ice, substantially as shown, in the manner herein-before set forth.

2. The chamber or box, heated by hot air or hot water, or steam, for the purposes herein-before mentioned, substantially as described.

108,817, antedated October 26, 1870.—CLUTCH-GEARING. — Ezra Nicholson, Cleveland, Ohio.

Claim.—1. The clutch entire, as constructed and specified.

2. The wrench-lever *d*, acting on a rim or in a groove, as described.

3. The reversing apparatus, as applied to the wrench-levers, or its equivalent, substantially as described, and for the purposes herein set forth.

108,818. — CLOTHES-DRIER.—Abiel O'Dell, Napanee, Canada.

Claim.—The combination and arrangement of the hub A, with radiating arms *b*, cord C, pulley *d*, and rope-holder *y*, substantially as shown and described.

108,819. — FOLDING WINDOW-BLIND.—Franklin R. Osgood, Grand Rapids, Mich.

Claim.—1. The combination and arrangement of the cords *a' a'* and web W, for the purpose of lowering and raising the blind independent of the cords C C', substantially as herein set forth.

2. The looped tape or ribbon T, in combination with the slats S S', when arranged to operate as and for the purposes set forth.

108,820.—MACHINE FOR DRESSING HOOPS.—Joseph Penney, Rochester, N. Y.

Claim.—1. The movable cutter-head D, when its adjustment is controlled by a swiveled yoke, F, having two points of bearing upon the hoop, substantially as set forth.

2. The combination, with the cutter-head H, and its controlling-rest *m* and its connection, of the springs *d'*, which shall operate to force the cutter-head away from the hoop, and at the same time draw the rest against it, for the purposes set forth.

3. The combination of the swinging-standard E, the shaft A, cutter-head D, swiveled yoke F, with its rests *l* and *o*, and the spring *i*, operating substantially as and for the purposes set forth.

4. In combination with the adjustable cutter-head H, its shaft I, and the controlling-rest *m*, the tie-rod or rods *u v*, connected to said shaft by an arm, *z*, the parts being arranged to operate substantially as set forth.

5. The combination of the automatically-adjustable cutter-head D, upon the back side of the hoop, with the automatically-adjustable cutter-head H, upon the face side of the hoop, operating substantially as described.

6. In combination with the movable cutter-head H, the rest *m*, when made adjustable to and from said cutter-head, as and for the purposes set forth.

7. In combination with the automatically-adjustable cutter-head H, the fixed rests *o'* and *f'*, arranged to operate substantially as set forth.

8. The combination of the automatically-adjustable cutter-heads N and O, operating conjointly to dress the edges of the hoop, substantially as described.

9. In combination with the cutter-head N, the swinging sustaining-frame *g'*, the center of whose movement is the center of the driving-shaft *i'*, operating substantially as set forth.

10. In combination with the swinging-frames *g' h'* and cutter-heads N and O, a spring, *i''*, operating to force the cutter-heads against the edges of the hoop, for the purposes set forth.

11. The combination of the self-adjusting cutter-heads N and O for trimming the edges of the hoop, the self-adjusting cutter-head H for shaving the hoop, and the self-adjusting cutter-head D for removing knots, operating substantially as described.

12. For the purpose of forming the finished hoop, the combination of the crimping-rolls 7, 8, and 9, with the automatically-adjustable cutter-heads H and D, and N and O, arranged to operate substantially as and for the purposes set forth.

108,821.—PREPARING COTTON-WASTE FOR CLEANING MACHINERY.—Anthony Peple, Billerica, Mass.

Claim.—1. Utilizing cotton-waste, or other absorbent materials or substances, by stitching or quilting layers of the same between sheets of woven, knit, or porous fabric or make, substantially in the manner and for the purpose herein set forth.

2. Utilizing cotton-waste, or other absorbent materials, by stitching together layers of the same, substantially in the manner and for the purpose herein set forth.

3. The use of cotton-waste, or other absorbent materials, in connection with any form of knit, woven, or porous fabric or make, for the purpose herein set forth.

4. Producing cohesiveness, or preventing or lessening the separation of portions or particles, or fibers of cotton-waste, or other absorbent materials, substantially as described, and for the purpose herein set forth.

108,822. — MACHINE FOR GRINDING AND POLISHING METAL.—Julian H. Pitkin and Julius S. Lane, Akron, Ohio.

Claim.—1. The combination of the annular wheels or holders C C', and the ring or blocks of emery 2, the mechanism for tightening and advancing the ring or segments when worn, substantially as described and represented.

2. In combination with a grinding and polishing-wheel composed of two parts, C and C', the two shafts D E, for holding and driving said wheel while the part C' can be moved out or in from the face of the other part C, as and for the purpose described.

3. In combination with the grinding-wheel and the two shafts, one of which is adjustable longitudinally in the other, the rod, gears, and sliding bearing, so that the grinding-wheel as a whole, and both shafts, may be moved in and out, as and for the purpose described.

4. In combination with a grinding-wheel and a cover or case in which it revolves, a series of vanes on the wheel, and an air-trunk, for the purpose of making a blast or current of air, and a conveyer for carrying it loaded with the abraded dust out of the way of the operator, as described and represented.

108,823.—STORE-SHELVING.—Robert Poole, New Providence, Tenn.

Claim.—The improved store-shelving herein described, consisting of the part A B, provided with rollers, and the part E F, the same being hinged together so that the one may form a vertical extension of the other, or both may fold together, so that when locked or secured the drawers *c* will be also locked, all as shown and described.

108,824.—FAUCET.—Abel Putnam, Jr., Saratoga Springs, N. Y.

Claim.—1. In a faucet, the combination of the annular groove *n* with the passages *a a²*, as and for the purpose described.

2. The plug A, having the valve *b*, passage *a*, and groove *n*, in combination with the spigot S, having the passage *a²* and the cock D, substantially as and for the purpose specified.

108,825, antedated October 19, 1870.—CAR-WHEEL.—John Raddin, Lynn, Mass.

Claim.—1. In combination with the web *t* and its sub-tire *l*, the tire-flange *n* and ring *m*, with the elastic packing or rings *p q* interposed between the flange and ring and the sub-tire and web, substantially as shown and described.

2. In combination with the radially-bent plate *m*, the bolts *t* and the bolts *r*, substantially as described.

108,826.—WARP-TENSION MECHANISM FOR LOOMS.—Joseph F. Randall, Warren, Ohio.

Claim.—The tension-roll A, having perforated sheet metal cover, rolls E F, weight D, and friction-band C, all combined in a loom, as described.

108,827.—SEWING-MACHINE.—William Anderson Rayer and William Stillwell Lincoln, Boston, Mass., assignors to themselves and Abijah B. Lincoln, same place.

Claim.—1. The endless annular rotating guide D, constructed in cross-section, as shown, and arranged to work behind the presser-foot and needle-arm, as and for the purpose specified.

2. The annular rack *e*, and sliding shaft *e* having pinion at each end, combined with the driving-shaft F of a sewing-machine, having the worm *f* thereon, all arranged for rotating a guide-plate, D, as described.

3. The combination, with stitching and feeding mechanism, substantially such as described, of a continuously-revolving annular fabric-guide D, as and for the purpose set forth.

108,828.—LOW-WATER INDICATOR.—Frederick Raynsford, Grand Rapids, Mich., assignor to himself and C L. Bouchard, same place.

Claim.—1. In combination with the valve-rod *e*, operating the valve of an alarm-whistle, the coil-spring *e*, long lever B, pulley *b*, chains *a a'*, and floats C D, as specified.

2. In combination with the valve-rod *e*, closing the throttle when operated by the coil-spring *e* or weighted lever G, the combined float and weight C, suspended from the valve-rod by a chain, *a*, and arranged to operate as and for the purposes specified.

108,829. — TRANSPARENT VARNISH.—John Restle, Boston, Mass.

Claim.—The varnish, when compounded of the ingredients, substantially as described, and for the purpose set forth.

108,830.—RAILWAY-CAR BRAKE.—Israel L. G. Rice, Cambridge, Mass.

Claim.—The cam-wheel B, constructed as described, in combination with the disk D, axle A, rod H, and brake-lever L, as and for the purpose set forth.

108,831.—CARRIAGE-TOP FIXTURE.—Nathan B. Richardson, Somerville, N. J.

Claim.—1. A cast-iron corner, *c*, in both ends of

which is screwed the iron rail to which the top is fastened.

2. A cast-iron corner, having on the forward part thereof a projection, separate from and unconnected with the rest, to receive and bring the upright jointed brace on the inside, and to enable it to fold within the top.

108,832.—TENT AND UMBRELLA.—John Ritchie and George Ritchie, London, England.

Claim.—1. The combination of a single rib, *f*, with a single stretcher, *g*, and the stick *a*, the two parts *f g* being so connected with the stick *a*, as described, that when a tent or umbrella is opened the outer end of the rib expands downward, and when closed the outer end contracts upward, substantially as set forth.

2. The improved stakes *m* and *o* employed in combination, as hereinbefore described and represented in fig. 8, sheet 1, of the accompanying drawing.

3. The improved socket *b*, in combination with an adjustable collar *b'*, having arms *e e* hinged thereto, and the pole *a*, as hereinbefore described and represented in fig. 2, sheet 1, of the accompanying drawing.

108,833. — COMBINED CULTIVATOR AND SEEDER.—Robert L. Robeson and William Nash, Oskaloosa, Iowa.

Claim.—The combination of the seed-box C, the bow cross-piece D, spindles B, and wheels A, when the seed box is elevated on the cross-piece to avoid the necessity of removal to cultivate corn, and the whole are constructed and operated as described.

108,834.—SHOVEL-PLOW AND CULTIVATOR. Elijah G. Rowell, Alfonzo D. Rowell, James R. Rice, and Smith M. Seeley, Hartford, Wis.

Claim.—A shovel-plow and cultivator, constructed with center frame A, handles B B, stem-post C, side frames D D, cross-bars E, teeth F, and plowshare G, arranged substantially as described.

108,835.—WAGON-BRAKE.—Daniel J. Rundell, South Westerlo, N. Y.

Claim.—The combination of the two brake-bars E, with their shoes F, keepers G, rod or rods H, and lever I, with each other and with the wheels and rack-frame or box of the wagon, substantially as herein shown and described, and for the purpose set forth.

108,836.—BREECH-LOADING FIRE-ARM. — Peter Schuler, Morris, Ind.

Claim.—1. The combination, with the open breech end of the barrel A, of the cam-arbor F, provided with the handle *e*, and the solid head E of the cartridge-shell D, having the transverse groove *e*, all arranged as shown and described, and for the purpose specified.

2. The spring-dog G *g h*, and handle *e* and hammer C *i*, each of said parts being constructed and all of them arranged specifically as shown and described, and operating as specified.

3. The groove *e*, provided in the solid head of a cartridge for the reception of a cam or arbor, whereby the cartridge is locked to the barrel, as set forth.

108,837.—COUNTERSINK.—William B. Shedd, East Boston, Mass.

Claim.—The herein-described combination of the clasp A, the cutter *g*, block *i*, and screw A, the whole constituting an adjustable countersink for boring tools, and operating as set forth.

108,838.—TABLE-CASTER.—Daniel Sherwood, Lowell, Mass., assignor to himself, Edward P. Woods, and C. H. Latham, same place.

Claim.—The table-caster herein described, consisting of the legs 1 1, handle 5, cross-bars 2 2, and rings 3 3, constructed substantially in the manner herein described and set forth.

108,839. — HARVESTER-RAKE. — David B. Shirk, Brunnerville, Pa.

Claim.—1. The arrangement of the cam-way G, depressing-guide D, switches E and F, and terminal pulley *k*, on the rake-arms K, all inclosed within stationary box B, (made also adjustable,) in combination with the revolving cap C, in the manner and for the purpose specified.

2. In combination with the revolving cap C and inclosing-box B, the pin T and switch E, constructed and operating as described.

108,840.—VISE.—John E. Sinclair, Worcester, Mass.

Claim.—1. The combination of the screw *g*, carriage *c*, nut *d*, piece *e*, and serrated casing of jaw *b*, substantially as set forth.

2. The combination of the screw *g*, carriage *c*, nut *d*, and piece *e*, substantially as set forth.

108,841. — SUSPENDER. — Joseph William Smith, Boston, Mass.

Claim.—1. The combination of a suspender-strap, folded as described, with the strap which is to be attached to it when that strap is inclosed within the folds of the suspender-strap, in the manner described, and these folds and this strap are secured together by sewing, riveting, or cementing, in the manner shown.

2. The combination of the triangular frame or strap-holding device, constructed as described and represented in figs. 1, 6, 7, and 8, with a suspender-strap, in the manner described.

3. The strap-holding device above described, consisting of a loop or its equivalent, connected to the apex of the triangular device shown in fig. 1, and so formed, as above described, that the web can be passed over the sides and under the base of the triangle.

4. The device formed by connecting the auxiliary fenders *e f* with the device claimed in the preceding clause of claim, as shown in fig. 5.

5. The combination of the devices B, C, and D, when constructed as shown in figs. 2 and 3, but not as shown in fig. 11, with the webbing A, folded and arranged, substantially as described.

108,842, antedated October 29, 1870. — LIQUID-METER.—William E. Snediker, New York, N. Y.

Claim.—1. The combination, with a reciprocating lever-diaphragm or piston, and measuring-chamber in which it works, of a main valve to said chamber, and secondary or additional valve, operated by the lever-piston, and serving to effect the throw of the main valve by or through the operating liquid, essentially as herein set forth.

2. The hub of the lever-diaphragm, constructed of independent sections, C C', the one of which, C', is made to operate as a valve, and has an intermittent motion communicated to it by the other section, C, essentially as and for the purpose herein set forth.

3. The valve D, provided with an exhaust-passage or opening in its periphery, in combination with the abutments *u u'*, substantially as and for the purpose specified.

4. The arrangement, relatively to the valve D, of the ports or passages *l l'*, the hub-ports or passages *m, m'*, and *o*, the inlet-port or ports *n n*, and exhaust-port or ports from the hub to the main outlet, essentially as described.

108,843. — CLEANSING ATTACHMENT FOR HOES.—Robert R. Spedden and Harrie T. Spedden, Astoria, Oregon.

Claim.—In combination with the blade A, the scrapers F, (one or more,) when arranged to operate substantially as and for the purposes herein shown and described.

108,844.—CARBURETING ATTACHMENT FOR GAS-BURNERS. — John Henry Steiner, Reading, assignor to himself and Christian Sharpe, Philadelphia, Pa.

Claim.—1. A reservoir, A, surmounted by a burner, B, and having a tube, *a*, for tight attachment to and detachment from a gas-tip, all substantially as set forth.

2. The arrangement within the said reservoir of a perforated or notched diaphragm, *b*, substantially as described.

3. The arrangement of the disk *i* on the upper notched or perforated edge of the tube *a*, as set forth.

108,845.—COMPOUND FOR CLEANSING AND PRESERVING THE TEETH AND GUMS.—William M. Tandy, Carrollton, Ky.

Claim.—The mixing or compounding of said ingredients, and manufacture of the compound which I denominate "Acos," in the proportions and for the purposes set forth.

108,846.—FINISHING AND BLEACHING HANDLES, &c. — David Hendrick Taylor, Westfield, N. Y.

Claim.—1. Wood handles, oars, and like articles, when finished in the manner substantially as herein set forth.

2. The process of treating wood for handles and other purposes, by the application of a chlorine bath or other bleaching material, as and for the purpose described.

108,847. — WATCH-CASE. — Charles Louis Thiery, Boston, Mass.

Claim.—The combination, with the center *a*, glass-bezel *b*, and cover *c*, of the spring *f*, with its catch, *e*, made concave on its inner side, so that when pressed back it may fit snugly upon the bezel, as herein shown and set forth.

108,848.—GOVERNOR.—James L. Todd, Newburg, N. Y.

Claim.—1. The double-armed bell-cranks F and F', with right-hand and left-hand thread on their faces to act as nuts alternately on a right-hand and left-hand screw, for the purpose as specified.

2. The spindle G, with right and left-hand thread cut on it, so that the nuts F and F', acting on it and turning in the same direction, will raise or lower it.

3. The direct connection of the governor-balls N N with the arms F F' by means of the links L L, for the purpose of throwing either arms F F or F' F' into the right-hand or the left-hand screw G² or G' on the spindle G, to move up or down the spindle G, which may be connected to a steam-valve, variable cut-off rigging, water-gate, &c., as specified.

4. The spindle G, provided with recessed spaces *g'* and *g²* at the end of the thread for the purpose of preventing excessive play or movement of the valve-stem.

5. The combination of the elliptical springs *q q*, connected to cross-head *n*, with the sharp-edged collar *a*, for the purpose of preventing the flutter of the balls, incidental to the irregular motion of each single stroke of the steam-engine, from throwing either arms F or F' in the thread on spindle G.

108,849. — GLOVE. — William S. Tooker, Kingsborough, N. Y., assignor to himself and Elliot Thomas, same place.

Claim.—As an improved article of manufacture, a gauntlet, the back of which is formed in one piece, as represented by A B C, the front of the arm piece, and part of the wrist D E, and the back of the thumb F, also formed in one piece, as shown, and both combined with the palm portion G H, all substantially as specified.

108,850. — GLOVE. — William S. Tooker, Kingsborough, N. Y., assignor to himself and Elliot Thomas, same place.

Claim.—As an article of manufacture, a glove, having the back A B B², front or palm D, and the palm-piece N of the thumb, cut, shaped, and united, substantially in the manner described.

108,851.—MANUFACTURE OF ICE.—Peter H. Vander Weyde, New York, N. Y.

Claim.—1. The method described of making large blocks of ice by freezing water artificially, radiating cold downward on its surface, on successive superposed layers.

2. The suspended immovable non-conducting cooling-vessels *v v'*, with their conducting and radiating bottoms and systems of internal tubes and jets *g i*.

3. The freezing-tanks *b b'*, movable upward, to embrace said immovable coolers *v v'*.

4. The floats *f'* and *h*, with their stop-cocks or valves attached, for the purposes specified.

5. The system of double pumps, in connection with the vacuum and condensing operations, as described.

108,852. — COOKING-STOVE. — George W. Walker, Malden, Mass.

Claim.—In combination with the main stove or stove-body, the removable hot closet, arranged as described, when, at the end of such closet, and separated therefrom by a wall, *n*, is an ash-pit space, located under the main ash-pit *h*, substantially as shown and described.

108,853.—EXPELLING VOLATILE MATTERS FROM PEAT.—Thomas George Walker, New York, N. Y.

Claim.—1. The pipe *i*, passing through the fire-space or furnace, combined with the steam-pipe *h*, that supplies steam to force the peat through said pipe *i*, substantially as and for the purposes specified.

2. The enlargement or chamber *k*, in combination with the pipe *i*, and superheated steam-pipe *h*, as and for the purposes set forth.

3. The chamber *l*, plunger *m*, and nozzle *n*, in combination with the pipes *i*, *k*, and *s*, for the purposes set forth.

4. The pug-mill, made with the division *e*, and steam-jacket, combined with the pipe *s*, and passage from the upper part of the mill into the steam space, for the purposes set forth.

108,854.—PLAITING DEVICE.—William Walker, Brooklyn, N. Y., assignor to George H. Wooster, New York City.

Claim.—1. A plaiting-knife or blade, having a compound movement or series of movements, which consist of a rocking or rising and falling motion, a curvilinear sweep or action, and a straightforward movement in the line of feed, essentially as described.

2. The combination, for the production of a double-pointed plaited trimming, of the two knives D D', constructed and operating, in relation to each other, substantially as specified.

3. The combination of the rocking and sliding frame K or K' with the shaft J or J', the arm I or I', the rack G or G', and the pinion H or H', on the spindle *e* or *e'* of the knife D or D', essentially as described.

4. The combination of the cams M, N, and O, or M', N', and O', and the springs P, Q, and S, or P', Q', and S', with the slitting and rocking frame K or K', and the rocking and sliding shaft J or J', substantially as specified.

108,855.—PLATING DEVICE.—William Walker, Brooklyn, N. Y., assignor to George H. Wooster, New York City.

Claim.—1. The arrangement of the plaiters D or D', with its arm or arms F F', and rocking shaft or shafts G G', relatively to the line of feed, substantially as specified.

2. The combination, with a plaiter, D or D', operating by spring pressure, of a sliding and rocking shaft, G or G', for securing to said plaiter both its forward or plaiting-stroke, and its release from hold on the goods when retiring, essentially as herein set forth.

3. The combination of the rocking frame M or M', the sliding and rocking shaft G or G', the cams

I or I', and N or N', the springs K or K', and L or L', and the arm F or F', of the plaiter D or D', substantially as specified.

4. The combination, for the purpose of making plaiting, of two knives or plaiters D D', arranged for reciprocal operation in relation to each other, substantially as specified.

5. The combination, with the plaiting device attached to a sewing-machine or a secondary shaft, operated by the main shaft of the machine, and made to run at a slower velocity than said secondary shaft, essentially as and for the purpose set forth.

108,856. — Warping-Machine. — James Walmsley and Thomas Walmsley, Blackburn, Great Britain.

Claim.—1. The link *s*, rocking-bar s^1, finger s^2, and spiral spring s^3, in combination, for actuating the rods *w w*, substantially as hereinbefore described, and represented in the accompanying drawing.

2. The arrangement and combination of the movable frames B and the bars D D', and the swing or tension-rod E, so as to warp from the cop direct, substantially as hereinbefore described, and represented in the accompanying drawing.

108,857. — Corn-Plow.—John A. Walter and Eli Bushman, White House, Pa.

Claim.—The standards D D', articulated so as to fold backward, and provided with the draft-rod O, whereby they are secured in the vertically-inclined or folded position, arranged with the beam A, standard B, handles F, as shown and described.

108,858. — Toilet-Box. — Samuel W. H. Ward, New York, N. Y.

Claim.—A self-closing box, constructed substantially as described, having the cover D combined with case A, by an elastic spring, in the manner and for the purposes set forth.

108,859.—Machine for Making Wooden Pins.—Royal Harlow Watson, Lapeer, Mich.

Claim.—1. The die K, operated by means of the piston H, pitman F, crank-wheel E, and shaft C, in combination with the stop L upon the table A, constructed, arranged, and operating substantially as and for the purposes herein described.

2. The arm M, operated by the spring N, in combination with the arm P, chain or cord R, adjustable stop U, and adjustable stop-spring *s*, constructed, arranged, and operating substantially as herein set forth.

3. The lever V, provided with shoe *f*, and actuated by the springs W X, in combination with the short beveled cam *l*, projecting from the pitman, arranged and operating substantially as and for the purposes herein set forth.

4. The combination of the table A, provided with suitable openings therein, with the hopper Y, and stop L, as described, and for the purposes specified.

108,860.—Plow.—John W. Webb, Cotton Valley, Ala.

Claim.—The arrangement of the colter B, standard F, subsoil-plow H, and double brace J, with the beam A, as specified.

108,861.—Manufacture of Sugar.—Arnold Weichert, New York, N. Y.

Claim.—The manufacture of concrete sugar by the evaporation of the juice in the vacuum-pan, substantially as herein described.

108,862.—Metallurgic and other Furnaces.—Theodor Weiss, Dresden, Saxony.

Claim.—The arrangement of the air-heating chamber H, the fire-place B, the blast-apertures *b d*, the passage *c*, the flues D G, and the arch F, substantially as specified.

108,863.—Heating Apparatus for Lamps.—Windsor Newton White, Winchendon, Mass.

Claim.—1. In the apparatus as described, consisting of the vessel D, as made with the recessed bottom, and the supporter C, as constructed with the central and surrounding openings or passages *a b*, as set forth, such being to operate with a lamp-chimney, in manner as described.

2. The supporter, as made, with its rod-receiving passage *d*, constructed in manner, and to operate with the rod, substantially as described, whereby a set-screw is rendered unnecessary for retaining the supporter at any altitude on the rod.

108,864.—Brick-Machine.—Morris D. Williams, Dakota, Iowa.

Claim.—1. The combination, substantially as herein shown, of the adjustable false bottoms with the movable molds, for the purpose specified.

2. The convex oscillating platens S, constructed with one end heavier than the other, to hold them in proper position within the platen-wheel to bear upon the molds, as both platen and mold-wheel are rotated, as herein set forth.

3. The combination, with the mold and platen-wheels, of the oscillating platens S, the movable molds H, and false bottoms J, substantially as described, for the purpose specified.

4. In combination with the mold-wheel, the movable molds H, and adjustable false bottoms J, substantially as described, for the purpose specified.

5. In combination with the molds H, and false bottoms J, the levers L, and cams E' F', substantially as described, for the purpose specified.

6. In combination with the pivoted molds H, the segmental guides D', substantially as described, for the purpose specified.

7. In combination with the molds H, and false bottoms J, the set-screws G, substantially as described, for the purpose specified.

8. The arrangement of the water-tank H', and sand-box I', with reference to the platens S, substantially as described, for the purpose specified.

108,865. — Corn-Planter.—Charles Wisdom, Flat Rock, Mich.

Claim.—1. The guard *i*, tooth *j*, and covering-wings or plates *k*, in connection with the spouts I, as and for the purpose set forth.

2. The combination of the dropper M, the cylinder L, the shaft F, the connecting-rod A, and the curved rod N, all constructed and arranged substantially as described and shown, and for the purpose of adjusting the delivering of the seed, and marking the hill at the same operation.

3. The arrangement of the wheels A, the gears *a*, *b*, E, and G, the axle B, the frame C, the shafts D and F, the connecting-rod *h*, the markers N, the seed-dropper M, the cylinder L, and the spout I, constructed substantially as described, for the purpose set forth.

108,866, antedated October 29, 1870.—Apparatus for Making Cheese.—Edwin Lee Yancy, Batavia, and Charles Edwin Dorman, Pembroke, N. Y.

Claim.—The standard I, in combination with the cheese-board F, in the manner as described, and for the purpose specified.

108,867. — Printing-Telegraph.—George L. Anders, Boston, assignor to himself and E. B. Welch, Cambridge, Mass.

Claim.—1. A single electro-magnet B, with its armature E, in combination with the permanent magnet H, having director I, by which means the power of magnet B, through the agency of a reverse polarity, is directed either upon the type-selecting or printing mechanism of a telegraph-printing apparatus, substantially as described.

2. The combination of the electro-magnet B, armature E, lever F, permanent magnet H, and director I, with the printing mechanism, consisting of

the slides N O, type-wheel J, and feed mechanism W X, and their attachments, substantially as described.

108,868.—Apparatus for the Manufacture of Ice.—Silvester Bennett, Jefferson Parish, La., assignor to Matthew Julius Bujac, New York City.

Claim.—The arrangement of the freezing-cistern above the absorption vessel, operating as and for the purpose described.

108,869.—Breech-Loading Fire-Arms.—Hiram Berdan, New York, N. Y., assignor to the Berdan Fire-Arms Manufacturing Company, same place.

Claim.—1. The combination of the inclined surface *b* on the extractor, the bearing *i* in the breech-piece, and the spring C, applied to the extractor, substantially as herein described.

2. The combination of the extractor, having its rear end capable of protrusion through the part of the breech-piece within which it is applied, and the inclined or rounded surface *c* on the breech-receiver, substantially as and for the purpose herein described.

3. The sleeve E^2, on the sliding pin-hammer or firing-pin, extending forward over a portion of the sliding-bolt breech-piece, substantially as and for the purpose herein described.

4. The yielding pawl H, constructed with two projections 26 and 27, and operating substantially as herein described, for the two purposes of assisting to throw out the cartridge-shells and stopping the breech-piece.

108,870.—Heel for Boots and Shoes.—Horace H. Bigelow, Worcester, Mass.

Claim.—1. An improved blank heel, composed of a series of hollow lifts B, and central filling E', formed under pressure from all sides, substantially as described.

2. A compressed boot or shoe-heel, having the rand F united and compressed with the bottom lift A at the time the body of the heel is pressed and formed, as and for the purposes set forth.

3. The hollow lifting B, formed by cutting out the center of the lifting, so as to leave the exterior portion of the lifting in the shape of a continuous or endless strip, as shown and set forth.

108,871, antedated October 21, 1870.—Measuring Apparatus for Looms, &c.—John A. Bradshaw and Seldon L. Crockett, Lowell, Mass., assignors to Seldon L. Crockett.

Claim.—1. The combination and arrangement of the gears *e e*, operated by the drum-shaft *d*, the gears *f g*, and the variable gears *h' i*, with a suitable reducing gear and index or indexes, for measuring and indicating any desired lengths of yarn of warp, or of cloth, substantially in the manner shown and described.

2. In combination with the dial-gear *i*, and the adjustable gear *h'*, the graduated shaft *g'*, for indicating the position of the said adjustable gear, and thus forming a gauge of the scale of movement of the measuring apparatus, substantially as described.

3. In combination with the dial-gear *i*, the stop-pin *n*, for disengaging the driver and stopping the machine whenever the desired or predetermined lengths have been measured, substantially as described.

108,872. — Bustle. — John Broughton, Brooklyn, N. Y.

Claim.—The springs B B, secured each at one end to the lower part of the waistband, thence running up across the band, and being secured to the upper part thereof; thence springing upward and turning over in arched form, and combined with the band by means of a tension-cloth, substantially as herein described.

108,873. — Bustle. — John Broughton, Brooklyn, N. Y.

Claim.—The combination, with the waistband A, of the springs B, attached intermediately of their lengths to said band, and sprung and united together at their free ends, and connected laterally with each other and with the waistband by a web or tape, C, substantially as specified.

108,874.—Automatic Furniture-Lock.—James T. Brown and Isaac Hird, Cincinnati, Ohio.

Claim.—The bar A, provided with links B B turning horizontally, and engaging with the drawers C C by means of hooks *c c*, the whole operated automatically by one or more drawers, C', coming in contact with elastic lever D, and held unlocked by spring E, when all the parts are constructed and arranged substantially as herein described, and for the purpose specified.

108,875.—Try-Square and Level.—Henry L. Buckwalter, Limerick township, Pa.

Claim.—A combined try-square and level, having its handle composed of the two metallic plates B, said plates being formed with recesses or cavities on their inner faces, so as to confine the spirit-level tube and the blade between them, when united, substantially as described.

108,876.—Mouse-Trap.—John N. Bunnell, Unionville, Conn.

Claim.—The combination of the automatic setting-strap or lever D, constructed substantially as shown and described, and spring-bow S, with the choking-loop E, for operation in connection with the bait-hook, as specified.

108,877. — Watchmakers' Vise.—Arthur W. Bush, St. Cloud, Minn.

Claim.—The slotted plate or stock A, sliding plate B, spring C, and clamp-slide D, combined and arranged as shown, so as to furnish a watchmaker's tool or vise, substantially as described.

108,878.—Dining-Table.—Russel C. Case, Guilderland, N. Y.

Claim.—The arrangement and combination of the adjustable portion of the table *a* with the lateral portions thereof, *a'*, and the pivot *c* and lever *e*, or its equivalent, substantially as and for the purpose described.

108,879.—Stereotyping.—Alonzo Chace, Ithaca, N. Y., assignor of one-half his right to Ezra Cornell, same place.

Claim.—Providing the stereotype-matrix drying apparatus with the vacuum-chamber V, to be used alone or in combination with the chambers C C and D D, substantially as and for the purpose hereinbefore set forth.

108,880.—Brick-Machine.—Cyrus Chambers, Jr., Philadelphia, Pa.

Claim.—1. In a brick-machine, constructed and operating as described, the screw-case A, fluted or corrugated upon its interior surface, substantially in the manner and for the purpose set forth.

2. The combination and arrangement of the steam-jacket J, and corrugated screw-case A, in the manner and for the purpose described.

3. The combination and arrangement of the steam-jacket K, and the former E and die D, in the manner and for the purpose stated.

108,881.—Cow-Milker.—Leighton O. Colvin, Humphreyville, Pa.

Claim.—1. The reversely-cranked handles E E, cranks or levers *k k*, and rods *l l*, all constructed and arranged for operation substantially as described, in combination with the flexible diaphragm B, provided with a lower guiding-stem, *n*, essentially as set forth.

2. The arrangement, essentially as herein set forth, of the discharge-valve H, relatively to the base of the pan and contracted suction-passages *f* leading to the teat-cups, substantially as and for the purpose specified.

3. The outlet-chamber G, provided with a perforated discharge-plate, *r*, and dam *s*, in combination with the valve H, the whole being arranged in relation to the pan, as specified.

4. The clamping-ring C, provided with locking-ears *d*, for action under fixed lugs *e*, in combination with the reversely-cranked handles E E and flexible diaphragm or piston B, substantially as described.

5. The air-passage *u* within the sides of the teat-cups, arranged to communicate at its opposite ends with the interior of the latter, substantially as and for the purpose herein set forth.

108,882.—BREAST-PUMP.—Leighton O. Colvin, Newark, N. J.

Claim.—1. The cup A, having its edge open to form a hollow rim or border, *a*, in combination with the elastic diaphragm or lining B, sprung at its thickened edge *b* within said rim, substantially as specified.

2. The arrangement of the valve *f*, in combination with the lever C and diaphragm B, for operation by and with the lever, under cover of the milk, essentially as herein set forth.

3. The combination, with the nipple D, of the hollow screw *g*, the soft packing *h*, and the socketed branch E, essentially as shown and described.

108,883.—WOOD-SPLITTING MACHINE.—Edward Coogan, Washington, assignor to himself and Joseph L. Simons, Georgetown, D. C.

Claim.—1. The adjustable block H, constructed with flanges and tapering from front to rear, substantially as set forth.

2. The combination of the adjustable block H, constructed as described, and frame A B, substantially as set forth.

3. The elastic cushion I′, in combination with the helve and ax, substantially as and for the purpose set forth.

108,884.—BRIM OF SOFT HAT.—James W. Corey, Newark, N. J.

Claim.—A hat whose brim has inclosed within it or its binding a stiffener of textile goods saturated with shellac or other suitable gum, and capable of being curled or shaped as herein described.

108,885. — EARTH-CLOSET.—Rensselaer A. Cowell, Cleveland, Ohio.

Claim.—The chamber D, apron *g*, cross-bar E, arms F F, bars A and A′, hook *j*, pin *p*, spring *o*, and strip *q*, when the same are combined, arranged, and operated substantially as and for the purpose described.

108,886. — SAWING-MACHINE. — James H. Curell, St. Louis, Mo., assignor to himself and Jeremiah E. Morrisey, same place.

Claim. — 1. The horizontally-sliding saw-carriage, supported on a turn-post, G, substantially as and for the purpose described.

2. In combination with the carriage J, the standards *j j′* and *k k*, and journal-blocks L L′, allowing the vertical adjustment of the saw without affecting the length of the belt, as described.

3. The combination of the rollers *m m″*, E E′, pulley *t*, rods S S′ S″ S‴, and belt Q, so connected and arranged as to permit the movement of the saw-carriage J without affecting the tightness of the belt, substantially as shown and described.

4. The combination of the turn-post G *g*, platform H, shaft T, and pulley V, substantially as described, and for the purpose set forth.

5. The combination of the turn-post G, platform H, set-screw X *a*, table B, and slot W, as and for the purpose described.

108,887. — CARD-RACK. — John F. Curtis, Chicago, Ill.

Claim.—1. In combination with the pockets B, the adjustable lining B′, substantially as and for the purpose set forth.

2. The removable clasp C, held in place by the strip C′, and hooking over the upper edge of the pane of glass to secure the latter, substantially as set forth.

108,888.—GAS-HEATER.—Samuel G. Dare, New York, N. Y.

Claim.—The heater or heating attachment to gas-burners, consisting of a conical tube with internal ribs or projections, substantially as herein described.

108,889. — HAY-PRESS.—J. Ham. Davison and Thomas J. Sasher, Mound Station, Ill.

Claim.—The arrangement of the grooved windlass N, provided with the clutch P and forked lever L, in combination with chains R, arms S, and platen V, in the manner herein shown and described, for the purposes set forth.

108,890.—BORING-MACHINE.—William H. Dentrick, Heidlersburg, Pa.

Claim.—The sliding carriage C, having holes *a a* and pins D D therein, and clamp G E thereon, in combination with the revolving sliding auger N, when constructed to operate in the manner shown.

108,891.—PAPER-CUTTING MACHINE.—St. Clair Denny, Pittsburg, Pa., and Israel L. G. Rice, Cambridge, Mass.

Claim.—1. The cutters T T′, operating in connection with the feed-rollers *s s s′ s′*, when combined with a series of cutters, *l l l*, set at right angles with them, substantially as described, and for the purpose set forth.

2. The combination of the double ratchet K, carriages *i i*, and the pinions *k k′*, the whole arranged to give a revolving motion to the series of cutters *l l l*, substantially as described, and for the purpose set forth.

108,892.—PLOW.—Edward Dietsch, Findlay, Ohio, assignor to himself and Jacob C. Powell, same place.

Claim.—The arrangement and combination of the tongue *a*, beam B, hanger D, and handle *b*, all as shown and described.

108,893.—BEE-HIVE.—Eliza Jane Donavan, Indianapolis, Ind., assignor to herself and W. T. Gibson, same place.

Claim.—1. The combination of the box D and drawer F with the strips *d* and holes *e*, arranged at the front of the hive, as set forth.

2. The arrangement of the perforated bottom M, having the drawer E, with its covered air-passages *p* and *c* located underneath, and the box D and drawer F, with their covered air-passages, all as set forth.

108,894.—RAILWAY SNOW-SHOVEL.—John Wheeler Elliot, Toronto, Canada.

Claim.—1. The shovel C, surmounted by a flaring scoop, D, and provided with a revolving discharger, J, substantially as described.

2. The convex back P to the shovel and scoop, in combination with a revolving discharger, substantially as described.

3. The shovel and scoop, terminating in a cylindrical portion, E, through which is an escape-opening, O, provided with slides G, substantially as described.

4. The combination, with the truck A, of the depressed horizontal shovel C, having flaring sides and revolving blades J, substantially as described.

108,895.—MACHINE FOR CUTTING NAILS.—David J. Farmer, Wheeling, West Va.

Claim.—1. The intermittingly-moving and reciprocating table and series of nail-plate holders, in combination with cutters, and with mechanism to feed the plate forward to said cutters, substantially as described.

2. In combination with the table C, the stud *e*, arm J, lever G, double pawl H, and toothed wheel I, arranged to operate substantially as described.

3. The combination of the reciprocating table C, the racks L L, adjustable wedge W, and lugs *m m*, substantially as and for the purposes set forth.

4. The combination, with the hollow feeder K, of the continuously-grooved bars *k k*, to guide the plates to the cutter or cutters, as set forth.

108,896.—COTTON-SEED HULLER.—William R. Fee, Cincinnati, Ohio.

Claim.—1. The housing or end piece A, provided with the shoulders A′, substantially as set forth.

2. The segments B, in combination with the shoulders A′ of the housing, substantially as set forth.

3. The knife G′, when provided with the grooves *j*, as herein shown and described.

4. The knife G′, in combination with the adjoining grooved and adjustable cylinder section or clamp, when said parts are arranged as herein shown and set forth.

108,897.—BUNG-LOCK.—Hermann Fischer, Lanesville, Ind.

Claim.—In combination with the plate A and casing B, the lid C, provided with the valve *d*, and secured to the plate by any suitable means, substantially for the purposes herein set forth.

108,898. — BOTTLE-FAUCET. — Hermann Fischer, Lanesville, Ind.

Claim.—The combination of the screw-tube A, hollow cross-piece E with valve *i*, stuffing-box C, bent tube B, and stop-cock D, all constructed to operate substantially as set forth.

108,899. — LOCOMOTIVE SMOKE-STACK. — Eugene Fontaine, Fort Wayne, Ind., assignor to himself and William A. Roberts, same place.

Claim.—The cylinder *f* and pipe *c*, the former surmounting the latter, in combination with the head *d* and deflector *h*, substantially as described.

108,900, antedated October 22, 1870. — PLATE FOR HARNESS-SADDLE.—James H. Garrett, Mount Pleasant, Iowa.

Claim.—As a new article of manufacture, a harness pad-plate, composed of the plate A, provided with the groove *c* for the reception of the water-hook and crupper-loop *b b*, and the perforation C, all constructed as herein described.

108,901. — STUMP-EXTRACTOR.—Lyman B. Gibson, South Addison, N. Y.

Claim.—1. The sweep D, capstan B, rope or chain C, and pulleys 1, 2, 3, 4, and 5, arranged and operating substantially as herein shown and described.

2. The capstan B, sweep D, coupling *b*, hinged wedged block G, ratchet and pawl H I, bolt-rods P P, and block K, when combined and operating in connection with the rope or chain C, and pulleys 1, 2, 3, 4, and 5, substantially as described.

3. In combination with the above, a connection, *f*, for operating the pawl, substantially as described, for the purpose set forth.

108,902.—APPARATUS FOR OPERATING SEWING-MACHINE.—Victor Giroud, New York, N. Y., assignor to John M. Dow, same place.

Claim.—1. The combination of the seat H, arranged to rise and fall with the toothed segment-lever I and a train of gear-wheels or pulleys for operation, essentially as specified.

2. The segment-lever I and seat H, or its stem *e*, connected by an adjustable pin *i*, in the slot A, substantially as and for the purpose set forth.

3. The combination of the seat H, constructed to swivel horizontally with the lever I and driving-wheels or pulleys G, substantially as shown and described.

108,903.—WAGON-AXLE.—George H Glad and John C. Becker, Boston, Mass.

Claim.—1. In combination with the oil-cup E and E′, the plug I, provided with the opening *i*, substantially as shown, and for the purpose set forth.

2. The oil-cup E and E′, provided with the plug I and with the perforated lug E″, in combination with the axle-arm B, provided with the oil-grooves G, substantially as and for the purpose shown.

108,904.—PRESSURE-REGULATOR FOR WATER AND STEAM APPARATUS.—John C. Hagan, Nashville, Tenn.

Claim.—1. The automatic pressure-regulator E F G, adapted to operate substantially as herein set forth.

2. The combination of the secondary valve I with the compound piston-valve E F, substantially as and for the purposes explained.

3. The combination of a minute-valve, N or N′, operated either with or without the branch connections O or Q, in combination with the combined piston-valve E F, for permitting the latter to open in the manner described.

4. The valve N′, of any required size, when operated by wires Q, substantially as herein explained.

108,905.—STEAM AND WATER-SUPPLY AND PRESSURE-REGULATOR.—John C. Hagan, Nashville, Tenn.

Claim.—1. The piston G, working in a cylinder, F, and regulating a valve, C, through the medium of suitable connections, substantially as herein set forth.

2. The hollow weight M, in combination with the lever L, and with a pipe, O, through which the said weight may be supplied with water to increase its effect, as required.

3. The electro-magnetic connection R S, operating the regulator from distant points, substantially as specified.

4. The balance valve P, fig. 3, constructed and operating in the manner and for the purpose stated.

5. The combination, with the water-main D, and a suitable pump or pumps, A, of the pipe E, cylinder F, piston G, and valve C, to automatically regulate the pressure in said main D, substantially as described.

6. The combination, with the water-main D, of the pipes N O, valve P, hollow weight M, and a regulating-valve of any suitable form, to admit of maintaining increased pressure in the pipes when required.

108,906, antedated October 22, 1870. — EAVES-TROUGH FASTENER. — Michael Henney and William B. Rager, North Manchester, Ind.

Claim.—1. The bent bar B, and clasps C D, constructed as described, substantially as and for the purposes herein set forth.

2. In combination with the bar B and clasps C D, the headed bolt *a*, washers *b b*, set-nut *d*, and strap E, all constructed and arranged substantially as and for the purposes herein set forth.

108,907.—REVERSIBLE PLOW.—Ephraim C. Hodge, Oneonta, N. Y.

Claim.—1. A reversible plow, in which the bottom edge of the land-side or its shoe is at a depressed angle with the pivotal line on which the mold-board turns, for operation essentially as described.

2. The catch F, pivoted at the rear end of the beam, and extending rearwardly between the handles, with its forward end constructed to secure the mold-board on either side of the beam, for operation substantially as set forth.

2. The double land-side, consisting of two plates *a a*, formed at their lower edges to serve as a substitute for the ordinary shoe, in combination with a reversible plow, as shown and described.

108,908.—Dress-Shield.—Burritt M. Hotchkiss, Naugatuck, Conn., assignor to the Goodyear India-rubber Glove Manufacturing Company, same place.

Claim.—The India-rubber shield, made with a seam of the character and in the manner specified.

108,909.—Manufacture of Fertilizer.—Carlos P. Houghton, Georgetown, D. C.

Claim.—1. The improved fertilizer herein described, composed of marl treated with alkaline salts, substantially as set forth.

2. The combination of marl, alkaline salts, and bones, in the manner described.

3. The combination of marl, soda-ash, or its equivalent, and ammoniacal salts, so as to produce a fertilizer, as described.

108,910.—Harrow.—John Jacobson, Austin, Minn.

Claim.—The construction and arrangement of a harrow, the front rollers *af* which are provided with knives; and the other rollers of which the harrow may consist are provided with teeth, arranged substantially as and for the purpose set forth.

108,911. — Sulky.—Jesse Jenkins, Sligo, Md.

Claim.—1. A sulky, having its seat-frame E arranged and supported so that it may at pleasure be converted from a spring to a rigid seat, to adapt it as a road or track sulky, as described.

2. The swiveled locking arm I, in combination with the spring seat-frame E, for the purpose described.

3. The seat-frame E, hinged to the shafts at opposite points so as to serve as lateral braces to said frame, as described.

4. The seat-frame E, hinged to the shafts so as to be adjusted vertically to suit different heights of horses, as described.

5. The combination of the seat-frame E, the spring F, and the locking arm I, the several parts being arranged and operating as described.

108,912.—Harvester-Reel.—John H. Keller, Boalsburg, Pa.

Claim.—The combination of the standard E, hinged reel-support B, lever H, connecting-rod *f*, and prop L, provided with the friction-roller *e*, substantially as and for the purpose specified.

108,913.—Manufacture of Paper.—John S. Kenyon and Lewis Fox, Baldwinsville, N. Y.

Claim.—The mineral substance called red-rock in stock or pulp in the manufacture of paper, substantially as and for the purposes herein set forth.

108,914.—Mineral Paint.—John S. Kenyon and Lewis Fox, Baldwinsville, N. Y.

Claim.—The combination of the hereinbefore described mineral substance, called red-rock, with linseed or other oil, substantially as and for the purposes set forth.

108,915. — Motive-Power Apparatus.—Lebbeus W. Lathrop, Poughkeepsie, N. Y.

Claim.—The elastic belt F, shafts A B, and differential gear D E, combined and arranged as and for the purpose described.

108,916.—Pen-Holder.—Robert B. Lawrence, Wheeling, West Va.

Claim.—The longitudinally-compressible and laterally-expansible spiral wire-sheath *b*, applied on the reduced end of the pen-handle and supported thereby along its whole length, and adapted to receive the shank of the pen between it and the handle, substantially in the manner shown and described.

108,917.—Sleigh-Runner.—John Logan, Waterloo, Iowa.

Claim.—The cast-iron sled-runner A, herein described, having chilled bottom, steel shoe *a*, tapering bolts *b b*, openings *v v*, braces *s s l l*, constructed and arranged to operate as specified.

108,918. — Cotton-Chopper. — John Augustus Lutz, Waynesborough, Va.

Claim.—1. The cutters I I, provided with points *f f* and flanges A A, in combination with the revolving wheel G, when constructed and arranged to operate substantially as and for the purpose specified.

2. The combination of the lever N, rod M, with arms *p r*, connecting-rods *o s*, slotted bar *t*, rod *v w*, and collar *s*, all constructed and arranged substantially as and for the purposes herein set forth.

108,919. — Swivel Plow. — Elbridge G. Matthews, Oakham, Mass., assignor to Franklin F. Holbrook, same place.

Claim.—The combination, with the swiveled mold-board B and point or share E, of the wings F F, substantially as and for the purposes set forth.

108,920.—Door-Bolt.—Duncan McArthur, New Haven, Conn., assignor to Sargent & Co., same place.

Claim.—As an article of manufacture, a barrel-bolt, in which the plate and barrel are formed in one and the same piece by cutting away a portion of the center of the plate, so that in raising the barrel the two parts of the plate are drawn together at the center, substantially in the manner herein set forth.

108,921.—Scroll-Saw.—Reuben McCheney, Birmingham, Conn., assignor to himself, Thomas L. Cornell, and Sidney Cornell.

Claim.—1. The combination of the two rods G G, three flexible sections *g g*^{1} *g*^{2}, three segments or pulleys F F^1 F^2, saw S, blocks E E′, straight sliding device C′, and adjusting device W V, all arranged and operating in the manner and for the purpose herein described.

2. The combination of the block E or E′, constructed as shown, and the perforated hollow guide-rods *e e*, carrying oil, as an oil-chamber, and supplying the same to the external head-block E or foot-block E′ of a saw which is guided by them, substantially as described.

3. The movable covers *n n*, and the thimbles T T, combined with the lower perforated guide-rods *e′ e′*, substantially as described.

4. The split saw-stirrup *c*, having the adjustable back-rest *p* and clamp-screw *p′* applied to it, substantially as described.

5. The combination of the device *c c*^{2} *f*, divided saw-carrying block E or E′, elastic strip *s*, screws *k k*, and nuts, substantially as shown and described.

6. Straight moving adjustable support C′, pulley F^2, flexible section *g*^{2}, rods G G, pulleys F^1 F, flexible sections *g g*^{1}, saw S, and adjustable device V W, combined and arranged substantially in the manner described.

108,922.—Harvester.—Leander J. McCormick and William R. Baker, Chicago, Ill., assignors to C. H. McCormick & Brother, same place.

Claim.—1. The combination of the main frame, mounted on the main axle, the flanged plates E in which the main axle and counter-shaft are mounted, the trunnions on the flanged plates, the ribs on the trunnions, the grooved box *f*^{1} on the gear-frame, and the counter-shaft extending across the frame, all these parts being constructed and operating as described.

2. The combination, construction, and relative arrangement, as set forth, of the main frame, the trapezoidal gear-frame, the elbow-lever, the inner driving-wheel, and the sprocket-wheel.

3. The combination of the main frame, the sprocket-wheel on the main axle, the sliding elbow-lever on the main frame, and the friction-roller on the elbow-lever, all these parts being constructed and arranged, as hereinbefore set forth, for joint operation.

4. The pitman-connection, constructed as set forth, with the yoke, the socket half-box, the convex half-box, and the concave washer, to prevent the binding of the pitman.

108,923.—Paint-Brush.—Alvin McDonald, Washington, Ill., assignor of one-half his right to James M. White, same place.

Claim.—The segments B C pivoted together at *a*, their free ends finishing in a point, and the lower part of segment C, having a recess, *b*, for retaining the ends of the bristles, in combination with the cone D, screw E, shell A, and handle F, all as shown and set forth.

108,924.—Roofing-Bracket.—Lyman W. Merriam, Fitchburg, Mass.

Claim.—The hanger L, with a slot, C, ears D D, braces F F, and rib G, in combination with a suitable form of frame or bracket to support the stage, substantially as described.

108,925.—Fence.—William A. Middleton, Harrisburg, Pa.

Claim.—A fence as described, consisting of the post A, joint and metallic band *a*, angular attached boxes B, made of flat bent metal, and detachable sections C C, formed and arranged as specified.

108,926.—Machine for Separating Middlings.—William R. Middleton, Cleveland, Ohio.

Claim.—The combination of the reel B, sieve H, chamber D, and blower E, when arranged in relation to each other in the manner as and for the purpose set forth.

108,927. — Lock-Nut. — John Miller, Jr., Marshalltown, Iowa.

Claim.—The combination of the recessed head D of the bolt C, spring E, elongated plate *a*, convex on its outer surface, and the nut I, concaved on its inner surface, all substantially as shown and described.

108,928.—Shaft-Iron for Carriages.—Francis B. Morse, Plantsville, Conn., assignor to H. D. Smith & Co., same place.

Claim.—As an improved article of manufacture, shaft-irons having the ears P P formed thereon, and so as to be closed down onto the shaft, as herein set forth.

108,929.— Carriage-Spring.—Francis B. Morse, Plantsville, Conn., assignor to H. D. Smith & Co., same place.

Claim.—An elliptic spring, composed of two lifts, the outer one formed with two ribs and the inner with corresponding recesses upon their meeting surfaces, so as to be combined in the manner and for the purpose set forth.

108,930.—Shelving for Stores.—Richard Murdoch, Baltimore, Md.

Claim.—1. A case of shelves, provided with sliding sections, combined with counter-weights, substantially as described.

2. The arrangement of the levers *o v*, cord *r*, plates *t*, and bracket *u*, as specified.

108,931.—Composition for Bearings.—Eliza Dexter Murfey, New York, N. Y.

Claim.—1. The composition for bearings and journals, &c., consisting of the ingredients herein described.

2. The process of manufacturing the said composition by combining and condensing the materials, forming a solid mass, and then grinding or comminuting the latter, as set forth.

108,932.—Pneumatic Car-Brake.—David Myers and Albert B. Pullman, Chicago, Ill.

Claim.—1. The hinged arm D and friction-wheel C, when constructed and arranged substantially as and for the purposes as described.

2. The combination and arrangement of the arm D, wheel C, the car-axle, the air-pump, and air-tank or reservoir P, when constructed and arranged substantially as and for the purposes specified and shown.

3. The spring arm J, when constructed and arranged substantially as and for the purposes specified and shown.

4. The projections N attached to the piston-valve M of the pump, when constructed and operating substantially as and for the purpose described.

5. The expansible sides *f* and clamps *n*, when constructed and arranged substantially as and for the purpose described.

6. The cord or rope 3, in combination with the swinging arm 6, when constructed and arranged substantially as and for the purposes described.

7. The drum 4, spring 5, pawl 7, and ratchet-wheel 8, when arranged and operating substantially as and for the purposes described and shown.

108,933.—Device for Cutting Screw-Threads.—Zina S. Ogden, Glen's Falls, N. Y.

Claim.—The jaws C C, hinged together and provided with lips *a a*, having teeth *e e* and grooves *i i*, in combination with the stock A, slotted screw, B, and tapering screw-sleeve D, all substantially as and for the purposes herein set forth.

108,934.—Washing-Machine.—Arthur M. Paullin, Atlanta, Ill.

Claim.—The combination of the box A, cylinder C, wash-board D G, notched cleats *b b*, rod *a*, and treadle I, all constructed and arranged substantially as and for the purposes herein set forth.

108,935. — Steam-Generator. — John T. Rich, Philadelphia, Pa.

Claim.—1. The combination, in a steam-generator furnace, of the diaphragm F^1, and dead-plate D^1, substantially as and for the purpose set forth.

2. In combination, the grate-bars D, dead-plate D^1, and diaphragms E E′, arranged in relation to each other and to the furnace door, substantially as set forth.

3. In combination, the grate-bars D, dead-plate D^1, diaphragms E E′, and air-passages F F, arranged in relation to each other, substantially as set forth.

4. The arrangement of the rose-head covered air-pipe F^3, substantially as and for the purpose set forth.

5. The combination of the bridge-wall or water-bridge or water-leg, and the perforated pipe F^3, when arranged with reference to the funnel-mouthed air-pipes F^3 F^4, substantially as set forth.

108,936. — Steam-Generator. — John T. Rich, Philadelphia, Pa.

Claim.—1. The arrangement of air-induction apertures with reference to the igniting-diaphragms, substantially as and for the purpose set forth.

2. The rose-heads C′, when constructed and ar-

ranged upon the interior of the fire-box, substantially as and for the purpose set forth.

3. The lift-pipe E, constructed and arranged substantially as and for the purpose set forth.

108,937.—Gas Apparatus.—Jean Elie Richard, Columbia, S. C., assignor to himself and Eugene C. Plumer, same place.

Claim.—1. The cylinder *a*, when divided into the chambers *b* and *c*, which are connected by the pipe *g*, and combined with the perforated hollow shaft B and the spiral carbureter *a' b'*, substantially as described.

2. The carbureter *a' b'*, pins *c'*, and suspended rocking-vessels *d'*, arranged as specified.

3. The hollow perforated shaft B, spiral condenser *u v*, and carbureter *a' b'*, arranged as set forth.

4. The cylinder *a*, gas-pipe *f*, air-pipe *s*, coil *l'*, and tube *k'*, all arranged as explained.

5. The cylinder *a*, elbow *m' o'*, stuffing-box *p'*, finger *q'*, and register *r'*, all arranged as described.

108,938.—Carpet-Stretcher.—Alvan S. Richards, Montgomery county, Md.

Claim. — The hereinbefore-described carpet-stretcher, consisting of the lever A, provided with the stud *a*, the claw B, and the pivoted fulcrum-bar C, provided with the stud *c*, substantially as shown.

108,939.—Subsoil Attachment for Plow. Albert F. Roberts, Lexington, Ky.

Claim.—1. The standard E, composed of the portion E', attached to the shovel L, and the portion E'', constituting the colter, with the foot R, with the adjustment composed of the slotted strap A, provided with the projections *m*, set-screw C, plate F, and nut H, substantially for the uses and purposes shown and set forth.

2. In a plow, cultivator, or subsoil attachment, the device A, provided with the projections *m*, for the uses and purposes described and shown.

108,940. — Finishing the Surface of Plated Goods.—John Rogers, Newark, N. J., assignor to Lippiatt Silver Plate and Engraving Company, New York City.

Claim.—The method herein specified of finishing the surface of plated-ware, by the joint action of stippling and plating, substantially as set forth.

108,941.—Portable Forge.—Philander H. Roots and Francis M. Roots, Connersville, Ind.

Claim.—1. The combination of the blower H, having two conoting abutments, and metallic fire-bed and tuyere P, with the mechanical devices for operating same, when constructed and arranged as herein shown and described.

2. In combination with the metallic fire-bed and tuypre P and blower H, the valve O, for preventing explosions, as set forth.

3. A portable forge, provided with the pivoted handles L and wheels B, connected to a single axle, substantially as described, for convenience in moving the forge, as set forth.

4. In combination with the depressions C in the fire-bed and hearth, the guard about the hearth, with a gate, d, constructed and arranged substantially as and for the purpose set forth.

5. In combination with the fire-bed or tuyere P and blower H, the ratchet R and pawl S, when constructed and arranged in connection with the mechanism for driving the blower, substantially as herein described, and for the purposes set forth.

108,942.—Breech-loading Fire-Arm. — William Middleditch Scott, Birmingham, England.

Claim.—The combination, with the lump on the under side of the barrel or barrels, of a separate joint-hook, adjustable on said lump by means substantially as herein described, whereby the hook may be advanced or pushed outward to compensate for its wear upon the joint-pin, as set forth.

108,943.—Grooving-Machine.—Jared W. Smith, Hartford, Conn.

Claim.—The plates A A, in combination with the reversible teeth *z z*, and the adjustable bearing-plates *s s*, substantially as shown and described.

108,944.—Wash-Boiler.—Oscar F. Stedman, Westfield, N. Y.

Claim.—1. In connection with a wash-boiler, the construction of a double false bottom composed of two parallel horizontal plates, the lower one being provided at each edge with a perpendicular flange, C, or its equivalent, substantially in the manner and for the purpose described.

2. The perforated plate G, in combination with the end pieces B B and cross-bar D, and made detachable and removable, for the purpose set forth.

3. The combination of the flanged plate A with its end pieces B B and cross-bar D, in connection with the perforated plate G and tubes J J, substantially in the manner described.

108,945.—Cultivator.—Daniel C. Stover, Lenark, Ill.

Claim.—1. The combination of the short sliding eye-bearing J, long tubular bearing *t*, and retaining-screw *h*, substantially as described.

2. The short axle-extensions P, tubes *t*, braces *c c' c''*, and forked tongue, combined substantially as and for the purpose described.

3. The tubular eye-bearing J, with perforated ears, in combination with the short axle-extensions P, tube *t*, plates G G, and beam D, substantially as described.

108,946.—Cap for Plane-Iron.—Charles N. Tuttle, Auburn, N. Y.

Claim.—The plane-iron cap, provided with a nut when each is formed in separate pieces, and brazed together, as and for the purpose herein specified.

108,947, antedated October 22, 1870.—Cotton and Corn-Planter.—Elijah Wagner, Westminster, Md.

Claim.—1. A cotton or corn-planter, with fertilizer-distributer, so constructed that the fertilizer is first deposited and covered up, and then the seed or corn dropped and covered up, substantially as and for the purposes herein set forth.

2. The curved guide N, provided with opening O, constructed as described, and operating substantially as and for the purposes herein set forth.

3. The curved bar R, with covering-plow S, adjusted by means of the chain *m*, substantially as shown and described.

4. The combination of the fertilizer-hopper H, boot J, and plow K, with the seed-casing C D D, guide N, and covering-plow S, all constructed and arranged as described, to operate substantially in the manner and for the purposes herein set forth.

108,948.—Boot.—Joseph H. Walker, Worcester, Mass.

Claim.—A boot, having a saddle or brace piece applied within the boot to the side seams, and extending up on said seams, above the top line of the counter, as and for the purposes set forth.

108,949.—Fan-Blower.—Lorenzo D. Wheeler, Fitchburg, Mass., assignor of one-third his right to Hubbard H. Beigham, same place.

Claim.—1. The combination of the peculiarly-constructed fans F with the inwardly-projecting flanges *d d'*, substantially as and for the purpose stated.

2. An improved fan-blower, the parts of which are constructed and combined together, as herein shown and described.

108,950.—Earth-Commode.—Enos Woodruff, Elizabeth, N. J.

Claim.—The lateral-moving shovel or distributor, constructed, arranged, and combined with an earth-closet or commode, substantially in the manner, and for the purpose specified and shown.

REISSUES.

4,170.—Hasp for Trunk-Lock.—Samuel Croft and John C. Schuellermann, Philadelphia, Pa., executors of Conrad Liebrich, deceased.—Patent No. 10,862, dated May 2, 1854; extended seven years.

Claim.—1. The combination, with a hinged hasp, of a spring for throwing out the lower or hinged portion thereof, substantially as described.

2. The combination, with a hasp, of the solid trunnions *c* and recesses *b*, substantially as and for the purpose described.

3. The hasp-catch, secured to a solid projection on the hinged portion of the hasp, substantially as and for the purpose described.

4,171.—Machine for Rolling Cornices.—Asa Johnson, Cairo, N. Y., for himself and William H. Johnson, assignee of Asa Jonnson.—Patent No. 18,906, dated December 22, 1857.

Claim.—1. In a machine for corrugating sheet metal, a series of sets of grooved rollers, of which the rollers of the first set shall have one groove to form a single corrugation, and the second the same groove as the first, and one more, and so on for as many corrugations as is desired, so that the corrugations will not only be formed successively, but each and every corrugation will be firmly held during the formation of the remainder, as set forth.

2. The die or bed B, in combination with the forming-roller E, and holding-rollers C^2 D^2, as and for the purposes set forth.

3. In combination with sets of rollers grooved relatively to each other, as described, the horizontal rollers E E and dies B L L, as described, for the purposes set forth.

4. The arrangement of the series of rollers C D, C^1 D^1, C^2 D^2, bed or die B, rollers E E, and dies L L, for the purpose of forming sheet metal into cornices and gutters for buildings, while hot, and passing it through the machine in boiling oil, as described, and for the purposes set forth.

4,172.—Corrugated Iron Bridge.—Richard Montgomery, New York, N. Y.—Patent No. 25,210, dated August 23, 1859.

Claim.—1. The within-described double arch, formed, substantially as herein set forth, of arches B M, of longitudinally-corrugated metal describing curves of different radius.

2. Bearers or socket-plates F or G, grooved to fit the under side of the corrugated curved beams B M, in combination with blocks or saddles C or C', grooved to fit upon the upper side of said beams, when said bearers and blocks are placed in pairs upon opposite sides of the superimposed beams B M, and are connected and secured by transverse tie-bolts I or E, substantially in the manner and for the purpose herein set forth.

4,173.—Fabric for the Manufacture of Shoes, &c.—Enoch Waite, Franklin, Mass., assignor of one-half interest to Stephen M. Weld.—Patent No. 107,642, dated September 20, 1870.

Claim.—1. As a new manufacture, a fabric, formed by making, with water and fibers which will felt, a sheet in the manner in which sheets are formed from paper-pulp, then felting or fulling such sheet, or both felting and fulling it.

2. The process herein set forth of making the said new fabric.

3. A shoe-upper or other articles, as made of such new fabric in a wet state, and by means of a mold or former, and heat and pressure, as set forth.

DESIGNS.

4,446.—Collar-Box.—Albert Aronson, New York, N. Y.

Claim.—The design for a collar-box, substantially as herein shown and set forth.

4,447. — Umbrella-Stand. — Christopher Blake, Boston, Mass.

Claim.—The design for the pan *d* and rest *e* of an umbrella-stand, substantially as shown and described.

4,448.—Carpet-Pattern.—Jonathan Crabtree, Philadelphia, Pa.

Claim.—The design for a carpet, as shown.

4,449.—Flower-Pot.—James Leak, Geddes, N. Y., assignor to himself, Thomas G. White, and William Holmes.

Claim.—The design for a flower-pot, decorated with representations of trees and shrubs substantially.

4,450.—Clock - Front.—Nicholas Müller, New York, N. Y.

Claim.—The design for a clock-front, as herein shown and described.

4,451.—Coal-Hod.—Joseph Pitts and James K. Pitts, McLean, Ill.

Claim.—The design for a coal-hod, substantially as shown and described.

4,452.—Cylinder and Frame of Steam-Engine.—Gelston Sanford, Bergen, N. J.

Claim.—1. The design and configuration of the cylinder-portion A, side frames B B, and feed water-heater C, when combined, as herein shown and described.

2. The design and configuration of the steam-chest E, its cover E', and the pump-cylinder F, as herein represented and described.

4,453.—Frame.—Benjamin A. Ward, Lynn, Mass.

Claim.—The design for a frame, substantially as shown.

4,454. — Bracket. — Benjamin A. Ward, Lynn, Mass.

Claim.—The design for a bracket, substantially as shown.

4,455. — Bracket. — Benjamin A. Ward, Lynn, Mass.

Claim.—The design for a bracket, substantially as shown.

4,456.—Clock-Front.—Benjamin A. Ward, Lynn, Mass.

Claim.—The design for a clock-face, substantially as shown.

TRADE-MARKS.

17.—Seamless Metal Tube.—American Tube-Works, Boston, Mass.

18.—Stove-Blacking.—Henry A. Bartlett & Co., Philadelphia, Pa.

19.—Lead-Pencil.—Eberhard Faber, New York, N. Y.

20.—Manufactured Tobacco. — Arthur W. Foote, Brooklyn, N. Y.

21.—PREPARATION FOR THE HAIR.—Richard Green, Manchester, N. H.

22.—CIGAR.—David Hirsch & Co., New York, N. Y.

23.—CIGAR.—David Hirsch & Co, New York, N. Y.

24.—CIGAR.—David Hirsch & Co., New York, N. Y.

25.—CIGAR.—David Hirsch & Co., New York, N. Y.

26.—CIGAR.—David Hirsch & Co., New York, N. Y.

27.—CIGAR.—David Hirsch & Co., New York, N. Y.

28.—CIGAR.—David Hirsch & Co., New York, N. Y.

29.—CIGAR.—David Hirsch & Co., New York, N. Y.

30.—CIGAR.—David Hirsch & Co., New York, N. Y.

31.—CIGAR.—David Hirsch & Co., New York, N. Y.

32.—CIGAR.—David Hirsch & Co., New York, N. Y.

33.—CIGAR.—David Hirsch & Co., New York, N. Y.

34.—CIGAR.—David Hirsch & Co., New York, N. Y.

35.—CIGAR.—David Hirsch & Co., New York, N. Y.

36.—WATCH.—Henry Hirsh and Seligman Oppenheimer, New York, N. Y.

37.—COTTON-SEED.—Henry J. Holmes, Atlanta, Ga.

38.—CORN-PLANTER.—David W. Hughes, Palmyra, Mo.

39.—STOMACH BITTERS.—James A. Jackson & Co., St. Louis, Mo.

40.—SCHOOL-CHART.—Frank G. Johnson, New York, N. Y.

41.—SILVER AND PLATED-WARE.—Lippiatt Silver-Plate and Engraving Company, New York, N. Y.

42.—MEDICAL COMPOUND.—John A. McKinnon, Selma, Ala.

43.—AX.—Julius W. Meyer, St. Louis, Mo.

44.—PRIZE-CANDY.—Elkanah Myers & Co., Cincinnati, Ohio.

45.—SOLUBLE SEA-ISLAND GUANO.—R. W. L. Rasin, Baltimore, Md.

46.—BASE-BALL.—Peck & Snyder, New York, N. Y.

47.—ALL-HEALING LINIMENT AND MORNING-STAR LAMP-OIL.—Teter & Hite, Moffett's Creek, Va.

48.—LUBRICATING OIL.—The West Virginia Oil and Oil Land Company, Petroleum, West Va.

49.—SCALE.—Victor Scale Company, Dixon, Ill.

50.—SUSPENDER AND ELASTIC WEBBING.—Joseph Warren Wattles, Canton, Mass.

51.—SEWING-MACHINE.—Weed Sewing-Machine Company, Hartford, Conn.

52.—MEDICINE.—J. H. Zeilin & Co., Macon, Ga.

ISSUE OF NOVEMBER 8.

PATENTS.

108,951.—PAD AND TRUNK-LOCK.—Andy M. Adams, Washington, D. C.

Claim.—The sliding bolt C, dog D, and hasp B, in combination with the rising-block E or its equivalent, when arranged to throw out the hasp and support the dog D, substantially as shown and described.

108,952.—ELECTRO-MAGNETIC LOCK.—Henry Arden, St. Louis, Mo.

Claim.—1. The levers E E, attracted by the fixed magnets A, to impart intermittent rotary motion to the levers M, as set forth.

2. The levers M, arranged within a lock, to connect the fragments of a conductor, a, so as to establish a current through each conductor, for moving the bolt, as set forth.

3. The ratchet-disks D, combined with the levers M in such manner that the combination of the lock will be varied by varying the positions of said levers on the disks, as specified.

4. The combination of the arms c with the levers M, serving to work an alarm, by which the position of each lever M will be indicated, as set forth.

5. An electric lock, provided with an alarm-bell or equivalent instrument, whereby the position of the main levers M will be indicated, so that no other register will be required, as set forth.

108,953.—FANNING-MILL.—Henry K. Averill, New Oregon, Iowa.

Claim.—1. The arrangement in the fanning-mill herein described of the slats E and G, as shown, and for the purpose specified.

2. In the fanning-mill herein described, the drum S, working upon shaft O, when constructed with removable pins p and operating with lever B, substantially as and for the purpose specified.

108,954.—PUMP.—William C. Barker, Ypsilanti, Mich.

Claim.—The combination, with the reciprocating cylinder A, provided with the hollow plug B, valve C, and packing D, of the bucket G, surrounding the same and reciprocating alternately therewith, as and for the purpose herein set forth.

108,955, antedated October 28, 1870.—GEARING FOR METAL PLANERS.—William M. Barr, Williamsport, Pa.

Claim.—The combination of the recessed gear-wheels c c' c'', hollow slotted shaft b, pin k, and feather l, with the gear-wheels d d' d'', substantially as hereinbefore described.

108,956.—HEAD-REST.—James S. Bartlett, Warsaw, N. Y.

Claim.—The combination of the head-piece A, the brace B, the rods C C, the ratchet D, and base-block E, constructed as and for the purpose specified.

108,957.—COMPOUND FOR PIPES, TILES, SIDEWALKS, &c.—William Augustus Battersby, Williamsburg, N. Y., assignor to himself, Timothy R. Crawford, Robert Brown, and John Anderson.

Claim.—The silicious compound herein described, prepared substantially as specified.

108,958.—SPARK-CATCHER AND CONSUMER. Darwin Beach, Oshkosh, Wis.

Claim.—A smoke-stack, with a diagonal screen, A, set in smoke-stack D, in combination with the opening E and return-flue B, as herein shown and described, and for the purposes set forth.

108,959.—SUCKER-ROD COUPLING.—James H. Beatty, Franklin, assignor to John Adams and Thaddeus W. Brigham, Venango county, Pa.

Claim.—1. The slotted coupling B, the ends of which are contracted, so as to embrace the rod A, by means of a thimble or nut, and which is provided with the lugs J, substantially in the manner and for the purpose set forth.

2. A sucker-rod coupling, provided with a bayonet-clasp catch upon one end, substantially as shown and described.

108,960.—BEE-HIVE.—Joseph Behe, Carrolltown, Pa.

Claim.—An improved bee-hive, composed of the detachable sections A A', top B, floor C, honey-boxes D, and comb-frames e, with the ventilating-apertures u m o o, and moth-trap T, all constructed and arranged substantially as herein described and shown.

108,961.—HAT AND COAT-RACK.—George T. Benson, Jersey City, N. J.

Claim.—1. The combination of an open frame and a horizontally-swinging hook journaled vertically between its sides, when said frame is pivoted to and folds edgewise upon a similar frame, substantially as and for the purpose shown.

2. In combination with the above-named elements, the studs z and recesses z', substantially as shown, and for the purpose specified.

108,962, antedated October 28, 1870.—ORE-WASHER.—Hezekiah Bradford, Reading, Pa.

Claim.—1. The ore-washing cylinder, formed with the heads f and g and necks d d', in combination with the shafts b b and supporting-wheels c c, as and for the purposes specified.

2. The hopper-shaped cistern and delivery-opening m, in combination with the slide n, having a A-shaped edge, as and for the purposes specified.

3. The slide n, with a A-shaped edge, in combination with a cistern, l, opening m, segment o', and gear-teeth o, as specified.

4. The perforated cylinder r, formed of staves, in combination with the surrounding screen, substantially as set forth.

5. The removable sections of the perforated inclined lifting-volute, in combination with the ore-washing cylinder, as and for the purposes set forth.

6. The neck d', formed with a recessed interior surface d^2, and flange d^3, as and for the purposes specified.

7. The inclined chute, formed with bars h^3, and intervening vertical openings, combined with the plates or ribs h^4, as and for the purposes set forth.

8. The staves r, with the flanges r^2, formed in the manner and for the purposes specified.

9. The staves r, made with grooves near the ends for receiving the edges of the heads f g, in combination with the clamping-bands 12 13, as and for the purposes specified.

10. The slide n, having a A-shaped edge, in combination with the opening m of the hopper or vessel, substantially as specified, so as to obtain a variable discharge-opening of the character, as set forth.

11. The bars h^3, set transversely of the chute c^4, and having inclined upper surfaces, so that the opening between the bars may be nearly vertical, as and for the purposes specified.

108,963. — LINIMENT.—James C. Branch and Hugh P. Quin, Washington, Ga.

Claim.—A liniment compound of the above-mentioned ingredients in the proportions and in the manner as substantially herein described, and for the purposes set forth.

108,964, antedated November 5, 1870.—PERMUTATION LOCK.—Franklin H. Brown, Chicago, Ill., assignor to himself and Benjamin B. Wiley, same place.

Claim.—1. Brake a, in combination with tilting-bar b, cam 5, tumblers O, and fence L, or its equivalent, as and for the purposes specified.

2. The combination of wheel G, yoke m, cams n and n', as and for the purposes specified.

3. Eccentric Q, strap S, teeth S', gear-wheel 1, and block V, combined as and for the purposes specified.

108,965. — APPARATUS FOR COOLING THE VAPORS OF OXIDE OF ZINC.—John E. Burrows, Newark, N. J.

Claim.—The apparatus for purifying and cooling the vapors of zinc with combustion-chambers and water-pans, substantially as herein described and set forth.

108,966. — SPRING BED-BOTTOM.—Thomas A. Carl, Nashville, Tenn.

Claim.—1. The spring bars D D, supported by the springs C that rest on the ribs a of the side rails, and are guided at the ends by tenons and grooves, substantially as herein shown and described.

2. The slats F, united by straps G, and secured to cross-bars E that rest on the spring bars D, substantially as herein shown and described.

3. The combination of the straps e and blocks f with the ribs a and spring bars D, all arranged to operate substantially as herein shown and described.

108,967.—STEERING MECHANISM FOR VELOCIPEDE.—Andrew Christian, New York, N. Y.

Claim.—In a velocipede, the combination of the racks I J with the front axle G, reach D, foot-lever H, and connecting-rods b b, substantially as and for the purpose herein specified.

108,968.—SASH-HOLDER.—Charles B. Clark, Buffalo, N. Y.

Claim.—1. The hinged spring arm D, provided with hooked catch d and thumb-piece d^1, and arranged to operate in combination with a doubly-inclined socket-plate C, as hereinbefore specified.

2. The cap-plate E, provided with stop e^2, arranged with the spring i, rivet n, and arm D, provided with shoulder d^2, substantially as and for the purpose hereinbefore specified.

3. The notch d^2 in the arm D, arranged with the projection e^2 in the cap-plate E, as and for the purpose hereinbefore set forth.

4. The cover or washer S, provided with extension s and spur s', arranged with the cap-plate E, provided with recess e^1 and flange u, as and for the purpose hereinbefore described.

108,969.—CHURN.—Timothy Coffield and Benedic Egli, Natrona, Pa.

Claim.—The arrangement of the cylinder A, door C, dasher A, and plug g, the whole being constructed, arranged, and operating substantially as herein described, and for the purpose set forth.

108,970. — WATER-WHEEL.—Frederick G. Coggin, Burlington, Vt.

Claim.—The straight vertical chutes C C, fixedly attached to the ring b, and the gates D, pivoted, respectively, to the ring D and base-plate and cover of the wheel-case, in the manner shown and described, so as to operate as specified.

108,971.—GATE-LATCH.—Calvin Cole, Ithaca, N. Y.

Claim.—The hooked head, gravitating and reversible latch G, carved and pivoted to a bearing, D, in combination with a reversible beveled stop and catch, substantially as described.

108,972.—SHADE FOR LAMP AND GAS-BURNERS.—Michael H. Collins, Chelsea, Mass.

Claim.—A shade for a lamp or Argand gas-burner, having its body B and radial springs C constructed in a single piece from a thin sheet of metal, and having the springs C flexible, so as to sustain the shade upon glass chimneys by the tension of the springs, substantially as set forth.

108,973.—FOLDING CHAIR. — Thomas Babbitt Comins, Jr., Lowell, Mass.

Claim.—The arms D, provided with notches *d* and projections d^1, or groove d^2, and seat-frame E, provided with elbow-shaped lugs F and notches h', in combination with bars B, provided with pins A, frame A, and cloth H, all constructed as herein described, for the purpose specified.

108,974. — STRAW-CUTTER. — Edward A. Cralle, Jr., Brickland, Va.

Claim.—1. An improved straw or feed-cutter, formed by the combination of the frame A, feed-box B, discharge-spout C, adjustable bars or ribs D E, adjustable knife F, lever G, pitman H, crank I, shaft J, crank K, balance-wheel L, lever M, stop-plate N, and box or spout P, with each other, said parts being constructed and arranged substantially as herein shown and described, and for the purpose set forth.

2. The combination of the movable stop-plate N and stop-plate lever M with the knife and knife-lever of a feed-cutter, substantially as herein shown and described, and for the purpose set forth.

108,975.—PLOW.—Robert S. Crockett, Rossville, S. C.

Claim.—In combination with the upright adjustable perforated bar B, carrying a subsoil-point, A, the adjustable curved brace C, bearing a turning-mold, D, when constructed and arranged to operate in the manner and for the purposes specified.

108,976.—PORTABLE ELEVATOR AND CONVEYER.—Henry C. Crosby, Chicago, Ill.

Claim.—1. The jointed section L, having the movements described, with the tramway J, the whole arranged substantially in the manner and for the purpose set forth.

2. Chain belt M, provided with carrying-shafts O O, in combination with tramway J, the several parts arranged substantially as and for the purpose specified.

3. The adjustable uprights B B of the derrick, when pivoted to power A as described, whereby the same may be moved forward or backward, substantially as and for the purpose specified.

4. Caster-wheels W, arranged to operate by means of levers, as described, in combination with frame A and uprights B B, the whole arranged in the manner and for the purpose set forth.

5. Bucket V, provided with clutch-hooks *s s*, and arranged to operate in the manner described, in combination with traps *r r*, the whole constructed substantially as and for the purpose specified.

6. Self-adjusting bucket V^2, arranged substantially in the manner and for the purpose set forth.

7. A portable elevator and conveyor, consisting of an adjustable jointed tramway mounted upon an adjustable frame, and provided with an endless conveying chain, substantially as described, for the purpose specified.

8. The endless chain operated from the horse-power A through the medium of the endless chain P and rag-wheels S S^2 and T T^2, substantially as herein shown and described.

9. The adjusting ropes h f, arranged for adjusting the tramway and endless conveyer-chain M from windlasses H K, substantially as herein shown and described.

10. The adjustable frame E, in combination with the adjustable uprights B and the adjustable tramway J, substantially as described, for the purpose specified.

11. The adjustable wheel R, in combination with the frame E and endless chain P, substantially as described, for the purpose specified.

108,977. — DEVICE FOR KEYING PAVING-BLOCKS.—Perley D. Cummings, Portland, Me.

Claim.—1. The method of keying blocks, for the manufacture of wooden pavements, as set forth herein, to wit, by means of the wheel A, sprocket-wheel B, the endless chain C, and the reciprocating dog H.

2. The beveled slide T, operated by means of the key-board, and opening the end of the machine.

108,978.—STEAM-RADIATOR.—Lewis S. Daniels, Foxborough, Mass.

Claim.—A steam-radiator, consisting of the tube A, uprights B B', the vertical perforated divisions, H H', secured by means of stem L and socket K, surmounted by cap D, when constructed and arranged as shown and described, and for the purpose specified.

108,979. — PLOW. — Andrew Day, Crystal Springs, Miss.

Claim.—The arrangement of the curved bars P F, keepers G, screw-bolt and the nuts *a a*, the scraper H provided with slots h', and the bolts I, as shown and described, for the purpose specified.

108,980.—TYPE-SETTING MACHINE.—Marcel de la Peña, New York, N. Y., assignor to J. G. O. Guimaraes, same place.

Claim.—1. The combination of the inclosed branching gravitation type-slide with two series of type-holders arranged at opposite sides of the head of said slide, the whole being constructed to operate, in combination substantially as before set forth, so that the types from opposite type-holders can be delivered into one passage of said slide.

2. The combination of the inclosed branching gravitation type-slide, the series of type-holders arranged at one side of the head thereof, and the type-ejectors arranged to move in the direction of the lengths of the types in said type-holders, all constructed to operate in combination, substantially as before set forth, so that the types are ejected endwise from the type-holders and received by the gravitation type-passages.

3. The combination of a type-ejector with the ejector-lever in such manner that the former is maintained erect during its forward movement, and permitted to descend during its retrograde movement, substantially as before set forth.

4. The combination of the type-ejector, the ejector-lever, and the guard which compels the rise of the ejector at the end of its retrograde movement, substantially as before set forth.

5. The combination of the inclosed branching gravitation type-slide, the series of type-holders, the series of type-ejectors arranged to move in the direction of the length of the types in said holders, and the series of keys for operating the type ejectors, all constructed to operate in combination substantially as before set forth.

6. The type-carriage, constructed with a series of transverse partitions forming parallel cavities for the reception of the types, substantially as before set forth.

7. The combination of the type-holder with a removable lining for holding the types, substantially as before set forth.

8. The combination of the type-setter and type-carriage with the justifier, substantially as before set forth.

9. The combination of a set of type-ejectors with a movable series of type-holders containing a double set of type-cavities, substantially as before set forth.

108,981.—SAW-MILL.—Moses Delude, Carrolton, Mich.

Claim.—The l-shaped buckles E, provided with pins *b*, in connection with the slotted sill of a gang-frame, and the hooked straps D, as and for the purpose herein specified.

108,982.—VALVE-GEAR FOR STEAM-ENGINE. William B. Doddridge, Hebron, Ind.

Claim.—1. A band-wheel, E or E', so pivoted upon a revolving shaft at right angles to its axis as to admit of being inclined thereto at pleasure, in combination with a rod pivoted to the band of said wheel, for the purpose of producing, by the revolution of the shaft and wheel, a rocking movement of the rod to operate the valve of an engine, substantially in the manner and for the purpose herein set forth.

2. The two pivoted band-wheels E and E', arranged substantially as described, and combined with each other and with a revolving shaft, D, valve-rods P P', and valves T T', substantially as and for the purpose herein set forth.

3. A lever, O, combined, by means of intermediate mechanical devices, with one or more band-wheels, E and E', pivoted upon a revolving shaft to produce and control an inclination of said wheels upon the shaft, substantially as and for the purpose herein specified.

4. The valve-plate n of a hollow valve, T, which has free communication with an exhaust-pipe, in combination with ports *m m* in a face-plate, U, the whole being inclosed within a steam-chest, S, and made to operate substantially as herein set forth.

108,983, antedated October 29, 1870.—PRESERVING MEAT, FISH, OYSTERS, &c.—Julius Edmund Dotch, Washington, D. C.

Claim.—1. The preserving of meats, oysters, fish, &c., by the use of thymol, or thymic acid, or any thymate salts, either alone or in solution of water, or alcohol, or glycerine, or any or all of them, mixed together in any proportion, or in any other fluid or solvent in which thymol or thymate salts are soluble.

2. The preserving of meats, oysters, &c., by the use of thymol vapors introduced into closed vessels or refrigerators containing the meat, &c.

3. The use of thymol or thymate salts, in combination with any of the various processes already patented by me in patents No. 84,491 and No. 93,183.

4. The stearoptene and their salts, of oil of cumin, lavender, horsemint, hearhound, bergamot, and all other ethereal or essential aromatic oils and essences of fruit, for the preservation of meats, oysters, vegetables, and dead bodies in general.

5. The vapors of the different stearoptens, either for inhalation or injection into the bodies, or for introduction into closed vessels or refrigerators.

6. The mixtures of these stearoptens or their vapors, in combination with any of the existing gases.

7. The impregnation of melted tallow, paraffine, or stearine with one or more of the different stearoptens, or any of the phenate salts, for packing and covering.

108,984.—BEE-HIVE.—James A. Douglass, Altoona, Pa.

Claim.—The reversible and bottomless hives A F, combined with a detachable slide, C, as and for the purpose described.

108,985, antedated November 7, 1870.—INSOLE FOR MANUFACTURING SHOES.—Charles S. Dunbrack, Swampscott, Mass.

Claim.—1. The combination of the separate carrier A with the false inner sole B, the said carrier and false inner sole being provided with means of connecting and disconnecting them, as set forth.

2. The false inner-sole carrier, as provided with the centering-points *c*, the spurs *d* and the buttons *b*, for connecting such carrier to a false inner sole, as explained.

3. The carrier and the false inner sole, as provided not only with the centering-pins and the spurs, and the buttons for connecting the carrier and false inner sole, but as having the centering-holes *e* formed through the said carrier and the false inner sole, such being for the purposes as explained.

4. The false inner sole, as made or provided with the holes *a* and notches *n*, or their equivalents, for connecting or aiding in connecting such sole with a carrier, substantially as explained.

108,986, antedated October 28, 1870.—SCREW-SPIKE FOR RAILROADS.—Alpheus C. Dunn and Isaac L. Dunn, New York, N. Y.

Claim.—A new article of manufacture in spikes, when the same is of the tapered form on its shank and spiral rib or ribs, and provided with notches partially extending through said ribs, and with square shoulders, substantially as and for the purpose herein described.

108,987. — LOCK-NUT. — Philip Dyer, Jr., Abram Parker, and William B. Way, Pontiac, Mich.

Claim.—A nut-lock, wherein the plates A B C D are constructed and operate substantially as described, and secured by the key E, as herein set forth.

108,988. — SEED-PLANTER. — James M. Elliott, Winnsborough, S. C.

Claim.—1. The combination of the frame A B, V-shaped wheel C, adjustable blocks or bearings E, pulley F, endless chain or band G, pulley H, stirrer I K, hopper J, stationary fingers L, and V-shaped guide-plate M, with each other, substantially as herein shown and described, and for the purpose set forth

2. The combination of the spring O, slotted strap N, roller P, and lever Q, with each other, and with the slotted bottom of the hopper J, substantially as herein shown and described, and for the purpose set forth.

3. The combination of the pivoted bars S, covering-block R, and adjustable spring bars T, with each other and with the frame A B, substantially as herein shown and described, and for the purpose set forth.

108,989.—LUNCH-BOX.—James Elson, Northampton, Mass.

Claim.—As an improved article of manufacture, a lunch-box, composed of a sheet-metal box and a paper box combined, substantially in the manner described.

108,990.—BLANK FOR SAW-TEETH.—James E. Emerson, Trenton, N. J.

Claim.—Blanks for saw-teeth cut obliquely from a rolled steel plate, of the shape, in cross-section, herein described and shown; that is to say, a plate having a marginal swell or enlargement on both sides thereof at or near one edge, but otherwise of uniform thickness.

108,991.—ASH-SIFTER.—William S. Estey and Isaac S. Clough, Brooklyn, N. Y.

Claim.—An improved sifter, formed by the combination of the box A a^1 a^2 a^3, cover B, plate C, and screen E, with each other, said parts being constructed and operating substantially as herein shown and described, and for the purpose set forth.

108,992. — WOOD-BENDING MACHINE.—Joshua Fipps, New Albany, Ind.

Claim.—The combination of the former B, clamp-

ing-lever D, angle-plate K, spring L, clamp O, and the holding-bar N, the said former and the bar D being attached to a frame, and the other devices being used in conjunction therewith, all substantially as specified.

108,993. — CHILDREN'S CARRIAGE.—Isaac Newton Forrester, Bridgeport, Conn.

Claim.—The combination, in a child's carriage, constructed to be pushed from behind, of the pivoted front axle, the grinding straps passing under the carriage, and the spool upon the pushing-handle at the back of the carriage, around which the straps are wound in opposite directions, all these parts being constructed and arranged as set forth, for joint operation.

108,994.—WINDOW-SASH WEIGHT.—John T. Foster, Jersey City, assignor to William Stanley, Englewood, N. J.

Claim.—A sash-weight case of thin metal, furnished with a conical swaged end with an orifice in the top thereof, and having an orifice beneath said end for introducing a core to form a hole in the cast weight for inserting the cord, as described.

108,995.—HORSE-COLLAR PAD.—John Fraser, Dowagiac, Mich.

Claim.—The arrangement, in a horse-collar pad, of the inner lining A, the cushion B, shield C, and cover D, when the several parts are constructed substantially as described and shown, and for the purposes set forth.

108,996. — ATTACHMENT OF CULTIVATOR-FRAMES TO WAGON AXLE-TREES.—David Fuller, Fullersburg, Ill.

Claim.—The arrangement in a cultivator of the beams F F', pivoted levers K, foot-board K', adjustable seat L, connecting-rods h h', and clevises j j', constructed substantially in the manner and for the purpose hereinbefore set forth.

108,997, antedated October 28, 1870.—BEE-HIVE.—Gilbert G. Gabrion, Olive, Mich.

Claim.—A bee-hive, provided with adjustable bottom board K, adjustable ventilators L, adjusting regulators H, separators O to the comb-frames, honey-boards D E, dead-air space T, and the upper or store-room M, provided with adjustable entrances and comb-frames, when all the parts are constructed and arranged as and for the purposes herein described.

108,998. — BED-SPRING. — D'Alembert T. Gale, Fort Wayne, Ind.

Claim.—The springs formed with the loops or eyes A in one end coil, and the hooks B in the other, and hooked together thereby, substantially in the manner specified.

108,999. — PISTON-PACKING.—John Gates, Portland, Oregon.

Claim.—1. The sectional ring A, provided with the outer rib *a*, projecting double dowel-pins *b*, and tapering webs *c*, as set forth, for the purposes specified.

2. The spring D, having the ears *d* and *e* to straddle the webs of the sectional ring A, as set forth, for the purpose of holding said ring in place, as specified.

3. The duplicate sectional rings B, in combination with the rib *a* of the ring A, and the dowel-pins *b*, substantially as shown and described.

109,000.—COMPOSITION FOR PENCILS.—William Geller, New York, N. Y.

Claim.—1. The combination of potato pulp with any suitable coloring-matter, to form a composition for pencils, substantially as set forth.

2. The herein-described composition for pencils, crayons, &c.

109,001.—LATERALLY-SLIDING THROTTLE-VALVE.—William Glass, Brooklyn, N. Y.

Claim.—In combination, the slide-valve B, with attached ratchet-bar C and wedges *m m*, the valve-casing A, with sliding grooves as described, inclined planes *s*, and the pinion D, substantially as specified.

109,002. — ROOFING COMPOSITION.—James P. Godfrey, Manchester, N. H.

Claim.—The manufacture or preparation of a composition, which I denominate Granite-State roofing, of the ingredients, in the proportion, and for the purposes set forth in this specification.

109,003.—REED-ORGAN.—Horatio N. Goodwin, Syracuse, N. Y.

Claim.—In a reed-organ which is operated by an exhaust the reverberatory-chamber B' formed in the reed-board, and arranged in rear of reed-tubes, for conducting or modifying the sound-wave produced by the reed.

109,004.—STEAM-TRAP.—Morrill C. Gove, Lowell, Mass.

Claim.—An air-expelling or liberating steam-trap, as described, consisting of a tank or holder having an inlet, E, and an outlet, C, and provided with a toothed rack, E, a segmental gear, I, a float, H, and a valve, D, a perforated plate, J, and air-valve, S, a pivoted lever, M, and an expansion-rod, K, all combined, arranged, and operating substantially in the manner and for the purpose set forth.

109,005.—LATH-MACHINE.—James T. Hall, Alma, Mich., assignor to himself and Isaac Pierce, same place.

Claim.—In combination with the planing-machine A B C D, the grooving device described and shown, consisting of the sash E, the mandrel H, the saws I, and adjusting-screw F, when constructed and arranged as described and shown, and as and for the purposes set forth.

109,006. — PENDULUM CRUSHING-MILL.—James Hart, Sweeden Center, N. Y.

Claim.—The combination of the pendulum D, spring catches G G', and stamps B B', substantially as and for the purpose set forth.

109,007.—AWNING.—William Hildebrand, Fort Wayne, Ind.

Claim.—The arrangement and combination of the brackets A, sheathing or shades B, with thin flanges or guides *f* and *d*, friction-rollers *e*, chains and pulleys D D, as shown and described, for the purposes set forth.

109,008.—BOX-SCRAPER.—Frederick B. Hill, East New York, N. Y.

Claim.—1. The rectangular slots *b' b' b'* in the blade B, and opposite the vertex of each angle, combined with a rectangular rib-guide, *a'*, on the front face of the handle-socket, as and for the purpose described.

2. An improved scraper, formed by the combination of the handle A *a'*, triangular cutter-plate B *b'*, bolt and hand-nut C, and guard D, said parts being constructed substantially as herein shown and described, and for the purpose set forth.

109,009.—PREPARATION OF PEAT.—Charles E. L. Holmes, New York, N. Y.

Claim.—The method herein specified of preparing peat for fuel, by mixing with the wet peat dry peat, as specified, and for the purposes set forth.

109,010, antedated October 28, 1870.—LIQUID GLUE.—William Horwitz, New York, N. Y.

Claim.—The herein-described composition for liquid glue, consisting of the ingredients substantially in the proportions herein set forth.

109,011.—ROCKER-CHAIR.—Charles H. Hudson and Joel Bowker, New York, N. Y., assignors to Charles H. Hudson.

Claim.—1. The combination, with a rocker of a chair, hobby-horse, or other article mounted on rockers, of the pawl or pawls, substantially as hereinabove set forth.

2. The combination, with the rockers A A, and pawls D D, of the cords or chains *d d*, as and for the purpose set forth.

3. The combination, with the pawls D, of the pads *i*, substantially as described.

4. The combination, with the rockers A, figs 7 and 8, of the pawls D, armed with projecting points *g*, substantially as specified.

109,012. — EXTENSION SCAFFOLD. — John Hughes, New Berne, N. C.

Claim.—1. In combination with a step-ladder, divided vertically and transversely through the upper step, the extensible frame E, substantially as shown and described.

2. In combination, the ladder A, legs B, boxes *b* C, extensible frame E, and bracing-platform H, substantially as specified.

109,013.—GOVERNOR FOR STEAM-ENGINE.—Reuben K. Huntoon, Wakefield, assignor to J. Augustus Lynch, Boston, Mass.

Claim.—1. In the steam-engine governor, the combination of the pendulous arm or arms IO with the propeller, and the mechanism for revolving it, and that for actuating the valve, the whole being substantially as explained.

2. The combination of the furcated or pronged arm I, and the teeth *k k i* with the wheel A and the shaft U of the valve, and its operative mechanism.

3. The conical valve and the auxiliary shaft U, as combined with the valve-case and with shoulders *o p*, arranged as described, and by means of mechanism by which the valve-shaft will derive rotary motion from the shaft U, and the two shafts be independent of each other, so as to be capable of being moved in opposite directions by the pressure of the steam, as set forth.

109,014.—FIRE-CRACKER PISTOL OR HOLDER.—Robert Hutchison, Newark, N. J.

Claim.—A fire-cracker holder, made of the barrel *b* and stock *a*, united by a hinge, *c d*, that is above the barrel so as to suspend the same, as and for the purposes specified.

109,015. — MACHINE FOR EXTRACTING STUMPS.—James A. Jenkins, Clarksville, Mo.

Claim.—1. The wheels D^2 applied to an axle or bar D, which has secured to it levers D^1, in combination with the fastenings *e f*, substantially as described.

2. The lever L, with or without wheels W, constructed with a pointed end, *n'*, a forked end, *n*, and a staple, *t*, adapted for use, substantially as described.

3. The combination and arrangement of the lever L, chain *k*, and grapple-hooks P, in the manner and for the purpose herein described.

109,016. — SPINNING-WHEEL. — Thomas Johnston, Ruby Post Office, assignor to himself and George Adams, Watrousville, Mich.

Claim.—In combination with the frames A and D, the ways C, the carriage L, the spindle-head Q, the spindle R, the driving-wheel B, pulley-wheel J, shaft F, with pulley-wheels upon it, cords K and G, connecting-rod P, rocker-arm O, shaft M, treadle N, and crank B', when all are constructed and arranged as described and shown, and for the purposes set forth.

109,017.—COAT AND HAT-RACK.—James M. Keep, New York, N. Y

Claim.—1. A rack, in which the hooks, by means of a single journal, are pivoted within and swing horizontally beneath a bar constructed of a single piece, substantially as is shown, and for the purpose specified.

2. The hook, journaled as above described, in combination with the divided collar, for securing the same within a solid bar, substantially as shown.

109,018.—COMPOSITION FOR COATING BEARINGS.—Peter J. Kelly, New York, N. Y.

Claim.—The herein-described composition for, and method of covering, bearing surfaces, as specified.

109,019, antedated October 22, 1870.—DIGGING-MACHINE FOR AGRICULTURAL PURPOSES.—Alfred Lafayette Kennedy, Philadelphia, Pa.

Claim.—1. The attachment of a traction-engine, or other vehicle, to a digging-device, consisting of a spade, G, actuated by a reciprocating rod C, through the medium of the cam H, lever I, rods *e* and *p*, cord *i*, fly-wheel F, and its pin *s*, or of other equivalent devices which will produce a like effect.

2. The cam H, carrying the spade or digger G, and consisting of curved ways *e* and *f*, adapted to the rollers *h* and *h'* of the rod C, all substantially as herein set forth.

3. The combination of the cam H, its digger G, reciprocating rod C, and lever I, the latter being operated substantially as described, through the medium of the devices herein described, or their equivalents.

4. The hinging of the frame A, which carries the digging mechanism to the traction-engine or vehicle, substantially as described.

109,020.—DUMPING-CAR.—Sidney D. King, Middletown, N. Y., assignor to himself and James M. Welch, Bradford, Pa.

Claim.—A dumping-car or cart, provided with arms *a*, which sustain the tail-board, holding the same up while the box is being dumped, substantially as herein shown and described.

109,021.—FLUX FOR WORKING METALS AND MINERALS.—Solomon W. Kirk, Philadelphia, Pa., assignor to himself and Henry Thomas, same place.

Claim.—1. The combination of caustic potash with cyanide of potassium, as and for the purpose herein specified.

2. The combination of caustic soda with cyanide of potassium, as and for the purpose herein specified.

3. The combination of cyanide of potassium with caustic potash and soda, as and for the purpose herein specified.

109,022.—FIRE-PLACE STOVE.—Philip Klotz, Baltimore, Md.

Claim.—1. The addition or section D, inclosing an extension G' of the fuel-magazine, and provided with a front feed-opening; said extensions being made to rise above the level of the fire-place in front of the mantel, substantially as described.

2. The flange or cut-off *a'*, applied to the front door of the feed-opening of the top section D, in combination with a space between the wall of this section and the wall of the magazine extension G', whereby when said door is shut the interior of the magazine will not be influenced by the draught of the stove, but when said door is open the draught of the stove will prevent the escape of gas from the magazine into the room, substantially as described.

109,023.—MEDIUM FOR TURNING MUSIC-SHEETS.—Albert Krafft, Berlin, Prussia, assignor to F. G. Utassy & Co., New York City.

Claim.—1. The combination of the music-holder D with adjustable support B and adjustable rod U U, as and for the purpose described.

2. The spring-fingers J N, having eyes I and lugs

L, pinion R, pawl S, arm T, spring Y, and lever U, all constructed and relatively arranged as and for the purpose described.

109,024. — BUTTON-FASTENER.—Frank M. La Boiteaux, College Hill, Ohio.

Claim.—1. The improved button, consisting of the part A and stem B, the said stem being detachably connected to the button, and provided with the slot and the notches, all substantially as specified.

2. The combination of the button and the eyelet, having a cross-bar, all constructed and arranged substantially as specified.

109,025.—REMOVING DIES MADE FROM ANILINE, &c., FROM PORTIONS OF FABRICS.—Jean Lambert, Jr., New York, N. Y., assignor to Gustave Bourgade, same place.

Claim.—1. The herein-described method of effecting local decoloration on fabrics that were dyed with anilio or phenic coloring matter, as specified.

2. The application to dyed goods of powdered metals or soluble cyanides, for the purpose of decolorizing the same according to design, as specified.

109,026.—PARLOR-SKATE.—Tilman F. Leak, Montgomery, Ala.

Claim.—The socket-plate D d^1 d^2 d^3, applied to the base-bar E e^1 e^2 of a parlor-skate, as described, and for the purpose set forth.

109,027. — COLORING AND PRESERVING WOOD.—Frederick Lear, St. Louis, Mo.

Claim.—The improved machine herein described, consisting of the concaved disks or heads E E, provided with the packing e^1, to form chambers e^2, the screw hook-rods *f*, chains F', and screw-rods F, and the discharge-tube d, provided with stop-cock, all constructed and arranged as specified, and connected with the force-pump A B C D, as shown.

109,028. — WELL-BORING APPARATUS.—Noah H. Lindley, Bridgeport, Conn.

Claim.—1. The boring-tool G, made in the form of a hollow cylinder open at its lower end, having its upper end perforated, its lower edge serrated, and having one or more circular ribs or flanges attached to or formed upon its inner surface, substantially as herein shown and described, and for the purpose set forth.

2. The combination of the elastic projecting and self-adjusting bail L, with the cylindrical boring-tool J, provided with a bottom and boring-lips, substantially as herein shown and described, and for the purpose set forth.

109,029. — DOUBLE AND SINGLE-TREE ATTACHMENT FOR STREET-CAR.—James F. Lowe, Louisville, Ky.

Claim.—The combination of the clevis A, the central bar B with its hooks C and D, the double and single-trees E and H with their circular slides F F, and the holes J J, substantially as and for the purpose herein set forth.

109,030. — WASHING AND TRANSPORTING SAND.—David D. Mallory, Mystic Bridge, Conn.

Claim.—The within-described method or process of transporting and washing sand and analogous material by means of a current of water conducted through the spout A, passing over the bars a, or equivalent partial riffles, and separating the water and foreign matter from the sand in the tank B, or its equivalent, at its base, all substantially as herein set forth.

109,031, antedated October 28, 1870.—DEVICE FOR FASTENING DESKS, SEATS, &c., TO FLOORS.—John D. McAuliff, St. Louis, Mo.

Claim.—The legs, so constructed as to fit in the dovetailed pieces *b* and *b'*, securely attached to the floor, and the legs held in place by the buttons a, when all the parts are constructed and arranged as herein described.

109,032.—HORSE HAY-FORK.—William W. McFaddin, Ennisville, Pa.

Claim.—The tine E, when constructed as described, to clasp the cross-head at its front, top, and rear, and to pass through the loop *c'* of the bottom plate, said tine and plate being connected by one bolt only, in conjunction with said loop, substantially as specified.

109,033.—SPRING FOR WAGON.—Alexander W. McKown, Honesdale, Pa.

Claim.—1. The improved wagon or other springs, formed by a combination of the wood bars or springs A, one or more sets of transverse bars C, one or more sets of longitudinal bars G, and the India-rubber springs, all substantially as specified.

2. The combination of the longitudinal bars and the India rubber springs, of the adjusting pieces M, substantially as specified.

3. The combination of the wood bars, India-rubber springs, and bolts, all substantially as specified.

109,034.—BRICK-MACHINE.—William Mendham and Cyrus Chambers, Jr., Philadelphia, Pa., assignors to Edwin Chambers and Cyrus Chambers, Jr., same place.

Claim.—1. The hollow former A of a brick-machine, having a recess, R, to receive and surround a removable die, as and for the purpose specified.

2. The steam-chamber E in the former A, with its walls thinner at the corners than at the sides, so as to direct the heat from the steam to the angles of the die, as and for the purpose set forth.

109,035.—ANIMAL-TRAP.—John B. Merriman and George B. Lewis, Plantsville, Conn.; said Lewis assigns his right to said Merriman.

Claim.—1. The combination of the T-lever *f*, bait-hook *h*, chaft A, pan E, lever *e*, latch *f*, rods C C, spring D, levers *b b b b*, jaws B B B B, frame A, legs *a a a a*, and side pieces *o o*, substantially as and for the purpose described.

2. The combination of the pan E, lever *e*, latch *f*, rods C C, spring D, levers *b b b b*, jaws B B B B, frame A, and legs *a a a a*, substantially as and for the purpose described.

3. The combination of the bait-hook *h*, T-lever *f*, and pan E, combined and operating together, substantially as described.

109,036.—FENCE.—Uriah D. Mihills, Fond Du Lac, Wis.

Claim.—The short posts B and G, in combination with the pickets C, provided with grooves to receive the loops of the wires B, and braced by the bar F and posts E, all as and for the purpose set forth.

109,037.—PLANE.—Ellis H. Morris, Salem, Ohio.

Claim.—1. The intersecting ridges *d* on the face of a metallic plane, as described.

2. The arrangement of the handle B, knob C, plane-iron D, cap E, screw F, and wedge G, with the metallic plane-body A, constructed as herein described, and operating as set forth.

109,038. — TOOL-HANDLE.—Edgar Murray, New York City, assignor to Charles W. Dunlap, Brooklyn, N. Y.

Claim.—The wedge *f* and clamping-block *e*, made with lips or projections to prevent their falling out of the socket *d*, into which socket they are introduced, and set to hold the tool in the manner specified.

109,039. — SETTING BOILER. — Charles Neames, New Orleans, La.

Claim.—The bridge-wall A, sloped at F, and having air-passage therethrough from under the grate, combined with a downwardly-sloped arch, G, fitting against the boiler, and the upwardly-projecting wall C, to form an independent chamber, B, wherein the air and gases are brought into contact, retarded, mixed, and burned, before passing up the smoke-pipe.

109,040. — MACHINE FOR SCOURING THE EYES OF NEEDLES.—Horace A. Nettleton and Edwin R. Lawton, West Cheshire, Conn.

Claim.—1. The device consisting of the wheel A, grooved and provided with the hole through its periphery, the hook *a*, eye *b*, shaft B, and a support for the latter, substantially as set forth.

2. In combination with the subject-matter of the first clause of claim, the emery-covered thread E, as and for the purpose set forth.

3. In combination with the subject-matter of the first clause of claim, the belt *c* and treadle D, as and for the purpose set forth.

4. In combination with the subject-matter of the second clause of claim, the reel F, as and for the purpose set forth.

109,041. — COMBINED BARROW AND TURNIP-DRILL.—Albert M. Nowland, Olivet, Mich.

Claim.—The construction and arrangement of the hand-levers N, bell-cranks N', and links O, with relation to the side-bars A and shoe-bars I, as and for the purpose herein shown and set forth.

109,042, antedated October 29, 1870.—HYDRAULIC APPARATUS. — Nicholas Nolan, New York, N. Y.

Claim.—The U-shaped supply-pipe A, having valve *g*, and a siphon, D, having faucet-valves and cock, as described, combined with a vessel, B, and valve discharge-pipe C, all relatively arranged as and for the purpose described.

109,043.—STOVE-PIPE GRATE.—Joseph O'Malley, Montreal, Canada.

Claim.—The combination of the band in two halves *b b'*, hinges *c*, thumb-screws *d*, arms *e e'*, catches *f*, brackets *g*, halves of grate *h* and *h'*, arms *i i* and *k k*, lugs *l*, and rods *m*, all working together and in combination with the stove-pipe *a*, substantially in the manner and for the purpose described.

109,044.—PIN-CUSHION.—Marcus Ormsbee, Brooklyn, N. Y.

Claim.—As a new manufacture, the pin-cushion above described, consisting of the disks A and B, one provided with a pocket, and the other with a calendar, as described.

109,045.—APPARATUS FOR TOWING CANAL-BOATS.—Sidney W. Palmer and Josiah Foreman Palmer, Auburn, N. Y.

Claim.—1. In combination with a towing-chain, or other equivalent device, extended beside, over, or within a canal, a series of pivoted braced booms, substantially as shown, and for the purpose set forth.

2. The hereinbefore described towing-chain, consisting of the washers I and L, connected together by means of the studs K and sleeves *k*, substantially as described and shown.

3. In combination with the boom O and posts P and P', the rope guard *p*, substantially as and for the purpose described.

4. The pivoted and sliding boom E, constructed as described, in combination with the towing-chain or other equivalent device, substantially as and for the purpose shown.

5. The construction and relative arrangement of the sheave-block F, provided with the pulleys *f* and *f'*, the guide G, the rod F', and the staple *e*, in combination with the boom E, substantially as shown, and for the purpose specified.

6. The weight M, the cord *m*, and the pulley N, or their equivalents, in combination with the boom E, and towing-chain, substantially as described, and for the purpose set forth.

7. The braces U, provided with the rollers *u* and V, for the purpose of sustaining and guiding the towing-chain, substantially as described.

8. The lever W, provided with the roller *w*, in combination with the pivoted bar W', or its equivalent, substantially as shown, and for the purpose specified.

9. The combination of the lever W, provided with the roller *w*, with the driving-wheel T, and the towing-chain, substantially as and for the purpose shown.

10. The sliding-bar X, provided with the studs *x' x'*, the ways Y, and the pin *z*, for the purpose of changing the point of draft of the tow-line, substantially as shown and described.

109,046, antedated October 29, 1870.—MACHINE FOR DRESSING MILLSTONE. — James Pepler, Bath, England.

Claim.—1. The circular base A, provided with openings, in which to mount the cutting apparatus, substantially as set forth.

2. The base A, in combination with the cutting apparatus mounted upon shaft C, supported at both ends, substantially as set forth.

3. The adjustable girt I, in combination with the bed A, substantially as set forth.

109,047. — PITMEN.—Charles H. Perkins, Providence, R. I., assignor to Perkins Sheet-Iron Company, same place.

Claim.—1. The combination of the globular recessed socket D, rivet-bolt F, and the ball B, fitted to receive a crank-pin, and provided with the slot *f*, and arranged with relation to the bolt F, substantially as described, for the purposes specified.

2. In combination with a pitman-rod having a flattened and widened end, the shank G, provided with corresponding dovetailed recesses, substantially as shown and described.

109,048.—DEVICE FOR OPERATING PLOWS.—James O. Potter, Rouseville, Pa.

Claim.—An axle C, bent to form the central recess D, combined with a plow and beam hung under it, and movable upwardly into it, as described.

109,049.—TOP OF GAS AND WATER STOP-COCK BOXES.—William W. Pullis, St. Louis, Mo., assignor to Thomas R. Pullis and John Pullis same place.

Claim.—The sliding-bar or pin C, to which the cover B is hinged, in combination with the cover B and upper part of the box A, substantially as herein shown and described, and for the purpose set forth.

109,050.—PORTABLE CRADLE OR CRIB.—Daniel M. Reynolds, Chicago, Ill.

Claim.—The cradle or crib in which the side pieces and ends are united by dovetail-tongues and grooves, as described, when said parts are combined with a bottom board, G, constructed in a single piece, with longitudinal openings *g g*, substantially as and for the purpose specified.

109,051.—TABLE.—Daniel M. Reynolds, Chicago, Ill.

Claim.—The table, consisting of the side rails C, secured to the top A, and formed with dovetail tenons, the detachable legs D secured to the detachable end rails by dovetail joints, each set of legs being constructed as described, to slide upon the dovetail tenons of the side rails, and to be slipped off the same, in connection with the end rails, to permit such legs and rails to be packed upon the side rails between the folded leaves B, all con-

structed as herein set forth and shown, for the purpose specified.

109,052.—SAW-MILL.—Benjamin F. Richardson and David Richardson, Martinsburg, Iowa.

Claim.—1. The shaft E and hinged rack F, in combination with the feed-shaft G, pinion G', and retaining-wheel V, all constructed and operating as and for the purpose specified.

2. In combination with the elements above named, the carriages C and D, constructed and operating as shown and described.

109,053.—BALANCE SLIDE-VALVE.—Alexander K. Rider, York, N. Y., assignor to himself, Cornelius H. Delamater, and George H. Reynolds, same place.

Claim.—The slide-valve D C, the upper portion D being an extension upward of the main body of the valve, and having a firm union with the valve at one edge and a tight contact with the steam-chest cover B at the other edge, as specified.

109,054.—LAMP HEATING-APPARATUS.—Alvah Rittenhouse, Philadelphia, Pa.

Claim.—The construction of the pots P or P', provided with tubes t t^1 t^2, concave bottom b, band C, covers or rings $O O^1 O^2$, so as to operate substantially as and for the purpose specified.

109,055.—HORSESHOES.—John S. Robertson, Wood End, near Cathcart, Scotland.

Claim.—The plate B, provided with the toe and heel-calks C and D, and secured in place by means of the hook E and strap F, substantially as shown and described.

109,056.—VENTILATOR.—William F. Ross, Davenport, Iowa.

Claim.—1. The chamber A, arranged above and opening into the apartment to receive the warm air therefrom, combined with a cold-air duct, for the purpose of tempering the fresh air before its introduction into the room.

2. The zigzag siphonic duct B, having partitions b^1, tanks b^2, and cloths b^3, arranged with respect to the air-chamber A, as and for the purpose specified.

3. The arrangement, with respect to outlet-pipes E F, of a branch projecting into the apartment, and having a detachable central glass tube, G, to produce a draught in said pipes, and to admit of the unhealthy products of combustion being carried off, in the manner described.

4. The basin or chamber C, constructed as described, in combination with the air-chamber A, air-pipes or passages E F, either or both, and with the apartment or space to be ventilated, substantially as herein shown and described, and for the purpose set forth.

5. The combination of the chamber D with the chamber or basin C, air-chamber A, air-passages or pipes E F, and apartment or space to be ventilated, substantially as herein shown and described, and for the purpose set forth.

6. The pipes or passages E F, either or both, constructed as described, in combination with the chamber or basin C, air-chamber A, and apartment or space to be ventilated, substantially as herein shown and described, and for the purpose set forth.

109,057.—PUMP.—Martin Van Buren Rowley, Worcester, N. Y.

Claim.—The improved deep-well pump, consisting of frame A, pipe B, spout b^2, branches b^1, valve F, cylinder C, valves E, pistons D, rods H, beam I, rod J, fly-wheel K, shaft L, crank M, and chamber O, all constructed and relatively arranged as and for the purpose described.

109,058, antedated October 26, 1870.—STOOL AND TRAVELING-BAG.—John Salisbury and Benjamin Wilbur, Scituate, R. I.

Claim.—The stool and traveling-bag, when constructed of the parts B B and C with the flexible material A, and arranged in the manner described.

109,059.—DYE-TUB.—Thomas Sampson, Providence, R. I.

Claim.—1. A dye-tub, having a partition, B, arranged in the manner substantially as described, for the purposes specified.

2. A dye-tub, having a partition, B, in combination with a compartment, C, the whole constructed and arranged in the manner substantially as described.

109,060.—SCROLL-SAW.—August M. Schilling, Chicago, Ill.

Claim.—1. The brake formed by the levers E and spring-cams I, in combination with the belt-shifter F G H and crank-wheel D, attached to the driving-shaft, substantially as herein shown and described, and for the purpose set forth.

2. The jaws L, levers M, and cam or wedge-screw N, for securing the lower end of the saw to the cross-head K, substantially as herein shown and described, and for the purpose set forth.

3. The jaws L L, (for holding a scroll-saw,) distended by a spring, l, interposed between their tenons, and applied to secure a more convenient insertion of the saw, as described.

4. The oil-cups S, applied to the connecting-rod J and ways O, as and for the purpose described.

5. The combination of the screw-nuts t' and threaded sleeve with the brace-rods T and way-bed P, to support said way-bed and enable it to be accurately plumbed, substantially as herein shown and described.

6. The combination of the guides X, guide-beds V, bands W, set-screw w, and adjusting-screws Y, with each other and with the plate U, substantially as herein shown and described, and for the purpose set forth.

7. The combination of the rear guide A', lever B', and lever-nut C', with the plate U and guides X, substantially as herein shown and described, and for the purpose set forth.

8. The combination of the guides G', guide-beds F', adjusting-screws H', and clamping-screw I', with each other and with the swinging or pivoted arm E', substantially as herein shown and described, and for the purpose set forth.

9. The combination of the rear guide J' and swiveled nut K' with the swinging guide-arm E', and with the adjustable guide G', guide-beds F', and clamping-screw I', substantially as herein shown and described, and for the purpose set forth.

10. The combination of the spring U', spring-catch Q' R', and levers S' and T', with the guide-arm E', and with the sliding block P', substantially as herein shown and described, and for the purpose set forth.

11. The combination of the plumbing-block W^1, supporting and adjusting-rods X', and set-screws Y' Z', with each other, and with the extension-plate V' and swinging guide-arms E', substantially as herein shown and described, and for the purpose set forth.

109,061.—CHURN-DASHER.—Lovi Scott, Burgettstown, Pa.

Claim.—The construction of the double self-acting conical cylinder G, with its central valve H operating upon its upright lever, and arranged and combined with the horizontal octagon-shaped beater B, as herein described, and for the purposes set forth.

109,062.—HARVESTER.—Allen Sherwood and Clarence Sherwood, Auburn, N. Y.

Claim.—1. The hinged foot-supports, when arranged to cover and uncover the oil-holes in the main frame-supports, as described and represented.

2. In combination with the driver's seat, when made of an upper hinged part and a lower stationary part, and with a bar attached thereto for supporting a shield or cover, the studs 1 2 on said hinged part, and the holes or keepers 3 4, one in the seat-portion and the other in said bar, for uniting and strengthening said portions, substantially as described.

3. In combination with the pitman and the wrist or crank-wheel projection r, the rubber or other elastic rolls o o, for preventing wear, noise, and clatter, when said rolls are arranged not to embrace, but are slightly distant from the wrist-pin, and are struck by said projection r in its rotation, as described and represented.

109,063.—MILL-GEARING.—Henry Shoemaker and John Alexander McClintock, Perry, Ill.

Claim.—1. The lever D, with the hollow journal J, and the mode of supporting, guiding, and fastening it, substantially as and for the purpose herein shown and described.

2. The spring M, in combination with the pinion C and coupling L, and the mode of connecting the spring with the coupling, substantially as and for the purposes described.

3. The pinion and spindle, arranged so as to revolve independently of each other, substantially as described.

4. The forked lever P, and the mode of supporting it, and the spring-catch R for holding it in place, substantially as described.

109,064.—METALLURGIC GAS-FURNACE.—Charles William Siemens, Westminster, England.

Claim.—The arrangement of the furnace C and regenerators A A A' A', and their connecting-passages B B B' B', and air and gas-mixing chambers D D E E, substantially as hereinbefore explained, and as represented in the accompanying drawing.

109,065.—METHOD OF CUTTING BOOT-PACKS.—Warren G. Slater, Hart, Mich.

Claim.—1. The form or pattern of the boot-pack cut out in one piece, as shown and described.

2. The form or pattern of a boot-pack cut out in two pieces, as shown and described.

109,066.—THIMBLE-SKEIN AND BOX FOR VEHICLES.—Thomas Smart, Jr., Brockville, Canada, assignor to himself and Elsward Smart, Pittsburg, Pa.

Claim.—The combination, with the ordinary oil-channels, (in an axle-box,) of the transverse chamber d and longitudinal ribs e passing therethrough, to take up the superfluous oil and gradually convey it to the end of hub for distribution, as described.

109,067.—SEWER CATCH-BASIN COVER.—Henry Smith, Jr., Milwaukee, Wis.

Claim.—A sewer catch-basin cover, when made with body A, openings B B, top-cover C, ring D, and lugs E E, substantially as described.

109,068.—DRYING AND PRESERVING APPLES.—Marshall P. Smith, Baltimore, Md.

Claim.—1. The process of drying and preserving apples when combined with the action of hot water or steam, substantially as described.

2. The article of dried apple, when prepared by the process described herein.

109,069.—CHAIN WATER-WHEEL.—William M. Starr, Washington, D. C.

Claim.—The combination of the chain of buckets B with the drum H, tapering toward both ends, all substantially in the manner and for the purposes set forth.

109,070.—BUTTER-PRINTER.—William C. Stern and James W. Robinson, London Grove, Pa.

Claim.—1. A mold for printing butter, made in sections, so as to close up to receive the butter, and open or spread and leave the butter, by means of any suitable mechanism, substantially as described.

2. The funnel B, in combination with the mold C, and operating mechanism, substantially as described.

109,071.—BARREL-FILLER.—Frederick Stitzel, Louisville, Ky.

Claim.—1. The combination of the float N, the lever-catches L L, the valve F, and stem J, the guard E, trigger G, the crank-stem H, and openings K K in the lower end of the pipe, substantially as and for the purposes set forth.

2. The combination of the sliding sleeve-joint C, the screw-nut B, the packing D, and valve-cock A, substantially as and for the purpose herein set forth.

109,072.—HAT-FINISHING MACHINE.—George W. Stout, Newark, N. J., assignor to New York Hat-Finishing Company.

Claim.—1. The within-described method of ironing and finishing hats with curved brims, the brims being ironed by the yielding irons on the heated and curved brim-plate, revolved and operated substantially as herein set forth.

2. The rocking connection K and duplicate irons I J carried thereon, operated by the single lever or arm L, so as to allow the irons to change their positions relatively to each other and conform to the varying positions and sizes of the hats, as herein specified.

3. The iron P, arranged and operating as specified.

4. The confined locking-key C, arranged and operating as represented relatively to the block E e and heated revolving brim-plate D, for the purposes herein set forth.

109,073.—CORNER TROWEL.—Sumner F. Strecter, Bernardston, Mass.

Claim.—1. A trowel, having two or more plates, C and C', which can be adjusted at any desired angle, substantially as described.

2. In combination, with the plates C and C', the arms D and thumb-screws G, when combined to operate as set forth and described.

109,074.—LATCH.—Addison A. Stuart, Plainville, Iowa, assignor to himself and J. D. Eddy, same place.

Claim.—The arrangement, in the slot b, of the two inclined or wedge pieces D D', as set forth, so that one will pass by the other when pressure is exerted on a thumb-piece, C, from either side of the door.

109,075, antedated October 29, 1870.—RELISHING-MACHINE FOR TENONING SASH.—George L. Sullivan and Edward Lippincott, Chicago, Ill.

Claim.—1. In a relishing-machine, the arrangement of transversely-reciprocating saws with vertically-reciprocating saws, substantially as described, for the purpose specified.

2. The series of vertically-reciprocating saws D, adapted for adjustment, with relation to each other, within the cross-head E, by means of the blocks f and set-screws g, substantially as described.

3. A series of cross-cut saws, J, adapted for adjustment, with relation to each other, to regulate the width of the relish in the tenon of a sash, door, or blind-rail, substantially as herein described.

4. The combination of the movable stop T with the relishing-saws J, for the purpose specified.

5. A relishing-machine for the tenons of sash, door, and blind-rails, in which the relishing-saws are thrown into operation intermittingly during the continued movement of the ripping-saws, for the purpose specified.

109,076.—ADJUSTABLE COAT-PATTERN.—George P. Sweezy, Riverhead, N. Y.

Claim.—1. The front patterns, composed of

pieces A B C D E, connected by clamping slides, and provided with graduations, as shown and described.

3. The back patterns I J K L, connected by clamping slides, and provided with graduations, as described.

3. The two front and back patterns, combined with clamps F and slotted slides G, when all are constructed and applied as described, to form an adjustable coat-pattern.

109,077.—MACHINE FOR LAYING CHANNELS IN BOOTS AND SHOES.—Seth D. Tripp, Lynn, Mass.

Claim.—The belt-smoother T and smooth pulley N, the rough-rimmed roller O and belt U, and the vibrating former F, all combined, arranged, and operated as and for the purpose described.

109,078. — BORING-MACHINE.—Andrew J. Truxell, Lynchburg, Va.

Claim.—1. The combination of the ratchet I, pawl *i*, lever N, rod *n*, and sliding frame C, for turning the cylinder, substantially as shown and described.

2. The combination of the ratchet J, pawl *j*, lever N, rod *n*, and sliding frame C, for moving the cylinder longitudinally, substantially as shown and described.

3. The upright forked bar *w*, arranged as shown and described, for the purpose specified.

4. The curved bar *m*, arranged as shown and described, for the purpose specified.

109,079.—COMBINED CENTER AND LATHE-DOG. — Andrew J. Truxell, Lynchburg, Va.

Claim.—The improved device herein described, consisting of the shank and center A C, studded jaws D, and screws B and E, constructed and arranged as set forth.

109,080.—IRON LINING FOR FIRE-POT.—Edward A. Tuttle, Williamsburg, N. Y.

Claim.—As an article of manufacture, for lining fire-pots, the iron block A, having flanges a^1 attached to the back-plate thereof, and ribs a^2 across its face, whereby narrow points only are presented to the clinkers, and a series of recesses is formed to receive the ashes and protect the plate from intense heat, the outline of the block being made to correspond in shape to the internal form of the fire-pot, as set forth.

109,081.—COOK-ROOM REFRIGERATOR AND CONDENSER.—Presley D. Van Deventer, Wright City, Mo.

Claim.—The box A A, the doors C C and H, the glass G, the flue E, the cap J, and the rod K, all of which combined constitute the cook-room refrigerator and condenser, substantially as and for the purposes hereinbefore set forth.

109,082. — CULTIVATOR-RAKE.—James T. Van Wyck, Poughkeepsie, N. Y.

Claim.—The runner-bar A, the blocks B B, rakes C^1 C^2, slide-braces E^1 E^2, when constructed, arranged, and combined to operate in the manner and for the purpose specified.

109,083.—FLOATING VELOCIPEDE.—Carl O. Wederkinch and Archibald Starkweather, Boston, Mass.

Claim.—1. A water-velocipede, provided with two parallel floats fastened together, a paddle-wheel operated by foot-cranks between them, and a seat for the driver, all constructed and arranged as shown and described.

2. A water-velocipede, provided with a steering apparatus, consisting of posts F G, tailless band d, and pulleys, as specified.

3. The arrangement of the seat with respect to the paddle-wheel, as set forth.

109,084. — BRUSH.—John Lake Whiting, Boston, Mass.

Claim.—1. The stock as made, with the shoulder *b* and the lips *c c*, arranged as described.

2. The stock as made, with the lips *c c*, and one or more projections, *a*, to enter the bristles, as described.

3. The stock as made, with the lips *c c*, the shoulder *b*, and one or more projections, *a*, arranged as described.

4. The brush as made, with the lips *c c*, and the ferrule C, arranged with the stock A and bristles B, as set forth.

5. The brush as made, with the lips *c c*, and one or more projections, *a*, arranged with its stock A, and ferrule C, as described.

109,085.—PAPER-FILE.—Frank W. Whitney, Brooklyn, N. Y.

Claim.—In combination with a letter or paper-file, the springs A, arranged to operate substantially as and for the purposes described.

109,086. — STEAM-GAUGE AND SAFETY-VALVE. — Isaac N. Whitteisey, Mount Vernon, Ind.

Claim.—The combination of the rotary steam-valve A, casing B, dial C, lock-caps E E, rod F, weight G, box H, casing I, abutment K, valve L, substantially as and for the purposes herein set forth.

109,087.—CURTAIN-FIXTURE.—John H. Wilhelm, Chicago, Ill.

Claim.—1. The imbedded washer and tube-guide P, in combination with the movable washer J, the tube H, the cylindrical helical spring I, the cord C, the bracket B, orifice K, and roller F, when all the parts are constructed and arranged to operate as herein described, and for the purpose set forth.

2. The imbedded washer and tube-guide P, in combination with the movable washer J, the tube H, the cylindrical helical spring I, the cord C, the bracket B, the orifice K, roller F, spool collar-plate T, bracket E, and cord-guard V, when all the parts are constructed and arranged to operate as herein described, and for the purpose set forth.

3. The imbedded washer and tube-guide P, in combination with the movable washer J, the tube H, the cylindrical helical spring I, the cord C, the bracket B, orifice K, roller F, spool collar-plate T, bracket E, cord-guard V, and weight Q' on the bottom of the curtain or shade, when all the parts are constructed and arranged to operate as herein described, and for the purpose set forth.

109,088.—DEVICE FOR UNLOADING WAGONS. Isaac Williams, Westfield, Ind.

Claim.—The herein-described unloading attachment to wagons, made substantially as herein shown and described.

109,089.—BRICK-MACHINE.—John R. Williams, Taunton, Mass.

Claim.—1. The press-box herein shown, provided with removable sides *e*, plunger I, and top M, when said parts are constructed, arranged, and operated as and for the purpose set forth.

2. The combination, with the movable sides *e* of a press-box, of toggle-levers G and springs *h*, when arranged as and for the purpose described.

3. The arrangement, in a brick-press and with respect to toggles G, of levers H, cam *k*, and rods *j*, as and for the purpose described.

4. The arrangement, in a brick-press, of the vertically-reciprocating and adjustable frame P, to feed the brick in the manner described.

5. The arrangement, with respect to the frame P, of shaft N, toothed segment *c'*, and spring *h'*, as and for the purpose specified.

6. The spring catch *e*, arranged to lock the presser M, and provided with the arm *i*, to be released by the cam *n*, as specified.

7. The swinging frame L, combined with the levers *d* and pawls *e*, for the purpose of imparting intermittent rotary motion to the belts B and C, as set forth.

8. The bars R and frame L, combined with the frame P, for elevating the said frame substantially in the manner and for the purpose herein shown and described.

9. The frame P, secured to the rack *f'*, which is arranged to reciprocate in the frame O, as specified.

10. The spring catch *f'* and pin *f'*, combined with the shaft N, slide P, and presses M, substantially as and for the purpose herein shown and described.

109,090.—POT FOR GLUE, PAINT, &c.—John J. Wilson, New York, N. Y.

Claim.—A paint or other pot fitted with a ring of a less diameter than the pot to which it is applied, and supported above the pot by arms attached to and rising from the pot, substantially as and for the purposes set forth.

109,091. — DITCHING AND GRADING-MACHINE.—Hiram A. Winter, Windsor, Ill.

Claim.—1. The shear B, nose D, and plate C, combined and attached to a supporting-frame, A A, as and for the purpose described.

2. The device B C D, combined on a frame, A A, with the revolving cutters L L_1, as and for the purpose described.

109,092, antedated October 22, 1870.—MACHINE FOR BOOKING TOBACCO LEAVES.—Joseph Wise, Elizabeth, N. J.

Claim.—1. The semi-cylinder A, provided with pressing flaps C, substantially as described.

2. The combination, with the semi-cylinder A and pressing flaps C, of a platform, B, on which the semi-cylinder can be swiveled round, as set forth.

3. Making the surface of the semi-cylinder A convex in a transverse direction, as shown and described.

109,093.—POTATO-DIGGER.—Albert R. Wixom, Farmington, Mich.

Claim.—1. The gang of plows *a b b*, standard *c*, hoe-plate *d*, and fingers *e*, attached to a frame or plate, V, and the bars W, as and for the purpose set forth.

2. The combination of the frame C, axle B, traction-wheels A, windlass Q, lever Q', and chains X, with the plows *a b b*, standard *c*, hoe-plate *d*, fingers *e*, plate V, and bars W, constructed and arranged substantially as described and shown, for the purpose set forth.

109,094, antedated October 29, 1870.—MACHINE FOR BENDING IRON-PIPE FOR WELDING.—Elon G. Woodworth, John Brawdy, and Fitch Merithew, Birmingham, Pa.

Claim.—The combination and arrangement of the rolls A B C D *e f*, constructed, arranged, and operating with relation to each other, substantially as herein described, and for the purpose set forth.

109,095. — SPRING FOR VEHICLES. — Enos Wright, Lee County, Iowa.

Claim.—The spring-bearer B, secured to the body A, the spring C and spring-holders D D, the roller-boxes and rollers E E, with all the various parts hereinbefore mentioned and described, substantially as and for the purpose hereinbefore mentioned and set forth.

109,096.—DOOR-CHECK.—Charles P. Young, Attleborough, Mass.

Claim.—The arrangement on the cylinder A of the rubber *a* and socket S, combined with adjustable door-check, substantially as described.

109,097.—SELF-ACTING WAGON-BRAKE.—Anthony Zink, Lancaster, Ohio.

Claim.—1. The arrangement of the side levers D, flanged friction-rollers B B, and semi-elliptic spring J, when combined and operating with the wagon-bed A, as herein described, and for the purposes set forth.

2. The arrangement and combination of the front post G, the under cross-brace and check H, and the rear half-elliptic spring J, with the wagon-bed A, as herein described, and for the purposes set forth.

109,098.—TREE-PROTECTOR.—Abraham S. Adams, Waynesborough, Pa.

Claim.—The above-described hoop for separating the poorer earth, near the stem, from the better mold, in setting or cultivating trees and plants, substantially as set forth.

109,099.—WATER-WHEEL.—Benjamin J. Barber, Balston Spa, N. Y.

Claim.—1. The stationary chutes I^2, curved upon their inner surfaces, substantially as and for the purpose specified.

2. The combination, in a water-wheel, of two sets of buckets, one, B, being of curved form, and the other, C, of the spiral form, substantially as and for the purpose set forth.

3. The curved arm upon the gate, for opening the same with varying rates of speed, and with varying amounts of power, substantially as set forth.

4. The combination of the curved gates I, the curved stationary chutes I^2, and the buckets B, whereby a chamber is formed, for the action of the water, by impact, upon the buckets of the wheel, substantially as set forth.

5. The combination and arrangement of the shaft K, the chain L, the ring H, and the slotted arm I^1, substantially as and for the purpose set forth.

6. The arrangement of the lower series of buckets of a water-wheel, and the lower plates thereof, whereby a bottom and a circumferential discharge of the water from such buckets is obtained, substantially as and for the purpose set forth.

109,100. — PENCIL-SHARPENER.—Asahel G. Batchelder, Lowell, Mass.

Claim.—1. In combination with the conical guide A, having the ledge *e*, handle *m*, and confining arms *d d*, the removable blade B, as and for the purposes specified.

2. In combination with a conical guide, A, having confining arms *d d*, and friction-spring *s*, the removable blade B, as specified.

109,101.—CALL-BELL AND CASTER-STAND.—Frederick Anton Blätterlien, West Meriden, Conn.

Claim.—The rack *a*, secured to the touch-rod C, and gearing in a pinion, *b*, which carries the clapper *d* in combination with a bell, A, mounted on a stand, B, with or without the revolving frame D, substantially as shown and described.

109,102.—CLAMPING MOVABLE SEAT FOR CARRIAGES.—Sylvester W. Beach, Ypsilanti, Mich.

Claim.—1. The clamping-guides *g'*, when constructed and operated substantially as set forth.

2. The bail *m*, the clamping-guides *g'*, the supports *e e*, the ways *c c*, the guides *g g*, and the wheels *e*, the whole constructed and arranged as and for the purpose substantially as specified.

109,103.—STEAM-TRAP.—William H. Bechtel, Philadelphia, Pa.

Claim.—1. The combination, with expansible plates H I and valve F, of the adjustable support L, for the purpose described.

2. The combination with the valve-chamber of the screen N, for the purpose set forth.

109,104. — OYSTER-DREDGE WINDER. — Charles T. Belbin, Baltimore, Md.

Claim.—The combination of lever *m*, pawl *n*, and ratchet *r*, with chains *o t*, lever and weight *b p*, or their equivalent, lever *l*, clutch *c*, spool *s*, and wind-

lass W, when constructed to operate substantially as and for the purpose specified.

109,105.—MALT-KILN.—Charles Philipp Berekhemer, Cincinnati, Ohio.

Claim.—1. A malt-kiln, having the external and elevated air-inlets J, which are closable by registers K, or their equivalents, substantially as herein described.

2. The combination of the sheet-metal case M M and plastic filling N, for the object herein set forth.

109,106.—NECK-TIE FASTENING.—George W. Bishop, Baltimore, Md., assignor to himself and John McFarland, same place.

Claim.—The plate A, provided with holes *a a'* and notch *b*, used in combination with the spring-hook B and loop C, substantially as and for the purposes herein set forth.

109,107.—DINING-TABLE.—David Boardman, Columbus, Ind.

Claim.—The arrangement, with table B, of the circular center A, with spindle *a*, girth *g*, gearing E E', and crank-shaft F, all as set forth.

109,108.—HARNESS-SADDLE.—Valentine Borst, New York, N. Y.

Claim.—1. The skeleton-frame A, cast in one piece, with its bridge constructed as described, having the terret-bars formed upon the face of the frame, substantially as and for the purpose set forth.

2. In castles, the combination of a metallic anterior part with a wooden posterior part, substantially as described.

109,109.—TRANSPOSING SCALE FOR TEACHING MUSIC.—Pariah G. Bryan, Louisville, Ky.

Claim.—1. The card A, for teaching transpositions of the musical scale, made substantially as and for the purpose set forth.

2. The card B, used in connection with card A, for teaching transpositions of the musical scale, substantially as in the manner shown.

109,110.—DRAWER FOR CABINET FURNITURE.—Levi Burnell, Milwaukee, Wis.

Claim.—1. The combination of the within-described supporting-bars B with furniture drawers by means of grooves G in the ends of said drawers, and opposite grooves G'' in the casing of the same, substantially as and for the purpose herein set forth.

2. The combination of the embracing-straps S with the supporting-bars B and the pins *p p*, or their equivalent, substantially as and for the purpose herein set forth.

109,111.—POTATO-DIGGING MACHINE.—Lemuel Cochran, Penn's Grove, N. J.

Claim.—1. The removable share A, constructed substantially as shown and described, that is, with a central tip, parallel-sided heels, and inclined edges, projecting laterally beyond the heels.

2. The combination of the double-edged share with the parallel land-sides C, when the tips of these sides project further forward than the tip of the share, and also reach below its lowest plane, substantially as and for the purposes set forth.

3. In combination with land-sides having side-openings, as shown, a double-edged share, whose edges, at the rear, project laterally beyond the land-sides, for the purpose set forth.

4. In combination with the share, the heel bottom piece D, constructed as described, removably attached to the share, and arranged to rest on the inclined upper sides of the heels *d d* of the share, as shown and described.

5. In combination with the vine-lifting points *f* and *f*, the concave-edged vine-cutters E E, located as shown, and removably attached to the land-sides.

109,112.—ANIMAL-TRAP.—John Cosolowsky, Titusville, Pa.

Claim.—1. The thin elastic tripping-board G, arranged within and secured to the bottom of the box A, so that, when tripped, it will descend and lie flat upon said bottom, in the manner herein shown and described.

2. In combination with a thin elastic tripping-board the dead-fall D, the locking-piece *e*, the guide-bar E, and the pivoted tripping-arm F, arranged and operating as described.

109,113.—CONDENSER FOR STEAM-PUMPS.—William Craig, Newark, N. J., and Henry L. Brevoort, Brooklyn, N. Y.

Claim.—1. The combination, with the perforated suction-pipe or extension D' thereof, of the float G, operating as a valve, to control in an automatic manner the ingress of water to the condenser, essentially as and for the purpose or purposes herein set forth.

2. The water-jacket E, in communication with the suction-pipe D below and with the condenser A above, in combination with the float G', operating as an automatic valve to the discharge-apertures of the jacket, substantially as described.

109,114, antedated October 29, 1870.—HORSE-POWER.—Rufus W. Crouse, Westminster, Md.

Claim.—The tumbling-shaft *c*, when extended entirely across the space beneath the driving-wheel *a*, in order that coupling-boxes may be placed on both ends of the shaft, and when used in connection with the bevel-pinion *c*, so placed in reference to the driving-wheel as to receive motion therefrom in the right direction for the machine while the horses are traveling against the sun.

109,115.—APPARATUS FOR FITTING AND SETTING AXLES.—James Cunningham, Rochester, N. Y.

Claim.—1. The dies A B, shaped to the form of the fitted axle, and provided with the extensions *b b*, for setting the arms, the whole operating in the manner and for the purpose specified.

2. In combination with the above, the tank or tanks H H', substantially as and for the purpose set forth.

109,116.—SUPPORTING-PROP FOR FOLDING BUGGY-TOPS.—Alexander Dom, Mount Healthy, Ohio.

Claim.—1. In connection with a buggy-top, constructed and operated substantially as described, the additional toggle-joint props between the bows B'' B''', when they are arranged between the outer and inner cloth of the top, and operated from within by means of the shafts F and crank-handles H, substantially as set forth.

2. A buggy-top prop, composed of arms I J and links K L, connected and operating as and for the purpose described.

3. The provision of the bent lips *a*, as and for the purpose specified.

109,117.—ROTARY PUMP.—John Doyle, Hoboken, N. J., and Timothy Augustine Martin, New York, N. Y.

Claim.—The annular rotating tube A, provided with valves F, in combination with mercury G or any suitable fluid or semi-fluid placed within the annular tube, and all arranged to operate in the manner substantially as and for the purpose set forth.

109,118.—LUBRICATOR.—Isidore Dreyfus, New York, N. Y.

Claim.—In a lubricator, substantially such as described, the combination with the condensing-chamber and discharge-tube or tubes of an auxiliary oil-chamber and valve for regulating the flow of oil or other lubricant from the same to the said discharge-tube or tubes, substantially as and for the purposes set forth.

109,119.—RAILWAY SLEEPING-CAR.—Joseph S. Du Bois, St. Louis, Mo., assignor to himself and Thomas Dorwin, Leavenworth, Kansas.

Claim.—1. The seat-frame C', with its pivot *c*, in combination with the notches *b* and slat *b'* in the lower frame, substantially as and for the purpose set forth.

2. The frame C', latch-rod E, spring c^1, levers *c*, and notches *d*, when combined with frame B', substantially as set forth.

3. The hinged posts K K', in combination with the ferrules *h* and h^1, substantially as and for the purpose set forth.

4. The jointed posts K K', pin h^2, and latch *l*, in combination with the frame F, all substantially as described.

5. The combination and arrangement of the frame F, suspending-bands I I, rear elastic support G *g g'*, and the jointed posts K K', latch *l*, and pin h^2, all constructed and operating substantially as herein described.

109,120.—APPARATUS FOR PARLOR-CROQUET.—Albert P. Eastman, Washington, D. C.

Claim.—1. A croquet-wicket or turning-stake, provided with prongs, as and for the purpose specified.

2. A croquet turning-stake made in separable sections, which are connected by springs, substantially as described.

3. The arrangement of the wicket or stake with the prongs *e* and disks *f*, as specified.

109,121.—VISE.—James Findlay, Toronto, Canada, assignor to himself and William Smellie, same place.

Claim.—The peculiar construction of the jaws A B, and their application to the forceps or vise-jaws C D, substantially as herein set forth and shown.

109,122.—BOOTS.—Charles H. Fitch, Worcester, Mass.

Claim.—A boot, in which the counter is constructed and applied to the back B and relatively to the seams C, substantially in the manner and for the purpose herein set forth.

109,123.—DOVETAILING MACHINE.—Crawford Staples Griffin and Josiah Wells Wilkins, Stockton, Me.

Claim.—In combination, the base-plate A, turn-plate B, saw-shaft E, adjustable slides C C, circular guides *a b*, and adjusting-lever I, substantially as specified.

109,124.—COTTON-SCRAPER AND CHOPPER.—Nathan M. Hale, Cleborne, Texas.

Claim.—The combination of the frame C, throwing-on plows *s s*, throwing-off plows *t t*, and oscillating hoe *m*, when all these parts are arranged as described.

109,125.—MANUFACTURE OF WHITE LEAD.—Robert F. Hatfield, New York, N. Y., assignor to "Hannon Lead Company," same place.

Claim.—1. The process above described of applying acetic acid to comminuted lead deposited in the bottom of gas-tight chambers, for making white lead, which consists in subdividing and spraying the acetic acid on the lead by forcing therethrough a current of air or gas.

2. In the manufacture of white lead, the process above described of spraying acetic acid upon lead by impinging upon it a counter-current of air or gas, for the purpose of distributing it in the form of a fine mist about the comminuted particles of lead.

3. The process of simultaneously applying carbonic-acid gas and acetic acid by forcing them together in counter-currents upon the subdivided lead in an air-tight chamber, as described.

4. The combination of an acid pipe, B, and a gas-pipe, C, having their discharging channels at right angles to each other, as and for the purpose described.

109,126.—PRESERVING BEER AND ALE ON DRAUGHT.—Cornelius E. Haynes, Boston, Mass.

Claim.—1. The process herein-described for preserving beer, which consists in introducing into a beer-barrel a blast of gas or air impregnated with alcoholic vapors, for purposes specified.

2. In combination with a beer-barrel, one or more tanks for containing the charged air or gas, and a force-pump for driving the said gas into the beer-barrel, the tank and barrel being connected, and the whole operating as herein explained.

109,127, antedated October 29, 1870.—FENCE.—Charles Nelson Hitchcock and Henry Pendleton Taylor Wilson, Canton, Miss.

Claim.—1. The two parallel rails A A, connected by the standards B B, and used in combination with the braces C C and keys D D, substantially as herein set forth.

2. The parallel rails A A, provided with slots *a a* and pins *b b*, substantially as and for the purposes herein set forth.

3. The combination of the rails A A with their slots *a a* and pins *b b*, standards B B, braces C C, keys D D, covering E, and posts I I, all constructed and arranged to operate substantially as and for the purposes herein set forth.

109,128.—GUN-LOCK.—Cyrus B. Holden, Worcester, Mass., assignor to himself and Isaac Fiske, same place.

Claim.—In combination with the trigger or triggers *e*, a slide or bolt, *f*, and a lever, *l*, the slide being arranged to lock or to release the trigger or triggers, and the locking being effected by the spring and the release by the lever, all substantially as described.

109,129, antedated October 29, 1870.—CULTIVATOR.—Henry Howe, Oneonta, N. Y.

Claim.—The plow-beams E, hung to the main frame of the machine by rearwardly-swinging pendants G G', in combination with the lever *a* and chains *c*, so arranged and operating as to cause the plows to rise from the earth on coming in contact with an obstacle, substantially as shown and described.

109,130.—FLOWER-STAND.—Hiland H. Kendrick, Fulton, N. Y.

Claim.—1. The connecting-plate B, constructed substantially as described, with its flange and notches for supporting the arms C C and intermediate arms D D, in the manner herein specified.

2. The bracketed arms F F and G G, supported directly by the standards A A by means of the sliding hook-sleeves *r r*, constructed as described, substantially as and for the purpose herein specified.

3. The improved flower-stand, composed of the central standards A A, connecting-plates B, supporting arms C C, intermediate arms D D, bracket-arms E E and G G, and the several pivoted holder-plates, arranged and combined substantially as and for the purpose herein specified.

109,131.—BURNING HYDROCARBON.—Isaac Kendrick, Philadelphia, Pa.

Claim.—1. The inverted cone-shaped chambered cylinder B, constructed and arranged in combination with the burner E, so that the flame passes up both sides of the retort, in the manner herein described.

2. The cone-shaped cylinder or jacket C, for superheating steam for purposes as hereinbefore described, arranged, in combination with a gas-generator, as herein set forth.

3. The box D, arranged as shown, in combination with the retorts B and C, for the purpose of mixing the vapor of hydrocarbons and superheated steam preparatory to its introduction to the burner as fuel.

4. The burner E, so constructed and arranged that the flame is brought to bear upon the outer and inner walls of the gas-generator B, as also upon the inner wall of the superheater C, as herein described.

5. The gas-generator B, the superheating steam-cylinder C, the mixing-receiver D, and burner E, combined and arranged and connected together, substantially in the manner and for the purpose herein described.

109,132.—EXCAVATING SCOOP.—Oscar P. Kniffin, Clinton, Conn., assignor to himself and H. A. Lyne, same place.

Claim.—The scoop A, combined with the shank C and pivoted thereto, the said shank constructed with an arm, *d*, bearing upon the scoop below the pivot, in the manner and for the purpose substantially as described.

109,133.—NECK-TIE RETAINER.—Henry Laurence, New Orleans, La.

Claim.—1. A cravat or neck-tie retainer made of separate plates, A B A B, hinged together and connected by an elastic loop, C, so as to admit of flexion in the manner and for the purpose herein described.

2. A cravat or neck-tie retainer hinged as described, in combination with the elastic loop D, which secures the bow fabric and forms a support for the button-ring *i*, as herein shown and described.

109,134.—BUTTON-FASTENING.—Edwin F Lee, New York, N. Y.

Claim.—The button-fastening, constructed substantially as described, of a disk or head, A, having a slot, *b*, in it, and recess *d*, in combination with a tongue, B, formed with a swell or locking projection to fit within the recess of the disk, essentially as specified.

109,135, antedated November 4, 1870.—HIDE-BEAMING MACHINE.—Patrick Lennox, Lynn, Mass.

Claim.—Producing reciprocating rectilinear movements in a horizontal plane of a vibrating suspensory, by supporting or guiding the upper end of the same upon or by means of a sliding connection, and in combining therewith a device whereby to counteract the tendency of the working extremity of such suspensory to move in a curved or sectoral path.

109,136.—GANG-PLOW.—William Mason, Independence, Oregon.

Claim.—The tongue A, extension A‴, crank-arms B and *a a*, and axle A′, constructed, arranged, and combined with the plow-beams C C, and system of levers and connecting-rods, as shown and described, and for the purpose specified.

100,137.—VARIABLE CUT-OFF APPARATUS.—Thomas May, Brooklyn, N. Y.

Claim.—1. The auxiliary piston or pistons D D′, moving in a cylinder or cylinders connected to the slide-valve A, in combination with ports *a a′*, *a″ a‴*, *c c′*, and *d d′*, substantially in the manner described, so that the auxiliary piston or pistons are caused to move automatically at the proper intervals, and that, by their motion, steam is cut off from the main cylinder at the required part of the stroke of the main piston.

2. The combination of slides *f f′* with the auxiliary exhaust-ports *d d′*, substantially as described, so that the time when the motion of the auxiliary pistons takes place can be regulated and the cut off varied to any desired part of the stroke.

109,138.—PITMAN.—John H. McGowan, Cincinnati, Ohio.

Claim.—A pitman composed of the following elements, viz., recessed column A *a*, caps B *b b′*, C *c c′*, bent rod D, and nuts E E′, combined substantially in the manner and for the purpose specified.

100,139.—WOOD PAVEMENT.—Duncan McKenzie, Brooklyn, N. Y.

Claim.—The combination and arrangement of the sectional foundation planks or strips D D, resting on sleepers E E, with the main blocks B B and transverse blocks C C bolted together to form independent sectional blocks, and arranged in relation to each other to form spaces *e e* between the main blocks, substantially as specified.

109,140.—CHEESE-VAT.—Henry W. Millar, Utica, N. Y.

Claim.—The arrangement, in relation to a cheese-vat, of the supply-pipe *f* and supply-pipes *w w* and C C, elbow-pipes *d d*, and return-pipes *e* and Z, or their equivalents, substantially as described, and for the purposes hereinbefore mentioned.

109,141.—RAILWAY-SWITCH.—John Miner and Silas Merrick, New Brighton, Pa.

Claim.—In combination with the blocks Z Z′, perforated for the passage of the bolts, the track-rails A T, chair or bed-plate D, and the outer binding-rails E, when constructed and arranged to keep the track-rails in the proper position with respect to the switch-rails C, as specified.

109,142.—CONDENSER FOR GAS-WORKS.—Peter Munsinger, Philadelphia, Pa.

Claim.—1. A multitubular condenser, with flange-attachments, for the purpose shown and described.

2. A multitubular condenser, composed of the inlet-chamber B, condensing-chamber C, chamber or passage D, and the lower tube-sheet E, as shown and described.

3. The tapering ground-joint, for the purpose shown and described.

109,143.—RAILROAD-CAR STOVE.—John Oliphant, Spring Hill Furnace, Pa., assignor to F. H. Oliphant, Jr., same place.

Claim.—1. The reservoir A surrounding the fire-chamber, and made to communicate with the interior thereof by means of the removable plate E, substantially as described.

2. The ring E in the fire-chamber, applied to operate substantially as described.

3. The float-valve E, in connection with the reservoir A.

4. The tube S, communicating with the reservoir A and the fire-chamber, substantially as and for the purpose described.

109,144.—NUT-CRACKER.—Joshua Pusey, Philadelphia, Pa.

Claim.—1. The combination of the jaws J J′, the slots S, the flanges or bearings F, and the lever L, provided with the rounded parts C and the pins P, as and for the purpose specified.

2. In combination with the foregoing, the slots X and Z, as specified.

3. The stem R, in combination with the jaw J′, working within the head H, substantially as hereinbefore described and specified.

109,145.—BIT FOR HARNESS.—Benjamin S. Roberts, New Haven, Conn., assignor to O. B. North & Co., same place.

Claim.—1. A bit in which the joint is constructed in a hinge form, as described, so as to retain the two parts in the same relative position, substantially as herein set forth.

2. A bit in which the two parts A and B are hinged together by a joint of hinge form, in the manner described, and each of the said parts provided respectively with arms A′ and B′, formed in one and the same piece with their respective parts of the bit, as herein set forth.

109,146.—SAWING-MACHINE.—David S. Shanabrook, Greencastle, Pa.

Claim.—1. The rocking-shaft I, with its arm *d*, block *f*, screw-rod *e*, and nut h, all constructed and arranged to operate substantially as and for the purposes herein set forth.

2. The arrangement of the treadle D, shaft E, wheel G, shaft H, pitmen *a b*, and shaft I with its arms *b d*, all substantially as shown and described.

109,147.—TIRE-SHRINKER.—Christian S. Sherk, Grantville, Pa.

Claim.—In combination, the stationary concave bed A, levers I I, with cams H H, levers E E, with slotted arms *e e*, and angular bearing-edges *s s*, and the wedges *f f*, having their lower bearing-edges V-shaped, substantially as specified.

109,148.—APPARATUS FOR CARBURETING AIR.—Jacob D. Spang, Dayton, Ohio.

Claim.—1. The within-described pump for forcing air, which has been impregnated with the vapor of water, into the oil or gasoline-chamber of a gas-generating contrivance, substantially as and for the purpose set forth.

2. The perforations in the lower portion of the gasoline or oil-chamber, substantially as and for the purpose set forth.

3. The arrangement of the pump E, the oil-reservoir A, and oil-chamber C, it being such that the oil is delivered to the interior of the reservoir at the same time that air is being delivered to the chamber C upon its outer surface, substantially in the manner shown.

109,149.—BOILER-FEEDER AND LOW-WATER DETECTOR.—John L. Starkey, Worcester, Mass.

Claim.—1. The relative arrangement of the valve M in the pump-pipe L, with the lever N and expanding-pipe B, whereby the action of the lever is brought directly upon the spindle M′ of the valve, and the valve is placed in close proximity to the boiler, substantially as and for the purposes herein set forth.

2. The combination, with the expanding-pipes B and C, of the vertical pipe F and branch-pipes G, H, I, and J, and their stop-cocks, substantially as and for the purposes set forth.

3. A boiler-feeder and low-water detector, the parts of which are constructed and combined substantially as shown and described.

109,150.—BRICK-KILN.—Edward C. Sterling, St. Louis, Mo.

Claim.—1. In an open-top brick-kiln, A, the arrangement of an imperforate deflecting wall or walls *b* in the body of the kiln, extending upward from the hearth of the same toward the top thereof and base-flues *d*, in direct communication with the interior of the kiln, substantially as herein shown and described.

2. The shiftable blower *h*, constructed with necks *h′ h″* and adjustable register *h‴ i*, the pipes *j k l P*, and nozzles *m*, combined and arranged substantially as shown and described, in connection with two or more kilns, to exhaust the hot gases from any one kiln, and to force said gases, mingled with more or less air, through one or more of the other kilns, as set forth.

109,151.—MACHINE FOR FILLING BARRELS.—John L. Stewart, Philadelphia, Pa.

Claim.—1. The trigger arrangement, consisting of trigger T, link V, and spring S, so set that the joints *v′*, *t′*, and *w′* are in the same straight line, and operating the valve B, in the manner herein described.

2. The elastic diaphragm M, within the chamber M, arranged, in combination with the air-passage K and spigot E, so that the compressed air at the top of the barrel operates the diaphragm, for the purpose herein described.

3. The combination of the diaphragm N, rod O, nut *p′*, and trigger T, for the purpose herein shown and described.

4. The adjustable conical stopper *f′*, screwed internally upon the spigot E, to regulate the quantity of oil admitted to the barrel, and screwed externally to make an air-tight joint, substantially as described.

109,152.—COFFEE-POT.—John F. Still, West Farms, N. Y.

Claim.—1. The overflow-chamber or well B within the body of the pot, substantially as specified.

2. The combination of the overflow-well B and screen D or D and E, with the upper sieve or screen C, substantially as specified.

109,153.—CIGAR-CUTTING MACHINE.—Lucius S. Stimson, deceased, by Harriet N. Stimson, administratrix, Lowell, Mass., assignor to himself and Moses S. Moulton, same place; said Moulton assignor to Nelson F. Libby.

Claim.—The combination of the two concave cutters h and *j*, substantially as and for the purpose herein specified.

109,154.—COUNTERSINK.—Delay F. Sutton, Toledo, Ohio.

Claim.—The slotted tube A, provided with the round lip-cutters B B at one end and tapering screw C at the slotted end, and used with the nut D, substantially as and for the purposes herein set forth.

109,155.—GRAIN-SEPARATOR.—Frank Swift and Miles Standish, Hudson, Mich.

Claim.—1. The vibrating bar C, provided with alternate square and round spaces, placed in the hopper-bottom, and operated by the crank *d*, roller *b*, slotted bar D, and shaft *a*, all substantially as set forth.

2. The combination and arrangement of the screen G H, trap-door I, rollers *e*, upright post *f*, slotted board K, and bars J J, all substantially as set forth.

3. The bars J J, pivoted at or near their center, provided with the rollers *e e*, and made adjustable by means of the upright post *f*, which is attached at any height desired on the slotted tail-board K, substantially as and for the purposes herein set forth.

109,156.—GARMENT-HOLDER.—Benjamin Van Campen Taylor, Newark, N. J.

Claim.—1. A handle, A, provided at its ends with the linked rings *b b* to receive strap *d*, substantially as shown and described.

2. The handle A, made in two or more parts united by the male and female screws *a*, or equivalent fastening, and provided at its ends with the links *b b*, to receive straps, substantially as set forth.

109,157.—CORN-HULLER, SHELLER, AND FEED-CUTTER.—Tower Thomasson, Calhoun, Mo.

Claim.—1. The wheel E, provided with knives *b b*, and used in combination with the irons *d d*, substantially as and for the purposes herein set forth.

2. The slotted iron h, constructed and arranged as described, in combination with the wheel E and knives *b b*, substantially as and for the purposes herein set forth.

3. The combination of the frame A, sheller B, wheel E, with knives *b b*, angular irons *d*, adjustable platform G, and sloping apron H, all constructed, arranged, and operating substantially as and for the purposes herein set forth.

109,158.—ROCK-DRILLING MACHINE.—Nathaniel Tucker, Levi Williams, and Henry H. Coppock, Pleasant Hill, Ohio.

Claim.—1. The drill-rope pulley *c*, applied to a frame, B B^1, which is pivoted to the main frame A, in combination with the braces B^2, substantially as described.

2. The lever F, constructed and arranged as described and shown, so that, while it occupies a place upon the shaft *d*, it does not interfere with the drum E, which is also on said shaft, said lever carrying the pulley *g*, and being operated by the cam J, all substantially in the manner set forth.

3. The cam or tappet J, keyed on the endwise adjustable shaft *j*, in combination with the loose spur-wheel K, clutch *e e'*, and fast drum L, and also, in combination with the lever F and slow-speed wheel N, substantially as described.

4. In combination with the slow-speed wheel N and its pinion K, and the drum E and vibrating lever F, the paying-out device, substantially as described.

109,159.—JOURNAL-BOX FOR CARS.—Ernest Von Jeinsen, Omaha, Nebraska.

Claim.—1. The drawer B, fitting under the ribs *a a* in the box A, and provided with guides *b d*, substantially as and for the purposes herein set forth.

2. The combination of the drawer B with its guides *b d*, springs C D, one or more wicks A, and the lubricator E, provided with felt *f*, grooves *h h*, holes *i i*, and collar or flange *e*, all substantially as and for the purposes herein set forth.

109,160.—PRIVY.—William Jacob Warren, Philadelphia, Pa.

Claim.—1. The combination of the tube *b* and a receptacle, C, receiving water from a waste-pipe, B, communicating, through a pipe, F, with a sewer, and provided with a valve, *f*, all substantially as described.

2. The arrangement, substantially as set forth, of the chamber C and pipes B, F, and G.

109,161. — TYPE-WRITING MACHINE. — Charles A. Washburn, San Francisco, Cal.

Claim.—1. In combination with a series of lettered or otherwise marked keys, a series of levers of differing lengths, and pivoted at varied distances from the printing or impressing point, and furnished with letters or marks corresponding to those on the keys, respectively, to which they are attached, so that, when actuated, each lever of the series shall bring its lettered or marked end over or upon one and the same point or position, to leave its impression, substantially as described.

2. In combination with a series of type-levers, and a striker common to all, for forcing the type-ends thereof against the paper or other article to be impressed, a stop, that is also common to all the levers, for preventing the levers in rising from being carried beyond the exact point where the impression is to be taken, substantially as described.

3. In combination with the series of type-levers of differing lengths, and hung in different planes, an inking-roller, against which the type of each lever moves as it is swung into position for printing action, substantially as described.

109,162.—APPARATUS FOR GRINDING THE KNIVES OF MOWING-MACHINES.—Dwight F. Welsh, Nevada, Ohio.

Claim.—1. The combination of the bed-plate A, slide-bar B, adjustably attached thereto by intermediate mechanism, grinding-wheel or stone E, and a train of wheels for driving the latter, substantially as set forth.

2. The combination of the bed-plate A, oscillating arm D, rest C, slide-bar B, grinding-wheel E, and train of wheels F G H I, substantially as set forth.

109,163.—MECHANICAL MOVEMENT.—John H. Whitney, Rochester, Minn.

Claim.—1. A mechanical movement or motor, consisting of the oscillating platform E, arranged in the manner herein described, whereby the operator, by standing on said platform, is enabled, without changing his position, to throw his weight alternately upon opposite sides of the bearing point of the platform, the same being connected by crank and pitman, or equivalent devices, with a driving-shaft for communicating motion, substantially as described.

2. In combination with the platform E, arranged as described, the driving-crank *c*, arranged in relation thereto, as set forth, whereby the operator is enabled to operate the platform and crank conjointly, as set forth.

3. The combination of the oscillating platform E, the driving-crank C, drum B, and lever G, all arranged to operate substantially as described.

109,164. — STOP-MOTION GEAR-WHEEL.—John H. Whitney, Rochester, Minn.

Claim.—1. The wheel A, with the internally-projecting flange *c*, in combination with the wheel B, having the stop-plate *c*, all constructed and arranged to operate substantially as described.

2. The wheel A, having its teeth and its flange *c*, each formed in sections, so that the sections may be attached or detached at will, and thus vary the number of revolutions of wheel B, as described.

109,165.—SWING.—Lucius Winston, Pontiac, Ill.

Claim.—1. The parallel bars, in combination with the movable seat and hand-propeller, the said seat and propeller being arranged to always move in parallel planes with each other, substantially as set forth and described.

2. The parallel bars, in combination with the movable seat and foot-propeller, said seat and propeller being arranged to always move in parallel planes, substantially as set forth and described.

3. The combination of the frame-work, slotted plates, bars, hinged bar, movable seat, and hand and foot-propellers, secured to move with the seat in parallel planes, substantially as set forth and described.

REISSUES.

4,174.—MACHINE FOR HUSKING CORN.—L. Augustus Aspinwall, Albany, N. Y.—Patent No. 101,809, dated April 12, 1870; reissue No. 4,099, dated August 16, 1870.

Claim.—1. The husking-rolls R R, when provided (one or both) with depressions *r*, formed substantially as shown, and for the purpose set forth.

2. In combination with the rolls R R, constructed substantially as described, the double gears L L, as and for the purpose specified and set forth.

3. In combination with the depressions *r* of the rolls R R, the teeth P, as and for the purpose described.

4. The combination and arrangement of the knives M M with the rolls R R, constructed substantially as shown, and for the purpose set forth.

5. The employment, in a machine for husking corn, of husking-rolls working together in pairs, provided with alternate depressions on their peripheries, formed substantially as shown in cross-section, fig. 3 of the drawing, and arranged to operate substantially as described, and for the purpose set forth.

4,175. — HEATING-STOVE. — Silas Hoffman La Rue, Allentown, Pa. — Patent No. 105,816, dated July 26, 1870.

Claim.—1. The fuel-reservoir D, provided with an air-inlet passage above its lower end, surrounded by an ascending draught-passage, *b*, and arranged over a fire-chamber, J, so as to be free from the grate C, substantially as described.

2. The contractors E, or the equivalent thereof, arranged in a reservoir, D, above the air-passage leading therein, substantially as described.

3. The combination of a water-packed cover, H, with a fuel-reservoir, into which air is admitted, substantially as described.

4. The descending air-conduit B, leading into the fuel-magazine, above the lower end thereof, and arranged in the ascending draught-space *b*, in combination with a grate, C, which is arranged below and free from the magazine, substantially as described.

5. A fuel-reservoir stove, in which air is admitted to a fire-chamber, J, through the grate, in combination with an air inlet-passage leading from without the stove into the fuel-reservoir at a point which is above the lower end thereof, whereby the products resulting from combustion in the reservoir are reheated after leaving the latter, substantially as described.

4,176. — DRIP-FILTERING OIL-FOUNTAIN. — Eli F. Wilder, Lowell, Mass.—Patent No. 101,069, dated March 22, 1870; antedated September 22, 1869.

Claim.—1. The standing fountain C at the top of the pump B, in combination with the pump, the tank or reservoir A, and sink or drip-receiver D, for the purpose herein specified.

2. The filters E and G, in combination with the sink or drip-receiver D and the pump B, for the purpose set forth.

DESIGNS.

4,457.—ORNAMENTATION OF GLASSWARE.—James S. Atterbury and Thomas B. Atterbury, Pittsburg, Pa.

Claim.—The within-described melon design, for the ornamentation of glassware, as shown.

4,458. — BUCKLE.—Joseph I. Bell, Bell's Bridge, Cal.

Claim.—The design or configuration for a buckle, as described and shown.

4,459. — WATCH-PLATE. — Florentine A. Jones, Boston, Mass.

Claim.—The design for watch-plate C, having depressions F, with their adjoining recesses, substantially as described.

4,460.—BOX FOR THE TOP OF BUREAUS.—Cheney Kilburn, Philadelphia, Pa., assignor to Kilburn & Gates, same place.

Claim.—1. A box for the tops of bureaus, having its front and sides (or ends) formed upon a continuous curve of such character that the box shall be narrower at the back than at a point between the latter and the front of the box, all substantially as described and illustrated.

2. The design of the molding or finish for the edge of the box, substantially as described, and as represented in and by the accompanying drawing

4,461.—RUSTIC FENCE.—John Millar, Paterson, N. J.

Claim.—The design for a rustic fence, as shown.

4,462.—PICTURE-FRAME.—Joseph H. Saunders, Johnson, R. I.

Claim.—A design for a picture-frame in form of a cross, made of any suitable material, and arranged for holding twenty-two card-pictures, they also forming a cross, as above described.

4,463.—TOASTER AND BROILER.—Philo B. Sheldon, Rochester, N. Y.

Claim.—The star design and configuration, herein described and represented, for a bread-toaster or meat-broiler.

4,464.—RANGE OR STOVE.—Nicholas S. Vedder, Troy, and Tobias S. Heister, Lansingburg, N. Y., assignors to J. L. Mott, New York City.

Claim.—1. The combination of the compound ornament A and raised tablet B, when shaped and arranged together upon and cast with a door or plate, C, of a stove or range, as herein shown and described.

2. The combination of the ornament A, tablet B, and border-molding D, when shaped and arranged together and cast with a door or plate of a range or stove, as described and shown.

3. The design for the plate E, as shown and described.

4. The design for the fire-door J, as described and shown.

5. The design for the leg M, as shown.

TRADE MARKS.

53.—WHITE LEAD.—Brooklyn White Lead Company, New York, N. Y.

54.—WHITE LEAD.—Brooklyn White Lead Company, New York, N. Y.

55.—WHITE LEAD.—Brooklyn White Lead Company, New York, N. Y.

56.—COSMOLINE—A PRODUCT OF PETROLEUM.—Edwin F. Houghton, Philadelphia, Pa.

57.—TABLE-SAUCE.—William King, Springfield, Ill.

58.—PREPARATION FOR THE HAIR.—Joseph Lloyd Martin, Baltimore, Md.

59.—SOAP.—Alexander Warfield, Philadelphia, Pa.

60.—SUPERPHOSPHATE.—Wattson & Clark, Philadelphia, Pa.

EXTENSIONS.

HARVEY B. INGHAM, of Camptown, Pa.—Letters Patent No. 15,978, dated October 28, 1856; antedated June 24, 1856.

"Improvement in Smut-Machines."

Claim.—1. The receptacle D, arranged and operating in combination with the blast-tubes and beating-cylinder, substantially as specified.

2. The arrangement for discharging the grain, by its centrifugal action, at an aperture on the upper side of the beating-cylinder and through a channel eccentrically around the blast-pipe, whereby the grain is thrown into the blast higher in the pipe, and is distributed more evenly therein, as set forth.

TOBIAS J. KINDLEBERGER, of Eaton, Ohio. Letters Patent No. 12,958, dated May 29, 1855; reissue No. 2,332, dated August 14, 1866.

"Cider-Mill."

Claim.—1. A mill for grinding fruit, when constructed with three rollers, E, G, and H, the former of which is placed above the two latter, and so arranged in relation to the sides of the hopper that the fruit shall be broken by the longitudinal projections on the roller E, and crushed against the breast-piece, and then delivered upon the two crushing or grinding-rollers, between which the pomace passes, substantially as set forth.

2. In a cider-mill, having the three parallel rollers arranged as shown, in combination with the gearing arranged as described, and each of the grinding-rollers revolving, by means of said gearing, at different velocities, as set forth.

3. An adjustable breast-piece, I, or its equivalent, by which the space between it and the upper crushing-roller can be varied as desired.

4. The scraper A, arranged to operate in combination with the roller E, substantially as set forth.

5. Constructing the case B with concave or segmental metallic end pieces, D, as and for the purpose set forth.

6. The use of a slotted grate, or its equivalent, to form the bottom of the tub or curb for the purpose of permitting the juice to drain through it, as set forth.

ISSUE OF NOVEMBER 15.

PATENTS.

109,166.—Chicken-Coop.—John R. Achenbach, Saddle River, assignor to himself, Thomas Terhune, and P. O. Terhune, Hoboken, N. J.

Claim.—The improved folding chicken-coop, consisting of the hinged and slotted posts A, ridge-pole B, centrally-hinged bottom D, the flexible cover C, and the hinged triangular door E, all arranged as and for the purpose specified.

109,167.—Steam-Engine.—Herman F. Amboe, Columbus, Ohio.

Claim.—1. The cylindrical valve F, recessed and applied to the shouldered and ported cylinder E, said valve and cylinder being arranged between piston-heads D D, and within a cylinder which has steam-ways arranged substantially as described.

2. The exhaust-ways *d' d'*, crossed as described, in combination with the valve F, ported cylinder E, and piston-heads D D, substantially as described.

109,168.—Testing Instrument for Brewers and Distillers.—Moritz Augenstein, Brooklyn, N. Y.

Claim.—1. The test-cup A, having cylindrical chamber B, bulb recess C, perforated partition *b*, graduated guard-plate *c*, and thermometer D, substantially as specified.

2. The straining-funnel herein described, having the upper and coarser strainer *m* hinged, the intermediate strainer *q* of similar shape to the funnel wall and parallel thereto, and the finest strainer *s* spanning the tube or spout, substantially as specified.

3. The complementary saccharometers K K herein described, graduated to tenths and according to the scale of 60° Fahrenheit, as specified.

4. The combination of the test-cup A, having cylinder-chamber B, bulb recess C, guard-plate *c*, thermometer D, and correction-scale, with the complementary saccharometers K K, substantially as shown and described.

5. The instruments K K, graduated so as to show per cents. and fractions of per cents., and adjusted to Fahrenheit's thermometer scale, all substantially as specified.

109,169.—Elevator.—Cyrus W. Baldwin, Boston, Mass.

Claim.—1. The safety-catch or locking device, applied to the lower part of the carriage-platform of the elevator, substantially in the manner and for the purposes shown and set forth.

2. As a safety device, for arresting the accidental fall of an elevator-carriage, the employment of the fluted rollers *i i'*, operating, in connection with the recessed brackets *f f'*, or their equivalents, to embrace opposite sides of, and clasp or clamp, the supporting-slides or guides of such carriage, in the manner and operating substantially as before explained.

3. As a means of actuating or raising the rollers *i i'*, as well as forming a support to the same, the employment of the tripping-levers *k k'*, supported by the shaft *l*, and operated by the bracket *w*, or its equivalent, essentially in manner as herein shown and explained.

4. The combination and arrangement of the rollers *i i'*, levers *k k'*, (supported by the shaft *l*, provided with the spring *u*,) trigger *q*, lever *u*, and bracket *w*, the trigger *q* being connected with the lever *u* by the rod *s*, and the bracket *w* provided with the spring *x*, and the whole operating, in connection with the recessed brackets *f f'* and the slides *b*, in manner and for the purpose as before explained.

109,170.—Water-Wheel.—William Blake, Buchanan, Mich., assignor to himself and Charles H. Parkton, same place.

Claim.—1. The air-tight cylinder having the concave top, as and for the purposes set forth.

2. The combination of the air-tight cylinder with the shaft A, buckets T, curb B, flange D, deck E, traverse-wheel G, chutes *c*, shutters S, pinion H, arms *j*, pivots K, and pins *d*, substantially as and for the purposes hereinbefore set forth.

109,171, antedated November 10, 1870.—Machine for Making Screws and Screw-Nails.—Reinhold Boeklen, Brooklyn, N. Y., assignor of one-half his right to Henry Torstrick, New York City.

Claim.—1. The pivoted and oscillating guide F, in combination with the rolls C C and dies I I, as and for the purpose set forth.

2. The combination of the rolls C C, dies I I, clamping-dies J J, and header O, substantially as and for the purpose herein described.

3. The combination of the rolls C C, dies I I, cutters or pointers S S, and guide F, substantially as and for the purpose herein stated.

4. The combination of the rolls C C, dies I I, cutters or pointers S S, guide F, clamping-dies J J, and header O, substantially as and for the purpose herein shown.

109,172.—Piano.—Ole Bull, New York, N. Y.

Claim.—1. The series of parallel ribs A' on the whole lower surface of the sounding-board, and standing nearly parallel to the grain of the wood thereon, as and for the purposes specified.

2. In connection with the above, the truss-rods D, the rigid frame-work B², arranged relatively to each other and to the piano-strings, as specified.

3. The U-shaped irons uniting the legs, case, and sounding-board, and its connections, and holding the sounding-board practically isolated from the case, as specified.

4. The screws A A, pressing against the front edge of the sounding-board to graduate and insure a sufficiently firm pressure thereon, and arranged, as shown, relatively to the inclined front board G, as specified.

5. The valves N, arranged as represented, to control apertures in the hollow legs of a piano.

6. The inclined front-board G, arranged as represented, and reflecting the sound backward and upward, as specified.

7. The sounding-board P P', arranged, as represented, near the lower edge of the casing C, in connection with the inclined front-board G, as set forth.

109,173.—Furnace for Deoxidizing Iron Ore.—Alexander H. Brainerd, Rome, N. Y.

Claim.—1. The combination and arrangement of the dampers *a b d e* and the flues A, *k*, *l*, and *m*, substantially as described, and for the purposes hereinbefore mentioned.

2. The combination and arrangement of the dampers *f* and *g* and the flues 12, 13, and 14, substantially as described, and for the purposes hereinbefore mentioned.

3. The combination and arrangement of the flues V V¹ V² and flues T T¹ T², substantially as described, and for the purposes hereinbefore mentioned.

4. The combination and arrangement of dampers X with X' and W with W'; also the combination and arrangement of the dampers X and X', or their equivalent, with flues V¹ and V² and flue 21; also the combination and arrangement of dampers W and W', or their equivalent, with flues V and V¹ and flue 21; all substantially as described, and for the purposes hereinbefore mentioned.

5. The combination of flues 21, 22, and 20, and smoke-stack, substantially as described, and as and for the purposes hereinbefore mentioned.

6. The combination and arrangement of flues 21, 22, and 20, substantially as described, and as and for the purposes hereinbefore mentioned.

7. A general reservoir, 12, in connection with one or more furnace-fires, and with or without one or more adjacent flues, as 13 and 14, substantially as described, and for the purposes hereinbefore mentioned.

8. The combination and arrangement of the lining, figs. 11, 12, and 13, when made substantially as described, and the ore-cells, for deoxidizing ore, substantially as described, and for the purposes hereinbefore set forth.

9. A chimney, or one or more stacks of chimneys, for both deoxidizer and puddling furnace or furnaces, arranged in such a manner that the said chimney or stacks of chimneys may be used as a chimney for the puddling furnace or furnaces, independently of the deoxidizer, and without the fire or heat from the said furnace or furnaces passing through the deoxidizer, substantially as described.

10. The combination and arrangement of one or more of the dampers *a*, *b*, *d*, and *e*, and one or more of the flues 1, 2, 3, and 4, alongside of the ore-cell or cells, substantially as described, and for the purposes hereinbefore mentioned.

11. The steam-generator or boilers N' N', when arranged within the smoke-stack, so that all the heat from the puddling furnace or furnaces, whether passing through the flues of the ore-cell or cells, or passing directly up from the furnace or furnaces into the chimney, and without passing through the flues of the ore-cell or cells, shall, in any event, pass under the boilers.

109,174.—Plane.—Lewis Bundy, Mooer's Forks, N. Y.

Claim.—The plane-stock A, in combination with the bar G, plow H, and rabbet-planes F G, constructed and operating as and for the purpose described.

109,175.—Fruit-Crate.—George Clapp, Geneva, N. Y.

Claim.—The attachment of the parts or slats Nos. 2 and 3, in the manner shown and described.

109,176.—Hay-Binder.—Augustus R. Clark, Onondaga, N. Y.

Claim.—1. The binding-lever L, when applied to the ropes R R', substantially in the manner and for the purposes described.

2. The combination of the link-loop knot C, when made substantially as described, with the binding-lever L and the ropes R R', substantially as described.

109,177.—Apparatus for Bleaching Threads, Yarns, &c.—John Ernest Clarner, Pawtucket, assignor of one-half his right to Benjamin F. Greene and Horace Daniels, Smithfield, R. I.

Claim.—1. The apparatus described, consisting essentially of the tank A, dividing-bars K, base roller B, crown roller C, pivoted levers D, graduating spring-bar F, and cord G, operating substantially as and for the purposes specified.

2. Combining, with the series of chemical and rinsing-tanks of a thread bleachery, a set of graduated rollers, B and C, arranged with relation thereto, substantially as described, whereby the thread to be bleached in a chain of hanks or knots may be subjected to the continuous action of the chemical and rinsing operations, as and for the purposes set forth.

109,178, antedated November 11, 1870.—Sawing-Machine.—John C. Clime, Philadelphia, Pa.

Claim.—The combination of the double crank *k*, operator's seat *m*, bracing-rod *n*, and driving-wheel *f*, substantially as set forth, for driving a foot-power circular saw.

109,179.—Rotary Engine.—James Constantine, Mansfield, La.

Claim.—The piston B L and cut-off plates E F, combined with chambered boss N, annular space O, channel K, and chamber H, combined, constructed, and relatively arranged as and for the purpose described.

109,180, antedated November 5, 1870.—Rocking-Chair and Step-Ladder.—William H. Cook, Bergen, N. J.

Claim.—A combined rocking-chair and step-ladder, when provided with the rockers *b* and stationary arms *c*, and constructed as herein shown and described.

109,181.—Gun-Carriage.—Thomas Coughlan, Newton, Mass.

Claim.—1. The cheeks D D, constructed to roll upon the traversing-rails, as set forth, when the gun is mounted in bearings formed in said cheeks, without an intervening carriage or frame, substantially as described.

2. In combination with a gun mounted eccentrically in cheeks D, constructed to roll upon the traversing-rails, as set forth, constructing that portion of the upper edges of the traversing-rails A, over which the cheeks D roll, in a curved form, to increase the rise and fall of the gun, substantially as described.

3. In combination with a gun mounted in cheeks constructed to roll upon the traversing-rails, the rocker-shaft I, levers M, and links N, arranged and operating substantially as described.

4. In combination with a gun mounted in cheeks constructed to roll upon the traversing-rails, as set forth, the levers M, the rocker-shaft R, crank Q, and chain P, arranged and operating substantially as described.

109,182.—Lock for Railroad-Switches.—Alonzo W. Cram, St. Louis, Mo.

Claim.—1. The sleeve C, bolt B, flange F, and spring E, in combination with the plate F, when the latter is bent at right angles at the points *x x*, so as to form an offset which adapts it to be attached to a switch-bar, substantially as described.

2. The bolt B, provided with the key-hole N in its outer end, for the purpose of admitting the key at a point which enables the bolt to be drawn outward by pulling on the key, substantially as described.

109,183.—Steam-Tiller.—Robert Crenzbaur, Williamsburg, N. Y.

Claim.—1. The frame 2, constructed and arranged to revolve rigidly with the tools, at a constant angle with its shaft *f'*, substantially as and for the purpose described.

2. The sliding head 1, in combination with the shaft *f* and frame 2, substantially as and for the purpose described.

3. The shaft *f* and arms G, arranged, with the frame carrying the tilling-tools, for vertical adjustment without changing the angle of the tilling tools and frame with respect to the shaft *f'*, substantially as described.

4. The combination of one or more frames, each constructed to operate rigidly with its tools in a horizontal direction, at a constant angle with its shaft *f'*, with the mechanism for regulating the depth of the entrance of the tools into the soil, substantially as and for the purpose described.

5. The combination of the horizontally-rotating frame, carrying tilling or crop-cultivating tools with one or more speed-varying gears or mechan-

3. As a means of actuating or raising the rollers i i', as well as forming a support to the same, the employment of the tripping-levers h h', supported by the shaft l, and operated by the bracket w, or

3. The combination and arrangement of the flues V V^1 V^2 and flues T T^1 T^2, substantially as described, and for the purposes hereinbefore mentioned.

as described, and for the purposes hereinbefore mentioned.

4. The general arrangement of the entire boiler, having a large grate and conical furnace, vertical flues or tubes for the rise of the gases from the furnace, a mixing-chamber receiving the gases from such tubes, radial passages E discharging the gases from such mixing-chamber, upper annular space G imprisoning the gases after such radial discharge, the enlargement M with the descending tubes m therein, lower annular chamber H receiving the gases and turning them again upward, provisions n' for the conveyance of the gaseous products upward to the chimney, and enveloping the upper portion of the boiler and the apertures C and controlling means J for affording a more direct draught when desired, all constructed, combined, and arranged for joint operation to form the boiler, substantially as herein set forth.

5. The casings O and P, arranged, as shown, relatively to the enlargement M and to the boiler-shell, above and below, and to the passages for the gaseous products of combustion, for the purposes herein set forth.

5. The combination of the horizontally-rotating frame, carrying tilling or crop-cultivating tools with one or more speed-varying gears or mechan-

isms, operating upon the relative speed of the carriage, and devices for adjusting said gears or mechanism, substantially as and for the purpose described.

6. Laterally or radially adjustable land-tilling or crop-cultivating tools, applied to a horizontally-rotating frame, substantially as described.

7. The adjustment of a set of cultivating-tools or scrapers around their own pivots or shanks g, independent of the adjustment of their carrying-frames, substantially as and for the purpose hereinbefore set forth.

8. In a steam or other analogous land-tiller, the arrangement of horizontally-rotating frames carrying tilling-tools, with seed-distributing devices, substantially as herein described.

9. The combination of the horizontally-rotating frame or frames, carrying land-tilling or crop-cultivating tools, with the transporting wheels of the carriage, by means of a system of driving and controlling mechanism, whether the said system be for giving a uniform or both a uniform and varying speed, substantially as herein described.

10. The arrangement of two or more horizontally-rotating frames, carrying tilling or cultivating-tools, operated simultaneously, and at the same time are separately adjustable up or down without being thrown out of gear, substantially as described.

109,184.—Sheave.—Alvin Matthew Cushing, Lynn, Mass.

Claim.—The arrangement and combination of the annular channel or groove g and projection f with the cap-plate B, the ring c, the series of rollers or balls b, and their chamber a, made in the body A of a sheave, as set forth.

109,185.—Machine for Spinning and Doubling Silk, &c.—Thomas N. Dale, jr., and George Kraink, Paterson, N. J.

Claim.—1. The combination, with the bobbin-rack I, constructed as described, of the drawing and doubling rollers G H and twister I K, arranged as set forth, for the purpose specified.

2. The bobbin-rack I, constructed and arranged as described, in order that the spools may be located therein, as set forth, for equalizing the tension of the cords.

3. The combination with the belt-shifters for the spindles B and twisters I, the brake W and the lever for throwing in the shaft d^3, of the drop-rod V and tripping-bobbins s, all substantially as specified.

4. The combination, with the drop-rod, belt-shifters, and brake, of the tripping-rod r, hollow tripping-lever t, having one or more balls therein, and the fallers F, all substantially as specified.

109,186.—Machine for Squeezing Puddlers' Balls.—Samuel Danks, Cincinnati, Ohio, assignor to himself, Joseph C. Butler, and Lewis Worthington, same place.

Claim.—1. The combination of the corrugated rollers B C, having unequal diameters, with the cam-compresser D, substantially as shown, and for the purpose specified.

2. The bloom-ejector E, in combination with the rollers B C, constructed and arranged to operate substantially as herein shown, and for the purpose specified.

109,187.—Oven-Plate for Cooking-Stoves.—William C. Davis, Cincinnati, Ohio.

Claim.—The recessed metallic frame A, provided with a longitudinal rib, a'', for the retention of the oven-plate and flanges G G', fitting in grooves in the side plates of the stove, the recess in said metallic frame being filled with a refractory material, C, held in position by conical bolts D D, all arranged and constructed as set forth.

109,188.—Dumping-Car.—Peter K. Dederick, Albany, N. Y.

Claim.—The car with a V-shaped bottom, in combination with a double crank-shaft located underneath, when connected and operated substantially as described.

109,189.—Carriage.—Charles N. Dennett, Amesbury, Mass.

Claim.—1. The rods C D E F, combined, as described, with the dasher and seat, for the purpose specified.

2. In a carriage-body, a sliding back seat, I, and a turn-out front seat, B, combined with a sliding dasher, G, to enable each to be adjusted to suit the contraction or elongation of the body.

3. A turn-out front seat, B, combined with a back, b^1 b^2, jointed and folding, as described, and for the purpose set forth.

109,190.—Miter-Box.—Justin Devoge, Meadville, Pa.

Claim.—1. The ribbed bottom B, and hinged false bottoms F F, applied together to a miter-box, as and for the purpose described.

2. The beveled and hinged bottoms F, adjustable by means of wedges H, as and for the purpose described.

109,191.—Faucet.—Charles A. Douglas, Franklin, N. Y.

Claim.—The improved faucet A B C, the said parts A B C being constructed and operating substantially as herein shown and described, and for the purpose set forth.

109,192.—Device for Cutting and Shearing Metals.—Isaac Dubois, Boonesborough, Iowa.

Claim.—The compound tool, above described, consisting of handles A A' pivoted at B, bolt-cutters C C, shearing-plates E F, of which the lower is notched at H, cam lever I, stud K, and yoke M, all constructed and fitted together, as set forth, to form an improved article of manufacture.

109,193.—Electro-Magnetic Apparatus for Protecting Safes.—William Duncan and Calvin C. Rowell, Lebanon, N. H.

Claim.—In combination with a safe and an electric circuit and an alarm apparatus, the compound circuit-wires or cable, and series of magnetic coils and armatures, arranged to operate substantially as described.

109,194.—Dovetailing-Machine.—John P. Flanders, Vergennes, Vt.

Claim.—1. The chisel-frames C^1 C^1, made adjustable on the arched standard C, for the purpose of adapting the chisels to any desired angle, in the manner shown and described.

2. The horizontal shaft D, with its connections D^1, provided with screw-thread and nuts k k, and standard f jointed at bar D^2, and arched standard C, all constructed and combined substantially as and for the purpose described.

3. The combination of chisels C^2 C^2 and C^3 with adjustable frames C^1 C^1, horizontal shaft D with its disks and cutters F and f^2, shaft D^1 and its connections for moving it reciprocally, all substantially as and for the purpose described.

109,195.—Steam-Boiler.—Daniel Flynn, Fall River, Mass.

Claim.—1. The enlargement M, in the waist or middle height of an upright tubular boiler, in combination with means E for conducting the hot products of combustion outward beyond the shell of the boiler above such enlargement, and with means m m' for utilizing the heat remaining, substantially as herein set forth.

2. In combination with the enlargement M and tubes m around the middle height of the boiler, the movable ring J j, controlling passages C, for the more direct flow of the products of combustion thereto when required, as set forth.

3. The perforated plate F, the central tube e, and the space e', for the water column below, arranged

109,196.—Mill for Powdering Roots, &c.—Herod D. Garrison, Chicago, Ill., assignor to Garrison & Murray, same place.

Claim.—1. The combination of the curb or drum C with the revolving bed-stone A, to serve as a binder thereto, and extending vertically upward nearly to the axes of the runners D, so as to prevent the material being ground from overflowing, constructed substantially as herein shown and described.

2. The sleeve E, constructed with trunnions d, arranged transversely to its axis, and near its outer end, for supporting the spindle e of the runner D, as and for the purpose set forth.

109,197.—Straw-Cutter.—George Sutton Garth, Mill Hall, Pa.

Claim.—1. The bent ratchet-bar V V' V'', formed as described, and applied to move the ratchet-wheels R S simultaneously in opposite directions, as specified.

2. The combination of the bent ratchet-bar V V' V'', constructed as described, and having pin W thereon, with slotted lever X and lug Y on cutter-bar Y', for the purpose of enabling the cutter-lever to operate it in the manner described.

3. The combination of the face-plate a^1, formed as described, with the cutter-lever Y', armed washer f, bolt b, and nut a, for the purpose set forth.

109,198.—Gate.—William Gause, Indianapolis, and Joseph C. Curryer, Thorntown, Ind.

Claim.—A gate, having the brace C and vertical adjustment F, constructed and operating substantially as herein specified, and for the purposes mentioned.

109,199.—Feed-Roll for Rossing-Machines.—Charles Gilpin, Cumberland, Md.

Claim.—The feed-cylinder for a rossing-machine, having lengths of different diameters, substantially as described.

109,200.—Clothes-Drier.—Joseph Gnau and William Gnau, Louisville, Ky.

Claim.—The combination of the frames A A, the cross-piece B, the cords C and D, and the hinge F, by which the different frames are connected, substantially as and for the purpose hereinbefore set forth.

109,201.—Bee-Hive.—Lawson L. Goodwin, Toronto, Ind.

Claim.—1. My improved bee-hive, constructed, substantially as herein set forth, of the illuminated chamber H provided with a glass-covered conducting-board, I, the superimposed brood and honey-cells C and F having marginal perforations, as described, and the upper darkened ventilating chamber W, the whole being arranged and combined to afford perfect ventilation throughout and facility of access to every part, as specified.

2. The combination and arrangement of an upper glass cover with the sloping conducting-board I, extending from the entrance of the hive, and with the ventilating chamber H formed under its brood and honey-cells to decoy moths from the entrance, and at the same time illuminate the ventilating chamber, all substantially in the manner and for the purpose herein set forth.

3. Thin, centrally-perforated, detachable supports K K, constructed substantially as herein described, for the purpose of supporting the brood-combs, as herein set forth.

4. The within-described metallic comb-extractor G, made rectangular in form, to fit closely within the honey-cells, for the purpose of cutting out and removing the honey-comb therefrom, substantially as herein set forth.

109,202.—Chair and Lounge.—Edward Hagan, New York, N. Y.

Claim.—1. The combination of the back D, extensible seat C, and extra rising and falling seat E, substantially as described.

2. The arms G G pivoted to the back D, and arranged to slide in or on the side pieces A A of the frame, as herein set forth.

3. The bent and notched levers F attached to the back of the chair, in combination with the extra seat C, substantially as and for the purposes herein set forth.

4. The prop I, in combination with the back D and extra seat E, substantially as herein set forth

109,203.—Horse and Cattle Liniment.—Horace H. Hanmer, Nashville, Tenn.

Claim.—The manufacture or preparation of a compound, which is denominated "Hanmer's celebrated horse and cattle liniment," of the ingredients, in the proportions, and for the purposes set forth.

109,204, antedated November 3, 1870.—Toy-Ball.—George Hartz, New York, N. Y.

Claim.—The combination, with the tapering hole a in the ball, of the button D, constructed to fit, in a readily detachable manner, the end of one of the handles C so as to form in appearance a component part of the same, substantially as specified.

109,205.—Attaching Dicing-Stones to Wheels for Polishing Leather.—Hector C. Havemeyer and David P. Burdon, New York, N. Y.

Claim.—The trough B, constructed to receive the imbedded stone A and the bolt or bolts C, by which said stone is secured to a cylindrical or other surface, substantially as herein shown and described.

109,206.—Oil-Cake Packing Apparatus.—Washington Hawes, Port Richmond, N. Y.

Claim.—The treadle-clutch mechanism P M N K Q, the drum G L, placed loosely on end, perforated shaft L, and the rope F, all combined with the follower C H E, as and for the purpose described.

109,207.—Grape-Trellis.—William M. Heath, Wataga, Ill.

Claim.—The slotted or notched standard-posts A A' and braces B, arranged with the wire-carrying posts C, constructed and operating substantially as and for the purpose specified.

109,208.—Advertising Apparatus.—William Hebdon, New York, N. Y.

Claim.—The arrangement of the pulleys h and i

bands *r* and *s*, rollers *e* and *f*, clutch *n*, and lever *m*, in combination with the advertising-curtain *c*, as and for the purposes set forth.

109,209.—SPOOL-STAND.—Edwin C. Heywood, Worcester, Mass.

Claim.—A spool-stand and work-table implement-holder, consisting of frame *a*, drawer *b*, cushion *c*, and swinging spool-supporting shelves *d d*, all arranged as shown.

109,210.—RAILWAY RAIL-JOINT.—Noah Hill, Leavenworth City, Kansas.

Claim.—A rail joint, consisting of the lock-splice A A' B B', or the dovetail key-joint F, and the shoe C, the whole constructed and arranged substantially as and for the purpose set forth.

109,211.—POTATO-DIGGER.—George M. Hoag, Muscatine, Iowa.

Claim.—1. The combination and arrangement of the scraper I, pronged digger J, and the endless carrier, formed by the belts R, strips *n*, and rods *o*, when united for joint operation, substantially as herein set forth.

2. The arrangement of the carrier-frame P, whereby its lower end may be adjusted to a higher or lower position, independently of the digger J, substantially as specified.

3. Hanging the scraper I, for removing the potato-vines, so that it be adjusted higher or lower, independently of the pronged digger, substantially as described.

109,212.—BOTTLE-STOPPER.—William L. Hoefer, Jeffersonville, N. Y.

Claim.—The body A *a'*, of the form described, the wedge C, and the rubber ring B, combined and applied as set forth, to form an improved bottle-stopper.

109,213.—PORTABLE BOOK-CLAMP.—Charles W. Holbrook and E. Frederick Butler, Windsor Locks, Conn.

Claim.—The taper recesses in the stationary bridge-piece B, in combination with the lugs formed on the windlass and with the bars and cord, substantially as herein described.

109,214.—WELL-AUGER.—James Ingels and Thomas J. Ingels, Atchison, Kansas.

Claim.—1. The well-boring devices herein described, consisting of sectional earth-bucket A having the bits C with valves *d*, and hinged bail *m* with hook *n*, and the sectional shafts D D, having the hooks *e* and loops *l*, provided with pendent keys *s*, when combined and arranged substantially as shown and described.

2. The sectional shaft D, having hook *e* and loop *l*, provided with pendent key *s*, when constructed and operated as and for the purposes shown and described.

109,215.—ADJUSTABLE DRAFT DEVICE FOR PLOWS.—Cornealius L. Jackson, Millersburg, Ill.

Claim.—The combination of a clevis-bar, C, draft device D, lever E, roll H, and connecting bar, substantially as and for the purpose specified.

109,216.—MEDICAL COMPOUND FOR CURE OF RHEUMATISM.—Andrew J. Jenkins, Virginia City, Nevada.

Claim.—The medicine above described, composed of the ingredients enumerated in about the proportions specified, mixed and compounded as above set forth.

109,217, antedated November 5, 1870.—POTATO-DIGGER.—William Joseph, Quincy, Mich.

Claim.—The combination and arrangement of the plates b and C C, the rods *d d d*, with the frame A, as herein described, and for the purpose set forth.

109,218.—BREECH-LOADING FIRE-ARM.—Benjamin Franklin Joslyn, New York, N. Y.

Claim.—1. In a breech-loading fire-arm, a sliding breech and a hammer, carried by and sliding with the breech, and serving the twofold purpose of locking the breech and discharging the cartridge, substantially in the manner described.

2. The hammer B, with its mainspring and catch, arranged on and carried by the sliding breech, and locking the latter, substantially as described, so that the breech may be unlocked, the hammer cocked, and the breech drawn back by one manipulation of the hammer, as set forth.

109,219.—CLOTHES-DRIER.—John Kaspar, Pomeroy, Ohio.

Claim.—The combination of the flush-folding panels B, C, D, E, and F, with and on each side of frame A, substantially as and for the purpose hereinbefore set forth.

109,220.—COMBINED LOCK AND LATCH FOR SLIDING DOORS.—Edward J. Kehoe, New York, N. Y., assignor to William A. Hopkins and Frederick Z. Dickinson, same place.

Claim.—1. The thumb-piece or catch I and slot *n*, in combination with the arm H, the sliding bolt *k*, and the locking-hook B, substantially as and for the purposes herein specified.

2. The combination of the follower G, operated by a knob-spindle, with the sliding frame C, the finger-hole or slot *d*, and the locking-hook B, essentially as described.

109,221.—SCAFFOLD-BRACKET FOR ROOFING.—John R. Kennett, Geddes, N. Y.

Claim.—The bed-plate A *a* and lever B *b* combined, substantially as and for the purpose herein described.

109,222.—COTTON-SEED PLANTER.—John C. King, Spring Place, Ga.

Claim.—The arrangement, in the seed-box A and on a vibrating shaft, F, of stirring-arms H, so as to pass through the aperture in the bottom of the seed-box, and through the adjustable slides I I, as and for the purpose described.

109,223.—(Suspended.)

109,224.—PAPER-FEEDING MACHINE.—Margaret E. Knight, Boston, Mass.

Claim.—1. The arrangement and combination, in the manner described, of the bellows, flexible tubes J, compound arms N, guides Z and B', and suction-mouths K, for the purpose stated.

2. The compound arms N, made flexible laterally, and having an external case, receiving the spring-rod O, the construction being for the purpose of simultaneously controlling and yielding to the movements of the suction-mouths, as described.

3. The oscillating stirrup *g*, for supporting the upper end of the tube J, and holding the suction-mouths K in proper position at every point in their course, as stated.

4. The librating guides Z, arranged for conjoint operation with the stirrups *g*, to regulate the movements of the suction-mouths K, as set forth.

5. The side guides B', in combination with the elastic arms N, to regulate the lateral movement of those arms and of the sheet, as and for the purpose stated.

6. The combination, with the upper plate V, operating as described, of the oscillating fingers X, united by the elastic band *t*, and operated by the movements of plate V, to cockle the paper, in the manner and for the purpose specified.

7. The combination of the cam R, slide-bar L', vibrating step J', rod I', and spring K', for the purpose of operating the movable feed-table H', as described.

109,225.—CORN-PLANTER.—Hermann Koeller, Camp Point, Ill.

Claim.—1. The slotted coupling-arm W, in combination with the side bars R and lifting apparatus, as described, as an improvement upon my patent of May 3, 1870.

2. In combination with the neap C, the elbow-lever I', eccentric K', and removable lever H, when constructed and arranged as specified, as an improvement upon my patent of May 3, 1870.

109,226.—COMBINED AGRICULTURAL IMPLEMENT.—Leopold Lehmann, Monee, Ill.

Claim.—1. The permanent frame hereinbefore described, consisting of the axle A, the side bars C, and the cross-bars D and E, supported by and upon the wheels B, substantially as and for the purpose specified.

2. In combination with the permanent frame, the bars F and H, provided with the bars L, shovels M, and braces N, substantially as shown, and for the purpose set forth.

3. In combination with the bars F and H, the cross-bars G, I, and K, and the blocks *k*, substantially as shown, and for the purpose specified.

4. The means employed for raising or depressing the cultivator-bars or the corn-planting devices, and for tripping the rake, consisting of the shaft O journaled upon the axle, and provided with the arms *o*, the rods Q, the lever R, and the detent S, engaging with the notched segment T, and operated by means of the hand-lever U, substantially as and for the purpose shown.

5. The seed-box C', constructed as described, and combined with and supported by the cross-bars D and E, substantially as shown and set forth.

6. The means employed for operating the dropping devices, consisting of the lever C'' and connecting-bar D'', in combination with the foot-levers X, the chains Y, and the pulleys *y*, substantially as and for the purpose specified.

109,227, antedated November 5, 1870.—MACHINE FOR ATTACHING STUDS OR TUBULAR-SHANKED BUTTONS TO FABRICS.—Joseph H. Lewis, Providence, R. I., assignor to Alfred R. Field, Greenfield, Mass.

Claim.—1. The machine, substantially as hereinbefore described, viz., as composed of a hopper, D, a chute, W, the jaws I K, the punch N, and the advancer L, arranged as set forth, and provided with mechanism for operating them, or causing them to operate, essentially in the manner and for the purpose as described.

2. The arrangement and combination of the pitman T, the stud *k*, the cam *l*, and the stud *m* with the lever O and the advancer L.

109,228.—COFFEE-ROASTER.—Nicholas Linden, Chicago, Ill.

Claim.—1. The coffee-roaster, composed of the kettle A, having bail F attached to its side, as shown, the double-forked shovel C, crank-shaft B, and scraper E, substantially as described, for the purpose set forth.

2. The scraper E, in combination with the S-shaped shovel C, substantially as and for the purpose specified.

109,229.—CULTIVATOR.—Isaac Low, East Fairfield, Ohio, assignor to himself and Ephraim Phillips, Cross Cut, Pa.

Claim.—1. The combination of the levers N and pivoted loops or connecting-rods P with the cross-beam D and cultivator-frames H, substantially as herein shown and described, and for the purpose set forth.

2. The arrangement of the wheels A, axle B, standards C, tongue E, cross-beams D G, braces F, double plow-frames H, standards K, braces J L, rods M, levers N, and rods P, constructed as and for the purpose described.

109,230.—DRY GAS-METER.—George Lowen and Samuel H. Goldthorp, Pittsburg, Pa.

Claim.—The flexible tubes *e e*, communicating between the interior of the diaphragms *h h* and condensing-chamber or receivers *f f*, substantially as and for the purposes described.

109,231.—ARTIFICIAL FUEL.—P. Miott McGill, Washington, D. C.

Claim.—1. A fuel formed by cementing together particles of coal-dust, waste, or screenings of coal, by means of a solution of water-glass, with the addition of chloride of calcium, saw-dust, and saltpeter, or either of them, so as to agglutinate and cement the particles together and form, by means of the decompositions induced, and by kneading, pressing, and drying, a solid, hard, tenacious, and combustible substance for fuel, as herein described.

2. A fuel formed of coal-dust, waste, or the screenings of coal, and saw-dust or peat, by means of a solution consisting of fluid silicate of soda and saltpeter, and exposing the mass, so formed, to a bath of chloride of calcium, so as to form, by means of the decompositions induced, and by kneading, pressing, and drying, a solid, hard, tenacious, and combustible substance for fuel, as herein described.

3. A fuel formed by cementing together particles of coke-dust, by means of the agglutinate above described, in the manner set forth.

109,232.—ELEVATOR.—George McKenzie, Zanesville, Ohio.

Claim.—1. The weighted pivoted pawl T, arranged upon the carriages and operating in connection with hoisting mechanism, substantially as herein shown and described.

2. The swinging hook P, located within the vertical shaft A, for the purpose described.

3. The carriage B, moving on the vertical shaft A, carrying the radiating arms E E, supporting the platform C with its hoisting mechanism, consisting of the frame G, bearing the wheels L and J with their drums, and its brake mechanism.

4. The carriage B with its projections *b' b'*, to which are secured the radiating arms E E, supporting the platform C, carrying the hoisting mechanism consisting of the wheels L and J, with their drums, journaled to the sides G G, and provided with a suitable crank, operating in connection with the pawl T, rope N, and hook P, substantially as described.

109,233.—DEVICE FOR DELIVERING MAIL-BAGS TO CARS.—James B. McLain, Newark, Ohio, assignor to Henry M. Wyeth, same place.

Claim.—The combination of a notched arm, B, and a lever, D, with a post, A, and a prop, C, composed of a part, c^1, articulated vertically to the post, and a part, c^2, articulated laterally to the part c^1, when constructed to operate substantially in the manner and for the purposes set forth.

109,234.—DRIER.—John P. Miller, Somerville, N. J.

Claim.—An improved fruit-drier, consisting of the wooden box or case A, sheet-metal lining B, holes C, sliding plate D, ribs or flanges E, and racks or grates F, said parts being constructed and arranged substantially as herein shown and described, and for the purpose set forth.

109,235.—MATCH-BOX.—John Monaghan, Tuckahoe, N. Y.

Claim.—1. The combination of a rubber or other suitable flexible and elastic lining, E, with the body or case of a match-box, substantially as herein shown and described, and for the purpose set forth.

2. The combination of the body A B, made in two parts, bottom C, band D, and rubber lining E, with each other, substantially as herein shown and described, and for the purpose set forth.

109,236. — WATER-ELEVATOR. — Amos A. Moulton, Providence, R. I.

Claim.—1. The combination and arrangement of a lever, L, a spring at the point *g*, and the friction-wheels W and W′.

2. The combination and arrangement of the shaft R, friction-wheels W and W′, annular piece *a*, ratchet-teeth *r* and *r*′, and annular shaft *n*.

3. The combination and arrangement of the friction-wheel W, annular piece *a*, ratchet-teeth *r*′, and lever L, all as shown, and operating substantially as described.

109,237.—MODE OF PREVENTING THE HEATING OF AXLES OR JOURNALS.—Eliza D. Murfey, New York, N. Y.

Claim.—A shaft or journal provided with a detachable metal cone, or with one or more pointed projections, substantially as and for the purpose described.

109,238.—SPINDLE-STEP.—Eliza D. Murfey, New York, N. Y., assignor to "The Manhattan Packing Manufacturing Company," same place.

Claim.—The box A, its flange *c*, and screw-cylinder B, in combination with the step *a* and washer *i*, arranged below the step, as described.

109,239. — MATERIAL FOR BEARINGS AND JOURNALS.—Eliza Dexter Murfey, New York, N. Y., assignor to "The Manhattan Packing Manufacturing Company," same place.

Claim.—1. A bearing for journals, &c., consisting of impregnated yarn plaited, woven, interlocked, or otherwise connected together, so as to form a sheet or mat, as described.

2. The process of impregnating the strands by introducing the impregnating materials among fibers formed into a lap, and then twisting the latter into a yarn.

109,240. — CLOTHES-POUNDER.—James W. Norton, Pioneer, Pa.

Claim.—The perforated beater A with concave upper surface, perforated disk C with concave lower surface, and valve D, all constructed and arranged to operate substantially as shown and described.

109,241.—CURTAIN-FIXTURE.—James Lloyd Oliver, Boston, Mass.

Claim.—The sliding curtain-roller carriers *f g*, connected as described, in combination with the posts *b* and ribs or splines *c c*′ on the inner faces of the same, said parts being arranged for joint operation, as shown and set forth.

109,242.—PISTON-PACKING.—William Ord, Brooklyn, Ohio.

Claim.—A piston ring, provided with the transverse slots *a a*, *b b*, *c c*, and grooves *e*, to receive the soft-metal packing, substantially as herein shown and described.

109,243.—BOLSTER FOR WAGONS.—John W. Pearman and Joseph F. C. Lutz, Holden, Mo.

Claim.—The solid end B and horizontal top and bottom flanges E F, cast in one piece with the standard, to form an improved bolster-plate, as set forth.

109,244.—CUTTER-HEAD.—Daniel W. Perry, Wilkesbarre, Pa.

Claim.—The combination of the rotary head of a tenoning-machine, with shoulder-bits *a* placed at right angles to the shaft of the head, and plane-bits *c* placed parallel to said shaft, as and for the purpose specified.

109,245. — MANUFACTURE OF VARNISH.—James B. Pollock, Port Richmond, N. Y.

Claim.—The arrangement, with two or more kettles and superheaters, of one or more systems of return steam-pipes, for conveying the steam used in one kettle back to be reheated, and thence conveyed to another kettle to be used over, substantially as herein shown and described.

109,246. — ROOFING-CEMENT.—Oliver Porter, Waterford, Me.

Claim.—A cement for roofing and other purposes, composed of the ingredients and in about the proportions specified, substantially as and for the purposes set forth.

109,247. — CULTIVATOR. — John Rebman, Binkley's Bridge, Pa.

Claim.—The arrangement, in a cultivator, of a fulcrum-pulley, P, adjustable bearings F, adjustable brace G, central shovel-arm A, curved bar D, clip E, and hook-bolts *e e*′, all constructed to operate as described.

109,248, antedated November 3, 1870.—PROPELLING CANAL-BOATS. — James Reid, Catskill, N. Y.

Claim.—A chain or wire rope suspended above the canal by suitable posts or supports, in substantially the manner specified, so that it may be acted upon by a wheel upon the canal-boat, and the suspending device will not prevent the action of such wheel on the chain or rope, as specified.

109,249.—PAPER-CUTTING MACHINE.—Israel L. G. Rice, Cambridge, Mass.

Claim.—The combination consisting of the holding-frame M′ and the interchangeable cutting-dies P P′, &c., arranged substantially as described, and for the purpose set forth.

109,250.—PLOW.—Lionel W. Richardson, Roscoe, Ill.

Claim.—The securing a steel mold-board, in sections of various sizes and shapes, to an iron back, by means of bolts or otherwise, in the manner and for the purpose set forth.

109,251.—DITCHING-MACHINE.—John Wesley Roberts, Hartford City, Ind.

Claim.—An improved ditching-machine, consisting of the leveler A B and its adjustable cutters C *c*, D *d*′, and the plow E F, and its adjustable beam G *g* and adjusting-bar H, said parts being constructed and operating substantially as herein shown and described, and for the purposes set forth.

109,252.—FLOOD-GATE.—Samuel Rowland and Thomas C. Tipton, Williamsport, Ohio, assignors to themselves and G. W. Wiggins, same place.

Claim.—The arrangement of the roller C, provided with the stakes D and the springs E, with the inclined frame or shed A B, as and for the purpose specified.

109,253.—PAPER-FILE.—William W. Russell, Malden, Mass.

Claim.—The combination and arrangement of the stiffener *c*, connecting the pieces *a a* with the elastic band *d*, and two arms, *g* A, the whole being constructed and combined as and for the purposes hereinbefore set forth.

109,254. — ROOFING-COMPOSITION.—Albert Ruttkay, New York, N. Y.

Claim.—The composition herein described, for the uses and purposes herein set forth.

109,255.—BREECH-LOADING FIRE-ARMS.—Edward L. Sargent, Watertown, N. Y.

Claim.—1. The combination of one or more cocking or lifting-fingers, arranged upon a vibratory shaft within the stock or breech of the gun, and operated by the device for locking and unlocking the barrels, substantially as described, with the lock-tumbler or tumblers arranged to engage with said fingers so as to lift the hammers from the firing-pin and throw them back to quarter or half-cock when the gun is unlocked, as set forth.

2. The tubular lifting-finger shaft, mounted upon the transverse screw which binds the two locks of the gun together, substantially as shown and set forth.

3. In a fire-arm, substantially such as described, the construction of the tumblers of back or forward-action locks with laterally-projecting pins or studs upon the portion of the tumbler extending in front of its pivot or axis, so as to readily engage with the lifting-fingers when the hammers are down, as shown and set forth.

109,256.—EXTENSION PLATFORM STEP-LADDER.—George A. Schachtel, Newark, N. J., assignor to himself and Robert B. Sanderson.

Claim.—The combination of the hinged extension piece D and stay E with the platform B and prop C of the ladder, substantially as and for the purpose herein set forth.

109,257.—FOUNTAIN-PEN.—Fridolin Schifferle, St. Louis, Mo.

Claim.—1. The combination of case A, having funnel-top *c*, nut *c*″, and fountain *a*, with the screw-stopper C′, having an annular valve-projection, *c*′, constructed in the manner and for the purposes shown.

2. The combination of case A, having funnel-top *c*, nut *c*″, and fountain *a*, having aperture *a*′ and stopper C′, with the pen-holder B and pen *b*, arranged to operate as shown.

3. The combination of case A, fountain *a* having stopper *c*′, and aperture *a*′, with cover C having the rubber lining *d*, all constructed and arranged in the manner shown.

109,258. — SHINGLE-MACHINE. — Charles Shelmidine, Summit, N. Y.

Claim.—1. The combination, with tools G H, of the pivoted levers F F′ grooved on their inner faces, and the sliding frames I J, as and for the purpose described.

2. The combination, with the pivoted levers F F′ having inclined slots O, of the sliding lever L *p p*, spring *r*, plate *i*, and fixed stops *s t*, to open and close the knives at the times and in the manner described.

3. A pressure-roller, *u*, for shingle-machines, formed of two cones united at their vertices, and in contact with the shingle only at each side, to thereby prevent all lateral swing of the same.

4. The combination, with the shingle-transferring slide D, of the pivoted and knife-edged clamp N, to retain the blank firmly while said slide moves in one direction, but to release it readily when it moves in the other, as described.

5. The combination, with a shingle-transferring slide, D, of the spring-foot O, pivoted to the frame A, to hold the shingle after the clamp N has released it, as described.

6. The combination, with the edges P P, of laterally sliding frame *a*′ *d*′, swinging levers R, spring-wedge lever S *g*′, inclined stop *c*′, and sliding frame D *h*′, to open the said edgers for the shingle at the time and in the manner described.

7. In a shingle-machine, the driver *d*, spring-pressed roll *u*, vibrating clamp N, and presser-foot O, combined with the sliding frames C D, to transfer the blank to and from the knives, in the manner described.

109,259. — WASHING-MACHINE.—Hamilton E. Smith and Garret F. Speer, New York, N. Y., assignors to Mary Jane Smith, same place.

Claim.—1. The combination of the shell A with the rib *j* and the cylinder B, substantially as and for the purposes herein shown and described.

2. The cylinder B, constructed as described, provided with the partitions *g h* to form a series of independent compartments, constructed as set forth.

3. The ledge *i*, arranged on each compartment of the cylinder and made solid, while the remaining side of the cylinder is perforated, as set forth.

4. In combination with the elements of foregoing claims the rock-shaft D, applied to the shell A, and provided with the pin *l* for locking the washing-cylinder, and with the clutch *n*, substantially as herein shown and described.

109,260, antedated November 5, 1870.—TACKLE-BLOCK.—Roscoe J. Smith, North Haven, Me.

Claim.—The improved tackle-block, as made with the shouldered saddle B, as described, the yoke C, the springs, and the body part A, provided with one or more sheaves, all being arranged and combined as explained.

109,261, antedated October 29, 1870.—HAY-RACK FOR WAGON.—Stephen J. Smith, Farmington, N. Y.

Claim.—The hay-rack B C, constructed as described, and attached to the bottom of the wagon-box by means of the metal boxes *a a* and bolts *b b*, substantially as herein set forth.

109,262. — WASHING-MACHINE. — Thomas Snow, Social Circle, Ga.

Claim.—The combination of the box A with guides *a a*′, perforated wash-boards B B′, forked arm C, lever D, and arms *b b*, all constructed and arranged to operate substantially as and for the purposes herein set forth.

109,263, antedated November 3, 1870.—TAG.—Theodore J. Southworth, Rochester, and William H. Lawton, Elmira, N. Y.

Claim.—The label-card A, having the strips of India rubber *b b* cemented across one end on opposite sides, and provided with the eye or perforation *c*, substantially as and for the purposes herein set forth.

109,264, antedated November 3, 1870.—FEEDING HYDROCARBON LIQUIDS TO A HOT-GAS RETORT.—Theodore G. Springer, St. Louis, Mo.

Claim.—1. Producing an equal or uniform pressure upon hydrocarbon liquids contained in a tank or vessel, by the generating of gas by the action of acids upon suitable material, in proportion as the hydrocarbon liquids are consumed, for the purpose of making illuminating gas, substantially as set forth.

2. The combination of the hydrocarbon-tank with the pressure apparatus in which gases are generated by the action of acids upon suitable material, for the purpose of feeding hydrocarbon liquids to a hot retort, substantially as set forth.

109,265.—MOSAIC FLOOR.—Joseph Stegmiller, New York, N. Y., assignor to himself and Ludwig H. Rueckenbag, same place

Claim.—The mosaic floor constructed in sections which are united by flexible or jointed hinges interposed between the adjoining edges of the sections, as specified.

109,266. — CURTAIN-FIXTURE.—John Stephens, Fairview, Ohio, assignor to himself and Jairus Collins, same place.

Claim.—The central weighted band D and supporting-cords G G, combined as described with a curtain, C, which is movable up and down from the top, as set forth.

109,267.—RULING-MACHINE.—James Stewart, Washington, D. C.

Claim.—The combination of the extension bars A, thumb-screws B, screw-rods C, and rod D, when all are arranged to operate substantially as described.

109,268.—PURIFYING ILLUMINATING-GAS.—William H. St. John and Peter Cartwright, New York, N. Y.

Claim.—The improved process herein described for purifying illuminating-gas, the same consisting in treating the same with oxide of iron, having the texture and composition above set forth.

109,269.—COMBINED HARROW AND SEEDER.—Ezra Stoner, Greencastle, Pa.

Claim.—1. The combination of an elastic endless apron with rollers and pulleys under each dropping aperture in the hopper of a seeding-machine, said apron being arranged and made to operate substantially as and for the purpose herein set forth.

2. The combination of the lever F' with the end of the axle E and with the frame *b'* of a seeding-machine, substantially as and for the purpose herein set forth.

109,270.—STEAM-ENGINE.—Charles Strong and Augustin W. Stickney, Lebanon, N. H.

Claim.—1. The combination, with the end of the piston-rod and pitman, of a rocking-bar and pendulum-arm, substantially as and for the purposes set forth.

2. The combination, with the bar H and wrist 6, of the yoke 4 and set-screw 5, substantially as and for the purposes set forth.

109,271. — WINDOW-SHADE. — William Strunk, Nettle Lake, Ohio.

Claim.—The herein-described movable shades C D and immovable shade B, when arranged in relation to each other, with the fingers *b*, in combination with the frame A, so as to operate in the manner as described, and for the purpose set forth.

109,272.—MOLDED CARRIAGE-TOP.—Greenleaf L. Swett and Joseph P. Lockey, Leominster, Mass.

Claim.—As an article of manufacture, a molded carriage-top, formed of the material and adapted to use as described, and for the purpose set forth.

109,273. — ROTARY PULVERIZER. — John Thompson, Louisville, Ky.

Claim.—The combination of the pulverizer E, the gearing by which it is rotated, and the several devices for adjusting and maintaining it in position, all constructed, arranged, and operating substantially as herein described.

109,274.—HOOK FOR DUMPING-TUB.—John R. Thorne, Waldoborough, Me.

Claim.—The combination of the stock *e*, ring *d*, arm A, ring *m*, piece *j*, pivot *i*, spring *k*, stock and hook *c*, pivot *n*, and ring *f*, as and for the purposes herein set forth.

109,275.—ELEVATOR.—Gustavus C. Timpe, New Orleans, La.

Claim.—1. The combination, with the hoist-wheel drum and platform of an elevator, of a fly-wheel, arranged to be disconnected by the check-rope and brake-lever, substantially as specified.

2. The combination, with the brake-lever, of the ratchet-bar *b*, weighted pawl *i*, and trip-cord *k*, substantially as specified.

3. The combination, with the gear-wheel E, of the drum-shaft and the hoist-wheel shaft of the sliding pinion H, sliding shaft I, wheel L, pinions K and M, and the shifting-lever P, all substantially as specified.

4. The teeth *l*, arranged within the faces of the wave B, and the platform-frame, provided with the rollers a^1 working across the faces of the said ways, all substantially as specified.

5. The combination, with the platform and the pinions *m*, having the toothed hubs described, of the locking-pawls *p* and weighted levers *r*, substantially as specified.

109,276.—EARTH-CLOSET.—Elias W. C. Vanderveer, Linden, N. J.

Claim.—The flexible back B, together with the sliding valve C and box E, with hinged bottom, supported by and moving on the roller G, substantially as and for the purposes described.

109,277, antedated November 11, 1870.—BREECH-LOADING FIRE-ARMS. — Frederick Vetterlin, Neuhausen, Switzerland.

Claim.—The arrangement of the extractor I, formed with an elastic extension, *r*, within a groove in the upper side of the breech-piece, and in relation with the covering-plate *s*, whereby not only is the extractor retained in place, but the most efficient action of said extractor in the withdrawal of the cartridge-shell is secured, substantially as herein set forth.

109,278.—HOISTING APPARATUS.—John H. Violett, Goshen, Ind.

Claim.—1. The pivoted and notched levers T T, arm S, and trip-bar P, combined with a pin, U, on the beam F, as and for the purpose described.

2. The plates J, wheels K, bar L, block M, and weighted ropes O V, combined with the trip mechanism S T P and beam S U, as and for the purpose described.

109,279. — WASHING-MACHINE. — Horace Warner, Ridgway, Pa.

Claim.—1. Hinging the frame C to the tub so that the rollers P P can be raised from the tub, substantially as and for the purposes herein shown and described.

2. The eccentric L and stand J, in combination with the frame C and rollers P P, substantially as and for the purposes herein shown and described.

109,280. — MACHINE FOR MAKING CIGAR-BUNCHES. — Wendelin Weis, St. Paul, Minn.

Claim.—1. The cover or top H, provided with screws *c c*, and adjustable plate I, and hinged to the cross-head C, substantially as and for the purposes herein set forth.

2. The combination of the bed A, guides B, cross-head C, trough D, rollers E, oil-cloth *b*, belts *d*, cover H, and plate I, all constructed and arranged to operate substantially as and for the purposes herein set forth.

109,281.—DOOR-STOP.—Leonard C. Wemple, Rockford, Ill.

Claim.—1. An improved door-stop, consisting of the block or cup A *a'*, catch C c^1 c^2, arm D, spring E, and projection or knob B, said parts being arranged and operating substantially as herein shown and described, and for the purpose set forth.

2. The combination of the staple F, with the block or cup A *a'*, catch C c^1 c^2, arm D, spring E, and projection or knob B, substantially as herein shown and described, and for the purpose set forth.

109,282.—ROACH AND BUG-TRAP.—Thomas Williams, Tompkinsville, N. Y.

Claim.—A removable vessel, B *a*, having a glass or other equivalent smooth inner surface, and suspended as described, combined with the box A, all constructed as and for the purpose specified.

109,283, antedated November 5, 1870.—MEASURING-CAN.—Arthur Gates Wilson, Chicago, Ill.

Claim.—A metallic liquid-can, having a transparent pump-cylinder containing a piston arranged within it, with its graduated side exposed to view through the side of the can, substantially as described, for the purpose specified.

109,284.—ROTARY PUDDLING-FURNACE.—Enoch Wood, Pittsburg, Pa., assignor to himself, Edward Perry, Richard Perry, William McPherson, and Edward Williams, same place.

Claim.—In combination with a puddling-furnace, an annular bed, supported by columns and wheels, being encircled with a chamber, provided with water from a pipe passing through a hollow shaft, and rotated at right angles with the line of its axis by suitable gearing, substantially as and for the purpose set forth.

109,285.—GRATE-BAR.—James Yocom, Jr., Philadelphia, Pa.

Claim.—The combination, with a single bearer, B, of a central fire-exposed surface, A, and one or more side fire-exposed surfaces, A' A', by the means and in the manner substantially as herein described and shown.

109,286.—PADDLE-WHEEL.—Samuel Bateman, Asniere, near Paris, France.

Claim.—The oscillating paddle A, furnished with an extension piece, C, and an elastic buffer, D, attached thereto, in combination with the connecting-rod E and the abutment G, arranged and operating as herein described.

109,287.—WASHING-MACHINE.—William B. H. Beach, Naples, N. Y.

Claim.—1. The rubber C, suspended by an arrangement of hinge-jointed arms, *a b c*, so as to permit the rubber to adjust itself to all thicknesses of clothes, substantially as set forth.

2. The rubber, consisting of two parts, *h' h*, arranged to open and close by the lever *s*, for inserting and retaining the fabric, substantially as and for the purpose set forth.

109,288. — FILTER.—John Bean, Hudson, Mich.

Claim.—The arrangement of the stalk B with air-chamber C and the reversible filter A, all substantially as set forth.

109,289.—COMBINED THRASHING-MACHINE AND CORN-SHELLER. — John Bowman, Princeville, Ill.

Claim.—1. The combined grain-thrasher and corn-sheller herein described, and composed of cylinder B provided with ribs *a* the removable reticulated bars C, and the concave reticulated plate H, substantially as and for the purpose set forth.

2. The removable reticulated bars C, in combination with the cylinder B and ribs *a*, substantially as and for the purpose set forth.

109,290.—PLOW.—Thomas E. C. Brinly, Louisville, Ky.

Claim.—1. The mold-board D, the cross-section of which approaches, on line 2 2 a^6 fig. 1, in contour, the curve of a semi-parabola, substantially as shown and described.

2. The combination and arrangement of the revolving colter E, bar or bars E', and upright colter F, substantially as set forth.

109,291.—PLOW.—Thomas E. C. Brinly, Louisville, Ky.

Claim.—The standard A, constructed with the ears A^2 and A^4, and flange A^3, in combination with the mold-board B, flanged share C C', and land-side D, the parts being united together substantially in the manner set forth.

109,292. — CONNECTING FIRE-DETECTER WITH THE ALARM. — Henry L. Brower, New York, N. Y., assignor to Charles D. Fredericks, same place.

Claim.—1. The combination of a series of detecters with the annunciator by means of a single wire, which transmits the signal passed by each detecter of the series, substantially as before set forth.

2. The combination of the detecter with a tripping-lever, by means of which the detecter is caused to transmit a signal from a preceding detecter toward the annunciator, substantially as before set forth.

109,293.—MACHINE FOR CUTTING LOAF-SUGAR.—Adolphus Brown and Felix Brown, New York, N. Y.

Claim.—Blocks of some elastic substance, as rubber, inserted between the cutters of sugar-cutting cylinders, as described, and for the purposes set forth.

109,294. — HAND-DRAG RAKE. — Edward Brown, Kennebunk, Maine.

Claim.—A hand-rake, having a head, *a*, in which are inserted teeth *b*, which rest upon and are fixed to a shoe or fulcrum, *c*, located about midway between the head and the points of the teeth, the rake-frame having shafts bolted or rigidly connected to the head and to the shoe *c*, all substantially as shown and described.

109,295.—MACHINE FOR CUTTING LOAF-SUGAR.—Felix Brown, New York, N. Y.

Claim.—1. The combination of saws by which grooves are formed in the loaves at right angles to each other, as described, and for the purposes set forth.

2. The guiding-table B, in combination with two sets of saws, as S and U, as hereinbefore described.

3. The guiding-table B, with the sliding bed C, in combination with a cut-off saw, as described.

109,296.—MACHINE FOR CUTTING LOAF-SUGAR.—Felix Brown, New York, N. Y.

Claim.—1. The combination of a guide, B, with saws D D, for scoring or grooving the sugar-loaf, as described, and for the purposes set forth.

2. In combination with a guide, B, the band-saw E for cutting off said scored or grooved portions of the loaf, as described.

3. The guides K, for conducting the severed strips of sugar from the band-saw to the nipping-rolls, as described.

4. The clamping device, in combination with the sliding or moving guide, for holding the uncut portions of the loaf, as described, and for the purposes set forth.

109,297, antedated November 5, 1870.—COMBINED CANE AND WHIP.—Corydon L. Bushnell, Cherry Valley, Ohio.

Claim.—A cane-whip, combining in its construction the barrel A, whip B, tip-thimble D, iron tip E, and spring catch F, all substantially as shown and described.

109,298.—COMBINED LATCH AND LOCK FOR SLIDING DOORS.—Jacob Capron, New York, N. Y.

Claim.—The described lock, with its latch A, stops D and E, spring arms *c c'*, and offset on the latch, all constructed and operating substantially as set forth.

109,299.—FRICTION-CLUTCH.—Thomas Coldwell, Newburg, N. Y.

Claim.—The eccentric sleeve C, in combination

with the chilled surface of hub B and balls F^1, F^2, and F^3, for the purpose as herein set forth and described.

109,300.—APPARATUS FOR TRIMMING HEELS OF BOOTS AND SHOES.—Louis Coté, St. Hyacinth, Canada.

Claim.—A hand-operated heel-trimming tool, constructed as described.

109,301.—HARVESTER-RAKE.—Asahel G. Crane and William T. Johnston, Ottumwa, Iowa.

Claim.—1. In combination with detachable platform A, the wheel D, rake H I, and cam-guide J, all the parts being constructed and operating as described.

2. In combination with the above, the clutch *e*, tube k, pin *i*, and spring *f* on the shaft E, all as and for the purposes herein set forth.

109,302.—CANCELING-STAMP.—Charles E. Donnellan, Indianapolis, Ind.

Claim.—A stamp for canceling postage-stamps, having a series of lines radiating from the post-office stamp, and covering the entire or almost entire surface of the envelope, as herein set forth.

109,303.—APPARATUS FOR BURNING PARAFFINE AND OTHER HYDROCARBON-OILS.—Henry Harrison Doty, London, England.

Claim.—The herein-described apparatus for burning hydrocarbon-oils, consisting of the wick-holder *f*, cylinders *b*, receptacle *l*, communicating-tubes *m*, the chimney-bracket A, and pinions and racks *d* and *e* and *i* and *k*, respectively, operating the wick-holders and chimney-bracket, the whole combined and arranged in the manner and for the purpose specified.

109,304.—SCHOOL-DESK.—William E. Doyle, Eaton, Ohio.

Claim.—The combined school-desk and seat herein described, provided with the bracing-arms G G, bolts *s s*, and semicircular plates *a a*, attached to the under side of the seat and desk-board, and provided with the quadrant slots *c c*, as and for the purposes shown and described.

109,305.—HORSE HAY-FORK.—Alvin T. Dunbar and James H. Fellows, Alba, Pa., assignors to A. T. Dunbar and George H. Dewey, same place.

Claim.—The center bar A, provided with projecting head *d*, the cam-shaped lever H, bail B, and cross-bar G, all combined and arranged to operate substantially as set forth.

109,306.—SAD-IRON.—Theodor G. Eiswald, Providence, R. I.

Claim.—In combination with the shell or body A of a sad-iron, the permanent non-corrosive metallic shoe C, heating-bolt D, and door or gate G, constructed substantially as and for the purpose described.

109,307.—MOP-WRINGER.—Homer L. Ennes, Birmingham, Ohio.

Claim.—1. In combination with the ring D and an attaching device, the forked and spiral wires C C', substantially as specified.

2. The curved bar A, with the hooks B and set-screws *a*, in combination with the ring D, the forked spiral wire C, and the forked spiral wire C', having the initial band *e*, as specified.

109,308.—STONE-TRUCK.—Washington Evans, Ontario, Ohio.

Claim.—1. The platform *a*, provided with the cleats *b*, *c*, and *d*, and the plates *f* and *f'*, and the bar *s*, with or without the pieces A, side boards *g*, and transverse boards *i*, when suspended from the axles of a wagon by stirrups *s'*, having drivers *w* and nuts *y*, and the king-bolt *m* having the notched key *a'*, substantially as and for the purpose herein-before specified.

2. The stirrups *s'*, having drivers *w* and nuts *y*, bar *s*, platform *a*, block of wood *v*, curved reach *l*, and rear axle and bolster, arranged relatively one to the other, for the purpose hereinbefore set forth.

3. The king-bolt *m*, the notched key *a'*, and nut *c'*, front axle, sand-bar *n*, platform *a*, and curved reach *l* having brace *t*, arranged relatively one to the other, as described, for the purpose specified.

4. The curved reach *l*, provided with the brace *t* and chain *d'*, with or without the brake *n'*, arranged relatively one to the other, and to the wagon-axles and the platform *a*, for the purpose set forth.

109,309.—SKIRT-SUPPORTING HOOK FOR CORSETS.—David H. Fanning, Worcester, Mass.

Claim.—The metallic skirt-supporting hooks F, provided with cloth or other textile coverings, by which they are secured to the corset, substantially as shown and set forth.

109,310.—RAILWAY-CAR WHEEL.—John N. Farrar, Pepperell, Mass.

Claim.—1. The wheel A, provided with cogs F and flange 2, in combination with the tire D, provided with the flange *w* and with the interposed packing B, substantially as described.

2. The combination of elastic rim *g*, packing B, washer *y*, and flange *a*, substantially as set forth.

3. The packing B, in combination with the ring *s*, arranged within the flange *w* of the tire D, all as set forth.

4. The packing B, composed of rubber *b* and wood *b'* combined, the rubber being solid, or skeleton-formed by means of any-shaped holes or grooves, all substantially as shown.

5. The combination of closed band *c*, key J, and rectangular recess h on tread a^2, substantially as set forth.

6. The combination and arrangement of the inwardly-projecting flange *w* with relation to the tread a^2, the flange *z*, and the rim E, substantially as set forth.

7. The combination of body of wheel A cast with flange a^1, packing B, constructed and arranged as described and modifications shown, elastic rim *g*, cogged or plain rim or ring *z*, band *c*, ring collar-plate E, and tire D, all arranged substantially as described.

109,311.—WATER-ENGINE.—Russel Francis, Woodstock, Wis.

Claim.—Flume or tank B, cups or buckets C C, levers D D, valves E E and F F, rocker G, pitman N, and crank M, substantially as described.

109,312, antedated November 12, 1870.—RAILWAY-CAR SPRING.—Heman Gardiner, New York, N. Y.

Claim.—1. The combination of the hollow cylinder of rubber F with the jackets G and H, for the purposes hereinbefore set forth, and substantially in the mode of application and material used and described.

2. The combination of a cylindrical roll of felt-cloth, of wool, hair, or other similar fabric of like properties, with a coil or spiral spring, substantially as described, and for the purposes set forth.

3. The combination of the barrel A, made as described, with the hollow cylinder of rubber F, inclating felt-cloth jackets G and H, spiral spring J, and roll of felt-cloth K, all arranged and operating as described, and for the purposes set forth.

109,313.—BRICK-MOLD.—Gottlieb Graesle, Hamilton, Ohio, assignor to himself and L. E. White.

Claim.—1. A portable brick mold, having its bottom B arranged to slide laterally, substantially as described.

2. In combination with the molds or compartments C having the steel plate *e* secured to their sides and ends, the sliding bottom B having the steel plates *d* attached thereto and engaging over the cross-bars *e*, all constructed and arranged to operate substantially as described.

3. The combination of the mold or frame A, sliding bottom B, and levers *f*, constructed and arranged to operate as set forth.

4. In combination with a portable brick-mold, the pads E, mounted on supports D, and having a lubricating-surface on their bottom and sides for lubricating the interior of the molds, as set forth.

109,314.—APPARATUS FOR THE MANUFACTURE OF SUGAR.—John William Hahn, San Francisco, Cal.

Claim.—The combination of the frame A, shaft B, eccentric C C', rods D, stems *a'*, boxes *b d*, cross-bars F and G, and conical cups H, when all the parts are constructed and arranged as described, and for the purpose set forth.

109,315.—CORN-SHELLER.—Jonathan R. Hamilton, Kingston, Minn.

Claim.—1. The lifters *c*, provided with points *k* and *l*, in combination with the adjustable plates *d*, when constructed and arranged substantially as shown and described, for the purposes set forth.

2. The combination of the plates B and C, constructed substantially as shown, with the lifters *c* and tube *b*, when arranged as shown, and for the purposes specified.

3. The combination of the lifters *c*, and adjustable plate *d*, with the rubber band *f*, pins *e*, and flange *m*, when all constructed and operating as shown, for the purpose set forth.

4. The combination of the lever D with the driver *g*, cup A, lifters *c* and tube *b*, all constructed and arranged as shown, for the purpose set forth.

5. The arrangement of the lifters or cutters *c* and *c'*, placed opposite each other in pairs, so that the lower surface of the short lifters *c'* will be above the upper surface of the long lifter *c*, constructed substantially as shown, for the purpose specified.

109,316.—STUMP-EXTRACTOR.—Samuel Harman, La Porte, Ind.

Claim.—The frame-work A A', upright post B, carrying a vertical pivot, C, the drum D revolving loose upon said pivot C, the rope *d*, and the lever E, all combined and arranged as specified and shown, and for the purpose set forth.

109,317.—APPARATUS FOR TRANSPORTING LOADS ON WIRE ROPE.—Charles Hodgson, Richmond, England.

Claim.—1. The wheels attached to the hook and block, and operating in reference to the endless rope, substantially as and for the purpose set forth.

2. The block or saddle, constructed as described, with a converging grooved seat to render it self-adhering to the moving wire or rope, yet readily disengaged therefrom when the pulley engages with the side rail, substantially as and for the purpose herein set forth.

3. The combination, with the block or saddle, of the guards and wheel or pulley, to enable the wheels to take the load and block off the rope while the guards retain the blocks in a position to re-engage the rope when past the side rail, as herein shown and set forth.

4. The rails arranged close to the wire or other rope at the extremities of, or changes in direction in, the rope, for the purpose, and in the manner substantially as described.

5. The pendent frame, pivoted to the block so that the load will remain vertically suspended independent of the inclination of the rope, substantially as set forth.

109,318.—CLOTHES-LINE REEL.—George Holman, Waterville, N. Y.

Claim.—In combination with the forked head A, with its four slotted arms, B B B B, and handle C, the removable screw or bolt D, passing through a slot in the center of the head, and through the hand-frame E or wall, as set forth and shown.

109,319.—JOURNAL-BEARING.—David A. Hopkins, Jersey City, N. J.

Claim.—The method herein described of constructing journal-boxes, whereby the journals of axles are imbedded therein, substantially as herein set forth.

109,320.—RAILWAY-CAR WHEEL.—Lewis B. Hunt, New York, N. Y.

Claim.—A car-wheel, the body of which is composed of a series of thin disks or veneers of wood laid together with the grains crossing each other, cemented, glued, or otherwise secured together, in combination with a metallic rim and a hub, substantially as set forth.

109,321.—BUCKLE.—James C. Hyde, West Haven, Conn., assignor to the West Haven Buckle Company, same place.

Claim.—The hinge for buckles, consisting of the strip of metal *c*, bent and closed separately around each of the two parts to secure them together and form the hinge, substantially as set forth.

109,322.—MOWING-MACHINE.—Benjamin Illingworth, Le Roy, Minn.

Claim.—1. The lever L, shaft M, arm *m*, and slotted ear *n*, all constructed and arranged as described, for throwing the plate H in and out of gear with the pins *i i*, substantially as herein set forth.

2. The combination of the wheels C C, pins *i i*, shaft D, arms E G, plate H, lever L, and shaft M, all constructed and arranged to operate substantially as and for the purposes herein set forth.

109,323.—MUFF AND COLLAR-BOX.—Gustav L. Jaeger, New York, N. Y.

Claim.—1. The apron C, forming both a support for a muff or other article when the lid is closed, and a means for elevating when the lid is raised, said apron extending from the rear edge of the hinged cover to the front edge of the body of the box A, as herein shown and described.

2. The box A, with its lid B, provided with the flanges *a* in combination with the above, substantially as set forth.

3. The inwardly-inclined flanges *a a* upon the lid B, forming a double joint and a receptacle, as described, in combination with the box A, substantially as set forth.

109,324.—FIRE-KINDLER.—Jeremiah Kenney, Sr., Baltimore, Md.

Claim.—A portable gas fire-kindler, constructed and arranged to be used as herein described.

109,325.—MACHINE FOR GRINDING AND POLISHING LENSES, &c.—Horatio D. Knight, Elgin, Ill.

Claim.—1. In a machine for grinding curved or faceted surfaces, a swing-center, *c*, in combination with a sliding head-stock, E, mandrel, and revolving lap, as set forth.

2. The swinging bed *d*, carrying the sliding head-stock E and mandrel, when the parts are so arranged that the point of the chuck may be advanced beyond the swing-center, for the purpose set forth.

3. The swinging bed *d*, carrying the mandrel, when the said bed is moved forward and backward by the swinging motion, as set forth.

4. The socketed slide-bed *a*, carrying the swinging bed, with its pinion, the said pinion being connected to a cam for moving the sliding bed through a lever.

5. The steel bands, connecting the pulleys *g g*, arranged as described, the outer carrying a cam of any desired form, the cam operating on the lever, as set forth.

6. In combination with the lever *h*, a movable fulcrum, as set forth.

7. The slotted lever *h*, constructed as shown, and held by the movable fulcrum, as shown and described.

8. In combination with the sliding bed and swinging bed, the index *f*, as set forth.

9. The index-wheel *f* and pawl, in combination with the mandrel, as described.

10. The slide head-stock, carrying the lap *a*, in combination with the swinging and lever-moved sliding bed, all as set forth.

109,326.—OPENING AND SHUTTING DEVICE FOR RAILROAD-CAR WINDOW. — John Fannon Lash, Toronto, Canada.

Claim.—1. The combined clasp and hinge B C, provided with one or more hooks, G, and a catch, I, to adapt it to operate in connection with the plate A, substantially as and for the purposes set forth.

2. The hinged strut D E, in combination with the hinge B C and plate A, substantially as shown and described.

109,327. — INK FOR WRITING.—Robert G. Loftus, Chelsea, assignor to himself and Oliver W. Farrar, Boston, Mass.

Claim.—As a new article of manufacture, a writing-ink, made of the materials and in the manner substantially as described.

109,328. — DETACHING-HOOK. — Joseph A. Lord, Jr., Middletown, Conn.

Claim.—A hook, D, provided with a spring-detacher, F, constructed and operating substantially in the manner shown and described.

109,329. — SHUTTER-FASTENER. — Ira O. Luey, Bernardston, Mass.

Claim. — 1. The combination of the catch C, spring D, lever G, and slotted operating-bar H, extending toward the inner edge of the shutter, all as and for the purpose set forth.

2. The slotted operating-bar H, with its projection *a*, combined with the fastening-button I and guide-pin *d*, all arranged as set forth.

3. The combination of the rigid stop L with beveled notch O, the spring L, and the spring catch C, working in the blind; all as and for the purpose set forth.

109,330.—VESSEL'S HATCH.—Joshua P. Maddox, Belfast, Me.

Claim.—The method of pressing down and securing vessels' hatches by double levers, or their equivalent, as herein described.

109,331.—ELEVATOR.—Walter K. Marvin, New York, N. Y.

Claim.—1. An elevator, in which the carriage and the balance-box connected therewith are combined with a chain or other weight, and means for transferring a greater or lesser portion of said chain or weight from the carriage to the balance-box, or *vice versa*, substantially as described, whereby, by the shifting of the chain or weight, the carriage, together with its load, may be caused to rise or descend, as required.

2. The combination, with the elevator-carriage, the balance-box, the chain or weight, and means for transferring the same, of a brake arranged to be operated from the carriage, so as to regulate or entirely check the movement of the carriage as desired, substantially as shown and set forth.

3. The weighted lever, or its equivalent, as described, in combination with the clutch, the chain-pulley, and the shaft upon which the same are mounted, arranged substantially as and for the purposes set forth.

4. The brake, constructed, arranged, and operating in the manner and for the purposes substantially as herein shown and described.

109,332. — PIPE-COUPLING. — John H. McGowan, Cincinnati, Ohio.

Claim.—The combination, substantially as described, of the fixed pipe A B *b*, elastic packing-ring or gasket C, annular clamp D *d* E, and hinged spout F G, for the object set forth.

109,333, antedated November 5, 1870.—CONCRETE PAVEMENT.—Abraham B. McKeon, Rutherford Park, N. J.

Claim.—The combination of pine-tar, asphalt, coal-tar, rosin, and sulphur, in the proportions hereinbefore described, and for the purpose set forth.

109,334.—CORN AND COTTON-SCRAPER.—George Milliorn, Pyhalia, Miss., assignor to himself and P. T. Raiford, same place.

Claim.—The scraper, consisting of beam A, standard C, handles E E, rods G G, and share D, the said share being provided with projection *d*, which extends half-way up from its lower corner, all as set forth and described.

109,335. — WATER-WHEEL.—Jarvis Alonzo Morgan, Navasink, N. J.

Claim.—In combination with the trough A, with incline B and sliding gate C, the water-wheel having two disks, E, and hinged gates G G, which impinge on the shaft D, all substantially as set forth.

109,336. — DIE FOR FORGING CARRIAGE-CLIPS. — Francis B. Morse, Plantsville, Conn., assignor to himself and H. D. Smith & Co., same place.

Claim.—As an improvement on the dies patented to me October 11, 1870, No. 108,283, the central raised portion H on the one die, and the recess D on the other die, of depth sufficient to permit the raised portion H to enter into it, as and for the purpose specified.

109,337. — SCREW-PILE. — Thomas W. H. Moseley, Boston, assignor to R. P. Moseley, Samuel R. Moseley, and Anna M. L. Moseley, Hyde Park, Mass.

Claim.—The cap H, so applied as to cause a part of the load to be borne by the sub-pile G, through the medium of a filling of concrete or other suitable material, substantially as described.

109,338.—AIR-ENGINE.—David Myers, Chicago, Ill.

Claim.—The combination of the quadrant K and spring-crank or lever O, when so constructed and arranged that the valve motion may be reversed, substantially as shown.

109,339, antedated November 5, 1870.—OFF-BEARING TRUCK FOR BRICK-MACHINES.—Walker Olds, Albany, N. Y.

Claim.—1. In combination with a machine for making bricks, the truck, constructed substantially as shown, provided with an endless apron, such apron being operated by the plunger of the machine through the intervening mechanism, constructed substantially as shown, and for the purpose set forth.

2. The combination and arrangement of the springs D^3 D^3, roller D^2, and apron D, substantially as and for the purpose set forth.

109,340.—PLOW.—Ornan Osborn, Erie, Pa.

Claim.—In combination with the plow-beam A, provided with its grooved block C, with cog-teeth *b b*, the crooked beam B, pivoted to the beam A at its front, having a cam and flange, *a*, at its rear, and with segment D and lever E, all constructed as shown and described.

109,341.—MANUFACTURE AND APPLICATION OF COLORS FOR PRINTING AND DYEING. Alfred Paraf, New York, N. Y., assignor to Edward Sabine Renwick, same place, trustee.

Claim.—1. The manufacture of colors, for printing and dyeing fibrous and textile articles, of the coloring-matter and soap, substantially as before set forth.

2. The process of applying colors to fibrous and textile articles by means of the coloring-matter and soap, substantially as before set forth.

109,342. — DOOR-CATCH.—Robert V. Phillips, Council Bluffs, Iowa.

Claim.—A door-catch, made of pliable springs *c*, fastened to the wall by a screw, *d*, passing through an India-rubber pad, *b*, substantially as above described.

109,343. — SAWING-MACHINE. — Richard J. Poston, Mainville, Ohio.

Claim.—1. The combination, substantially as described, of the main frame A A′, B B′, C, gravitating-frame D E, shaft G *g*, driving-pulley H, belt I, pulley J, shaft K *k*, fly-wheel L, arm M, pitman N, reciprocating saw O, and feed movement R S T *t*, U *u* V V′, W X, for the object stated.

2. The combination of the gravitating-frame D, reciprocating and obliquely-slotted saw O *o*, and the elongated bearing P, which latter is attached to said gravitating-frame in the manner herein explained.

3. In combination with the main frame A of a sawing-machine, the slotted and wedge-shaped dog Y *y* and guide-bar Z, for the object herein explained.

109,344. — SHAFT-COUPLING. — William M. Pratt, Chicago, Ill.

Claim.—1. The combination of the rings D D′, having bearings E, with the shaft-heads A, trunnions B, and tubes or washers C, substantially as and for the purpose specified.

2. The combination of the rings D D′, having bearings E and oil-chambers F, with the shaft-heads A, trunnions B, and tubes or washers C, substantially as specified and shown.

3. The combination of the rings D D′, having bearings E and oil-chambers F, with the shaft-heads A and trunnions B, substantially as specified and shown.

4. The oil-chamber or chambers F, in combination with the ring or rings of a tumbling-rod coupler, substantially as specified and shown.

109,345. — TAKE-UP DETAINING-PAWL. — George Richardson, Lowell, Mass.

Claim.—1. The arrangement of the pawl-lifters F G and the compound retaining-pawl, composed of the parts *a b*, made and applied together, as described, with the impelling-pawl C, ratchet-wheel B, and the shaft E of the stop-motion, the whole being constructed and operating as explained.

2. The compound retaining-pawl, composed of the two parts *a b*, when constructed and arranged substantially as explained.

109,346.—WOOD AND COAL-DUMPER FOR RAILWAYS.—Richard B. Robbins, Adrian, Mich.

Claim.—The dumping arrangement herein described for loading the tenders of locomotives, consisting of a pivoted crane, A, suspended pivoted platform B, chain *d*, and lever *e*, all constructed and arranged to operate as specified.

109,347. — RAILWAY-CAR BUMPER AND DRAW-HEAD.—Alexander Ross and John Arthur, Freeport, Ill.

Claim.—The draw-bar B, constructed as described, so as to form the shoulders *a*, in combination with the bumper A, arranged as shown, so that its front end shall come flush with the front end of the draw-bar and its rear end come against the shoulders *a*, and the coupling-pin pass through both the draw-bar and bumper, all as herein set forth.

109,348.—TAKE-UP NUT.—Thomas Ross and William W. Graham, Rutland, Vt.

Claim.—A take-up nut, divided in two parts, and provided with suitable means for securing the two parts upon and concentric with each other, substantially as and for the purposes herein set forth.

109,349. — PUMP. — Alonzo Sherman and John W. Sheaffer, Sterling, Ill.

Claim.—As a new article of manufacture, the pump-cylinder B, provided with a solid central exterior flange, *a*, and of a length equal to or longer than the range of the pump-piston, said cylinder being inserted and fitting neatly in an upper and a lower section of a pump-stock, all substantially as shown and described.

109,350.—APPLE-PARER, CORER, AND SLICER. James Shobe, Upper Principio, Md.

Claim.—1. The revolving paring device, consisting of the knife *b*, with its friction-roller *j*, swivel-stock L, ratchet *m*, and spring *n*, as connected with the lever I, spring *i*, and arm E, operating in the manner herein shown and described.

2. The revolving spoon-shaped corer *d* on the shaft D, and the cutting-blades *h h h* for quartering or slicing apples, substantially in the manner as set forth.

3. The apple-holder *a* on the sliding bar F, with its rack *f*, in combination with the cropped toothed wheel E, for operating the same, as herein specified.

4. The chute J, in combination with the paring, coring, and slicing-blades, as shown and described.

109,351. — SAWING-MACHINE. — Fred. D. Smith, Chicago, Ill.

Claim.—The combination, in a sawing-machine, of the parallel vibrating levers H H′, connected by the strap h, the toggle-jointed levers F F′, rod E, balance-wheel C, and crank-wheel D, substantially as and for the purpose specified.

109,352. — PLOW. — Hugh Smith, Moline, Ill.

Claim.—1. In a plow-beam, constructed as described, the projection *c*, in combination with the socket *d* on the land-side, when arranged to operate as and for the purpose set forth.

2. The plate *f*, interposed between the beam A and the standard B, for adjusting the plow, as set forth.

109,353.—DRAFT DEVICE FOR HARVESTER. John M. Smith, Jerseyville, Ill.

Claim.—The adjustable bar D, constructed specifically as described, with its rollers, in combination with frame, chain, and triple-tree, as and for the purpose described.

109,354.—MACHINE FOR SEPARATING MAGNETIC-IRON ORES FROM OTHER SUBSTANCES. —John Y. Smith, Pittsburg, Pa.

Claim.—1. The endless belt of magnets carried upon drums or pulleys, arranged substantially as set forth.

2. In combination with revolving magnets, an apron, C, on which the separation occurs, substantially as set forth.

3. The arrangement of the magnets with reversed poles in succession, substantially as set forth.

4. In combination with magnets arranged substantially as set forth, a keeper, E, attached to the frame, to form a permanent connection between the poles of the magnets not in action on the ore.

5. The apron C, having its upper surface roughened, substantially as set forth.

109,355.—Furnace and Process for Treating Iron and other Ores.—John Y. Smith, Pittsburg, Pa.

Claim.—1. A revolving furnace, E, through which the heat is conducted through the tubular tile B, so that the ores when under treatment are not subjected to the action of the gaseous products of combustion.

2. A revolving furnace, E, constructed with a tubular tile, B, chamber D^2, and steam-jet in pipe H, substantially as and for the purpose set forth.

3. The revolving furnace E, when constructed with openings E^2 E^3, arranged to operate substantially as and for the purpose set forth.

4. The arrangement of the furnace A, revolving furnace E, with tubular tile B and up-take C in relation to one another, substantially as set forth.

5. The process for preparing and treating metallic sponge by subjecting the ore to treatment for decarbonization, desulphurization, or deoxidation in a close furnace without being brought into contact with the gaseous products of combustion, and then protecting it from further change by coating it with a vitreous material injected into the said furnace, and the subsequent removal and reduction of the metallic sponge so formed in a reverberatory furnace, substantially in the manner set forth.

109,356.—Blast Apparatus for Furnace.—Robert Allen Smith, Newburyport, Mass.

Claim.—1. In a blast apparatus, as described, combined or to be combined with a furnace in manner as set forth, the shaft of the blast or fan-wheel as made with the air-passage extending through it, as specified.

2. The combination of the steam-duct, provided with a stop-cock, as described, with the blast apparatus, as set forth.

3. The combination and arrangement of the smoke-box, the steam-duct, and the blast apparatus made and provided with the two educts and their dampers, as specified.

109,357.—Window-Fastening.—Hiram St. John, Wilton, Conn.

Claim.—A window-sash lock, consisting of the plate C having the raised ends with the notches *a* and the lever E, with the spring F secured to its under side, extending through a slot in the outer end thereof, and engaging with a notch in the plate D, all substantially as described.

109,358.—Spring for Railway-Car Truck.—William M. Taylor, Newburg, Ohio.

Claim.—1. The coil-spring *c*, made either round or oval, and having a strengthening plate, *a*, inserted between its coils, substantially as herein set forth.

2. The concave seat D, provided with flanges *b b* and projections *c c*, substantially as and for the purposes herein set forth.

109,359.—Fluid-Meter.—Francis Wagner, New York, N. Y.

Claim.—1. The arrangement of piston-valves, having a reciprocating motion imparted to them by the direct action of the fluid to be measured, and a partially-revolving motion imparted to them by the action of the fluid to be measured on the main piston in the measuring-cylinder, substantially as herein shown and described.

2. The piston-valves D D′, provided with ports *i*, and a V-shaped space, *l*, in combination with ports i^1 i^2 i^3 i^{4*}, inlet and outlet-openings *d e*, ports a^* b^* *a b*, and a measuring-cylinder A, all substantially as herein set forth.

3. The slide *n*, in combination with the main piston B and with the piston-valves D D′, substantially as described.

4. The lever *t*, rock-shaft *u*, lever *s*, pawl *w*, and ratchet-wheel *x*, in combination with the slide *n* and piston B, substantially as set forth.

109,360.—Funnel.—Albin Warth, Stapleton, N. Y.

Claim.—1. The projecting finger *b*, arranged at the ends of a funnel, A, as and for the purpose set forth.

2. The elbow *a*, arranged at the end of a funnel when said end is provided with a projecting finger, *b*, substantially as and for the purpose set forth.

3. A funnel provided with a spout, *i*, arm *h*, and elbow *a*.

4. The funnel A, with the spout *i*, slip-joint *c*, shank *g*, and elbow *a*, substantially as and for the purpose described.

109,361.—Grinding-Mill.—Joseph M. Westmoreland, Danville, Texas.

Claim.—1. The circular track J and traveling frame K L C, combined with wheel H, shaft G, and bevel-gear E F, to work the grinders in the manner described.

2. The vertical rotating grinder B and serrated shell B′, combined with a hopper, A, having horizontal plate *a* therein, apertured on the edges, to allow the shaking motion of the traveling mill to feed the grain automatically, as described.

109,362, antedated November 5, 1870.—Sash-Holder.—Edmund H. Wheeler, Scranton, Pa.

Claim.—The combination of the solid eccentric D provided with elastic band *a*, and pin *i* with the slotted spring G provided with hook *b*, constructed and arranged to operate substantially in the manner and for the purposes herein set forth.

109,363.—Cultivator.—Benjamin F. Young, Toulon, Ill.

Claim.—The arrangement of plate R, lever N, rocking shaft P, arms Q Q, link *n*′, shield Y, braces *y* and W, parallel motion-bars X X, stirrups L L, plow-standards K K and I I, with braces J J, all as shown and set forth.

109,364.—Flavoring Compound.—William Zeigler and John H. Seal, New York, N. Y.

Claim.—A dry flavoring compound, composed of magnesia, sugar, and the flavoring substance, ground or pulverized to form a powder, substantially as above set forth.

109,365.—Cartridge-Box.—Josias R. King, Washington, D. C., assignor to William M. Tileston, same place.

Claim.—1. The plate A, whether made in one or more pieces, and provided with rows of loops for holding cartridges, substantially as described.

2. The plate A, provided with rows *a b* of loops on one side, and a row or rows, *d*, on the other side, so arranged as to fold compactly together and be covered by the plate, substantially as specified.

109,366.—Binding-Attachment for Sewing-Machine.—William Nelson Martin, Boston, Mass.

Claim.—1. The combination of the arms *c c*′, guide *b*, slide *b*′, with the presser-foot and its slide *d*, and hooked spring *e*, all constructed as and for the purpose set forth.

2. The hooked spring *e* and slide *d*, in combination with, and adjustable on, the presser-foot, as and for the purpose described.

REISSUES.

4,177.—Ice-cream Freezer.—Benjamin Green Martin, Williamsburg, N. Y.—Patent No. 100,305, dated March 1, 1870; antedated February 14, 1870.

Claim.—1. The up-and-down adjustable rotating shaft D, combined with the pivoted arms *e e*, to support the rotating vessel E, substantially as herein shown and described.

2. The stirrer F, consisting of the pivoted arms *h* and vertical bars *i*, and made self-adjusting, substantially as herein shown and described.

3. In an ice-cream freezer, the adjustable vertical hollow shaft D, in combination with the vessel E, all substantially as and for the purpose specified.

4. In an ice-cream freezer, the shaft G, working inside the hollow shaft D, in combination with the dashers F, substantially as shown and described.

4,178.—Division A.—Brick-Machine.—James Sangster, Buffalo, N. Y.—Patent No. 59,080, dated October 23, 1866.

Claim.—1. The openings T T, be the number more or less, when placed within the portion of the sliding mold B, where the brick or material receives its pressure.

2. The opening J^1 in the bottom of the mold B, for the purpose of leaving room for the escape of the surplus clay or material, as described.

3. The openings J^1 and J^2 in the lower part or sides of the pistons, as and for the purposes described.

4. The pins Z Z, or the equivalent thereof, in the mold B, substantially as described.

5. A piston, moving and compressing the clay to the point desired, which is there forced by the opposite piston, with the brick partly compressed, back again to a support, where it remains until the piston which moves it back gives the completing pressure to the brick.

6. The employment of one or more plates R, substantially as described.

7. The arrangement of the cam, connecting-rod and the stationary guide E, as described, when used to give the irregular reciprocating motions to the mold of a brick-machine.

8. The combination of the pistons H and H^1, as described and set forth.

4,179.—Division B.—Brick-Machine.—James Sangster, Buffalo, N. Y.—Patent No. 59,080, dated October 23, 1866.

Claim.—The combination, with the mold B of the forked follower U and deposit-table C′, arranged and operating so that the follower will cross the table in its downward movement and deposit the brick thereon, substantially as hereinbefore set forth.

4,180.—Bed-Bottom.—Edward Yeoman, Waukegan, Ill.—Patent No. 67,698, dated August 13, 1867.

Claim.—The sliding spring braces D, pivoted or jointed to one section of the frame A B, and operated by any suitable springs on the other section, when combined and arranged in a bed-bottom, so as to slide and support the upper section, substantially as described.

DESIGNS.

4,465.—Bracket.—John H. Bellamy, Charlestown, Mass., assignor to Samuel D. Niles and Benjamin A. Ward.

Claim.—The design for a bracket herein set forth.

4,466.—Bracket.—John H. Bellamy, Charlestown, Mass., assignor to Samuel D. Niles and Benjamin A. Ward.

Claim.—The design or pattern for a bracket herein set forth.

4,467.—Lock-Front.—Frederick W. Brocksieper, New Haven, Conn., assignor to Sargent & Co., same place.

Claim.—The design for lock-front, as described and shown in the accompanying illustration.

4,468.—Piano.—Ole Bull, New York, N. Y.

Claim.—The design for a piano, as described and shown.

4,469.—Stove-Shelf.—William C. Davis, Cincinnati, Ohio.

Claim.—The design for a stove-shelf, as shown.

4,470.—Face-Plate of a Sash-Lock.—Charles H. Eccleston, Oxford, N. Y.

Claim.—The design for a face-plate of a window-fastener, as shown in the drawing.

4,471.—Box for Putting up Paper Cuffs.—George Faul, Boston, Mass., assignor to Samuel F. Hilton, Providence, R. I.

Claim.—The design for a box, as set forth.

4,472.—Door-Bolt.—Ferdinand Fogelstrand, New Haven, Conn., assignor to Sargent & Co., same place.

Claim.—The design for door-bolt, as described and shown in the accompanying drawing.

4,473.—Thumb-Latch.—Ferdinand Fogelstrand, New Haven, Conn., assignor to Sargent & Co., same place.

Claim.—The design for thumb-latch, as herein described and shown in the accompanying illustrations.

4,474.—Car-Lock.—William Gorman, New Britain, Conn., assignor to Russell & Erwin Manufacturing Company, same place.

Claim.—The ornamental design for a car-lock and keeper, herein described, and shown in the drawing.

4,475.—Sad-Iron.—William Morris Griscom, Reading, Pa., assignor to Harbster Brothers & Co., same place.

Claim.—1. The design for a sad-iron, substantially as described, and as represented in fig. 1 of the drawing.

2. The same when ornamented, substantially as represented in fig. 2 of the drawing.

4,476.—Spoon and Fork-Handle.—Edward C. Moore, Yonkers, N. Y., assignor to Tiffany & Co., New York City.

Claim.—The design for a handle for spoons and forks, substantially as described and illustrated by the accompanying drawing.

4,477.—Show-Case.—William Henry Grove, Philadelphia, Pa.

Claim.—A show-case, having double-inclined slides, substantially as described, and as represented in and by the accompanying drawing.

4,478.—Center-Piece.—Samuel Kellett, San Francisco, Cal.

Claim.—The design for a center-piece, as shown.

4,479.—Center-Piece.—Samuel Kellett, San Francisco, Cal.

Claim.—The design for a center-piece, as shown.

TRADE-MARKS.

61.—Snuff.—Appleby & Helme, New York, N. Y.

62.—Cough Balsam.—William Maddox, Ripley, Ohio.

63.—Whisky.—C. P. Moorman, Louisville, Ky.

64.—WHISKY.—Charles P. Moorman, Louisville, Ky., and Milton J. Hardy, New York, N. Y.

65.—CIGARS, TOBACCO, AND SNUFF.—John C. Partridge & Co., Chicago, Ill.

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PATENTS.

109,367. — ELECTRO-NASAL DOUCHE. — Samuel E. Adams, Springfield, Ohio.

Claim.—1. The combination of electrical apparatus with the douche and syringe, in the manner described, for the purposes set forth.

2. The manner of conveying electricity to the affected parts, when the circuit is formed by means of a metallic conductor in connection with a stream of water or other fluid passing through a tube, in the manner described, for the purposes set forth.

109,368.—SEAT FOR VEHICLES.—Daniel R. Allen, Cumberland, Me.

Claim.—A suspended seat for agricultural machines, &c., having the support *c*, the connections *p p*, and with or without the springs *s* and *r*, as set forth.

109,369.—GLASS LAMP.—James S. Atterbury and Thomas B. Atterbury, Pittsburg, Pa.

Claim.—The new manufacture, viz., glass or other vitreous hollow articles with an attaching peg, B, around which is a recess, *a*, formed by depressing the bottom of the article, as shown.

109,370. — MANUFACTURE OF LAMPS.—James S. Atterbury and Thomas B. Atterbury, Pittsburg, Pa.

Claim.—The lower mold *b'*, operated by the stem *c*, male and female screws c^1 c^2, and an apparatus which revolves this stem, in combination with the mold which makes the bottom of a vessel, for making seamless screw-threaded pegs on the bottoms of glass or other vitreous ware.

109,371, antedated November 19, 1870.—HYDRAULIC STOP-VALVE. — Charles S. Bailey, Mobile, Ala.

Claim.—The improved valve-chest A, having main channel B, a series of channels, D E M, double valves I, nuts *k k*, screws J, and plugs G, all constructed and relatively arranged as and for the purpose described.

109,372. — LIQUID-METER.—Phinehas Ball and Benaiah Fitts, Worcester, Mass.

Claim.—1. The piston-carrying connecting-rods *d*, having slots formed as shown, with concavities to the right and left of the center, in combination with the stops *e e*, substantially as set forth, and operating as described.

2. The piston-carrying connecting-rods *d*, having slots formed, as shown, in combination with crank *m* and crank-pin *n*, constructed and operating substantially as set forth and described.

109,373.—WOODEN-HOOP BOX.—Samuel S. Barrie, Green Point, N. Y.

Claim.—The sheet-metal tip or shield B, fitted over the outer chamfered end of the hoop A, and having its outer side longer than the inner, as and for the purpose specified.

109,374.—SASH-HOLDER.—George F. Beardsley, Oxford, assignor to himself and A. S. Parker, Greene, N. Y.

Claim.—The combination of the keeping-lever *g*, the bolt *e*, and spring *h* lying within the arc of the circle described by said bolt *e*, as specified and set forth.

109,375. — BROOM-HOLDER.—Washington H. Bixler, Easton, Pa., assignor to Calvin G. Beitel, same place.

Claim.—A broom-holder, formed of one piece of wire, consisting of the ring or eye *a*, ends *b b*, and projections *c c*, as a new article of manufacture.

109,376.—BRICK-MACHINE.—John R. Armstrong, Elkhart, Ind., administrator of the estate of Thomas E. Bonner, deceased.

Claim.—1. The movable bottom plate *e*, projecting beyond the ends of drum, combined with grooved and swinging jaws *g g*, to expel the shaped and compressed brick, as described.

2. The reciprocating shaft *i*, rods *h h*, and frame G G, combined, as described, to simultaneously press and discharge a brick on opposite sides of the machine.

109,377.—SLIDING SEAT FOR CARRIAGE.—Richard F. Briggs, Amesbury, Mass.

Claim.—1. The construction of the grooves *g g*, with each side of the slot or way beveled under as described.

2. The application of springs *s s* to grooves *g g* and slides *b b*, as described, for the purpose herein set forth.

109,378.—TRACE-BUCKLE.—Leroy Brooks, Mount Pleasant, Iowa.

Claim.—The frame A, having inclined slots B B, mortises C' C', and tongue H, in combination with plate E, having tongue D', shoulders F F, and knobs or heads G G, all arranged as herein shown and described.

109,379. — SOFTENING SHEEP AND OTHER SKINS.—James M. Brown, Lynn, Mass.

Claim.—The new mode, hereinbefore described, of beaming or defleshing and softening a skin, such being by supporting and moving it on a vibratory beam or platform and subjecting it, in manner described, to the action of a rotary beater, made in manner and arranged and operating with such beam or platform, substantially as set forth.

109,380. — MANUFACTURE OF WROUGHT-METAL WHEELS.—Barthélemy Brunon, Lyons, France.

Claim.—The method herein described, of constructing metal-spoked wheels, substantially as set forth.

109,381. — BUTTER-WORKER. — Joshua N. Brush, Eyota, Minn.

Claim.—The butter-worker, consisting of the hinged or pivoted lever A, carrying the inverted cup C and spring-mold F, all the parts being arranged as herein set forth, for the purpose specified.

109,382, antedated November 12, 1870.—CLOTHES-HOLDER FOR CLOTHES-LINES.—Milton V. Bulla, South Bend, Ind.

Claim.—A clothes-holder for clothes-lines, constructed from one piece of wood or metal, A, with openings B and *b*, as shown, for the purpose described.

109,383, antedated November 9, 1870.—TINNERS' FIRE-POT.—Frank M. Campbell and Lorenzo W. Brown, Cleveland, Ohio.

Claim.—A fire-pot, when constructed with an annular flue, F, provided with a perforated bottom, D, damper H, and fire-box A, substantially in the manner as described, and for the purpose specified.

109,384.—SHEET-METAL COVER FOR SEWING-MACHINES.—Richard H. Chinn and John Franklin Reigart, Washington, D. C.

Claim.—A plain or ornamented sheet-metal cover, of any size or form, when constructed and used to protect and cover a sewing-machine.

109,385. — MACHINE FOR WASHING AND WRINGING CLOTHES. — Andrew Clark, Plymouth, Ohio.

Claim.—1. The combination and arrangement of the square-grooved roller B, concave of rollers *d* and frame *e f*, the springs *g*, blocks *h*, and tub A, all constructed and operating as described.

2. The springs *g g*, grooved roller B, concave of rollers *d*, frame *e f*, the tub A provided with blocks *k k* and fulcrums *p p*, and wringing mechanism composed of the parts *j j k*, rolls *l m*, loose bars *n o*, and crank *q*, all constructed and arranged to operate substantially as herein set forth.

109,386.—UMBRELLA-LOCK.—Henry Clarke, Baltimore, Md.

Claim.—1. The combination of the flanged or beaded band B, sliding band C, sliding bar D, partially-rotating notched or recessed shaft E, cap or disk F, notched disk G, slotted band H, and true and false bolts I, with each other, substantially as herein shown and described, and for the purpose set forth.

2. The combination of a partially-rotating shaft, E, with the sliding bar and band D C, for the purpose of locking and unlocking said sliding bar and band, substantially as herein shown and described, and for the purpose as set forth.

3. The combination of the slides or bolts I and notched disk G with the partially-rotating shaft E, to lock and unlock said shaft, substantially as herein shown and described, and for the purpose set forth.

109,387, antedated November 9, 1870.—WASHING-MACHINE.—De Witt C. Cooley, Wilkesbarre, Pa.

Claim.—1. The rotating beater B, with alternating cam-shaped blades with alternating spaces between them.

2. The vertical oscillating automatic roller-frame C, pivoted to movable arms *d d* outside the suds-box, with or without the upright standard *g* and cord *h*, or their equivalents, and furnished with the cords *i i*, pulleys *k*, cross-bars *j j*, and weight *m*, or their equivalents.

3. The floater N, in combination with the said beater and roller-frame specified in the foregoing first and second claims.

109,388. — STEAM-WHISTLE. — William S. Cooper, Philadelphia, Pa., assignor to Cooper, Jones & Cadbury, same place.

Claim.—The combination in a steam-whistle of the spindle H and its projections *x*, with the elongated opening of the spindle *e*.

109,389.—POTATO-DIGGER.—John W. Corwin, Lebanon, Ohio.

Claim.—The arrangement of the bars *d*, bolster *c*, standards *e*, lever *f*, arms *l*, revolving colter *m*, and share *i*, as specified.

109,390. — WATER-WHEEL.—Kenyon Cox and Theodore Cox, New York, N. Y.

Claim.—The combination, with the wheel-case and the buckets or pistons, of a sectional ring arranged eccentrically to the axis of said case and buckets, substantially as specified.

109,391.—LATHING-MACHINE.—George N. Creamer, Trenton, N. J.

Claim.—1. The combination of the slotted frame-pieces, the rod inclosed in said frame-pieces, the clamping-teeth movable freely endwise on said rod, the springs interposed between said clamping-teeth, and the tension-springs which press the clamping-teeth together to hold the laths, all these parts being constructed to operate in combination, substantially as hereinbefore set forth.

2. The combination of the frame, the clamping-teeth, the springs interposed between the clamping-teeth, the tension-springs, and the tripping-levers pivoted on the frame and engaging one of the clamping-teeth, all these parts being constructed to operate in combination, substantially as hereinbefore set forth.

3. The combination of the slotted frame, the rod, the clamping-teeth constructed with projecting thimbles, and springs interposed between the clamping-teeth and inclosed within the thimbles, the shoulders of which thimbles act as stops to limit the approximation of the clamping-teeth, as hereinbefore set forth.

4. The combination of the central clamping-tooth, provided with the bearing-piece F, the end tooth E', its dog *e'*, the tripping-lever, and the tension-springs, all these parts being constructed to operate in combination, as hereinbefore set forth.

5. The combination of the frame, the central clamping-teeth, the tension-springs, the hooks, levers, their holding-pawls, and ratchets, all these parts being constructed to operate in combination, as set forth.

109,392. — BED-PLATE FOR SAW-MILL. — Adelbert J. Croft, Williamsport, Pa.

Claim.—The bed-plate D, constructed as shown and described.

109,393.—OPERATING HIDE-MILL.—John G. Curtis, Emporium, Pa.

Claim.—The milling-blocks B B, attached to pivoted pendent bars D D, combined, as described, with double steam-pitmen H H, jointed to the latter, as and for the purpose described.

109,394.—CAR-SEAL.—John Dewe, Toronto, Canada.

Claim.—The rivet of soft metal, provided with the imprinted head E and the flattened shank to be imprinted, substantially in the manner described.

109,395.—WINDOW-SCREEN FRAME.—Henry Ray Dexter, Putnam, Conn.

Claim.—The improved window-screen frame herein described, consisting of four parts or pieces A provided with the lugs *a'*, and each having one of its ends slotted and shaped to overlap the straight end of the adjacent piece, to which it is secured by a clamp-screw, B, all as shown and described.

109,396.—HEATING-STOVE.—Andrew Dickey, Albany, N. Y., assignor to John S. Perry, (trustee and executor,) Andrew Dickey, and Nathan B. Perry.

Claim.—1. The arrangement of the air-inlets *b b* as near as possible to the upper edge of the ash-pit section, above doors J J, in combination with a closed-sided fire-pot, which is suspended within the ash-pit, and surrounded by a space, *g*, substantially as described.

2. The air-inlets *b b*, the annular air-circulating space *g*, the suspended fire-pot E, and the register-ring *a*, arranged and combined as described.

109,397.—PRESS FOR THE MANUFACTURE OF ARTIFICIAL STONE.—Lewis Dodge, Chicago, Ill.

Claim.—1. The combination of mold-carriage E, traveling upon level bed-rails H H, propelled by cogged wheel *b*, on shaft running in slots K K, playing into cogged rail *a*, with the followers *g g g g*, provided with rollers *n n*, and traveling on inclined planes D D, and the upper plungers *h h h h* upon the dead-weight M, operated by tappets P P, and springs N, when said parts are constructed,

arranged, and operated as and for the purpose herein described and set forth.

2. The mixing-barrel I, with blades *j j*, on pendent arms *k k*, attached to cross-arms *x*, operated by cogged wheels *y* and *z*, and basin R, with tubes and slide *r*, when said parts are constructed, arranged, and operated as and for the purpose herein described and set forth.

109,398. — LAWN-MOWER. — Whitfield H. Drake, Musconetcong, N. J.

Claim.—In a lawn-mower, the loose pinion E', provided with the sleeve *e* and pawl *e'*, in combination with the loose driving-wheel F, provided with the ratcheted chamber F', substantially as described.

109,399.—LAST.—Charles Story Dunbrack, Swampscott, Mass.

Claim.—A wooden last, A, a metallic gauge and clinching-plate B, fixed to the bottom of such last, with a space, *b*, as described, around such plate and between its periphery and that of the sole of the said wooden last, all being substantially as and for the purpose as hereinbefore set forth.

109,400.—MILK-CAN FASTENER.—Daniel D. Edgerton, Ava, N. Y.

Claim.—1. The arrangement of ears *g g* upon the lower part of the sides of a milk-can, in combination with a locking mechanism, substantially as described.

2. The milk-can fastener, consisting of the rod *e*, hooks *d d'*, lever C, and catch *f*, in combination with the ears *g g'* and milk-can B, substantially as and for the purposes specified.

109,401. — UTERINE-SUPPORTER. — Robert Faulkner, Erie, Pa.

Claim.—1. A uterine-supporter, made of rubber or equivalent material, having a central, vertical, non-collapsible tube supporting an annular chamber having expansible elastic walls, and a broad base and broad top, all as shown and described, and for the purposes set forth.

2. The same, when provided with a cup-shaped top surface to receive and support the body of the uterus, all as set forth.

109,402.—PICKET-FENCE POST.—Augustus M. Freeman, Charles P. Idell, and Bergen Vanderhoven, Metuchen, N. J.

Claim.—The mortised base A, combined with a slit and bottom-shouldered upright, B, having a perforated and angled top and bottom, b^2 b^3, to form an improved picket-fence post.

109,403. — CORN-PLOW. — William French and James Crawford French, Keokuk, Iowa, assignors to William French, same place.

Claim.—In a corn-plow, the arrangement of the axle-tree A B, shafts F F, yoke H H', vibrating-bars R, evener P, draft-rod V, and brace-rod W', as specified.

109,404.—GAS-BURNER.—Andrew Fulton, Albany, N. Y.

Claim.—In combination with the gas-burner A, B, C, and D, the flanged piston G, attached by the screw-stem *e* to the valve E, and the cylinder F, provided with ports S, all constructed and arranged to operate substantially as described herein.

109,405. — ANCHOR BEAM-SUPPORT FOR BRICK WALLS.—William W. Goodrich, Rondout, N. Y.

Claim.—A base-plate, B, combined with plate C, at right angles thereto, and the plates E T placed obliquely thereon, to form a dovetailed recess, when applied to the brick wall of a building, as and for the purpose described.

109,406. — VEHICLE SPRING. — Jacob H. Gould, Burlingham, Ohio, assignor to himself and John J. Campbell, same place.

Claim.—In combination with a vehicle, the levers F and G, the springs B, C, and L, and the weight O, or their equivalents, when the same are constructed and arranged to operate substantially as and for the purposes herein shown and described.

109,407. — SHOE. — Francis Gurney, Newburyport, Mass.

Claim.—A shoe, having an elastic ankle-tie made as described, and a covering-rosette or bow applied to the middle of the elastic part of the tie, all as set forth.

109,408.—VELOCIPEDE.—Daniel Hanchett, John C. Daney, and Reuben Stuart, Smithfield, Ill.

Claim.—The combination, with drive-wheel G and its axle, of hand-lever I and foot-levers J J, with their pawls L L L and ratchet-wheels H H H, substantially as and for the purpose hereinbefore set forth.

109,409.—ROSE FOR DOOR-KNOBS.—John J. Henderson, New York, N. Y.

Claim.—A porcelain rose, C, applied to a knob-shank and spindle, in combination with a metal back, A *a*, having shoulder *b* and flanged knob-shank socket B *c*, as and for the purpose described.

109,410.—DIAPER.—Alice M. Hughes, Hudson City, N. J.

Claim.—A triangular diaper, A, having the elastic band *a* in each side, button-holed at two corners and buttoned at the other, all as described, for the purpose of giving fullness to the seat and elasticity to the sides, to admit of the child's free movement in any direction.

109,411, antedated November 5, 1870.—DENTISTS' REST.—Robert Finley Hunt, Washington, D. C.

Claim.—1. The combination of the bar B, the disk D, the shaft S, and arm A, the catch C, the carrier E, the plate P, the cushion O, and the clamp-screw F, arranged and operated substantially as herein described.

2. The adjustable dentists' rest herein described, consisting substantially of the bar B, the toothed disk D, the shaft S, the catch C, the rod R, the arm A, the screw G, the carrier E, the clamp-screw F, the plate P, the slides K and L, the cushions O and N, the ratchet H, the brace M, and the pawl Z, or their equivalents, arranged and operated substantially as and for the purpose hereinbefore set forth.

109,412.—ROPE-HOLDER.—Cornelius Weygant Huson, French Corral, Cal.

Claim.—1. The roller D moving in the arc of a circle, in combination with the bench E, substantially as and for the purpose above described.

2. The plate C provided with the curved slot *a*, and block A provided with a correspondingly curved groove or channel, *a'*, in combination with the journaled roller D, substantially as and for the purpose herein described.

109,413.—SPRING BED-BOTTOM.—Hanford Ingraham, Naples, N. Y.

Claim.—The flat steel springs *f f*, as arranged and connected with the slats *g g*, cross-bars *h h*, corner springs *k k*, and catches *n n*, when suspended on the rails, as set forth.

109,414.—SHUTTLE FOR SEWING-MACHINES.—Albert W. Johnson, Middletown, Conn., assignor to the Finkle & Lyon Manufacturing Company, same place.

Claim.—The tension-cylinder *e*, when constructed as described and combined with the bobbin-frame and bobbin, as set forth, that is, when the tension-cylinder is attached to the bobbin-frame by means of a collar which forms a bearing for one end of the bobbin.

109,415. — HARVESTER-RAKE. — Isaac A. Johnson, Rockford, Ill., assignor to himself and Frederick H. Manny, same place.

Claim.—1. The combination of the inner platform, the polygonal stud secured to the under side of the platform, the polygonal socket in the spindle, through which the stud passes, and around which the rake-driving mechanism revolves, and the bracket upon which the spindle is mounted, the parts being constructed as set forth, to secure a firm support for the platform, an unobstructed space for the working of the rake, and a ready removal or replacement of the platform.

2. The combination of the bevel-wheel, the friction-rollers carried by said wheel, the slotted slide-bar, moving endwise on the friction-rollers, and the rake head pivoted to said slide-bar, these parts being constructed and operating as set forth.

3. The combination of the guide-rail and rotating slide-bar, both arranged beneath the platform, and the rake working over the platform, and in a slot therein, all these parts being constructed to operate in combination, substantially as hereinbefore set forth.

4. The combination, with the rake, of the oscillating endwise-moving telescopic slide-rods, constructed and operating as set forth.

5. The combination of the guide-rail and slide-bar below the platform with the rake and its telescopic slide-joints above the platform, as set forth.

109,416.—PREPARATION OF MICA.—Henry M. Johnston and Frederick Beck, New York, N. Y.

Claim.—1. The process herein described for preparing mica in sheets or fine scales.

2. Mica in sheets or fine scales, prepared substantially as described.

109,417.—REVOLVING FIRE-ARM.—Benjamin Franklin Joslyn, New York, N. Y.

Claim.—1. The hooked dog *f*, hung in a recess of the hammer E, and arranged to be forced down by the hammer and catch the rim of the cartridge from above, as described.

2. The piece H, hung to the frame, and arranged in respect to the cylinder, as set forth.

3. The combination of the notches *i i* and intervening rib with the forked end of the hammer and hooked dog *f*.

109,418.—RAILWAY RAIL-CHAIR.—Charles R. Joyce, Alexandria, Va., assignor to himself and Edwin Reeside, same place.

Claim.—A chair having its base A, with flange *a'*, and slots *a a*, and rail B with small holes *a' a'*, as described.

109,419. — BREECH-LOADING FIRE-ARM. — Allan B. Kay, Newark, N. J.

Claim.—The tube or barrel *a*, when constructed and adapted in the manner described, for the purpose specified and shown.

109,420.—PRESERVING EGGS.—John Kaye, Jr., Setzler's Store, Pa.

Claim.—The process above described, of preserving the freshness of eggs by pouring thereon a solution of borax in boiling water in the proportion of about one ounce of borax to a quart of water.

109,421.—MOP-HEAD.—Fernando C. Kendall, Hartford, Wis., assignor to himself and Gilbert R. Barney, same place.

Claim.—1. The combination, with a mop-head, as herein described, of a wooden roller and an India-rubber covered roller, substantially as described, for the purpose specified.

2. In combination with the main bar A, looped ends C, and rollers D E, the adjustable spring pressure-bars F G, constructed substantially as described, for the purpose specified.

3. The mop-head, consisting of the main bar A, looped ends C, rollers D E, crank-handle H, springs L, and adjustable pressure-bars F G, all constructed as described, for the purpose specified.

109,422.—COAL-HOLE COVER.—Lewis A. Kimberly, New Haven, assignor for one-half his right to George E. Kimberly, Guilford, Conn.

Claim.—The spring bars C and D, when applied to a coal-hole cover, and provided with a hasp and staple, F G, in the manner and for the purpose substantially as herein specified.

109,423. — LATHE-CHUCK.—William Haskell King, Newark, N. J.

Claim.—The combination, as herein described, of the chuck-shell A, screws D, threaded nut-bolts *e*, nuts *f*, and dogs C, for the purpose set forth.

109,424.—COTTON AND HAY-PRESS.—David Knowles, Philadelphia, Pa.

Claim.—1. The construction and arrangement of the box A, frames B and B^1, bolsters C and C', rods D, D^1, D^2, and D^3, head-block E, cross-pieces F and F^1, side and end pieces G, G^1, G^2, and G^2, substantially in the manner and for the purpose specified.

2. The combination of the chain-pulleys N, N^1, N^2, and N^3, circular plate O, endless chain P, shaft Q, clutch S, lever T, pins or studs U, U^1, U^2, U^3, and sliding plate W, constructed and arranged substantially as described.

109,425.—WAGON-IRON.—Henry C. Kochensperger, Thornville, Ohio.

Claim.—1. The tongue-clevis E, in combination with the bracket *b*, when the latter is provided with the pin *b'*, which passes through the lower branch of the clevis and through the tongue, and is riveted at its upper end into the upper branch of the clevis, and all the parts specified are constructed and arranged as described.

2. The combination of the hammer-strap F, double-tree plate E, provided with the thimble *i*, and lugs *k k'*, and bracket G, all constructed and arranged as specified.

3. The double-tree clevis H, provided with the lug M, and combined with the pin N', in the manner set forth.

4. The hook P, in combination with the washer *r'* and flanged thimble *s*, in the manner explained.

109,426. — SAWING-MACHINE. — James R. Lambert, Sr., and James R. Lambert, Jr., Rockville, Ind.

Claim.—1. The tubular guides H H, combined with the forked guide G, saw F, and pitman I, substantially as herein shown and described.

2. The bifurcated handle G G fixedly attached to the saw, and the tubular guides H H pivoted at their back ends, combined with a crank-pitman pivoted at each end, as described.

109,427. — SEWING-MACHINE.—William R. Landfear, Hartford, Conn.

Claim.—1. The arms L and M, and the upright K, connected with the thread-guide, and operated from the link that moves the needle, all constructed and operating as described.

2. The loop-supporter, arranged and operating substantially as described.

3. The needle, constructed with one or more shoulders or notches for drawing back the fiber of the material, substantially as described.

109,428.—COMBINED THRASHER AND GRAIN-SEPARATOR.—Jacob S. Landis, Lancaster, Pa.

Claim.—1. The arrangement of the fan-chamber,

with its perforated cap V, door N, and swinging or hinged valve M, operating in unison on both sides of the machine, by means of connecting-rods J, substantially in the manner and for the purpose specified.

2. The twofold cams *c' c*, when arranged and operating in reference to the shaking bottom and shoe, so as to actuate both, by the single shaft of said cams, in the manner set forth and shown.

3. The arrangement of the shoe O, with its fluted metallic shelf or apron X and terminal corrugated heel S of the comb *s*, the whole being also adjustable in the manner and for the purpose described.

4. In the thrashing-machine, substantially as herein described, the combination of the shoe O with the right-and-left screw or flanged shaft I, as and for the purpose herein set forth.

5. A composite shaking bottom Q' Q Y, in combination with the cam *c* when said cam is on the same shaft of cam *c'*, which jointly operate both the shoe and bottom, in the manner set forth.

6. The combination of the corrugated metallic plate S with its projecting wire-teeth *s*, forming a comb, in the manner and for the purpose specified.

109,429. — SEWING-THIMBLE. — Albert H. Law, San Francisco, Cal.

Claim.—A thimble, with a single opening on the back, above an open base, and with a full side to support the front of the forefinger, substantially as described.

109,430. — DRAWING-FRAME.—Charles P. Leavitt, New York, N. Y.

Claim.—1. The two endless-traveling-belts, arranged in connection with their supporting and pressing-rollers, as shown and combined with the drawing-rollers, substantially as described.

2. The guide-rollers *i i'* and fingers *e e'*, hung on the pins *m m'*, as described, in combination with the two endless-traveling belts *a a'*, constructed and operating as described.

109,431.—HALTER FOR HORSES.—Augustus Le Plongeon, San Francisco, Cal.

Claim.—The combination of the nose-piece B, curved cheek-pieces A A, provided with knobs *d d*, curved jaw-piece C, and closing-strap B B, all constructed to operate as shown and described, for the purpose set forth.

109,432.—CULTIVATOR AND SEEDER COMBINED.—Jonathan Lewis, Washington County, D. C.

Claim.—The arrangement of the reversible dropping-cylinder P, the steady-pins A as fastened to the bar H of the plow-beam, and the adjusting-rod K', when operating as herein described and for the purposes set forth.

109,433.—MACHINE FOR THREADING BOLTS. Milton Love, Corry, Pa.

Claim.—1. The arrangement of the supports *b*, hollow and slotted shaft A, threaded thimble and wheel *f f*, gearing C and J, shaft I, cap L, and cranks M and N, combined, constructed, and operating as described.

2. The reversible tail-block or rest W, constructed as described.

3. The combination of the subject-matter of second claim with the dogs 4, levers 3, and ways 2 2, substantially as and for the purpose set forth.

109,434.—CHUCK.—Milton Love, Corry, Pa.

Claim.—The arrangement, with the hollow head A, of the jaws *b b*, levers C C, attachments *e e*, toggle *f*, and screw *g*, when combined and operating as herein described and set forth.

109,435, antedated November 5, 1870.—COMBINED MUFF AND PORTE-MONNAIE.—Henry Manneck and Charles Strohmenger, New York, N. Y.

Claim.—1. A muff provided with a frame, C, covered by a hinged flap, B, said frame being provided with devices to secure a porte-monnaie within it in such a manner that the latter may be detached, when desired, as herein set forth.

2. The arm *e* on the rod *g h*, forming the locking-device for the flap B, and adapted to release the catch of the porte-monnaie, as herein described.

109,436.—SAWING-MACHINE.—Charles H. Mayo, Bath, Me.

Claim.—1. The combination of the head or frame *a'*, swiveled as explained, the carriage *m*, and the endless-band saw *m'*, under the arrangement and for operation as herein set forth.

2. The combination with the endless-band saw of the directing-roller *o'*, the horizontally-vibratory roller-bar *o'*, and the devices for adjusting the position of said roller and bar, under the arrangement shown and described.

109,437, antedated November 17, 1870.—HAND CORN-PLANTER.—Peter McCollum, Fayette, Mo.

Claim.—The combination of the channeled board A, two or more spouts or prongs E, two or more plungers D, plunger-board F, dropping-holes K, adjustable tongued plate L M, stationary plate N, and seed-box I, divided into two or more compartments by the partitions O, with each other, said parts being constructed and operating substantially as herein shown and described, and for the purpose set forth.

109,438.—METHOD OF CONSTRUCTING BOOTS AND SHOES.—Joel McComber, Rockford, Ill.

Claim.—1. The construction of a boot or shoe, as set forth, with the sole conformed to the bottom of the foot, the instep and ball overhanging the inner line of the sole, and the outer shank and ball deflected laterally and lowered, all substantially as set forth.

2. The last, constructed as described, with a sole conformed to the foot, an overhanging ball and instep on its inner side, and an outer shank lowered nearly to the plane of the ball and heel on that side, for the purpose set forth.

109,439.—HORSE HAY-RAKE.—Oliver T. Nanny, Amity, assignor to himself and J. M. Hanford, Middletown, N. Y.

Claim.—The combination, with the vibrating rake A D and clearer G H, of clutch E F, arms I, and treadle devices M N O P and J K L, as described, for the purpose specified.

109,440. — ROAD-SCRAPER. — William T. Nichols, Chicago, Ill., assignor to himself and H. H. Lawrence, same place.

Claim.—1. The arrangement of the bail D, fastening *e g*, brace C', tongue C, and scraper *a* A B, substantially in the manner described.

2. The combination of the tongue C, brace C', bail D, and scraper A *a* B, substantially in the manner described.

3. The bail D, braced at C', and attached to the tongue C, and made flexible between its brace C' and its hooked ends *e e*, in combination with the road-scraper, in the manner shown and described.

109,441.—HARVESTER-RAKE.—George Oerllein, Utica, Minn.

Claim.—Combination of rake F, rake K, shaft U, wheels W and X, pinion Y, shaft Z, wheel *a*, and cord *b*, arranged to operate substantially as described.

109,442. — GRAFTING-AWL. — Daniel Betts Oliver, Cambria, N. Y.

Claim.—The budding-awl herein described, having its end bent at an angle to the shank, and provided on one side with the flat surface *b*, and on the other with the round surface *f*, the whole operating in the manner and for the purpose specified.

109,443.—SEWING-MACHINE.—Charles Parham, Philadelphia, Pa.

Claim.—1. The combination, with the take-up arm of a sewing-machine and the cam *a* which operates it, of the upright guide-bar G and spring *f*, substantially as and for the purpose set forth.

2. In combination with the cloth-feeder bar K, constructed as specified, the long lever L, operating with a sliding and vibratory or lateral motion, by means of the cam *l*, bevel 5, and roller 6, substantially as and for the purpose set forth.

3. In combination with the long lever L, operating as described, the bent lever M, and roller 6, when one end of the lever M is pivoted to the bed-plate and the other is kept in position by a thumb-screw, for the purpose of regulating the length of the vibration of the lever L and the length of the stitches, substantially as described.

109,444.—FLY-TRAP.—John Parker, Dubuque, Iowa.

Claim.—The wire-cloth case A, provided with a removable cover, *e*, and divided internally by one or more conical partitions, B C, in combination with the flanges *f f*, at the place for the entrance of the insects, substantially as described.

109,445.—SPRING BED-BOTTOM.—J. Franklin Peck, Springfield, Mass.

Claim.—The manner of constructing the frames for spring bed-bottoms, with the longitudinal straps *a a* and cross-straps *b b*, in combination with the springs applied at each crossing or intersection of the metal straps, and also the form of the springs with the hooks B and C, together with the manner of attaching the same to the frames, as herein set forth, and for the purposes specified.

109,446.—WOVEN-WIRE MATTRESS.—George C. Perkins, Hartford, Conn.

Claim.—1. An elastic cord, composed of a number of spiral coils of wire, substantially as described.

2. The combination of the cords of coiled wire, herein described, with a woven-wire fabric, substantially as herein set forth.

109,447.—WHEEL FOR VEHICLES.—C. Vallette Pettibone, Fond du Lac, Wis.

Claim.—The notched supplemental rim A, in combination with the ordinary tire and fellies of a carriage or wagon-wheel, as herein described, for the purpose specified.

109,448.—ATMOSPHERIC LEAF-TURNER. — Chamberlayne Phelps, Clayton, and Aaron K. Tuttle, Cape Vincent, N. Y.

Claim.—1. The concave flexible disk A, or its equivalent, for turning the leaves of music, D, or other leaves, by atmospheric action, substantially as described.

2. The oscillating arm B, having elbow *e*, arranged to work upon the pivot P in slot *d*, as described.

3. The enameled surfaces H applied to the leaves D, substantially as described.

4. The combination of the disk A, arm B, and fingers K, with the enameled surfaces H upon the leaves D, as described.

109,449. — HARVESTER-RAKE. — William Pimlott, Brockport, N. Y.

Claim.—The device K, with its projections *p* and *e*, when constructed to operate substantially as described, and for the purposes set forth.

109,450.—CLUTCH FOR MACHINERY.—John E. Plummer and Joseph P. Noyes, Binghamton, N. Y.

Claim.—The combination and arrangement of the clutch D and switch E, handle F and detent *f*, with the annular-notched flange C, fly-wheel or pulley A, spring *o* and shaft B, all being constructed and operating as hereinbefore set forth.

109,451. — SKATE-FASTENING. — Frederick C. Poole and Harry Howe, Boston, Mass.

Claim.—The screw or screws *d d* fitted through the plate A for holding the same level on uneven heels, as specified.

109,452.—DRIFT-RECEIVING GRATE.—William N. Reed, Arlington, Va.

Claim.—The curved blades 1 2 3 4 5 6 7 8 9 10 11 12 13, firmly and closely set and braced in the frame A, substantially as set forth.

109,453.—SEDIMENT-AGITATOR FOR STEAM-BOILERS.—Baker W. Reynolds, Evansville, Ind.

Claim.—In combination with a steam-boiler, the shaft D, rods or pins E, and wings F, arranged to operate substantially as and for the purposes described.

109,454.—APPLE-PARING MACHINE.—William Robb, 2nd, South Stoddard, N. H.

Claim.—1. The combination with the fork of the stripper O, the fork-frame being arranged to recede from the axis G during the continuation of the motion around said axis after the driving-pinion D passes beyond the end of the segmental rack, all substantially as specified.

2. The arrangement of the base of the fork-frame in two parts, K L, and the latter to slide on the former, and being actuated by stud-pin N and the walls of groove M on plate A, all substantially as specified.

109,455.—LIGHTNING-ROD.—George Row, Indiana, Pa.

Claim.—1. A lightning-rod, constructed of a series of plications or folds of metal, substantially as and for the purposes hereinbefore set forth.

2. The manner of connecting the several sectional parts, substantially as and for the purposes hereinbefore set forth.

109,456.—FLUTING-MACHINE.—Henry Sauerbier, Newark, N. J.

Claim.—1. As a new article of manufacture, a fluting-machine, composed of the rolls *a* and *b*, supporting-frames *c* and *d*, and pivoted handles *e* and *f*, constructed, combined, and operated substantially as shown and described, and for the purpose specified.

2. In combination with the above the guard *h*.

109,457. — COMBINATION-LOCK.—Seymour K. Seelye, Hudson, Mich.

Claim.—The blocks F, latch G, and catch I, in combination with the bolt A, when the same are constructed and arranged to operate substantially as and for the purposes described.

109,458.—PROPELLING MECHANISM.—Christian Sharps, Philadelphia, Pa.

Claim.—1. The combination of an inclined shaft with a propeller having blades which are sections of differential screw-threads, decreasing in the extent of pitch from the hub outward, when the whole is so applied to a vessel that the said shaft shall be above the water-line.

2. A two-bladed propeller, arranged on an inclined shaft in respect to the center line of the engine and crank, as set forth.

3. A propeller, consisting of two separate blades, secured together and to the shaft by rings *h h* and bolts *i i* applied to the hub, substantially as described.

109,459. — FURNITURE-KNOB. — John H. Shelton, Waterbury, Conn., assignor to Benedict & Burnham Manufacturing Company, same place.

Claim.—The combination, with the socket A, of the threaded-rod D hinged to knob-spindle E, and

knob F, when the same shall be constructed substantially as and for the purposes set forth.

109,460.—GENERATING GAS FROM HYDROCARBONS.—James R. Smedburg, San Francisco, Cal.

Claim.—1. The combination of the float D and hollow spindle C, arranged to traverse vertically in the tank A so as to feed constantly from the surface of the tank, substantially as described.

2. The combination of the adjustable plug E and hollow traversing spindle C, constructed and arranged to operate as described, for the purpose set forth.

3. The vessel K, with its diaphragm L, together with the outer vessel N, when arranged to operate substantially as herein described.

109,461, antedated November 11, 1870.—INSULATOR FOR TELEGRAPH-WIRES.—Ashbel Grattan Smith and William Pettingell, Painesville, Ohio, assignors to themselves and William H. Fowler, same place.

Claim.—1. The combination of the oval box A and cover B, with the water-drips *a* on the lower edge of the cover, substantially as and for the purpose as hereinbefore set forth.

2. The combination of the curved glass blocks C and D, substantially as and for the purpose as hereinbefore set forth.

3. The elastic gasket G, substantially as herein before set forth.

4. The combination of the oval box A, cover B, with the water drips *a* on the lower edge of the cover B, the curved glass blocks C and D, and the elastic gasket G, all combined and used in combination, as and for the purpose as hereinbefore set forth.

109,462.—TUBE-DRAWER FOR DEEP WELLS.—Jonas P. Smith, Pioneer, Pa.

Claim.—1. The combination of a swivel with the hinged bail of a tube-drawer, substantially as described.

2. The combination of a recessed socket, with a tong hinged to such socket, of a tube-drawer, substantially as described.

109,463.—TUBE-DRAWER FOR DEEP WELLS.—Jonas P. Smith, Pioneer, Pa.

Claim.—The combination of a recessed collar, with a bail hinged to such collar of a tube-drawer, substantially as described.

109,464.—SUCKER-ROD DRAWER FOR DEEP WELLS.—Jonas P. Smith, Pioneer, Pa.

Claim.—A sucker-rod drawer, in which a slot and recess of a holding-socket are adapted to receive and hold a combined sucker-rod, substantially as described.

109,465.—WHEEL FOR VEHICLES.—Thomas Jordan Smith, Connersville, Miss.

Claim.—1. The tire A and spoke-sockets B, formed in one piece, as and for the purpose described.

2. The disks D, having recesses E G, the grooved bearings H, and collared axle I, all combined as described, and for the purpose set forth.

109,466.—STUMP-EXTRACTOR.—William Smith, Tomah, assignor to himself and Herman Greve, Sparta, Wis.

Claim.—The relative arrangement on the frame of lever-sockets K H, pawls J G, straps L, and boxes I, as and for the purpose specified.

109,467.—FILTER FOR WINES, SIRUPS, &c.—Julius Strauss, New York, N. Y.

Claim.—As an improved article of manufacture, the portable filter, A B B' C D E, having sheet-metal case, made in two parts, and detachably connected at the point below the diaphragm, to which the nozzles are connected, to facilitate the removal of the bags for cleaning and changing, all as described.

109,468.—HARVESTER-RAKE.—Hugh Arbuthnott Stringer and Alexander Field Ward, Chatham, Canada.

Claim.—The crank B, provided with a swiveled head, and the curved guide-rod E, provided with a hinged and swiveled head, in combination with each other and with the driving-gearing and rake of a harvester, substantially as herein shown and described, and for the purpose set forth.

109,469.—HARVESTER-RAKE.—Warren Sutliff, Burns, Wis.

Claim.—The cylinder H, constructed as described, in combination with the shaft *g'* pulleys G *g* E' E, and their connections and slide D, the parts being arranged as described, for the purpose set forth.

109,470.—SEED-SOWER.—Justin G. Thompson and Frederick M. Briggs, Stockton, N. Y.; said Briggs assigns his right to said Thompson.

Claim.—1. The combination of the bolt G and spiral spring L, substantially as and for the purposes hereinbefore set forth.

2. The combination of the bolts Z Z Z and the nuts C C C, substantially as and for the purposes hereinbefore set forth.

3. An improved seed-sowing machine, formed by the combination of the box A, slide M, spirally-looped wire W, suspended bar E, standard F, bolt G, spiral spring L, bolts Z Z Z, and nuts C C C, lever H, with each other, said parts being constructed and operating substantially as and for the purposes set forth.

109,471.—SAD-IRON HEATER.—Joseph W. Thorp, Hillsborough Bridge, assignor to himself, David F. Brown, and Albert Webster, Concord, N. H.

Claim.—1. The tubes H, provided with air-openings K, and also with oblique-mouthed burners, (or burners having a directing shield above the flame,) for the purpose of bringing the flame or flames directly upon both sides of the transverse center of the face-plate of the iron, substantially as set forth.

2. In combination with the above tubes or burner H, the series of escape-holes F or their equivalent, at the top and outer corners of the chamber of the iron, substantially as set forth.

3. The arrangement of the perforated plate E, in combination with the face-plate A and the jacket N, substantially as described.

109,472.—DEVICE FOR EXHIBITING PHOTOGRAPHIC PICTURES.—Albert G. Walton, San Francisco, Cal.

Claim.—1. The wheels b, either provided with pins *d* or slats extending entirely across the frame, so as to connect the two opposite wheels, substantially as and for the purpose above described.

2. The D-shaped block *a*, or its equivalent, substantially as and for the purpose above described.

3. The combination of parts above described, by which the pictures or frames are taken from the bottom of the pile and carried in succession in front of the window, and deposited with their opposite sides down in the well, in the manner and for the purpose above described.

4. The conical or wedge-shaped projections, in combination with the recessed picture or card-frame, substantially as and for the purpose above described.

5. The box A, provided with a window, in combination with the devices above claimed for bringing the cards or pictures in succession so as to be viewed through it, substantially as described.

6. The eye-glass blocks, hinged together as described, so as to be convertible into a magnifying-glass, as above set forth.

109,473.—VENTILATOR FOR HATS.—William F. Warburton, Philadelphia, Pa.

Claim.—1. The combination of a sweat-band with a flexible elastic strip *a*, arranged outside the band for the purpose described.

2. A hat-band cut longitudinally, and contracted in length at one side of said cut, substantially as and for the purpose described.

3. The flexible strip *a*, secured to the hat and extended through vertical slits *z z* in the hat-band, substantially as described.

109,474.—UNDER-GROUND DRAIN.—Samuel H. Warner, Darbyville, Ohio.

Claim.—In under-ground drains, the chamber E' open at B, and chamber E open at the bottom, combined as and for the purpose described.

109,475.—ELECTROPLATING WITH NICKEL THE METALLIC PARTS OF COTTON-GINS.—Leonard Watrous, Mystic River, Conn.

Claim.—A cotton-gin, having the metallic parts thereof nickel-plated, as and for the purpose described.

109,476.—VALVE.—John West, Bethlehem, Pa.

Claim.—The main valve B and its supplementary or release valve H, attached to the operating spindle, and having a limited movement independently of the main valve, in combination with the plate or disk C, or other resisting medium to the space between which and the top of the said main valve steam or other fluid is admitted on raising the supplementary valve.

109,477.—BEE-HIVE.—George T. Wheeler, Mexico, N. Y.

Claim.—1. A detachable comb-frame, having the sides tapering from about midway to the bottom, a straight portion being left at the top to co-operate with the removable keys, as and for the purpose described.

2. The honey-boxes K K K, arranged in rows and communicating with one another on each side of slips M, combined with a shallow detachable frame, L, for the purpose described.

108,478, antedated November 14, 1870.—MOTIVE MECHANISM OF SEWING-MACHINES.—Amos Whittemore, Cambridgeport, Mass.

Claim.—1. The clutch-arm P, constructed as shown, and applied to a sewing-machine or other analogous mechanism, substantially as set forth.

2. As elements of a sewing-machine or other analogous mechanism, the combination of the clutch-arm, constructed and arranged as described, collar G, and wheel E, substantially as set forth.

3. As elements of a sewing-machine or other analogous mechanism, the combination of the clutch-arm P, constructed as described, loose collar G on hub *m* of shaft A, wheel E, and pendulous arm F, substantially as described.

4. As elements of a sewing-machine or other analogous mechanism, the combination of the clutch-arm P, constructed as described, loose collar G, wheel E, arm F, pitman H, and detachable swinging seat and frame, substantially as set forth.

5. The seat and its frame, connected to the machine by means of hooks, so as to be detached, substantially as set forth.

109,479.—HAIR-CLIPPING DEVICE.—John C. Wilson, New York, N, Y.

Claim.—1. An upper cutter-plate M, provided with the upwardly-curved guard *m'*, to prevent the mechanism from being clogged with hair.

2. An improved horse-clipping machine, formed by the combination of the base-plate A, handle C, arm D, crank gear-wheel E F or equivalent, shaft G, gear-wheel H or equivalent, eccentric I, ring J, lever K, solid projection L, lower detachable cutter-plate B, upper cutter-plate M having a guard, *m'*, formed upon its rear part, long washer and nut bar P having square projections formed upon its lower side, screws O, and spring plate Q, with each other, substantially as herein shown and described, and for the purpose set forth.

109,480.—DITCHING-MACHINE.—Stephen Sidney Wood, Brooklyn, N. Y.

Claim.—1. The combination of the spades F, endless belts E, elevators G, and discharging-brush A, the said elevators and brush being arranged obliquely to the longitudinal axis of the machine, substantially as specified.

2. The combination of the guide-belt F', brackets G', spades F, and a tripper, the latter being either a plate, H', or the guide-bar itself, when a fixed bar is used, substantially as specified.

3. The drum O, mounted in the curved bearings P and supports Q R, for the same, and the supporting-frame X of drum W, mounted on the shaft of drum C, and all operated substantially as specified.

4. The combination of the supports O' P' of the brush H with the adjustable bearings of the tightening-drum of the elevator, all substantially as specified.

109,481.—MEANS FOR ADJUSTING THE GRAIN-WHEEL OF HARVESTERS.—James D. Wright, Columbia, Tenn.

Claim.—The devices herein described for adjusting the grain-wheel of a harvester, consisting of arm C, bolt B, spring pawl E, and hinge A, all arranged substantially in the manner set forth.

109,482.—THRASHING-MACHINE.—Joseph Allonas, Mansfield, Ohio.

Claim.—1. The combination of the reticulated concave section C and the triangular teeth D, having their upper or working-edges made concave in form, substantially as described.

2. The combination of the grooved concave section C, the teeth D, provided with flanges *d*, and the bolts *d'*, substantially as described.

109,483.—SAFETY-VALVE.—Astley Cooper Ancona, Evansville, Ind.

Claim.—1. A safety-valve, consisting of a steam-chest having two seats and containing two loaded valves, which, when in contact with their respective seats, are in steam-tight contact with each other, but which, when yielding to the pressure of the steam, will be separated from each other simultaneously with their movement from their seats, all substantially as herein set forth.

2. The combination of the two valves H and I, the springs K and K', and spindle B' and its collar *n*, and adjusting-nuts J and J'.

3. The combination of the said valves, spindle B B', its collar *n*, and the toy-lever C, or its equivalent.

4. The tube *a*, having at the top a hollow enlargement or flange *b*, with openings *e f* for the passage of steam, and a central opening for the passage of a spindle, B, and at the lower end threads for the reception of the piece or nut E, as set forth.

5. The steam-chest, composed of the pieces E, F, and G, substantially as described.

6. The said steam-chest in combination with the tube *a*, fitted to the dome-cap of a locomotive or shell of a boiler, as set forth.

109,484.—THILL-COUPLING.—William W. Anderson, Camden, N. J.

Claim.—1. The spring plate F, constructed with the small segment *f*, to press against the pin *e*, and secured in rigid contact with the shaft-iron E by the bolt G, as and for the purpose set forth.

2. The thill-coupling iron E, constructed as described, and attached to the thill D so that the draft-strain shall be against the central part of the greater arch or segment *e*, as and for the purpose set forth.

3. The construction and arrangement of the clip B with the pin C and the segment *e*, as described, so that the same cannot be detached when the points of the thills are elevated from the ground.

109,485. — VARNISH. — Robert Alexander Beattie, Philadelphia, Pa.

Claim.—A varnish consisting of the within named ingredients, combined as set forth.

109,486.—COATING AND ORNAMENTING THE SURFACE OF PAPER, CLOTH, &c.—Frederick Beck, New York, N. Y.

Claim.—1. The process herein described for ornamenting the surface of paper, cloth, wood, metals, and other materials, by coating them with mica-scales combined with transparent or translucent adhesive substances, with or without the admixture of glycerine, substantially as set forth.

2. A fabric, such as paper, cloth, or the like, coated with mica-scales, combined with transparent or translucent adhesive substance or substances, with or without the admixture of glycerine, substantially as described.

109,487.—DEVICE FOR CUTTING SLATS FOR WINDOW-SHADES.—Francis A. Bixler, Nashville, Tenn.

Claim.—1. The spring-guide D and plate M, provided with the slot *r* and clamping-screw *s*, constructed and arranged to operate as described.

2. The frame-piece A, provided with slot *r*, the side pieces B B', the knife C, and the set-screw *b*, all constructed and arranged to operate as described.

109,488.—CREAM-STRAINER.—Harry Blake, Panama, N. Y.

Claim.—The slightly-conical shaft C, provided with the tapering and spiral grooves E and F, in combination with the perforated cylinder or strainer, as and for the purposes described.

109,489.—PREPARATION OF GARANCINE.—Spencer Borden, Fall River, Mass.

Claim.—The improvement in the treatment of garancine or other product of madder, which consists in eliminating the coloring-matter contained therein by the combined or separate action of hard soap and chlorate of potash, or their chemical equivalents, in the manner substantially as herein described.

109,490.—CIGAR-MOLD.—Nicholas H. Borgfeldt, New York, N. Y.

Claim.—The spring-clamp C, in combination with the follower B and mold A, constructed and operating substantially in the manner shown and described.

109,491.—COTTON-SWEEP.—Thomas E. C. Brinly, Louisville, Ky.

Claim.—The share A, constructed in one piece with the cutter A', in combination with the standard B, constructed in one piece with the land-side B', and arranged in relation to one another, substantially as set forth.

109,492. — FASTENING FOR BLOCKS OF LASTS.—Josiah Bullivant, Newark, N. J., assignor to Samuel W. Jamison and William J. Dudley, same place.

Claim.—A fastening for the blocks of lasts, composed of the tongue, holding-plate and latch herein specified, constructed, and applied to the last and block, substantially as shown and set forth.

109,493. — WRENCH. — Peter Burress and Conrad Cline, Braidwood, Ill.

Claim.—The screw E, bolt D, and catch *h* provided with the thumb-piece *i*, when constructed and arranged to operate substantially as and for the purpose set forth.

109,494. — GLUING-HOPPER. — James W. Campbell, New York, N. Y.

Claim.—A gluing-hopper, constructed with small apertures *e* and *f* in its bottom, near one end, arranged to distribute the glue on the flat surfaces of the molding, and slightly to overhang the groove, substantially as shown and described.

109,495. — NUT-CRACKER. — Paul Ceredo, Dusseldorf, Prussia.

Claim.—The standard *a*, ledge *f*, lever *d*, nut-holder *c*, and basket *h*, all arranged as described.

109,496. — WINDMILL.—John P. Clement, Grinnell, Iowa.

Claim.—The fans H H, placed upon the arms G G, as described, and connected with the sliding wheel I by means of the rods *a a*, regulated by means of the weighted lever J, connected with said wheel I by the rod L and lever M, substantially as herein set forth.

109,497. — BREAD-PAN.—William A. Daggett, South Vineland, N. J.

Claim.—1. The within-described bread-raiser, consisting of an exterior pan, A, and an interior pan, B, the latter extending from the bottom to about one-half of the distance to the top of the former, leaving a suitable space between them, and provided with the interior funnel C, all arranged as set forth.

2. In combination with the bread-raiser, the vessel D, constructed and used as and for the purpose specified.

109,498.—COMBINED PRUNING IMPLEMENT. Charles W. Dawson, Paynesville, Mo.

Claim.—A combination-pruning tool, composed of the saw D, hatchet E, and knife G, all arranged as described in the bisected block A, provided with the socket B and handle C, substantially as herein set forth.

109,499.—COTTON-PLANTER.—John S. Dickerson, Sulphur Well, Tenn.

Claim.—The seed-box *b*, provided with the cranks *m*, lid *f*, rods *e*, and discharge-orifices *i*, the leaning-wheel *j*, provided with cranks *m*, the pitmen *n*, guide *o*, and coverer *r*, arranged relatively one to the other, and to the frame *a*, in the manner and for the purpose specified.

109,500.—MACHINE FOR MOLDING, ROUNDING, AND CHANNELING BOOT AND SHOE-SOLES. — William Duchemin, Boston, Mass., assignor to George B. Bigelow, trustee, same place.

Claim.—1. In a machine for rounding the soles of boots or shoes, a reciprocating bed or support for the sole, in combination with a rotating head-block and knife or cutter for trimming the edge of the sole, said cutter being mounted upon and carried by the head-block.

2. In a machine for channeling the soles of boots and shoes, the combination of a reciprocating bed or support for the sole, a rotating head-block, and a channeling-tool, mounted upon and carried by the head-block.

3. In a machine for rounding and channeling the soles of boots and shoes, a bed or support for the sole, in combination with a head-block, a rounding cutter, and a channeling-tool, both of which are mounted upon a carriage or slide having a reciprocation independent of the head-block.

4. In a machine for rounding and channeling the soles of boots and shoes, a reciprocating bed or support for the sole, in combination with a rotating head-block, a rounding-tool and a channeling-tool.

5. In a machine for rounding or channeling the soles of boots and shoes, as a means for supporting the sole, a bed provided with a series of pins or spurs, operating as set forth.

6. The automatically-reciprocating moulder h^3, in combination with the supporting-bed or form b^3, substantially as set forth.

7. The combination, in an organized machine, of mechanisms for rounding, and moulding, and channeling a sole, substantially as set forth.

8. The guide-fingers m^4 m^5, constructed substantially as shown, and mounted upon sliding plate, f^6, in such manner that one finger may rest against the pattern-plate or head-piece b^3 in front of the rounding-knife, and the other one in rear of said knife.

109,501, antedated November 19, 1870.—WASHING-MACHINE.—John H. Dustan, Spartansburg, Pa.

Claim.—The suds-box *a*, combined with dripping-box *b*, squeezer *c*, pitman *f*, elbow-lever *i*, rock-shaft *h*, and spring *k*, when all these parts are constructed and arranged to operate as described.

109,502.—WINDING-MACHINE.—Samuel Eccles, Philadelphia, Pa.

Claim.—1. The arrangement of the horizontal drum *c*, series of horizontal spindles E, vertical driving-belts D, rollers *h*, and devices, substantially as described, for operating said rollers, all substantially as and for the purpose set forth.

2. The combination of the arm M, rollers *h*, bar J, pawl *d*, rod *e*, and trigger K with its pins *a a*, the whole being arranged and operating in connection with the spindles E and driving-belts D, as described.

3. The combination of the above, the rod *n*, and notch *m* of the rod *e*, as and for the purpose specified.

109,503.—SEEDING-MACHINE.—Samuel M. Firey, Clear Spring, Md.

Claim.—1. A cylindrical seed-feeder, with cavities or channels *d*, in combination with the inclosing case or cup J and the fingered or winged slide M^1, for the purpose of regulating the quantities of grain to be sown, substantially as herein described.

2. The cups or inclosing cases J of the seed-feeders H, constructed with stops or steps *f* near their discharging-mouth K, for the purpose and in the manner herein shown and described.

3. In combination with a seed-feeder, constructed with ribs *c* and channels *d*, the inclosing case or cup J, made with stops or steps *f* near its discharging-mouth, as herein described.

4. The pan N, hinged by its stem *i* so that the latter forms the back of the conductor, in combination with the stops *n*, to limit the rearward movement of said pan, as described.

5. The check-lever V and the seat *y* of the spring, hinged together between double drag-bars, as and for the purpose described.

6. As an improvement on my former patent, the eccentric-groove in the wheel O, in combination with the tri-branched pivoted slotted lever *v*, for operating both the fertilizer and grass-seed stirrers with a slow and uniform motion, as described.

7. The brace H, when locked with the short axle 9, for the purpose and in the manner herein shown and described.

109,504.—METALLIC SLEEPER FOR RAILWAYS.—Cyrus Fisher, Canton, Mass., assignor to himself and Augustus G. Fisher, Brooklyn, N. Y.

Claim.—The arrangement of the grooved tie *a*, boxes *b*, grooved blocks *d*, cushions *h*, and covering-plates *f*, in the manner and for the purpose specified.

109,505.—DUMB-WAITER FOR CAISSONS.—Henry Flad, St. Louis, Mo.

Claim.—1. A cylinder or conveyer of other form, having vertical movement in a closely-inclosing cylinder or case, with means of operating or balancing the conveyer by compressed air, to enable material to be removed from or carried into the working or air-chamber of the caisson, in manner substantially as described.

2. The cylinder L, having a cavity, N, for reception of matter to be carried into or out of the air-chamber, the inclosing-cylinder B J, attached to the top A of the air-chamber, and having the interior collars or rings *b' j f'* or other packing to check or prevent the escape of air, and the pipes E G communicating with the upper part of the fixed cylinder and with the air-chamber and outer air, respectively, each substantially as described.

109,506.—DIE FOR MAKING CHORD-BARS.—William Forshaw, Chicago, Ill.

Claim.—1. In combination with the dies A and A^2 for swaging and punching the ends of chord bars, the cutters C and C^2 arranged thereon, substantially as and for the purpose set forth.

2. The combination of handle G, gauge I, and guide J, constructed and arranged to operate substantially as described, in combination with the dies, as and for the purpose specified.

109,507.—SECURING THE TOPS OF FRUIT-JARS.—William Galloway, Philadelphia, Pa.

Claim.—In combination with the detachable rod *f* and cover, the arm *h*, with its wedge-like projections *i i*.

109,508.—PROTECTING IRON AGAINST CORROSION.—Cornelius Godfrey and Reuben Lighthall, New York, N. Y.

Claim.—The protection of iron surfaces or bodies from oxidation or corrosion, when exposed to the action of fresh or salt water or dampness, by applying to the iron an electro-positive metal, alloy, or combination composed of zinc and tin, substantially as hereinabove described.

109,509. — HORSE HAY-RAKE.—Henry N. Green, Fort Wayne, Ind.

Claim.—The arrangement, with the rake *d* I, of the lever G, rod *m*, arm *k*, bar *n*, pawl *p*, and rod *s*, all substantially as shown and described, and for the purposes set forth.

109,510, antedated November 11, 1870.—APPARATUS FOR THE MANUFACTURE OF ILLUMINATING GAS.—Alexander W. Hall, New York, N. Y., assignor to himself and Edwin R. Warren, same place.

Claim. — 1. The combination of the guard G with the perforated basket B, arranged in relation to each other for operation within the acid-chamber A, substantially as specified.

2. The combination of the piston D and cylinder C with the basket B and its guard G, essentially as described.

3. The float H, in combination with the basket B, the guard G, and piston D, substantially as specified.

4. The combination of the submerged agitator S with the basket B, essentially as herein set forth.

5. The combination, with the gas-generating chamber A and pipe K, which conveys the gas to the carbureter, of the perforated escape-pipe K', bent as described, and arranged in relation to the carbureting-chamber M and wicks N, suspended therein, substantially as specified.

109,511. — CLOD-FENDER.—Reuben Harpster, West Cairo, Ohio.

Claim. — The construction of the adjustable spring bar I, the open-fingered fender G H, and the perforated and slotted L-shaped bar J, when the several parts are arranged in relation to the plow, as specified.

109,512.—Gate and Door-Spring.—Melvin Harrington, Waupun, Wis.

Claim.—1. The reversely-arranged hooks or notches *c c'* and *d d'* on the the case A and hub C respectively, as shown and described, for the purpose set forth.

2. The combination of the toothed disks D D' with the hub C and lever E, when the latter has the toothed disk cast upon it, substantially as shown and described.

109,513.—Safety-Guard for Pistols.—Randall D. Hay, Crooked Creek, N. C.

Claim.—The combination of the guard *a*, rod *b*, curved finger *i*, spring *k*, trigger *k*, substantially as described.

109,514. — Gun-Lock.—Randall D. Hay, Crooked Creek, N. C.

Claim.—The guard *a*, sliding within the breech, and combined with the spring-lever *c* and trigger *i*, in the manner and for the purpose described.

109,515.—Baling-Press.—Elias Hill, Hamilton, Ill.

Claim.—1. The combination and arrangement of the press A and the base-frame C with the hinge D, when constructed and operating as shown and described, for the purpose set forth.

2. The arrangement of the press A, double levers E E, and handle F, base-frame C, hinge D, horse power B with rope H, and ring K, when all these are constructed and operated as shown and described, for the purposes set forth.

109,516.—Sash-Lock.—John Hughes, New Berne, N. C.

Claim.—1. In combination, the catches C C' upon the front face of the sash, and the automatic double-acting latch D, having the hooks *d d'*, and pivoted to the frame, as specified.

2. In combination, the automatic double-acting latch D having the dovetail recess *e*, the plate L having the holes *e e'*, and the eccentric disk K having the inclined places *s s'* in its edge, and the locking-pin *a*.

109,517.—Washing-Machine.—George W. Hungerford, Chicago, Ill.

Claim.—In a washing-machine having pendulum-hammers therein, the sleeves G, when arranged on the pendulum-rods of the hammers so as to be adjustable, substantially as herein described and for the purpose set forth.

109,518. — School-Desk and Seat.—Nathaniel Johnson, New York, N. Y.

Claim.—The combined school-desk and seat herein described, consisting of the standards A, slotted arms D E, stops J J, pivots I I, head-piece *a*, desk C, and seat B, all constructed in the manner and for the purpose specified.

109,519.—Stocking-Last and Yarn and Needle-Holders Combined.—David B. Keith, East Boston, Mass.

Claim.—The stocking-last herein described, having the chamber E for holding yarn at one end, provided with a removable cover, and the chamber F at the other end, provided with a removable plug, all arranged as specified.

109,520. — Bridge-Gate.—Michel Kirsch, Chicago, Ill.

Claim.—1. The combination of the rotating gates E having the disks F attached thereto, with the slotted wheel G and the pins *i*, attached to the swinging bridge, said operating mechanism being arranged in a suitable frame overhead, substantially as described.

2. The locking bars I, in combination with the sliding bar J and the frame or bar H, arranged to operate in connection with the disks F, substantially as described.

109,521. — Apparatus for Detaching Poles and Shafts from Vehicles.—Lodwig O. Kunze, Harrisonville, Mo.

Claim.—The disk F, slotted arm *u*, provided with runner G and spring *i*, in combination with the detaching-apparatus, substantially as specified.

109,522.—Grain-Register.—Charles Lamb, Binghamton, N. Y.

Claim.—The revolving box D, provided with measures E E, each having a drop-valve or bottom, *b*, operating as and for the purpose set forth.

109,523. — Elevator for Raising and Stacking Straw. — Stephen Lewin, Poole, England.

Claim.—1. A second trough beneath the main trough, substantially as and for the purposes set forth.

2. The main trough, when jointed at or about the middle of its length, so that the upper part can be turned over the lower part, substantially as described.

3. The toothed wheels fixed to the poles, and driven by suitable gearing from a winch-handle, the poles being connected to the trough by a sliding connection, and being made to turn on pins carried by the framing, substantially as described.

4. Anti-friction rollers arranged in the main-trough for the carrier-chains to pass over, substantially as described.

5. The front incline trough, provided with traveling chains, as and for the purpose set forth.

109,524. — Concrete Composition for Walks, Flooring, &c.—Richard S. Lewis, Rockville, Conn., assignor to Jonathan H. Lewis.

Claim.—A compound of the ingredients, in the proportions and for the purpose set forth.

109,525.—Car-Axle Lubricator.—Joseph Lichenstein, Baltimore, Md., assignor to himself, Charles F. Smith, and William H. Peirce, same place.

Claim.—1. In combination with the lubricator, the partition F and passages I, substantially as described, for the purpose specified.

2. The lubricator for the journals of car-axles, consisting of the shallow rectangular box C, the partition F, passages I, block H, wicks J, and springs D, substantially as herein shown and described.

109,526.—Water-Pressure Regulator.—Nathaniel C. Lock, Salem, Mass.

Claim.—The arrangement of the check-valve J in the receiver A, with relation to the pipes B H, loaded movable diaphragm D, and valve or cock C, substantially as described.

109,527. — Cider-Mill. — James Lytch, Laurinburg, N. C.

Claim.—The combination of the hopper E located at the side of the hinged section B, and the cylinder D, with the case A, oblique rows of pins *c*, cylinder D, spiral rows of cutters *a*, pins *b*, and discharging-wings *d*, the whole arranged and operating as described.

109,528.—Shifting Carriage-Top.—Orson E. Mallory, Batavia, N. Y.

Claim.—1. The cylinder A and rod B, constructed and arranged on a carriage or wagon-seat, substantially as described, for the purpose of horizontally moving the top over the seat, as herein set forth.

2. The combination of the slotted cylinder A *a* with the rod B, provided with head *b* and bearings *c d*, substantially as and for the purpose described.

109,529. — Machine for Making Corn Cake.—William Manning, Chelmsford, Mass.

Claim.—The combination of the frame A, the balance-wheels B B, the gears C C and shaft, the gears D D, the crank-shaft E, the connecting-rod F, the follower G, the step H, the clearers I I I with their operating springs, the knives J J J, the boxes K, and the bed L with the corn-cake frame, substantially as described, and for the purpose specified.

109,530.—Animal-Trap.—Thomas E. Marable, Petersburg, Va., assignor to himself and S. A. Plummer, same place.

Claim.—The arrangement of the box A, platform *h*, trap-door *i*, spring *k*, bait-block *n*, shaft *a*, and radial arms *b*, when said shaft and arms are made to revolve in any suitable manner, substantially as described.

109,531.—Sleigh.—James Martin, Morenci, Mich.

Claim.—1. The runner A, provided with the knee B and semicircular bar C, constructed and arranged substantially as and for the purposes herein set forth.

2. The grooved casting *a*, provided with the arm *b* and arranged on the beam D, substantially as and for the purposes herein set forth.

3. The combination of the runner A, knee B, bar C, beam D, brace E, casting *a*, and arm *b*, all constructed and arranged substantially as and for the purposes herein set forth.

109,532.—Awning for Horses.—William McCormick, Philadelphia, Pa.

Claim.—The bows C C', with the extension D and covering A, mounted upon the shafts of a vehicle, and secured in position by the braces or straps *b b*, the whole constructed and combined substantially as and for the purpose set forth.

109,533. — Apparatus for Collecting Precious Metals.—James T. McDougall, San Francisco, Cal.

Claim.—1. The wooden bars or centers E, substantially as and for the purpose above described.

2. The standard F, constructed as described, for the purpose of giving the wave-like or rocking motion to the water, as above specified.

3. In combination with the standards or obstructions C or F, the copper bottom B with a soft amalgam of gold or silver, or some of the base metals, substantially as and for the purpose set forth.

109,534.—Pump.—John H. McGowan, Cincinnati, Ohio.

Claim.—The air-vessel H, when located wholly within the air-chamber G, and detachably connected with the base of the pump, as and for the purpose specified.

109,535.—Fluting-Machine.—William P. McKee, Cincinnati, Ohio.

Claim.—The combination of the sliding frame M which supports the adjustable roller D, pitman L, crank K, shaft G, and weighted lever I J, all arranged with reference to one another, as set forth.

109,536. — Grain-Drier. — Helem Merrill, Brooklyn, N. Y.

Claim.—1. Forcing air through revolving layers of malt or grain, substantially as described.

2. The sectional carriers with movable perforated bottoms.

3. The inclined division-plates or partitions *e*, that separate the revolving carriers, in the manner described.

109,537. — Lamp for Railroad-Cars.—Rufus S. Merrill, Boston, Mass., assignor to himself, Joshua Merrill, and William B. Merrill, same place.

Claim.—The combination, with a lamp-holder or bracket constructed so as to inclose the oil-vessel, as described, of an argand lamp, fitting in the said holder, and corrugated or otherwise formed upon its exterior, as specified, so that under all circumstances no matter how closely the lamp may fit within the holder, spaces will be left between the holder and lamp-body for the passage of air to the central draught-tube, substantially as shown and set forth.

109,538. — Bedstead-Fastening. — Elisha Mets and William B. Geddes, Rochester, N. Y.

Claim.—The screw C, constructed as described, and used in combination with the wrench-lever D and pin *h*, substantially as and for the purposes herein set forth.

109,539. — Curtain-Fixture. — Martin H. Mosman, Waterbury, Conn.

Claim.—The brake-wheel B and its pivot *e* on the roller, sustained by the spring or elastic band D, in combination with the slotted fixed bracket C and its shoe *b*, for operation essentially as set forth.

109,540.—Center-Seal for Gas-Works.—Peter Munzinger, Philadelphia, Pa.

Claim.—1. The concentric inlet, outlet, and drip-pipes, substantially for the purpose shown and described.

2. The distributing-chamber E, as shown and described.

3. The rotary valve L, substantially as and for the purpose shown and described.

4. The covered ground radial joints or partitions F, as shown and described.

5. The angle-boxes T, for the purpose shown.

109,541.—Cheese-Vat.—William H. Obitts, Elyria, Ohio.

Claim.—1. The circulating and distributing-chamber *e* formed within a central board, G, having an ingress and egress-opening, *b c*, at opposite ends, and transverse channels *d*, and arranged in such relation to the tank H and heating-chamber *a* as to communicate with them in the manner and for the purpose described.

2. The heat-retaining arms I and plates *i*, arranged upon the central board G, to assist in equalizing the heat of the water in the tank, in the manner described.

3. The concave bottom of the distributing-chamber *e*, arranged to project within the heating-chamber *a*, to obtain a greater heating surface, as described.

109,542.—Millstone Dress.—George O'Connor and Haines O'Connor, Mishawaka, Ind.

Claim.—1. The combination of plates A B when provided with curvilinear grooves *c f*, said grooves being arranged on the outer circumference of the plates, as and for the purpose set forth.

2. The curvilinear grooves *c f*, in combination with the tangential ridges *a d* and receivers *e b* on the grinding plates A B, when constructed and arranged as shown and described.

109,543.—Corn-Planter.—George H. Peek, East Hamburg, N. Y.

Claim.—1. The wheel F, provided with handle H, and arranged to operate the plungers *k*, substantially as set forth.

2. The slotted levers *h*, in combination with wheel F and plungers *k*, substantially as described.

3. The combination of seed-box A, constructed as described, and provided with upright guides *e*

in combination with wheel F, slotted levers h, and plungers k, all arranged as specified.

109,544. — CARRIAGE-SPRING. — Thomas Henry Prushaw, Fredonia, N. Y., assignor to Taylor, Day & Co., same place.

Claim. — 1. The combination of the slatted springs A A', with the side springs B B', and the head-blocks a a', for the purpose hereinbefore specified.

2. The arrangement of the slatted springs A A', elliptical side springs B B', central cross-bars b b', and connecting bolts and tubes c c', operating in the manner and for the purpose specified.

109,545.—WINDMILL.—Alexander R. Randal, Avola, Mo.

Claim.—1. The arrangement of the wheel a, wings d, cords f, spring i, barrel and windlass u j, verge-wheel n, ring l, and lever m, in the manner specified.

2. The arrangement of the wheel a, wing d, cord g, spring i, barrel u, and verge-wheel n, for the discharge of the separate function of counteracting the increasing tension of the spring by the increasing leverage of the cord g upon the verge-wheel, substantially as described.

109,546.—MANUFACTURE OF SALT.—Dexter Reynolds, Albany, and James W. Paige, Rochester, N. Y.

Claim.—The process of making salt by exposing brine to a metallic surface heated by steam, and thereby heating and evaporating it to such a point of concentration below saturation that the gypsum therein will not adhere thereto, in combination with the removal of such concentrated brine to another vessel, and its further concentration to saturation and deposit of the lime therein, without the addition of further heat by the evaporation due to the heat thereof when removed thereto, in combination with the removal and reduction to salt of such purified saturated brine, also by steam, substantially as described.

109,547.—HYDRANT.—Alexander Richmond, Jr., Dayton, Ohio.

Claim.—1. The means employed for closing the waste-opening of the hydrant, consisting of the rubber ring E fitted upon and working with the plunger C, and within the box B and provided with the opening b, substantially as shown and described.

2. The means employed for closing the valve when released, consisting of the rubber ring E working between the valve-box B and plunger C, in addition to and in combination with the outward pressure of the water, substantially as specified.

3. The hollow plunger C, provided with the squared part c, the flange C', the tapering plug C'', the openings x, and the screw c'', substantially as and for the purpose shown.

4. The combination of the valve-box B, the plunger C, the valve D, the rubber ring E, and the discharge-pipe F, substantially as shown and for the purpose described.

5. The combination of the water-chamber A, the valve-box B, the plunger C, and the valve D, substantially as shown and for the purpose specified.

6. In combination with the plunger C and the valve D, the pipes F and G, and the screw K, substantially as shown and for the purpose described.

109,548.—APPARATUS FOR STIRRING AND COOLING LARD.—Edward F. Ring, St. Louis, Mo.

Claim.—1. The blades E E, when constructed in the curved form shown at c c' c', and arranged in an inclined position spirally around the shaft D, substantially as and for the purpose specified.

2. The combination of the shaft D, provided with inclined blades E E, constructed as above described, with the jacketed vessel A, substantially as and for the purpose set forth.

109,549. — ELECTRO-MAGNETIC SIGNALING APPARATUS FOR RAILROAD CROSSINGS, &c.—William Robinson, Brooklyn, N. Y.

Claim.—1. The combination, with the circuit-closer C or C', of the lever b or b', so arranged that said lever holds the circuit-closer in position when opened or closed, substantially as specified.

2. The spring r or r' in combination with the circuit-closing lever g or g', substantially as and for the purpose indicated.

3. The combination of the lever b or b', the springs f r or f r', and the circuit-closing lever g or g', substantially as and for the purpose herein specified.

4. The magnet d or d', so arranged with reference to the circuit-closing lever g or g' that the charging of said magnet shall open the main or additional circuit, substantially as described.

5. The magnet d or d', in combination with a circuit-closing lever, g or g', of a main or additional circuit, and a circuit-closer, F or F', of an independent circuit, essentially as and for the purpose or purposes described.

6. The combination of the lever b or b', the signals E and H, or either, with a battery, D, and the circuit-closing lever g or g', operating essentially as specified.

7. The wires v, v', and w, so combined or arranged with a single battery, D, a signal or signals, and two or more circuit-closers, C C', that a circuit may be closed and signal operated independently by either of said circuit-closers, essentially as herein set forth.

8. The arrangement of the wires p q s o' o q' s' with the magnets d d', circuit-closers F F', and battery G, so that said battery will charge one of the several magnets d d' independently, through or by different circuit-closers F F', essentially as and for the purposes described.

9. The circuits t w t t w, and a' a', so arranged with reference to a battery and circuit-closers that two or more circuits may be closed, and two or more signals be operated independently of each other, by one and the same battery D, substantially as specified.

109,550. — FIRE-PLACE GRATE. — John S. Runyan, Columbus, Ohio.

Claim.—A fire-place, constructed with the vertical concavities or flues D D near the sides of the grate-basket, substantially as and for the purpose set forth.

109,551.—MODE OF PRODUCING LITHOGRAPHIC COPIES FROM PHOTOGRAPHIC NEGATIVES. — Emil Rye, Copenhagen, Denmark.

Claim.—1. The herein-described process for covering plates with plane and smooth surfaces with a preliminary coating prepared with chrom-acid, on which the picture from a photograph negative may be transferred and secured, and then serve as a print-plate from which lithographic copies may be taken, substantially as and for the purpose set forth.

2. The combination and arrangement of the drying apparatus, consisting of a closed vessel, B, forming the bottom, and provided with pipes C and D, standards A'', the cover A, and the hinged doors A', substantially as described.

3. The combination and arrangement of the closed vessel G with the apertures G' and thermometer G'', substantially as and for the purpose set forth.

109,552.—PAPER-MACHINE.—Patrick Scanlan, Indianapolis, Ind.

Claim.—1. The combination of the Fourdrinier and cylinder-machine, for the purpose set forth.

2. The combination of the making-felt of the cylinder-machine with the first-felt of the Fourdrinier machine, and the first-press rollers M M, to prevent the cracking of the paper, as set forth.

109,553.—EJECTOR.—Thomas H. Schriber, Evansville, Ind.

Claim.—The exterior casing A, its branches a b

f, partition f, and valve-seat, in combination with the adjustable nozzle B, adapted to the valve-seat, and having perforations h h, and steam-nozzle D adjustable in the nozzle B, all substantially as and for the purpose described.

109,554.—CULTIVATOR.—James B. Sexton, Pella, Iowa.

Claim.—1. In a cultivator, the diamond-shaped couplings c c, when constructed and arranged substantially as and for the purpose specified.

2. In a cultivator, the adjustable and corrugated axle-plate H, when constructed and arranged as and for the purpose set forth.

3. In a cultivator, the plate Z, pins u u, and cap v, with the screw-nuts, as described, when the several parts are constructed and arranged substantially as and for the purpose specified.

109,555.—EVAPORATING SALT-BRINE.—Calvin A. Shepard, Pomeroy, assignor to himself and Roman Menager, Gallipolis, Ohio.

Claim.—The combination of the return-flue boiler A with setting-pans F, substantially as specified.

109,556. — CHURN. — Benedict J. Smith, Osage Mission, Kansas.

Claim.—In combination with the vibrating platform H, suspended by the pivoted arms i to the frame G, the removable churn-box K, provided with the cover v having the hollow descending tubes z z, when constructed and arranged to operate as and for the purposes herein shown and described

109,557.—BEE-HIVE.—Uriah A. Springer, Pontiac, Ill.

Claim.—The combination and arrangement of the hood K, the aperture I, and the perforated plate M, substantially as shown and described.

109,558.—COTTON-CULTIVATOR AND PLOW. John R. Thomas, Mifflin, Pa.

Claim.—The standards E and F, having one straight and one beveled side, substantially as and for the purpose specified.

109,559.—FURNACE FOR DESULPHURIZING ORES.—Jonathan George Trotter, Newark, N. J.

Claim.—1. The combination of the bridge F with a steam-chamber, G, and vents, H, substantially as described, and for the purposes hereinbefore set forth.

2. The combination of the oven D with the vapor of water or steam-flue or chambers Q, and vents S, substantially as described, and for the purposes hereinbefore set forth.

3. The combination of the oven D with flues K, M, and N, and vents P, for discharging the gases in a diffused state into the oven, substantially as described, and for the purposes hereinbefore set forth.

109,560.—LINK FOR OPERATING THE ANNULAR SERIES OF GATES FOR TURBINE WATER-WHEELS.—Fuller Trump, Springfield, Ohio, assignor to James Leffel & Co., same place.

Claim.—The chambered foot A and rods D, attached by a hard fusible material, and used in combination with the oscillating gates of a water-wheel, substantially in the manner and for the purpose set forth.

109,561. — AIR-CARBURETING WHEEL.—James H. Van Houten, Newark, N. J.

Claim.—1. The edges of the metal, folded either one or more times, substantially as and for the purposes herein set forth.

2. In combination with the strips of metal forming the periphery of the wheel, the insertion therein of strips of zinc, substantially in the manner and for the purposes herein set forth.

109,562. — APPARATUS FOR CARBURETING AIR.—James H. Van Houten, Newark, N. J.

Claim.—1. A carbonizing-wheel, with its flues formed in sections and connected together by means of a shaft, substantially in the manner herein shown and specified.

2. The carbonizing-wheel herein shown and described, consisting of the air-drum a, air-chamber b, flues c, formed in sections and having a common axis, and the air-tube d, when the same are combined and connected together, and operate substantially as described.

109,563. — SHOE-FASTENING FOR SHOE-BOXES.—William W. Walton, Roanoke, Ind.

Claim.—In combination with the fastener A B D, a metallic plate forming the hooks a or b b, or both, substantially as and for the purposes herein set forth.

109,564.—LIQUID METER.—Albert Werckmeister, Berlin, Prussia.

Claim. — 1. The arrangement of two distinct measuring-chambers, each containing two floats, one to control the supply of fluid and the other to control the discharge of fluid, substantially as described.

2. The combination of a movable siphon and float with the measuring-apparatus, substantially as described, to control the discharge of the liquid from the measuring-chambers.

3. The wells r r', in combination with the measuring-chambers b b' and movable siphons o o', substantially as set forth.

4. The hinged arms a' on the rods of the floats s s', in combination with the tripping-levers t t' and movable siphons o o', substantially as described.

109,565.—MILL-BUSH AND OTHER SPINDLES. Charles T. Weston, Scranton, Pa.

Claim.—The upwardly-extending sleeve formed on the bush B, and surrounding the spindle A to near the point of attachment of the driver, forming an annular space around the spindle to be supplied with oil, and to exclude dust from the bush, as shown and described.

109,566.—PAPER CAP. — Philo S. White, Providence, R. I.

Claim.—The improvement in paper caps, which consists in forming the crown or body of one piece of paper, of circular form, with the radial cuts b forming the flaps c, which, being down over one another, are secured at their lower ends only, and strengthened by the band d, as and for the purposes specified.

109,567. — CARRIAGE-ATTACHMENT FOR PLOWS. — John Zoeberlein, Baltimore, Md.

Claim.—The mounted bolster K, provided with a series of holes, l', and with the notched bar J, hook o, and the pivoted frame L l' l' having holes o', said parts constituting a carriage-attachment for plows, adapted for adjustable connection with the plow-beam by means of a chain, I, substantially as and for the purpose set forth.

109,568. — GAS-MACHINE.—James H. Van Houten, Newark, N. J.

Claim.—1. The feed-pipe n, the automatic valve o, and the float r, arranged at the end of the air-carbureting wheel, for the purpose described.

2. The induction air-pipe h, the gas-pipe f, the burner y, and the water-inclosing cylinder e, arranged in relation to each other so that the water-inclosing cylinder and the induction air-pipe will be heated by one and the same burner, as shown and described.

3. The air-pipe h, the gas-burner y, the air-wheel a, and the gas-supply chamber s, arranged in relation to each other that either heated or cold air may be introduced into the carbureting-wheel, as may be desired.

4. The removable valve j of the inner fixed cylinder, with its stem projecting through the outer fixed cylinder, for the purpose described.

REISSUES.

4,181.—COMPOUND FOR COLORING AND ORNAMENTING PAPER AND OTHER FABRICS AND MATERIALS.—Frederick Beck, New York, N. Y.—Patent No. 107,997, dated October 4, 1870.

Claim.—1. The compound herein described, consisting of disintegrated mica combined with transparent or translucent adhesive substances, substantially as herein set forth.

2. The combination of mica scales, transparent or translucent adhesive substances, and glycerine, so as to produce a coating for paper, cloth, and other fabrics, substantially as described.

4,182. — LAMP-CHIMNEY.—Edward Dithridge and Edward D. Dithridge, Pittsburg, Pa.—Patent No. 33,428, dated October 8, 1861.

Claim.—1. A lamp-chimney having a flattened bulb, substantially as set forth.

2. A lamp-chimney having a round top and base and a flattened oval-shaped bulb, substantially as set forth.

4,183.—STOVE-PIPE DAMPER.—Griffen B. Halsted, Brooklyn, N. Y.—Patent No. 70,836, dated November 12, 1867.

Claim.—1. The notched friction-ring, in combination with the spurred shaft of the damper, substantially as described, and for the purposes set forth.

2. The friction-ring, constructed with a cam-like surface, whereby the compression of the pipe may be increased by turning the friction-ring with reference to the damper-shaft, substantially as described, and for the purposes set forth.

3. A cast-iron or plate or sheet-metal damper B, constructed with the angular groove e and lips f, arranged transversely of the damper, substantially as described, whereby the damper may be readily attached to its spurred shaft, as set forth.

4,184.—TREADLE FOR SEWING AND OTHER MACHINES. — Benjamin Charles Pole, Washington, D. C.—Patent No. 107,717, dated September 27, 1870.

Claim.—1. A treadle, composed of a rigid rocking plate, and also of another plate carried by and rocking with it, and having also a yielding or elastic movement of its own.

2. An extensible connecting-rod for a treadle, changeable as to its operative length when in action, and composed of two rigid parts, arranged to move lengthwise relatively to each other against the force of a spring or springs.

3. The combination, with an extensible elastic connecting-rod, of a treadle, in which one rocking plate works with another rocking plate under elastic tension.

4. The rocking or vibrating plate A with its springs D D, combined with a vibrating bed-plate, E, and elastic stops C, the whole operating substantially as and for the purposes described.

5. The connecting-rod, composed of the pieces G G, the pins I, elastic springs d d, the fixed head or strap H, and the elastic stops e e, the parts being combined and operating substantially as and for the purpose described.

6. A bed-plate, adapted for connection to a connecting-rod, and provided with a shaft and journals, and with ears b b, substantially as and for the purpose described.

7. The combination of the elastic treadle, constructed as shown, with the elastic connecting-rod, also constructed as shown in the drawing, the whole operating substantially as and for the purposes set forth.

DESIGNS.

4,480. — CARPET-PATTERN. — Alexander Beck, Philadelphia, Pa.

Claim.—1. The design for the border A, as described and shown.

2. The design for the body B of the pattern, as described and illustrated.

3. The entire design of the carpet-pattern, including the border A and body B.

4,481. — CARPET-PATTERN. — Alexander Beck, Philadelphia, Pa.

Claim.—1. The design for the border A, as described and shown.

2. The design for the body of the pattern as illustrated and described.

3. The design for the entire pattern shown, including both border and body.

4,482. — CARPET-PATTERN. — Alexander Beck, Philadelphia, Pa.

Claim.—1. The design for the border A, as described and shown.

2. The design for the body of the pattern, as illustrated and described.

3. The whole design, as shown, including both border and body.

4,483.—WELL-CASING.—Erastus S. Cummins, Clarence, Iowa.

Claim.—The design for metallic well-casing, as shown and described.

4,484. — FLOOR OIL-CLOTH PATTERN.—Charles T. Meyer, Newark, N. J., assignor to Edward C. Sampson, New York City.

Claim.—The design or pattern for floor oil-cloths, carpets, or other fabrics, shown and described.

4,485. — FLOOR OIL-CLOTH PATTERN.—Charles T. Meyer, Newark, N. J., assignor to Edward C. Sampson, New York City.

Claim.—The design or pattern for floor oil-cloths, carpets, or other fabrics, shown and described.

4,486. — FLOOR OIL-CLOTH PATTERN.—Charles T. Meyer, Newark, N. J., assignor to Edward C. Sampson, New York City.

Claim.—The design or pattern for floor oil-cloths, carpets, or other fabrics, shown and described.

4,487.—GROUP OF STATUARY.—John Rogers, New York, N. Y.

Claim.—The design for a group of statuary, as herein shown and described.

4,488.—SCHOOL-DESK.—Nelson O. Tiffany, Buffalo, N. Y.

Claim.—1. The shape or conformation of the bent wood ends or standards for school-desks A B, substantially as represented and described.

2. The form of the brace or tie-plate D d, substantially as represented and described.

3. The form of the brace or tie-plate D d, with seat-arm F, substantially as represented and described.

4,489. — SCHOOL-SEAT HINGE.—Nelson O. Tiffany, Buffalo, N. Y.

Claim.—1. The form or configuration of the

members A B of a seat-hinge for school-desks, substantially as shown and described.

2. The form or configuration of the attaching-arm C, as represented.

4,490.—STATUARY.—Ames Van Wart, New York, N. Y.

Claim.—The design for statuary herein described.

4,491.—STATUETTE.—Ames Van Wart, New York, N. Y.

Claim.—The design for a statuette, as shown.

4,492.—CHURCH-WINDOW GLASS.—Samuel West, Boston, Mass.

Claim.—The design for the glass of a church-window, substantially as shown and described.

TRADE-MARKS.

66.—BLACK ALPACA DRESS-GOODS.—Bowen, Hunt & Winslow, Chicago, Ill.

67. — NON-EXPLOSIVE BURNING-FLUID.—Roderick F. Danforth, Cleveland, Ohio.

68.—HUNTOON STEAM-GOVERNOR.—John Augustus Lynch & Co., Boston, Mass.

69.—YERBA SANTA.—A. McDermott, Oroville, and Redington, Hostetter & Co., San Francisco, Cal.

70.—DETERGENT POWDER.—Jesse S. Smith, Waverly, N. Y.

71.—WHITE LEAD.—The Atlantic White Lead Company, New York, N. Y.

72.—REFINED BOILED LINSEED-OIL.—The Atlantic White Lead Company, New York, N. Y.

73.—METAL.—The "Patent Metal Company," Philadelphia, Pa.

74.—MEDICAL COMPOUND.—United States Proprietary Medicine Company, Cincinnati, Ohio.

75.—FERTILIZER.—Walton, Whann, & Co., Wilmington, Del.

76.—MEDICINE.—William N. Wells, Boston, Mass.

77.—WHISKY.—White & Alexander, Paris, Ky.

EXTENSIONS.

SAMUEL MORRILL, of Andover, N. H.—Letters Patent No. 16,065, dated November 11, 1856; reissue No. 830, dated September 27, 1859.

"Improvement in Clothes-Driers."

Claim.—1. Tilting the reel to the desired position to enable a person to place the clothes on the lines without high reaching, and elevate them in good position to dry, and out of the way of injury, substantially as set forth.

2. Arranging and combining with a rotary tilting reel the ratchet G and pawl H, or their equivalents, for preventing backward rotary motion of the reel as the clothes are placed on the lines and moved along, substantially as set forth.

3. Operating the reel by the combined action of the arm C, jointed arm or lever E, and loop or staple F, or its equivalent, substantially as set forth, and for the purpose specified.

EL DORA LOUIS, of New York, N. Y., administratrix of LA FAYETTE LOUIS, deceased.—Letters Patent No. 16,094, dated November 18, 1856; reissue No. 2,498, dated February 26, 1867; reissue No. 2,944, dated May 26, 1868.

"Improvement in Melodeons."

Claim.—In combination with the reeds of a melodeon, (or that class of instruments in which the air is drawn through the reeds by the exhaust action of a bellows,) a tremolo-valve or valves, so arranged that, when vibrated, it or they shall interrupt the passage of air through the reeds, and thereby produce the tremolo sound, at the will of the performer.

Also, in combination with the reeds of a melodeon, a tremolo-valve, actuated by a rotary fan or blade-wheel, substantially as described.

Also, in combination with the reeds of a melodeon, a tremolo-valve or valves having a positive connection with the valve-actuating mechanism, substantially as described.

ISSUE OF NOVEMBER 29.

PATENTS.

109,569, antedated November 12, 1870.—CUTTING APPARATUS FOR HARVESTERS.—Joshua L. Abell, Cummington, Mass.

Claim.—The connecting-pieces V, formed of parts a, caps d d, and rubber bands, constructed as described.

109,570, antedated November 19, 1870.—RUBBER CEMENT.—Hiram J. Ball, Oswego, N. Y.

Claim.—The improved cement, made by combining rubber and asphaltum in solution, substantially in the manner specified.

109,571.—APPARATUS FOR TREATING CANE-JUICE WITH SULPHUROUS-ACID GAS.—John W. Austin, Plaquemine, La.

Claim.—1. The drum G, constructed as described, in combination with the spindle C and tank A having openings in the centers of its top E, and partition or bottom H, for the ingress or egress of the juice and gas, substantially as herein shown and described, and for the purpose set forth.

2. The drum I, constructed as described, in combination with the spindle C, drum G, and tank A having openings in the centers of its top E, partition H, and bottom J, for the passage of the juice and gas, substantially as herein shown and described, and for the purpose set forth.

3. The basin K, constructed with a central open pipe, b', and discharge-trough or spout L, in combination with the spindle C, drums G and I, and tank A having openings in the centers of its top E, partition H, and bottom J, for the passage of the juice and gas, substantially as herein shown and described, and for the purpose set forth.

109,572.—BACKBAND-HOOK.—Henry Beagle, Jr., Philadelphia, Pa.

Claim.—A backband-hook formed of band-iron B, having its ends bent over upon itself, and a trace-hook, C, bent inwardly at the point, both riveted together, for the purpose specified.

109,573.—SPIRAL SPRING FOR BEDSTEADS.—William L. Beardsley, Binghamton, N. Y.

Claim.—The spring A, provided with the reversed extension B, in combination with the eyes C C, substantially, and for the purposes hereinbefore set forth.

109,574.—Shuttle for Sewing-Machines.—Walter Bennett, Springfield, Ill.

Claim.—The combination, with the shuttle, having the depressions in the wall over which the thread passes, of the slotted eye-bar C, arranged substantially as specified.

109,575. — Riveting-Mandrel. — James Berry, Buffalo, N. Y.

Claim.—1. The combination and arrangement of the rivet-elevating-bar B and mechanism for elevating it, pins b^1, socketed clamp-bars A^1 A^2, and mandrel A, as and for the purpose hereinbefore set forth.

2. The combination and arrangement of the wedges b^4, levers b^5, connecting-rod b^3, with the bar B, pins b^1, clamps A^1 A^2, and mandrel A, as and for the purpose set forth.

3. The combination and arrangement of the curved spring c^5 with the stop-enlargement c^6 on connecting-rod b^3, wedges b^4, elevating-bar B, pins b^1, and mandrel A, as and for the purpose set forth.

4. The combination of the clamping-bar H, arm G, riveting-mandrel A, constructed as described, and standard-bearing E F F', arranged and operating as hereinbefore set forth.

109,576.—Chemical Fire-Extinguisher.—Edmund Bigelow, Springfield, Mass.

Claim.—1. The combination, in apparatus for using water charged with carbonic-acid gas in putting out fire, of the air-tight reservoir for acid, D, in a fixed position within the body of the apparatus with the valve-seat E, the valve F, the stem G G with a screw-thread raised thereon, the cap C, the screw-threaded yoke K, the wheel H, the equalizing pipe L L, and the screw M.

2. The combination, in fire-extinguishers for using water charged with carbonic-acid gas, of the body or tank, A, the reservoir for acid, D, fixed within the tank, the high-water gauge B, and the collar N, with its cap, all substantially as and for the purposes set forth.

109,577.—Machine for Soldering Can-Caps. — William B. Bishop, Brooklyn, N. Y.

Claim.—1. The ring or cup-shaped soldering-tool G, for soldering the caps upon cans, substantially as herein shown and described.

2. The revolving table I, having also a vertical movement, in combination with the ring or cup-shaped soldering-tool G, substantially as herein shown and described, and for the purpose set forth.

3. The combination of the adjustable elastic holder J K with the revolving table I, substantially as herein shown and described, and for the purpose set forth.

4. An improved machine for soldering can-caps, formed by the combination of the platform A, feet B, adjustable platform C, adjusting and supporting-rods D, furnace E, heater F, ring or cup-shaped soldering-tool G, weighted holding-rod H, table I, adjustable holder J K, shaft L, lever N, treadle P, gear-wheels Q and R, shaft S, and crank T, with each other, substantially as herein shown and described, and for the purpose set forth.

109,578, antedated November 12, 1870.—Composition for the Manufacture of Boot and Shoe-Heels.—Carl Boeking, Boston, Mass.

Claim.—The herein-described composition for the manufacture of boot and shoe-heels.

109,579.—Elastic Roller for Wringers, &c.—Augustus O. Bourn, Providence, R. I.

Claim.—The improvement in the construction of elastic rollers for wringing-machines and for other purposes, which consists in winding, so as to form a roller to be subsequently vulcanized, a sheet of ground rubber and cloth, C, (or, instead thereof, a sheet of rubber compound, which, when vulcanized, will become hard rubber,) in combination with a sheet of ordinary soft rubber, A, such two materials being disposed, with respect to each other, so as to form a roller, substantially as described, for the purposes specified.

109,580, antedated November 14, 1870.—Clothes-Pin. — George Bradley and Nelson A. Walker, Rockford, Ill.

Claim.—A clothes-pin cut from a single piece of wood, with a central enlarged slot, as set forth.

109,581.—Construction of Globes, Maps, &c., for Schools. — John De Witt Brinckerhoff and James Duthie, Morrisania, N. Y.

Claim.—The production of globes, maps, or charts having a surface with the configurations and lines inlaid or imbedded therein, by the process described or any other substantially the same.

109,582, antedated November 12, 1870.—Arm-Support for Keyed Instruments.—Leopoldin Buchberger, Chicago, Ill.

Claim.—Providing an arm-support for keyed instruments, with an adjustable bar, B, which is pivoted to the adjustable standards D and held in a fixed position by set-screws H H, so that, when the bar is either raised or lowered, its flat side may be presented to the arm of the operator, as set forth.

109,583.—Roller-Temple for Looms.—William H. Burns, Grafton, assignor to Jonathan Luther, Worcester, Mass.

Claim.—1. The fluted roller G, in combination with a toothed-roller, when arranged and operating as and for the purpose herein specified.

2. The arm B and stand A, having the corresponding slots E and F, and the spring J, or its equivalent, when combined and arranged as and for the purposes herein specified.

109,584.—Corn-Dropper.—Major Robert Wilson Caldwell, Jackson, Ohio.

Claim.—The combination of the valve G and case F of the springs L or O, substantially as specified.

109,585.—Hemmer and Feller for Sewing-Machines.—Cyrus Carleton, Brooklyn, N. Y., assignor to Wilcox and Gibbs Sewing-Machine Company, New York City.

Claim.—The folding-guide herein described, consisting of the elastic tongue a upon the plate A, the guiding surface d, and the gauge b, constructed and operating substantially in the manner and for the purposes described.

109,586. — Horseshoe-Bar. — Ebenezer Cate, Watertown, Mass.

Claim.—The above-described bar horseshoe iron, constituting series of blanks for horseshoes, the same being creased, and each blank having, along its middle part only, the rabbet G, forming the flange H, while the parts at and toward the ends forming the heels of the shoe are without said rabbet, and rectangular in cross-section, substantially as described and shown.

109,587.—Hydrant.—Elias Clampitt, Baltimore, Md.

Claim.—1. The reservoir or pliable material F, to hold the subsiding water when the issue of water is stopped.

2. The gum packing V around the stem T, to prevent direct access between the main and the reservoir F, also to raise the said stem T.

3. The hydrant-nozzle I, secured in the frame or casing by the stud a and plate b, and screwed into

the elbow of the delivery-pipe, all substantially as described.

4. In combination with the nozzle I, and as a means of operating the same, the handle J, slotted as represented, and secured to the frame or casing by means of the studs M, as described.

5. The yoke P R S, combined with the delivery-pipe G and reservoir F, as described.

6. The handle J, pivoted, as set forth, with an oblong slot, in combination with the nozzle and pipe, and a valve operated by a downward pressure derived from said handle, substantially as described.

109,588. — Burglar-Alarm. — Edward T. Clegg, North Harpersfield, N. Y.

Claim.—1. The burglar-alarm placed upon wheels, and constructed so that it will be discharged by the rotation of the said wheels, as set forth.

2. The rock-shafts D, carrying the hammers c, and geared together to move simultaneously, substantially as herein shown and described.

3. The spring F, combined with the rock-shafts D, guns C, for the purpose of throwing all the hammers at once, as set forth

4. The lever-pawl E, locking the shafts D, and connected with the supporting-wheels B of the platform, substantially as herein shown and described.

5. The sliding gun C, provided with racks f which mesh into toothed wheels g on the shafts D, substantially as specified.

6. The swinging gate H, connected with the hammer-shafts D, substantially as and for the purpose herein shown and described.

109,589.—Globe for Gas-Lights.—Charles Collier, Selma, Ala.

Claim.—The construction of globes for gas-lights, with the upper portion turned outward and formed into a horizontal flange or ring, the same being made double for securing the silvering between the plates for a reflector, substantially as herein shown and described.

109,590.—Combined Railroad-Jack and Pinch-Bar. — Matthew Grier Collins, Meadville, Pa.

Claim.—The fulcrum D, the foot or rail-plate G, the spring O F, in combination with the lever B, when the same are constructed as described, for the purposes set forth.

109,591. — Machine for Making Key-Boards for Wood Pavements.—Perley D. Cummings, Portland, Me.

Claim.—The combination of the saws S and T, rollers M' M' and N' N', with the converging cutters M and N, substantially as described.

109,592.—Filter.—George Curtis, Springfield, Mass., assignor to himself and E. Bigelow, same place.

Claim.—The perforated deflecting case, with button and sleeve, inclosing a percolating medium, the parts being contained within the case formed of the two parts, as set forth and described.

109,593.—Filter.—George Curtis, Springfield, Mass., assignor to himself and Edmund Bigelow, same place.

Claim.—1. The combination, in filters to be used in purifying water under a head or pressure, of the two sponges E and K, so arranged as to present to the water successive filtering media of unequal density, with the interposed deflector, and the flanch or rim S projecting inward from the inner surface of the deflector, substantially as and for the purposes set forth.

2. The combination, in filters for purifying water under a head or pressure, of the sponges E and K, so arranged as to present to the water successive filtering media of unequal density, the deflector, the flanch or rim S, the surrounding case F, the space H, and the surrounding box D, and the false bottom, substantially as and for the purposes set forth.

3. The combination, in filters for purifying water under a pressure or head, of a sponge, K, a deflector, and a rim or flanch, S, substantially as and for the purpose set forth.

109,594.—Combined Vise and Drill.—Otis Dean, Richmond, Va.

Claim.—As an improvement upon the combined vise and drill heretofore patented to me June 15 and October 18, 1869, the beveled guide-rib d, cast in one piece with the parts A and B, and the channel e, and perforations z in the movable jaw C, as set forth.

109,595.—Boiler for Preparing Paper-Pulp.—Lorenzo Dean, Fort Edward, N. Y.

Claim.—1. The arrangement, upon the bottom of a steam or hot-water cylinder A, and beneath the pulp-cylinder, of the detachable chamber G and valved pipe E F, to form a convenient means of testing the condition of the pulp, as set forth.

2. The arrangement, in a pulp-cylinder and with respect to auxiliary end chambers a^2 a^3, of the open channel-ways D, as and for the purpose specified.

3. The combination of perforated channel-ways D in the pulp-cylinder, with an outlet-pipe H at the bottom of the cylinder A, to promote a rapid discharge and change of the liquids, as described.

109,596.—Preparation of Straw for the Manufacture of Paper. — Lorenzo Dean, Fort Edward, N. Y.

Claim.—The method of preparing fibrous material for conversion into paper-pulp, by macerating the long straw between rolls and then saturating and soaking it in repeated and successive tepid waters, as and for the purpose described.

109,597. — Asphalt Pavement.—Edward Joseph De Smedt, New York, N. Y.

Claim.—The combination of hard and soft natural asphalts, such as the Trinidad, Cuban, Grahamite, or Albertite, and Mexican, or their equivalent natural asphalts, mixed with a suitable proportion of sand or pulverized stone, substantially as and for the purpose herein set forth.

109,598.—Hook Attachment for Seats.—Joseph A. Dixon, New York, N. Y.

Claim.—The pivoted hook B, having walls F F, pivot D, spring E H, sides c, and holding attachment c', all applied, in combination, to a seat-back, as and for the purpose described.

109,599. — Healing-Salve.—Robert Dobbins, Binghamton, N. Y.

Claim.—The invention of the manufacture or preparation of a compound, which is denominated Dobbin's healing salve, of the ingredients, in the proportions, and for the purposes set forth.

109,600.—Projectile.—Ellis Drake, Stoughton, Mass.

Claim.—1. A projectile or shell cast in one piece, with cross-grooves c c and d d, substantially as and for the purpose set forth.

2. In combination with a projectile or shell a series of expanding lugs, operated in the manner substantially as described.

3. A space formed at the base of a lug or button, whereby the same may be operated upon by the force of the explosion, and radially forced out or expanded, for the purpose specified.

109,601.—Apparatus for the Manufacture of Ozone.—Cleaveland F. Dunderdale, New York, N. Y.

Claim.—1. In combination with the apparatus

specified in the Letters Patent granted to me March 15 A. D., 1870, No. 100,736, or its equivalent, the use of points of suitable conducting material, wires, needles, or their equivalents, placed between the tubes or plates thereof, operating as and for the purpose as herein specified and described.

2. The passing of atmospheric air or oxygen through finely-divided streams or currents of electricity or magnetic fluids, for the purpose of converting the oxygen thereof into ozone.

3. The plates C, points or their equivalents G, the insulators D', the spaces, intersticos, or passages D, or their equivalents, with battery terminals E, combined and arranged substantially as herein specified and described, and for the purpose set forth.

109,602.—CASTER AND SPOON-HOLDER COMBINED.—Louis Evans, Pittsburg, Pa.

Claim.—The slotted radial caster-arms *d*, either in connection with the rings *e* or as a plain spoon-holder, substantially as described.

109,603.—THERMO-ELECTRIC BATTERY.—Moses G. Farmer, Salem, Mass.

Claim.—1. A thermo-electric battery, constructed so as to surround or inclose the source of heat, substantially as described.

2. A thermo-electric battery, with the pairs arranged in curved tiers, one above another, and compacted by cement, substantially as described.

109,604, antedated November 12, 1870.—REVERSIBLE-BUTT.—George W. Field, Lowell, Mass., assignor to himself and Robert H. Butcher, same place.

Claim.—The stand B, constructed as described, with hinging-hubs on opposite sides, ends, and edges, whereby the leaf A may be applied, and thus form a right or a left-hand butt, as described.

109,605.—LOG-GUIDE FOR CIRCULAR-SAW MILLS.—Benjamin Fitts, Toledo, Ohio.

Claim.—A log-guide for circular saw-mills, formed by the combination, with the stock A, sliding slotted plate B, lever D having its fulcrum at E, the pointer M and index-plate L, of the stop G and lever J, all said parts being constructed and relatively arranged as shown and described.

109,606.—FENCE.—Rodolphus J. Flanner, Plainfield township, Mich.

Claim.—A portable or stationary board-fence, composed of horizontal boards A connected by post B and brace C, and secured by means of foot-piece D and cap-piece E, substantially as described.

109,607.—MANUFACTURE OF ARTIFICIAL STONE.—William H. Foye, San Francisco, Cal.

Claim.—Artificial stone, formed of pulverized limestone or other calcareous rock, combined with asphaltum, the mixture being heated and subjected to hydraulic or other heavy pressure, and formed into blocks by means of molds, substantially as and for the purpose described.

109,608.—ELASTIC RUNNING-GEAR FOR CARRIAGES.—George E. Garretson, Russellville, Ky.

Claim.—1. The part M, combining a horizontal bearing for the springs C C, and a vertical connection for the king-bolt, when so constructed that the bearing and socket cannot be rocked independently of each other.

2. The loop E, when constructed of metal, adapted to rest directly on the springs or an elastic cushion upon the springs, and provided with arms *c' c''*, adapted to the support of different-shaped carriage-bodies, substantially as described.

3. The combination of the second leaf of the spring resting upon the first leaf, with their supporting-places or bearings, when constructed to operate together in case of the fracture of the lower leaf, substantially as described.

4. The described arrangement of the supplemental springs F G, when employed in addition to the main springs, for the purpose specified.

109,609.—GATE.—Elijah Gemberling, Elkhart, Ind.

Claim.—The combination, with the gate hinged so that it may rise and fall, as described, of the angle-plate or bar H, the hinged arm E, and the roller F, all substantially as specified.

109,610, antedated November 26, 1870.—POLISHING-MACHINE.—John Gooden, Lockport, N. Y.

Claim.—1. The sleeve B, fitted loose upon the shaft A, and arranged to adjust the polishing-blocks G, for larger or smaller cylinders, substantially as herein shown and described.

2. The combination of the expansion-blocks G with the sliding nuts E, screws H, wheels I *b*, sleeve B, and shaft, all arranged and operating substantially as herein shown and described.

109,611, antedated November 17, 1870.—APPARATUS FOR AGING WHISKY AND OTHER SPIRITS.—John P. Greeley, Boston, Mass.

Claim.—1. The vessels D, consisting of the tanks *d* and troughs *d'*, as and for the purpose set forth.

2. The vessels D, in combination with tube F, trough G, and tubes E *e*, substantially as described.

3. The chamber A, in combination with the flue B and door *a*, as shown.

4. The combination of the chamber A and refrigerating-chamber C.

5. The combination of chamber A, refrigerating-chamber C, vessels D, pipes E *e* F, flue B, and door *a*, arranged and operating substantially as described.

109,612.—ATTACHMENT FOR SEWING-MACHINES.—Franklin Thomas Grimes, Liberty, Mo.

Claim.—The rod *a*, provided at its ends with toothed arm *b* and toothed elastic *d*, in combination with the guiding-plate *f*, as and for the purpose set forth.

109,613.—COMBINED SEED-SOWER AND CULTIVATOR.—Henry L. Hall, Woodbridge, Iowa.

Claim.—The seed-sower and cultivator, having curved adjustable teeth constructed as described, and arranged in three or more ranks, in the manner set forth and shown.

109,614.—ANIMAL-TRAP.—William R. Hampton, Fairfield, Ill.

Claim.—The combination of the case A, spring D, shaft B, toothed wings C, and bait-lever *e*, when constructed and arranged to operate substantially as and for the purpose specified.

109,615, antedated November 26, 1870.—PHOTOGRAPHIC PRINT-CUTTER.—John Haworth, Philadelphia, Pa.

Claim.—1. The combination and arrangement of the guide-strip E on the clamping-plate D, with the table E, for regulating the form of the print, substantially in the manner above described.

2. The combination of the revolving cutter F, shaft G, swivel-plate J, the sliding bar L, and center-pin K having a nut, O, the said parts being constructed, arranged, and operating in relation to each other and to the guide E, substantially in the manner and for the purpose set forth.

3. The combination and arrangement of the spring Q and rods R S, with the stand A and sliding bar L, substantially as and for the purpose above described.

109,616.—STEAM-GENERATOR.—John Houpt, Springtown, Pa.

Claim.—1. The primary condenser C and air-pump *c'''*, in combination with the valve *b''* and steam-passage-way B, the said parts being constructed and arranged to operate substantially as and for the purposes hereinbefore set forth.

2. The secondary chamber or evaporator D, in combination with the escape-steam passage-way B and the hot-water discharge-pipe *c*, the said parts being constructed and arranged to operate substantially as and for the purpose hereinbefore set forth.

3. The supplementary boiler G, furnace *g'''*, and pipe *g'*, in combination with the escape-steam passage-way B, when arranged substantially as shown in fig. 2, for the purpose hereinbefore specified.

109,617.—GARTER.—Henry A. House, Bridgeport, Conn.

Claim.—A coiled spring garter, the coils of which are on opposite sides of a common center, at which point the wires forming the coils cross, thus making fastening-eyes on both sides of said center, substantially as described.

109,618.—AUTOMATON ROPE-WALKER.—Henry A. House, Bridgeport, Conn.

Claim.—1. The combination of a balancing-pole with a walking-automaton, substantially as described.

2. The guide *e*, in combination with the balancing-pole and the walking-automaton, substantially as described.

3. The leg-sections D and P, jointed together, pivoted to the frame A, and actuated so as to make stepping movements by means of rods F, guide *g'*, and crank-wheel G, substantially as described.

4. The diagonal grooves in the soles of the feet of the automaton, substantially in the manner and for the purpose described.

5. The socketed pole-section *a*, attached to the hands of the automaton, in combination with the removable sections of the balancing-pole C, substantially as described.

6. The case B, constructed with recesses or slots *s s* and fastening *b*, in combination with the frame A of the walking-automaton, substantially as described.

7. The leg-sections F E, bowed inwardly in such manner that the feet of the automaton will step in the same line, substantially as described.

109,619.—ADDING AND SUBTRACTING-REGISTER.—Henry A. House, Bridgeport, Conn.

Claim.—1. The combination, with one or more concentric rings, which are numbered, toothed, and notched, and are interlocked periodically with each other in their forward movement, of the toothed setting-wheel G, and pawl Z, or pawls *s* and *s*, for reversing the movement of the rings, substantially as described.

2. The combination of the cams *e*, fixed disk C, hooked spring-pawl *e e'*, toothed rings J L, set-wheel G, and spring-pawl Z, or pawls *s s*, substantially as described.

109,620.—COMBINING KEYS WITH WATCHES.—Alfred Humbert, Philadelphia, Pa., assignor to himself and Gustavus Gigor, same place.

Claim.—The lug *d*, in combination with a groove formed in the pendant B, and the spring *h*, as shown and described.

109,621.—MANUFACTURE OF PAPER.—Carleton B. Hutchins, Ann Arbor, Mich.

Claim.—The fibrous ingredients, as set forth in the foregoing specification, for the manufacture of paper, as before named.

109,622.—WATER-ELEVATOR.—Timothy H. Hutchinson, Gorham, N. H.

Claim.—The combination and arrangement of the weighted bucket *a* and the water-tank *b*, when combined with the trencher *c* and device *g h y*, troughs *c e*, and pump *f*, arranged and constructed substantially as described, and for the purposes hereinbefore set forth.

109,623.—PILE-DRIVER.—Jacob Huy, Whistler, Ala.

Claim.—1. The combination of the grooved sills C, toothed carriages C' sliding therein, shaft D, provided with cog-wheels *e* gearing with the rack *k* of the carriages, connecting-rods *n*, and frame E, made in sections, which are hinged together, substantially as and for the purpose specified.

2. The sills *c* provided with the ways *d*, and combined with the carriages C' provided with the ribs *i* and friction-rollers A, substantially as and for the purpose described.

109,624.—PUMP.—Joseph Icard, Donaldsonville, La.

Claim.—A pump, consisting of two or more forcing and two or more lifting pumps, in combination with air-chamber J and pipes F F, said pipes and pumps being provided with suitable valves, and all arranged as and for the purpose set forth.

109,625.—FRUIT-JAR.—Charles G. Imlay and William L. Imlay, Philadelphia, Pa.

Claim.—A fruit-jar, provided with a locking shoulder, consisting of the double inclines B B, situated within its body, at the base of the neck, and with a cover having a locking bar, A, operating as shown and described.

109,626.—EMBELLISHMENT OF GLASS.—Elias Ingraham, Bristol, Conn.

Claim.—The process of embellishing upon glass plate, substantially as set forth.

109,627, antedated November 17, 1870.—HEATING-STOVE.—George B. Isham, Burlington, Vt.

Claim.—1. The arrangement of the case *a*, pipe B, base C, perforated bottom D, and plate E', substantially as shown and described

2. The combination of the base C, perforated bottom D, hollow cone E, and ash-receiver F, all constructed and arranged substantially as and for the purposes herein set forth.

3. In combination with the perforated bottom D and hollow cone E, the perforated plate E', operated by means of the lever G, substantially as and for the purposes herein set forth.

4. The grate H, constructed as described, with perforated bulge in the center, serrated edges, and a circular downwardly-projecting flange on its under side, said flange encircling the upper end of the hollow cone E, substantially as and for the purposes herein set forth.

5. The fire-pot I, constructed without a bottom, and having its sides pierced or slotted, and provided with strengthening-bars L L, in combination with the grate H, substantially as and for the purposes herein set forth.

6. The combination of the jacket or case A, base C, bottom D, plate E', cone E, grate H, fire-pot I, and cap K, all constructed and arranged to operate substantially as and for the purposes herein set forth.

109,628.—TRUSS-BRIDGE.—William Johnson, Lambertville, N. J.

Claim.—1. The eccentrics E E and K, in combination with post A pin B, and diagonals O O P, arranged in the manner and for the purpose specified.

2. The lock-stops S S and bolts F F F, when combined and arranged in the manner and for the purpose substantially as described and set forth.

109,629.—CULTIVATOR-PLOW.—Thomas F. Jones, Hicksford, Va.

Claim.—The arrangement of the stock A carry-

ing the arc F, and the plow or point, and wings K, with a hinged and adjustable beam C, all being arranged as and for the purpose herein described and represented.

109,630.—MACHINE FOR CUTTING, SCORING, AND CORNERING PAPER FOR BOXES. Jacob M. Keen, Philadelphia, Pa., assignor to himself and Charles C. G. Armeling, same place.

Claim.—1. The frame M, arranged in the uprights N and N', and provided with a cutting-knife O, scoring-knives P and P', rectangular-shaped knives U U, cross-pieces T and T', head-blocks V V, and screw-rods W W, all combined and operating in the manner and for the purpose herein specified.

2. The construction of the longitudinal pieces Y Y, cross-pieces *e e e*, bolts *f f*, and wooden strip *g*, arranged between the frames A and A' of the machine, in the manner and for the purpose set forth.

109,631.—PUMP.—Henry K. Kenyon, Steubenville, Ohio, assignor to himself and Jarecki, Hays & Co., Erie, Pa.

Claim.—1. The construction of pumping tubes, by combining with the working-barrel a series of segmental or U-shaped pipes, or a series of crescent-shaped pipes, either made as a part of the working-barrel or securely attached thereto, and with an arrangement of communicating ports for the inflow and outflow of the liquid, substantially as described.

2. A series or column of valves, four or more in number, arranged in the lower end of the working-barrel, stationary when the pump is in operation, in combination with a corresponding series of longitudinal side chambers with communicating ports, substantially as described.

3. A series or column of valves, Nos. 1, 2, 3, and 4, in combination with the head *b'*, diaphragm or cage-body *a*, and chambers *a' a² a³ a⁴*, substantially as described.

109,632. — SEWING-MACHINE. — Isaac W. Lamb, Northville, Mich.

Claim.—1. A sewing-machine, arranged to produce, with one single thread, a stitch, in which every new loop is first put around and then through the preceding loop, substantially as herein shown and described.

2. The carrier D, in combination with the looper C, having a hook, *d*, and latch *c*, when constructed and operating substantially as herein shown and described.

3. The latch-opener E, arranged in combination with the looper C, substantially as here shown and described, to operate as set forth.

4. The spring *f* formed on the latch-opener, for the purpose of holding the looper while the carrier advances, as set forth.

109,633. — ELECTRO-PLATING IRON AND STEEL WITH SILVER.—Alexander Lowe, Kingston, Canada.

Claim.—The process described, of plating iron with silver by first plating it with gold, with the solution of cyanide of potassium and battery, as described, and covering it with silver in the ordinary manner, as and for the purpose set forth.

109,634.—FEED MECHANISM FOR CARDING-MACHINES.—Walter A. Lawton, Providence, R. I.

Claim.—The stationary arms A A applied to the shaft B for holding the sliver down upon the apron of a carding-machine, substantially as herein shown and described.

109,635.—LIFTING-JACK.—Stephen C. Leonard, Oberlin, Ohio.

Claim.—The standards B C, shouldered lever D, standard F, catch G, spring K, and base A, when arranged to operate in the manner as described, and for the purpose set forth.

109,636.—FIFTH-WHEEL.—Joseph Le Roy, Marathon, N. Y.

Claim.—An iron platform or frame for wagons, composed of the bars A, B, C, and D, stay rods *a*, *b*, *c*, and *d*, draft-shackles G G, and with or without the fifth-wheel F, substantially as shown and described.

109,637.—PIER FOR BRIDGES.—Christian H. Lilienthal, Yonkers, N. Y.

Claim.—1. In combination with the metal case B, made in sections and joined together as set forth, the inner case H, for the purposes hereinbefore described.

2. In combination with the spile A the metal caps L and M, the former resting directly on the spile and case, as set forth.

109,638.—DEODORIZING THE AIR AND GASES IN FAT-RENDERING, BONE-BOILING, &c.—Alfred Lister, Edwin Lister, and Charles J. Eames, Newark, N. J.

Claim.—The apparatus and process above described, the method for disinfecting and deodorizing the gases produced by fat-rendering, bone-boiling, and by any other means, substantially as herein set forth.

109,639.—PUMP.—Charles Markley, New York, N. Y.

Claim.—1. The combination of the reservoir B, delivery-sluice C, valve D, and cushion E, with the cylinder A, as and for the purpose set forth.

2. The arrangement of the air-vessel F, in combination with the sluice C, valve D, reservoir B, and cylinder A, as and for the purpose set forth.

109,640, antedated November 19, 1870.—BOLT. — Felix G. McClelland, Attica, Ohio.

Claim.—The guard *d*, having the ends *g* and *e* constructed as described, when used in combination with the shaft *a*, provided with the groove *c* and convex recess *b*, for receiving the corresponding ends of the guard *d*, and with the head *f*, with or without the ring *h*, when the whole is arranged and operated in the manner and for the purpose hereinbefore specified.

109,641.—HAT.—John W. McGill, Washington, D. C.

Claim.—As an article of manufacture, a hat whose lower body portion or band point, and outer brim portion, one or both, are colored to imitate a band or binding, substantially as herein set forth and described.

109,642. — CHIMNEY-TOP. — Melville E. Mead, Darien, Conn.

Claim.—The chimney-top, formed by the hood A having sides or wings B B, and operated automatically by the weighted vane, substantially as specified.

109,643.—GAUGE FOR GANG-SAWS.—Oliver Carpenter Meigs, Dubuque, Iowa.

Claim.—The gauges, formed of a central and main piece of iron, combined with a steel plate on each side to prevent lateral friction, as set forth.

109,644, antedated September 17, 1870.—VEHICLE.—F. H. C. Mey, Buffalo, N. Y.

Claim.—The combination of wheel A B C with a pair of wheels and body to form the running-gear of a vehicle, in the manner shown and described.

109,645.—STEAM-GENERATOR.—Joseph A. Miller, Boston, Mass.

Claim.—1. The pipe B, arranged in courses, which are connected at the ends as set forth, the

front connections entering and being supported by the chamber A, as set forth.

2. The deflector shield C, applied to the upper end of each pipe B within the chamber A, substantially as and for the purposes herein shown and described.

109,646.—MANUFACTURE OF GLASS ARTICLES.—Charles A. Moore, Westbrook, Conn.

Claim.—The mode of blowing lamp-chimneys and cones, or two or more articles, together, with the view of separating them from each other, substantially as and for the object set forth.

109,647. — CLOTHES-DRIER. — William N. Moore and Alexander K. Moore, Neenah, Wis.

Claim.—The cap E, having lugs *a*, screw D, and reel-head F, in combination with the thimble C having slots *b*, and the post A, all constructed substantially as described, and for the purposes set forth.

109,648.—TOWEL-RACK.—Frederick Myers, New York, N. Y.

Claim.—1. The combination of the plate A, the grooves B B B, the lip or projection G, the rack C, and the ball D, so applied as to form thereof a towel-rack, substantially as shown and described.

2. The towel-rack above described, constructed, arranged, and operating as set forth.

109,649, antedated November 26, 1870.—METALLIC AND ELASTIC STAIR-PLATE.—Peter W. Neefus, New York, N. Y.

Claim.— The combination, with a perforated stair or floor-plate, A, of a plate, B, having projections thereon of elastic material, which extend through the perforations in A, substantially as herein specified.

109,650, antedated November 26, 1870.—METALLIC AND ELASTIC DOOR-MAT.—Peter W. Neefus, New York, N. Y.

Claim.—A new article of manufacture, consisting of a floor or door-mat, on which narrow, elastic ribs B, or projections of sufficient height to bend when subjected to pressure from the foot, are secured in a plate, A, of wood or metal, substantially in the manner shown and described.

109,651, antedated November 26, 1870.—STAIR AND FLOOR-PLATE.—Peter W. Neefus, New York, N. Y.

Claim.—The combination of a wood or metal stair or floor-plate with elastic studs 9, 15, 21, and 27, secured substantially in the manner shown and described.

109,652.—STEAM-GENERATOR.—Eugen Neumann, New York, N. Y., assignor, by mesne assignments, to Charles D. Tyler, Newark, N. J.

Claim.—The employment of slanting bridges or partitions, G G, in the interior shell of a steam-boiler, perforated and stayed with tubes of different diameters, through which the flame and heat pass while the water surrounds them, substantially for the purpose shown and described.

109,653. — HAND-POWER BALING-PRESS.—William R. Newman, Galesburg, Ill.

Claim.—1. The combination and arrangement of the cords T T', pulleys *n'*, A, and *m*, windlass P, follower F, beam H, and loop M, with the frame A, substantially as described, and for the purpose set forth.

2. The vibrating arms N N and tapering shaft P, when arranged relatively as described, and operating conjointly to secure the proper winding of the cords T T' on the shaft P, substantially in the manner and for the purpose set forth.

109,654.—CHURN-DASHER.—Floyd Ogden, Fisherville, Ky.

Claim.—The churn-dasher B, formed of perforated ring *e*, flanges *d d*, and ball *f*, combined as described, with the balanced metallic valve F, having unequal areas on opposite sides of the pivot *g*, for the purpose specified.

109,655.—SEWING-MACHINE.—John Palmer, Randolph, Mass.

Claim.—1. The pressure-foot feed-wheel K, when used in combination with an awl or needle to which a lateral motion is given coinciding with the feed of material while passing through the same, substantially as described.

2. The rotary throat-wheels *n* and *n*, arranged and operating as set forth, when used in combination with a pressure-foot feed-wheel, substantially as described.

3. The throat-wheel *n'* mounted upon the hinged plate V', substantially as described.

4. The adjustable sliding block R upon the lever E, and carrying upon opposite sides thereof the pins *k* and *l*, when used in combination with the levers Q and T, the rocker-shafts L and S, and the feed-wheel K and awl-bar J, in such a manner that the movement of the block R upon the lever E shall adjust both the movement of the feed-wheel K and the lateral motion of the awl-bar, J, whether said rocker-shafts pass one through the other, as shown, or are arranged in separate bearings, substantially as described.

109,656, antedated November 26, 1870.—COMPOUND FOR BATING HIDES AND SKINS.—Charles F. Panknin, Charleston, S. C.

Claim.—A bate, to be used in the treatment of hides and skins, composed of carbolic acid, muriate of ammonia, and alum dissolved in water, in about the proportions specified.

109,657.—COMBINED GARDEN TOOL.—Louis Perrot, Greenville, and Frank Perrot and Charles H. Bates, Appleton, Wis.

Claim.—The means of combining the rotating cultivator F and hoe B, consisting of the shank A, pivot *r*, frame I G H, spurs D, recess E, set-screw J, plate K, spring *s*, and screw *t*, substantially as described.

109,658.—ENAMELED CAST-IRON RETORT.—Thomas D. Phillips, Cassadaga, and Thomas S. Phillips, Buffalo, assignors to Benoni S. Brown and Thomas S. Phillips, Buffalo, N. Y.

Claim.—A retort, as a new article of manufacture, made of cast-iron, in two parts, A A', lined with porcelain on the inside and at the edges of the joint, and secured together with an interposed packing, *b*, as hereinbefore set forth.

109,659. — STEAM-WHEEL.—John Nicolaus Pommert, Greenfield, Ohio.

Claim.—The combination of the wheel, the case A, hollow shaft E, and the hollow reacting arms K I, when arranged to discharge the steam on the surface of the water, substantially in the manner described.

109,660.—MATCH FOR CIGAR-LIGHTERS.—William Porter, St. Stephen's Parish, Canada.

Claim.—The mode herein described, for protecting the friction-ends of matches, and also securing said ends together by means of gummed tissue-paper or its equivalent, substantially as specified.

109,661, antedated November 19, 1870.—SHUTTER-WORKER.—Charles A. Potter, Providence, R. I.

Claim.—The fixed lever A, the fulcrum-bar B

with a hook or stud at each end, and the lever G, all combined as set forth, and for the purpose of working a blind or shutter.

109,662. — CLOTH-CUTTING ATTACHMENT FOR SEWING-MACHINES.—William Edgar Prall, Washington, D. C., and Alden B. Rand, Staten Island, N. Y.

Claim.—The cutting-attachment, constructed as herein shown and described, when combined with and operated from the rotating wheel or shaft of the machine.

109,663.—SHOW-CASE.—Philip Price, West Chester, Pa.

Claim.—1. A case, B, containing ice or a freezing mixture, and arranged within a case, constructed as set forth, for the exhibition of perishable articles.

2. The combination of the upright B secured to a base, X, a show-case revolving round said upright, and an adjustable pivot, *a*, secured to said case and bearing on the upright, so that by adjusting said pivot the case may be raised from or caused to rest on the base, all as described.

109,664.—WATER-WHEEL.—Demmon Reynolds, Napanock, N. Y.

Claim.—The combination of the crown-plate A, flange B, guide-plates C C′, gates D, ring E E′, and pinion F′, all constructed, arranged, and operated substantially as shown and described.

109,665.—MANUFACTURE OF WRENCH.—John Richards, Philadelphia, Pa.

Claim.—The within-described manner of manufacturing wrenches from pieces stamped or punched from sheets of metal, combined as herein specified.

109,666.—SAFETY-SWIVEL.—Richard Richards, Albany, N. Y.

Claim.—The swivel A *a′* B *b′*, constructed substantially as herein shown and described, and for the purpose set forth.

109,667. — EARTH-CLOSET. — George W. Roberts, Wilmington, Del., assignor to himself and John H. Graham, same place.

Claim.—The combination of the movable seat N with the sliding platform G, valve L, spring M, and hopper E having the sleeve *b*, whereby the quantity of earth to be used and the time of passage is regulated, arranged to operate in the manner and for the purpose specified.

109,668, antedated November 26, 1870.—CLOTH-GUIDING ATTACHMENT FOR SEWING-MACHINES.—Simeon Rogers and Edwin K. Sperry, Fleming, N. Y.

Claim.—The combination of the curved spring E and the guiding-rollers I I with the plate A, gauge B, and spring-guides D, all constructed, arranged, and operating as described.

109,669. — MANUFACTURE OF ARTIFICIAL STONE.—James L. Rowland, Milwaukee, Wis.

Claim.—1. An artificial stone manufactured from quick-lime slaked with the smallest quantity of water introduced in the shape of steam or vapor, in combination with other materials, substantially as described.

2. An artificial stone manufactured from a hydrate of lime or hydraulic lime, or hydraulic cement, treated as described, and combined or not, substantially as described.

3. The mode of hardening artificial stone and other articles, materials, mixtures, or combination of materials, by the introduction of carbonic-acid gas, artificially produced, into a structure of a holding medium placed or built over or around the same, substantially as herein described.

4. The mode of hardening artificial stone in the shape of tubes, pipes, or such articles, by the introduction into them of carbonic-acid gas artificially produced, and holding it confined in such tubes, pipes, or other articles, substantially as described.

5. The mode of hardening walls, hollow or with flues, made of artificial stone, by the introduction of carbonic acid artificially produced, in the manner described.

6. The mode of hardening quick-lime, or hydrate of lime, or hydraulic lime, or hydraulic cement, by the use of carbonic acid artificially produced, substantially as described.

7. The hardening or maturing manufactured stone and other articles having for their base, or as a part or ingredient of their base or combining medium, hydraulic cement, by the use of carbonic acid artificially produced, substantially as described.

109,670.—RAILWAY-FROG.—John C. Rupp, Newark, Del.

Claim.—The bars D and E E′, combined with the frog C and with the rails A A′ B B′, substantially as and for the purpose herein set forth.

109,671.—COCK FOR CARBURETERS, &c.—Samuel Rust, Jr., Cincinnati, Ohio.

Claim.—A cock having the interior portion composed of brass, iron, or other hard metal, and the exterior of zinc or other metal or alloy fusible at a lower temperature than brass, substantially as and for the purpose herein described.

109,672.—BEE-HIVE.—William A. Ruth, Wyoming, Del.

Claim.—The slides A A, arranged in the grooves *k k* of the partition *b b*, and provided with stems *i* projecting outside the wall of the hive, as and for the purpose specified.

109,673.—PROPELLER.—James Salter, Williamsburg, N. Y.

Claim.—A flat fan, A, set in the hub B, and secured thereto by means of braces C, the said braces being provided with adjusting swivels D, constructed, arranged, and operating in the manner and for the purpose substantially as herein set forth, shown, and described.

109,674. — DOVETAILING-MACHINE. — John B. Schmid, Salem, Va.

Claim.—1. The arrangement, in a dovetailing-machine, of the laterally-swinging frames D D E E I, and the notched curved plates M M, with respect to a vertically-movable frame, B, as and for the purpose specified.

2. The socketed flanged block N and concave seat O, arranged with respect to rod K and crosshead I, as and for the purpose described.

3. The arrangement, upon a vertically-adjustable table, Q, and a horizontally-sliding table, U, of the equal-angled points *s*, and the table A′ having angular points B′ thereon, as and for the purpose specified.

109,675. — DOVETAILING-MACHINE. — John B. Schmid, Salem, Va.

Claim.—The arrangement, in a foot-power mortising-machine, of joint I, extension K, curved bar L, and clamping-bolt and nut, as shown in the drawing, and for the purpose described.

109,676.—ELEVATOR.—George Scott, New Orleans, La.

Claim.—1. In the elevator A, having catches a^1 secured thereto, moving over guides or ways *b b*, and operated by the springs *a a*, substantially as shown and described.

2. The combination, in the elevator A, of catches a^1 a^1, springs *a a*, lever a^2, bracket a^3, ropes B E, wheels C F, sheaves *c c*, and balance-weight D, substantially as shown and specified.

3. The combination of the brake G, lever *g*, pawl *d*, and cords *f f′*, as shown and described, and for the purpose set forth.

109,677.—CONFECTIONERY FOR DRUGGISTS.—August Seitz, Hoboken, N. J.

Claim.—As an article of manufacture, a caramel, B, formed with an irregular cavity in the center thereof, for the purpose specified.

109,678.—PUMP.—William Shearer, Atlanta, Ga.

Claim.—The combination of the cylinder A, caps D, plates E, diaphragms H H′, and the working-rod, the cylinder being provided with the passages, the plates E with the openings, and the cavities and the diaphragms with the valves, all substantially as specified.

109,679.—AGRICULTURAL CALDRON.—Ebenezer E. Sill and Alonzo H. Bennett, Rochester, N. Y.

Claim.—1. The arrangement in the furnace A of the two air-spaces *b* and *c*, separated by the intermediate lining D, the outer space being of greater extent than the inner one, and the two having a compound circulation of air, by means of the passages *d d f* and *d′ d′ f′*, the whole operating in the manner and for the purpose specified.

2. The shell C, constructed of such shape as to fit the open-topped furnace, and provided with the depending leg *m*, forming a water-space below the caldron, and having the opening *p* in front, in the manner and for the purpose specified.

3. The combination of the open-topped caldron C and jacket C′, formed as herein described, the said parts being arranged with the jacket-space h between the walls, and with the depending leg *m*, forming an extra water-space below the caldron, as herein described.

109,680.—GRAIN AND FRUIT-CLEANER.—Silas A. Slocomb, Philadelphia, Pa.

Claim.—1. The combination of the screen-cylinder C, when composed of the hinged sections, flanges E and E′, shaft S, and brush B, constructed and operating as and for the purpose set forth.

2. In combination with the bisected screen-cylinder, with its flanges and brush, as described, the removable case G, as and for the purpose set forth.

109,681.—AXLE FOR CARRIAGES.—Alfred E. Smith, Bronxville, N. Y.

Claim.—1. The groove G formed in the screw-nib C, in combination with the detent-pin J and series of holes H formed in the nut F, arranged and operating in the manner and form substantially as set forth.

2. The combination of the solid-headed or box-nut F with the screw-nib C of a wagon-axle, when the said nib is made of greater length than the depth of the cavity in the screw-nut, so as to make the bottom of the said cavity the bearing for the end of the nib to draw against, and thus obviate the formation of shoulders on the nib of the axle, and thereby weakening the same.

109,682.—SLEIGH.—Samuel S. Spear, South Weymouth, Mass.

Claim.—1. In the runners of a sleigh, pivoted to its body or to an independent frame connected therewith by means of tripedal braces C, substantially in the manner and for the purpose set forth.

2. The independent frame H, to which the pole or shafts are secured, in combination with a pair of runners pivoted to the frame H, the whole arranged and operating substantially as and for the purpose described.

3. In combination with a pair of runners pivoted as described, the braces *c c*, as and for the purpose set forth.

109,683. — CURTAIN-FIXTURE. — Thomas Stewart, Philadelphia, Pa.

Claim.—The construction and arrangement of the brackets B and B^1, provided with flanges *f* and *f′*, openings O, and pulleys P and P′, in combination with the bracket B^2, pulley P^2, roller R, and cords C, C^1, and C^2, so as to operate substantially in the manner and for the purpose specified.

109,684.—WHEEL-PLOW.—John E. Swallow, Hagerstown, Md.

Claim.—1. The coupling G, connecting the tongue and forward end of the plow-beam, and constructed with segmental racks G^2, in combination with the pinions H H, substantially as set forth.

2. The slotted plow-beam D d^1, in combination with the guide-bars C^2 *e*, sliding bolt D^1, provided with a sleeve, D^2 *d*, and means substantially such as described, to operate upon the sliding bolt to raise and lower the rear end of the plow-beam.

109,685. — WATER-WHEEL. — William A. Terry, Bristol, Conn.

Claim.—1. The combination of the disk C, provided with buckets *a*, with the slotted wheel-race B, combined and operating together, substantially as described and for the purpose set forth.

2. The combination of the wheel-race B, provided with its T-shaped slot A, disk C, stops *k*, buckets *a*, and arms *b*, the whole combined and operating together, substantially as described.

3. So combining the disk C and oscillating buckets *a* that said buckets, with their adjacent parts and the disk C, shall enter the slot in the wheel-race as one continuous solid piece, substantially as described and for the purpose set forth.

109,686.—APPARATUS FOR MARKING CLOTH.—Alfred Thomas, Hoboken, N. J.

Claim.—1. The combination of the table A with the pins G G, the rollers C and B, the clamp H, the pattern-sheet E, and roller F, when operated substantially as and for the purpose set forth.

2. The roller F, when combined with the pattern-sheet E, and operated upon the material, substantially as and for the purpose herein described.

109,687.—APPARATUS FOR MARKING CLOTH.—Alphonse Thomas, Hoboken, N. Y.

Claim.—The platform A, the lid F with the hooks H H and the clamp E, and pins *a a a a*, in combination with the pattern-sheet I, substantially as and for the purpose herein stated.

109,688.—RECORDING INSTRUMENT FOR THE ELECTRIC TELEGRAPH.—William Thomson, Glasgow, Scotland.

Claim.—1. The general arrangement of apparatus, substantially as described.

2. The capillary or small ink-siphon, kept in rapid vibration, substantially as described.

3. The arrangement of such apparatus so that an electric discharge may pass between the siphon and the surface to be marked, and so set up the requisite vibrations.

4. The arrangement of the receiving-coil, consisting of a small number of turns of fine wire suspended between strained threads or fibers in such a position that part of the coil is situate in a powerful magnetic field, substantially as described.

109,689.—AUTOMATIC STOVE-REGISTER.—John S. Toan, Rochester, N. Y.

Claim.—1. The combination of the two register-disks D E, the first automatic in its action through the medium of expanding-rod H, and the latter adjustable by hand, the whole arranged as described, and operating in the manner and for the purpose specified.

2. An automatic register for attaching to stove-pipes, &c., consisting of an ordinary circular register-disk weighted or made heavier on one side, and connected with an expanding-rod, the whole arrangement being such that when the rod expands the register will open of its own weight as herein described.

with a hook or stud at each end, and the lever C, all combined as set forth, and for the purpose of working a blind or shutter.

109,662. — CLOTH-CUTTING ATTACHMENT FOR SEWING-MACHINES.—William Edgar Prall, Washington, D. C., and Alden B. Rand, Staten Island, N. Y.

Claim.—The cutting-attachment, constructed as herein shown and described, when combined with and operated from the rotating wheel or shaft of the machine.

109,663.—SHOW-CASE.—Philip Price, West Chester, Pa.

Claim.—1. A case, B, containing ice or a freezing mixture, and arranged within a case, constructed as set forth, for the exhibition of perishable articles.

2. The combination of the upright B secured to a base, X, a show-case revolving round said upright, and an adjustable pivot, *z*, secured to said case and bearing on the upright, so that by adjusting said pivot the case may be raised from or caused to rest on the base, all as described.

109,664.—WATER-WHEEL.—Demmon Reynolds, Napanock, N. Y.

Claim.—The combination of the crown-plate A, flange B, guide-plates C C′, gates D, ring E E′, and pinion F′, all constructed, arranged, and operated substantially as shown and described.

109,665.—MANUFACTURE OF WRENCH.—John Richards, Philadelphia, Pa.

Claim.—The within-described manner of manufacturing wrenches from pieces stamped or punched from sheets of metal, combined as herein specified.

109,666.—SAFETY-SWIVEL.—Richard Richards, Albany, N. Y.

Claim.—The swivel A *a′* B *b′*, constructed substantially as herein shown and described, and for the purpose set forth.

109,667. — EARTH-CLOSET. — George W. Roberts, Wilmington, Del., assignor to himself and John H. Graham, same place.

Claim.—The combination of the movable seat N with the sliding platform G, valve L, spring M, and hopper E having the sieve *b*, whereby the quantity of earth to be used and the time of passage is regulated, arranged to operate in the manner and for the purpose specified.

109,668, antedated November 26, 1870.—CLOTH-GUIDING ATTACHMENT FOR SEWING-MACHINES.—Simeon Rogers and Edwin K. Sperry, Fleming, N. Y.

Claim.—The combination of the curved spring E and the guiding-rollers I I with the plate A, gauge B, and spring-guides D, all constructed, arranged, and operating as described.

109,669. — MANUFACTURE OF ARTIFICIAL STONE.—James L. Rowland, Milwaukee, Wis.

Claim.—1. An artificial stone manufactured from quick-lime slaked with the smallest quantity of water introduced in the shape of steam or vapor, in combination with other materials, substantially as described.

2. An artificial stone manufactured from a hydrate of lime or hydraulic lime, or hydraulic cement, treated as described, and combined or not, substantially as described.

3. The mode of hardening artificial stone and other articles, materials, mixtures, or combination of materials, by the introduction of carbonic-acid gas, artificially produced, into a structure of a holding medium placed or built over or around the same, substantially as herein described.

4. The mode of hardening artificial stone in the shape of tubes, pipes, or such articles, by the introduction into them of carbonic-acid gas artificially produced, and holding it confined in such tubes, pipes, or other articles, substantially as described.

5. The mode of hardening walls, hollow or with flues, made of artificial stone, by the introduction of carbonic acid artificially produced, in the manner described.

6. The mode of hardening quick-lime, or hydrate of lime, or hydraulic lime, or hydraulic cement, by the use of carbonic acid artificially produced, substantially as described.

7. The hardening or maturing manufactured stone and other articles having for their base, or as a part or ingredient of their base or combining medium, hydraulic cement, by the use of carbonic acid artificially produced, substantially as described.

109,670.—RAILWAY-FROG.—John C. Rupp, Newark, Del.

Claim.—The bars D and E E′, combined with the frog C and with the rails A A′ B B′, substantially as and for the purpose herein set forth.

109,671.—COCK FOR CARBURETERS, &c.—Samuel Rust, Jr., Cincinnati, Ohio.

Claim.—A cock having the interior portion composed of brass, iron, or other hard metal, and the exterior of zinc or other metal or alloy fusible at a lower temperature than brass, substantially as and for the purpose herein described.

109,672.—BEE-HIVE.—William A. Ruth, Wyoming, Del.

Claim.—The slides *h h*, arranged in the grooves *k k* of the partition *b b*, and provided with stems *i i* projecting outside the wall of the hive, as and for the purpose specified.

109,673.—PROPELLER.—James Salter, Williamsburg, N. Y.

Claim.—A flat fan, A, set in the hub B, and secured thereto by means of braces C, the said braces being provided with adjusting swivels D, constructed, arranged, and operating in the manner and for the purpose substantially as herein set forth, shown, and described.

109,674. — DOVETAILING-MACHINE. — John B. Schmid, Salem, Va.

Claim.—1. The arrangement, in a dovetailing-machine, of the laterally-swinging frames D D E E I, and the notched curved plates M M, with respect to a vertically-movable frame, B, as and for the purpose specified.

2. The socketed flanged block N and concave seat O, arranged with respect to rod K and crosshead I, as and for the purpose described.

3. The arrangement, upon a vertically-adjustable table, Q, and a horizontally-sliding table, U, of the equal-angled points *x*, and the table A′ having angular points B′ thereon, as and for the purpose specified.

109,675. — DOVETAILING-MACHINE. — John B. Schmid, Salem, Va.

Claim.—The arrangement, in a foot-power mortising-machine, of joint I, extension K, curved bar L, and clamping-bolt and nut, as shown in the drawing, and for the purpose described.

109,676.—ELEVATOR.—George Scott, New Orleans, La.

Claim.—1. In the elevator A, having catches *a′ a′* secured thereto, moving over guides or ways *b b*, and operated by the springs *c c*, substantially as shown and described.

2. The combination, in the elevator A, of catches *a′ a′*, springs *c c*, lever *a²*, bracket *a³*, ropes B E, wheels C F, sheaves *e e*, and balance-weight D, substantially as shown and specified.

3. The combination of the brake G, lever *g*, pawl *d*, and cords *f f′*, as shown and described, and for the purpose set forth.

109,677.—CONFECTIONERY FOR DRUGGISTS.—August Seitz, Hoboken, N. J.

Claim.—As an article of manufacture, a caramel, B, formed with an irregular cavity in the center thereof, for the purpose specified.

109,678.—PUMP.—William Shearer, Atlanta, Ga.

Claim.—The combination of the cylinder A, caps D, plates E, diaphragms H H′, and the working-rod, the cylinder being provided with the passages, the plates E with the openings, and the cavities and the diaphragms with the valves, all substantially as specified.

109,679.—AGRICULTURAL CALDRON.—Ebenezer E. Sill and Alonzo H. Bennett, Rochester, N. Y.

Claim.—1. The arrangement in the furnace A of the two air-spaces *b* and *c*, separated by the intermediate lining D, the outer space being of greater extent than the inner one, and the two having a compound circulation of air, by means of the passages *d d f* and *d′ d′ f′*, the whole operating in the manner and for the purpose specified.

2. The shell C, constructed of such shape as to fit the open-topped furnace, and provided with the depending leg *m*, forming a water-space below the caldron, and having the opening *p* in front, in the manner and for the purpose specified.

3. The combination of the open-topped caldron C and jacket C′, formed as herein described, the said parts being arranged with the jacket-space *h* between the walls, and with the depending leg *m*, forming an extra water-space below the caldron, as herein described.

109,680.—GRAIN AND FRUIT-CLEANER.—Silas A. Slocomb, Philadelphia, Pa.

Claim.—1. The combination of the screen-cylinder C, when composed of the hinged sections, flanges E and E′, shaft S, and brush B, constructed and operating as and for the purpose set forth.

2. In combination with the bisected screen-cylinder, with its flanges and brush, as described, the removable case G, as and for the purpose set forth.

109,681.—AXLE FOR CARRIAGES.—Alfred E. Smith, Bronxville, N. Y.

Claim.—1. The groove G formed in the screw-nib C, in combination with the detent-pin J and series of holes H formed in the nut F, arranged and operating in the manner and form substantially as set forth.

2. The combination of the solid-headed or box-nut F with the screw-nib C of a wagon-axle, when the said nib is made of greater length than the depth of the cavity in the screw-nut, so as to make the bottom of the said cavity the bearing for the end of the nib to draw against, and thus obviate the formation of shoulders on the nib of the axle, and thereby weakening the same.

109,682.—SLEIGH.—Samuel S. Spear, South Weymouth, Mass.

Claim.—1. In the runners of a sleigh, pivoted to its body or to an independent frame connected therewith by means of tripedal braces C, substantially in the manner and for the purpose set forth.

2. The independent frame H, to which the pole or shafts are secured, in combination with a pair of runners pivoted to the frame H, the whole arranged and operating substantially as and for the purpose described.

3. In combination with a pair of runners pivoted as described, the braces *e e*, as and for the purpose set forth.

109,683. — CURTAIN-FIXTURE. — Thomas Stewart, Philadelphia, Pa.

Claim.—The construction and arrangement of the brackets B and B¹, provided with flanges *f* and *f′*, openings O, and pulleys P and P′, in combination with the bracket B², pulley P², roller R, and cords C, C¹, and C², so as to operate substantially in the manner and for the purpose specified.

109,684.—WHEEL-PLOW.—John E. Swallow, Hagerstown, Md.

Claim.—1. The coupling G, connecting the tongue and forward end of the plow-beam, and constructed with segmental racks G², in combination with the pinions H H, substantially as set forth.

2. The slotted plow-beam D *d*¹, in combination with the guide-bars C² *e*, sliding bolt D¹, provided with a sleeve, D² *d*, and means substantially such as described, to operate upon the sliding bolt to raise and lower the rear end of the plow-beam.

109,685. — WATER-WHEEL. — William A. Terry, Bristol, Conn.

Claim.—1. The combination of the disk C, provided with buckets *a*, with the slotted wheel-race B, combined and operating together, substantially as described and for the purpose set forth.

2. The combination of the wheel-race B, provided with its T-shaped slot *h*, disk C, stops *k*, buckets *a*, and arms *b*, the whole combined and operating together, substantially as described.

3. So combining the disk C and oscillating buckets *a* that said buckets, with their adjacent parts and the disk C, shall enter the slot in the wheel-race as one continuous solid piece, substantially as described and for the purpose set forth.

109,686.—APPARATUS FOR MARKING CLOTH.—Alfred Thomas, Hoboken, N. J.

Claim.—1. The combination of the table A with the pins G G, the rollers C and B, the clamp H, the pattern-sheet E, and roller F, when operated substantially as and for the purpose set forth.

2. The roller F, when combined with the pattern-sheet E, and operated upon the material, substantially as and for the purpose herein described.

109,687.—APPARATUS FOR MARKING CLOTH.—Alphonse Thomas, Hoboken, N. Y.

Claim.—The platform A, the lid F with the hooks H H and the clamp E, and pins *a a a a*, in combination with the pattern-sheet I, substantially as and for the purpose herein stated.

109,688.—RECORDING INSTRUMENT FOR THE ELECTRIC TELEGRAPH.—William Thomson, Glasgow, Scotland.

Claim.—1. The general arrangement of apparatus, substantially as described.

2. The capillary or small ink-siphon, kept in rapid vibration, substantially as described.

3. The arrangement of such apparatus so that an electric discharge may pass between the siphon and the surface to be marked, and so set up the requisite vibrations.

4. The arrangement of the receiving-coil, consisting of a small number of turns of fine wire suspended between strained threads or fibers in such a position that part of the coil is situate in a powerful magnetic field, substantially as described.

109,689.—AUTOMATIC STOVE-REGISTER. — John S. Toan, Rochester, N. Y.

Claim.—1. The combination of the two register-disks D E, the first automatic in its action through the medium of expanding-rod H, and the latter adjustable by hand, the whole arranged as described, and operating in the manner and for the purpose specified.

2. An automatic register for attaching to stove-pipes, &c., consisting of an ordinary circular register-disk weighted or made heavier on one side, and connected with an expanding-rod, the whole arrangement being such that when the rod expands the register will open of its own weight as herein described.

109,690.—STRETCHING-FRAME.—John Tonner, Canton, Ohio.

Claim.—1. The stretching-frame A B C D, herein described, the same consisting of the bars A B and C D, having the slots *a b c d* cut therein, and united by the clamping-bolts E F, constructed with thumb-nuts and flattened stems, substantially as is herein specified.

2. The combination, with the frame-bars A B, of the legs G G hinged to said bars, and the braces H H pivoted to said bars and provided with the thumb-screws I, said braces being so arranged as to be secured either to the legs or the frame-bars by the thumb-screws I, and the several parts being arranged to fold together, substantially as specified.

109,691. — SIRUP-CAN. — Antony Tumler, New York, N. Y.

Claim.—The lever-valve G, spiral spring H, spindle K, knob M, stop L, can A, cover B, and well C, combined, arranged, and operating substantially as and for the purposes described and set forth.

109,692.—BUFFER AND CATCH FOR DOORS.—Andrew A. Veer, Delaware, Ohio.

Claim. — The adjustable buffer-head D or its equivalent, provided with a buffer-block, in combination with a base-plate and a catch, substantially as and for the purpose described.

109,693. — OIL-CAN. — Henry C. Warfel, Philipsburg, Pa.

Claim.—1. The combination with an oil-can of the plug A, spring C, and operating wire-pusher E, all arranged substantially as specified.

2. The pusher E of the plug-operating devices, arranged for actuating the air-valve M by means of hook P, simultaneously with plug A by means of spring C, all substantially as described.

109,694. — AWNING-FRAME. — Christopher Werner, Charleston, S. C.

Claim.—1. The rods D D, arranged to diverge from each other throughout their length, for the purpose of laterally bracing the awning-frame, as shown and described.

2. The combination of the pins F, arms B, bar or pipe C, eye-plate E, rods D D, pins G, screw-nuts I I, and studs H, all arranged as shown and described.

109,695.—ATMOSPHERIC CAR-BRAKE PIPES. George Westinghouse, Jr., Pittsburg, Pa.

Claim.—1. The pipes *a a'*, the latter having a packing-ring, *a''*, in its taper end, and the former a conical coat or rubber at its base, arranged in connection with the ring *n*, springs *m*, and head *o*, the latter having cut-away parts *o''*, substantially as described.

2. In combination with the valves of an atmospheric car-brake coupling, an interposed longitudinally-movable block or stem, whereby, when the couplings are united, the valves are unseated, substantially as described.

109,696. — VIOLIN. — Maurice W. White, Boston, Mass., assignor to himself and Ebenezer P. Cutter, same place.

Claim.—A violin or kindred instrument having the elliptical bracing *a b*, or its equivalent, applied in the manner and for the purposes hereinbefore set forth.

109,697, antedated November 19, 1870.—WASHING-MACHINE.—Levi H. Whitney, Washington, D. C.

Claim.—A suds-box of a washing-machine, having an inclined lid, in which the agitator has its bearings so that the arms of such agitator move in a diagonal plane, substantially as and for the purpose set forth.

109,698.—DANCING TOY.—George L. Wild and Louis P. Wild, Washington, D. C.

Claim.—1. The devices A B B C D and the automatic figures, whereby to transmit invisible musical vibrations to automatic figures and impart motion thereto, all combined and arranged substantially as herein shown and described.

2. In the body *a* of the puppet, as shown in fig. 4, the recesses *b b* and the springs M, with their turned-up ends *c c*, all arranged as and for the purpose set forth.

109,699. — MANGLING AND IRONING-MACHINES.—Stephen Williams, Philadelphia, Pa.

Claim.—1. The combination and arrangement of the crank H, and gear-wheels D E G I with the rollers C J, and pivoted frame K L, substantially as herein shown and described, and for the purpose set forth.

2. The curved arms or bars K, and pivoted cross-bar L, in combination with the rollers C J, substantially as herein shown and described, and for the purpose set forth.

3. The cam P, in combination with the bed-plate A, frame Q L K, and rollers J C, substantially as herein shown and described, and for the purpose set forth.

4. The combination of the lever V, horizontal rod or shaft U, crank-arm T, and slotted crank-arm S with each other and with the bed-plate A, cam P, frame Q L K, and rollers J C, substantially as herein shown and described, and for the purpose set forth.

5. The horizontal rod U, in combination with the slotted crank-arm S, for operating the device for raising the upper roller for the introduction of the cloth to be operated upon, substantially as herein shown and described.

109,700. — HORSE HAY-RAKE.—James E. Wisner, Friendship, N. Y.

Claim.—1. In combination with the wheels of the rake, the sliding rods J and lifting-bar E, the jointed bar L and pin M, substantially as described, for the purpose specified.

2. In combination with the wheels, the sliding rods J, jointed bar L, and sliding pin M, substantially as described, for the purpose specified.

3. The foot-lever N and stop O, in combination with the sliding pin M, jointed bar L, sliding rods J, and the wheels of the rake, substantially as described, for the purpose specified.

109,701. — HORSE OR MULE-SHOE.—John Wonderlin, Louisville, Ky.

Claim.—The shoe A, having a depression in the under side when made to cover the entire under surface of the hoof, and provided with toe and heel-calks, a hook, B, metallic band C, and tightening-nuts D, all substantially as herein described.

109,702.—BEE-HOUSE.—James W. Wood, Alden, Ill.

Claim.—The arrangement of the bee-house A, secured by a locked door, I, and having a central passage between inwardly-removable hives, said hives being accessible only to bees from the outside by means of apertures E, substantially as described.

109,703. — FASTENING FOR FRUIT-JARS.—Theodore F. Woodward, Winslow, N. J., assignor to Hay & Co., Philadelphia, Pa.

Claim.—The combination of the wire clamp D, constructed substantially as described, with the cover C having vertical grooves *a a*, and with the jar A having double inclines *f f*, substantially in the manner, and for the purpose set forth.

109,704. — GATE. — Jackson Wright, Versailles, Ill.

Claim.—1. The pivoted sway-beam M, arms O O, and block S, all combined, constructed, and applied to the fastening-bars to unlatch the gate, in the manner described.

2. The unlatching device M O O S, and the opening device V V C, combined, as described, with levers K K and rods Y Y, to unlatch and open the gate in quick succession, and by the same actuating force, as described.

109,705, antedated November 18, 1870.—SEWING-MECHANISM.—Josiah L. Young, San Francisco, Cal.

Claim.—1. The reciprocating-bar J, having pin *i* and pin I and washer, in combination with the slotted plate b^2, the guide-cam *b*, and the roller *d* for feeding the material, substantially as specified.

2. The combination with the cutting-blades A E, of the needle and looper, operating to cut and baste at one operation, as set forth.

109,706.—DRYING DISINTEGRATED FIBERS. William Adamson, Philadelphia, Pa.

Claim.—The process herein described of treating separated fibers.

109,707.—CARRIAGE-WHEEL HUB.—Simeon Atha, West Liberty, Ohio.

Claim.—1. The metallic shells or bands C C', each carrying its own separate and independent metallic mortises, substantially as described.

2. The flanges D D', formed with or secured upon the metallic shells or bands C C', when said shells or bands each carry its own separate mortised metallic plates *a a'*, substantially as described, for the purpose set forth.

3. The recesses or openings *e e* formed between the flanges D D' and the metallic shells or bands C C', substantially as described, for the purpose set forth.

4. The metallic shells or bands C C', with the mortised plates *a a'*, and flanges D D', in combination with the wooden hub or core A, substantially as described, for the purpose set forth.

109,708. — TRAVERSE MOTION FOR WINDING AND SPOOLING MACHINERY.—John E. Atwood, Mansfield, Conn.

Claim.—1. The combination of the differential wheels F and F', furnished respectively with the projection *e* and cam *f*, the pinion E, and the cam G, with the traverse-bar A, substantially as and for the purpose or purposes herein set forth.

2. The wire-conductors H, made double, in combination with the staples *g* and flattened interposed wires A, essentially as shown and described.

3. The sheet-metal thread-guides C, constructed of a bent or hollow form, and with a flat slotted base or end, substantially as specified.

109,709.—PULLEY-COUPLING.—John E. Atwood, Mansfield, Conn.

Claim.—The insertion of the keys *e e* in recesses *d d* in the shaft A and hub *b*, in such manner that they act as dowels to prevent the rotation of the one within the other, and to prevent the withdrawal of the shaft endwise from the eye of the pulley, substantially as shown and described.

109,710.—WASHING-MACHINE.—Bennett C. Bailey, Constitution, Ohio.

Claim.—1. The combination of the press-boards B and B', levers E E, links E^1 E^1, and cross-bar E^2, all arranged and operating substantially as set forth.

2. In combination with the elements enumerated in the preceding clause, the oscillating frame F F F^1, and links F^2 F^2, substantially as and for the purpose set forth.

3. The combination and arrangement of the press-board B, board D' hinged thereto, and stationary board D, the two boards forming a false bottom, substantially as set forth.

109,711.—GRATE-BAR.—Hosea Ball, New York, N. Y.

Claim.—The rocking grate-bars B, each provided at top with a number of transverse bars D constructed with convex upper surfaces eccentric to the pivots C, the whole being adapted to operate substantially as described.

109,712.—IRONING-BOARD.—Jacob H. Beidler, Adrian, Mich.

Claim.—The combination, with the board A, of the stationary under L-shaped piece B and fulcrum C, all as shown and described.

109,713.—GATE.—Robert T. Bowne, Fallston, Md.

Claim.—1. The lever K, pivoted at its center, in combination with the cords P Q and pulleys N O at the ends of the crank-rods L M, so that said lever may always be moved by a positive pull to operate the gate, as set forth.

2. In combination with the lever C or its equivalent, arranged to operate the gate B, as described, the latch F, constructed to operate substantially as set forth.

109,714. — TANNING COMPOSITION.—William B. Brittingham, La Fayette, Ind.

Claim.—1. A composition for preparing skins for the removal of the hair therefrom, consisting of the following-named ingredients, and substantially in the following-named proportions: Potash, three ounces; nitrate of potassa, one ounce; common salt, three ounces; lime, twenty ounces; water, ten gallons.

2. A composition for tanning leather, consisting of the following-named ingredients, and substantially in the following proportions: A strong decoction of bark, japonica, gambier, or cutch, added to potash or carbonate of potassa, two ounces; nitrate of potassa, four ounces; alum, two ounces; sulphate of zinc, one ounce; water, ten gallons.

109,715.—PLATE-LIFTER.—Heman P. Brooks, Waterbury, Conn.

Claim.—The herein-described plate-lifter, consisting of the three hooks *a d f*, the said hooks *a* and *f* being provided with springs for their adjustment, substantially in the manner herein set forth.

109,716.—RIDDLE FOR SEPARATING GRAIN. Matthew M. Cooper and James W. Donaldson, Fairfield, Cal.

Claim.—The riddle herein described, consisting of the frame A, the inclined planes B, the longitudinal plates or partitions C, and the longitudinal wires D, when combined and arranged to operate substantially as described, and for the purpose set forth.

109,717.—PADLOCK.—Joseph Corbett, Brooklyn, N. Y.

Claim.—1. The key, constructed with a thick bit, the steps of which have operating faces of varying curves, in combination with the ring-tumblers D and with a bolt so constructed that the said tumblers and bolt, or any two of them, will be adjusted or actuated by the contact of parts of the key not in one and the same radial plane.

2. The pivoted dog G, operated positively by a tusk or equivalent device on the bolt-shank, to lift the nose of the shackle and hold the bolt in its retracted position.

109,718. — SEAL-LOCK. — Joseph Corbett, Brooklyn, and Franklin W. Brooks, New York, N. Y., assignors to the American Seal-Lock Company, New York City.

Claim.—The sliding case D carrying a seal, E, and secured by a spring catch, G H, which operates independently of the lock or other fastening, and which cannot be retracted while the seal is in position without breaking the latter.

109,719. — HARROW-TEETH. — Squire W. Corbin, Bainbridge, N. Y.

Claim.—The combination of the inclined socket

A, tooth C, and spur or star-wheel D, all constructed and arranged substantially as and for the purposes herein set forth.

109,720.—Fly-Brush.—James E. Darnall, Washington, D. C.

Claim.—As an article of manufacture, the within-described fly-brush, composed of slitted sheets of paper, A, pasted together and folded over a string, B, by which they are secured to the handle C, in the manner set forth.

109,721. — Oscillating Piston-Engine.—James B. Davis and Seth M. Davis, Harrisonville, Mo.

Claim.—1. The combination and arrangement of the cylinder B, having an annular cavity, oscillating piston D, shaft B^2, gear-wheel B^3, wheels D D and their operative mechanism, shaft D^1, and fly or hand-wheel D^2, substantially as and for the purpose set forth.

2. The combination and arrangement of the disks D^3 and D^4, and valves C′ C″, substantially as and for the purpose set forth.

3. The combination and arrangement of the wheels D D, rods G G, and pawls E E, as and for the purpose set forth.

4. The construction and arrangement of the wheels D D, substantially as and for the purpose set forth.

109,722. — Packing-Box for Rotary Steam-Cylinders.—Samuel Deacon and John Russell, Lawrence, Mass.

Claim.—The nut D, adjusted on the cam E, and arranged to clamp the packing between two conical ends, substantially as herein shown and described.

109,723. — Electro-Magnetic Burglar-Alarm.—James Madison Dille, Coopertown, Pa.

Claim.—1. An electro-magnetic burglar-signal, constructed substantially as herein described, with two electro-magnets operating separate clock-works, one when the current is broken and the other when connection is made, as herein set forth.

2. The springs *e e* or *e′*, constructed and arranged as described, to form a connection, and also to break a current, substantially as and for the purpose herein set forth.

3. In combination with the electro-magnetic burglar-signal, as herein described, the spring *b*, post *d*, lever *c*, and key *w*, substantially as and for the purposes herein set forth.

4. A wire cable for conducting electricity, composed of two or more single wires, each covered with hot resin or its equivalent, forming a brittle coating, and twisted or braided together while said coating is still warm, and the whole then covered with an elastic or flexible coating, substantially as and for the purposes herein set forth.

109,724. — Concrete for Paving and Roofing.—Edward Duempelman, New York, N. Y.

Claim.—The process of sulphurizing of oil, by treatment with chloride of sulphur in the proportions named, which is to be subsequently added to pure asphaltum, in the manner and for the purposes above described and set forth.

109,725.—Machine for Cutting Sheets of India Rubber.—Charles A. Ensign, Naugatuck, Conn.

Claim.—1. The revolving cutter *a* and fixed cutter *d*, combined with the moving table C and endless band E so as to present the gum to the said cutters, in the manner described.

2. In combination with the revolving cutter *a*, fixed cutter *d*, and a device for feeding the gum thereto, the arrangement of the sheet T, to receive the said gum when cut, and operating in the manner described.

3. In combination with the revolving cutter *a*, fixed cutter *d*, and a device for feeding the gum thereto, the lever L, carrying the rod *n*, so as to disengage the sheet of gum from the fixed cutter, as substantially as set forth.

109,726.—Machine for Joining Irregular Seams in India-rubber Work.—Charles A. Ensign, Naugatuck, Conn.

Claim.—1. In combination with the fixed and stationary cutters F and I, the plate L and folder N, arranged so as to receive the strip of fabric, cut and double the said strip over the plate L, substantially as set forth.

2. In combination with the plate L and folder N, operating as described, the bed *a* and presser *b*, when arranged so that the strip folded upon the said plate may, by the turning of the plate, be laid upon the said bed, substantially as set forth.

3. In combination with the plate L, folder N, bed *a*, and presser *b*, arrangement of the sides W, operating to move the folder away from the said strip when laid upon the said bed, substantially as set forth.

109,727.—Railway-Car Brake. — Francis M. Finnell, Covington, Ky.

Claim.—The buffer E, rod G G′, and brake-lever I, arranged relatively as described, in combination with the link H^1 and spring-lever $H H^2$, connected by the cord or chain K to the brake-shaft, and operating substantially as set forth.

109,728.—Shoe.—John W. Fisher, Albany, N. Y.

Claim.—A shoe, made with the extended flaps B D formed substantially in the manner shown, so that the shoe may be convertible, at pleasure, into a buttoned or laced gaiter or shoe.

109,729.—Shoe.—John W. Fisher, Albany, N. Y.

Claim.—The within-described slipper, provided with the extended upper A and the flaps C C so that it may be used interchangeably as a slipper and as a shoe, substantially as set forth.

109,730, antedated November 19, 1870.—Faucet. — Oscar Hanks, Cincinnati, Ohio.

Claim.—The shell A *a*, tubular revolving-valves B *b*, and cam-handle C *c*, combined and operating substantially in the manner, and for the purpose specified.

109,731. — Breech-loading Fire-Arm.—John Hanson, Rastcliffe, near Huddersfield, England.

Claim.—1. The plug or rod with two heads, within a tube to be acted upon, in the manner and for the purpose hereinbefore described and shown in the accompanying drawing.

2. A tube for containing the coiled spring, and to serve as a guide for the closing-bolt to slide upon, in the manner hereinbefore shown and described.

3. The disk, with a projecting thumb-piece, and with a portion of the edge cut away, for retaining the arm at full cock, or for freeing it ready for the discharge, as hereinbefore shown and described.

109,732. — Air-Pump. — John F. Haskins, Fitchburg, Mass.

Claim.—1. The centrally-perforated disk-valve, in combination with a fixed central guide, formed substantially as described, in the part over which such valve moves in action, for the purpose specified.

2. The combination of the pump-barrel, chest, delivery-valve seat, delivery-valve, and pump or chest-head, when arranged substantially as and for the purpose set forth.

109,733.—Clothes-line Fastener.—Bryant B. Herrick, Decatur, Mich., assignor of one-half his right to John H. Wallace, same place.

Claim.—1. A cam *c*, working against a fixed counter, H, when said cam is pivoted to a plate or disk having a partial movement upon an eccentric pivot, *c*, whereby the interval between the cam and its counter may be increased or decreased at pleasure, substantially as and for the purposes herein set forth.

2. The combination of the projecting arm *k* and friction-roller *p* with the fixed counter H and swinging cam *c*, substantially as and for the purpose herein set forth.

109,734, antedated November 26, 1870.—Flood-Gate.—Nathaniel Hinckley, Marston's Mills, Mass.

Claim.—The troughed lever, carrying a float at one end and a tank at the other, and connected, to operating the gate at a point between the float and tank, substantially as shown and described.

109,735. — Safety-Tube for Lamps. — George M. Hopkins and John A. Straight, Albion, N. Y.

Claim.—The tube B, made of non-conducting fibrous material, and suspended within the reservoir of a lamp, in the manner and for the purpose described.

109,736.—Garter.—Henry A. House, Bridgeport, Conn.

Claim.—A garter or band composed of two or more wire coils, which are uncovered so as to afford ventilation, and which are tied together laterally at their ends by plates or pieces *a*, substantially as and for the purpose described.

109,737.—Garter.—Henry A. House, Bridgeport, Conn.

Claim.—1. An uncovered wire-spring garter or band, which has its adjoining springs connected and stayed at one or more points between its fastening ends, substantially as described.

2. A stay or stays, *b*, arranged within an uncovered wire-spring garter or band, substantially as described.

3. The clasp-plates, constructed with tongues *t t*, notched, as described, to receive and hold the ends of the springs A A, substantially as described.

109,738.—Fluting-Machine.—Arthur Y. Hubbell, Elmira, N. Y.

Claim. — 1. The right-angular roll-supporting frame G, provided with a slot through which the journal of the lower roller passes, and extended into the bed-plate of the machine, all substantially as and for the purposes herein set forth.

2. The combination of the upper roll-supporting frame G, its guide-pins *a a*, tension-spring and elevating device, with the outer main standard C, substantially as set forth.

3. The combination of the shaft I, its pin *i*, with the standard C having a hub, *b*, with incline or inclines *k* with a stop at each end for raising, lowering, and locking the upper roll and compressing and holding the spring H, all substantially as set forth.

109,739.—Package for Lard, Butter, &c. George M. Huntly, Grand Rapids, Mich.

Claim.—The within-described cylindrical package or nests of packages, whose sides are made of paper or pasteboard connected with a wooden bottom and a rabbeted wooden top, said sides, top, and bottom being coated with a solution of gum-arabic and glue on their inner sides, all as set forth.

109,740.—Friction-Clutch.—Walter W. Jerome, Samuel B. Alger, and Clinton H. Sage, Norwich, N. Y.

Claim.—The pivoted curved arms G, and adjusting-screws H, or equivalent, in combination with the slides D *d*, springs I I, sleeve E, hub B, and pulley C, substantially as herein shown and described, and for the purpose set forth.

109,741.—Rotary Plow.—Nelson T. Judd, Washington, D. C.

Claim.—1. The frame F, pivoted centrally on the axle B having a series of rotary plows mounted upon a transverse shaft at its rear end, and so arranged that, by adjusting its front end, the plows can be raised or lowered at will, substantially as described.

2. The arrangement of a series of gangs of rotary plows, substantially as described, whereby the plows of each gang may be adjusted to cut at any required depth, independently of the other gangs in the series, so that, while one side of the machine is lower than the other, the whole series of plows may be adjusted to cut at a uniform depth, as set forth.

3. The oscillating-frame F, having levers *m*, with their pins *n* and springs *l* attached thereto, in combination with the front frame or reach C having the screw G and inclines *p* thereon, and the sliding clutches *f* and wheels D, with the clutches *h*, all arranged to operate as and for the purpose set forth.

109,742.—Paper-Stock.—Morris L. Keen, Jersey City, N. J., assignor to himself and Samuel A. Walsh, New York City.

Claim.—1. The brown paper-stock herein described, made by the first process, and having the several qualities and peculiarities herein described.

2. The gray paper-stock, as produced from the brown by boiling the same in alkaline solutions, put up in any convenient form for sale or use.

3. The bleached paper-stock, as produced from the brown by boiling the same in alkaline solutions, and treating it with any bleaching materials.

109,743. — Separating Lead from the Precious Metals.—Solomon W. Kirk, Philadelphia, Pa., assignor to himself and William Bailey, same place.

Claim.—1. The process of applying black oxide of manganese, or any other material that will liberate oxygen at an incandescent heat, to melted lead, and forcing through the mass a stream of oxygen gas or atmospheric air, so as to separate the baser from the precious metals, substantially as described.

2. The process of forcing oxygen gas or atmospheric air through melted lead, so as to convert it with great rapidity into oxide of lead or litharge, for the purpose of separating the gold or silver that it may contain, substantially as specified.

109,744.—Fan Attachment for Rocking-Chairs.—Rudolph Knaffl, Nashville, and Theodore M. Schleier, Knoxville, Tenn.

Claim.—The combination of the fan-operating parts, consisting of rod L, spring M, cord I, and spring K, communicating between a relatively-fixed point on the stem D E and the floor, with which the foot of the rod is held in constant contact by the dominant spring M, substantially as shown and described.

109,745.—Ramming-Machine for Wood and other Pavements.—Arthur Livingston Lansing, Philadelphia, Pa., assignor to Henry Seymour Lansing, same place.

Claim.—1. A portable ramming-machine for wooden and other pavements, consisting, mainly, of a frame, A, supported upon two sets of adjustable propelling-wheels, B and C, arranged at right angles to each other, and carrying a weighted and guided ram, I, to which a vertical reciprocating motion is imparted.

2. The ram I, connected to and operated by a crank-shaft, J, the bearings of which are adjustable and capable of yielding vertically.

3. The said bearings or boxes *k* of the crank-shaft, arranged to slide in adjustable segmental frames M, and maintained in a proper position in the said frames between strong spiral springs *l*.

4. The frames M, adapted to and rendered adjustable, by set-screws or otherwise, in segmental guides L secured to or forming a part of the frame of the machine, and formed on a curve described from the center of the driving-shaft.

5. The combination of the ram I, operated substantially as described, with a swage, K, arranged beneath the ram, as specified.

6. The said swage, having projections or ribs *c* on its under side, adapted to the spaces between the blocks of a "Stow" or other pavement.

7. The said swage, adapted to guides in the frame of the machine, and capable of being connected to and raised with the ram, as set forth.

8. The disks H, hung to the frame of the machine, attached to the spindles of the propelling-wheels C, and connected together by rods *f*, so that they can be operated simultaneously, in the manner and for the purpose specified.

109,746.—DEVICE FOR CUTTING SCREW-THREADS AND FOR DRILLING METALS.—James W. Mahlon, Brooklyn, N. Y.

Claim.—The die-stock body A, detachable handles *f*, socket *a*, hollow body *h*, and the ratchet-and-pawl mechanism, jointly, the several parts being constructed and fitted to co-operate in the cutting of screw-threads, or drilling of metals to the extent and in the manner substantially as described.

109,747.—DEVICE FOR CLAMPING OR CUTTING OFF TUBES AND RODS.—James W. Mahlon, Brooklyn, N. Y.

Claim.—1. The combination of the stock A having a lip, *h*, on the one end, the clamping-plates J J' united by bolts and nuts, the clip *w*, side lugs *n n*, and bolt *s*, the whole arranged and operating substantially as and for the purpose herein set forth.

2. The improved machine herein described, adapted to the interchangeable uses of holding and cutting off pipe.

109,748.—COTTON-BALE TIE.—John F. Milligan, St. Louis, Mo., assignor to Joseph W. Branch, same place.

Claim.—In a tie-plate, A, substantially of this form, the improved entering-space here shown, composed of the transverse slots *a* and diagonal slots a^1, for the purpose set forth.

109,749, antedated November 21, 1870.—HEATING-STOVE.—Lyman Ayrault Morse, Battle Creek, Mich.

Claim.—1. In combination with the perforated top plate A and base plate B, the outer cylinder C and inner cylinder G, forming the chamber H, all substantially as set forth.

2. The combination of the perforated top A, hollow base B, cylinders C G, chamber H, lining I, draught-flue E, flue J, pipe K, bonnet L, and damper, all substantially as set forth.

109,750.—MACHINE FOR VARNISHING PENCILS.—Teile H. Müller and Henry C. Benson, New York, N. Y., assignors to Joseph Reekendorfer, same place.

Claim.—1. The pencil-compressing die or dies, placed in the varnish-vessel and below the level of the varnish, through which the pencil passes, substantially as and for the purposes set forth.

2. In a varnishing apparatus, substantially as described, the combination, with the stuffing-box at either or both ends of the varnish-vessel, of a gland or cover, held to the box and upon the packing contained therein by means of screws or equivalent holding devices, and springs interposed between said holding devices and the gland, for the purpose of compressing the packing as it wears, and thus maintaining an even pressure upon the pencil, substantially as shown and set forth.

109,751. — STATION-INDICATOR. — Louis Neike, Chicago, Ill.

Claim. — The name-plates D, secured to endless chains passing around rollers *c*, the journals of said plates having blocks *e* attached, and arranged to operate in connection with the guide *f*, all substantially as described.

109,752. — MANUFACTURE OF IRON AND STEEL.—Charles Motier Nes, York, Pa.

Claim.—1. The manufacture of wrought or cast-steel in a cupola, refinery, puddling, or other suitable furnace, by the use of the ore herein specified, in combination with pig or cast-iron, substantially as described.

2. The ore herein specified, for purifying cast-iron and restoring the qualities deficient in burnt-out iron, fitting them to be used as steel pig for the manufacture of steel therefrom, substantially in the manner set forth.

109,753.—NEEDLES AND THEIR CARRYING-ARMS FOR SEWING-MACHINES.—Charles Henry Palmer, New York, N. Y., assignor to A. F. Sawyer, William H. Sharp, Jacob Regensburger, Charles D. Carter, and Mary P. Carpenter.

Claim.—The arm E, having grooves F F, combined as described with the divided needle and the clamping device, for the purpose specified.

109,754. — WHEEL-HARROW. — Edwin R. Powell, Jeffersonville, Vt.

Claim. —1. The combination, with the sulky-frame A B C D and harrow proper G, of the truck E F, hinge-joints J *j* K, and chains H I M, constructed and arranged substantially as described and represented, for the purpose set forth.

2. The tooth *g*, composed of the cast point 1 4 6, steel mold-board 2, and bolt 3 5, constructed and arranged as represented and described, for the purpose set forth.

3. The axle-tree A, wheels B B, tongue C *c*, seat D, pulley-bracket P N O, and hand-lever L *l*, the whole constituting an improved sulky-frame, as constructed, combined, and arranged in the manner shown and described, for the purposes set forth.

109,755. — HARVESTER.—Solomon Rawson and Isaac Rawson, Almond, N. Y.

Claim.—The frames C and D, connected by means of the bows A A, angle-irons *c c*, and axle B, all these parts being arranged as shown and described, whereby a leverage is exerted on the frame D, as set forth.

109,756.—MACHINE FOR HEELING BOOTS.—Timothy K. Reed, East Bridgewater and Arza B. Keith, North Bridgewater, Mass.

Claim. — The combination, with calipering or grasping-jaws, of a heel-holding or presenting device, for accurately locating the heel to be nailed, substantially as described.

109,757.—MANUFACTURE OF PAINT.—Thomas C. Rice, Worcester, Mass.

Claim.—An improved paint, composed of coal-tar and Venetian red combined together, substantially as above described.

109,758. — WINDOW-SHADE. — William S. Rice, Biddeford, Me.

Claim. — The combination and arrangement of the joints *d*, rods *a*, joints *c*, cross-bar *m*, part *b*, cord *o* passing through the wall of the building, the pulley *i*, loop or loops *f*, and button or buttons *h*, all as described, to operate as set forth.

109,759.—CHURN.—Stacy Risler, Locktown, N. J.

Claim.—The arrangement of the standard B, boxes C C, hinged lids D D, provided with metallic plates *e e* and strips *h h*, diamond-shaped blades H H, attached to bottom of churn, and dasher-arm *b*, provided with similar-shaped blades B and handles for operating it, all as shown and described.

109,760.—APPARATUS FOR DRESSING MILLSTONES.—Henry Robinson, Lewisham, and John Smith, Carshalton, England.

Claim.—The flanged cone carrying the curved slide *h*, having the arc of a circle, of which it consists, struck from a point at a greater distance from its periphery than is the center of the millstone, in conjunction with the curved sliding bracket or saddle *u* carrying the radial arm *s*, by which means the cranks are made coarser or wider apart near the skirt of the stone than near the center thereof, as herein specified.

109,761. — WAGON-BRAKE.—James Robinson, Sedalia, Mo., assignor to George Scheer.

Claim.—1. The arrangement of the brake-shoe supporting-bars or levers herein shown, for moving under the box when released from the wheels and out again when applied to the wheels, substantially in the manner specified.

2. The combination, with the brake-lever for forcing the brakes upon the wheels and the brakes arranged to slide under and out from under the box, of the cranked slotted lever I, rod N, and forked lever O, all substantially as specified.

109,762.—INSECT-POWDER EJECTOR.—Solomon Rose and Nathan Goldsmith, Cincinnati, Ohio.

Claim.—The improvement in insect-powder ejectors, herein described, consisting of a detachable bottom, B, for the case A, and the arrangement of the elastic diaphragm E so as to be retained in place by a clamping-ring, F, whereby the parts constituting the device can be easily separated for repairs.

109,763. — MILK-STRAINER. — Patrick S. Ryan, Rutland, Vt.

Claim.—The milk-strainer herein described, provided with a rim, *a*, projecting inward, all around from its upward edge, at an angle, as shown, and the strainer-gauzes *b b*, at an inclination, with a sediment cavity, *c*, below them, substantially as and for the purpose set forth.

109,764. — EXCAVATOR.—Clinton H. Sage and Samuel B. Alger, Norwich, N. Y.

Claim.—In an excavating-machine having a boom arranged to swing vertically and horizontally, as described, a dipper, the arm of which is pivoted to the boom and operated by a rope or chain which passes over the outer end of the boom and the post the said dipper being pivoted at a point intermediate between the ends of boom, the whole constructed and operating as set forth.

109,765.—STEAM-GENERATOR.—Walter G. Savage, Knoxville, Iowa.

Claim.—One or more primary boilers, A, constructed as described, and connected to one or more secondary boilers, B, by a series of water-tubes, D D, the latter being surmounted by a dome, J, the primary boilers and pipes being incased, and all arranged and used as and for the purposes set forth.

109,766.—MANUFACTURE OF PAPER-PULP.—Charles B. Sawyer, Fitchburg, Mass., assignor, by mesne assignments, to William Pratt and Abby A. Williams.

Claim.—1. The vine of the potato, for the manufacture of pulp for paper and other like articles, as paste-board and papier-maché.

2. The tuber itself, in combination with the potato-vine, for the making of paper-pulp.

3. Either or both the above-named materials in combination with ordinary paper-stock, or with pulp made of other vegetable materials for the purpose of cheapening and improving the same.

109,767.—PAPER-TRIMMING MACHINE.—Josephus Fletcher Schuyler, Tiffin, Ohio.

Claim.—1. The arrangement of the feeding-rollers D D', springs *b b*, thumb-screws *d d*, lever *f*, and plate *e*, all substantially as shown and described, and for the purposes herein set forth.

2. In combination with the frame A, with its adjustable knife-rollers H H', the laterally-moving table B, operated by the lever C and carrying the trough E with its adjustable slide G, and the adjustable-yielding feed-rollers D D', all constructed and arranged substantially as set forth.

109,768.—ROAD-SCRAPER.—David L. Shepard, Foxborough, Mass.

Claim.—1. The scraper H, when attached to the beam I and brace J, and adjusted by means of the chain *c*, rod *b*, and pin A, in combination substantially as set forth.

2. The brake-rod M, the connecting levers *k l m n o*, and the spring N, in combination with the scraper H, substantially as and for the purpose set forth.

109,769.—FILLINGS FOR WOOD.—Theron R. Sherry, Newark, N. J.

Claim.—1. The improved filler for wood, composed of linseed-oil, India rubber, red lead, and raw umber, compounded in the manner and about in the proportion herein set forth.

2. The improved filler for wood, composed of India rubber, sugar of lead, whiting, and linseed-oil, compounded in the manner and about in the proportion herein set forth.

3. The improved filler for wood, composed of red lead, linseed-oil, India rubber, and whiting, compounded in the manner and about in the proportions herein set forth.

4. The improved filler of wood, composed of linseed-oil, India rubber, raw umber, red lead, sugar of lead, and whiting, compounded in the manner and about in the proportions herein specified.

109,770.—SCHOOL-DESK AND SEAT.—William A. Slaymaker, Atlanta, Ga.

Claim.—1. The fastening B, described, consisting of wedge-shaped projections having inclined sides and face, *b*, in combination with a socket correspondingly formed.

2. The projection c^3 and socket *y*, in combination with each other and with the projecting curve or incline c^2, upon the face of the side frame, when the socket is correspondingly carved or inclined, as described.

3. The seat-arm D, constructed as described, when movably hinged in the slotted bearings of the side frame, as set forth.

4. The combination of the projections c^2 c^3, sockets *y*, and wedge-key, when constructed and arranged as described.

5. The desk described, consisting of the floor-sockets, side frames, movable-hinged seat, back, top with hinged lid, board, and shelves, when combined as described, for the purpose set forth.

109,771.—DOOR-HOLDER OR CHECK.—Otto Sliker, Lincoln, Ill.

Claim.—The combination of the knob A, springs C C, and socket D, when the latter passes within the recess in which are the ends of the spring, when constructed and arranged substantially as and for the purposes herein set forth.

109,772.—PURIFYING AND REFINING OILS.—William M. Sloane, New York, N. Y.

Claim.—1. The method of purifying oils by agitating with any deodorizing agent, in a close vessel, under the action and pressure of steam, substantially as set forth.

2. The combination of the closed filter with the agitating vessel and steam-boiler, for the purposes set forth.

3. The combination of the condenser D with the agitating vessel B and steam-generator, as and for the purposes set forth.

4. An oil-refining apparatus, consisting of the agitating vessel B, condenser D, filter E, steam-boiler A, and pipes *f h h l*, combined and arranged substantially as and for the purposes set forth.

1. The method of refining and purifying oils by means of agitating, vaporizing, and filtering under the heat and pressure of steam, as set forth.

109,773. — PERFUMERY. — Gibeon Smith, Groton Junction, assignor to himself and Charles W. Bannon, Athol, Mass.

Claim.—A perfumery made of the ingredients in the manner substantially as herein set forth.

109,774.—WASH-BOILER.—Henry L. Sprague and Jacob N. Guyon, Tottenville, N. Y.

Claim.—1. The water and steam-tank B, provided with perforated tubes *a*, in combination with a clothes wash-boiler constructed upon or with the tank, substantially as and for the purpose set forth.

2. In combination with the above, the inside rim C, constructed in the manner and for the purpose as shown and set forth.

109,775. — UMBRELLA. — Mary Stephens, Philadelphia, Pa., assignor to Wright Brothers & Co., same place.

Claim.—A lined cover for umbrellas, &c., made by connecting the outer edge of the face and lining sections, folding such sections so as to conceal the seam, and then connecting the sections together at their straight edges, substantially as described.

109,776.—DUMPING APPARATUS.—Lyman B. Stilson and James G. Payson, Minneapolis, Minn.

Claim.—1. The combination of the carrying and dumping apparatus herein described with the bed or platform of a flat, substantially as and for the purpose specified.

2. In a dumping-box for railway cars, the circular ratchet-bars D, when constructed to operate substantially as and for the purpose mentioned.

3. The combination of the bars or tracks *v* and *g* with the rollers *e* and *y*, substantially as and for the purposes specified.

109,777. — BRICK-MACHINE. — Samuel H. Taylor, Jacksonville, Ill., assignor to himself and Le Grand Parker.

Claim.—1. The combination with the follower and the shaft L of the weighted lever A, cranked shaft H, cam K, and connections E F, all substantially as specified.

2. The mold-carriage mounted on the beam P, having the shoes Q arranged in the adjustable supports R, all substantially as specified.

3. The combination with the mold-carriage of the lever U and stop V, substantially as specified.

109,778. — BRICK-MOLD. — Samuel H. Taylor, Jacksonville, Ill., assignor to himself and Le Grand Parker, same place.

Claim.—A brick-mold, having hinged ends A A combined, as described, with handles, consisting of pawls E, tappets G, and plates H I, for the purpose of clamping the bricks and discharging them, at the time and in the manner described.

109,779.—VENTILATOR, ALARM, AND BILGE-PUMP FOR VESSELS.—William F. J. Thiers, New York, N. Y.

Claim.—1. The chambers A or C, connecting-pipe or pipes B or D, induction-port or ports E, and eduction-port or ports G, arranged to operate in combination, substantially as and for the purposes set forth.

2. The diagonal arrangement of the connected chambers or cylinders of the respective systems, to adapt them to be operated by either the pitching or rolling motion of the vessel, as set forth.

109,780. — PORTABLE FURNACE. — Charles Van De Mark, Phelps, N. Y.

Claim.—1. The construction of a portable heater with an inclosing holder, A, and interior fire-pot B, having an annular or equivalent space, *c*, between them, and an exit-flue, *k*, near the top thereof, so that, while the draught-air may be admitted from above the stove, it is introduced into the fire-pot at or near the bottom thereof, and the heat of combustion is directed upward through the same against the boiler or other heating utensil, substantially as and for the purpose herein specified.

2. The combination of the grate *d* with the holder A and fire-pot B, when provided with a handle, *e*, for shaking it, and arranged to operate substantially as herein set forth.

3. The valve-openings *g g g* in the bottom of the holder A, in combination with the inclosed fire-pot B, substantially as set forth.

4. The plate *w* in the fire-pot, arranged in combination with the exit-flue *k*, substantially as and for the purpose herein set forth.

5. The construction and arrangement of the flues *b* and *c*, valve *q*, apertures *l n*, and valve-plate C with its apertures *r s*, in combination with the boiler or heating-vessel D, substantially as and for the purpose herein specified.

109,781.—DIE FOR FORGING FIFTH-WHEEL HEADS.—Frederick Van Patten, Auburn, N. Y., assignor to himself, E. D. Clapp, and M. S. Fitch, same place.

Claim.—The two sets of dies, 1 2 3 4, formed in the die-plates A B, for finishing the heads of fifth-wheels ready for welding, substantially as herein shown and described.

109,782. — STUMP-JOINT FOR CARRIAGE-TOP BRACES.—Frederick Van Patten and Emerons D. Clapp, Auburn, N. Y., assignors to themselves and M. S. Fitch, same place.

Claim.—Improved stump-joints for carriage-top braces, constructed and formed or forged with dies, substantially as herein shown and described, as a new article of manufacture.

109,783.—STEAM-ENGINE.—Francis Wedge, Zanesville, Ohio, assignor to himself and Thomas Griffith, same place.

Claim.—1. The combination of the cold-water pump, the feed-water reservoir, the saddle which supports the boiler and covers the reservoir, and the cold-water pipe passing through the saddle into the reservoir, all these parts being constructed and operating substantially as hereinbefore set forth.

2. The combination of the boiler, the feed-water reservoir, and the saddles which form the cover of the reservoir and the support of the boiler, all these parts being constructed substantially as hereinbefore set forth.

3. The combination of the boiler, the feed-water reservoir, the working cylinder at one end of the reservoir and the feed-pump at the other, all these parts being constructed to operate substantially as hereinbefore set forth.

4. The combination of the feed-pump with the removable plate which forms the end of the feed-water heater, as set forth.

5. The feed-water reservoir, constructed as described, and supporting the forward end of the boiler.

6. The combination, with the feed-water reservoir, constructed as described, with a removable end plate, *e*, of the inclined transversely-divided feed-water pans constructed independently of the reservoir, as set forth, so that they, as well as the reservoir, may be accessible for repairs.

7. The combination of the cold-water pump, the reservoir, the feed-water pans, and the feed-pump, all these parts being constructed and operating in combination, substantially as hereinbefore set forth.

8. The combined throttle and regulating check-valve in the steam-dome, constructed and operating as set forth.

9. The combination of the horizontal boiler, the

main shaft mounted on top of the boiler, the working cylinder and its valve having its face radial to said shaft, both cylinder and valve being mounted on the feed-water reservoir, below the boiler, as set forth.

10. The combination, construction, and arrangement of the feed-water reservoir, the saddle in which the main shaft is mounted, the bar connecting the saddle and reservoir, the working cylinder, the guides of the cross-head, and the yoke supporting said guides, substantially as hereinbefore set forth.

11. The combination of the working cylinder, the tubular guides between which the cross-head works, the yoke which connects the guides with the engine-frame, and the screw-rods connecting the yoke, the guides, and the cylinder-head, as set forth.

12. The combination and arrangement of the working cylinder, the feed-water reservoir, the exhaust-pipe, and the feed-water steam-pipe leading from the exhaust-pipe to the reservoir, these parts being constructed to operate in combination, substantially as set forth.

13. The combination of the feed-water reservoir, the exhaust-pipe, and the automatically-closing overflow-valve, substantially as set forth.

14. The combination of the slotted strap, the flanged brasses, the flanged backing piece, the flanged gib and its bracket, and the tightening-wedge, its screwed spindle and jam-nuts, all these parts being constructed to operate in combination, as set forth.

15. The combination of the throttle-valve, the steam-chest, the steam-pipes, the ball-joints, and the through-bolts inclosed in the pipes, all these parts being constructed as described for joint operation.

109,784. — WATER-WHEEL. — George W. Werntz, Auburn, Ind., assignor to himself and Henry A. Shull, same place.

Claim.—1. The concentric series of buckets D^1 D^2, the lower ends of which are of greater width than are the upper ends, substantially as and for the purpose set forth.

2. The combination of the gates E E and F^1 F^2, when so arranged with reference to each other that either set may be used separately, or that they may be used in conjunction, substantially as and for the purpose set forth.

109,785.—HEATING METALLURGIC AND OTHER FURNACES.—James D. Whelpley and Jacob J. Storer, Boston, Mass.

Claim.—1. The process herein described for producing heat, by burning together pulverized fuel and carbonaceous and other gases in aid of combustion, substantially as set forth and described.

2. The combination of a gas-generator and of a machine for supplying pulverized fuel, with a puddling, heating, or other furnace, as set forth.

3. The combination of pulverized fuel, gaseous fuel, and hot-blast, so as to produce a flame of high temperature, and regulated as to character, as set forth.

4. The combination of a gas-generator, a machine for feeding pulverized fuel, and a hot-blast oven with a puddling or other furnace, substantially as described.

5. The process herein described, for producing heat of great intensity by burning pulverized fuel under pressure, as set forth.

109,786.—CASTING STENCH-TRAP.—James E. White, New York, N. Y., assignor to Louis A. Cauvet, same place.

Claim.—1. The groove *f*, formed on the line of union of the two sections or halves of the trap, by the projections along their edges, substantially as herein described, and for the purpose set forth.

2. The method of forming an opening with a screw-thread on its interior surface, in the lower curve of a cast-metal stench-trap, by the employment of a threaded core, adapted to be turned out, substantially as herein described.

109,787.—ELEVATOR.—Frank Wicks, Decatur, Ill.

Claim.—1. In a hay-elevating machine, the rope J J, in combination with the traveling pulleys K K, pulley I, and rope H, constructed, arranged, and operating in the manner and for the purpose herein described.

2. The within-described arrangement and combination of the rope J J, posts E, D, and R, and traveling pulleys K K, for the uses and purposes herein set forth.

3. In a hay-elevator, the within-described means and arrangement of ropes, traveling pulleys, and fixed pulleys, for changing the direction of the hay or weight to be raised and lowered, in the manner and for the purpose herein described.

100,788.—BAG-HOLDER.—Daniel S. Wing, Rome, N. Y.

Claim.—The combination, in a bag-holder, of the slotted standard A, lever-holder B, ratchet-bar D, latch E, and catch-pin F, when said parts are constructed and arranged for operation substantially as described, and for the purposes set forth.

109,789. — ANIMAL-TRAP. — Romanso E. Wood, Santa Cruz, Cal.

Claim.—The doors D and E, spring G, rod C, and bed-piece or frame A, and tube F, when combined, arranged, constructed, and operated substantially as described, and for the purpose set forth.

109,790.—MECHANICAL MOVEMENT.—Jacob Woolf, Burr Oak, Mich.

Claim.—An annular weight, H, controlled by holding device W of suitable construction, through the medium of one or more levers, I, and two or more cranks, G, substantially as set forth.

109,791. — DEVICE FOR MANUFACTURING METALLIC CARTRIDGE-SHELLS.—Edward A. Worthen, Springfield, Mass.

Claim.—The punch E and die D, constructed substantially as described, and operating in connection with each other in the manner, and for the purposes specified.

109,792. — HAND-STAMP.—Augustus Zantzinger, Louisville, Ky.

Claim.—In the combination of the bar *c*, ball *d*, socket *h*, and handle *f*, the elastic washers *i*, as and for the purpose specified.

REISSUES.

4,185. — ATTACHING SLEIGH-BELLS TO STRAPS.—William E. Barton, East Hampton, Conn.—Patent No. 46,623, dated March 7, 1865.

Claim.—1. A seat, *h*, of hard material, interposed between a sleigh-bell and its strap, substantially as and for the purposes set forth.

2. The metallic seat, having a recess conforming to the boss of the bell, a hole for the coupling-screw to pass, and holding-surfaces on the leather side to keep the seat in place, substantially as described.

3. In combination, the bell with the short boss and screw-hole, the metallic seat, strap, and coupling-screw, substantially as described.

4. In combination, the coupling-screw, flaring-washer, strap, metallic seat, and bell, substantially as described.

4,186.—Division B.—STEAM-GENERATOR.—American Gerner Boiler Company, New York, N. Y., assignees of Henry Gerner.—Patent No. 73,595, dated January 21, 1868.

Claim.—A return longitudinal fire-flue, F, within a direct longitudinal fire-flue H, each fire-flue being within a water-chamber, *a* and *c*, and all within the boiler, substantially as described.

4,187.—AUGER-HANDLE.—James M. Horton, Chicago, Ill., assignor to "The Miller's Falls Manufacturing Company," Miller's Falls, Mass.—Patent No. 35,856, dated July 8, 1862, reissue No. 2,229, dated April 17, 1866.

Claim.—1. The combination of the barrel A provided with a socket C, jaws B and D, and nut N, working on a screw for holding a boring-tool, substantially in the manner described and specified.

2. The socket C of the barrel A, having cavities *b b*, in combination with the jaws B D having curved ends to fit therein, to allow the necessary lateral movement in the socket without falling out, substantially as described and specified.

4,188.—VESSEL FOR BOILING.—Werner Krœger, Milwaukee, Wis., assignor to William Frankfurth, same place.—Patent No. 47,025, dated March 28, 1865.

Claim.—The band B, applied to tin vessels in the manner substantially as described.

4,189.—STONE-CHANNELING MACHINE.—Ebenezer G. Lamson, Windsor, Vt.—Patent No. 89,265, dated April 20, 1869.

Claim.—1. The segment *y*, pivoted concentrically with the frame that supports the cutters and engine, arranged to be operated by the engine and to impart motion to the feed mechanism, whereby the cutters may be adjusted at various angles without disconnecting or interfering with the operation of the feed mechanism, substantially as described.

2. The arrangement of the chain H and a weight, J', in the manner shown, for counterbalancing the weight of the machine when working up or down an incline, as set forth.

3. A stone-channeling machine, having its boiler supported on trunnions arranged lengthwise of the truck, so that the boiler will maintain its vertical position while the machine is working along the face of an incline, as herein described.

4. The adjustable supports B', in combination with the boiler and the main frame, whereby the boiler can be held suspended or permitted to rest stationary on the truck, substantially as described.

5. A stone-channeling machine, provided with two or more sets of cutters and engines for operating the same independently, in combination with the herein-described feed mechanism, whereby either engine may be made to feed the machine in either direction, substantially as set forth.

6. The arrangement of the shaft *a* with its screw *a*, and the axle E with its worm-wheel *y'* and the rack-bar B, whereby the worm-wheel *y'* is made to feed the machine along by engaging with the rack-bar, substantially as set forth.

7. The yielding pitman or device, consisting of the hinged arms E' and a spring arranged to hold said arms asunder, and having links or their equivalents for attaching them to the clamp or cutters, substantially as described.

4,190.—SCHOOL-DESK.—Charles H. Loomis, New Philadelphia, Ohio.—Patent No. 104,472, dated June 21, 1870.

Claim.—1. The top G of a school-desk, provided with the recess K and clamp L to receive and hold an ink-stand, as described.

2. The combination, with a desk-top, G, of the lipped plate H I, supported on a vertically-adjustable bar, C, as described.

3. The vertically-adjustable bar C, combined as described, with laterally-adjustable bar E and tubular stand B, for the purpose described.

4,191.—SKATE-FASTENING.—Harshaw Scott, New York, N. Y., assignee of Henry Pickford.—Patent No. 16,653, dated February, 17, 1857.

Claim.—1. A skate in which the connection to the sole is made by means of a flange-headed projection and slot or recess at one end, and a projecting plate and recess or their equivalent at the other, substantially as described.

2. In fastening the skate to the sole, the combination of the flange-headed projection with a slot or recess, both constructed and operating substantially as described.

DESIGNS.

4,493.—CARPET-PATTERN.—Alfred Heald, Philadelphia, Pa., assignor to McCallum, Crease & Sloan, same place.

Claim.—1. The design for the tablet A, with its foliated ornaments.

2. The design for the tablet B, with its central ornaments *k*.

3. The design for the ornamented borders *e* and *f* of the tablets A and B.

4. The stripe or bar *h*, forming the outline of both of the tablets A and B, and connecting the same together, as shown and described.

5. The design for the foliated ornaments *m* in the angles between the tablet B and its border *f*.

6. The design for the spots *p*, arranged within the border *f*, as described and represented.

7. The design for the whole pattern, including the tablets A and B, their borders *e* and *f*, the bar *h*, spots *p*, and the ornamentation described.

4,494.—CARPET-PATTERN.—Alfred Heald, Philadelphia, Pa., assignor to McCallum, Crease & Sloan, same place.

Claim.—1. The design for the ornamented central medallion A, as shown and described.

2. The design for the tablets B bounded by the ornamented stripes D.

3. The design for the ornamented tablets C bounded by the stripes D, as described and represented.

4. The design for the ornamented stripes D, arranged at right angles to each other, as shown and described.

5. The design for the entire pattern, including the medallion A, tablets B and C, and ornamented stripes D.

4,495.—SADDLE-TREE.—John T. Million, Fayette, Mo.

Claim.—A saddle of the design and form shown and described.

4,496.—CLOCK-FRONT.—Nicholas Müller, New York, N. Y.

Claim.—The whole design for a clock-front, as herein shown and described.

4,497.—SAW.—Edward Rhodes, Philadelphia, Pa., assignor to Henry Disston & Son, same place.

Claim.—The design for the cutting-edge of a saw, as illustrated in and by the accompanying drawing.

4,498.—WATER-COOLER STAND.—Charles C. Savery, Philadelphia, Pa.

Claim.—The design for a water-cooler stand, having an enameled top, A, and drip-cup holder C, as represented and described.

4,499.—MEDAL.—Theodore R. Timby, Tarrytown, N. Y.

Claim.—The design for medals, substantially as above set forth.

4,500.—DRESS-TRIMMING.—Robert Werner, Hoboken, N. J.

Claim.—The central ruffles V, border ruffles *b b*, and trimmings *a*, combined, to form a design for ruffled trimmings.

TRADE-MARKS.

78.—LEATHER-DRESSING.—C. L. Hautha-way & Sons, Boston, Mass.

79.—WHISKY.—Hoffheimer Brothers, Cincinnati, Ohio.

80.—CIGAR.—William S. Roose, Washington, D. C.

81.—CIGAR.—William S. Roose, Washington, D. C.

82.—DEVILED ENTREMET.—William Underwood & Co., Boston, Mass.

ISSUE OF DECEMBER 6.

PATENTS.

109,793.—KNITTING-MACHINE AND NEEDLE.—Austin W. Allen, Indianapolis, Ind.

Claim.—1. The combination, with the reciprocating sliding frame and pivoted yarn-carrier, of the slotted adjustable springs *s s*, to hold the yarn-carrier back when the motion of the sliding frame is reversed, substantially as specified.

2. In combination with the thimble F, having an angular slot, *w w*, and projection *v*, the thumb-nut G, having the groove *x* and stop *t*, and arranged to close tightly on the edge of the thimble, substantially as specified.

3. Knitting-machine needles, having the heels of the shanks square or diamond-shaped, to correspond with the inclination of the cam-slots, as specified.

109,794.—CLOTH-WINDING MECHANISM FOR LOOMS.—William A. Arnold, Rockport, Mass.

Claim.—The combination and arrangement of the hooked guides or guide-weights E E, as described, with the sand-roller B, the cloth-roller C, and frame of a loom, all being substantially as explained.

109,795.—LUBRICATOR.—Charles Dudley Austin, Newcastle-on-Tyne, England.

Claim.—1. The improved lubricator hereinbefore described, and illustrated in fig. 1 of the accompanying drawing, that is to say, a lubricator in which a tube closed at its upper end is mounted on the discharge-tube, the outer tube being of such size as to leave a small space between it and the said discharge-tube, so that the oil shall ascend between the said outer tube and the said discharge-tube, and descend through the latter to the surface to the lubricator.

2. The several modifications of the said lubricator hereinbefore described, and illustrated in figs. 2, 3, 4, and 14 of the accompanying drawing, by means of which modifications the outer tube of each lubricator is so adjusted relatively to the inner tube as to regulate the flow of oil.

3. The combination and arrangement of parts constituting the improved lubricator for steam-cylinders, hereinbefore described, and illustrated in fig. 15 of the accompanying drawing, that is to say, a lubricator in which the arrangement of tubes described acts in combination with a flat valve worked by means of a screwed spindle, as and for the purpose described.

109,796.—VALVE-COCK.—Robert Berryman, Boston, Mass.

Claim.—The arrangement and combination of the two connected valves, K L, with the spindle, the seat-tube, and the case B, provided with the induction and eduction-passages D E, the whole being constructed, and the valve and seat-tube being furnished with ports or passages *a*, as hereinbefore explained.

109,797.—CAR-COUPLING.—Henry Blanchard, Jr., Boston, Mass.

Claim.—The forked lever D, the spring E, and the catch C, arranged, constructed, and combined with the draw-bar A or B, and for use with the double-hooked shackle-bar G, in manner substantially as explained.

109,798.—BELT-FASTENER.—Samuel S. Bolton, Big Rapids, Mich.

Claim.—The belt-stay B, when constructed as herein described, for the purpose set forth.

109,799.—BEDSTEAD-JOINT.—Lewis G. Bradford, Plymouth, Mass., assignor to himself and Nathaniel H. Morton, same place.

Claim.—The joint A B, when the same is made by inserting a plate, C, made as described, in the rail, and connecting the same with the mortise *h k* and pin D in the post A, substantially as described, and for the purpose set forth.

109,800.—CURTAIN-FIXTURE.—John G. Brothwell, Wolcottville, Conn., assignor to Turner, Seymour & Judds, same place.

Claim.—The lever *l* and projecting block *o*, arranged to move between the bracket *k* and the wheel *i* in the manner specified, so that the contact of the wheel *i* with the side of the lever *l* shall tend to move the pawl-block *o* into contact with the ratchet-teeth of the wheel *i*, as and for the purposes set forth.

109,801.—SASH-LOCK.—Erastus L. Brown, Norwich, N. Y.

Claim.—The circular case D, provided with the diaphragm *c*, the slot *f*, the opening *b*, and the yoke *h*, all cast in one piece, and combined with the bolt *j*, substantially as described and shown, and for the purposes set forth.

109,802.—APPARATUS FOR EVAPORATING BRINE AND OTHER LIQUIDS.—James Buchanan, Detroit, Mich.

Claim.—1. The steam-generator A, constructed in the form of a pan, as shown, of two shells, *a b*, and stayed as described, so that the same will be a steam-generator and an evaporating-pan, as and for the purposes herein set forth.

2. In combination with said steam-generator, the steam-pipes B, connecting the sides of the generator with the steam-drums C and the connecting steam-pipes D, by means of which free communication is had between said steam-drums, as and for the purposes set forth.

3. In combination with said steam-drums and the pan, when constructed as described, the coil of pipe E, as and for the purposes set forth.

109,803.—BRICK-MACHINE.—Cyrus Chambers, Jr., Philadelphia, Pa.

Claim.—1. The knife K, clamped at such an angle with cut-off arm A that the edge of the knife shall come in contact with the clay-bar in a line coinciding with the plane of the upper surface of the bar, as described.

2. The knife-clamp L, constructed and adjusted as set forth, and operating to hold the knife in the manner specified.

3. The arrangement and combination of the cam C, its recess R, and curved edge E, with the spring-arm R', roller *r'*, and projecting jaws *j j*, in the manner and for the purpose stated.

4. The combination of the roller *r'*, jaws *j j*, and cam C, for the purpose of keeping the roller in its proper relation to the cam in all positions of the latter, as set forth.

109,804.—COTTON-BALE TIE.—William Chambers, New Orleans, La.

Claim.—The tie A, when provided with slots formed as shown at B and C, and a slit D entering the slot C in such a manner as to produce the point E, as herein described, for the purpose set forth.

109,805.—TINSMITHS' FURNACE.—Michael Conner, Plymouth, Mich.

Claim.—The construction of a tinsmith's furnace, vapor burning, wherein the cylinder A, dome B, reservoir C, pipe D, stop-cock E, burner F, muffle G, and supporting plate H, are arranged and operating in the manner and for the purpose set forth.

109,806.—CIRCULAR-SAW JOINTER.—Elijah H. Corbin, Winchester, Ind.

Claim.—In combination with the adjustable loop-block C, the springs E E, adjusted by means of the thumb-screws *b b*, substantially as and for the purpose herein set forth.

109,807.—STEAM-GENERATOR.—Leffert Ryerson Cornell, Flatbush, N. Y.

Claim.—The arrangement hereinbefore described, in combination with each other, of the boilers B B, arched pipes D D, steam-drum E, and furnace F, the arched portion of the pipe D being inclosed within the furnace, substantially as hereinbefore set forth.

109,808. — RAILWAY RECLINING-CHAIR.—John P. Curry, New York, N. Y.

Claim.—1. The combination of the slides D with the slots cut in them at E, and the lever F with the button or set-screw in it at G, and the levers H and I or their equivalents, the foot-rest K, and the pendulums L, substantially as and for the purpose hereinbefore set forth.

2. The combination of the revolving base, the center pin P, the India-rubber pad or cushion R, the metallic cup S, the arms T, and the rubber casters V, substantially as and for the purpose hereinbefore set forth.

109,809, antedated November 26, 1870.—NUT-LOCK.—Milo A. Cushing and Otis R. Glover, Ottawa, Ill.

Claim.—The spring dog X Y, formed of a single piece of steel, and constructed, applied, and operating substantially as described.

109,810.—WASHING-MACHINE.—Henry Dickinson, Marlborough, Conn.

Claim.—The oblong box *b* with the blocks *c*, cap *l*, and thumb-screw *m*, with its gearing, shafts, and crank, to give motion, in combination with the frame *a*, chain and staples *h* and *g*, the whole constructed and arranged substantially as and for the purpose set forth.

109,811. — REFRIGERATOR.—Hermann F. Eberts, Detroit, Mich., assignor to himself, Daniel Y. Howell, Toledo, Ohio, and Thomas S. Sprague, Detroit, Mich.

Claim.—The annular ice-receptacle D, constructed substantially as described and shown, in combination with the box A, arranged to operate as set forth.

109,812. — CULTIVATOR.—Abraham Eshleman, Martinsville, Pa.

Claim.—The arrangement of two sets of shovels S, adjustable oblique beams B, and cross-beams A A, when constructed and operating as herein described, and for the purposes set forth.

109,813.—BARREL SAFETY-VALVE OR VENT.—Benjamin Franklin Evans, Newburyport, Mass.

Claim.—The barrel safety-vent, as composed of the screw body A, chambered and nicked as set forth, the notched screw D, the spring C, and the headed and slotted plug B, all constructed, arranged, and to operate together, as explained.

109,814.—HAND-STAMP.—Daniel W. Fish, Brooklyn, N. Y.

Claim.—1. The detachable stamping apparatus, when provided with a reversible self-inking die-plate, in combination with the bed or platform B, substantially in the manner shown, and for the purposes described.

2. In combination with the reservoir A and distributing-pad *g*, the ink gauge *h*, constructed and arranged to operate substantially in the manner and for the purposes set forth.

109,815. — PERPETUAL BRICK-BURNING KILN.—William Gilbert, Detroit, Mich.

Claim.—1. In progressive burning-kilns, the gutters J, filled with sand, in combination with the downward-projecting flanges I of the platform L of the truck P, and with the perforated water-pipe M, when arranged and operating substantially as and for the purposes herein set forth.

2. The platform L, provided with upturned flanges K, containing sand, ashes, or other non-conductors of heat, and with the down-turned flanges I, constructed and arranged substantially as described and shown, and for the purposes set forth.

3. In brick-kilns, constructed as herein set forth, the perforated water-pipe M, for the purposes designated.

4. A progressive burning and cooling-kiln, composed of a series of furnaces, A, cooling chamber H, railway-track G, water-tank N, gutters J, perforated pipes M, and flues C D *s*, and provided with suitable gates, all arranged relatively to each other, and operating substantially as and for the purposes herein described.

109,816, antedated November 25, 1870.—SEWING-MACHINE FOR MAKING PUFFING.—Edward D. Gird, Syracuse, N. Y.

Claim.—1. The guide-roller E^2, the rod M, the spring rod L, and guide-rollers 8^2, when arranged as described, and used in connection with each other, for the purpose set forth.

2. The shifting device, consisting of the crank L^1, reciprocating brake T^4, link G^7, and pivoted shipper D^7, when operating together for the purpose specified.

3. The double-hammer B^1, composed of the T-shaped piece a^1 s^1, and lipped cap *b*, for turning a hem on each edge of the narrow strip, as set forth.

4. The adjustable spool-rocks C^4 E^4, in combination with the rod T^9, for governing the tension of the needle-threads, as set forth.

5. The combination, with sewing mechanism, of the hemmer, constructed to turn both edges of a narrow strip, and secured to the presser, a feeding mechanism and a tacking mechanism, substantially as described.

109,817.—WAGON-TONGUE SUPPORT.—Albert F. Gue, Eastmanville, Mich.

Claim.—The combination, in a wagon-tongue supporter, of the jack A, the eye-bolts *b'* secured by the nuts *b*, the rod *d*, the eye-bolts *a* secured to the axle B, and the spring E, secured to the tongue C by means of the bolt *b* having a suitable nut, all constructed and arranged substantially as shown and described.

109,818. — SHUTTER-FASTENER.—Theodore Hair and James Wood, Norristown, Pa.

Claim.—The key F, with its square shoulder, its round portions, and feathers, when combined with a square opening in the shutter-bolt and a round one in the staple, in the manner and for the purpose substantially as shown and described.

109,819. — SNOW-PLOW. — Cornelius F. Hornbeck and William J. Carns, Slaterville, N. Y.

Claim.—1. The plow-car A, with a single or double track on the top of it, the platform-car E, and unloading hood or plow H, operating together, substantially as described.

2. The just-named plow, when further combined with the anterior road-attachment E', substantially as set forth.

3. The arrangement of the rack L on the platform-car, and the pinion B' on the shaft of the wheels B, the cord M and lever M', and the stops or cams required for these parts, for the purpose of moving and controlling the platform-car E on the main car A, substantially as set forth.

4. The whole, consisting of the platform E and anterior hinged part E', hood-plow H, rack and pinion L, and cord M, combined and arranged so as to operate substantially as set forth.

109,820. — DEVICE FOR FREEZING FISH, MEATS, &c.—Daniel Y. Howell, Toledo, Ohio, assignor to himself, Thomas S. Sprague, and Hermann F. Eberts, Detroit, Mich.

Claim.—1. The employment of sheets of metal, arranged in pairs in a suitable box, in connection with a freezing-mixture, substantially as described, and for the purpose set forth.

2. The arrangement, within the box A, of the sheet-metal plates B and blocks C, D, and E, substantially as and for the purposes herein set forth.

109,821.—BOX FOR PACKING FRUIT, PROVISIONS, &c.—George M. Huston, Putnam, Ohio.

Claim.—The employment of an outer box or other receptacle, in combination with an inner perforated receptacle, the latter receptacle being made of such a size as to leave a space or chamber between it and the inner walls, top, and bottom of the outer receptacle or casing, for the reception of preservers, substantially as described.

109,822.—FEED-CUTTER.—William Hutchins, Paw Paw, Mich., assignor to himself and George G. Hutchins, same place.

Claim.—The combination of the toothed upper feed-roll J, tumbling-rod Q, with universal joint *d d*, sliding plates I, stirrups K, lever L, and weight C, with the lower corrugated feed-roll G', all constructed and operating substantially as described and shown, for the purposes set forth.

109,823. — HEAD-REST FOR CAR-SEATS. — Edward M. Judd, New Haven, Conn.

Claim.—The head-rest A with the end-bars *i*, connected by the slot *g* and pins *l* with the seat-back, in combination with the teeth 4 and notches 3 to retain the head-rest in position, substantially as and for the purposes set forth.

109,824.—JELLY-GLASS.—William M. Kirchner, Pittsburg, Pa.

Claim.—1. As a new article of manufacture, a jelly-glass having a rectangular mouth, beaded on two opposite sides or more, whether such beading be continuous on each side or broken, substantially as set forth.

2. A jelly-glass having a rectangular mouth, and beaded as specified in the preceding claim, in combination with a cap made with lips on two opposite sides or more, whether each such lip be broken or continuous, substantially as set forth.

109,825. — TOOL FOR FORMING SCREW-THREADS ON GLASS JARS.—William M. Kirchner, Pittsburg, Pa.

Claim.—1. The plug *a*, surrounded through the whole or a part of its length by an annular flange, *a'*, so as to leave an annular space, *a''*, between, the inner face of the flange *a'* being threaded, substantially as and for the purposes set forth.

2. In connection with plug *a*, flange *a'*, and stem *d*, the arrangement of wrench-plate *g* with its apertures *h h'* and spring *s*, substantially as set forth.

109,826.—HAIR-SPRING OF WATCHES, &c.—Calvin Kline, Brooklyn, N. Y., assignor to himself and George E. Hart, Newark, N. J.

Claim.—The adjustable pendent-spring for time-keepers herein described, having a reversed curve of small radius, with a sufficient length of spring beyond it, as shown by A^4, to allow the adjustment to be made on material having the ordinary curvature, all substantially as and for the purposes herein set forth.

109,827.—POCKET-BOOK.—Julius Lehman, New York, N. Y.

Claim.—The within-described improved pocket-book, having separate compartments A B attached together near their centers and tops, and adapted to spread apart at their lower edges, substantially as and for the purposes herein specified.

109,828.—SEWING-MACHINE.—T. A. Macaulay, Northampton, Mass.

Claim.—1. The combination, with disk *a* and wing *a*, supported on projection a^3, of the pins and links for operating the needle-bar, substantially as described.

2. The combination, with the presser-bar, of the adjustable block *y*, lever *u*, link *v*, and guides *x* a^4 a^5, all substantially as and for the purpose described.

3. The device *t n s*, for raising and lowering the feed-wheel, when constructed as described, and combined with the table and feed-wheel, as set forth.

109,829. — STEAM-BOILER. — William B. Mack, Detroit, Mich., assignor to Divie Bethune Duffield, same place.

Claim.—The construction and arrangement of the mud-chamber F with its pipe L and the blow-off cock E, the openings *i i* and flange G, and its combination with the conducting or circulating-pipes B and C, substantially as and for the purposes hereinbefore set forth.

109,830. — CAR-COUPLING. — Stephen Mahurin, Liberty, assignor to himself, James W. Singleton, and William A. Richardson, Quincy, Ill.

Claim.—1. The combination and arrangement of the coupling-bars *a* and *b* with the projections *g* and *d*, for the uses and purposes substantially as herein shown and set forth.

2. The coupling-bar, fig. 5, provided with the draw-rod E and levers D and G, in combination with the projections *d* and *g*, arranged and operated for the uses and purposes herein shown and described.

109,831.—SAUSAGE-STUFFER.—Jacob Mickley and John E. Hartman, Cashtown, Pa.

Claim.—The improvement in sausage-stuffers, consisting of the screw C swiveled to the plunger G, and formed with crank D, in combination with the receiver E, hinged at the side of one end to the supporting-table A, all constructed and operating as herein described.

109,832.—WAGON-BRAKE.—Jacob Mickley and John E. Hartman, Cashtown, Pa.

Claim.—1. A brake-bar, adapted to slide within slots or guides attached to or formed with a rack or sills of wagons, when said bar is located behind the rear wheels, and operated by an endless screw, substantially as described.

2. A bar, N, secured to a body or running-gear of a wagon in such a manner as to support an endless screw, which operates a brake-bar carrying a spring, located in the rear of the hind wheels, substantially as described, for the purpose set forth.

3. The bar N, provided with a nut-casing, within which works an endless screw, swiveled or otherwise attached to a brake-bar carrying brake-shoes or blocks, and acting in conjunction with a spring in reference to the rear or hind wheels of a wagon, substantially as described, for the purpose set forth.

109,833.—VARNISH FOR COATING PHOTOGRAPHIC NEGATIVES.—Johan Wolfgang Morgenstier, Sheboygan, Wis.

Claim.—The varnish for coating photographic negatives, composed of the ingredients, and in or about the proportions herein set forth.

109,834.—DOOR-LATCH.—Wallace T. Munger, New Britain, Conn., assignor to P. & F. Corbin, same place.

Claim.—The hook *m*, within the lock-case and upon the stem 2 of the button or knob *l*, said stem passing through the lock-case and bolt, and, when turned, causing the hook *m* to engage with or disengage from the stud *r*, as and for the purposes set forth.

109,835. — TREADLE FOR SEWING-MACHINES.—Alfred Nielson, Brooklyn, N. Y.

Claim.—1. The crank-lever C, having a cam or stop, E, on its shank or inner edge, substantially as described, in combination with a pulley-wheel, A, having a countersunk ledge, G, or equivalent device, in or upon its face, substantially as set forth.

2. The crank-lever C, having the cam E thereon, as set forth, in combination with the stationary axis B of the pulley-wheel A, when projecting beyond the face of the pulley-wheel so as to form a fixed bearing for the cam E to jam against to stop any backward motion of the pulley-wheel, as hereinbefore described.

109,836. — WASHING-MACHINE. — Luke B. Osgood, Shelby, Mich.

Claim.—The construction of a cylindrical revolving wash-boiler, when it and the journals on which it revolves are equally divided in two parts, that easy access may be had to the contents of the boiler, as specified.

109,837. — CORN-PLANTER. — George Paddington, Waubeek, Iowa.

Claim.—1. The combination of the harrows K, constructed as described and shown, the vertical shaft L, cranks M, handle M', and frame A, all arranged as and for the purposes set forth.

2. The arrangement, with the frame A, of the hangers C', spring-bars D' D'', provided with marking-teeth E' F', when said spring-bars are operated with the gauge G', secured to the axle A, as set forth.

109,838.—STOVE-PIPE THIMBLE.—James D. Pierce and John B. Smith, Milwaukee, Wis.

Claim.—1. A stove-pipe thimble, with the head raised in a rounded or ogee-form, with the air-holes on the inside or the highest part of the curve, substantially as described.

2. A stove-pipe thimble-head, with a square indentation, K, for the inner band F to lap over, substantially as and for the purpose described.

109,839.—GRAIN-SEPARATOR.—Hiram Raymond, Tecumseh, Mich.

Claim.—The raddle C, in combination with the raddle B, when constructed, arranged, and operated substantially as described and shown, for the purpose set forth.

109,840. — WASHING-MACHINE. — John G. Raymond, Rondout, N. Y.

Claim.—The combination of the rubbers E and D, bar C, tub A, handle B, cleat *b*, and slot *i*, constructed as described, and operating as and for the purposes set forth.

109,841, antedated November 30, 1870.—BUR-MILL.—Samuel G. Rollins, Boston, Mass., assignor to Wigg, Rollins & Co., same place.

Claim.—The arrangement of the fixed stone H, the supporting cylinder D, and the adjusting device *d e* E Y T, constructed substantially as described, and for the purpose set forth.

109,842.—CARRIAGE-AXLE AND AXLE-YOKE. Samuel Rowell, Amesbury, Mass.

Claim.—1. The above-described axle-iron, rolled solid, with one flat and one rounded side, substantially as described, as a new article of manufacture.

2. In combination with solid axle-iron, rolled with one flat and one rounded side, the axle-yoke C, provided with lugs or flanges E, fitted to the rounded side of the axle-iron.

109,843.—WAGON-BRAKE.—George W. Sanborn, Gilmanton, N. H.

Claim.—The combination of the brakes B *b b* and the hinge-lever A A A, attached, by the rope E, to the yoke, substantially as and for the purpose hereinbefore set forth.

109,844.—MACHINE FOR STAMPING, PRESSING, AND POINTING HORSESHOE NAILS.—Frederick Sandham, Montreal, Canada.

Claim.—1. The trade-mark stamping die J and the body-compressing die K, in combination with the rotating dial C and surrounding bed B, substantially as described.

2. In combination with the elements of the first claim, the cutter-wheel M, arranged and operating substantially as described.

109,845, antedated November 26, 1870.—LAST FOR BOOTS AND SHOES.—Samuel W. Shorey, Chicago, Ill.

Claim.—1. The plates E E and bolt F, when arranged between the longitudinal sections A D and B C, for the purpose of adjusting the relative positions of the heel and toe-sections, substantially in the manner described, and for the purpose specified.

2. The bolt F, plates E E, strips J J J' J', bolts G and H, when combined and arranged with a last divided into the four sections A B C D, substantially as described and for the purpose specified.

109,846. — SHAFT-COUPLING. — William Smeed, Rochester, assignor to himself and Glen & Hall Manufacturing Company, Brighton, N. Y.

Claim.—1. The shell A, provided with a socket or blind eye, as at *a'*, adapted to receive and support one end of the pin *c'*, to which are attached the remaining parts of the coupling, substantially as described.

2. The shell A, provided with bosses *a a'* upon its inner surface, for the purpose of maintaining the ring C in a central position, as set forth.

3. The shell A, provided with the dovetailed groove, in combination with the sliding plate D, for securing the pin C' in the perforation at *a*, and the blind eye at *a'*, substantially as set forth.

109,847.—MILKING-STOOL.—George Smith, Syracuse, N. Y.

Claim.—1. The sliding clamp C, connected to an extension, *b*, which is applied to a vibrating seat, B, substantially as described.

2. The spring *f*, applied between the vibrating seat-extension *b* and the clamp C, substantially as described.

109,848.—APPARATUS FOR THE MANUFACTURE OF GAS FROM HYDROCARBONS.—James H. Smith, Newark, Ohio.

Claim.—In an apparatus for generating gas from liquid hydrocarbons, the combination of the retort B, distributing-pipe D P, and tar-box T B, all arranged and operating substantially in the manner and for the purpose specified.

109,849.—BUCKLE.—George E. Stedman, Boston, Mass.

Claim.—The improved locking-buckle, having its lock-case pivoted to the frame and the tongue projected from the said case and movable with it, as described.

109,850.—PILE FOR BEAMS.—Joseph Stokes, Trenton, N. J.

Claim.—The improved pile for the stem or web of a beam, composed of the two flange pieces *c c'*, the flanges of the one being turned toward those of the other, the filling-bars interposed between said flanged pieces and the wedges by which said flanged pieces and the filling-bars are fastened together, substantially in the manner described.

109,851.—MACHINE FOR COUNTERSINKING THE HOLES IN BUTT-HINGES.—Lucius P. Summers, New Britain, Conn., assignor to P & F. Corbin, same place.

Claim.—A vertically-moving slide, carrying the hinges or other articles to be bored or countersunk, and presenting the same to the revolving tools, in combination with reciprocating fingers that move the articles along progressively, substantially as and for the purposes set forth.

109,852.—BED-BOTTOM.—Charles Valkmar, New York, N. Y.

Claim.—A bed-bottom, composed of the plain slats or bars A, two steel fulcrum bars B, and the rope C, the slats or bars A extending alternately from the opposite ends of the bed-frame, so forming two opposing sets, the two steel bars B producing the elastic or spring fulcrum, one steel bar to each set of slats, all the slats to be united and balanced by means of the rope C, substantially and for the purpose hereinbefore set forth.

109,853. — SUSPENDER. — Joseph Warren Wattles, Canton, Mass.

Claim.—A suspender-button strap, having a layer of thin sheet metal interposed between two layers of cloth or leather, in the manner and for the purpose set forth.

109,854.—MACHINE FOR TRUSSING BARRELS.—Peter Welch, St. Louis, Mo.

Claim.—1. The compound trussing-arms H H^1 H^2 H^3, composed of two branches pivoted together at *e*, and adjusted by the screw S, in the manner described.

2. The trussing-fingers *t* and *s*, constructed as described, and united to the trussing-arms and rests by ratcheted surfaces, collars, and set-screws, in the manner and for the purpose specified.

3. The rests N, sliding and adjusting in grooves in the bed-plate P, in the manner set forth, and provided with the trussing-fingers *s*, as stated.

4. The combination of the treadle T, lever L, cross-arms X, and trussing-arms H H^1 H^2 H^3, in the manner and for the purpose described.

5. The combination of the worm W, driven as stated, with the worm-wheel W', threaded shaft F, nut G, and arms H H^1 H^2 H^3, in the manner and for the purpose set forth.

109,855.—SPRING HINGE.—William Wells, Cleveland, assignor to himself and John Wrigleworth, Mentor, Ohio.

Claim.—The combination, in a single or double spring hinge, of the unincloased spring C, loose adjustable regulating-collar D, pintle E A, and the leaves, all constructed and arranged substantially as herein described.

109,856.—LANTERN.—Hiram Jacob White, Boston, Mass.

Claim.—1. The air-supplying guard D, as composed of the foraminous-sided annular chamber *d*, the mouth-piece *f*, and the chamber *g*, constructed and arranged substantially as specified.

2. The combination and arrangement of the guard D, substantially as described, with the lamp-body or reservoir A, and the burner C, applied together, as set forth.

3. The combination of the metallic dished guard B and the elastic lantern frame, as explained, with the glass lamp-body A, the burner C, and its chimney, as described.

4. The lantern frame I, as made, with shoulders *h h* to two of its elastic hooked bars, F F, and grooves *l l* to the other two, G G, such being for receiving the ring H, as set forth.

5. The dome, as made, with the chimney-receiver or mouth *m*, and also with the foraminous sides, arranged to flare in manner as explained and represented.

109,857. — PROCESS OF SEPARATING THE HAIR FROM THE WARP IN HAIR-CLOTH.—David Whiteley, Providence, R. I.

Claim.—The process of applying sulphuric acid and heat to hair-cloth, for the purpose of separating the hair from the warp in hair-cloth, substantially as above described.

109,858. — WIRE-FENCE. — Bartholomew Wilson and Franklin P. Grimes, Dayton, Ohio.

Claim.—1. The posts A, provided with the anchors B and with the brace-arms C and *c*, all constructed from one piece of metal, substantially as and for the purpose specified.

2. The swinging boards K, suspended from and in combination with the panels of a wire-fence, substantially as and for the purpose set forth.

109,859. — TREE-PROTECTOR. — Blaney L. Alley, Salem, and Thomas W. Shapleigh, Cambridgeport, Mass.

Claim.—The new manufacture of tree-protector, as described, composed of the strip A grooved as explained, and the double-fringed belt B arranged therewith in manner, and fixed thereto by means substantially as specified.

109,860. — CLOTHES-DRIER. — Charles R. Anderson, St. Louis, Mo.

Claim.—The bars J J', frames I I, cords G H, pulleys E F, ring K, and stud M, all arranged substantially as and for the purpose specified.

109,861, antedated December 3, 1870.—CORPSE-PRESERVER. — R. C. Andrus, Poughkeepsie, N. Y.

Claim.—The corpse-preserver, consisting of the ice-case B, hollowed out upon the top for the reception of the head of the corpse, and the ice-chest C, hollowed out upon its under side to fit over the chest and body of the corpse, both cases being supported by the base-board A, and all arranged as described, for the purpose specified.

109,862.—DRAIN-TILE MACHINE.—Henry F. Baker, Centreville, Ind.

Claim.—1. The matrices B C, provided with the vertical re-entering corners *e* and the vertical recesses *h*, and having their end walls and partition notched to suit the form of channel required, as specified.

2. The combination of the mold A, having the notched end walls *f* and notched partition *d*, with the channel-cutter H having the shouldered guides *i i*, substantially as specified.

3. The combination of the mold A, having the notched end walls *f* and notched partition *d*, with the finisher L, shod with the plate *b'*, bent to suit the form of the channel, and provided with the guiding ears *e*, as specified.

109,863.—HAY-TEDDER.—Orville A. Benton, Amenia, N. Y.

Claim.—The gear-wheels *e f g*, for rotating the tines E on their axes, irrespective of their rotation with and around the axis of the reel, in combination with crank *g*, whereby their points may be raised or lowered in passing over the ground, as essentially as specified.

109,864. — ATTACHING LAMP-FOUNTS TO BRACKETS, CHANDELIERS, &c.—George Bohner, Chicago, Ill.

Claim.—1. A screw-ferrule, constructed in such a manner as to connect a lamp-fount or reservoir to an ordinary bracket or chandelier, substantially as herein described, for the purpose specified.

2. The metallic screw-ferrule D, constructed as described, with one end contracted to fit upon the ordinary screw-pin of a lamp-bracket or chandelier, for the purpose specified.

3. The nut or block G, constructed as described, to connect the cylindrical lamp-ferrule to the screw-pin of a lamp-bracket or chandelier, as herein set forth, for the purpose specified.

109,865.—APPARATUS FOR CLEANING AND POLISHING COPPER.—James H. Brookmire, St. Louis, Mo.

Claim.—1. The stationary cylinder E, having semi-cylinder heads h h', forming feed and discharge-chambers I I', center shaft F, spirally-arranged beaters and polishers *f*, when arranged in combination with the frames B and A, substantially as set forth.

2. The pulley G, extension shafts F^1 F^2, center shaft F, beaters *f*, cylinder E, frame B, bracket C, and screw D, when arranged adjustably in combination with the frame A, substantially as set forth.

109,866. — FRICTION-ROLLER. — William Brown, Portsmouth, England.

Claim.—1. The collar D, provided with beveled faces *c c* upon the shaft C, in combination with a series of tapering rollers playing between the beveled faces of the collar and the thrust-blocks, substantially as described, for the purpose set forth.

2. The conical rollers *b b*, arranged within the recess or channel of the thrust-blocks, and bearing against the beveled faces *c c* of the collar D upon the shaft C, said shaft having its bearings upon the thrust-blocks B B, the whole combined, arranged, and operating substantially as herein shown and described.

3. The thrust-blocks B, secured together by pins and keys, and mounted upon a shoe, A, as described, in combination with the collar D, formed with beveled faces *c c*, and secured upon the shaft C, with a series of conical-shaped rollers interposed and playing within the recess or channel *a*, and bearing against the beveled faces *c c* of the collar, the whole constructed and arranged substantially as set forth.

109,867, antedated November 25, 1870.—ICE-AX AND PICK.—John N. Bunnell, Unionville, Conn.

Claim.—The ax and pick, composed of the taper blade A, of steel plate, the slotted and shanked stock B, handle C, and the rivet *a*, constructed as herein described.

109,868, antedated November 26, 1870.—COMBINED RULE, BEVEL, SQUARE, AND DIVIDER.—George G. Burgess, Grafton, Ohio.

Claim.—A folding rule, in combination with the square and bevel attachment, holding by means of the binding-screw *g*, the combined calipers and dividers, the whole being constructed and arranged to operate together, substantially in the manner as shown and set forth.

109,869. — INSECT-DESTROYER. — Thomas Byrne, New York, N. Y., and Deidrich Strunk, Lavaca county, assignors to themselves and J. J. Schott, Lavaca county, Texas.

Claim.—The combination of the vessel A, lamp B, and chimney D, formed as shown, with the conical reflector *c*, and inverted conical transparent deflector *b*, placed base to base, when arranged as described, for the purpose specified.

109,870, antedated November 20, 1870.—JOURNAL-LUBRICATOR.—James A. Cowles, Chicago, Ill.

Claim.—1. The curved plate A, having the bent down parts B B, when employed in a journal lubricator in combination with the matting E E, attached to the parts B B, and extending down into the oil, substantially as and for the purpose described.

2. In combination with the curved plate A, constructed with the terminal lugs C C, the coiled spring D, arranged as described, and connected to the plate by the parts C C, substantially as and for the purposes specified.

3. The combination and arrangement of the coiled spring D with the wicking E E, when the latter is attached to the bottom of the curved spring, substantially as shown and described.

109,871.—BUCKLE.—Lorenzo Dow Cowles, Romeo, Mich.

Claim.—The frame C, with one end bent upward, with its cross-bar *b* and the hooked sliding bar A, all constructed as shown and described.

109,872. — SEASONING AND PRESERVING WOOD.—Charles Massey Cresson, Philadelphia, Pa., assignor to American Wood Protection Company.

Claim.—The treatment, substantially as herein described, of timber with liquid applications while the said timber is being heated.

109,873. — SEASONING AND PRESERVING WOOD.—Charles Massey Cresson, Philadelphia, Pa., assignor to American Wood Protection Company.

Claim.—The treatment of wood, substantially as described, by a combined shower of liquid and current of warm air.

109,874.—TREATING AND RECOVERING THE LIQUIDS USED IN SEASONING AND PRESERVING WOOD.—Charles M. Cresson, Philadelphia, Pa., assignor to American Wood Protection Company.

Claim.—The recovery and utilizing, substantially as described, of liquids employed in seasoning timber.

109,875.—BREAD-PAN.—William H. Daggett, South Vineland, N. J.

Claim.—1. The bread-pan A, in combination with the top A', when furnished with their respective plates *b* and *c*, in the manner and for the purpose substantially as set forth.

2. The plates *b*, when supplied with rings C and tongues *a*, in combination with plates *c*, when constructed with openings I and projections *x*, the whole constructed and operating substantially as specified.

109,876.—FOLDING-CHAIR.—Isaac N. Dunn, New Haven, Conn., assignor to the New Haven Folding-Chair Company, same place.

Claim.—1. In a folding chair, the arrangement of the seat F, secured to the legs B, both in front and in the rear of the pivot, substantially in the manner set forth.

2. In a folding chair consisting of the crossed pivoted legs A B, the arrangement of the bar D upon the rear legs to bear against the forward legs when the chair is open and form a support to retain the chair in an upright position, substantially as described.

3. In a folding chair consisting of the crossed pivoted legs A B, and having the seat secured to the legs B, as described, the rear legs extended up and combined with the strap H, connecting the upper end G of the rear legs with the forward legs

above the seat, substantially as and for the purpose specified.

109,877, antedated November 23, 1870.—LOCOMOTIVE HEAD-LIGHT.—Samuel M. Davies, Chicago, Ill.

Claim.—1. The shells A and B, made with a continuous winding thread, substantially as and for the purpose described.

2. The shells A and B, made with a continuous winding thread, and with ribs V V V V, substantially as shown and described.

3. The combination and arrangement of the small bearing H, large bearing F, intermediate packing I, shell C adapted to fit and support the bearings, shaft or stem D, handle L, and ratchet-wheel E, when the several parts are constructed in the manner and employed for the purpose set forth.

109,878. — ROTARY ENGINE.—William A. Davis, Salem, Ohio.

Claim.—1. The engine, constructed with a cylinder, A, two heads with convex faces and ports, a slotted plate moving in diagonal grooves, and a piston, all substantially as set forth.

2. The combination of the cylinder A, plates B, heads C, with their ports *b d*, and the piston E, all constructed and arranged as described, to operate substantially as and for the purposes herein set forth.

109,879. — INSULATOR FOR TELEGRAPH-WIRE.—Manuel De Montufar, New York, N. Y.

Claim.—A telegraph-insulator, composed of the divided cylinder and the outer and inner sheaths, when they are constructed and arranged as and for the purpose specified.

109,880.—CASING T'S FOR OIL-WELLS.—Julius C. Dickey, Titusville, Pa.

Claim.—The casing T for oil-wells, when the parts A and B are constructed and joined together in the manner and for the purpose described.

109,881.—PROCESS FOR MAKING CONCAVE CIRCULAR SAWS.—Thomas S. Disston, Philadelphia, Pa., assignor to himself and Henry Disston & Son, same place.

Claim.—The process of manufacturing concave circular saws by the whole series of operations described and in the following order, namely, cutting the teeth and central opening in a circular plate of steel, heating said plate, compressing the same between heated dies, hardening it, and then tempering between heated dies, as set forth.

109,882.—POST-MARKING STAMP-CANCELING MACHINE. — Charles E. Donnellan, Indianapolis, Ind., assignor to himself and McCord & Wheatley, same place.

Claim.—1. The combination of the elastic stop K, compensating holder I, wires J, and series of cams H, placed on vertical shafts, with spaces between the cams, substantially as and for the purposes herein set forth.

2. The guide-wires J, elastic stop K, and elastic rotating cams H, in combination with the pressure-rolls D F, type-wheel B, and friction conducting-wheel C, substantially as and for the purposes herein set forth.

3. The receiving device, consisting of the friction conducting-roll L, compensating holder M, and adjustable stop N, arranged substantially as set forth.

109,883.—STEAM-BOILER.—George S. Dubois, Jersey City, N. J.

Claim.—1. The furnace front herein described, covering the entire area of the furnace A, and provided with means for admitting and controlling the admission of air, as specified.

2. The open-front furnace A, constructed as specified, with a water-bar, D', connecting the water-legs, and adapted to receive and to serve with my removable front G H and its connections, as herein specified.

109,884. — HARNESS-OPERATING MECHANISM FOR LOOMS.—John C. Duckworth, Pittsfield, Mass.

Claim.—1. The arrangement, in combination with the leaves of heddles, of a double series of vertical angular heddle-levers, placed at the side of the loom on bearings which are parallel to each other and to the side of the loom, and moving toward and from the side of the loom, the vertical arm of each lever of each series of heddle-levers being connected with a leaf of heddles, and the horizontal arms or toes of each lever of each series acting upon the corresponding horizontal arms or toes of the opposite series, substantially in the manner and for the purposes hereinbefore described.

2. The arrangement of the pattern-chain, horizontal hooked jacks, and vertical or upright heddle-levers, pivoted at the side of the loom, so as to move toward and from the loom, and connected with the leaves of heddles, substantially as described, the gist of the arrangement consisting in bringing the pattern-chain directly in contact with the horizontal hooked jacks in said combination beneath the same, each jack having a hook on its upper and a hook on its lower edge, at one end, and at its other end attached to the heddle-lever, or to a projection thereof, so as to lift the jacks or allow them to be depressed by the action of the protuberances and depressions of the pattern-chain without intervention of hinged toes, as formerly practiced.

3. The arrangement of the pattern-chain relatively to the reciprocating knives, or lifters and depressers, the horizontal hooked jacks, hinged at one end to vertical or upright heddle-levers, each jack at its other end having a hook on its upper and a hook on its lower edge, such heddle-levers arranged at the side of the loom so as to move toward and from the loom, and connected with the leaves of heddles, and said upright heddle-levers, the gist of the arrangement being that the pattern-chain is placed directly in contact with the lower side of the jacks, and between the hooks of jacks, which engage with the reciprocating knives and the point where the jacks are hinged to the side levers, or a projection therefrom, whereby the jacks are elevated or depressed to engage with the knives, by comparatively small rings or protuberances upon the pattern-chain.

4. The arrangement of pattern mechanism, horizontal hooked jacks, and upright heddle-levers, the gist of the arrangement consisting in such heddle-levers being arranged at the side of the loom so as to move toward and from the loom, the jacks being hinged to such heddle-levers above their fulcrums, and arranged horizontally outside of such heddle-levers perpendicularly to the side of the loom, or nearly so, each jack at its other end having a hook on its upper and a hook on its lower edge, the pattern-chain being placed directly in contact with the lower side of the jacks and outside of such heddle-levers, and the drum which carries the pattern-chain being located beneath the jacks and above the fulcrums of such heddle-levers, whereby convenient access to the jacks and pattern mechanism is obtained, and also room for a considerable length of pattern-chain to be suspended vertically from the drum without obstruction, and, at the same time, direct action of the pattern-chain upon the jacks is secured, substantially as described.

109,885, antedated November 26, 1870.—WATER-WHEEL. — William H. Elmer, Berlin, Wis.

Claim.—1. The casing A and chutes B B, constructed as described, and formed in one, both the upper and lower parts of the chutes being beveled, as shown, substantially as and for the purposes herein set forth.

2. The combination of the casing A, chutes B B,

gates C C, pins *b b*, arms D D, wheel E, rack H, and pinion *d*, all constructed and arranged as described, substantially as and for the purposes herein set forth.

109,886.—Iron Culvert.—Moody G. Freeman, Wenona, Ill.

Claim.—1. The arch B, grooved longitudinally at its edges, in combination with the side pieces A A, provided with tongues to fit in said grooves on the arch, and secured by bolts, substantially as shown and described.

2. In combination with the arch B and side pieces A A, constructed and joined together as described, the bands or ribs C C, encircling the arch, and their ends fastened in staples *e e* on the side pieces, substantially as and for the purposes herein set forth.

109,887.—Saccharifying Mash for Grain. Charles H. Fringe, Centreton, Mo., assignor to himself and Charles Braches, same place.

Claim.—The application to water, for converting grain into mash, of a combination of sixteen parts of muriatic acid and one of phosphoretic acid, applied in the proportion of about three ounces to every bushel of grain, to operate preliminarily on the starch, as described.

109,888.—Bee-Hive.—James W. Gladding, Normal, Ill.

Claim.—1. A honey-box, formed of sections G G, each with a wire-guide, A, and placed side by side within the covering H, which completely incloses said sections so as to form a whole, substantially as herein set forth.

2. The arrangement of the hive A, frames B C D, with the disconnected wire-guides *a b*, honey-box G H, with guides A, cap J, and catches S, all substantially as shown and described.

109,889.—Spring Bed-Bottom.—Charles Glenn, Allegheny City, Pa.

Claim.—The slats *b* and *c*, forming one piece or united at the middle, in combination with stripe *d*, arranged transversely between, forming a spring bed-bottom, substantially as described.

109,890. — Breech-loading Fire-Arm.—Charles Green, Rochester, N. Y., assignor to Charles Parker, Meriden, Conn.

Claim.—1. The lever pivoted to the tang in the manner substantially as described, and combined with the bolt which secures the barrel, so that, through the operation of the said lever, the barrel may be locked or released, substantially as set forth.

2. The hooked piece on the barrel, and correspondingly hooked-shaped bolt, combined so as to draw and hold the barrel to the recoil-plate, substantially as set forth.

109,891.—Water-Wheel.—Mahlon Gregg, Rochester, N. Y.

Claim.—1. The compartment inclosed by the partitions F, between the chute-case A and the flume-bottom, whereby ready access may be had to the lower parts of the wheel, for the purposes set forth.

2. The annular gate C, operated from below the wheel in such a manner as to permit it to revolve with the wheel, for the purposes set forth.

109,892.—Window-Frame.—William H. Griffin, Springfield, Mass.

Claim.—A window-hinge, consisting of the swinging jamb A, double hinges B and C with their flanges *b* and *c*, the parts being constructed and arranged substantially in the manner and for the purpose shown and described.

109,893.—Cotton-Plow.—Thomas Guice, Mount Andrew, Ala.

Claim.—The plows *a a'*, and double-winged plows C C, each constructed and both sets relatively arranged in the particular manner shown and described, whereby they are adapted to cut a furrow with a vertical side, and to scrape along each side of the cotton-plant row or ridge, and clean the furrow of loose dirt.

109,894.—Mold and Cone for Metallic Castings.—William Hainsworth, Allegheny, Pa.

Claim.—Pulverized coke treated with sour beer, fire-clay water, or other similar fluid, as a material for molds or cores for casting metals, as specified.

109,895.—Medical Compound.—Orrin F. Harris, Norwich, Conn.

Claim.—The composition of matter composed of the ingredients aforesaid, in substantially the proportions aforesaid, to be used as a remedy for the disease called the piles.

109,896.—Pump.—William Hartley, Durand, Ill.

Claim.—1. The chamber B, constructed specifically as described, and arranged as and for the purpose set forth.

2. The combination of the chambers B and A, when constructed as described, and arranged relatively to each other, as and for the purpose set forth.

3. The combination of the chambers A, B, and C, and ram A', when the parts are constructed specifically as described, for the purpose set forth.

4. The ram A', with its packing *a'* and spiral spring *a²*, as and for the purpose set forth.

109,897.—Cotton-Press.—William Haynie, Memphis, Tenn.

Claim.—The combination of the standard A with the levers B fulcrumed in the stirrup C, the pulling-lever H, provided with the pawl G, and the piston P of the cotton-press herein described, all constructed and arranged as shown, for the purpose set forth.

109,898.—Collar for Circular Saws.—James B. Heald, Milford, N. H.

Claim.—The combination, with the collar B, ring F, and points E, of the steel washer I, and spring G, substantially as and for the purposes set forth.

109,899.—Canal Lock.—George Heath, Annapolis, Md.

Claim.—1. The chain *a'*, pulleys *d e s*, and self-closing tumble-gate B, in combination with the spur-wheels *t r*, pawl *p*, clutch *f'*, and hand-wheel H, all arranged and operating substantially in the manner shown and described.

2. The gravitating pulley *e* in combination with the tumble-gate B and its chain *a'*, substantially as described.

3. The combination, with the buoyant self-closing tumbling-gate B, of the releasing clutch *f'*, or both the releasing clutch *f'* and the pawl *p*, and suitable intermediate mechanism for lowering the gate, substantially in the manner described.

4. The combination of crab-lever *h h*, rods *n* and *g*, rack *w'*, and toothed lever L, with the valve *c* of canal-lock platform C, substantially in the manner shown and described.

5. The arrangement of two or more crab-levers on the same shaft, and extending rods vertically up from and horizontally out from said levers, and connecting each of said rods with its own independent rack and toothed-lever, and with its own independent valve, all in such manner that a series of valves on the canal-lock platform C may be separately or successively opened or closed from one side of the lock, as set forth.

109,900.—Sawing-Machine.—Daniel Heller, Milton Centre, Ohio.

Claim.—1. The combination of the pivoted beam G, pins or rests I, pins or handles J, pivoted bar L and strap M, with each other and with the frame A B C D E F, substantially as herein shown and described, and for the purpose set forth.

2. The combination of the slotted arm N, adjustable pivoted bar O, and pin R, with the other parts of the machine, substantially as herein shown and described, and for the purpose set forth.

109,901.—Coffee-Pot.—Louis Hildenbrand, Michigan City, Ind.

Claim.—The coffee-steamer, composed of the vessels A B, intermediate case C, and pipes *e g*, all arranged to operate substantially as herein shown and described.

109,902.—Faucet.—Jacob Hills, Haydensville, Mass.

Claim.—In the faucet, as described, the combination and arrangement of the sleeve D, as explained, and its guide-slots *n n*, with the valve C and its guide-lugs *g g*, key E, the screws *f q*, the body A, and the cap B thereof, all being as set forth.

109,903, antedated November 26, 1870.—Machine for Beating and Cleaning Hair.—George P. Holloway and William J. Huey, Portland, Ind.

Claim.—1. The construction of the cylinder D, it having the projecting pins E E and apertures D' D', substantially as and for the purpose set forth.

2. The combination of the shaft B, the disk G, key H, and cords F F, substantially as and for the purpose set forth.

3. The arrangement of the disk G, key H, shaft B, and cords F F, substantially as and for the purpose set forth.

109,904.—Direct-acting Steam-Engine.—William Davis Hooker, San Francisco, Cal.

Claim.—1. The valve F, with its cams or arms G and J, in combination with the main and auxiliary valve and main piston of a direct-acting engine, substantially as herein described.

2. The valves *f* and passage *i* in the piston N, together with the ports *a a'* and the auxiliary valve M, substantially as and for the purpose described.

3. In combination with the valve F and the valve M, the ports *c*, to arrest and cushion the main piston at the end of its stroke, substantially as herein described.

109,905.—Hay-Press.—Henry C. Hunt, Indianapolis, Ind.

Claim.—1. The combination of the rack-bars *a a*, dogs M M, and lever N, provided with pins *b b* and bar O, substantially as and for the purposes herein set forth.

2. The combination of the bale-box A B C with its doors D D and top H I, the follower K L with dogs M M and guides *d d*, and the lever N with pins *b b* and metal bar O, all substantially as and for the purposes herein set forth.

109,906. — Stop-Valve. — Charles Emery Hutson, Commerce, Mo.

Claim.—1. The rotary valve B, having projecting arms *b*, incline *b'*, and cutting-edges *b²*, when arranged in combination with the stem C and valve-shell A, substantially as and for the purpose set forth.

2. The stem C, having projecting arm *c*, incline *c'*, spring *e*, chamber *d*, to operate the valve B, and arranged in combination with the valve-shell A of cylindrical form, and having circular slot *c¹*, substantially as set forth.

109,907.—Tire for Traction-Engines.—Oliver Hyde, Oakland, Cal.

Claim.—1. An elastic tire for the wheels of traction-engines, when said tire is composed of elastic blocks B secured in succession around the tire A, substantially as and for the purpose above described.

2. The flat-headed bolt C, with its lower end bifurcated and spread apart so as to form a key, in combination with the countersunk holes in the blocks or equivalent device, substantially as and for the purpose above described.

3. The T-shaped projections *a* on the tire A, in combination with the corresponding grooves in the blocks B or equivalent device, substantially as and for the purpose described.

109,908. — Lubricator for Steam-Engines.—Francis Jackson, Wigan, assignor to William Prosser, Manchester, England.

Claim.—1. A tube or tubes, placed concentrically around the central tube *h*, through which steam is admitted, and in combination with a valve or valves, substantially as shown in fig. 2, and for the purpose set forth.

2. The method of increasing the condensation of steam, and, consequently, the displacement of the oil by means of the metallic casing *k*, adjustable upward and downward, substantially as set forth.

3. The employment of the valve or disk *v*, to prevent the escape of any oil in cases where a vacuum is created in the steam-pipe or steam-chest, substantially as set forth.

4. The plug *m*, with holes bored in it, in combination with the tube *h*, for the removal of the condensed water from the cup, substantially as set forth and illustrated in fig. 3.

5. A lubricator, as shown in fig. 4, with two chambers, one above the other, to be successively filled, substantially as and for the purpose set forth.

6. The perforated tube *m*, with a solid end, *b*, acting as a valve, the said tube communicating with the upper chamber, and the valve being between the two chambers, substantially as and for the purpose set forth.

7. The tube or tubes placed concentrically around a central tube, *h*, in combination with the aforesaid valve *b*, and without any opening in the side of the cup, substantially as and for the purpose set forth.

8. The upright tube, valves, and cotton-wick, substantially as shown in fig. 5, and for the purposes set forth.

109,909. — Base-burning Fire-place Heater.—Julius Jaeger, Tompkinsville, N. Y.

Claim.—1. The combination of the feed-cup P, pipe *b'*, and water-vessel O, substantially in the manner shown and described.

2. The oval air-pipes *a'*, arranged in the combustion-chamber of a heater in oblique positions toward each other, as and for the purpose set forth.

3. The back flues H, upper side flues G, apertures A, lower side flues C, and central back flue D, in combination with the combustion-chamber of a heater, constructed and arranged substantially as described.

4. The doors *d'* in the vertical partition *p*, in combination with the front part J and back part K of a fire-place heater, constructed substantially as set forth.

5. The grate F, formed with hub *l* encircling the shank of the cone I, in connection with the pin *i* passing through said shank, and with the rock-shaft K, on which the cone is mounted, substantially as and for the purpose described.

109,910.—Sawing-Machine.—Per Johnson, Columbia, Cal.

Claim.—1. The body A, provided with the rigid legs H, folding legs H', and driving or carrying-wheels B, substantially as and for the purpose described.

2. The peculiar combination herein described for operating the saws G, consisting of the wheels *d* and *e* and pitmen *h*, together with the parallel guide-rods *f f* and horizontal bar *g*, the whole constructed and operated as herein described.

109,911.—Wind-Wheel.—John H. Kimble, Samuel Kimble, and George W. Kimble, Fox Lake, Wis.

Claim.—The combination of the collar I, lever M, cylinder p, rods r r, and shaft L, substantially as and for the purposes herein set forth.

109,912.—Lathe.—Samuel U. King, Windsor, Vt.

Claim.—1. In combination with the upper feed-roller E and its operative mechanism, and with the cutter-head B and the guide-levers C C C and cutter E thereof, as described, a mechanism, substantially as specified, (or its equivalent,) combined with the lower feed-roller, and to operate with each for contracting the guide-levers and knife upon the stick, by rotary motion imparted to the lower feed-roller by the stick while being fed along by the upper feed-roller, as explained, the said mechanism consisting of the ring D, the bent lever L, the annulus K, the levers G' H', the helical groove n, the catch I, collar o, springs p' r, worm k, and worm-gear i, all arranged as specified.

2. The combination, as described, for effecting contraction of the guide-levers and cutter by the action of the stick on the lower feed-roller, while such stick may be in the act of being fed along by the upper feed-roller.

109,913.—Wrench.—Christian Knisely, Chicago, Ill.

Claim.—The plate a, when arranged between the plate m and the eccentric head of the lever E, substantially as described

109,914.—Revolving Fire-Arm.—Charles J. Linberg and William J. Phillips, St. Louis, Mo.

Claim.—1. The barrel stock, pivoted on an axis parallel with the axis of the cylinder, for opening to disengage the cylinders, and having the cavity in the side for receiving the spindle C when closing with the cylinders, all substantially as specified.

2. The locking-plate M, arranged with the barrel-stock H and the projecting ratchet-teeth O, substantially as specified.

3. The two cylinders arranged in connection for alternate use, and provided with the inclosed needles R, arranged and operating substantially as specified.

4. The annular nipple-chamber e, formed by the grooves or recesses in the adjacent end of the cylinders A and B, and closed by the flange d fitting in recess a, as shown and described.

5. The turning-pawl P, lever Q, bar V, and hammer-arm, all combined and operating substantially as specified.

6. The combination, with the locking-lever U, having the beveled head h and slide-bar V, of the headed spring f, all substantially as specified.

109,915.—Miter-Box.—Charles F. Linscott, Chicago, Ill.

Claim.—The metallic miter-box, constructed as described, with the guide-cuts or slots B and C, as herein set forth and shown, for the purpose specified.

109,916.—Combined Hand Seed-Drill and Cultivator.—Samuel D. Lucas, Winterpock, Va.

Claim.—1. A bottom-perforated and shaking seed-box, F, combined with a pan-shaped receiver, E, placed thereunder to collect the scattered seed and converge them toward the discharge-tube D, as described.

2. The combination, with the dropping-mechanism of a seed-planter, of the following instrumentalities, viz., the plow O to open the furrow, the pulverizers P to comminute the soil which is to be turned on the seed, the coverers M, and the concave ridge-roller L, when all are arranged as described.

109,917.—Putting up Pomatum.—Elard Ludde, New York, N. Y.

Claim.—A package, for pomatum and other articles, composed of a sheet-metal box stamped up or spun without solder, and provided with a shoulder to receive a top of tin-foil, which is secured in position by turning in the top edge of the box, as herein shown and described.

109,918.—Ironing-Table.—James H. Mallory, La Porte, Ind.

Claim.—In combination, the board A, legs C, spring D, arm E, shoulders a a, legs B, and key F, substantially as specified and shown.

109,919. — Churn. — Chelton Matheny, Greensburg, Ind.

Claim.—1. In combination with the described elements A B B' E E f G g H J K k L, the pivoted and gravitating arm M, with its roller N, for the purpose herein explained.

2. The pivoted yoke or loop P Q Q' and the eccentric clamps R r R' r', constructed, combined, and arranged as represented and described, for the purpose set forth.

3. The dash apparatus J j v v' U u u' W' w w', when arranged to operate as herein explained.

109,920. — Flock-Machine.—William McAllister, Lawrence, Mass.

Claim.—1. The reversible bed H and knives I, when constructed and operating substantially as and for the purposes described.

2. The feeding mechanism above described, consisting of the hopper and the spiked feed-rollers, revolving in opposite directions, and having their spikes interlapping.

3. The reducing-chamber above described, that is, when provided with an inlet to receive the flock, and an outlet whose dimensions are controlled by an adjustable cover, for the purpose of retaining the flock a longer or shorter time, as and for the purposes above described.

109,921.—Piano Action.—Frazee B. McGregor, Pontiac, Mich.

Claim.—The combination of the key C, blocks D and H, hammer E, lever F, fulcrum G, and combination-bar I, all constructed and operating substantially as and for the purposes herein set forth.

109,922. — Padlock.—William McIntyire, New York, N. Y.

Claim.—The tumbler-bolt B, with its rounded nose b and stop c, in combination with the shackle D, and with the reciprocating bolt C, with its inclined recess e and shoulders d and f above and below said recess, substantially as herein shown.

109,923.—Corn-Planter.—Noah Mendenhall, Greensburg, Ind.

Claim.—The combination of the box F, cut-off G, slide H, rod h, lever I, rock-shaft J, spring K, agitator M attached to lever I, and trigger L, all arranged, constructed, and operated in the manner and for the purpose set forth.

109,924.—Washing-Machine.—Samuel S. Middlekauff, Hagerstown, Md.

Claim.—1. The cylinder B, having the springs f and e arranged as described, in combination with the rollers b, or their equivalent, all mounted in a suitable box or body, A, as set forth.

2. The rock-shaft o, having the lever p and arm r attached, in combination with the cross-bar m and vertical rods l, connected by the springs s to the sliding journal-boxes k, having the cylinder-shaft C mounted therein, substantially as described.

109,925, antedated November 26, 1870.—Water-Wheel. — Mordecai Millard, Franklin, Ohio.

Claim.—The endless belt of buckets E, of larger

circumference than the wheels D E, in combination with the bridge M and inclines O, or their equivalents, operating conjointly in the manner and for the purpose substantially as described.

109,926.—Turbine Water-Wheel.—Ransom Monroe, Hendrick's Creek, Pa.

Claim.—1. The water-wheel A, whose diameter is greater at the bottom than at the top, provided with spiral issues B B, relatively larger at the top than at the bottom, thus preserving the outer periphery of the buckets in a perpendicular line, substantially as and for the purpose set forth.

2. The wheel A, provided with shoulder k, in combination with coverings d d and key-bars e e, all arranged as and for the purpose set forth.

109,927.—Thill-Coupling.—Francis B. Morse, Plainville, Conn., assignor to himself and H. D. Smith & Co., same place.

Claim.—1. A carriage-shackle, in which the ribs a a are constructed and arranged in internal angles to be imbedded into the pad D, in the manner and for the purpose specified.

2. The thill-iron F and eye E, combined with and united by the sleeve I, with or without the inclined stud d, substantially as herein set forth.

109,928.—Apparatus for Dressing and Furrowing Millstones.—James Lee Norton, London, England.

Claim.—1. The combination, with the grooved staff a, provided with the saddle b, cross-slide d, jointed carrier h, adjusting slide i, screw-shaft e, of the star or ratchet-wheel and jointed pawl f, substantially as shown and described, and for the purpose of dressing the face of a millstone.

2. The combination, with the staff a, provided with the saddle b, cross-slide d, jointed carrier h, screw-shaft e, star-wheel, and jointed pawl f, of the inclined axis or spindle r, provided with pulley r', pulleys s', on upright standards attached to the ends of the staff and the driving-belt or cord, substantially as and for the purpose specified.

109,929. — Cast-Iron Plow. — John K. Odell and William S. Little, Deckertown, N. J., assignors to G. W. Coe, same place.

Claim.—The one-piece cast-iron beam and standard A B, having flanges b b^1 d^1 e^1 and sockets b^2, combined with brace F, mold-board E, share D, C^2, and land-side C, as and for the purpose described.

109,930. — Coupling for Earth-boring Augers. — Thomas Orchard, Lincoln, Cal.

Claim.—The coupling and locking device, consisting of the bar b, the slots c c and d, and the pin e, substantially as herein described.

109,931, antedated November 26, 1870.—Metallic Cartridge.—William I. Page, East Boston, Mass.

Claim.—1. A metallic cartridge having its shell formed with a series of corrugations, a a, an internal annular shoulder or perforated diaphragm b, and a fulminate-chamber b', constructed and arranged substantially as described, and provided with powder, ball, and fulminate, applied thereto in manner as set forth.

2. A metallic cartridge-case, as formed with an internal annular shoulder or perforated diaphragm b, and a fulminate-chamber b', substantially as and for the purpose set forth.

3. A metallic cartridge-case, as formed with the corrugations a a and the annular shoulder or diaphragm b, as and for the purpose set forth.

4. A metallic cartridge-case, as formed with a perforated diaphragm b, arranged in manner and for the purpose set forth.

109,932.—Car-Coupling.—Jay R. Palmer, Mariposa, Cal., assignor to himself and James H. Hatch.

Claim.—In combination with the bumper, divided vertically, the wedge-shaped tongue i and levers m and p, to enable the brakeman to open the coupling either from the platform or side of the car.

109,933.—Shoe-lacing Hook.—Alphonso Patten, Biddeford, Me., assignor to himself and Robert W. Rumery, same place.

Claim.—As a new manufacture, the lacing-fastening, as made with the dents and in other respects as hereinbefore described, and as represented in the accompanying drawing.

109,934.—Corn-Plow.—Elwood Phillips, Centreville, Ind.

Claim.—A one-horse cultivator, having a horizontally-curved beam, to admit of the horse and driver walking on the same side of the row of corn, the beam near its rear end being bifurcated downward, and on the extremities of which are pivoted the standards of the shovels, for the purpose of giving to the latter a lateral motion in the arc of a circle, substantially as herein set forth.

109,935.—Skate.—Alfred C. Platt, Sandusky, Ohio.

Claim.—1. In combination with a skate, the overshoe A, provided with the stays b b and hollow heel I, and secured by the straps B B, arranged substantially as and for the purposes herein set forth.

2. The arrangement of the straps B B, substantially as shown and described, in combination with the strap or pad E and cord a, for the purposes set forth.

3. The elastic ankle supports b b, tightened by means of the heel-strap D, substantially as and for the purposes herein set forth.

4. In an overshoe, combined with a skate, the hollow heel I, having an opening in its front for the passage of the spurs d d, substantially as and for the purposes herein set forth and described.

5. The plate J, provided with one or more racks, e, constructed and applied in combination with the device C, substantially as and for the purposes herein set forth.

6. The device C, constructed as described, with spurs d d, teeth f f, levers or arms h h, and spring k, substantially as and for the purposes herein set forth.

7. The combination of the device C and straps B B, arranged and tightened, substantially as herein set forth.

8. The combination of the plate J, device C, and straps B B, all constructed and arranged substantially as and for the purposes herein set forth.

109,936.—Corn-Planter.—Henry G. Porter, Hopkinton, Iowa.

Claim.—The arrangement of the cylinder A, bung B, brush b, cap C, slide D, guide d, and spring E, substantially as shown and specified, and for the purpose set forth.

109,937.—Halter.—Robert Porter, Ottumwa, Iowa.

Claim.—The slotted castings C, H, and H', constructed as described, and used for connecting the different straps of a halter, substantially as herein set forth.

109,938. — Washing-Machine. — Samuel Post and Henry D. Martin, Ypsilanti, Mich.

Claim.—The construction and combination of the metallic plate A' with the braces or frame K K, segmental gear H and G, shaft E, pinions G' G'', upright shaft H', strap I, rubber M, tub D,

cover F, with frame A B C, and lever J, all as shown and described, and for the purpose set forth.

109,939.—Letter-Box.—Albert Potts, Philadelphia, Pa.

Claim.—1. A letter-box composed of two parts, which are provided with inwardly-projecting ears, and connected by bolts or pins fitted through said ears, substantially as herein shown and described.

2. A letter-box made of spherical form, with a door near the bottom and insertion-slots near the top, substantially as herein shown and described, for the purpose specified.

109,940.—Coke-Furnace.—Thomas Price, Steubenville, assignor to himself and James Cruthers, West Newton, Ohio.

Claim.—1. The cradle E, placed into the coke-furnace to serve as a grate and conveyer for the coal, substantially as herein shown and described.

2. The coke-furnace A, provided with the curved smoke-channels *a a*, as specified.

3. The furnace H, arranged in line with the furnace A, to receive the cradle containing the coke, substantially as herein shown and described.

109,941.—Buckle.—Francis Puetz, Buffalo, N. Y.

Claim.—The buckle A and metal strap B, constructed and arranged as described and operated, as and for the purposes set forth.

109,942.—Apparatus for Cooling Soda-Water and other Liquids.—Alvan Davis Puffer, Boston, Mass.

Claim.—1. An apparatus for cooling liquids, in which the liquid to be cooled is first conducted through pipes immersed in the ice-water accumulating from the ice-meltings before entering the pipes cooled directly by the ice, substantially as herein shown and described.

2. An apparatus for refrigerating liquids, composed of two clusters or coils of cylinders or pipes, one of which receives a reduction of temperature directly from the ice, and the other from the ice-water which results from the melting of said ice, in the manner and operating substantially as herein explained.

109,943.—Wagon-Seat Fastening.—John Calvin Rankin, Mount Vernon, N. Y.

Claim.—The herein-described wagon-seat fastening, composed of the bar *a* provided with the curve *b c d*, and attached to the seat, as shown, to strengthen the same, and the socket E *d'* made with curved projections *e e'*, between which the end of the bar *a* passes and is held, all the parts being constructed and arranged as herein set forth and shown.

109,944.—Marine Engine.—W. B. Reaney, Chester, Pa.

Claim.—1. The arrangement of the air-pump and the supplementary shaft E, its eccentrics F, and crank G, as set forth.

2. A feed-pump, having its barrel arranged partly within the air-pump and its bucket-rod connected to the air-pump bucket-rod, all substantially as described.

109,945.—Corn-Sheller.—George W. Reisinger, Harrisburg, Pa., assignor to William A. Middleton and Eugene Snyder, same place.

Claim.—The within-described corn-sheller, consisting of the sliding jaws E E, provided with the teeth *e e* and hooked projections *d d*, the rubber bands or springs G G, curved foot H, and cap-box A, all constructed and arranged to operate substantially as set forth.

109,946.—Scrubbing-Brush.—Ralph Rockwell and Zora B. Custer, Petroleum Centre, Pa.

Claim.—The brush-stock B held in dovetailed grooves of the board A, and prevented from lateral displacement by the socket D entering the recess *b*, as shown and described.

109,947.—Skirt.—Hugo Schultz, Paris, France.

Claim.—1. A crinoline-skirt, based upon the form or frame made by the metallic wire or band *a*, disposed as described.

2. In combination with the band *a''*, the bands *b f* and *i i i*, for adjusting the set of the crinoline-skirt, as described.

109,948.—Apparatus for Pitching and Coating Barrels, Casks, &c.—Louis Schulze, Baltimore, Md.

Claim.—1. The grate-bars, with the device for cleaning the same, substantially as described.

2. The furnace, with opening or openings so as to remove the cinders or ashes, substantially as described.

3. The combination of the frame A with the grate-bars and device for cleaning the same, substantially as described.

109,949, antedated November 25, 1870.—Wrench.—Eliphalet S. Scripture, Brooklyn, E. D., N. Y.

Claim.—The pawl A, B, and F, the regulating-slip *d i*, and screw E, when combined and applied to the sliding head of a pawl and notch-slide wrench, substantially in the manner and for the purpose set forth.

109,950.—Elevator and Distributer.—Thomas Shanks, Baltimore, Md.

Claim.—The machine herein described, consisting essentially of the base *o*, the column *t*, the platform *s*, arranged at right angles with the lower platform *o* and projecting at one end so as to rest upon the wall of the building, the revolving aprons *m e*, the connecting-gear *n v w k l*, and the operating wheel or drum *a* at the foot of the vertical apron, all constructed and adapted to operate together, for the purposes specified, in the manner substantially as herein described.

109,951, antedated November 28, 1870.—Direct-acting Engine.—Sidney F. Shelbourne, New York, and Charles E. Emery, Brooklyn, N. Y.

Claim.—1. The combination of a main valve, provided with the chamber L, a throttle-valve, *a*, and a valve-seat, provided with the passages or ports F and K, whereby the quantity of steam admitted to one end of the cylinder may be regulated as desired, and independently of that admitted to the other, substantially as herein specified.

2. The combination and arrangement of the valves *a*, *b*, and *c* with each other, the main steam-pipe H, and cylinder ports F and G, substantially as described.

3. The throttle-valve *d*, arranged in passage *f*, and constructed and operating substantially as described.

109,952.—Pocket-Alarm.—Calvin W. Simonds, Boscawen, N. H., assignor to Hollis Towne, same place.

Claim.—1. A pocket-alarm, composed of a case, A, adapted to be attached to the pocket, and a shackle F, for attachment to a pocket-book or other article, the case containing a bell, B, a hammer, D, and mechanism adapted to retain the said shackle from accidental withdrawal, and cause the forcible withdrawal of the same to trip the hammer and sound an alarm, all substantially as herein shown and described, for the purpose specified.

2. In a pocket-alarm, substantially as herein described, the brake E, as and for the purpose set forth.

109,953.—Beveling the Edges of Circular Plates of Metal.—William H. Singer, Pittsburg, Pa.

Claim.—The rolls C C, in combination with the swinging frame F, rotatory disks *e f*, and the lever L, or its equivalent, substantially as described.

109,954.—Alarm-Lock.—Thomas P. Sink, Fairton, N. J.

Claim.—The combination of a double-barrel gun with a door-lock, and with the trigger *c* in contact with the key-hole, as herein described, and for the purpose set forth.

109,955.—Pump.—John B. Sivertson, Chicago, Ill.

Claim.—1. The arrangement upon the plate Q, with relation to each other, of the segmental gear S, internally-toothed rim T, beam W, and the pump-brake, substantially as described.

2. The water-base A, constructed as described, to support the cylinders, and form the case F, containing the valve-chamber H and water-way I, in rear or upon one side of said cylinders, substantially as and for the purpose specified.

3. The valve B', having its packing secured in place by means of the plate *c'*, screw *f''*, and nut *g'*, and hinged to the piston in such a manner as to permit vertical play at the hinge, substantially as described, for the purpose specified.

4. In combination with the case F, the cover L, having the central covered opening, and adapted for removal, in the manner described, to permit access to the valve-chambers H and water-way I, as and for the purpose specified.

109,956.—Wagon for Loading Timber.—Jacob Skeen, Mound City, Ill.

Claim.—1. The fifth-wheel I I', constructed and connected substantially as described and shown, for the purposes set forth.

2. The combination of the tongue J and the fifth-wheel I I', both being constructed and arranged substantially as described and shown, for the purposes set forth.

3. The stakes N, provided with blocks O, and constructed, arranged, and operating substantially as described and shown, for the purposes set forth.

4. The skids R R', provided with plates S and cars t, constructed substantially as described and shown, for the purposes set forth.

5. The means employed in turning the front wheels under the wagon, consisting of the fifth-wheel I I' and the rails D and plates M, the two latter provided with the beveled recess *r*, all constructed and arranged substantially as described and shown.

6. The means employed for changing and regulating the length of the wagon, consisting of the rails D provided with holes *u*, the caps F provided with holes *u'*, the pins *v*, and the hind-axle block C, all constructed and arranged substantially as described and shown.

7. The combination of the plate E, the cap F, the straps G, and the hind-axle block C, all constructed and arranged substantially as described and shown, for the purposes set forth.

109,957.—Sleigh-Brake.—Henry W. Smith, Rainsburg, Pa.

Claim.—1. The spring G, provided with the ratchet H, and attached to the fender or other suitable place on the sleigh, substantially as and for the purposes herein set forth.

2. The spring levers B B, constructed as described, and pivoted at any suitable place to a sleigh, in combination with the brakes C C, hooks *a a*, and arms *b b*, substantially as and for the purposes herein set forth.

3. The combination of the cross rock-shaft D with its arms *d d*, and lever E, with the brakes C C and levers B B, all substantially as set forth.

109,958.—Cork-Screw.—John A. Smith, Brooklyn, N. Y.

Claim.—The combination, with the screw C, of the handle, composed of the revolving part A and the rigidly-attached part or arms B, substantially as herein described.

C P O——60 70

109,959.—Combined High and Low-water Indicator.—Levi F. Smith, Philadelphia, Pa.

Claim.—1. In combination with the hollow casing G, the float N, hollow arm O, hollow journal P, indicator V, lever T, fulcrums *f g*, and whistle-valve *e*, all constructed to operate substantially as set forth.

2. The fulcrums *f* and *g*, arranged within the casing G, and operating with the lever T, substantially as and for the purposes herein set forth.

3. In combination with the casing G, float N, arm O, journal P, and indicator V, lever T, and fulcrum *f g*, the nut R, valve *a*, nut S, and spring *b*, all constructed to operate substantially as set forth.

109,960.—Shifting Shovel-Plow.—Adam Snyder, Packard, Ohio.

Claim.—1. The arrangement of the ring E, internally-notched ring F, stop-piece or catch G, and shovel D, with the standard B, as and for the purpose specified.

2. The arrangement of the forked bar H, lever I, ring J, plow D, rings E and F, with the standard B, substantially as herein shown and described, and for the purpose specified.

109,961.—Box for Packing Bottles.—Joseph Jones Solomon, Philadelphia, Pa.

Claim.—A packing-box for bottles, having a partition with openings for the reception of the bodies of the bottles, and a divided partition with openings for the reception of the necks, substantially as described.

109,962.—Door-Spring.—William H. Stafford, New York, N. Y.

Claim.—The horizontal sliding rod C, spiral spring *b*, curved plate *d*, and roller *e*, (hung in arm *f*,) which projects over upon the inner end of plate *d*, all combined and arranged to operate in the manner described.

109,963.—Direct-acting Engine.—William J. Stevens, New York, N. Y.

Claim.—1. The combination of the auxiliary cylinder, rocking-lever, and main valves of a direct-acting steam-engine, substantially as and for the purpose herein specified.

2. The combination of the regulating-chamber with the auxiliary cylinder, rocking-lever and main valves of the main cylinder in a direct-acting steam-engine, substantially as herein specified.

3. The arrangement of the steam-chest of the auxiliary cylinder, between said auxiliary cylinder and the steam-chest of the main cylinder, substantially as and for the purposes herein specified.

4. The combination of the adjusting-wheel M and swivel *w* with the lever K and connecting-rod *s* and valve O, substantially in the manner and for the purpose herein specified.

109,964.—Drawer-Handle.—Caspar A. Stock, New York, N. Y.

Claim.—The notch D and shoulder *a* of the shank A, combined as described, with the pivoted and cup-ended handle F G, for the purpose specified.

109,965.—End-Gate for Wagons.—Roderick F. Stocking and Calvin P. Greene, Lawn Ridge, Ill.

Claim.—The combination of the hinges *a a*, constructed and arranged as described upon the gates C C and sides of the wagon, with the bolt or fastener *n* and the removable platform D, the whole arranged substantially in the manner and for the purpose as herein shown and set forth.

109,966.—End-Gate for Wagons.—Roderick F. Stocking and Calvin P. Greene, Lawn Ridge, Ill.

Claim.—The combination of the hinges *c c*, constructed and arranged, as described, upon the plat-

form and bottom end of the wagon, with the metallic stripe *d d* and spring-hooks *e e*, the whole arranged substantially in the manner and for the purpose as herein shown and set forth.

109,967.—HORSE-POWER.—Lorenzo P. Teed, Mechanicsburg, Pa.

Claim.—1. The levers or sweeps K L, and brace-rods O, constructed and arranged in connection with each other and with the wheel or drum to which they are attached, substantially as herein shown and described, and for the purpose set forth.

2. The hooked bars T, in combination with notched bands U attached to the outer ends of the hubs of the wheels A D, and the staples *b'* attached to the rear axle B to receive and hold the stakes V V', substantially as herein shown and described.

3. The frame E that sustains the power with the axles B C, in combination with the staple G, king-bolt H, and lever-nut I, with the forward axle C and the frame E, substantially as herein shown and described, and for the purpose set forth.

4. The rotary seat R, in combination with the spindle S, about which the levers or sweeps K L revolve, substantially as herein shown and described, and for the purpose set forth.

109,968. — STOVE-GRATE. — John Merritt Thatcher, Bergen, N. J.

Claim.—1. The concavo-convex grate G, adapted to a stove or heater, and arranged to be operated substantially in the manner described.

2. The said grate or semi-sphere G, in combination with a movable or fixed outer grate, F.

3. The said grate G, so hung to a movable outer grate that both can be operated by a single crank or key, substantially in the manner described.

109,969.—COAL-SCREEN.—Edward Thomas, Shickshinny, Pa.

Claim.—1. A coal-screen, made in successive steps, each step divided by tapering spaces into bars tapering in the opposite direction, substantially as specified.

2. A coal-screen, composed of a succession of alternating T-shaped bars and downwardly-flaring spaces, arranged in steps, and separated by offsets *c*, substantially as shown and described.

109,970.—BURGLAR-ALARM.—James Harry Thorp, New York, N. Y.

Claim.—The keeper D, slotted and grooved as described, in combination with the grooved sliding plate *a* and wire *b*, said wire connecting with a burglar-alarm, substantially as and for the purposes herein set forth.

109,971.—ALARM-ATTACHMENT.—James H. Thorp, New York, N. Y.

Claim.—The combination of the enlarged keeper or nose C with cross-slot F, hinged lever G with angles *x y z*, and the door-bolt B, all constructed and operating substantially as set forth.

109,972.—WATER-WHEEL.—Josiah Turner, and Stephen Woodward, Sunapee, N. H.

Claim.—The endless chain and buckets, flaring laterally, each of which buckets has, at its open end, a transverse segmental spout, resembling a hood, when the bucket is upright, in combination with the discharge-table, substantially as herein set forth.

109,973.—CLEVIS FOR SLED.—John Van Antwerp, Cleveland, Minn.

Claim.—The clevis A, jointed as at *a a*, in combination with a key B, fitted to lock and unlock its opening and closing arms or portions *b b*, substantially as specified.

109,974.—POTATO-DIGGER.—Nicholas Vandenburgh, Schuylerville, N. Y.

Claim.—1. In combination with the perforated cylinder I with its heads H H, the rakes *e f*, slots *d*, rods A, and cams J K, all constructed and operating substantially as set forth.

2. The bonnet L, with its flanges *m m* and the extensions M M, in combination with the cylinder I with its rakes and heads, and the cam-boards E E, all substantially as set forth.

3. In combination with a potato-digger, the scraper O and oscillating rake-teeth *n n*, constructed and arranged substantially as and for the purposes herein set forth.

109,975. — FIRE-EXTINGUISHER. — William P. Van Deursen, Cincinnati, Ohio.

Claim.—1. In the described connection with the gas-generating chamber A, the acid-chamber F, substantially of the form described, when constructed to be opened at the upper end from the outside and top of the chamber A, and at the lower or discharging-end from the side of the chamber, as described, and for the purpose specified.

2. The acid-chamber F, when constructed of lead, and fitted with lead-lined cap H J and lead-discharging valve I, as described, and for the purpose specified.

3. In the described combination with the acid-chamber F and valve I K, the sleeve L, as and for the purpose described.

4. The chamber A B C D E, acid-chamber F H, valve I K, and sleeve L, combined and arranged substantially in the manner and for the purpose specified.

109,976.—FIRE-EXTINGUISHER.—Jacob B. Van Dype, Covington, Ky.

Claim.—1. The cartridge, consisting of the case or cup B, provided with the center tube D and external tubes *b b*, constructed and arranged in combination with the acid bottles H H, in the manner and for the purpose herein set forth and described.

2. The cartridge-cap C, provided with the tubular screw-extensions *c' c''*, the upper portion of the extension *c''* being beveled on its interior, so as to form the packing-chamber *m*, and provided with the screw-cap M, all arranged and operating as herein set forth and for the purpose described.

3. In combination with the cap C, the screw-plunger E, constructed and arranged as herein shown, for the purpose of operating the stoppers of the acid bottles by means of the stirrup F and thumb-screw *e*, in the manner described.

4. The acid-proof stoppers G, consisting of the lead shells J, screw-bolts *j*, and rubber plugs or cores K, connected and operating with the stirrup F, in the manner and for the purpose herein set forth and described.

5. The convex top *a* of the reservoir A, that it may serve as a funnel, to assist in filling the same and admit of the apparatus being stood on its head to protect the cartridge from being disturbed, as herein shown.

109,977.—CARRIAGE-WHEEL LUBRICATOR.—Samuel S. Vollum and William H. Green, New York, N. Y.

Claim.—The combination of solid cap D, solid dist C, cup A, and pipe B, each constructed and relatively arranged as and for the purpose specified.

109,978.—MACHINE FOR POLISHING COFFEE.—Charles C. Warren and James B. Baldy, Toledo, Ohio.

Claim.—1. The combination of cylinders B C, rotated in the same direction, with coffee-bags placed on and in the interval between the exterior surfaces of said cylinders, as and for the purpose described.

2. The combination, with the surface-working cylinders B C and coffee-bags resting in the intervals between them, of the frame D *h*, to prevent any undue lateral movement of the bags, as described.

3. In combination with the textile cylinder containing the coffee to be cleaned, the plates *d*, constructed as described, and applied as shown, for the purpose specified.

4. The coffee-cleaning and polishing apparatus herein described, consisting of the frames A and D, the textile cylinders, cross-bars *b*, rollers B and C, belt *e*, and pulleys *f g*, constructed and arranged to operate substantially as described.

109,979.—TWINE-HOLDER.—Rodolphus L. Webb, New Britain, Conn.

Claim.—The combination, with the divisions A B of a twine-holder, of the hooked lugs C with the slotted inclined ears D, substantially as described.

109,980.—STEAM-PUMP.—George M. Weinman, Columbus, Ohio.

Claim.—1. The hollow piston-head E, provided with lugs *h h* and ports *k k* and *n n*, substantially as and for the purposes herein set forth.

2. In combination with the hollow piston-head E, constructed as described, the square piston-rod G, substantially as and for the purposes herein set forth.

3. The combination of the steam-cylinder A and steam-chest B, when provided with steam-channels *c c'* for operating the piston, and channels *m m* for exhausting the valve, substantially as herein set forth.

4. The hollow valve C, provided with steam-inlet *b*, channels *i i*, ports *d d'*, and passage *f*, and operating within the steam-chest B, substantially as and for the purposes herein set forth.

5. The combination of the cylinder A, steam-chest B, hollow valve C, with steam-inlet *b*, channels *i*, ports *d d'* and passage *f*, the channels *c c'* and *m m*, hollow piston-head E with lugs *h h*, ports *k k* and *n n*, and the main exhaust D, all constructed and arranged to operate substantially as and for the purposes herein set forth.

109,981.—LANDAULET CARRIAGE.—Edward Wells, New Haven, Conn.

Claim.—1. The top, consisting of the two parts E F hinged together, and the part E hinged to the door-post, so that the said parts and post fold together, substantially in the manner described.

2. In combination with the folding top E F and the post C, the front posts D D, constructed and arranged to fold down across the front, substantially in the manner set forth.

109,982. — MODE OF SETTING TIRES ON WHEELS.—Aaron O. Wheeler, St. Augustine Depot, Ill.

Claim.—The combination, with an ordinary divided nut and conical screw, of a plate, C, beveled internally, and thickened toward the center, to clasp the ends and under side only of the felly, and to form a strong and secure joint, which will not yield to lateral torsion or allow the wheel to be twisted out of a true vertical plane.

109,983, antedated November 26, 1870.—FRUIT-BASKET.—George H. White, Huntington, N. Y.

Claim.—The basket made of strips A, strengthened at top by the wooden hoop C, and bound over the top and hoop by the metal strip F, as described.

109,984.—CANAL WASTE-WAY AND SLUICE-GATE.—Andrew Jackson Whitney, Harrisburg, Pa.

Claim.—In combination with the segmental gate C and radial arms C' C', or their equivalents, the center pins E E, guides or ways D D, and adjusting-screws F F, substantially as herein described.

109,985. — COMBINED GRAIN HARVESTER AND BINDER.—John H. Whitney, Rochester, Minn.

Claim.—1. The rake R, provided with the arm *p*, arranged to work in the guide *h'*, extending around the rear end of the track of the rake, said guide being located, in relation to the wheel F, substantially as described, whereby the rake is feathered, and caused to rise vertically, or nearly so, until it is lifted clear of the grain, substantially as set forth.

2. In combination with the gatherer G, the hinged plates L, arranged to operate substantially as described.

3. The combination of the compresser *f* with the gatherer G, constructed and operating substantially as described.

4. In combination with the platform I having an opening for the wire-carrier Q, the hinged or yielding plate N, with its operating spring *u'*, arranged to operate as set forth.

5. In combination with the yielding plate N, the pin *t*, or its equivalent, for guiding the wire to the twister, as described.

6. The wheel *v*, in combination with the plate *u*, arranged in relation to the twister, substantially as described, for holding the wire, as set forth.

7. The combination of the pivoted levers *p'* and *t*, connected by the rod *r'*, with the knife *x* and pawl *w* arranged to be operated by the cam on wheel *v*, substantially as described.

109,986.—BEE-HIVE.—Robert A. Williams, Colusa, Cal.

Claim.—The hopper C, in combination with the removable shoe D, channeled or grooved as described, for the purpose of protecting the entrance from the inroads of moth, substantially as above described.

109,987.—MACHINE FOR POINTING NAILS.—Harry A. Wills, Vergennes, Vt., assignor to National Horse-Nail Company, same place.

Claim.—1. The rotary frame C, provided with cams *e e i i* and arms *l l*, in combination with the gauge-clamp and hammers of a nail-pointing machine, substantially as herein shown and described.

2. The gauge F, secured to a rock-shaft, G, and combined with the cams *e e* on the rotary frame C, and with the spring *f*, to operate substantially as herein shown and described, gauging from the point, as specified.

3. The clamp H, arranged on the arm I, in the manner described, and combined with the gauge F and hammers J, substantially as specified.

109,988. — HOISTING-MACHINE. — Nicolaus Wonlarlarsky, St. Petersburg, Russia.

Claim.—1. The beam *d*, suspended from a tripod, *a*, guy-ropes *r*, carriage *k*, and lifting-tackle *t s*, substantially as and for the purpose set forth.

2. The beam *d*, formed with two cheeks upon the bar a certain distance apart, connected by the yoke *g* with suspension-hooks *e*, through which the carriage *k* passes, substantially as set forth.

3. In combination with solid beam suspended from a tripod of a carriage, the wheels of which are connected by a stirrup partly encompassing the beam, substantially as and for the purpose set forth.

4. The apparatus for lowering, hoisting, and transporting, substantially as herein shown and described.

109,989.—WATCH-CASE.—Alfred A. Wood, Charlotte, Mich.

Claim.—The combination of the stud-pin *c*, or its equivalent, and the stay-spring *b*, with the catch-spring *a* of a watch-case, substantially as specified.

109,990.—COMPOUND FOR TREATING MALT LIQUORS.—William Zinsser, New York, N. Y.

Claim.—A compound for treating malt liquors, made of the ingredients herein specified, and mixed together substantially in the manner set forth.

109,991. — MANUFACTURE OF SUGAR OR SIRUP FROM SWEET POTATOES.—Charles Delamarre, New Orleans, La., assignor to himself, John A. Thurber, and Robert R. Benson, same place.

Claim.—1. Sweet potatoes, for the making there-

from of sugar or sirup, by means of malted barley, as described and specified.

2. The process by which saccharine is extracted from sweet potatoes and converted into sugar or sirup, as described and specified, or any other process substantially the same.

109,992.—AQUATIC TOY.—Amos W. Hart, Washington, D. C., assignor to himself and William M. Tileston, same place.

Claim.—1. The combination, with a toy representing an aquatic bird, of a steering or guiding-plate, *f*, attached thereto at its front end, substantially as shown and described.

2. The combination, in a toy representing an aquatic bird, of the legs *b b*, crank-shaft *c*, and train of wheels A B, substantially as shown and described, and for the purpose specified.

3. The combination, in a toy representing an aquatic bird, of the legs *b b* and train of wheels A B with the train *g p*, crank-shaft *c*, and compressible air-reservoir *k*, substantially as and for the purpose specified.

4. The combination, in a toy representing an aquatic bird, of a rubber tube, or other membrane impervious to water, with the flange *e* and leg *b*, substantially as and for the purpose specified.

REISSUES.

4,192.—MANUFACTURE OF PLATED METAL BRACELET.—John Barclay, Bergen, N. J.—Patent No. 94,064, dated August 24, 1869.

Claim.—The improved manufacture or bracelet, as made with the turned parts or beads E E, arranged with respect to the plates C D, in the manner substantially as represented and described.

4,193.—SLEEPING-COLLAR.—Levi Dederick, New York, N. Y.—Patent No. 103,026, dated May 17, 1870.

Claim.—1. The sleeping-collar A, as described, and for the purpose set forth.

2. In combination with the sleeping-collar, the separate, adjustable, and looped straps B B', substantially as described, for the purposes set forth.

4,194.—HARVESTER-RAKE.—Hiram H. Scoville, Oakland, Cal., assignor of one-half interest to Joseph A. Scoville.—Patent No. 23,513, dated April 12, 1859.

Claim.—1. The stationary cam F, on or in which the rear end of the lever H operates, for directing the movement of the rake K in combination with the crank E, these parts being constructed substantially as described, and operating as and for the purposes set forth.

2. The combination of cam F, crank E, standard I, and rake-lever H, with rake attached, constructed, and operating substantially in the manner and for the purposes set forth.

4,195.—TREENAIL.—Nathaniel L. Tomlinson, Mystic Bridge, Conn.—Patent No. 78,554, dated June 2, 1868.

Claim.—A treenail, made in sections of varying diameters, substantially as herein shown and described.

DESIGNS.

4,501.—LAMP-CHIMNEY CLEANER.—Emeline T. Annis, Mount Morris, N. Y.

Claim.—The design for a lamp-chimney cleaner, as shown.

4,502.—DRAWER-PULL.—Nelson Merriam, West Meriden, Conn.

Claim.—The design for drawer-pull herein described, consisting of the peculiar-shaped connection between the head and socket, as herein described, and shown in the accompanying illustration.

TRADE MARKS.

83.—CHOPPING-AX.—Bostticher, Kellogg & Co., Evansville, Ind.

84.—UMBRELLA AND PARASOL.—Dawes, Fiske & Fanning, New York, N. Y.

85.—TOILET-SOAP.—Deniker & Melville, New York, N. Y.

86.—BROOM.—Richard W. English, Buffalo, N. Y.

87.—XXX BROOM.—Richard W. English, Buffalo, N. Y.

88.—XX BROOM.—Richard W. English, Buffalo, N. Y.

89.—WHISKY.—Frieberg & Workum, Cincinnati, Ohio.

90.—WHISKY.—C. P. Moorman & Co., Louisville, Ky.

91.—CORN-PLANTER.—Popo & Baldwin, Quincy, Ill.

92.—CIGAR.—Rawson & Philbrick, Key West, Fla.

93.—LINIMENT.—Ridenour, Coblentz & Co., Springfield, Ohio.

94.—UMBRELLA AND PARASOL.—James T. Smith, New York, N. Y.

95.—BAKING-POWDER.—Thompson & Steele, Chicago, Ill.

EXTENSIONS.

GEORGE C. TODD, of Lynn, Mass.—Letters Patent No. 16,128, dated November 25, 1856.

"Improvement in Edge-Keys."

Claim.—A turned or circular edge-key, constructed substantially as described, and for the objects specified.

JONATHAN P. GROSVENOR, of Lowell, Mass. Letters Patent No. 16,144, dated December 2, 1856.

"Improved Method of Clamping Cutters in the Cutter-Heads for Planing-Machines."

Claim.—Connecting the collars with each other or with the core-blocks, by means of tongues and grooves, in the manner substantially as described, for the purpose set forth.

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PATENTS.

109,993.—CARRIAGE-SPRING.—David S. Abbott, Ischua, N. Y.

Claim.—In combination with a carriage or wagon-body, a sulky, or seat, the bar D (either with or without the braces E) and the spring J, when the same are combined and arranged to operate substantially as and for the purposes herein shown and described.

109,994.—PUMP-PISTON.—Joseph D. Alvord, Bridgeport, Conn., assignor to James Wilson, same place.

Claim.—A double-acting pump-piston, provided with valve B B' and passages C, D, and D', so arranged that the said valves are caused to open alternately in the same direction regardless of the direction in which the piston may be traveling, substantially as specified.

109,995.—HOLDER FOR SILK, &c.—Benjamin A. Armstrong, Jersey City, N. J., assignor to himself, James P. Brainerd, New Haven, Conn., and Leonard O. Smith, Philadelphia, Pa.

Claim.—The quill A, and wire B or its equivalent, arranged substantially as and for the purposes herein set forth.

109,996.—SAFETY-VALVE.—Jasper Armstrong, Brookfield, Mo.

Claim.—The valve A, spring E, stem B, yoke M, casing G, cylinder O, and regulating-nut N, arranged and operating substantially as and for the purposes described.

109,997.—BRICK-MACHINE.—James M. Austin, Georgetown, Mo., assignor to Isaac Turner, same place.

Claim.—1. The combination of the press-follower, the operating wheels F of the carriage, pins H, slotted plates G, levers K, and connecting-rods M, substantially as specified.

2. The combination with the mold-box and pressing-case of the grate-bars or plate P, and the detachable plates T, the said plates having the holes arranged in the order substantially as specified.

109,998.—CAT-HEAD ANCHOR-STOPPER.—William Henry Barker, Windsor, Nova Scotia.

Claim.—The novel combination of the box A, the cap C, (working on the hinge made by knob K,) the projection E, and the pin G, the lever N, secured to box A by screw-bolt M, and the pin R fitting into the hole D, all working together substantially in the manner and for the purposes described.

109,999.—SHOVEL-PLOW.—Isaac A. Benedict, West Springfield, Pa.

Claim.—The combination, with a pair of wings, D D, of arms E E pivoted to the foot of brace B' turning upwardly in an arc-slot upon the top bolts F F, and slotted at G G to allow the bolts H H to slide thereon, to lift, expand, and contract said wings, all as described.

110,000.—LET-OFF AND TENSION MECHANISM FOR POWER-LOOMS.—Erastus Brigham Bigelow, Boston, Mass.

Claim.—1. The combination, with a whip-roll and a lever-arm co-operating together as described, to increase the tension on the warps at the beat of the lay and diminish their tension when the shed is formed, of an adjustable spring connected with the lever-arm, to increase or diminish the operative force of the arm, independently of its movement.

2. The combination, with a vibrator and spring, constructed and arranged as above described, whereby the tension on the warps is increased to withstand the beating-up of the cloth and diminish when the shed is made, of a let-off mechanism, substantially as described, for delivering out the warps, the action of this let-off being determined by said vibrator and spring arrangement at the time the lay beats up the cloth.

110,001.—CARPENTER'S VISE.—George F. Bissell, Oneonta, N. Y.

Claim.—1. The coiled spring E, in combination with the ends of the braces B B', substantially as and for the purpose described.

2. The joint *b c*, constructed in the two braces B and B', substantially as and for the purpose described.

3. The combination of the spring E, braces B B', and friction rollers D D, with the jaws of a vise, substantially as and for the purpose described.

110,002.—SELF-LUBRICATING AXLE.—George P. Blaisdell, North Easton, Mass.

Claim.—The combination of screw-plug E, provided with vent or channel F, annular reservoir C, and wick D, all arranged and operated substantially as described.

110,003.—STEAM-HEATER.—Edward Bourne, Pittsburg, Pa.

Claim.—Such a construction, combination, and arrangement of parts constituting a low-pressure steam apparatus for warming buildings as that the opening and closing of the air-vents of the radiators will be done automatically, that is, by the rising and falling of a hydrostatic column, actuated by the fluctuating or varying pressure of steam in the generator.

110,004.—CLEANER AND GRINDER FOR CARDING-MACHINES.—Leander W. Boynton, Hartford, Conn.

Claim.—The arrangement, on the same shaft or sleeve, and for operation by the same devices, of the card-cleaner and grinder, made interchangeable as regards their action on the cylinder of the engine, substantially as specified.

110,005.—GAS-LAMP.—J. Hamilton Brown, New York, assignor to himself and Charles E. Ball, Jamaica, N. Y.

Claim.—1. The non-conducting partition J, in combination with the space H, substantially as and for the purposes set forth.

2. The arrangement of the valves E and F with the pipe D and chamber A, substantially as herein shown and described.

3. The pipes G and I, for the purpose of admitting air into the oil-chamber, in combination with the heating space H, substantially as shown and described.

110,006.—ADJUSTABLE SHACKLE FOR CARRIAGE-SPRINGS.—John Bullard, North Hyde Park, Vt.

Claim.—An adjustable shackle for carriage-springs, constructed and applied substantially as herein described.

110,007.—TOOL-CHEST.—George F. Card, Piper City, Ill.

Claim.—1. A tool-chest, provided with a cover formed of the parts B B' D I, and the seat G H, combined and arranged substantially as specified.

2. In combination with the parts B B' D I, and seat G H, the clamp-support K, clamp L M, cord P, and treadle, all substantially as specified.

110,008.—EXHAUST-VALVE.—William A. Carns, Malden, Mass.

Claim.—1. The arrangement of the valve F on the tube G, supported and guided by the spindle I, and operating in the chamber A, substantially as and for the purposes described.

2. The cone H on the valve-tube G, by means of which the exhaust-nozzle is closed as the valve rises, substantially as and for the purposes described.

110,009.—WATER-WHEEL.—Daniel W. Case, Garden City, Minn.

Claim.—1. The arrangement of the buckets with the central discharges S and the vertical discharge T, all substantially as specified.

2. The wheel-shaft, the extension A of the wheel-case, the inverted conical seat or cavity B, and the blocks F and screw-plug D, all arranged substantially as specified.

110,010.—Stamping-Mill or Crusher.—George F. Case, Windsor, Vt., assignor to himself and Milan C. Bullock, same place.

Claim.—The within-described stamping or crushing-machine, having the stamper M operated from a crank, C', through elastic connections, G^1 G^2, or their equivalents, substantially as and for the purposes herein set forth.

110,011.—Hay and Cotton-Press.—Nathan Chapman, Hopedale, Mass.

Claim.—1. The levers H, provided with pulleys I and I', when so arranged that the follower is raised, lifted out, and moved off from the top of the box by operating the ropes J, substantially as described.

2. The combination of the props h and h' with the gripes b and b', substantially as and for the purposes specified.

110,012. — Woven Fringed Fabric. — Peter Cocker, Philadelphia, Pa., assignor to himself and William L. McBride, same place.

Claim.—A woven textile fabric, having an independent fringe woven on and to it during the process of weaving, as above described.

110,013.—Table.—George J. Congle, Chippewa Falls, Wis.

Claim.—The grooved castings E, plates F G J, and hook-hinges I, combined as described, with legs B, rails C, and leaves D, for the purpose specified.

110,014.—Corn-Cutter.—Henry V. Corbett, Allendale, Mich., assignor to George W. Amigh, same place.

Claim.—A knife for cutting corn-stalks, adapted to be applied to and operated by the foot, substantially as described, for the purpose specified.

110,015.—Feed-Regulator. — William T. H. Daniels, Bellville, Ohio.

Claim.—The oscillating feed-board C, operated by the spring E or its equivalent, in combination with the box or hopper A, substantially as set forth.

110,016.—Alarm Attachment for Clocks. Joseph H. Davis, Chillicothe, Mo.

Claim.—The wire link D provided with the hook-shaped arm c, which supports it on the tube B, for the purpose of connecting the clock mechanism with the alarm attachment, as set forth.

110,017.—Coffee-Roaster.—Noah Davis, Boston, Mass.

Claim.—1. The arrangement and combination of the series of foraminous vapor-receiving and eduction-chambers A with the outer casing G and heads C C of the drum.

2. The combination and arrangement of the series of steatite plates or bars E with the series of foraminous vapor-receiving and eduction-chambers A, the outer casing G, and heads C C of the drums, all being substantially as described.

3. The combination and arrangement of the flanges e with the series of vapor-receiving and eduction-chambers A, the outer casing G, and heads C C of the drum, as set forth.

4. The arrangement and combination of the dotted plates e and the rings f f with the coffee-roasting drum.

5. A coffee-roasting drum, as made of iron, coated with a plating of silver arranged on its inner surface, or such part or parts thereof as, while the drum may be in use, may be exposed to the acid evolved from the coffee.

110,018.—Inking Apparatus for Printing-Presses. — Fred. Otto Degener, Brooklyn, E. D., N. Y.

Claim.—1. An ink-distributing table or surface of or for a printing-press, having a reciprocating intermittent rotary motion, substantially as specified.

2. The combination, with the ink-distributing table A, of the ratchet-wheel B, the pitman C, the toothed sector D, and the pinion E, essentially as shown and described, and for the purpose or purposes herein set forth.

110,019.—Land-Roller.—George C. Dolph, West Andover, Ohio.

Claim.—1. The supports F F, constructed and operated as described.

2. The combination of the roller R, the supports F F, the catch S, and the tongue B, when constructed as described, for the purposes set forth.

110,020.—Hinge.—Rudolf Drahota, Philadelphia, Pa.

Claim.—A hinge, consisting of the leaf A' having a hollow spiral projection, a, the leaf A, and the pin b, with its spiral projection a' adapted to the projection on the leaf A', and connected to the leaf A, as specified.

110,021. — Trumpet for Spinning-Machines. — George Draper, Hopedale, Mass.

Claim. — The silver-trumpet, as constructed in two parts, A B, provided with the guides b b d d and the means of connection and adjustment, all substantially as specified and represented.

110,022. — Rotary Engine. — Richard Dudgeon, New York, N. Y.

Claim.—1. The combination, substantially as before set forth, of two cog-wheels, the cheek-pieces, and the entry-port, arranged to admit steam, as described.

2. The combination, substantially as before set forth, of the two cog-wheels, the cheek pieces, and two ports, arranged as described.

3. The combination, substantially as before set forth, of the two cog-wheels, the cheek-pieces, the entry-port, and the exterior casing.

110,023.—Machine for Mixing the Materials to form Artificial Stone, &c. Josiah S. Elliott, Boston, Mass., assignor to "The Union Stone Company," same place.

Claim.—1. The slotted diaphragm, which divides the cylinder into two or more parts, constructed substantially as and for the purposes described.

2. The knives, made in two parts, of socket and blade, substantially as and for the purposes described.

3. The spiral spring, substantially as and for the purposes described.

110,024. — Breech-loading Fire-Arms.—William H. Elliot, New York, N. Y.

Claim.—1. The combination of mechanism herein described, or its equivalent, whereby the breech-block is forced back and forth to open and close the chamber by the alternate backward movements of the hammer, as set forth.

2. The combination of the double pawl e and e' with a hammer and breech-block, for the purpose of opening and closing the chamber, substantially in the manner described.

3. The combination of pawl e with the hammer and breech-block, when operated by spring l, or its equivalent, to open the chamber at each alternate backward movement of the hammer, as specified.

4. The combination of pawl e' with the hammer and breech-block, when operated by spring l, or its equivalent, to close the chamber at each alternate backward movement of the hammer, as set forth.

5. The combination of spring l, pawls e and e', hammer d, with its catches s and s', when said spring operates to throw said pawl back and forth from one catch to the other, substantially as specified.

6. The combination of spring l with pawl e and e', and breech-block b, when said spring serves the double purpose of operating the pawl and holding the breech-block in position, substantially as specified.

7. The combination of parts herein described, or their equivalents, whereby the backward sweep of the hammer for opening the chamber is extended beyond the points at which the next backward sweep begins for closing the chamber, as set forth.

8. The catches s and s', when arranged as specified in relation to the center around which they move during the manipulation of the arm, as herein set forth.

9. The combination and relative arrangement of parts, by which each alternate backward movement of the hammer is limited to less than full-cock in its movement for opening the chamber, substantially as described.

110,025.—Medical Compounds and Apparatus for Making the Same.—Peter Fahrney, Chicago, Ill.

Claim.—1. The medical compound, composed of the ingredients and prepared by the process, substantially as herein described.

2. The percolators, each constructed as described, of the cylindrical vessel provided with the main bottom D, perforated false bottom E, short tube F, and siphon H, as herein set forth and shown, for the purpose specified.

3. The medicine composed of the ingredients herein described, producing a combined alterative and cathartic, in the form of a fluid extract.

110,026.—Door-Stop.—William H. Fahrney, Rockford, Ill., assignor to himself and John Donaldson, same place.

Claim.—1. Securing spring detent K to stop C, by means of ferrule N, substantially as hereinbefore shown and described.

2. The ferrule N, with slotted projections P P to receive the screws s s, as and for the purpose herebefore shown and described.

110,027. — Manufacture of Paints. — Frederick W. Gerdes, Allegheny City, Pa.

Claim.—1. Argillite or argillaceous slate, in combination with white lead or oxide of zinc, in the manufacture of paints, substantially as set forth.

2. The combination of argillite or argillaceous slate, Prussian blue or other equivalent blue pigment, white lead or zinc-white, and linseed-oil, so as to form a blue paint for oil-casks and other articles, substantially as set forth.

110,028.—Pipe-Coupling.—George C. Germain, Cuyahoga Falls, Ohio.

Claim.—The application of a canvas wrapping C, saturated in some adhesive water repellant, to the sections A B of an iron or clay pipe, for the purpose of forming a tight joint, as described.

110,029.—Machine for Mixing "Batch" for Glass.—William T. Gillinder, Philadelphia, Pa.

Claim.—The combined arrangement of the case B, shaft A, and their respective attachments, b'' and c', constructed and operating together, substantially as and for the purpose hereinbefore set forth and described.

110,030.—Mode of Attaching Boot and Shoe-Heels.—Benjamin Giroux, Chicago, Ill.

Claim.—The central plate E, in combination with the central boss C, braces D, metallic rim B, and the fastening screws g, substantially as described, for the purpose specified.

110,031.—Hand-Stamp.—Edward S. Goodman, New Orleans, La.

Claim.—The shoulders and notched plates K N, elastic bed R, flanged ring S T, and anvil U, when all are combined, constructed, and arranged, as and for the purpose described.

110,032.—Tympan-Sheet for Printing-Presses.—John Gorman, Portland, Me.

Claim.—The process of saturating or smearing the tympan sheet with any oleaginous or greasy substance, when prepared as described, if required for the purpose of preventing blurring and offsetting, as set forth.

110,033. — Washing-Machine. — Dewitt Clinton Harlow, Hannibal, Mo.

Claim.—The heads A B, cylinder C, bed D, concave E, shaft I, gear-wheels H and J, and spring K, arranged to operate substantially as and for the purposes herein shown and described.

110,034.—Device for Driving Sewing-Machines.—Abraham W. Harris, Providence, R. I.

Claim.—1. A pawl, in combination with a loose band-wheel, E, and the crank-shaft A and treadle, the whole arranged and operating in the manner substantially as described.

2. The combination of the elastic rolls N with the band E' and the driver J.

110,035.—Piston-Rod Packing.—William Hartley, Rockford, Ill.

Claim.—The combination, with the packing-cylinder C and piston-rod, of the sectional metallic rings D, E, and F, and the springs S and T, all substantially as specified.

110,036.—Nautical Alarm.—John F. Haskins, Fitchburg, Mass.

Claim.—Combined in portable form, a reservoir, an air-pump located within said reservoir, a vibrator, and means for controlling the passage between it and the reservoir, arranged as shown, and for the purpose set forth.

110,037.—Mode of Attaching Composition Heels to Boots and Shoes.—Charles H. Helms, Poughkeepsie, N. Y.

Claim.—The heel A, arranged as described with the dovetail block B, the latter being molded into the former so as to be immovable therein, and afford a firm-bearing surface to the sole without the intervention of rubber, while presenting a material that readily holds nails, screws, or other fastening device.

110,038.—Core for Castings.—John Herald, Unadilla, N. Y.

Claim.—The metallic sand-holder B, arranged for application between the hook and shank of a hook-shaped plate or article to be cast, substantially as herein shown and described.

110,039, antedated December 1, 1870.—Culinary Vessel.—Richard M. Hermance, Troy, N. Y.

Claim.—1. The tube D, with perforated plate E and rim G, substantially as and for the purposes herein set forth.

2. The combination of the kettle A with its central tube C, loose tube D, plate E, and rim G, all substantially as and for the purposes herein set forth.

110,040. — Lubricator.—Milan Hinman, West Stockbridge, Mass., assignor to himself and Robert M. Stone, Des Moines, Iowa.

Claim.—The oil-cup G, oil-reservoir B, pipes C D, and stop-cocks E F H I, combined as described, with the steam-pipe A, to furnish a small and absolutely steady stream of oil

110,041.—Semi-rotary Valve.—Josephus F. Holloway, Cleveland, Ohio.

Claim.—1. The combination of the bolt or connecting-bar F, in connection with the sleeve G, and the nuts J and K on either side of the flexible plate H, substantially as and for the purpose herein before set forth.

2. The combination of the flexible plate H, in connection with the connecting-bar F and the loose sleeve G, substantially as described, and for the purposes set forth.

110,042. — Refining and Decolorizing Sirups and other Liquids, and Material for the same.—Duane Hull, Brooklyn, N. Y.

Claim.—1. The process herein described, for purifying sirups, spirits, oils, and other liquids, consisting in treating them with carbonized iron-ore prepared and used substantially as herein set forth.

2. The new composition herein described, called carbonized iron-ore, produced by treating iron-ore by means of any suitable carbonizing material, and then cooling, granulating, and preparing the same so as to be used for filtering and purifying sirups and other liquids, as set forth.

110,043. — Burglar-Alarm.—Marshall J. Hunt, Rising Sun, Md.

Claim.—1. In combination with the spring-trigger D, the plug *m*, for making a connection between said trigger and the outer door G, and so as to set and let off said trigger by the closing and opening of said door, substantially as described.

2. In combination with the trigger, door, and plug, the sleeve *n* around said plug, to prevent the latter from being reached and held from the exterior of the door should it be bored for that purpose, substantially as described.

3. In combination with a spring-trigger set and let-off, as herein described, the hinged-lever E, and the escape-levers *e f* resting thereon, for the purpose of letting off by one operation two alarms remote from each other, as and for the purpose described and represented.

110,044.—Steam-Jet Boiler-Tube Cleaner.—Roland C. Hussey, Milford, assignor to himself and Augustus O. Corbett, Boston, Mass.

Claim.—The combination of the tube D B with the central piece A A′, and the spiral *a a¹ a²*, arranged substantially as described, and for the purpose set forth.

110,045.—Tuck-creasing Attachment for Sewing-Machines. — John C. Jensen, Chicago, Ill.

Claim.—The spring marker-arm E, constructed as described, and attached to the base B, the said arm being made rigid at its outer end and having secured to such rigid portion the two inclined spring fingers F, when combined with the spring arm G operated by the needle-arm or bar, and having the lateral projection thereon bearing on the outer and rigid portion of the arm F, which bends near its center, and thereby causes the outer finger F to first bear on and move the cloth against the inner spring finger, thereby effectually preventing deflection of the cloth from the guiding-edge, as herein set forth and shown.

110,046.—Cultivator.—Freeman C. Jewell, Rahway, N. J.

Claim.—1. A cultivator-frame, formed of the bars B and upwardly-curved cross-bars A, the arms C D E, and rods F, when constructed and adjusted together as described.

2. The beams G, slotted bars H, and the plow-standards, combined with a vibratory frame A B C D E F, to adjust the pitch of the plows, as described.

3. The slotted and bent plow-beams, having their rear slotted parts thickened or flanged, in combination with the rods F, slotted bars H, and the standards of the plows I, substantially as herein shown and described, and for the purpose set forth.

4. The upper ends of the standards of the plows I, constructed substantially as herein shown and described, to adapt them for attachment to the slotted beams G, substantially as herein shown and described, and for the purpose set forth.

5. The arms D E F, crank-arms J, bowed axle K, lever L, bar M, and catch N *n¹ n²*, when all are combined and adjusted together, as and for the purpose described.

110,047.—Churn.—John W. Jordan, Lexington, Va.

Claim.—A churn-dasher, consisting of the lazy-tongs frames B, provided with the perforated boards and connected to the cage and working-rod, substantially as specified.

110,048.—Printing-Ink.—Julius Kircher, Cannstadt, near Stuttgart, Würtemburg.

Claim.—A compound, formed of ten parts of peroxide and six parts of protoxide of iron, prepared as specified, and applied in a solution of varnish to form printing-ink.

110,049.—Glassware and Metal Stem-connection. — Charles Louis Knecht, St. Clair, and Thomas Adams, Stow township, Pa.

Claim.—1. As a means of uniting together end to end two parts of a glass or metal manufacture, a wire spiral, *d*, rigidly or removably attached to the end of one part, in combination with a threaded stem or peg on the contiguous end of the other part, substantially as described.

2. The arrangement of wire spiral *d*, threaded pegs *c*, and socket *e*, substantially as described.

110,050. — Loom.—William Samuel Laycock, Sheffield, England.

Claim.—1. The combination of the studs *x x¹* and catches *y y¹* with the jaws of the shuttle, substantially as shown and described.

2. The combination, with the slide *p*, needle *s*, lever *r*, spring *r²*, lever *b¹* on shaft *b*, lever *b²*, and link *b³* of the tumbler-lever *t*, all arranged and operating as shown and described.

3. The combination of the plate *w*, sliding bar *p*, and weft-selector, with weft-stop lever *u¹* and spring *u²*, as and for the purpose shown and described.

110,051. — Buhl-Saw.—Thomas Leavitt, Everett, assignor to "Sonenta Wood-Carving Company," Boston, Mass.

Claim.—In combination with the saw and saw-frame, the plates *f* and the clamp-pins *g*, either with or without the splines, all substantially as shown and described.

110,052. — Cartridge-Cap Extractor.—John Logan and Daniel W. Eldredge, Boston, Mass.

Claim.—A cap-extractor, made with a tube, *c*, and a plug, *e*, combined and arranged substantially as described, so that, by relative movement produced between said parts, a cap received and withdrawn by application of the tube, as set forth, will be discharged therefrom.

110,053.—Chair.—Charles R. Long, Louisville, Ky.

Claim.—The mode herein shown and described of attaching the seat to the legs of a chair, substantially as set forth.

110,054. — Purifying Benzine. — George Lupton, Indianapolis, Ind.

Claim.—The within-described process for purifying benzine for illuminating purposes, substantially as and for the purpose set forth.

110,055, antedated November 26, 1870.—Lamp-Burner.—George Lupton, Indianapolis, Ind.

Claim.—A new article of manufacture, consisting of a lamp-burner, constructed as herein described, that is, with a tube for the wick extending to near the bottom of the oil-reservoir, a cap for securing the same to the lamp, a device for raising the wick, and two cones for deflecting and reflecting the rays of light, as and for the purpose set forth.

110,056. — Mold for Making Glassware.—James B. Lyon, Pittsburg, Pa.

Claim.—1. A two-part mold for pressing glassware, in which the two halves of the mold are arranged on sliding ways, or a bed or platform, and in opening and closing are caused to move directly to or from each other in straight lines.

2. An eccentric and yoke, arranged in connection with each or either half of a two-part glass-mold, whereby such half of the mold shall be caused to open and close on the other half.

3. A sliding frame, carrying at one end one-half of a two-part mold, and at the other end an eccentric shaft, which eccentric is arranged, in connection with the other half of the mold, to open and close both.

4. The arrangement of an eccentric or cam, operative against one-half of a two-part mold, with connections therefrom to the opposite half, for the purpose of holding the two well together when the pressing is being done.

110,057.—Velocipede.—Henry A. Maltby, Brownsville, Texas.

Claim.—1. The four cranks C C and D D on axle, combined with foot-stirrups P P and slotted levers Q Q, arranged to operate as and for the purpose described.

2. The combination of the caster-wheel spindle, provided with the seat, and arranged relatively thereto, to receive the body of the operator, and be turned thereby for steering, substantially in the manner described.

110,058. — Hair-Restorative. — Allen C. Maxfield, Biddeford, Me.

Claim.—The above-described compound of ingredients, in the proportions named, for the purposes specified.

110,059.— Life-Raft.—David McFarland, New York, assignor to A. M. Ingersoll, Brooklyn, N. Y.

Claim.—1. The cylinders A A, two or more, composed each of a series of air and water-tight sections, *a*, connected together by a rod, B, provided with screw-nuts *c* at its ends, substantially as shown and described, and for the purpose specified.

2. In combination with the air and water-tight sections *a* of the cylinders A A, the transverse pieces C, fitted or connected to the cylinders in the manner substantially as and for the purpose set forth.

3. The detachable bars *e*, to which the rowlocks *f* are secured, in combination with the fixed strips *d* on the cylinders A A, arranged substantially as and for the purpose specified.

4. The combination of the cylinders A A, constructed in sections *a*, the transverse pieces C, thwarts E, and removable rowlock-bars E, all arranged substantially as and for the purpose set forth.

110,060.—Belt-Splice Point-Finisher.—John Cummings McLaren, Montreal, Canada.

Claim.—1. The combination of the grooved bed A, guide F, and the clamping-lever H, substantially as specified.

2. The combination of the lever I and spring fulcrum L with the grooved bed A B, guide F, and clamping-lever H, substantially as specified.

3. The improved cutting-tool, consisting of the knife Q and stock R, constructed and arranged substantially as specified.

4. The combination of the cutting-tool Q R with the grooved bed A B and clamping-lever H, substantially as specified.

110,061.—Field Corn-picking and Husking-Machine. — George Meader and Charles Meader, Prairie Centre, Ill.

Claim.—In a field-operating corn-picker and husker, the spirally-grooved husking-rollers H in combination with the spiral elevator L, when said parts are constructed substantially as described, and arranged to operate in the manner specified and shown.

110,062.—Liquid Meter.—Charles Moore, New York, N. Y., assignor to José F. De Navarro, same place.

Claim.—The combination of the tubular slide-valves K K′, formed with a piston-head at either end of them, the cylinders or boxes L M and L′ M′ with their ports *m n m′ n′*, the chambers or passages H H′ C D C′ D′, the exhaust-chamber or passage E, and the cylinders A A′ with their pistons F F′, for operation in concert with or through a crank-shaft, G, substantially as specified.

110,063.—Truss.—Charles Morrill, New York, N. Y.

Claim.—A hernia truss, consisting of the horizontal bar B and the pads A, connected by the bars E, C, and D, or their equivalents, all being struck up from a single piece of metal, and provided with a strap or other suitable means for holding the same in proper place upon the body of the wearer.

110,064.—Apparatus for Dressing and Furrowing Millstones.—James Lee Norton, London, England.

Claim.—1. The combination of the curved staff or base, the slide *c* to traverse upon it in a circular course, the vertical axis *d*, and the arm *e* supporting the cutting-point, substantially as described and shown by the drawing.

2. The combination of the template *g* to govern the course of the tool, with the lever *f*, arm *e*, axis *d*, and slide *c*, substantially as described and shown by the drawing.

110,065.—Animal-Trap.—Ebenezer Oliver, New York, N. Y.

Claim.—1. The door B, constructed to swing inward, and provided with a spring, C, to close it, in combination with the body A of a round wire trap, substantially as herein shown and described, and for the purposes set forth, whether provided with a wire tube, *b²*, or not.

2. The pivoted platform E, catch F, and bait-hook G, in combination with the spring door B C, substantially as herein shown and described, and for the purpose set forth.

3. The pivoted loop D, in combination with the spring door B C, substantially as herein shown and described, and for the purposes set forth.

4. The combination of the ordinary entrance-tube *b²* with the inwardly-swinging spring door B of the trap, substantially as herein shown and described, and for the purpose set forth.

110,066.—Hitching-Post.—Wilson S. Owings, Pan Handle Post Office, West Va.

Claim.—A hitching-post, *a*, having mounting-steps *d*, constructed substantially as described.

110,067.—Bobbin-Winder for Sewing-Machines. — John L. Patch, Charlestown, assignor to himself and E. F. Tilden, Boston, Mass.

Claim.—The friction-wheel G, worm I, worm-

wheel J, cam K, link L, guide-plate M, spring k, and thread-guide N, all constructed and arranged as specified.

110,068.—ELASTIC MANE-TURNER.—Chamberlayne Phelps, Clayton, N. Y.

Claim.—1. The adjustment of a horse's mane by means of cords A A', arranged substantially as described and set forth.

2. The mane-turner and adjuster, consisting of the elastic cords A A', provided with holders b c d, and with loops or rings S S, substantially as set forth.

110,069, antedated December 9, 1870.—CHAIN-CLUTCH.—Hiram Pitcher, Fond Du Lac, Wis., assignor to himself and H. & G. O. Trowbridge, same place.

Claim.—1. In combination with a wheel, pulley, drum, windlass, or other revolving body, the cinch A, constructed, arranged, and operating substantially as described.

2. The chain-clutch, provided with trunnions at its inner end, and pivoted so as to be self-adjusting, as shown and described.

110,070. — DEVICE FOR ATTACHING THE SHANK TO MINERAL AND COMPOSITION BUTTONS. — Charles L. Potter, Providence, R. I.

Claim.—That improvement in the means for fastening shanks to mineral and other like buttons which consists in combining a cross-bar, b, with a base-plate, a, to which latter the shank is attached, both cross-bar and plate being secured to the button-head, substantially as described.

110,071.—COMBINED LOCK AND LATCH.—Francis M. Ranous, Yreka City, Cal.

Claim.—The pivoted stop J, pivoting-pin K, pivoted disk L, provided with a thumb-piece, knob, or handle M, pin N, and curved slot a^2 in the plate B of the case A, in combination with the arm H h', of the sliding hook-latch C c', substantially as herein shown and described, and for the purpose set forth.

110,072, antedated December 10, 1870.—BASKET FOR TILE-GRINDERS.—Peter C. Reniers, Pittsburg, Pa.

Claim.—1. In combination with a revolving table, A, the bearers B' B', arranged so that the basket may rest thereon, clear of the table, but so that the tile in the basket may come in contact with the face of the table, substantially as described.

2. One or more slotted bars, a, adjustable up and down on the posts D, substantially as described.

3. The slotted guide-rest b, in combination with the slotted bar a and side rail C, and so arranged as to be capable of a vertical or oblique adjustment, as shown in fig. 1.

4. The clip d, carrying in one side the adjustable gauge e, when used in connection with the bar a of a tile-grinding basket, substantially as set forth.

5. The slotted bar f, working loosely on its posts D, as a carrier for a tile-frame, in combination with collars w, so set as to stop the downward motion of the tile and arrest the grinding action at the proper point.

6. The tile-frame, consisting of plate f^3, from which flanges u project over the bar f, inclined rests w^2 and w^3, and an outer bar, t, all arranged substantially as set forth.

7. The central slotted rail l, vertically adjustable in the end posts E, as a carrier for the devices which engage the tile and hold them in vertical position while being ground.

8. A plunger, s, forced outward by a spiral spring, s^2, and released from its hold on the tile by a lever, s^3, all arranged in an adjustable bloct, m, substantially as described.

110,073.—DEVICE FOR TRIMMING CYLINDRICAL BRUSHES.—Arthur G. Risley, Utica, N. Y.

Claim.— The device described, consisting of the base-plate A, the stationary center n, and the movable center o, with its flexible bar m, for holding the brush, in combination with the shears, as described, the whole being connected, combined, and operating substantially as herein set forth.

110,074.—LEATHER FOR NECK-YOKE FOR CARRIAGES. — Henry Sanders, Utica, N. Y.

Claim.—The neck-yoke holder above described, consisting of an oval metal ring surrounded by leather stitched in the manner specified, and having an oval opening for the tongue end, so as to allow lateral play to the same, all substantially as shown and set forth.

110,075, antedated December 9, 1870. — MACHINE FOR CUTTING CORKS. — Eilert O. Schartan, Philadelphia, Pa.

Claim.—1. The box C, provided with slotted bottom and end pieces, adjustable back a, and guide-bars b b, all substantially as and for the purposes herein set forth.

2. The combination of the pitman E', bent lever J', T-shaped lever M, rod N, and weighted lever O, all constructed and arranged as described to operate the knife D, substantially in the manner and for the purposes herein set forth.

110,076.—CORK-MACHINE.—Eilert O. Schartan, Philadelphia, Pa.

Claim.—1. The circular knife N, provided with pulley P and journaled upon slide Q, substantially in the manner and for the purpose described.

2. The combination of the poppet head E, shaft F, slide-rest G, and lever H, all constructed and arranged to operate substantially as and for the purposes herein set forth.

3. The combination of the circular knife N and adjustable slide-rest Q, all constructed and arranged to operate substantially as and for the purpose herein set forth.

110,077.—TYPE-SETTING MACHINE.—William Stephenson Shipley, Jersey City, N. J.

Claim.—1. The type-setting machine, provided with air-channels, so that the types or characters are moved by means of air-channels, as set forth.

2. The cylindrical-grooved blocks B, applied under the type-holders A, to receive the types in their grooves and to form air-channels, as set forth.

3. The curved tube I, applied to the cylindrical type-holders B, to constitute a continuation of the air-channel formed by their grooves, as set forth.

4. The combination of the grooved cylindrical blocks B with the keys H, so that they will be moved to convey the type from the holder A to the air-channel, as set forth.

5. The pivoted plate S that is moved by the cam s, substantially as described, for the purpose of setting up the types in rows, as set forth.

6. The combination of the lever P and rods l h with the bell-crank j and crank-shaft O, and with the plates L and K, substantially as herein shown and described.

110,078. — SASH-LOCK. — Christian Sholl, Mount Joy, Pa.

Claim.—The spring F, permanently secured upon the bolt d^2, in combination with the plates E and D d^1, and projecting thumb-piece H, all the parts being arranged and constructed to operate together as shown and described, and for the purpose set forth.

110,079.—MORTISING-MACHINE.—William H. Sible, Harrisburg, Pa.

Claim.—1. As an improvement upon the machine described in my patent, No. 94,140, the combination therewith of the ratchet-wheel L' and pawl m, in the manner herein described.

2. The combination of the treadle E, spring I, bar G, box H, block J, screw K, toothed wheel L, and pawl n, all constructed and arranged to operate substantially as and for the purposes herein set forth.

110,080. — PLOW-CLEVIS ATTACHMENT. — Henry C. Sieverling, Carrollton, Ill.

Claim.—An attachment for plow-clevises, composed of rigidly-attached perforated bars B B^2, braces C C^1, and ferrule C^2, with pin and link D D^1, secured to the plow-beam, and applicable to an ordinary clevis, A', all constructed, arranged, and operating substantially as herein described.

110,081.—PROCESS OF REMOVING EARTHY MATTERS FROM BRONZE AND OTHER CASTINGS.—Michael Smith, Somerville, Mass., assignor to Russell & Erwin Manufacturing Company, New Britain, Conn.

Claim. — Fluoric, fluo-hydric, or hydro-fluoric acid, or the chemical equivalent thereof, for the purpose of softening and removing burnt clay, sand, or other earthy matter adhering to metallic castings, substantially as described.

110,082.—SAFETY-VALVE.—Henry F. Snyder, Williamsport, Pa.

Claim.—1. The combination of the casing A and its contained safety-valve, and guiding and operating means within the strainer G, adapted to prevent any possible access of flame from the exterior to pass the valve, as specified.

2. The perforated cap I i, in combination with the casing A and its contained safety-valve, and guiding and operating means, as specified.

3. The combination of the screw-cap I i, flange I', metallic strainer G, valve D D' d, steadiment E E^1 E^1, and casing A, constructed as represented, and adapted to serve relatively to the casing B and tank A, as and for the purposes herein set forth.

4. The stop-cock K, arranged relatively to the safety-valve D, spring C, and strainer G, as and for the purposes herein specified.

110,083. — BASE-BURNING STOVE. — Israel Snyder and Peter C. Garrett, Cedar Rapids, Iowa.

Claim.—1. The combination of shell D, cylinder B, and open-work fire-pot A, with a detachable cap U T, constructed and applied, as and for the purpose specified.

2. The arrangement, transversely across the upper part of the cylinders B D, of a shaft R and eccentric Q, for the purpose specified.

3. The combination of fire-pot with a close cylinder B, having draught-door S immediately under the outlet pipe, as set forth, and for the purpose described.

4. The combination of the plates L with the cylinder B D, constructed and arranged substantially as described.

5. The upwardly-converging plate T, combined with a funnel or coal-guide U having its lower edge projecting through the former, whereby an open annular space or combustion-chamber is formed above the fire, as and for the purpose described.

110,084. — MANUFACTURE OF ALUM AND FERTILIZERS FROM MINERAL PHOSPHATES.—Peter Spence, Newton Heath, Manchester, Great Britain.

Claim.—The mineral phosphates, containing alumina for the manufacture of alum, and the residual liquors from the said manufacture of alum, for conversion into and as artificial manures or fertilizers.

110,085, antedated December 9, 1870.—HEAD-BLOCK FOR SAW-MILLS. — Franklin J. Staley, Indianapolis, Ind., assignor to Long, Joseph & Carter, same place.

Claim.—The ratchets C, keyed to the setting-shaft B, dinks D, with their arms R, pawls r, and segmental cog v, pinion F, and lever G, all arranged to operate substantially as set forth.

110,086. — JOURNAL-BOX. — Edward H. Stearns, Erie, Pa.

Claim.—1. The described detached Babbitt-metal lining B of a journal-box, in a saw-mill, having the projection described on its under side to fit into a corresponding slot in the box itself, for the purpose of preventing both lateral and endwise motion, substantially as and for the purpose set forth.

2. The water-chamber W, with its bed C formed as described, having the oblong slot q for the reception of the said projection on the Babbitt-metal lining, and perforated with holes K K K, and the cap A with its screw-bolts and screw-holes, by means of which the box is closed and made fast over the journal, substantially as and for the purpose described.

3. The oil-chamber D, situated with reference with the journal, as described, so that the weight of the oil therein will force the same through the oblong openings n n, described, against the journal, on a level with its longitudinal center, substantially as and for the purpose described.

4. The shaft F, bed-piece I and G, and nut H, in combination, as an adjustable bearing for a journal-box, constructed and arranged substantially as described.

110,087.—STENCH-TRAP.—Daniel C. Stillson, Charlestown, Mass.

Claim.—The combination, with the main discharge pipe of a sink, of an auxiliary pipe, D, or duct, and a stop-cock, B, so formed and arranged that by turning the latter in one direction, a "water-seal" shall be formed, while, by turning it in the opposite direction, the liquid forming such seal shall be discharged through the main pipe in manner and for the purpose set forth.

110,088. — CAR-COUPLING. — Augustus F. Street, Zanesville, Ohio.

Claim.—The draw-head A, with the chamber C, openings E, shoulder L, and slide I, and, in combination therewith, the link B, the whole constructed and arranged to operate substantially as and for the purposes herein shown and described.

110,089, antedated November 26, 1870.—METHOD OF UNITING WOOD.—John A. Thompson, Auburn, N. Y.

Claim.—The method herein described, of uniting wood in various forms by metal tongs, where water-tight joints are required.

110,090.—TELEGRAPHIC RELAY.—Benjamin Birdwood Toye, Toronto, Canada.

Claim.—1. The lever armature b, without a cross-bar, its lower or flat part being acted on directly by the cores, and arranged in the manner and for the purpose hereinbefore set forth.

2. The safety-adjuster C, consisting of the bar g, its special spring K, the stop-piece h, and adjusting thumb-nut l, in combination with the spiral spring f and bar b, in the manner and for the purpose specified.

3. The auxiliary adjuster or cut-off D, with switch i and knobs j j', with wires 1 2 running to the helices a a', so that more or less of the magnetism in the spools or cores may be cut out and the resistance on the wire reduced, as hereinbefore set forth.

4. The combination and arrangement of the relay as a whole, consisting of spools a a', vertical armature b arranged between arms d d', safety-adjuster C, and auxiliary adjuster D, arranged substantially as and for the purpose hereinbefore set forth.

110,091.—TREE-PROTECTOR.—Charles Henry Trumbull, Marion, N. Y.

Claim.—The tree-protector A, constructed and applied substantially as and for the purpose set forth.

110,092, antedated December 9, 1870.—ALARM-TILL.—Cyrus Tucker and William H. Tucker, Indianapolis, Ind.

Claim.—1. The combination of the three armed levers E, the reversible tumblers C, and catch B, when arranged substantially as set forth.

2. The combination of the spring N and bell-lever J with the hinged catch B, all arranged substantially as and for the purpose set forth.

110,093. — RAILWAY AXLE-BOX. —James Wardrobe, Charles D. B. Fisk, John F. Curtis, and George Fetley, Carlin, Nevada.

Claim.—The oil-chamber casing A, combined as described, with a bearing, D, shorter than the journal, and flanged at d', and a plate, E, having flanges e^1 and projection e^2, for the purpose of preventing the wear of the journal-collars on the end of bearing, and of allowing the bearing to adjust itself, without much friction, to the journal as it turns on a curve.

110,094. — EXTENSION LADDER.—Thomas Watson and Charles Perry, Brooklyn, N. Y.

Claim.—1. The combination of the double system of guys with the members of the ladder, all operating substantially as described.

2. The combination of the double system of guys with the inclined bars b b and c c, substantially as described.

3. The combination of the double system of guys with the members of the ladder and inclined bars b b and c c, operating substantially as described.

4. The arrangement of ways and clip-pieces on and between the members of the ladder, substantially as described.

5. The inclined connecting-bars b b and h h at the front portion of the rear truck, and the bars c c and g g, in combination with the members of the ladder, substantially as described.

6. The arrangement of the reel on the front truck, as described.

7. The arrangement of the members of the ladder relatively to the base and rear truck and to the axle thereof, as described.

110,095. — DOUBLE-TREE FASTENER.—Decatur Worst, South Bend, Ind., assignor to himself and Joshua Lafflin, same place.

Claim.—The double-eyed link, arranged as fastener for whiffletrees, substantially as herein shown and described.

110,096. — BARREL. — James W. Weston, New York, N. Y.

Claim.—A barrel, made of lamina of wood rolled up to shape, with the grains of the respective laminæ crossing each other, and connected by glue or adhesive material, and the heads introduced within the cylindrical ends, substantially as set forth.

110,097.—PATTERN FOR MEASURING AND LAYING OUT GARMENTS.—Fannie Wetmore, Chicago, Ill.

Claim.—The front and back patterns, figs. 1 and 2, shaped and graduated as described and shown, for the purpose specified.

110,098, antedated November 28, 1870.—ROLLER-SHAFT FOR WRINGERS — Levi H. Whitney, Washington, D. C.

Claim.—A rubber roller, the shaft A of which is constructed with perforated and slotted longitudinal ribs A^1 a and transverse ribs A^2, substantially as set forth.

110,099. — FAUCET.—Franz Wiesenhofer, Fremont, Ohio.

Claim.—A slotted reciprocating plate, C, and projecting pin b, combined with an eccentric on the tubular end of a spigot, as and for the purpose described.

110,100. — WEIGHING-WAGON.—George A. Wilcox, Chicago, Ill.

Claim.—1. The arrangement of the lever or steelyard I, with its attachment to the wagon or cart-box at a point above the center of gravity of the same, for suspending it for weighing, as specified.

2. The combination of the wagon-box E, having the tube or well-hole F, with the standard H, supported upon the running-gear, and the lever or steelyard I, substantially in the manner and for the purpose set forth.

3. The combination of the wagon-box E, the tube F, standard H, steelyard I, lever L, and pivoted bar M, substantially as and for the purpose set forth.

110,101.—SCHOOL-DESK.—Elijah Wilson, New Brighton, Pa.

Claim.—1. A school-desk, pivoted between the slides c, and provided with stops e and e^1 for holding it in either a vertical or horizontal position, in combination with boxes b^2, in which the slides operate forward and back, such boxes being vertically adjustable on the posts a, all arranged substantially as described.

2. The seat-back f, carrying a folding seat, g, and vertically adjustable by means of sleeves f' and hook or flange-joints i i', substantially as described.

110,102. — MANUFACTURE OF EMERY-WHEELS. — John F. Wood, Boston, Mass., assignor to "The Union Stone Company," same place.

Claim.—1. Emery-wheels, having their centers of artificial stone, substantially as and for the purposes described.

2. The process of manufacturing emery-wheels having the central part of artificial stone, substantially as and for the purposes described.

110,103.—FRICTION-BLOCK FOR ATTACHING CULTIVATOR AND OTHER TEETH.—William Workman and Jason Hitchcock, Ripon, Wis.

Claim.—The friction-block B, formed with the wings b b and the intermediate socket f, and shoulders g and h, in combination with a tooth-shank, C, substantially as described.

110,104.—HEATING-STOVE.—Thomas Young, Montreal, Canada, assignor to Ives & Allen, same place.

Claim.—1. The novel combination of the fire-pot a, combustion-chamber b, corrugated and perforated ring c, projecting edge c', perforations d, ring e, drum e', openings f and g, door h, stove-pipe i, division-plate k, flange k', and damper l, all working together substantially in the manner and for the purpose described.

2. The novel combination of the corrugated ring c with perforations d and edge c', substantially as described.

110,105. — CHEESE-PRESS. —Robert Allen, Cleveland, Ohio.

Claim.—In the cheese-press herein described, the arrangement of the standards C D, grooves b, lugs c, follower K, hinged levers H F, standard L, and pins e f, when all constructed and arranged as described.

110,106.—BARREL CHAMFERING AND CROZING-MACHINE.—Truman M. Annis and Thomas B. Luce, Linden, Mich.

Claim.—1. The arrangement of the shaft D, crank E, cog-wheel G, pinion d, fly-wheel H, pinion e, cog-wheels I J, shaft K, and cams L L, all substantially as shown and described.

2. The arrangement of the platform C, rods a a, and spiral springs b b, in combination with the cams L L upon the shaft K, said shaft being revolved by means of the gearing herein described, as and for the purposes set forth.

110,107.—WAGON.—Ephraim Ball, Jr., Canton, Ohio.

Claim.—1. The rear hounds D D, constructed of L-shaped iron, and attached to the rear axle, substantially in the manner herein described.

2. The front hounds I, constructed as described, of T-shaped iron, and attached to the front axle, substantially in the manner herein set forth.

3. The standards M, constructed as described, and fastened to the bolsters E E, substantially as set forth.

4. A double or single-tree, made of T-shaped iron, with a loop or socket, i, in the center, substantially as set forth.

110,108.—PRESERVING SWEET POTATOES.—Hedgemon T. Basye, Dyersburg, Tenn.

Claim.—1. The combination of an inner crib, A, of slats and spaces a, with an inclosing-case, B, having a communicating air-chamber, c, between them, in the manner and for the purpose herein described.

2. In combination with an inner crib, A, of slats and spaces a, and a surrounding communicating chamber, c, an inclosing-case, B, having an inner and an outlet air-chamber, d and e, and a separating non-conducting chamber, D', in the manner and for the purpose herein described.

110,109.—MACHINE FOR TILLING OR CULTIVATING.—Henry Belmont, Romford, England.

Claim.—1. An improved cultivating or digging-machine, constructed substantially as described, having a number of strong forks, f f f f, fixed in a frame, d, which is suspended within another frame, c, upon the arms of crank-axles b b of carriage-wheels a a, arranged so that at each turn of the wheels with the machine moving forward the forks f f are, by means of the crank-axles, forced into and brought out of the ground to break up the soil.

2. The digging-forks f f, in combination with the suspended frame d and the crank-axles b b, arranged and operating as and for the purpose described.

3. The cultivating-machine, so constructed as to allow the use of interchangeable parts, as described.

110,110. — STEAM-JET PUMP. — Albert J. Blakslee and Garner C. Williams, Du Quoin, Ill.

Claim.—A stem, D, arranged within the steam and water-passages, substantially as described.

110,111.—MEAT AND VEGETABLE-CUTTER.—George E. Bringman, Philadelphia, Pa.

Claim.—1. The revolving plate B, in connection with a meat-deviling device, as and for the purpose set forth.

2. The box E, provided with pins a a, tubes b b, and springs d d, in combination with the revolving plate B, all arranged substantially as and for the purpose described.

110,112. — REFRIGERATOR. — Andrew J. Chase, Boston, assignor to himself and Perrin C. Drisko, Boston, (Highlands,) Mass.

Claim.—1. The refrigerator as made or provided with the aprons D and F, the inclined plane I, the trough H, and air-passages E G, arranged within the box A, in manner substantially as described.

2. The refrigerator as so made, and as having the ventilating-pipe K arranged in it in manner and to operate as set forth.

110,113.—BRICK-PRESS.—James F. Clark, Morenci, Mich.

Claim.—1. The grooved beam E and plunger G, moving between the guides H H, and operating in combination with the post d, rod e, pins i i, movable back J, and box I, substantially as and for the purposes herein set forth.

2. The combination of the bed A, posts B B, levers C D, joint b, beam E, plunger G, guides H H, box I, and movable back J, all constructed and arranged to operate substantially as and for the purpose herein set forth.

110,114.—STEAM-PIPE COUPLING FOR RAILROAD-CARS.—Joseph Conner, Philadelphia, Pa.

Claim.—1. The combination of the pipe A, tubes D D', and hollow cylinder F, having inclined grooves f f, the said parts being constructed and arranged in relation to each other substantially in the manner and for the purpose above described.

2. The connection of the cylinder F with the tube D' by means of male and female screws, which run in an opposite direction to the inclined slots f f of the cylinder, whereby a combined leverage is obtained in coupling the cars, substantially as described.

3. The combination of the hollow nut P with the pipe N, arranged and operating in relation to the conical nut E on the outer end of the tube D, as above specified.

4. The combination of the follower Q, having pins n n, with the pipe M, arranged and operating in relation to the inclines f f of the cylinder F, substantially as and for the purpose above set forth.

5. In combination with pipes A and N, tubes D and D', cylinder F, and follower Q, the pipe A' and intermediate hollow links, constructed and arranged as and for the purpose above described.

110,115. — BUCKLE. — Eugene P. Corwin, Washington, Ill.

Claim.—The combination of the serpentine lever B and cam-lever C with the sides A and bar D, the last being provided with a biting surface, z, as specified.

110,116.—BOAT-DETACHING APPARATUS. — John C. Cottingham, Philadelphia, Pa.

Claim.—The arrangement of the body B, hook H, shank K, lugs L, trip-lever T L, and pulley D, all constructed and operating as and for the purpose specified.

110,117.—CAR-AXLE-BOX COVER. — David Cowley, Erie, Pa.

Claim.—The cover B, in combination with the chamber D and spring E, when the same are constructed and arranged as and for the purposes set forth.

110,118.—FURNACE FOR BURNING SHAVINGS.—Lucius Crandall, New York, N. Y.

Claim.—The basket-grate c at the lower end of the hopper m, and within the casing a, in combination with the draught-regulators k, register l l, and flues e f, substantially as and for the purposes specified.

110,119.—HEAD-BLOCK.—Perley M. Cummings, Cincinnati, Ohio, assignor to himself and Joseph D. Clark, Erie, Pa.

Claim.—1. In connection with the notched knee A, the reciprocating bar F E E' and toggle-joint pawls C C' C'', the latter being kept in gear by springs, as described, and for the purpose specified.

2. In connection with the elements of the preceding clause, the spirally-grooved shaft J K and arms L, as and for the purpose described.

110,120.—PIANO-FORTE ACTION.—Willard G. Day, Baltimore, Md.

Claim.—1. The combination of the keys F, provided with the regulators b and pivoted jacks a, with the keys E provided with the ledge c, constructed substantially as described, and for the purpose set forth.

2. The combination of the upper and lower keys E and F, with the jack *a* pivoted to the former and between their front ends, as and for the purpose set forth.

3. The key-frame G, having its rear end attached to, and arranged to slide laterally upon, its connections, and its front end provided with a catch-pin, *h*, in combination with the opening *i* provided with the notches *m* in the front side of the case of the instrument, substantially as and for the purpose set forth.

4. In combination with the key-frame G arranged to move laterally, and having its keys F provided with the pivoted jacks *a*, the cross-bar *o*, as and for the purpose set forth.

110,121. — ASPHALT ROAD AND PAVEMENT.—Edward J. Desmedt, New York, N. Y., assignor to Grahamite Asphalt Company, same place.

Claim.—The combination of grahamite petroline with grahamite albertite, or any hard asphalt, and the same combined with sand, powdered limestone, or any like substance, all substantially as specified.

110,122.—OAT-CLEANER.—Simon Dickens, Jr., Milwaukee, Wis.

Claim.—An oat-cleaner, constructed with the upper and lower sieves A and B connected together, substantially as described.

110,123. — GROOVING-TOOL.—Joseph Dill, Grand Rapids, Mich.

Claim.—The grooving-tool A, constructed and operating substantially as herein shown and described.

110,124.—MACHINE FOR SEPARATING COCKLE FROM WHEAT.—William G. Douglas and Hugh Thomas Douglas, Warrenton, Va., and John Milton Reed, Omaha, Nebraska.

Claim.—1. The combination of the cotton or linen covering with a gum or other yielding roller or rollers, when the former is prepared and applied to said yielding surface as herein described, and for the purposes specified.

2. The cotton or linen covering for cockle-separating-rollers, coated with rubber cement, for producing an adhesive separating surface to said covering, as herein set forth.

3. The separating-rollers E, provided with the covering *c* and grain-guards *d*, as described.

4. The combination of the cockle-rollers E, constructed substantially as described, with the fluted feeding-roller C, pressure-roller F, stripping brushes D, and thin flexible or tremulous sheet-metal conductor *e*, for the purpose herein set forth.

110,125.—COFFEE, TEA, AND SPICE-CAN.—James M. Earle, Springfield, Mass.

Claim.—As a new article of manufacture, a coffee or spice-can having the two lids *a a* hinged to the piece *c*, all constructed and arranged substantially as and for the purpose herein described.

110,126.—HOE.—James Fairley and Alfred Fairley, Birmingham, England.

Claim.—1. A blade for hoes or other implements, having a nick, *f*, and slot *e*, in combination with a tenon, e^1, and slots $e\ e'$, on a socket, B, substantially as shown and described, for the purpose specified.

2. The socket B, when provided with a recessed and slotted bit, substantially as described, for the purpose specified.

110,127. — BUNG-ELEVATOR. — David F. Fetter, New York, N. Y.

Claim.—The bung-extractor described, formed by the construction and combination of the levers herein described, of which lever A is made to serve as a rocking fulcrum with a sharp point, and lever B has a curved blunt point overlapping lever A, in the manner specified.

110,128.—CUT-OFF FOR CISTERNS.—Frank Fischer, Quincy, Ill.

Claim.—The rectangular sectional supply-pipe A, having the automatic hinged valve *b* F, guide G, and float *d*, and strainers *f e*, substantially as and for the purposes specified.

110,129.—NOTES, CHECKS, &c., TO PREVENT ALTERATION.—Charles Folsom, New York, N. Y.

Claim.—1. The combination of a table of figures, letters, lines, or other characters, representing amounts, written, printed, lithographed, or otherwise placed on any document, with the signature thereto, substantially as herein described, and for the purpose set forth.

2. As an improvement in bank-notes, checks or other similar papers representing value, placing upon that portion of the same designed for the signature a table of figures, lines, letters, or characters representing amounts so arranged that the signature may be written thereon so as to indicate substantially the value of the same, as herein described.

110,130.—COAL-BARGE.—Lawrence F. Frazee, Jersey City, N. J.

Claim.—1. A series of compartments supported upon columns above the spar-deck, and made, arranged, and operated substantially as described, for the purpose specified.

2. In combination with the said elevated compartments, made, arranged, and operated as aforesaid, an elevator arranged in relation thereto, as shown and described, for the purpose specified.

110,131.—GRAIN-THRASHER AND SEPARATOR.—Henry Gill, Mansfield, Ohio.

Claim.—1. The inclined shoe *m*, having its rear end supported by the adjustable strap *c*, substantially as set forth.

2. The bent arms H, provided with the pin *l*, said arms being pivoted to the stationary bars *s*, and operated by the vibrating bars *y*, as herein described.

3. The arrangement of the slotted lever C, with its operating wheel P and elbow-lever *g* and connecting-rod *d*, for operating the shoe D, as set forth.

4. The combination in a thrasher of the inclined chute G, with its endless carrier F and the adjustable chute *n*, when arranged as described, whereby the grain from the cylinder and that from the shaker shall all be delivered from the chute *n* to the shoe D, as set forth.

5. The combination of the hinged detainer arms I, stationary bars *s*, and vibrating carrier bars *y*, all constructed and arranged to operate substantially as described.

6. The crank-shaft R, having the loose pulley P' and clutch *i* mounted thereon, with the lever E, arranged as described, whereby the shaker and shoe D are thrown out of connection with the driving-power while the cylinder and fan are permitted to continue their motion, as set forth.

110,132.—TREADLE FOR SEWING-MACHINES.—James W. W. Gordon, Newport, Ky.

Claim.—The cushion, strap, or spring, combined with the treadle, for the purpose of drawing down the knee of the operator, substantially as herein shown and described.

110,133.—HARROW.—James M. Harper, El Paso, Ill.

Claim.—In a wheeled straddle-row cultivator, the harrow attachment herein described, when constructed with a front shovel-plow, B, and side metal bars or plates *a a*, substantially as and for the purpose specified.

110,134.—COTTON-SEED HULLER.—Jackson Harrington, New London, Conn., assignor to himself, Ralph Wheeler, and Jonathan Dart, same place.

Claim.—1. The cutter-head B, provided with one or more double-edged cutters C, fastened by the V-shaped end *o*, and screws F, substantially as herein shown and described, for the purposes set forth.

2. The adjustable knives D D, forming the bottom of the hoppers G G, in combination with the cutter-head B, when constructed and arranged substantially as herein shown and described, for the purposes set forth.

3. The combination of the shell A, provided with the bars S, with the cutter-head B, knives D D, and hoppers G G, all constructed and arranged substantially as herein shown and described, for the purposes set forth.

110,135.—HAY-ELEVATOR AND CONVEYER.—Thomas E. Haymond, Morris, Ill.

Claim.—The arrangement, with relation to the carriage B and track A, of the sliding metal frame F, latches *a*, sheave D, and rope G, as herein described, for the purpose specified.

110,136.—WELL-TUBING.—George W. Hemenway, Elmira, N. Y.

Claim.—In combination with the cylinder A, having its inlet and outlet orifices at or near its upper end, the strainer F, valve G, and removable top and bottom C, all constructed and arranged to operate substantially in the manner and for the purpose specified.

110,137. — CLOTHES-DRIER.—Israel Hogeland, Indianapolis, Ind.

Claim.—1. The side-beams A A, grooved on their inner sides, and provided with slats D' D', in combination with the guide-bar G and line E, when constructed and arranged substantially as and for the purpose specified.

2. The combination of the side-beams A A, slats D' D', cross-bars B B, castings C C, props D D, guide-bar G, line E, and lock-bar H, when constructed and arranged substantially as shown and described.

110,138, antedated December 3, 1870.—GRAIN-BINDER.—Albert S. Hoyt, Winona, Minn.

Claim.—1. The combination of the compresser-arm *z*, provided with the counter-weight *x* and hinged arm *y*, with the arm *w* provided with the lever *t*, and the wheel E provided with the pins *t'* and *t''*, when said parts are arranged to operate substantially as set forth.

2. The hinged concave or grain-receiver H and arm *a'*, in combination with the cam-wheel *u*, when arranged to operate substantially as and for the purpose set forth.

3. The shield *z*, in combination with the curved frame A, to permit the machine to pass over the bundles without injury, substantially as described.

110,139.—FARMER'S BOILER.—Joseph H. Hunter, Pennington Point, Ill.

Claim.—The combination of the outer and inner tanks A C, water-indicator E G, strips L J', and steam-conductors K D, constructed and arranged as set forth.

110,140.—BRAKE FOR SEWING-MACHINES.—James W. Jacob, Jeffersonville, Ind., assignor to himself and John J. O'Donnell, same place.

Claim.—1. The friction-brake, constructed substantially as described, in combination with and adjustable on the slotted hanger A, for the uses and purposes set forth.

2. In combination with the above, the thumb-piece L, for removing the brake from or bringing it in contact with the fly-wheel W.

110,141.—VEHICLE.—John Jack, Tiskilwa, Ill.

Claim.—The within-described buggy or carriage, composed of the elliptical springs placed parallel with the axles, the box with concave on its under side, the brace A, hinged joints B B, and the curved bar extending from the rear spring under the box, and connected by the joint D to the rear brace C, all constructed substantially as set forth.

110,142. — HARROW. — David L. Jaques, Hudson, Mich.

Claim.—In a folding harrow, the arrangement of the transverse rotary tooth-bearing bars B, the connecting-bar *c*, pawl *e*, and ratchet *z*, and the combined runner and guide-blade D, substantially as shown and described.

110,143.—PILE FOR ARMOR-PLATES.—Joshua Jeavons, Sheffield, England.

Claim.—The manufacture of armor-plates and other heavy forms of malleable iron and steel from piles composed of layers of rabbeted, dovetailed bars, with scarfed joints, in combination with top and bottom large molds, as herein shown and described.

110,144. — NEEDLE-SETTER FOR SEWING-MACHINES. — Jacob Karr, Washington, D. C.

Claim.—The needle-setter, consisting of the self-closing pincers, both limbs of which are made elastic and provided with the finger-pieces H and H', the gauge-point or stud D, the groove C, and adjusting-head, all as described.

110,145.—CLOTHES-DRIER.—James W. Kenning, Quincy, Mich.

Claim.—In combination with the standard A, the removable socket H, pulley K, and the block *e*, provided with arms D and lifting apparatus, as described, when the several parts are constructed and arranged to operate substantially as specified.

110,146. — MECHANISM FOR OPERATING SHUTTLE-BOXES IN LOOMS.—Lucius J. Knowles, Warren, Mass.

Claim.—1. The combination, with each cam for operating the boxes, of a ratchet with half the number of teeth there are steps in the cam, and two oscillating pawls, each of which will move the ratchet forward a distance equal to one-half the length of the ratchet-tooth, serving, the one to raise, and the other to lower, the boxes, substantially as shown and described.

2. In combination with the cams, ratchets, and pawls, operating together, as claimed in the preceding clause, the compound lever, for raising and lowering the drop box, composed of two levers, pivoted one to the other, and actuated by their several cams in the manner set forth, the cams and levers being constructed and arranged as specified, so that the range of movement of one of the levers shall be double that of the other, to admit of the discounting operation herein described.

3. The combination of the spurs or projections 5 and 6 on the pawls 1 and 2, with the loops or hooks on the pawls 3 and 4, substantially as shown, and for the purposes described.

4. The combination and relative arrangement of shafts E F, ratchets G K, cams H L, pawls 1 2 3 4, arms N, and connections *b b c c*, substantially as and for the purposes set forth.

5. The combination and relative arrangement of the levers P R, cams H L, ratchet-wheels G K, and arm N, with shafts E F, pawls 1 2 3 4, rod S, and connections *b b c c*, substantially as and for the purposes set forth.

110,147. — SIDE-SADDLE TREE. — Andrew Lawrence, Louisville, Ky.

Claim.—The cantle or seat B B, when turned from a solid piece of wood, and secured to the tree

by means of screws or rivets, substantially as and for the purpose herein set forth.

110,148, antedated December 6, 1870.—Cover for Tea and Coffee-Cups.—Joseph Leach, New Harmony, Ind.

Claim.—As a new article of manufacture, the concave perforated cover B, provided with ledge or rim *a* and openings *b d*, substantially as and for the purposes herein set forth.

110,149.—Cotton-Renovating Machine.—James B. Lyons, Milton, Conn.

Claim.—1. The combination of the receiver G, air-pumps C C, retort H, barrel J, and door L, when arranged to operate substantially as and for the purposes described.

2. The combination of the sliding valve L closing the barrel J, the piston *l*, vertical cylinder M, connecting-pipe *m*, and retort H, for the purpose of suddenly liberating the contents of the barrel J by means of the compressed air in the retort, substantially as specified.

110,150.—Spring Seat for Vehicles.—Wait Mead, Francis D. May, and Rufus L. Hoyt, Chestertown, N. Y.

Claim.—The spiral spring C and straps D D, when arranged as described, and used in combination with a wagon-body, A, and elliptic springs B B, substantially as and for the purposes herein set forth.

110,151.—Gearing for Machinery.—Thomas M. Millett, Sr., Savannah, Ga.

Claim.—1. The wheel F, carrying the endless screw A working in nut-castings within a regulating-box, as shown and described, said screw being adjustable by means of wedges or gib and key, all combined and arranged as herein shown and described.

2. In combination with the foregoing, the multiplying gear-wheel K, with its coiled spring, as shown and described.

110,152.—Milk-Carrier.—Lewis Morris, Havre de Grace, assignor to himself and George W. Baker, Aberdeen, Md.

Claim.—1. The arrangement, with the can-body *a* and cover *b*, of the links A, bar *k*, and screw-bolt *n*, substantially as shown and described, for the purpose specified.

2. The improved milk-carrier, formed by the arrangement, with the can *a*, of the lining *d*, cover *b*, bar *k*, links A, screw-bolt *n*, standard *r*, and padlock, or other equivalent fastening device, substantially as shown and described.

110,153.—Wood Pavement.—William S. Morse, Washington, D. C.

Claim.—1. A wooden pavement composed of blocks beveled from base to top, and having reverse bevels in the lower portions thereof, and fitted together, substantially as shown and described.

2. A wooden paving-block, beveled from base to top, and having a reverse bevel in the lower portion thereof, substantially as shown and described.

110,154.—Wrought-Iron Column.—John W. Murphy, Philadelphia, Pa.

Claim.—In the construction of a wrought-iron or steel column, shaft, or post, the combination of the series of plates A and the series of X-formed or four-flanged ribs B, placed and riveted together, as herein described and represented.

110,155.—Flour-Packer.—Addison H. Nordyke, Richmond, Ind.

Claim.—1. The method herein described of packing flour, by holding the platform which sustains the package stationary while the flour is packed in a supplemental cylinder within the package, substantially as set forth.

2. The combination of the stationary cylinder E with the platform C, sustained during the packing operation by the catch-bar D D′ and keepers 1 and 2, arranged to operate substantially as set forth.

3. The platform C, constructed and arranged as described, in combination with the strap *y* and weight Y, used in connection with the flanges G G and supplemental packing-cylinder E, operating in the manner and for the purposes herein set forth and described.

4. The herein-described mechanism for releasing the platform C from its keepers simultaneously with throwing the wheel L out of gear to stop the packing operation, consisting of the cross-head H, cord *j*, pulley P, weighted cord *j* O, tappet-rod Q *s*, trigger T, lever M, connecting-rod *l*, brake U, wedge V, and catch-bar D D′, all arranged relatively to one another, as set forth.

5. The combination of the packing-shaft F G, cross-head H, cord *j*, pulley P, weighted brake U *u*, and weighted cord *j* O, substantially as and for the purpose set forth.

6. The shaft *i*, the drum Z, and the scroll-pulley W, in combination with the lever X and its spring *m* and wedge *n*, when used as and for the purposes set forth.

110,156.—Lubricator.—Thomas J. Nottingham, Cincinnati, Ohio.

Claim.—In the described connection with the chambers A B, the valves D E, operating as described, and for the purpose specified.

110,157.—Coal-Grate.—Ira Pickard, Lena, Ill., assignor to himself and James W. Slaght, same place.

Claim.—The rocking-grate bar B, having the groove *b*, solid ends b^1, web b^2, central ribs b^3, and hook *c*, combined with the notched supporting-ledges a^3 and rocking mechanism D E F, substantially as shown and described.

110,158.—Steam-Boiler.—Patrick Quinn, South Newmarket, N. H.

Claim.—1. A combustion-chamber placed between tubes in a tubular upright boiler, and having the flames admitted into it both through the bottom and sides of the boiler, substantially as herein set forth.

2. A hollow perforated drum, provided with hollow arms or pipes, and placed within the combustion-chamber of a steam-boiler, the hollow arms or pipes communicating with the outside air, substantially as and for the purposes herein set forth.

3. A feed-water pipe, so arranged as to conduct the feed-water through the boiler and combustion-chamber and deliver at the bottom of the boiler, substantially as and for the purposes herein set forth.

110,159.—Sash-Balance.—Charles R. Rand, Dubuque, Iowa.

Claim.—The device for balancing sash, consisting of the case A, having the small pulleys C and D and the large pulley E mounted therein in the relative positions shown and described, and also having in its front face the openings *b* and *c* for the passage of the cord and insertion or removal of the small pulleys, as set forth.

110,160.—Anti-Friction Boxes for Axles.—William O. Reid, Vienna, N. C.

Claim.—The arrangement of the flanged rings *b*, balls *b* and *c*, and tape *k*, with relation to the flanged and rabbeted pipe-box *a* and the axle journal, all constructed to operate as and for the purpose specified.

110,161.—Compound for Bating Hides and Skins.—Louis F. Robertson, New York, N. Y.

Claim.—1. A compound for bating hides and skins made of saw-dust, water, and ammonia, mixed together, substantially in the manner herein set forth.

2. A compound for bating hides and skins made of blood and ammonia.

3. A compound for bating hides and skins made of blood, saw-dust, and ammonia.

4. A compound for bating hides and skins made of saw-dust, blood, urine, water, and ammonia, mixed together, substantially in the manner herein specified.

110,162.—Implement for Removing Corns, Bunions, &c.—Charles L. Roorbach, St. Clair, Pa.

Claim.—1. A composition of matter, forming a body with a roughened surface, for rubbing or filing corns, &c., and thus exterminate them.

2. The improved corn-file herein described, produced by the combination of a body of wood or other material as a base, and a coating compound of the character described, all substantially as set forth.

110,163.—Material for Bearing-surfaces in Machinery.—John Schieder, New York, N. Y.

Claim.—A compound for bearing-surfaces of machinery, prepared substantially as described.

110,164.—Straw-Cutter.—Valentine J. Shryock, Folsomville, Ind.

Claim.—The combination, with the face-plate D, of the circular guide I, balance-wheel J, and the blade or blades H, separate from the balance-wheel and revolving within the circular guide, all being constructed to operate substantially as set forth.

110,165.—Sand-papering Machine.—Samuel F. Smith, Indianapolis, Ind., assignor to Osgood, Smith & Co., same place.

Claim.—The lever I and connecting-bar J, in combination with the hinged standard F and swiveled bearing E and pulley D, as and for the purpose specified.

110,166.—Self-acting Valve or Cut-off for Liquid Cans.—Heman S. Snow, West Meriden, Conn.

Claim.—A self-acting valve or cut-off, consisting of the valve D, composed of ears *d*, plate d^1, and weight d^2, arranged to operate substantially as set forth.

110,167.—Fruit and Vegetable-Parer.—Henry Soggs, Columbus, Pa.

Claim.—1. The combination of the loose sleeve *d* with the guard A, as and for the purposes specified.

2. The groove H, in combination with the guard A and the sleeve *d*, all constructed as described, and for the purposes set forth.

110,168.—Spoke-Shave.—George N. Stearns, Syracuse, N. Y.

Claim.—The spoke-shave herein described, consisting of stock A, gauge *e e*, constructed, arranged, and operating substantially as described.

110,169.—Water-Wheel.—Ralph Stinson, Whitesville, Mo.

Claim.—1. The buckets C, forming the outline of the wheel, in the form of a frustrum of a cone inverted, said buckets being secured to the base-plate A and annular rim B by means of the recessed seats *e* and the curved shoulders *f*, in the manner described.

2. The inclined buckets, having their outer sides of curves of a radius about half that of the inner sides, and arranged so that the sides having the least radius will form, with its contiguous bucket, enlarged openings at their receiving-ends and narrow outlets, in the manner and for the purpose described.

3. The hub D of the cone A, made with an angular tapering seat, and the end of the driving-shaft F of corresponding shape, for the purpose of suspending the wheel upon a self-locking and supporting-seat without fastening, as herein shown and described.

4. The arrangement of the cone K so as to form a continuation of the base-plate A and be inclosed by the hub I of the feeder, to produce a centrifugal action of the water upon the buckets and to insulate the vertical shaft from the water, as described.

5. The feeding-openings H, arranged tangent to the hub I of the feeder, in the manner and for the purpose described.

6. The register, having tangent openings, in combination with the tangent openings of the feeder, in the manner and for the purpose described.

7. The arms of the tangent openings and the arms of the feeder, inclined in the same direction on one of their sides only, so as to direct the water into the wheel and upon the buckets, in the manner described.

8. The buckets C, arranged upon a conical base-plate A, substantially as described, with a feeder constructed with tangent openings arranged within the diameter of the upper ends of said buckets, as described.

9. The combination and arrangement of the conical base-plate A, the annular rim B, buckets C, the angular suspending and locking-seat E of the wheel, the frustrum of a cone, K, the feeder and register, with their tangent openings, the several parts being constructed, arranged, and operating in the manner herein described.

110,170.—Fence.—William W. Sullivan, Liberty, Ind.

Claim.—The combination of the sections or panels A B C, perforated ears D, stakes E, and rails G, all constructed and arranged substantially as and for the purposes herein set forth.

110,171.—Shuttle-operating Mechanism for Looms.—Enoch P. Terrel, West Liberty, Ohio.

Claim.—1. The spirally-grooved cylinders H, operating the levers through which the pickers are operated, when constructed substantially as described, so that no change in the direction of their revolution will in any way interfere with the continuous operation of the parts.

2. The cylinders H, provided with the double-spiral cams I, double projections J, and wings N, substantially as and for the purpose herein described.

3. The combination of the vertical levers R and their pickers, connected by cords, as described, so that the same lever which throws the picker forward in one shuttle-box retracts the picker in the other shuttle-box at the same time, the other lever being entirely inactive during this movement.

4. The combination of the cylinders H, constructed substantially as described, and levers O and R, with springs V, cord W *b e*, and wheels *c d*, to operate the pickers, substantially as set forth.

110,172.—India-rubber and Combination Hose.—William A. Torrey, Mont Clair, N. J.

Claim.—1. The improved mode herein described for strengthening and reinforcing the ends of hose, by applying thereto any suitable fabric or material in the manner set forth.

2. The combination, with vulcanized hose, of a reinforcing or strengthening fabric or material having its threads or strands at right angles to the axis of the hose so as to prevent expansion, as set forth.

3. The improved hose herein described, having its ends reinforced and strengthened in the manner described.

110,173, antedated December 3, 1870.—Bridge.—Marshall Turly, Council Bluffs, Iowa.

Claim.—The combination of the abutments A B

C D, arch E, central rod G, and side-rods H H, all constructed and arranged as described, substantially as and for the purposes herein set forth.

110,174.—UPHOLSTERING-SPRING.—Henry C. Velie, Poughkeepsie, N. Y.

Claim.—A spring, A, having its ends bent to form stars *a a'*, as herein shown and described.

110,175.—MECHANICAL MOVEMENT.—William Walker, Odin, Ill.

Claim.—The auxiliary pitman B, with its spring *d* arranged and operating at the side of the main pitman A, substantially as and for the purposes herein set forth.

110,176. — NAIL-EXTRACTOR. — Wesley G. Ward, Fayette, N. Y.

Claim.—A nail-extractor, A, consisting of a single piece of metal curved, as herein shown and described, with a claw, B, at one end for insertion under the head of a nail, and a head, D, at the other for the application of a hammer, as set forth.

110,177.—PUMP.—Wesley G. Ward, Fayette, N. Y., assignor to himself and Abram M. Flickinger, same place.

Claim.—The combination, in a lift-pump, of a trap-valve, C, and valveless piston-head E, of less diameter than the bore of the pump, substantially as herein described.

110,178.—NECK-TIE SUPPORTER.—William A. Wicks, Baltimore, Md.

Claim.—A scarf-supporter, consisting of the flexible attaching-strap B and a suitable retaining-clasp secured to the scarf, through which the strap passes, and in which it is adjustable to fixed positions, as described.

110,179.—MACHINE FOR MAKING COUPLING-PINS.—Charles H. Williams, Cleveland, Ohio.

Claim.—The above-described machine for making coupling-pins for railroad cars, provided with the dies H^1 and H^2 for flattening the handle, and the dies Q and K^1 and K^2 for forming the head or collar, and the dies V and V^2, and the dies T^1 and T^2, and the punch V^4 for necking the handle and punching the hole in it, substantially as described.

110,180. — MOP-HEAD. — Lewis Williams, Arlington, Vt.

Claim.—1. The bail C, each side thereof being formed with a circular spring, *g*, substantially as set forth.

2. In combination with the above, the lever *d*, when constructed and operated substantially as specified.

110,181.—WASHING-MACHINE.—George L. Witsil, Philadelphia, Pa.

Claim.—1. The elastic weighted diaphragm C, in combination with a tub or vessel in which clothes are to be washed or cleaned.

2. The combination of the weighted diaphragm C^1, shaft B^1, and rollers B, substantially as and for the purpose specified.

3. The combination of the block to which the center of the diaphragm is attached, the diaphragm C, the cross-bar A^1, and the vertical shaft B^1, substantially as shown and described.

110,182.—PUMP.—Henry E. Wolcott, Elbridge, N. Y., assignor of two-thirds of his right to Russell B. Wheeler and Ezekiel B. Hoyt.

Claim.—1. The valves A A', constructed as described, for the purpose set forth.

2. The valves A A', pipes C C', tin-block valves B B', flaring-mouth cylinders D and D', and chambers G G', combined and arranged to operate substantially as set forth.

110,183. — WAGON-BRAKE.—Jacob Wölfle, Cincinnati, Ohio, assignor to the Union Omnibus and Wagon Manufacturing Company, same place.

Claim.—The combination and arrangement of the pivoted levers D D' E E', links F F', and rod H, the levers D D' carrying the rubbers C C', and the whole being connected and operated substantially in the manner and for the purpose specified.

110,184.—MACHINE FOR BENDING PLOW-HANDLES.—Jacob Woodburn, St. Louis, Mo., and Samuel F. Smith, Indianapolis, Ind., assignors to Osgood, Smith & Co., Indianapolis, Ind.

Claim.—1. The handle-strap, composed of the parts *a r i s*, harness rod T, and straining block V, all constructed and arranged as shown and described, and for the purpose set forth.

2. The handle-strap *a r i s*, in combination with T-head F, strap *s*, the former B, and key G, all constructed, combined, and arranged as shown and described, for the purpose specified.

110,185.—MECHANICAL MOVEMENT.—Jacob Woolf, Burr Oak, Mich.

Claim.—The combination of the two movements, running in opposite directions, with their levers interlocking automatically, in manner substantially as described.

110,186.—PEN.—George Washington Woolley, Washington, D. C.

Claim.—In combination with a pen provided with suitable fastening, the fountain attachment shown in figs. 1 and 2 of the drawing, substantially as and for the purposes hereinbefore set forth.

REISSUES.

4,196.—TUCK-CREASING DEVICE FOR SEWING-MACHINES.—James Bolton, Chicago, Ill., assignor to The Singer Manufacturing Company.—Patent No. 46,871, dated March 21, 1865.

Claim.—1. The creasing tuck-marker hereinbefore described, consisting substantially of the spur, the fork, and the stock, all permanently connected so as to constitute a removable attachment for sewing-machines.

2. The combination of the arm of the movable member of a tuck-marker with a movable bracket, by which the said arm may be connected with a reciprocating member of the sewing-machine, substantially as before set forth.

4,197.—INKSTAND.—Samuel Darling, Providence, R. I.—Patent No. 51,931, dated January 9, 1866.

Claim.—1. An inkstand, having a reservoir arranged to be rotated upon its bed or stand, and having a dipping-cup on one side of its center of rotation, when the ink is caused to be at the proper height in the dipping-cup by revolving the reservoir, substantially as described.

2. An inkstand, having a dipping-cup, the lower part of which is smaller than the pen, and having also an ink-containing cavity or recess in the bottom of the reservoir, under the dipping-cup, substantially as and for the purpose described.

4,198. — METALLIC ROOFING. — Seymour Hughes, Hudson City, N. J.—Patent No. 103,887, dated June 7, 1870.

Claim.—1. The roofing sheets A, clipped at the corners to receive the lozenge-shaped joint-pieces B, as set forth.

2. The water-proof fabric C, interposed between the plates A B of a metal roof, to permit expansion and contraction of said plates, as set forth.

3. A roof having longitudinal and transverse projecting joints between the several pieces when the intersections of the said joints are covered by the piece B, in the manner described.

4,199. — BIT-STOCK. — Levi J. Gunn and Charles H. Amidon, Greenfield, Mass., assignees of A. C. Moore.—Patent No. 16,931, dated March 31, 1857.

Claim.—1. The stock or tool-holder herein described, consisting of the barrel A, provided with screw-thread C, socket B, and nut E, constructed, arranged, and operating in the manner described and specified.

2. The barrel A, provided with socket B and screw-segment C, in combination with the slotted nut E, constructed and operating in the manner described and specified.

4,200.—GEARING FOR MOWING-MACHINES. Joel V. Strait, Litchfield, Ohio.—Patent No. 95,950, dated October 19, 1869.

Claim.—1. The combination of clutch K and pinion-wheel H with the ratchet spur-gear G and pawled fast-collar J on shaft F, substantially as shown and set forth.

2. The combination of wheel B, having the concentric gears C D E thereon, and arranged on shaft A, with the pawled fast-collar J, ratchet spur-gear G, and clutch and gears H K I, arranged on shaft F, all operating together in the manner set forth.

4,201. — FURNACE FOR BURNING BONE-BLACK AND OTHER SUBSTANCES.—Adam Weber, New York, N. Y.—Patent No. 65,457, dated June 4, 1867.

Claim.—1. The columns A', having cast upon their upper ends the plates *s s*, in combination with the angle-plates *p p*, supporting the fire-bricks *q q*, the bed-plates *a a*, and ash-pan L, substantially as described, for the purpose specified.

2. The arrangement of the inclined partitions *h h* between the single retorts D D, and cast upon them, and between the fire-spaces *k k* and *m m* in the rear of said retorts, substantially as described, for the purpose specified.

3. The horizontal fire-flues K K' and dampers *n n*, in combination with the retorts, substantially as described, for the purposes specified.

4. The hanging rods *s*, extending in sections from front to rear under the coolers, and suspended from the plate *a* by means of the hanger *d*, arranged to support a series of retorts, as herein set forth, for the purpose specified.

5. The suspended iron ash-pan L, in combination with the furnace C, substantially as described, for the purpose specified.

6. The flanges *v*, cast upon the upper ends of the lower sections of the retorts E, arranged in such a manner as to form partitions between the upper retorts and lower retorts E and E', substantially as described, for the purpose specified.

7. The combination, with the walls G and the retorts, of the projections *w*, substantially as specified.

8. The retorts, made either in one or more parts, inclosed at the sides, tops, and bottoms, in a furnace having the openings at the top and bottom for the supply and discharge of the substance subjected to the action of the heat therein, and arranged on posts or other supports, affording access to the discharge-openings beneath, all substantially in the manner described.

4,202. — COMBINED INDIA-RUBBER AND STEEL SPRINGS.—The National Spring Company, New York, N. Y., assignee of Erastus T. Bussell.—Patent No. 10,280, dated November 29, 1853; extended seven years.

Claim.—The combination of a column of rubber or its equivalent, whether solid or hollow, with a spiral metallic spring, when the said spring is arranged external to and surrounding the rubber, substantially as and for the purposes specified.

DESIGNS.

4,503.—FRAME FOR A PAPER-BAG MACHINE. Charles F. Annan, Boston, assignor to himself and Herbert S. Merrill, Cambridge, Mass.

Claim.—The design for the frame-work of a machine for making paper bags, herein shown and described.

4,504.—BASE OF A HOT-AIR FURNACE.—Robert Boyd and James C. Hart, Rochester, N. Y.

Claim.—The design for the base of a heating-furnace, as herein described and illustrated.

4,505. — SCYTHE. — Charles P. Crossman, West Warren, assignor to himself, D. Frank Hale, and Sidney Sanders, Chicopee, Mass.

Claim.—A scythe-blade, designed substantially as above specified.

4,506.—BROOM.—Richard W. English, Buffalo, N. Y.

Claim.—The design for a broom, as herein described and shown.

4,507.—CARPET-PATTERN.—Hugh S. Kerr, Philadelphia, Pa., assignor to Israel Foster, same place.

Claim.—1. The design for the medallions A, with their borders *a* and *b*, and interior ornament *c*.

2. The design for the ornamentation B, as shown and described.

3. The design for the continuous stripe C, arranged in respect to the medallions A, as described and represented.

4. The design for the whole pattern, including the medallions A, ornamentation B, and stripe C.

4,508.—CARPET-PATTERN.—William Mallinson, Halifax, England, assignor to W. & I. Sloane, New York City.

Claim.—The design for a carpet, as shown.

4,509.—CARPET-PATTERN.—William Mallinson, Halifax, England, assignor to W. & I. Sloane, New York City.

Claim.—The design for a carpet, as shown.

4,510.—COAL-BOX.—Robert W. Newbery, New York, N. Y.

Claim.—The design for a coal-box, as shown.

4,511.—COAL-BOX.—Robert W. Newbery, New York, N. Y.

Claim.—The design for a coal-box, as shown.

4,512.—CENTER-PIECE FOR CEILINGS.—Joseph Woolman Reeves, Philadelphia, Pa., assignor to W. H. French, same place.

Claim.—1. The central ornamental medallion *a*.

2. The ornamental molding *b*.

3. The paneled belt *d*.

4. The ornamented scalloped border *f*.

5. The whole design as illustrated in and by the accompanying drawing.

4,513.—CENTER-PIECE FOR CEILINGS.—Joseph Woolman Reeves, Philadelphia, Pa., assignor to W. H. French, same place.

Claim.—1. The central ornamental medallion *a*.

2. The ornamental molding *b*.

3. The ornamented spaces *e*, within the oval beading *d*.

4. The design, as a whole, exclusive of the borders.

4,514.—SHOW-CASE.—Robert Jordan Roberts, New York, N. Y.

Claim.—1. The design or configuration of a show-case, as shown.

2. The design of the ornamental post, and shelves *e e*, within the show-case, as shown.

4,515.—COOKING-STOVE.—John R. Rose and Edward L. Caley, Philadelphia, Pa., assignors to "Armstrong Company," Port Deposit, Md.

Claim.—The design for cook-stoves, as shown.

4,516.—BRACELET.—Theron I. Smith, Attleborough, Mass.

Claim.—The design for a bracelet, consisting of the raised central band B and edge moldings *a*, of contrasting color, substantially as herein described and shown in the drawing.

4,517.—HOE.—Barna T. Stowell, Quincy, Ill.

Claim.—The design for a hoe, as herein shown.

4,518.—WOVEN FABRIC.—Royal C. Taft, William B. Weeden, and James W. Taft, Providence, R. I.

Claim.—The design for fancy cassimeres, consisting of the herring-bone stripes A, continuous lines *a*, and broken or mottled lines *b*, substantially as shown and described.

4,519.—WOVEN FABRIC.—Royal C. Taft, William B. Weeden, and James W. Taft, Providence, R. I.

Claim.—The design for fancy cassimeres, consisting of the broken lines *a a*, the line stripes A, and spotted stripes B, substantially as shown and described.

4,520.—WOVEN FABRIC.—Royal C. Taft, William B. Weeden, and James W. Taft, Providence, R. I.

Claim.—The design for fancy cassimeres, which consists in the corded stripe C and the broken or mottled line stripes *a a*, substantially as shown and described.

4,521.—PLOW-SHARE.—Richard Henry Taylor, Lincoln, Va.

Claim.—1. The above-described design or pattern for plow-shares, substantially as set forth.

2. The contour or joint B C D E, or the equivalent thereof, for fitting the mold-board, substantially as set forth.

TRADE-MARKS.

96.—RAZOR-STRAP.—Benjamin F. Badger, Everett, Mass.

97.—WAGON-AXLE.—D. Arthur Brown & Co., Fisherville, N. H.

98.—ROOT AND HERB BITTERS.—Flint & Co., Providence, R. I.

99.—MEDICAL COMPOUND.—George C. Furber, Yreka, Cal.

100.—BROOM AND BRUSH.—L. Y. Gardiner & Co., Amsterdam, N. Y.

101.—WHISKY.—W. A. Gaines & Co., Frankfort, Ky.

102.—WHISKY.—W. A. Gaines & Co., Frankfort, Ky.

103.—WHISKY.—W. A. Gaines & Co., Frankfort, Ky.

104.—WHISKY.—W. A. Gaines & Co., Frankfort, Ky.

105.—LEATHER.—George F. Page and Charles T. Page, Franklin, N. H.

106.—CIGAR, SNUFF, AND TOBACCO.—Lorin Palmer, New York, N. Y.

107.—OIL.—Charles Pratt, New York, N. Y.

108.—CUTLERY.—Robert J. Roberts, New York, N. Y.

EXTENSIONS.

WILLIAM N. WHITELEY, of Springfield, Ohio.—Letters Patent No. 16,131, dated November 25, 1856; reissue No. 1,203, dated June 25, 1861; reissue No. 1,614, dated February 2, 1864.—Division A.

"Improvement in Harvesting-Machines."

Claim.—1. The combination of the main frame of a harvesting-machine with the main ground and driving-wheels, pinion shaft on the frame, the sector-plates *f f'*, and the sliding or adjustable boxes *g g'*, or their equivalents, so that the attendant of the machine can both vary the distance of the frame from the axle of the driving-wheel and its distance from the pinion-shaft, while the axle remains in said sliding boxes in which it revolves, for the purposes set forth and described.

2. In combination with the sector-plate *f*, a projecting lip for the shipper's fulcrum-pin, substantially such as is shown and described, for the purposes specified.

3. Retaining the pinion on its shaft by means of the shipper, or its equivalent, by which said pinion is thrown in and out of connection with its clutch-pin, substantially as shown and described, for the purpose stated.

4. So connecting or combining the driver's seat of harvesting-machines with the front end of the frame of the same, (when used for reaping,) that when the driver is on his seat his weight will do either, raise and hold up the rear end of the wheel-frame, (to which the cutting apparatus is connected,) or both the rear end of the frame and the center of the finger-bar, for the purposes specified.

WILLIAM N. WHITELEY, of Springfield, Ohio.—Letters Patent No. 16,131, dated November 25, 1856; reissue No. 1,203, dated June 25, 1861; reissue No. 1,615, dated February 2, 1864.—Division B.

"Improvement in Harvesting-Machines."

Claim.—In combination with a harvester's platform, which is behind its cutting apparatus, an automatic rake, having its outer end moved faster over said platform than its inner, by a crank and pitman, providing said crank with suitable mechanism, so that the driver on his seat can lock the crank to or release it from its shaft or driving mechanism, so as to make the rake remove the gavels from the platform more or less often while the machine is in motion, and make the gavels a proper size for binding into sheaves where the grain is thin on the ground.

Extended by Act of Congress, Approved July 7, 1870.

JOHN TYLER, of West Lebanon, N. H.—Letters Patent No. 15,309, dated July 8, 1856; reissue No. 3,015, dated June 30, 1868.

Improved Water-Wheel.

Claim.—1. The curved bucket-head *c*, when the said head is combined with the series of segment-shaped buckets *d d*, substantially in the manner herein set forth.

2. The segment-shaped buckets *d d*, when the said buckets are formed with and project from the concave surface of the curved bucket-head *c*, substantially as herein set forth.

3. The combination of the buckets *d d* with the bucket-head *c*, when the said buckets are located in positions tangential to the inner guiding circle *e*, substantially as herein set forth.

4. The combination of the scallop-edged rim *f* with the lower edges of the series of buckets *d d*, substantially as and for the purpose herein set forth.

5. The combination of the elevated cover D with the curb of my improved water-wheel, when the said cover is so proportioned as to receive and sustain the upper bearing-box of the shaft of the wheel, substantially as herein set forth.

6. The combination of the detachable gate-box B with the mouth of the water-way of the water-wheel, all substantially in the manner and for the purpose herein set forth.

THEODORE T. WOODRUFF, of Philadelphia, Pa.—Letters Patent No. 16,160, dated December 2, 1856.

"Improvement in Railroad-car Seats and Couches."

Claim.—1. In combination with the movable frame *g* and the fixed frame *f*, substantially as described, the employment of the movable seats at the ends of the several divisions, substantially as described, to give the required number of seats when the couches are not used for the purpose of reclining, as set forth.

2. Converting the back of the side seats into an elevated couch, as set forth, by connecting the upper or back edge of said back to the side of the car, or to the partitions *e e* by hinged joints, or other equivalent means, and holding it up in the required elevated position by means of catches or other equivalent means, as described, in combination with the movable frame *g* and fixed frame *f*, or any equivalent therefor, as described.

3. The manner of connecting the upper or fourth couch with the car, substantially as described, so that it may be let down to be used as a couch, or thrown up to the roof of the car when not required to be used, as set forth.

4. In combination with the said upper or fourth couch the hinged or suspended step, substantially as described, for the double purpose of a step to give access to the said upper couch when used as such, and as a means of securing said couch when thrown up out of the way, as set forth.

THEODORE T. WOODRUFF, of Philadelphia, Pa.—Letters Patent No. 16,159, dated December 2, 1856; reissue No. 1,439, dated March 17, 1863.

"Improvement in Railroad-car Seats and Couches."

Claim.—1. Connecting and combining the two opposite sets of cross seats of a railroad-car with additional frames to form the required length of cushioned surfaces to form couches in each compartment, substantially as described.

2. Combining and connecting the backs of opposite cross seats of a railroad-car, when elevated to a horizontal position, to constitute an elevated couch or couches, substantially as described.

3. Combining with the backs additional frames, substantially as described, to form the required length of couch, and thereby avoid the necessity of making the backs of an inconvenient height when used as backs to the seats.

4. Connecting the backs of opposite cross seats, when elevated to a horizontal position, to form an elevated couch or couches, substantially as described, in combination with the opposite cross seats arranged so as to be convertible into couches, substantially as described.

5. Forming an elevated couch, above the couch formed by the backs of seats, by a series of hinged frames, substantially as described.

JAMES APPERLY and WILLIAM CLISSOLD, of Dudbridge, England.—Letters Patent No. 18,883, dated December 22, 1857; antedated December 4, 1856.

"Improvement in Machinery for Preparing Fibrous Substances for Spinning."

Claim.—The means herein described for conducting the roping or sliver from one preparing-machine to the other, and laying the roping or sliver in parallel lines on the feed-bands, aprons, or tables of preparing machines.

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110,187.—PLANTER AND CULTIVATOR.—Solomon Bacher, Edina, Mo.

Claim.—The combination, with the covering teeth *x x* of a seed-planter, of the downwardly-projecting cutters Y Y, arranged directly in front thereof, as and for the purpose specified.

110,188.—LAMP-WICK.—Philander Baker, Chicago, Ill.

Claim.—The lamp-wick, composed of the metallic core B and pervious covering, when constructed so as to operate substantially as shown and described.

110,189.—PACKING CAUSTIC ALKALIES.—William Henry Balmain, St. Helen's, Great Britain, assignor to the Greenbank Alkali Company, and said Company assignor to George T. Lewis, Philadelphia, Pa.

Claim.—1. The process of putting up caustic alkali by packing the same in a granulated or pulverized state, and without admixture with other materials, in cases or packages, as set forth, for the purpose specified.

2. Cases or packages of granulated or pulverized caustic alkali prepared as described.

110,190.—APPARATUS FOR GENERATING CARBONIC ACID.—Wallace H. Bate, East Somerville, Mass.

Claim.—1. A hollow valve-plug, *b*, and spindle C, with its aperture *d*, in combination with an acid-chamber, A, and alkali-chamber, B, operating substantially in the manner and for the purpose set forth.

2. The pressure-gauge I, in combination with a hollow valve-plug, *b*, and spindle C, acid-chamber A, and alkali-chamber B, substantially as and for the purpose described.

110,191.—SMUT-MILL.—J. Adam Benzing, Jr., Oswego, N. Y.

Claim.—1. The combination of the case E provided with the openings *b* and corrugations *d*, with the fan H, shaft C, all constructed and arranged substantially as described and shown for the purposes set forth.

2. The combination of the disk F, the spiders F', the bottom E', the beaters G, and the shaft C, all constructed and arranged substantially as described and shown, for the purposes set forth.

110,192, antedated December 17, 1870.—CANE-JUICE EVAPORATOR.—John S. Blymyer, Mansfield, Ohio.

Claim.—1. Constructing the concentrator B with

inclined sides *c c*, and transverse ledges *d d* reaching from side to side and joining the inclined sides, with juice-passages *e e* around alternate ends of the ledges, said passages being formed by carving out a portion of the wood appropriately, substantially as illustrated and explained.

2. In combination with a cane-juice evaporator, in which the juice is evaporated in a continuous transverse current, a heater and defecator, having hollow corrugations developed upward from the general level of the bottom, and not extending to either side or end, substantially as shown and described.

3. In combination with a cane-juice evaporator, in which the juice is evaporated in a continuous transverse current, a finisher, arranged upon a lower level, substantially as and for the purpose explained.

4. In a compartment evaporator in which the juice is provided to flow continuously from one compartment to another, the double gate *i*, with openings *o*, constructed and arranged substantially as herein described, and for the purpose specified.

110,193.—APPARATUS FOR PITCHING BARRELS. — James W. Brady, Baltimore, Md.

Claim.—1. An apparatus by which melted pitch is injected into barrels, casks, &c., to pitch the interior of the same, substantially as described.

2. An apparatus by which melted pitch, combined with a hot blast, is injected into barrels, casks, &c., to pitch the interior of the same, substantially as described.

3. In an apparatus for pitching barrels, casks, &c., a furnace having its cover constructed to form the pitch-kettle, substantially as described, for the purpose specified.

4. In combination with the furnace and kettle, the pitch-pipe M and the hot-blast-pipe and nozzle, substantially as described, for the purpose specified.

5. In combination with the hot-blast nozzle L, the pitch-pipe M, substantially as described, for the purpose specified.

6. The flanged plates Q R, constructed as described, to connect the sections of pipe, substantially as set forth, for the purpose specified.

7. The door G, constructed as described, and applied to the furnace and its cover, in the manner set forth, for the purpose specified.

110,194. — REVOLVING CANNON.— Eduard Brehm, Jersey City, N. J.

Claim.—A disk E, having a cam-shaped edge, and several single-nippled sets of cartridge holders, combined, as described, with a spring hammer, G, which automatically locks the said disk and explodes the cartridge, in the manner set forth.

110,195.—SEAL-LOCK.—Benjamin Briscoe, Detroit, Mich.

Claim.—The herein-described seal-lock, composed of the segments A B hinged together, as shown, the former provided with the slotted lug A′ and the latter with the flattened extension B′, perforated for the reception of one or more leaden rivets C, as and for the purpose set forth.

110,196.—FANNING-MILL.—Levi Bronson, Buffalo, N. Y., assignor to James Braley, same place.

Claim.—1. The arrangement of the spring E with the inner shoe B, hanger *d*, and slots *e e′*, when constructed substantially as shown and described.

2. The skeleton head D upon short shaft C, provided with the adjusting holes *b b′*, combined with the inner shoe B, constructed substantially as set forth.

3. The combination and arrangement of the inner shoe B, screw-conveyer F, bent fingers *g g* attached to the head of the inner shoe, the whole constructed substantially as and for the purpose described.

110,197.— PEW-SHELF.—David Buchanan, Philadelphia, Pa.

Claim.—The combination of trunnioned shelf A B, brackets D, arms C C, and spring catch H, when arranged on the rear of a side, F, which supports the seat F, for the purpose specified.

110,198, antedated December 9, 1870.— VISE.—Isaiah Byrd and Turner Byrd, Jr., Calvin township, Mich.

Claim.—1. The treadle I, when provided with a supplementary lever, I′, pivoted thereto, and operating in the manner described, and for the purpose set forth.

2. The construction and arrangement of the treadle I, rope J, levers E and F, and spindle D, with relation to each other and the ratchet H, and any suitable vise, as and for the purpose set forth.

110,199, antedated December 10, 1870.— IMPLEMENT.—Joseph W. Calef, Boston, Mass., assignor to himself, Harvey King, and Augustus Peabody Hutchinson, same place.

Claim.—The implement composed of a hatchet, a hammer with a forked nail-claw, a screw-driver, a pair of forceps, and a scraper, constructed substantially as and for the purposes described.

110,200.—CLEVIS.—David M. Castle, Constantine, Mich.

Claim.—1. The collar *e* upon the clevis *f*, substantially as and for the purposes herein set forth.

2. In combination, the collar *e* and clevis *f* with a ring, *d*, substantially as and for the purpose specified.

110,201, antedated December 17, 1870.— BARREL-FILLER.—Seth C. Catlin, Cleveland, Ohio.

Claim.—1. In combination with an automatic barrel-filler the tripping-lever L, with the shoulder *m*, the adjustable spring-hook U, spring T, and setting-rod X, arranged, in connection with the lever P and float G, to operate substantially as and for the purposes described.

2. The self-adjusting drop-valve I, substantially as and for the purposes described.

110,202, antedated December 16, 1870.— LIQUOR-THIEF AND MEASURE.—Seth C. Catlin, Cleveland, Ohio.

Claim.—1. The combination of the globe A, tube E, and valve C, when the same are arranged to operate substantially as and for the purposes herein shown and described.

2. A liquid measure or thief, consisting of a tube open at both ends and connected with a valve-receptacle, for the liquid to be tested or measured, as shown and described, all arranged to operate as specified.

110,203.—KITCHEN AND HOUSEHOLD SINK.— Ernest George Chormann and Edward McLaughlin, Philadelphia, Pa.

Claim.—A kitchen or household sink composed of the sink-basin A A A A, the draining-rack B, the saddles C C C C, the shoulders *a a a a*, the strainer D, the reservoir E, the plug F, the outlet G, and the receptacle H, and their several equivalents, combined, arranged, constructed, and operating in the manner and for the purposes substantially as described.

110,204.—CAR AND OTHER SPRINGS.—John W. Cochran, New York, N. Y.

Claim.—A car-spring consisting of two or more concentric spiral springs, one within the other, the central rubber-spring G, constructed to act also as an air-cushion, and the dividing-cylinders D and E, all arranged and operating substantially as shown and described.

110,205.—EJECTOR.—Hugh Coll, Millvale Borough, Pa.

Claim.—1. The inner head *d*, open at its rear end so as to leave an unobstructed opening around the steam injection-pipe for the passage of such pieces of solid matter as may be brought up by the water, such inner head *d* being connected to the outer head *a* by means of radial arms *a′*, all arranged substantially as described.

2. The nozzle-piece *m*, abutting against and in combination with the inner head *d*, substantially as and for the purposes set forth.

110,206.—GALVANIC BATTERY.—Daniel McFarland Cook, Mansfield, Ohio.

Claim.—1. A cup or cell A for a galvanic battery, constructed substantially as described, and for the purposes set forth.

2. Two or more similar elements, combined in the manner and for the purpose specified.

110,207. — CORN-PLANTER. — Richard B. Corson and Henry Corson, Henry County, Mo.

Claim.—The feed-boxes B B, feed-wheels W W, shanks R R, sliding shoes S S, wheels H H, frame P, scrapers K and X, and the wheel E having metal bars N N, said parts being arranged relatively one to the other and to the frame A, in the manner described, for the purpose hereinbefore specified.

110,208. — STOPPING-MECHANISM FOR LOOMS.—James Cowngill, Philadelphia, Pa.

Claim.—The combination of the sliding bar A with the brake C and frog D of a loom, so as to be operated by the picker-staffs *b″ b‴*, substantially as and for the purpose hereinbefore set forth.

110,209.—VEHICLE.—Charles Daniel, Brownsville, Mo.

Claim.—The improved device herein described for preventing the swaying of wagon-bodies, consisting of the rod H, secured at its rear end, in connection with one of the springs, and pivoted at its front end to the upright bar F, which is pivoted at G, and arranged to work freely at its upper end, as shown and described.

110,210, antedated December 17, 1870.— POWDER-FLASK.—Franklin E. Darrow, Bristol, Conn., assignor to Darrow Manufacturing Company, same place.

Claim.—As a new article of manufacture, the herein-described flask, constructed mainly of rawhide, substantially as described.

110,211, antedated December 14, 1870.— TRANSPLANTING-IMPLEMENT. — Azahel Davis, Lowell, Mass.

Claim.—1. The combination of the jointed bar E and rods C D, with blades A B affixed, as described.

2. The combination of the arm H and guide G and the guide curve F, with the rods C D, with blades A B affixed, as set forth.

3. The combination of the jointed bar E, and guide G, and guide curve F, with the rods C D, and blades affixed, when made substantially as described, and for the purpose set forth.

4. The jointed bar E, the guide G, and guide curve F, and the rods C D, and blades A B affixed, in connection with the forked follower L, when made substantially as described, and for the purpose set forth.

110,212. — MOTIVE-POWER APPARATUS. — Thomas Davis, Detroit, Mich.

Claim.—The combination of the wedges D with a bar-link chain, C, constructed as herein described, and a series of fixed or stationary friction-rollers, B B′, arranged in the frame A, when operating in the manner and for the purpose substantially as herein set forth.

110,213. — SECTIONAL IMAGE. — Benjamin Day, West Hoboken, N. J.

Claim.—The sectional image or bas-relief, each section of which is made, upon its upper surface, to represent a feature or detail of the whole, in combination with a binding-plate provided with a beveling orifice, all arranged and operating substantially as described.

110,214.—CAR-COUPLING.—John C. Dearborn, Candia, N. H.

Claim.—The combination, in a coupling-link support, of the block C with or without the lug *c*, arms D D, guides E E hinged to the arm F, and operated by the means and in the manner substantially as set forth.

110,215.—LUBRICATOR.—Joseph L. Dickinson, Dubuque, Iowa.

Claim.—The tube C, with the orifice L and valve D, the stem G and valve F, and the thumb-screw J, with the stem K, in combination with the reservoir A, arranged to operate substantially as and for the purposes herein shown and described.

110,216. — PORTABLE LOADING AND DUMPING-MACHINE.—William D. Dorsey, Decatur, Ill.

Claim.—1. The combination of the windlasses W *w*, chains C *c* and C′ *c′*, levers L *l*, ratchet-wheels R *r*, and pawls E *e*, substantially as and for the purpose hereinbefore set forth.

2. The box B, with the devices for loading and dumping, substantially as above set forth and described.

110,217. — WATER-FILTER. — Joseph W. Dougherty, Chicago, Ill.

Claim.—1. The improved water-filter, consisting of the hollow cylinder A, perforated pipe E, fitting-cases G, the supply and exhaust-pipe connections, and the nozzles F and L, all combined, substantially as specified.

2. The cases G and hollow cylinder A, arranged for removing and turning the cases, substantially as specified.

110,218.—MACHINE FOR BEAMING YARNS OR WARPS. — George Draper, Hopedale, Mass.

Claim.—1. The combination as well as the arrangement of the mechanism for effecting rotary motion of the yarn-beam, the same consisting of the cone-drums *u v*, the belt *t*, and the gears *w x z a′* and their shafts, with the mechanism for gradually moving the belt *t* from the smaller to the larger end of the drum *v*, such consisting substantially of the train of gears *i′ h′ g′ f′*, the cone-drums *d′* and *b′*, the endless belt *c′*, the train of gears *l m n o p*, the shafts *k c′* and *q*, the screw *r*, and the belt-shifter *s*, and with the compound motion as described, composed of the gears *a b*, the pulley *c*, the endless belt *d*, the pulley *e*, the shaft *f*, and the gears *g*, *h*, and *i* applied together and to the shaft *k*, and the yarn-guide roller C, in the manner as described and represented.

2. The combination of the screw *m′* and the belt-shifter *n′*, or their mechanical equivalents, applied to the belt *c′*, with the mechanism for effecting rotary motion of the yarn-beam, the mechanism for gradually moving the belt *t* from the smaller to the larger end of the drum *v*, and with the compound motion, as described.

3. The combination of the wedge *r′*, lever *s′*, bracket *t′*, and rod *q′*, with the lever *p′*.

4. In combination with the mechanism for effecting the engagement and disengagement of the gears *w* and *x*, and, with the gears *o p*, of the mechanism for moving the endless belt *t* along the drum *v*, a mechanism, substantially as described, or its equivalent, for effecting the simultaneous en-

gagement or disengagement of the said gears *o p*, such mechanism consisting of the wedge *r'*, lever *s'*, bracket *t'*, and the rod *q''* applied to the lever *p'* and the gear *o* in manner and so as to operate and be operated essentially as hereinbefore explained.

110,219.—SHELL-FUSE.—James Eggo, Jersey City, N. J.

Claim.—1. The improved fuse for rifle-shells herein described, composed of the screw-stock A, closed at its outer end, the hollow screw-plugs B and C, tubular bar D, short tube E, and wire F, all relatively constructed, arranged as shown and described.

2. The safety-pin G, passing in through the closed outer end of the stock A, with its inner end resting against the end of the plunger C, substantially as herein shown and described, and for the purpose set forth.

110,220.—EXTENSION TABLE.—Thomas C. Ellison, Albany, N. Y.

Claim.—In combination with an extension table, the shaft *h*, gears K J J, screw-shaft S, and sleeves G and H, when arranged substantially as and for the purpose set forth.

110,221.—FENCE-POST.—Robert M. Filson, Willsborough, N. Y.

Claim.—The stone fence-post, recessed on its face, and provided with the metal rod B and eye-bolts *d*, substantially as herein shown and described.

110,222.—HYDRAULIC MINING APPARATUS. Frank H. Fisher, Nevada City, Cal.

Claim.—The swiveled-jointed nozzle and pipes A B D E, combined, as described, with the lever F working through slotted post *f*, strap *i*, lever *e*, and pawl and ratchet *j k*, for the purpose specified.

110,223.—CUT-OFF VALVE-GEAR.—George W. Fisher and Hugh Reid, St. Louis, Mo., assignors to Gerard B. Allen & Co., and Hugh Reid, same place.

Claim.—1. The slotted rod D, with its arms E E' and *k k' k'' k'''*, and cam-rod B, with its plate C, arranged for joint operation with each other and the valves and main shaft of the engine, and constructed and operated as and for the purpose shown and specified.

2. The slotted rod D, with its arms E E' and *k k' k'' k'''*, and cam-rod B, with its plate C, and air-cylinder M, arranged for joint operation with each other and the valves and main shaft of the engine, and constructed and operated as and for the purpose shown and specified.

3. The rod K, having a right and left-hand screw and adjustable tappets P P', in combination with the cam-rod N and the eccentric on the main shaft of the engine, and constructed and operated as and for the purpose shown and specified.

4. The slotted rod D, with its arms E E' and *k k'*, &c., cam-rod B with its plate C, rod K, having a right and left-hand screw and adjustable tappets P P', arranged for joint operation with each other and the valves and main shaft of the engine, and constructed and operated as and for the purpose shown and specified.

5. The slotted rod D, with its arms E E' and *k k'*, &c., cam-rod B with its plate C, rod K, having a right and left-hand screw and adjustable tappets P P'', and air-cylinder M, all arranged for joint operation with each other and the valves and main shaft of the engine, and constructed and operated as and for the purpose shown and specified.

110,224.—HAY-ELEVATOR.—Robert Furnas, Friendswood, Ind.

Claim.—1. The traveler C, having two upper branches, each provided with a roller, *a*, a sheave, *b*, and bale, *c*, all constructed substantially as described and shown, and arranged as and for the purpose set forth.

2. In combination with the traveler C, constructed as described and shown, the rails A and A', the hand-rope D, the hoist-rope G, and the pulleys E and H, all constructed and arranged substantially as described and shown, for the purposes set forth.

110,225, antedated December 9, 1870. — WARPING-MACHINE.—Jacob Furrer, New York, N. Y.

Claim.—1. The movable collar *r*, clamped to the rod *m*, and forming a gauge to set the parts, in combination with the frame *l*, reed *h*, screw *n*, and reel *k*, as and for the purposes set forth.

2. The friction-strap applied to the wheel *w* to give a uniform tension to the warps as they unwind from the reel *k*, in combination with the screw *n*, roller *v*, and warp-beam *t*, the parts being arranged as specified, so that the reel *k* can be removed without affecting the tension-strap, as set forth.

110,226. — HAMES-FASTENER. — Anthony Gale and Henry R. Johnson, Shelby county, Ky.

Claim.—1. The sliding-link connections C C, the hinge-joints F F, and the set-screws D D, in combination with the arch or circle-piece B provided with the ring E, all constructed, arranged, and operating substantially as herein described.

2. The combination of the links G G having slots H, and connected to the hames A by hinge-joints M, the key K, and plate I with pins J, all constructed and arranged to operate substantially as described.

3. The links L L provided with holes N, and secured together by the pin O and guard-pin P, all constructed and arranged substantially as described.

110,227.—STAMP-CANCELER.—John Goldsborough, Philadelphia, Pa.

Claim.—The combination of the movable case C, a series of printing-disks or types, an inking-band passing below the type, one or more vibrating plates, with serrated edges, and the devices described for operating said plates, causing them to strike and traverse the face of a stamp while the latter is held against the cushion by the type.

110,228, antedated December 9, 1870.—TOY GUN.—John Goodale, Boston, Mass.

Claim.—The combination, in a toy gun, of the hammer *d* and projection or catch *k*, with the ejector A, provided at its rear end with a hook, which, when the ejector is pushed back, catches over the projection *k*, and, when the hammer falls, is disengaged from the said projection so as to permit the ejector to move forward independently of the hammer, as shown and set forth.

110,229.—APPARATUS FOR THE MANUFACTURE OF VINEGAR.—Theodore Grundmann, Cincinnati, Ohio.

Claim.—1. The frame B set up in a vinegar apparatus and provided with cross-bars *c*, for supporting the several layers of loose straw or other material, substantially as herein shown and described.

2. A vinegar apparatus consisting of layers of loose straw or other loose material, for a proper distribution of the liquid, as set forth.

3. The pivoted trough C, provided with the adjustable weight *i*, to be made self-dumping, substantially as herein shown and described.

110,230. — COOKING-STOVE. — William Hailes, Albany, N. Y.

Claim.—1. The depressed water-reservoir C, having a vertical flue arranged in direct relation to the back wall of the stove, and with the concave shelf B, in combination with the rim or skirting *d* and studs *f*, substantially as described.

2. The rim *d*, made of one piece, in the form of a skirting, with a bridge, *g'*, and with pipe-collar, in combination with a depressed reservoir, C, and vertical flue, *e*, as shown and described.

3. The bridge *g'* of flange *d*, when it is tapered on opposite sides of its pipe-collar, as described, for the purpose set forth.

110,231.—TUMBLER-WASHER.—Albert Hallowell, Lowell, Mass., assignor to Gustavus D. Dows, Calvin Dows, and George S. Cushing.

Claim.—In connection with the water-delivering pipe, provided with a perforated cap or top, substantially as described, the upward-seating valve *g*, having a projecting rod, *m*, when arranged and operating in the manner and for the purpose specified.

110,232.—BARREL.—Thomas Hanvey, Elma, N. Y.

Claim.—The two-ply barrel, the heads of which are composed of two or more thicknesses, in combination with the hoops or clamps *a a a*, arranged on the outside, and secured to the barrel by screws *c c*, said screws forming the rests for the heads, the whole constructed substantially as and for the purpose set forth.

110,233.—REPEATING CANNON.—James H. Hedrick, Wythe county, Va., assignor of one-third his right to J. B. Barrett, same place.

Claim.—1. The combination of the cylinder G, having a light circular, hexagonal, or many-sided rim, with curved arms and a central eye, and between each arm one or more rows of six or more perforations, a less number, for the reception of cartridges, with spring to hold cartridge in place, when all constructed and arranged as shown, for the purposes specified.

2. The magazine L, provided with the springs *m* and grooves *h*, and bar *o*, for the purpose herein described

3. The combination of shaft E, provided with the cams or tappets *i*, with the hammers N and springs K, when arranged substantially as shown.

4. The combination of the cam F, upon shaft E, with the cylinder G, when operating as shown, for the purpose set forth.

5. The arrangement of the shaft E, cranks H, connecting-rods or links *f*, cross-bar *k*, and rammers I, substantially as shown, for the purpose set forth.

6. The combination and arrangement of the frame A, box B, barrels *l*, cylinder G, and magazine L, with the hammers N, cams *i*, shaft E, connecting-rod F, cross-bar *k*, and rammers I, all constructed and operating substantially as shown and described, for the purpose set forth.

110,234.—FENCE.—William D. Hillis, Elgin, Ill.

Claim.—The improved fence herein described, consisting of the rods *a a*, plates *b b*, wires *f f*, posts A A, pickets *d d*, cap-rail *h*, and straps *i i*, each constructed and arranged as specified.

110,235. —WASHING-MACHINE.—Alexander Hilton, Strathroy, Canada.

Claim.—The arrangement and combination of the box A, frame B, corrugated drum C, crank D, slots F F, journal-boxes G, rollers H H', apron I, rod K, slots L, and hooks M, when each part is constructed substantially as described, and operating as and for the purpose set forth.

110,236.—SAW-MILL.—Jacob R. Hoffman, Fort Wayne, Ind.

Claim.—1. The weighted lever D, in combination with the adjustable fulcrum-screw *d'*, and auxiliary frame B carrying the upper saw-pulley C, all constructed and arranged to operate substantially as described.

2. The hand-temper screw-shaft E, having stop-nut *b''*, in combination with the boxes *c'' c'*, shaft *e*, and upper saw-pulley C, all arranged to operate substantially in the manner and for the purpose described.

3. The plate *f*, having projections *f' f''*, and temper-screws *f' f''*, in combination with the frame B, carrying the shaft *e* and saw-pulley C, constructed and arranged substantially in the manner and for the purpose described.

110,237.—MACHINE FOR PREPARING FIBERS FROM SISAL-GRASS AND LIKE SUBSTANCES.—George E. Hopkins and William B. Shedd, Boston, Mass.

Claim.—1. The movable scraper N and stationary scraper M, constructed and operating in connection with each other, substantially as herein shown and described, to clean the fibers as the crushed leaves or stalks are drawn between them.

2. The combination of the crushing-rollers B, scrapers M N, rubber rollers H, and revolving brush K, with each other and with the frame A, substantially as herein shown and described, and for the purpose set forth.

3. The combination of the endless apron R with the revolving brush K, rubber rollers H, scrapers M and N, and crushing-rollers B, substantially as herein shown and described, and for the purpose set forth.

4. The combination of the rack or frame X, spring E', shaft Y, ratchet-wheel Z, and pawl D', with the band B', and endless apron R, substantially as herein shown and described, and for the purpose set forth.

110,238. — HOISTING APPARATUS.—Henry H. Hunt, Saratoga Springs, N. Y.

Claim.—The application, in hoisting-machines, to the endless chain D, of an automatically-reversible yoke L pivoted to a cross-bar M, and hung on the outside of the chain, as described, for the purpose of enabling the hods to be carried up or down upon the same yokes and without any manipulation.

110,239.—SHELF-BRACKET AND CLOTHES-HOOK. — Henry E. Hutchinson, South Brooklyn, N. Y.

Claim.—An improved combined shelf-bracket and clothes-hook A B C, constructed and operating substantially as herein shown and described, and for the purpose set forth.

110,240.—FOOT-REST AND BOOT-JACK COMBINED.—David H. James, Cincinnati, Ohio.

Claim.—1. A foot-rest, composed of the parts A and E, and made adjustable as to height and position, substantially as described.

2. In combination with the foot-rest, the staple C and the recess D, substantially as and for the purposes set forth.

110,241, antedated December 15, 1870.—LAMP-BURNER.—Walter Proctor Jenney and George Washington Taylor, Fairhaven, Mass.

Claim.—1. The deflectors *n n*, applied on the inside of the shell at the base of the slot *o*, and arranged in relief from the wick-tube, in combination with the air-space between the ring *h* and the collar D, substantially in the manner shown and described.

2. The combination of the specified deflectors *n n* with the shell A *a b o*, such shell being of the form herein described.

3. The device C, constructed with a collar, *p*, curved spring fingers *e e*, and air-passages *i*, in combination with the ring *h*, shell A *a b o*, and the chimney N, all in the manner and for the purpose described.

4. The chimney-holding and retaining device C, with the spring fingers *e* formed on it in such manner that the base of the slots between the fingers forms air-passages, both inside and outside of the

lamp-chimney, when such chimney is placed around the burner, substantially as described.

5. The arrangement of the flanged shell upon the flanged diaphragm G and under the springs *e*, substantially in the manner described, so that the shell may be readily detached when necessary.

110,242.—HOODED GARMENT.—Ambrose Keating, Boston, Mass., assignor to Benjamin T. Stephenson, same place.

Claim.—The described new or improved manufacture of hooded garments, in which the hood has its opening or mouth in, through, and down the cape, all as set forth and represented.

110,243.—TOOL FOR FORMING MOUTHS OF GLASS JARS.—Goveneur M. Keeffer, East Birmingham, Pa., assignor to himself and William H. Barry, same place.

Claim.—1. The plug *a*, having a screw-thread or inclines, *b*, for forming a like thread or inclines in the mouth of the jar, and a shoulder, *c*, for making a seat in the mouth of the jar for the reception of a gasket, substantially as described.

2. The threaded plug *a*, with its shoulder *c*, in combination with a plate, *d*, rigidly attached to said plug, and revolving therewith, substantially as described.

3. The threaded plug *a*, with its shoulder *c* and plate *d* rigidly attached thereto and revolving therewith, in combination with the rod *e* and swivel *f*, substantially as set forth.

110,244.—PRINTING-PRESS.—John W. Kellberg, Philadelphia, Pa.

Claim.—1. In a perfecting printing-press, printing without intermission from a continuous roll, so combining and arranging the various cylinders that the paper shall be in continuous contact with their convex surfaces until cut into sheets for delivery, so as to avoid the necessity of using any carrying tapes, belts, gripers, or bridges, substantially as shown and set forth.

2. The roll of paper *b*, in combination and rolling contact with the first impression-cylinder B, as and for the purposes substantially as described.

3. An air-blast, substantially as described, for the purpose of removing the rear end of the sheet from the reach of the gripers in seizing the forward end of the roll.

4. Two delivery apparatus, one running at a faster speed than the other, as and for the purposes substantially as described.

5. A circular serrated knife, for slitting or perforating the sheet, operated as and for the purposes substantially as described.

110,245.—BLOTTING-PAD.—Augustus Burr Kellogg, Buffalo, N. Y.

Claim.—1. In a blotting-pad having wedge-shaped notches *a a'* in each end, and corresponding wedges *c c'* fitting therein, the elastic band *d* and recesses *e e'* on top, by which the wedges are retained in place, for the purpose hereinbefore set forth.

2. In combination with the block A and band B, the band C, to fit on the hand between the thumb and fore-finger, so as to retain the pad on the ball of the hand and to prevent slipping, as hereinbefore specified.

110,246.—HARVESTER-DROPPER.—Thomas W. S. Kidd, Springfield, Ill.

Claim.—1. In combination with the dropper E, the means employed for imparting thereto a vertical and semi-rotary horizontal movement, consisting of the shaft F, the sleeve H provided with the slot A, the stud *f*, the guide I provided with the stop *z*, the levers K and N, the swiveled block M, and the connection *a*, substantially as shown and described.

2. In combination with the dropper E, the means employed for tilting the same downward at its rear end, consisting of the false head O provided with the slots *e* and springs P, and hinged to or upon said dropper, the lug R, and recess S, substantially as shown and set forth.

110,247.—MODE OF BALANCING CYLINDERS, PULLEYS, &c.—William Kitson, Lowell, Mass.

Claim.—A balancing tube, *b*, provided with plugs or stopples *d*, and applied to the cylinder or pulley, as shown and described, whereby such cylinder or pulley may be balanced by the tube *b* or by additional balancing material *c*, in the manner and for the purpose specified.

110,248.—SASH-HOLDER.—Andrew J. Kramer, Marion, Iowa.

Claim.—The combination of rod *a*, bolt *b*, and spring *c* with lever C, when said lever is slotted and curved and holds the bolt withdrawn, in the manner described.

110,249.—CLAY RETORT FOR THE MANUFACTURE OF GAS.—Frederick C. Krauss, New York, N. Y., assignor to Samuel A. Walsh, same place.

Claim.—1. A clay-retort, having a vitrified or non-porous portion within or between two clay surfaces, substantially as and for the purposes set forth.

2. In the construction of clay retorts, the use of kaoline, silica, and feldspar, combined substantially in the proportions, and placed within the body of clay, substantially as and for the purposes set forth.

110,250.—SEWING-MACHINE.—Lebbeus W. Lathrop, Poughkeepsie, N. Y.

Claim.—1. The combination, with the needle, of the two loop-spreaders, constructed and operated as described, to spread and hold the loop for the passage of the spool of locking-thread and its carrier, as specified.

2. The combination, with the shafts B and M, of the disk or a crank, N, connecting-rod L, bell-crank K, and pin I, all constructed and arranged substantially as specified.

3. The combination of the tubes O P, radial plates U, and grooved arm V, constituting the spool-carrier, all substantially as specified.

4. The combination, with the spool-carrier, of the fixed rod *z*, detachable rod *y*, and the guide *z*, substantially as specified.

5. The combination, with the spool-carrier, of the oscillating and reciprocating arms *g h*, sleeve *i*, and spirally-shaped way *j*, substantially as specified.

6. The combination of the spool-carrier, the oscillating and reciprocating driver, and the loop-spreaders, all substantially as specified.

7. The combination, with the needle and the loop-spreaders, of the looper 1, when constructed, arranged, and operating substantially in the manner described.

8. The combination, with the looper-stock 2 and lever 7, of the sliding bar 6, friction-roller 5, bell-crank 3, connecting-rod 4, and spring, all substantially as specified.

9. The driving-shafts M and M', the one gearing with and driving the loop-spreaders, the spool and the looper, and the other connected with and driving the needle-operating devices, and both connected together by the stud 25 and projection 24, and operating in the manner described, for shifting the motion of the machine for working forward or backward, all the said devices being combined substantially as specified.

110,251.—ADJUSTABLE PLOW-JOINTER.—John M. Leonard, Marshall City, Mich.

Claim.—The combination, in an adjustable plow-jointer, of the point A, the mold-board B, the shank C, and the standard D, wherein the mold-board B is pivoted to the lower end of the shank C by the bolt *a*, and the shank C is provided with the slots *c*, and secured to the standard D by the bolt *d*, and

the several parts named are constructed and arranged substantially as described and shown.

110,252.—MACHINE FOR FILLING OR STARCHING WOVEN FABRICS.—Thomas Lewis Livsey, Bury, Great Britain.

Claim.—1. The roller *b*, revolving in a trough and carrying the cloth through the starch or filling material, in combination with a revolving brush, *g*, and a doctor-plate, *f*, acting on the surface of the cloth while it is in close contact with the roller, substantially as described.

2. The trough *c*, its agitator *e*, and roller *b*, in combination with the brushes *g h h*, heaters *i*, and fan, all arranged and operating as specified.

110,253.—HOSE-COUPLING.—Conrad Locher, Oroville, Cal., assignor to himself and George C. Perkins, same place.

Claim.—The combination of the parts A and B, thimbles C and D, and the hose ends, the thimble C being provided with orifices for admitting the water beneath the hose end to form a water-tight packing, as described.

110,254.—CAR-SEAT LOCK.—Adam Lœffelholz and Anton Prier, Milwaukee, Wis.

Claim.—The notched bolt G, having slot M and pin S, and the cam-spindle N, having pin thereon, combined with a spiral spring, K, working in a case, P, as described.

110,255.—TIGHTENING-STRAP FOR BARRELS.—Samuel Macferran, Philadelphia, Pa.

Claim.—1. The shield K, arranged and operating in relation to the tightening-screw H, substantially in the manner and for the purpose above described.

2. The combination of the shield K with the stud G, whereby the ends of the strap D are held in position, substantially as above set forth.

110,256.—CULTIVATOR.—Isaac B. Mahon, Dunkirk, Ohio.

Claim.—The arrangement, in a cultivator, of a bi-branched pivoted beam C' C' and detachable guides D', as set forth, for the purpose of enabling the fifth plow A' to be readily removed or lifted up simultaneously with the other plows.

110,257, antedated December 15, 1870.—CULTIVATOR.—Isaac B. Mahon, Dunkirk, Ohio.

Claim.—1. The combination of clip E and washers G F with braces D D and wheels B B, as and for the purpose described.

2. The curved connecting-bar I', perforated as set forth, combined with a pair of pivoted cultivator-beams I J, for the purpose of rendering the latter susceptible of adjustment with respect to each other in a vertical direction.

110,258.—BASE-BURNING STOVE.—Henry C. March, Limerick Station, Pa.

Claim.—1. In a base-burning stove, the arrangement of the air-chamber D surrounding the fire-pot, upper hot-air chamber F', and connecting-tubes F, all substantially as described.

2. The door G, having at its lower edge a central projection, *m*, of the form described, in combination with the stove-body, having recesses *m'* and projections or lips arranged below said recesses, as specified.

3. The two sets of staples *d d'*, arranged within the base of the stove, as set forth, in combination with the grate and its hooks, or their equivalents, as described.

4. The bearings *e e' e''*, arranged as described, in combination with the adjustable rod L and the hinged grate, as set forth.

5. The supplementary reservoir H', having a flange, *g*, adapted to lugs *g'* of the reservoir proper, as set forth.

6. The valve *s*, covering the reservoir, in combination with the apertures *t*, forming a communication between the top of the stove and chamber M.

7. The valve *s*, arranged substantially as described, and as shown in fig. 10 of the drawing, in respect to the apertures *u*.

8. The combination and arrangement, substantially as described, of the annular valve *j*, apertures *i*, damper *k*, and pipe *k'*.

110,259.—MODE OF BALANCING SHAFTS.—Henry Martinson, Hawksville, Canada.

Claim.—The balance for cylindrical bodies, composed of the springs C C and bearings *a a*, and combined with the jointed driving-shaft, substantially as herein shown and described.

110,260.—FLIER FOR SPINNING.—Thomas Mayor, Providence, R. I.

Claim.—That improvement in fliers which consists in a tube or its equivalent, constructed as described, which forms an extension of the neck downward below the junction of bows B B, where it is provided with a delivery-orifice, substantially as herein described.

110,261.—PLATFORM WEIGHING-SCALE.—Richard J. McKeone, Inverness, Mich.

Claim.—1. The arrangement of the bars A, short arms F, points E, long arms G, and lever I, all substantially as specified.

2. The combination, with the bar L, of the weighted levers N N', links R, and rings O, substantially as specified.

110,262.—MACHINE FOR BENDING WOOD.—John McMichael, Philadelphia, Pa., assignor to Wright Brothers & Co., same place.

Claim.—The grooved cylinder A, constructed as herein specified, in combination with the standard S, clamps *c c c*, spring levers L L L, screw-bolts *b b b*, and operating substantially as and for the purpose set forth.

110,263.—CLOTHES-PIN.—William Miller, Boston, Mass.

Claim.—The wooden jaws A B, beveled at C, hollowed at D, and squared at E, combined as described with the non-corrosive spring F, having legs G and coil H, for the purpose specified.

110,264.—CARTRIDGE.—Richard R. Moffatt, Brooklyn, N. Y.

Claim.—1. The within-described process of manufacturing consumable cartridge-shells, substantially as and for the purpose herein specified.

2. The combination of the combustible packing-wad F with the combustible shell or case A and the non-combustible base or gas-check B, substantially as and for the purpose herein set forth.

110,265.—METALLIC CARTRIDGE.—Richard R. Moffatt, Brooklyn, N. Y.

Claim.—A cartridge with one or both faces of the priming fulminate-pocket roughened, substantially as and for the purpose set forth.

110,266.—PERCUSSION-PRIMER FOR CARTRIDGES.—Richard R. Moffatt, Brooklyn, N. Y.

Claim.—The anvil of a percussion-cap or primer, when composed of a consumable material as herein described, and applied in a liquid or plastic state, substantially as and for the purpose specified.

110,267.—BOBBIN-WINDING AND NEEDLE-SHARPENING ATTACHMENT FOR SEWING-MACHINES.—Richard R. Moffatt, Brooklyn, N. Y.

Claim.—A bobbin-winding attachment, substantially as herein described, the portion thereof carrying the driving-wheel being made hollow, and provided with a clamp to hold a needle, substantially as and for the purpose set forth.

110,268. — MODE OF APPLYING MOTIVE-POWER TO MACHINERY. — Richard R. Moffatt, Brooklyn, N. Y.

Claim.—Giving continuous motion to a wheel, screw-propeller, &c., by means of a piston which passes through or works in the hub or axis of the wheel, substantially as and for the purpose herein set forth.

110,269.—CAR-COUPLING.—James C. Morris, Greeneville, Tenn.

Claim.—The hooks *c*, springs *d*, and triangular bolt *e*, furrowed in V-shape in its rear side, all constructed and arranged as specified.

110,270.—MACHINE FOR MAKING CIGARS.—Robert Neisch, Allentown, Pa.

Claim.—1. The wheel D b^1 c^1, pinion *q*, arbor *p*, pinion O, rolls *i j*, and pinions *n n*, combined as described, with the apron K, for the purpose specified.

2. The disk D b^1 c^1, combined, as described, with pinion *q*, shaft *p*, pinion *u*, wheel V, shaft H, and spur-wheel *w*, for the purpose of moving the rack I forward in one direction, as set forth.

3. The disk D d^1, combined, as described, with pinion a^1, shaft *z*, pinions *y x*, shaft H, and pinion *w*, for the purpose of moving rack I in a backward direction.

4. The disk D b^1 c^1 d^1, combined with the forwardly-moving train of mechanism, having the partially-toothed wheel V and the backwardly-moving train of mechanism, all as specified, for the purpose of reciprocating the rack I, in the manner described.

5. A cigar-mold formed of a fixed lower frame, *g*, and hinged upper frame *h*, combined, as described, with the conical rolls *i j*, endless apron K, and spring-roll *l*, to form a cigar-shaping device, operating as described.

6. The combination, with the hinged two-part mold *g h*, of lever G, operated by a cord, e^1, a lever, J, and a cam, f^1, as described, for the purpose of clamping and allowing the mold to open at the times and in the manner described.

7. The end plate *m*, applied to the cigar-pointing molds, for the purpose of finishing the point of the cigar, substantially as herein shown and described.

8. The segmental, partly-conical block g^2, applied to the lower part of the mold, for forcing the entire bunch into the heading cavity, as set forth.

9. The carrier L, combined, as described, with a pair of rotary-fan spreaders, M P, placed in frames g^1 g^1 at the ends thereof, and middle spreaders N O, as and for the purpose described.

10. A rotary spreader for cigar-making machines, formed of roller h^1, with soft-felt wings j^1, and hung in a hinged frame, i^1, to be operated in the manner described.

11. The combination, with frame i^1, of yoke l^1, cord m^1, lever n^1, cam O^1, and lever p^1, on shaft C, for the purpose of raising the spreader M at the time and in the manner described.

12. The roller h^1 and frame i^1, combined, as described, with pulley b^1, cord u^1, attached to frame A, and spring V^1, for the purpose of causing the wings of fans to spread the wrapper on the carrier, and to be automatically prepared for a succeeding operation, as set forth.

13. The combination, with a rotary spreader, of the projecting blocks w^1, fitted into the supports g^1 g^1, for the purpose of graduating the distance to which the said spreader may be dropped.

14. The spreaders N and O, combined with the reciprocating carrier L, substantially as herein shown and described.

15. The cushioned spring platform R, applied to the cutter Q, for holding the wrapper smooth upon the carrier, substantially as and for the purpose herein shown and described.

16. The flat spreader N, combined, as described, with hinged frame z^2, cord y^1, lever z^1, pivoted catches c^2 b^2, and cams c^3 d^2, for the purpose of raising and lowering the said spreader.

17. The paste-roller f^2, provided with projections where it is to receive and apply paste, substantially as herein shown and described.

18. The intermittently-reciprocating cutter Q, combined, as described, with the sectional elastic platform R and grooved carrier L, for the purpose of cutting the wrapper on the end of cigar after the said wrapper has been pasted.

19. The sliding frame s^1, holding the paste-roller f^2, and operated by the cord b^3 and spring d^3, substantially as herein shown and described.

110,271.—STAVE-JOINTER.—John Newman, Cleveland, Ohio, administrator of the estate of Samuel Newman, deceased.

Claim.—1. The combination of the foot-treadle T, its connecting rods and spring-lever clamp-jaws R, with the adjusting reciprocating lugs M upon inclined part of bed plate H, constructed and arranged to operate in the manner and for the purpose described.

2. The combination of the hand-lever Q, rock-shaft O, arms N, pivoted links P, and sliding lugs M, constructed and operating in the manner and for the purpose described.

3. The combination of the hand-lever L, shaft K, connecting links J, reciprocating bed H carrying the stave A and its clamping devices, with the revolving planing cylinder B having knives F, constructed and operating in the manner and for the purpose described.

110,272. — MUSIC-STAND.—James Newton, Hanover, N. H.

Claim.—The combination and arrangement of the legs *f* f^1 f^2, of the described shape, the tube or standard *a* with the screw *k* attached, the rod *b* supporting the desk *d*, and the drop *h*, all combined and arranged for the purpose and in the manner hereinbefore set forth.

110,273, antedated December 9, 1870.—CORSET-CLASP AND SPRING. — Peter H. Niles, Boston, Mass.

Claim.—1. The double-acting corset-clasps, having the orifices *d d'*, and connected by the right-angled slots *e*, substantially as described.

2. A corset-spring, having graduated corrugations *a*, when the corrugation is situated at the center curve of the spring, substantially as described.

110,274. — FURNACE-STOVE. — James Old, Pittsburg, Pa.

Claim.—1. A rotating grating, *n n'*, the outer ring of which has air-passages, *s s*, in combination with air-passages leading thence to an annular chamber, *g'*, between the fire-pot *f* and stove-shell *b*, substantially as described.

2. A ring, *c*, the upper end of which forms a part of the stove-grating, when combined therewith so as to operate, by a direct vertical or vertical and rotary motion, in agitating the fire, substantially as set forth.

3. The ring *c* and ash-pit *a*, the one having an arrangement of lugs and the other a corresponding arrangement of inclines, for securing a vertical and intermittent rotary motion of the ring, substantially as described.

4. The circular rotating grate *n n'*, in combination with the devices of the last foregoing claim, arranged substantially as set forth.

5. In a cast-metal stove-top, *d*, a reverberatory tile, *h*, hung on supporting-lugs *i*, substantially as described, so as to leave an open chamber above as well as below such tile, and thereby secure the maximum radiation of heat.

110,275. — PREPARATION OF COD-LIVER OIL.—Michael O'Reilly, New York, N. Y.

Claim.—A compound, formed of equal parts of cod-liver oil and rendered fat, mixed at a temperature of 180° Fahrenheit, as described.

110,276.—VAPOR-BURNER.—Jason J. Palmer, Pittsburg, Pa.

Claim.—1. The T-shaped spreader B, constructed with a base-portion, *c'*, and guard-wings *c c*, in combination with the perforated nipple *a* and the spreader A, substantially as described.

2. The elongated rivet *g*, serving as a heater, and also as a means of securing the spreader B to the nipple *a*, substantially as described.

3. The spreader B, the spreader A, the nipple *a*, and the cup A^1, constructed and combined substantially as described.

110,277.—MANUFACTURE OF COLORS AND THEIR APPLICATION TO FABRICS.—Alfred Paraf, New York, N. Y., assignor to Edward S. Renwick, trustee, same place.

Claim.—1. The manufacture of colors for printing and dyeing fibrous and textile articles, of coloring matter, and a color-liberating salt, substantially as before set forth.

2. The process of applying colors to fibrous and textile articles by means of the coloring matter and a color-liberating salt, substantially as before set forth.

110,278.—COTTON-PRESS.—Isaac N. Patten and Eli W. Long, Shelby county, Tenn.

Claim.—1. The combination and arrangement of the screw B, nuts *b b*, toggles *c c*, levers *a a*, brace *e*, and platen D, substantially as shown and described.

2. The combination and arrangement of the screw B, nuts *b b*, toggles *c c* and *d d*, levers *a a*, brace *e*, platen D, braces *f* and *g*, and rods *h*, substantially as shown and specified.

110,279.—HARVESTER-RAKE.—Henry Pease, Brockport, N. Y., assignor to himself and Henry W. Seymour, same place.

Claim.—1. The adjustable yoke E, supporting the reel, in combination with the stationary reel-post B, tubular sleeve C, and driving gears D^2 D^3.

2. In combination with the wheel D and rake-carrier H, the tubular clutch J provided with arms *j*, which serve to connect the rake with the bevel-wheel and sleeve, substantially as set forth.

3. The hooks *i* on the rake-arm, in combination with the ears or hooks j^2 on the shipping-clutch, for preventing the rake from being thrown out of gear in its backward or return movement, as described.

4. The spring-catch *g*, in combination with the rake-arm I and carrying-wheel D, for locking the rake-arm down during its passage over the platform, as described.

5. The tripping-standard *g'*, in combination with the spring-catch *g*, arranged and operating substantially as described.

110,280.—ROCK-DRILL.—Charles Peck, New Haven, Conn., assignor to himself and Milo Peck, same place.

Claim.—1. The mechanism for automatically regulating the feed in drilling-machines, consisting of the rod G, with the arm N, and the cam O, and the vibrating lever I, constructed and operating substantially in the manner herein described and specified.

2. The mechanism for disconnecting the feed, consisting of the collar K on the screw-shaft, the collar L, and the pin *e*, constructed and operating substantially as described and specified.

3. The mechanism for automatically stopping the feed of the drill at any point, consisting of the adjustable stop J, and the rod G with its stop *u*, constructed and operating substantially in the manner herein described and specified.

110,281.—GANG-PLOW.—Thomas Peppler, Hightstown, N. J.

Claim.—The gang-plow, composed of the square axle A, adjustable box C, caps *c c*, movable pendants D D, the double joints or jaws E E, constructed for the purpose herein set forth.

110,282. — COOKING-STOVE.—Joseph Pratt and James H. Wentworth, Boston, Mass.

Claim.—1. The arrangement of the removable hearth *a* with the air-chambers *b*, as and for the purposes hereinbefore set forth.

2. The projections *e e*, for the purpose of accommodating the pipes *d d* leading to the water-front *c*, substantially as described.

110,283.—CUTTER FOR PLOWS.—George F. Pykiet, Fairfield, Ill.

Claim.—The cutter G G, having its curved end resting upon the point F of the plow, beveled along its upper edge on one side and aligned with the landside on the other, as and for the purpose described.

110,284. — SPRING-BED BOTTOM.—James Henry Quackenbush, Luddington, Mich.

Claim.—The ribs C, provided with shoulders E and the elastic strap F, in combination with the head and foot-boards of a bedstead, and the bottom slats D, when arranged to operate as herein set forth.

110,285, antedated December 9, 1870.—BOOT-CRIMPING MACHINE.—John Rausch, Huntington, Ind.

Claim.—The combination, with a crimping-board D, of a lever B B, constructed as shown in fig. 1 of drawing, and provided with set-screws C E, as and for the purpose described.

110,286. — CHAMBER-VESSEL. — Vernon Rhodes, Memphis, Tenn.

Claim.—As a new article of manufacture, the chamber-vessel *a*, provided with the partition *b*, substantially as described.

110,287.—CONSTRUCTION OF ORNAMENTAL-HEADED PICTURE-NAILS. — Thomas C. Richards, New York, N. Y.

Claim.—The attachment of the body A to the shank B by means of the metallic back D and nut C, in the manner substantially as described.

110,288. — LINIMENT FOR THE CURE OF RHEUMATISM. — Archibald A. Riddick, Franklin, Va.

Claim.—The liniment prepared of the ingredients in the proportions and manner substantially as herein set forth and described.

110,289. — INJECTOR. — Charles F. Root, West Springfield, Mass.

Claim.—An injector, consisting of the case C, having the flanges F and G and ribs T T, &c., and check-valve S, with its spout L, in combination with the nozzles K, V, and O, the parts being arranged and constructed substantially in the manner and for the purpose shown and described.

110,290.—COMBINED COTTON-PLANTER AND GUANO-DISTRIBUTER. — John E. Ross, Greenesborough, Ga.

Claim.—1. In planters and guano-distributers, the beam A, arched over the center to receive therounder the seed-hopper, and having a vertical projection to support the horizontal pinion M, as shown and described.

2. The horizontal pinion M, having a crank-pin attached thereto, and arranged upon a vertical stud of the beam, combined as described, with a stirring device, N O P R, for the purpose specified.

3. The bottom-slotted and curved hopper Q S S, combined with vibrating fingers R, (to separate the seed and keep up a steady discharge current,) and the narrow guide-spout T, to converge the seed to the center of furrow, as described.

110,291. — FANNING-MILL. — Frank Sauer and John Coerver, Waterloo, Ill.

Claim.—The fan B, shaft C, driver F, pulleys D, cranks R, hangers G, connecting-rods I, belts E and P, and conveyer M, when said parts are construct-

ed, combined, and arranged for operation, substantially as and for the purpose described.

110,292.—FAUCET.—Matthew Scrannage, Medford, and Wallace H. Bate, East Somerville, Mass.

Claim.—The combination of the cap C with its recess *k*, the spindle *b*, packing *l*, and washer *m*, all constructed and applied to a cock, substantially in the manner and for the purpose set forth.

110,293.—SPRING FOR BEDS, SOFAS, &c.—John Sears, Cortland, N. Y.

Claim.—The spring C, with screw-point D and cap H, in combination with the base A, with concave W and cone R, as shown and described.

110,294.—VALVE FOR ENGINES.—William C. Selden, Brooklyn, N. Y., assignor to Adam Carr, Paterson, N. J.

Claim.—The secondary valve *n* and passage-ways through it, substantially as described, in combination with the steam-valve *m*, pistons *p*, cylinders *g g'*, and steam and exhaust-ports, arranged substantially as and for the purposes set forth.

110,295.—HOOP-RACKING MACHINE.—Russel M. Shaner, Genoa, Ohio.

Claim.—The combination of the channeled bench, pusher, inclined plane, rollers G and H, and the vertically-reciprocating frame and foot-lever, all substantially as specified.

110,296.—CHURN.—John Shappell, Lynnville, Pa.

Claim.—The arrangement of the frame A A B, removable box F, bars I I', gear G' D, shaft C, bar L, shaft G, and dasher H, as and for the purpose set forth.

110,297, antedated December 16, 1870.—PUMP.—Nathaniel P. Sheldon, San Francisco, Cal.

Claim.—1. The segmental cylinder or barrel, in combination with the oscillating plunger or piston, substantially as herein described.

2. In combination with the segmental cylinder, the air-chamber or condensing-chamber inclosing the plunger or piston, substantially as herein described.

110,298.—STEAM-GENERATOR.—George W. Shields, Louisville, Ky.

Claim.—The arrangement of the chamber *e*, pipes *h*, *k*, *o*, *p*, and *q*, boiler A, and pipe *m*, as specified.

110,299.—PRESS FOR FORMING SOLES FOR PACKS.—Warren G. Slater, Hart, Mich.

Claim.—The combination of the divided block A provided with the opening B, the bolts C, and thumb-nuts *b*, with the follower D, when constructed and arranged substantially as described and shown, for the purpose set forth.

110,300.—SLIDE-VALVE.—James Smart, Stratford, England.

Claim.—1. The construction of a slide-valve having ports or openings on two opposite sides, through which the steam is admitted to the interior of the valve, or through the ports on one side only, the said valve being formed with a chamfer on one or both such sides, substantially as described and illustrated by the accompanying drawing.

2. The construction and arrangement of the hollow steam chamber, against which the slide-valve works.

3. The arrangement of a hollow facing, against which the slide-valve works, for the purpose of adjustment and draining.

4. The combination of the slide-valve, steam-chamber, and hollow adjustable facing, substantially as described and illustrated.

110,301.—GRAIN-SCOURER.—Austin Smith, Valmont, Colorado Territory.

Claim.—1. The spiral brush C and concave screen E, combined with the spiral flange D, arranged as and for the purpose described.

2. The rotating scouring-brush and concave screen combined with a spirally-flanged shaft H I arranged thereunder, in the receiving-chamber, as and for the purpose described.

110,302.—CULTIVATOR.—Peter E. Smith, Scotland Neck, N. C.

Claim.—1. The lifting-arms M, sliding upon an independent shaft L, combined with the adjustable axle B C, to enable the distance between the cultivators to be graduated without detaching any of the parts.

2. The perforated spring-bar R, applied, as described, to an independent rock-shaft, L, the arms M, for the purpose of enabling said arms and shaft to be secured at any desired point of adjustment.

110,303.—TYPE-CASTING MACHINE.—William Spang, Philadelphia, Pa.

Claim.—1. The arm B and sliding head A, constructed as herein described, and arranged on the oscillating frame C, as shown, so that the arm will cause the head to move perfectly parallel in the grooves in which it is retained, and thus producing a direct motion for tripping the matrix-lever and opening or closing the mold.

2. The construction and arrangement of the arm B, rod F, sliding head A provided with a block, J, and rod, E, matrix-lever D provided with the adjustable box I, and friction-wheel W, as and for the purpose herein specified.

110,304, antedated December 8, 1870.—COTTON-PRESS.—Noah W. Speers, Memphis, Tenn.

Claim.—1. The combination of the frame A and follow-block G with the double rack E E and worm-wheel B, all constructed and arranged substantially as described, and for the purpose set forth.

2. The combination of the windlass J with eccentric rollers K K, band N, lever L, ropes I I I P, and doors M, all arranged as herein shown and described, and for the purposes set forth.

110,305.—COOKING-STOVE.—David Stuart and Lewis Bridge, Philadelphia, Pa., assignors to David Stuart and Richard Peterson, same place.

Claim.—1. The plates of the stove, the half-plate *f*, and projection F, adapted to each other, as described, so that the said half-plate and projection may be fitted to the stove, or detached from the same and replaced by a whole plate, as set forth.

2. The guard *k*, consisting of projections extending upward from the rear of the plate *d*, as described.

3. The combination of the guards *k k'* and the fine *e*, as set forth.

110,306.—BILLIARD-TABLE.—Isaac N. Swasey, Yonkers, N. Y.

Claim.—The frame A, top B, cross-rails F, and saddles G, combined, as described, to prevent warping, winding, and twisting from heat and moisture.

110,307.—MOLD FOR CASTING UNDER PRESSURE.—John Blake Tart, Fairhaven, Mass.

Claim.—A mold for casting metal under pressure, constructed in the manner substantially as herein described, and for the purposes set forth.

110,308, antedated December 8, 1870.—LAMP-CHIMNEY.—George W. Taylor and Walter P. Jenney, Fairhaven, Mass.

Claim.—A lamp-chimney, in which the base portion *c'* is cylindrical, and in which two of the sides converge from the point *y* to the point *x*, and there terminate in vertical flat sides which extend to the top, the opposite or narrow sides of the chimney having a curved swell, and all the chimney above the point *y* being elliptical in form, as herein shown and described.

110,309.—CANT-HOOK.—Waldy Tetro, Northampton, Mass., assignor to Union Nut Company, Unionville, Conn.

Claim.—The combination of an ordinary iron crow-bar, A, adjustable and removable socket-sleeve C, and the hook D, the whole combined and operating together, substantially as and for the purpose described.

110,310.—PAD FOR CORSETS.—Mary P. R. Tilton, Trenton, N. J.

Claim.—A circular-projecting fabric, B, and quilted stays or pads C, combined, as described, with the corset A, to form a bust which will not press upon the body, but leave a ventilating-space between it and the bosom of the wearer.

110,311.—COTTON-SEED AND CORN-PLANTER.—Isaac A. Towers, Quincy, Fla.

Claim.—1. The cutter J and shoe K, combined and arranged with the dropping device, as shown and described.

2. The rake or stirrer V, in combination with the hopper F and spiked or toothed dropping-cylinder E, and connected with the ground-roller Q by the connecting-rod W, two-armed shaft X Y Z, connecting-rod A', and crank B', substantially as herein shown and described, and for the purpose set forth.

3. The pivoted coverers N O P, constructed, arranged, and operating in connection with the furrow-opener J K, roller Q, and seed-dropping device of a planter, substantially as herein shown and described, and for the purpose set forth.

4. The combination of the roller F' and lever G' with the belt D' and pulleys C' E', attached to the ground-roller Q, and the dropping-cylinder of a planter, substantially as herein shown and described, and for the purpose set forth.

5. The combination of the adjustable plate H with the spiked or toothed cylinder E, frame C, and bottom of the hopper F, substantially as herein shown and described, and for the purpose set forth.

6. The stationary brush I, secured to the frame C in the rear of the toothed or spiked cylinder E, substantially as herein shown and described, and for the purpose set forth.

7. The combination of the beam A, draft-iron B, frame C, handles D, bars S, hopper F, toothed cylinder E, pulley C', belt D', pulley E', grooved roller Q, crank B', connecting-rod A', two-armed shaft X Y Z, connecting-rod W, rake or stirrer V, adjustable plate H, and stationary brush I, conductor-spout G, furrow-opener J K, and pivoted coverer N O P, with each other, substantially as herein shown and described, and for the purpose set forth.

110,312.—HEATING-STOVE.—Alvah Traver, Troy, N. Y.

Claim.—1. The bent or siphon-tubes G or their equivalent, with inlet-orifices, dampered or not, extending from or through the bottom-plate of the stove, along the fire-box on either its inner or outer surface, entering into the outlet-draught chamber F, and in combination therewith, all constructed, arranged, and operating substantially as described and set forth.

2. The tubes G, bottom-plate B, damper U, outer walls of stove A, combustion-cover N, pipe-collar O, perforated cover N^2, single or double, and outlet-damper R, as constructed and arranged, all in combination and operation substantially as described and set forth.

3. The combination of the top-plate C, walls A, dome E, perforated cover N^2, pipe-collar O, and chute N^3, when constructed and arranged as described and set forth.

110,313.—BOILER-FURNACE.—Thomas Vicars, Sr., Thomas Vicars, Jr., and James Smith, Liverpool, England.

Claim.—1. The combination of the ratchets *k*, vibrating pawl *j*, and adjustable guard *l*, arranged to operate relatively to each other and to the reciprocating rod *h*, and to means for moving fuel into or within a furnace, substantially as herein specified.

2. The combination of the hopper *e*, shaft *d*, eccentrics, straps, and rods *c*, pushers *f*, sliding grate-bars, shafts *m m*, and the adjustable guard g^4, pawl g^5, impulse-pallet g^2, and ratchet-wheel g^3, for imparting motion to the said shaft *m* and to the shaft *d*, all operating substantially as herein described, for the purpose specified.

3. The damper *s*, arranged and operated as represented relatively to the grate or grates *n*, so as to render available for combustion either the whole surface of the grate or only the front portion, at will, as specified.

110,314.—THERMOMETER.—John D. Ward, Baltimore, Md., assignor to himself and William F. Jones.

Claim.—The combination of the plate *c*, provided with the bulb-guard *e*, and inscribed with a suitable scale, as described, with the thermometer-plate *b*, and arranged so that either scale may be readily used, and the mercury-tube *a* is incased as specified.

110,315.—SPARK-ARRESTER.—Jason Weidman, John Major, and John J. Sample, Pittsburg, Pa.

Claim.—1. The imperforate double-pipes *i i'*, arranged in and extending through the greater part of the height of a locomotive smoke-chamber, the inner one being of a uniform or nearly uniform diameter through the greater part of its length, and the chamber *s*, between the pipes *i i'*, opening at both ends into the smoke-chamber, substantially as described.

2. The perforated cones *c c'*, one in the upper part and the other in the lower part of a locomotive smoke-chamber, arranged with an imperforate pipe connecting them in the line of draught, the latter being surrounded with one or more draught-pipes *i'*, substantially as described.

110,316.—ADJUSTABLE SQUARE.—Samuel F. Wesner, Camden, N. J., assignor to himself and James Foster, Jr., same place.

Claim.—The combination of the two pairs of articulating-plates C C' with the square A and bar B, substantially as and for the purpose hereinbefore set forth.

110,317.—LEACH FOR TANNING.—William Thomas Harris Wharton, Fayetteville, Tenn.

Claim.—1. The leaches A, B, C, and D, provided with false perforated bottoms, and connected together by means of the pipes *e e e e*, substantially as described.

2. The trunk T, arranged at or near the top of the leaches A, B, C, and D, and communicating with the same through the medium of the pipes *h h h h*.

3. The leaches A, B, C, and D, formed with the hydrants O O O O, and the additional hydrants P P P P, the latter of which are provided with stops or gates, and operating in connection with the trunk T, substantially as described.

4. The main trunk S, supporting the leaches A, B, C, and D, and communicating with the same through the pipes or tubes *l l l l*, for the purpose described, substantially as set forth.

5. The junk J, provided with an orifice to receive the main trunk S, which supports and communi-

cates with the leaches A, B, C, and D, substantially as and for the purpose described.

110,318.—FEEDING MECHANISM FOR COTTON-OPENERS, &c.—William Edward Whitehead, Miles Platting, England.

Claim.—1. The combination of the rods D, beams E, plates C, and shell-plate I with the feed-roller B and the weighting and shifting devices F G, all constructed and arranged substantially as described, and for the purpose specified.

2. The combination of the plates C, rods D, and beams E with the weighting and shifting devices F G, all constructed and arranged substantially as described, and for the purpose specified.

110,319.—PUMP-BOX.—Anthony S. Whitehouse, Ashland, Mass., assignor to himself and Edward W. Southworth, same place.

Claim.—A valve-box, forming the inverted frustum of a cone, in which a conical filter is placed with its apex near the valve at the top, said valve having its attachment to the upper part of said box, all substantially as shown and described.

110,320.—HORSE-POWER.—John W. Wilcox, Macon, Ga., assignor to himself and John S. Schofield, same place.

Claim.—The combination of the main driving-wheel D, flanged pinion E, grooved shaft *e*, and bevel-wheel G, provided with a feather-key, *g*, when constructed and operating as and for the purpose described.

110,321.—STEAM-GENERATING APPARATUS.—Morris Wood, Chillicothe, Ill.

Claim.—A shallow boiler, A, whose whole bottom J is over the fire, combined, as described, with a coil, D, having a perforated supply-pipe, E, parallel with and very near to the said bottom J, for the purpose of generating steam at a low pressure for cooking, distilling, or other purposes.

110,322.—FRUIT-PARER.—Leander S. Woodbury, South Antrim, N. H., assignor to himself and David F. Hunt, same place.

Claim.—The combination and arrangement, as shown in the drawing, and as hereinbefore described, of the following operative parts or instrumentalities, viz: The fork A, arbor B, lever C, beveled sector D, pinion E, spur-gear F, pinion G, paring-knife H, stock I, rod K, slot N with its recess *c*, cam O, and spring P, the whole being applied together so as to operate in manner as explained.

110,323.—ANTI-FRICTION JOURNAL.—Pierce W. Yarrell, Littleton, N. C.

Claim.—1. The arrangement, within a hollow or recessed casing, A, of a series of single wheels *a a*, and a series of double wheels, *b b*, arranged and operating around the circumference of the shaft or journal, substantially as set forth.

2. The arrangement, within a casing, A, of a series of single wheels, *a a*, and a series of double wheels, *b b*, the wheels *a a* having bearings or boxes in the casing A, and the wheels *b b* their bearings on the peripheries of the wheels *a*, arranged and operating around the circumference of the shaft or journal, substantially as and for the purpose set forth.

110,324.—AUTOMATIC BAND-CUTTER, SPREADER, AND FEEDER.—William H. H. Youngs, Waverly, Iowa.

Claim.—An improved automatic band-cutter, spreader, and feeder for thrashing-machines, consisting of the frame A, adjustable support B C D, endless-belt carrier E, rollers F, adjusting-screws G, circular sickle-toothed cutters H, shaft I, angular spreaders J, shaft K, cap L, guide T U, and inclined side-boards V, said parts being constructed, arranged, and operating substantially as herein shown and described, and for the purposes set forth.

110,325.—SOCKET FOR BROOM-HANDLES.—Henry Achow, Cincinnati, Ohio.

Claim.—The combination, substantially as described, of the reversible socket C D, handle E, and pads G, for the purpose set forth.

110,326.—TWINE-HOLDER.—John Adt, New Haven, Conn.

Claim.—In a twine-holder, consisting of the two parts A B, the projection D, formed upon one of the parts and inclosing the head of or forming the screw *b* in the process of casting, substantially as and for the purpose described.

110,327.—COMBINED LINT-ROOM AND COTTON-PRESS.—Ichabod H. Albertson, Bedias, Texas.

Claim.—1. The lint-room I, for packing the cotton, constructed as described, with side doors *f f* and *h h*, and back door *k*, for the purpose of transforming it afterward into a bale-box for pressing the cotton, substantially as herein set forth.

2. In combination with the lint-room I, the condenser, composed of the sliding arms *d d* and roller D, constructed and operating as and for the purposes herein set forth.

3. The combination of the worm L, cog-wheel C, screw B, follower H, room I, and condenser *d* D, all constructed and arranged substantially as and for the purposes herein set forth.

110,328.—REVOLVING REFRIGERATOR.—Frank Allen, Erie, Pa.

Claim.—The ice-chamber A, with the pockets B B B, &c., constructed as described, in combination with the base L, guttered as described, and the standard F, arranged and operated as and for the purposes set forth.

110,329, antedated December 7, 1870.—GRAPNEL.—Nathaniel P. Allen and Nathaniel E. Allen, Salem, Mass.

Claim.—1. The improved grapnel, as composed of the long weight or arm A, the ground-prongs *a a*, and the leading prong *b*, arranged together as specified.

2. The combination and arrangement of the sounding-weight *h* with the line *f* and the grapnel, composed of the long weight or arm A, the ground-prongs *a a*, and the leading-prong *b*, arranged as described.

110,330.—ROTARY PUMP.—William D. Andrews, Brookhaven, N. Y.

Claim.—1. A free-joint rotary pump for conveying water or other fluid, by impetus communicated by rapid motion, when said pump is constructed with a case having an annular recess of like diameter at both ends, within which the propelling-wheel revolves or makes an entire sweep, free from contact, the said case having induction and eduction passages communicating with said recess through openings in its periphery, the centers of which openings are in the plane of motion of the center of the propelling-wheel, substantially as specified.

2. In combination with the case A, its annular recess B, and induction and eduction passages, as described, the propelling wheel C, made up of radial wings arranged to project from a central hub, and supported by a central flange, for operation within the recess, essentially as specified.

3. The combination of the movable or adjustable head D and bearing-boxes F and H, substantially as and for the purpose herein set forth.

4. The bearing-box H having a curved base, K, and made adjustable in relation to the curved arm G, in combination with the shaft I having a grooved or ridged fit within said box, essentially as described.

5. The combination of the boss or ring N on the case A, and concentric with the shaft I of the pump, with the annular or recessed standard L, for varying the position of the pump, substantially as specified.

110,331.—HOISTING APPARATUS.—William D. Andrews, Brookhaven, N. Y.

Claim.—1. The combination, as described, of movable and fulcrum gear-wheels of the same diameters at their pitch-lines, placed side by side, with their centers in line, the fulcrum-wheel having one or more teeth less or more than the movable wheel, and an actuating-wheel or pinion carried upon a crank or eccentric attached to a driving-shaft whose center is coincident with the centers of the movable and fulcrum-wheels, the pinion meshing into the movable and fulcrum-wheels simultaneously, tooth for tooth.

2. The combination, with the gearing, as described, of a friction-brake, attached to the fulcrum-wheel for the purpose of holding it stationary when hoisting, and permitting it to revolve, when required, to admit of the weight being lowered without reversing or stopping the moving power.

3. The two concentric drums, moving in opposite directions, in combination with gearing, substantially as described, for the purpose of increasing the power of the machine, as specified.

110,332.—BEE-HIVE.—Roberson Arnold, Suffolk, Va.

Claim.—As a new article of manufacture, a bee-hive head, composed of the bottom A, cap B, boxes C C, and slats E E, all constructed and arranged substantially as shown and described, and for the purposes set forth.

110,333.—COMBINED LAND-ROLLER AND MARKER.—Henry F. Baker, Centreville, Ind.

Claim.—1. The sliding bars *b b*, provided with shovels *a' a'*, and adjusted at any desired distance from the center in the roller B, substantially as and for the purposes herein set forth.

2. The roller B, provided with stationary shovels *a a* and adjustable shovels *a' a'*, substantially as and for the purposes herein set forth.

3. In combination with the roller B, constructed as described, the lever C with pin *f*, substantially for the purposes herein set forth.

110,334.—DRAUGHT-COCK.—Wallace H. Bate, East Somerville, Mass.

Claim.—A stop-cock, A, with its enlargement, *a*, and tack or flange, *b*, and provided with one or more apertures, *d*, for the reception of the pipe, all constructed substantially as and for the purpose described.

110,335.—SEWING-MACHINE TABLE.—Joseph Bennor, Philadelphia, Pa., assignor to himself, John N. McLean, and Samuel Crawford, same place.

Claim.—1. The combination of the legs or frames A, the locking and bracing-bar B, and rod C, all constructed and arranged to operate substantially as described.

2. The legs A, provided with the inclined studs *m*, in combination with the table-top, having correspondingly-inclined holes, whereby the table-top is secured to the legs without the use of screws, substantially as described.

3. The detachable hinge, consisting of the stem *f* jointed to the lug or arm *e*, and applied to sewing-machines or their covers, as described.

110,336.—PLOW.—James O. Billing, Halcyon Dale, Ga.

Claim.—The within-described plow, consisting of the beam A, handles B B, standard D, land-side C with ear *f*, and share G, all the parts being constructed, arranged, and operating substantially as set forth.

G P O——62 70

110,337.—CORPSE-PRESERVING COFFIN.—James Y. Black, Cleveland, Ohio.

Claim.—The case A, containing the air-chamber D, ice-chamber F, eduction-pipe L, and casket E, in combination with the cover G, containing the space or chamber I with its vent-holes J, cover H, and gasket K, when all the parts are constructed and arranged in the manner and for the purpose substantially as described.

110,338.—FEEDER FOR REPEATING FIRE-ARMS.—Lewis Wells Broadwell, Carlsruhe, Grand Duchy of Baden.

Claim.—1. The revolving feeding-cylinder, constructed and operated substantially as described, and for the purpose herein set forth.

2. The table or support A, in combination with the revolving feeding-cylinder, essentially as shown and described.

3. The under projection or lip E, as shown, and for the object specified.

110,339.—FARE-REGISTERING APPARATUS.—Charles Alexander Calvert, Manchester, Kingdom of Great Britain.

Claim.—The swinging tube or reservoir *b*, suspended at its upper end, and having at the lower end a frame, *e e*, in combination with a case recessed opposite the frame *e*, and with a hinged plate, *f*, sliding in a slot in the lower end of the tube, all as and for the purpose described.

110,340.—SAFETY-CASE FOR FRUIT-JARS.—Jane Carter, Towanda, Pa.

Claim.—The safety-case for preserve-jars, made of cotton or other fabric, with closed sides and a perforated bottom, as herein described, as a new article of manufacture.

110,341.—CORN-PLANTER.—John T. Carter and Moses B. Williamson, Xenia, Ill.

Claim.—In combination with the hoppers having shoulders formed thereon, the bar M, cog-wheel O, dropping-wheels L, and lever R, all arranged and operating substantially in the manner and for the purpose set forth.

110,342.—PEN.—Richard H. Chinn, Washington, D. C.

Claim.—1. The four-sided pen, Nos. 1, 2, 3, and 4, having two stiff points and two elastic points, to be used with or without a fountain-handle, as herein described, and for the purposes set forth.

2. The flat spring E, valves K and B, flange H, piston J, rubber rings G and L, when used, arranged, and operating in a cylinder, A, as a fountain pen-holder, in combination with my four-sided pen, as herein described, and for the purposes set forth.

110,343.—ROOFING MATERIAL.—James H. Cole, Chicago, Ill.

Claim.—The combination of the ingredients herein specified, with a paper or other suitable fabric for a foundation, for roofing purposes, substantially as described.

110,344.—HARROW.—Daniel B. Conover, New Bedford, N. J.

Claim.—1. A harrow divided into sections longitudinally and traversely, and said sections so united by hinged connections that they will yield to any unevenness of the ground independently of each other, and so that, through the center, longitudinally, said sections will be wholly unconnected except by a single hinged joint in front, substantially as described.

2. In combination with a harrow divided longitudinally into hinged sections, a draft from the center and the two forward corners, substantially as and for the purpose described.

110,345.—COMPOUND FOR PURIFYING MINE-WATER.—Frederick Jacob Delker, Ashland, Pa.

Claim.—The combination of the ingredients herein mentioned, for the purposes specified.

110,346, antedated December 9, 1870.—HYDRAULIC PRESS.—Jules Auguste Desgoffe, Paris, France.

Claim.—1. The combination of the screw J and hollow plunger H with the ram F and cylinders D I, substantially as specified.

2. The combination, with the elements recited in the previous claim, of the platen L and auxiliary screw K, essentially as herein set forth.

3. The arrangement, relatively to each other, of the plunger H and its operating screw J, the ram F with its bed G, and platen L with its operating screw K, substantially as shown and described.

110,347.—CLOTHES-DRIER.—John T. Elliott, Grand Rapids, Mich.

Claim.—The combination of the stationary post G, pieces E E, pins *d*, *e*, and *f*, and the post A, said post being grooved at its lower end, and provided with the collars B B', braces C C, and arms D D, all constructed and arranged substantially as and for the purposes herein set forth.

110,348.—MILK-RECEPTACLE.—George Millard Fillmore, St. Paul, Minn.

Claim.—1. The milk-receptacle A, provided with a tube, B, strainer S, suspension-plate *c*, and cover *a*, the tube B extending through an opening, C, in the door, and protected by a lock, D, substantially as described.

2. The milk-receptacle constructed as herein described, and arranged and operating substantially in the manner and for the purpose set forth.

110,349.—ROLL FOR FORMING HORSESHOE BLANKS.—Charles L. Fitzhugh, Pittsburg, Pa.

Claim.—As an improvement on the machine patented as aforesaid to W. W. Lewis, the cutting-off knives *a''*, inserted in the roll for the purpose of cutting the rolled bar into suitable lengths for horseshoe blanks while lying within the groove of the roll, as set forth.

110,350.—ROTARY STEAM-ENGINE.—George S. Follensbee, Philadelphia, Pa., assignor to himself and John Rosencrantz, same place.

Claim.—In an engine consisting of a case containing two cog-wheels, B B, arranged to operate as described, ports *b b' c* and a valve, H, arranged and operating as set forth.

110,351.—GRAIN-SIEVE AND OAT-EXTRACTOR.—Thomas Follett, Clermont, Iowa.

Claim.—The grooved frame A, combined with parallel strips B, bent to form one right and one acute angle, and the straight slotted edge-projecting strips C, all constructed and arranged as and for the purpose specified.

110,352. — OSCILLATING STEAM-ENGINE.—Isaac Newton Forrester, Bridgeport, Conn.

Claim.—1. The combination of the oscillating cylinder with the slide-valve working transversely across the bore of the cylinder, these parts being constructed to operate in combination substantially as hereinbefore set forth.

2. The combination of the oscillating valve-chest, the reciprocating slide-valve, and the valve-rod extending entirely through the chest, these parts being constructed to operate in combination, substantially as hereinbefore set forth.

3. The combination of the oscillating valve-chest, the reciprocating slide-valve, and the oscillating yoke, these parts being constructed to operate in combination, substantially as hereinbefore set forth.

4. The combination of the oscillating cylinder, the slide-valve reciprocating transversely to the bore of the cylinder, and the valve-seat reciprocating in a direction opposite to that of the movement of the valve, these parts being constructed to operate in combination, substantially as hereinbefore set forth.

5. The combination of the cylinder, the valve-seat, having trunnions on which the cylinder oscillates, and the valve-chest, oscillating with the cylinder, these parts being constructed to operate in combination, substantially as hereinbefore set forth.

6. The combination of the bed-plate, the oscillating cylinder, the valve-seat, the trunnions, the valve-chest, the valve, and the oscillating yoke, all these parts being constructed to operate in combination, substantially as hereinbefore set forth.

7. The combination, with the cylinder of a pump or water-engine, of elastic cushions at each end of the cylinder to deaden the concussion of the water on the cylinder-heads, as hereinbefore set forth.

110,353. — BREECH-LOADING FIRE-ARM.—Stephen Gerngross, St. Louis, Mo.

Claim.—1. The combination of the needle-socket *b* with elastic packing *n*, spring catch *g*, spring F, and the rear bearing *y* for said spring, all constructed and arranged to operate substantially as and for the purposes herein set forth.

2. In combination with the mechanism herein described for operating the needle, the needle-chamber C, provided with the angular groove *s* and handle *e*, substantially as and for the purposes herein set forth.

3. The lock-tube B, provided with lip *b* and angular groove *w*, and wedge-shaped cams *c c'*, substantially as and for the purposes herein set forth.

4. The combination of the lever D, bit E, and spring G, arranged for operation in connection with the spring catch *u*, as shown and described, and for the purposes set forth.

110,354.—MACHINE FOR CUTTING SHEET METAL TO AN OVAL FORM.—William D. Grimshaw, Newark, N. J.

Claim.—1. The arrangement of the pin-carrying slides D D' within the table E in different planes, whereby they are enabled to cross each other, substantially as specified.

2. The combination, with the table E, of the pressure-clamp, composed of the cranked brace or arm I, the lifting-rod H, and the disk G, the whole arranged to be capable of turning, essentially as herein described.

3. The combination of the eccentric sleeve or bearing M, with the shears F F' and friction-wheels K K', or other gears, substantially as specified.

110,355.—EXPLOSIVE COMPOUND.—Joseph Hafenegger, San Francisco, Cal.

Claim.—Fatty or oily substances in intermixture with explosive compounds, to prevent spontaneous or premature explosion, substantially as set forth.

110,356.—GANG-PLOW.—James Harris, San Francisco, Cal.

Claim.—The axle E, recessed as described, in combination with the timbers A B, extended cross-pieces D D', and pins *a*, for adjusting the plow-frame, seat, and the level of the plows, substantially as above described.

110,357.—MOUSE-TRAP.—Hubert C. Hart, Unionville, Conn.

Claim.—In a wood-choker mouse-trap, the combination, with the frame or saddle and yoke or choker, of a bait-hook, so constructed and arranged as to engage directly with said saddle, substantially as and for the purposes herein specified.

110,358.—HANDLE FOR CUTLERY, TOOLS, &c.—John T. Haviland, San Francisco, Cal.

Claim.—As a new article of manufacture, a handle for cutlery, arms, and tools, composed of baked or burned clay or earthy matter, substantially as above set forth.

110,359. — PILE AND POST-DRIVER.—Noah Havermale, Canton, Ill.

Claim.—1. The sills L, cross-timbers C, platform U, guide-posts W, guide-bars D, braces X, cap Y, braces R and S, posts T, windlass P, rope O, and pulleys M and N, when combined and arranged in the manner shown and described, and for the purpose set forth.

2. The hammer H, guide-arms *b*, sections *a*, buttons *a*, guide-bars D, and posts W, when combined and arranged in the manner shown and described, and for the purpose set forth.

110,360.—GUN-LOCK.—Edwin B. Hendee, San Francisco, Cal.

Claim.—A cock, or hammer and trigger, constructed and arranged to operate in connection with each other, substantially as described, so as to dispense with the tumbler, sear, and sear-spring heretofore used.

110,361.—LUBRICATING-OIL.—David R. P. Hill, Fredericktown, Pa., assignor to himself, E. F. Weaver, and H H. Weaver, same place.

Claim.—The lubricating-oil herein described, composed of the ingredients substantially as set forth.

110,362. — ELECTRO-MAGNETIC ENVELOPE FOR SAFES, VAULTS, &c.—Edwin Holmes, New York, N. Y., and Henry C. Roome, Jersey City, N. J.

Claim.—1. An envelope or lining for safes, vaults, and other structures, composed of two parts or conductors imperfectly insulated from each other, or connected with each other through a resistance-coil or medium, and in connection with the opposite poles of a battery or other electrical apparatus, for action as specified.

2. The combination of an electric envelope or lining for safes, vaults, and other structures, with a galvanometer or instrument, the movements of which are produced by variation in a current of electricity from a battery or other electrical apparatus, in connection with a safe, vault, or structure, substantially as herein described.

3. An electro-magnetic envelope or lining, composed of thin and pliable sheets of metal, insulated from each other by pliable non-conductors, so that when glued or cemented together the whole forms a single sheet, substantially as specified.

4. The combination of the metallic sheets or plates *a b*, the insulating sheets *c c'*, the metallic ribbon *d*, the resistance-coil or medium *f*, and the battery-wires or connections *k l*, essentially as described.

110,363.—GATE.—Henry R. Hoskins, Harlan, Ind.

Claim.—The lever-yokes F, pivoted to the bottom of panel B, embracing the gate on each side, and moving in the slots E to guide it, actuating and supporting it by the straps H, and operated by a weighted lever and strap K I, all as and for the purpose described.

110,364. — PURIFYING OILS WHICH HAVE BEEN USED IN LUBRICATING MACHINERY.—Christopher Houlker, Frankford, Pa.

Claim.—The process herein described for purifying or cleaning refuse petroleum lubricating oil that has been used for oiling shafting and other machinery, as and for the purpose set forth.

110,365. — SASH-SUPPORTER. — Robert B. Hugunin, New York, N. Y.

Claim.—The arrangement and combination of the lever holding plate A, movable lever D having friction surface F, roller K, and spring J, substantially as and for the purposes herein described.

110,366.—UTILIZING SEWERAGE MATTERS. —J. Burrows Hyde, New York, N. Y.

Claim.—1. The construction and use of a sewer-chamber or trap in the manner and for the purpose described.

2. The use of the described material in the manner and for the purpose set forth.

110,367. — THILL-COUPLING. — Frederic Augustus Jewett, Grafton, Mass.

Claim.—The metal plate A, provided with the right-angular screw A^2, in combination with the cylinder or plate B, constructed with a chamber having a screw-thread, and with the staple *b*, arranged to operate substantially as and for the purpose described.

110,368.—MACHINE FOR OPENING COTTON. William C. Jillson and Amos B. Palmer, Willimantic, Conn.

Claim.—1. In a machine for opening cotton, two or more reels or pulleys provided with hinged or pivoted flails, in combination with two or more shells or concaves, these parts being constructed and arranged substantially as shown and described, whereby the cotton, after being partially opened by the first set of flails, shall be fed to the second set of flails by the action of the first, substantially as set forth.

2. In combination with the bent flails and reel-bars constructed as shown, the elastic sleeves for separating the flails and allowing them to yield laterally, substantially as set forth.

110,369.—ROLLING-MILL.—John H. Jones, Knoxville, Tenn.

Claim.—1. The combination of the roll F in stationary bearings, the rolls E and G in shifting bearings, mechanism to elevate and depress the roll G, and mechanism to simultaneously shift laterally the rolls E and G, the latter roll half the distance of the former, in order to preserve the contrality of the roll G over the groove formed by the rolls E E, as described.

2. The combination of the movable roll E and its frame and guides *m n* with the stationary roll F and its frame and guides *m n*, as and for the purpose set forth.

3. The construction of the pair of vertical rolls E F with one or more welding and shaping-grooves and one or more finishing-grooves, located one above the other, and shaped, severally, substantially as described, for patching and re-rolling railway-bars.

4. The arrangement of the vertical shaft B, the several pairs of beveled gears *w x y*, the screws of varied pitch, and the roll-shafts M and *q*, substantially as described.

110,370.—TRUSS AND SUPPORTER.—Nathaniel Jones, New York, N. Y.

Claim.—The foraminous plate *a*, in combination with the perforated pad *b*, that is attached to said plate *a* and projects from the same, as and for the purposes specified.

110,371.—ROLLED BAR FOR PLOW-BEAM BLANKS.—George W. Jope and William Bunton, Pittsburg, Pa.

Claim.—As a new article of manufacture, a bar of iron or steel rolled into the form herein described and shown, for the purpose of forming a continuous series of blanks for plow-beams.

110,372, antedated December 15, 1870.—MACHINE FOR MAKING POST-HOLES.—James M. Kirkpatrick, Utica, Ohio.

Claim.—1. The movable frame I, set-screws A, and wedges *i i*, in combination with the false post H, substantially as shown and described.

2. The lever K, constructed, arranged, and operating substantially in the manner and for the purposes shown and described.

110,373.—APPARATUS FOR PITCHING BARRELS.—Alexander A. C. Klaucke, Washington, D. C., assignor to Charles F. Smith and Henry C. Comegys, of Baltimore, Maryland.

Claim.—1. The hinged bottom B of the furnace A, when arranged to operate substantially as and for the purpose specified.

2. The arrangement of the hot-air blast-pipe above the grate, and perforating its branches E, substantially as and for the purpose described.

3. The flanges or lugs *a*, on the outside of the furnace, in combination with the legs H, when constructed and operating substantially as and for the purpose specified.

110,374.—BRAIDING-GUIDE FOR SEWING-MACHINES.—Albert Komp, New York, N. Y.

Claim.—The throat-plate A, formed in one piece with the inverted T-shaped slot *b* having the vertical portion thereof opening on the face of said plate, and the horizontal portion communicating therewith below the face, all as set forth, for the purpose described.

110,375.—STONE-DRILLING AND CHANNELING MACHINE.—Ebenezer G. Lamson, Windsor, Vt.

Claim.—1. The yielding pitman, consisting of the arms I and spring H, with the connecting-rod G, or its equivalent, combined and arranged to operate substantially as described.

2. The brackets or guides D, in combination with the cutter J, arranged to play therein, substantially as set forth.

3. The clamp F, with the serrated block K and set-screw L, in combination with the serrated cutter J, constructed and arranged substantially as described.

110,376.—STONE-CHANNELING MACHINE.—Ebenezer G. Lamson, Windsor, Vt.

Claim.—1. A clamp for holding the chisels or drills of a stone-channeling machine, consisting of the recessed plate I provided with the side and top ledges *u*, and the plate N united to its face by bolts, thus forming a socket in which all the chisels or drills have a solid bearing on their ends and sides, substantially as described.

2. In combination with a clamp constructed as herein described, the serrated wedges *i*, arranged to lock the chisels in the clamp, as set forth.

3. The slotted cutter-bar H, provided with serrations on its face, in combination with a clamp provided with corresponding serrations, the said bar and clamp being united by a bolt, substantially as described.

4. The adjustable crank, consisting of the slotted arm U, crank-pin *t*, and collar W, all constructed and operating substantially as described.

5. The chain T, arranged on the machine in such a manner that, when motion is imparted to said chain by the operating mechanism, it shall engage with the studs *b* or equivalent devices attached to the supporting-rail or frame, for the purpose of feeding the machine along, substantially as described.

6. The stationary guide J, secured to the lower end of the cutter-bar for holding and guiding the cutters, substantially as described.

7. In combination with the stops R, or their equivalents, the pivoted lever *d*, connected to the clutch *c*, for automatically shifting the feed-worm and reversing the motion or travel of the machine, substantially as described.

110,377.—BREAST-COLLAR FOR HORSES.—William E. Leonard, Boston, Mass.

Claim.—The combination of an inner stay of enameled leather with an outer covering of ordinary harness-leather, substantially as and for the purpose set forth and described.

110,378.—CASTING CHILLED ROLLS.—George G. Lobdell and William Stuart, Wilmington, Del.

Claim.—1. The employment, in casting chilled rolls, of a sleeve or its equivalent, receiving the metal which forms the soft end of the roll, and moving with the latter when the metal contracts, substantially as described.

2. The application, to the top of the newly-cast roll, of pressure, as set forth.

110,379.—CARTRIDGE-BOX.—John C. Ludlam, Brooklyn, N. Y.

Claim.—1. A cartridge-box, consisting of the body A provided with a series of holes, *a*, in combination with the lifting-bars *f*, arranged to work in slots in the lower portion of the body, substantially as and for the purpose set forth.

2. The hinged doors or flaps *b'*, arranged to work in cavities in the sides of the body A and support the upper tier of cartridges, substantially as set forth.

3. The arm A, provided with the spring hooks *i* and the shoulders *k*, in combination with the bars *f*, arranged to operate substantially as described.

4. In combination with the lifting-bars *f* working in the slots of the body A, the handle *g*, protruding through the vertical slot *e*, substantially as described.

110,380.—PUMP.—Robert Mudge Marchant, London, England.

Claim.—1. A pump for compressing aeriform fluids, in which the bucket is made to work under water, with the inlet E for said fluid arranged below the water, and the outlet on transit above in free communication with the water, substantially as specified.

2. The combination and arrangement, essentially as herein set forth, of the inclined water-barrel or pump-cylinder A, the bucket B, the inlet E for the fluid to be compressed, the receptacle or chamber C, and its pipe D, for operation substantially as described.

110,381.—TABLE-FAN.—Joseph C. McEwen, Micanopy, Fla.

Claim.—The combination of the fan or brush C, shaft D, cord E, spring F, and treadle H, with each other and with the frame A and top B of a table, substantially as herein shown and described, and for the purpose set forth.

110,382, antedated December 9, 1870.—ELEVATOR FOR MERCHANDISE.—William McNaughten, Utica, Ohio.

Claim.—The merchandise-elevator herein described, consisting of the cars D and E, rails D', portable track F, windlass H, and pipe or box *c'*, when arranged and operating as shown and described.

110,383.—SHOT-CARTRIDGE.—Richard R. Moffatt, Brooklyn, N. Y.

Claim.—A shot-case or shell made partly or wholly consumable, substantially as and for the purpose herein set forth.

110,384.—RAILWAY RAIL-JOINT.—William Morehouse, Buffalo, N. Y.

Claim.—1. The spring-clamps C C applied to the fish-bars B B and rail-sections by means of a bolt, D.

2. The shoulders *g g*, made into the fish-bars to receive the ends of the clamps C C, substantially as described.

3. The combination of elastic washers *b* with the clamps C and fish-bars, substantially as described.

110,385.—METHOD OF FORMING SHAFT-IRONS FOR CARRIAGES.—Francis B. Morse, Plantsville, Conn., assignor to himself and H. D. Smith & Co., same place.

Claim.—The process herein described for forming the shaft-iron of carriages.

110,386.—CLIP-BAR FOR CARRIAGES.—Francis B. Morse, Plantsville, Conn., assignor to himself and H. D. Smith & Co., same place.

Claim.—As a new article of manufacture, a clip-bar constructed and prepared for use substantially as herein set forth, and either with or without the rib R.

110,387.—BASIN-COCK.—Charles A. Newton, Providence, R. I.

Claim.—The forked and flanged double tube K K F, screws G, nut H, and packing I, combined as described, to form a tight and easily-adjusted joint between the prolonged tubes C D and the water-pipes.

110,388.—LAWN-MOWER.—Augustus J. Ohmer, Hamilton, Ohio.

Claim.—The tubular handle *d* for the driving-shaft, provided with the shield *g* for protecting the gearing, in the manner and for the purpose substantially as described.

110,389.—COMBINED PARLOR AND COOKING-STOVE.—William W. S. Orbeton, Bradford, Mass.

Claim.—1. The combined parlor and cooking-stove, substantially as described, the same consisting of the fire-pot A, the air-supply inducts K K', the flame-educts I I', the oven L, the space or flue L^2, the main flues P P', and the discharge-pipe O, all constructed, combined, and arranged together and within a case, A, and so as to operate as and for the purpose set forth.

2. A parlor cook-stove, composed of the fire-pot A', the flame-educts I I', the air-supply inducts K K', the air-reservoir or chamber E, the oven L^2, the main flues P P', the flue or space L^2, the damper N', and the discharge-pipe O, the whole being combined and arranged in manner and so as to operate as described.

3. In combination with the fire-pot A' and the oven L^2, the main flues P P' and the cross-flue or space L^2, when all the said flues are arranged with respect to the oven and so as to operate as and for the purpose set forth.

4. The registers *f* and H, when arranged with respect to the oven, as described, and so as to regulate the heat thereof, as set forth.

5. The guards or deflectors *b b'*, in combination with the fire-pot, when the former are provided with air-inlets *h*, as described, and for the purpose set forth.

110,390.—SAW-TOOTH SWAGE.—Gordon Burleigh Pattee, Ottawa, Canada.

Claim.—1. The anvil-bar E, fitted with a movable die-piece, *r*, and provided with a shoulder, S, for shaping a saw-tooth, as described.

2. The combination of the jaw H, rod I, spring K, screws L L, and plate A, arranged and operating as described, for the purpose set forth.

3. The arrangement of the arm T, table *b*, set-screws V V, and screw U, for adjusting the anvil-bar and shoulder S, as specified.

4. The combination of the cam-lever X, pitman Y, the sliding journal-boxes Z Z, when applied as set forth, and arm Q', with the cam-shaft O, as set forth.

110,391.—STOP-VALVE.—Robert Pilling, Waterford, N. Y.

Claim.—1. In combination with the ratchet-gates C C, the wedge-shaped projection *h* for the purpose of expanding the gates, substantially as herein set forth.

2. The combination of casing A, bonnet E, stuffing-box G, ratchet-gates C C, wedge-shaped projection *h*, and stem D, all constructed and arranged to form a stop-valve, as set forth and described.

110,392.—STUFFING-BOX.—Andrew J. Prescott, Catawissa, Pa.

Claim.—The arrangement of the oil-chamber *a* between the two stuffing-boxes D and B, and provided with inlet F and outlet N, substantially as and for the purposes herein set forth.

110,393, antedated December 13, 1870.—COTTON-PLANTER.—Blackman Asbury Ramsey, Trenton, Tenn.

Claim.—1. The cotton-planter herein described, having automatically-adjustable barrel F, concave crushing and smoothing ties D E, concave harrow B, and concave roller L, when constructed and arranged as and for the purposes specified.

2. In a cotton-planter, the concave harrow B, adapted to the form of the ridge, having its central tooth *d'* longer than its fellows, to open the way for the furrowing-shoe, as specified.

3. In combination with the slotted uprights G of the frame, the automatically-adjustable seed-barrel F, having inner wall sloping to the center and elliptical exit opening *e*, and provided with the pins *b* extending partly within and partly without the barrel, as specified.

110,394.—REFRIGERATING-CAR.—Thomas L. Rankin, Granville, Ill.

Claim.—The arrangement, upon each side of the walk upon the top of the railroad-car A, of the inclined boxes B B, with followers D and spouts *a* leading into the troughs *c*, from which extend pipes *b* outside of the car, all substantially as set forth.

110,395.—FOUNDATION FOR PAVEMENTS.—Selah Reeve, Chicago, Ill.

Claim.—The described combination and arrangement of the paving-blocks, partitions, and packing-sand, when the latter not only fills the spaces between the partitions, but extends above their upper edge so as to form a uniform surface of sand for the support of the blocks, substantially as herein set forth.

110,396.—VEHICLE.—John D. Ross and Martin Keever Burk, Truckee, Cal.

Claim.—1. A truck-coupling, consisting of the horizontal rotating rim D, supported by the wheel J, and moving in the opening in the floor A so as to turn said wheel in any direction, substantially as herein described.

2. The device for reducing friction, consisting of the rollers *c* and guiding-plate E, operating between the rims *a* and *a* of the truck, substantially as specified.

3. The truck constructed with three wheels, B, B, and J, when mounted and operating substantially as herein described.

110,397, antedated December 9, 1870.—GRINDING-MILL.—John H. Rusk, Philadelphia, Pa.

Claim.—1. The combination, substantially as described, of soft-metal pins or plugs *c* with the driving-gear of a grinding-mill.

2. The detachable lining or inner shell, composed of one or more sections, adapted to and rendered self-locking in the outer conical shell of a grinding-mill by inclined planes on the cover or bridge of the mill, and similar inclined planes on the section or sections, all substantially in the manner described.

3. The detachable sections, having at their backs recesses filled with soft metal, as set forth.

4. The combination of the rotating spindle H, its bars P N, cross-piece K, sleeve *i* extending through said cross-piece, and set-screw *h*, substantially as described.

5. The outer shell or casing J, receiving the detachable sections E S, and sustaining the section K, as specified.

110,398.—Machine for Turning Logs.—Edward H. Stearns, Erie, Pa.

Claim.—1. The beam, provided with hawse-hole P, in combination with the fixed chain U' and turning chain *f*, substantially in the manner and for the purpose described.

2. The combination, with the upper pulleys G and H and the lower pulleys on the shaft *t*, the tightening pulleys H and H', the crossed belt *l*, an open belt, *m*, operated by the rods P and N, levers L and M, and bell-crank lever O, and spiral spring *g*, all substantially as and for the purpose described.

3. The device, composed of the traveling-pulley *o* and the grab-link *n'*, combined with the chain U', constructed and operated substantially in the manner and for the purpose set forth.

4. The chain U', stretched and fastened at each end thereof to a beam, or otherwise supported in a horizontal position, as a track or way for a traveling-pulley, when constructed and arranged substantially as and for the purpose described.

110,399.—Pipe and Tube for Water and Gas.—Henry M. Stow, San Francisco, Cal.

Claim.—A pipe composed of sheet metal or wire, and paper and pitch, substantially as herein described.

110,400.—Cooking-Stove.—David Stuart and Lewis Bridge, Philadelphia, Pa., assignors to Stuart, Peterson & Co., same place.

Claim.—The within-described arrangement of the oven G, fire-place F, the shelf J, damper K, plate I, and flue M, for the purpose specified.

110,401. — Wheel-Plow.—John H. Suydam, Atwater, Minn.

Claim.—The within-described attachment for plows, consisting of the wheel I, axle G, elongated seat J, brace K, slotted knee H, and clamp *a*, all constructed and used substantially as set forth.

110,402.—Seat-Hinge for School-Desks and Settees.—Nelson O. Tiffany, Buffalo, N. Y.

Claim.—1. In combination with the inclosed stop-lug *t* and stop-groove *v* of a seat-hinge, the cushion B, arranged in the end of the said stop-groove, all substantially as shown and described, for the purposes set forth.

2. The combination of the journal-socket *x*, journal *u*, stop-groove *v*, lug *t*, perforation *w x*, bolt C, and nut D, with a seat-arm B, and a bracket or arm, A, on the desk or other support, formed and arranged substantially as described, and represented for the purposes shown.

110,403.—Bark-Rosser and Breaker.—George S. Tillinghast and John W. Burdwin, Morrisville, N. Y.

Claim.—1. In combination with the self-adjusting reciprocal feeding-rollers C' C the rossing-knife E, substantially as specified.

2. The arrangement of the levers D D, arms *a a* and *a' a'*, thumb-screws *d d*, and springs *f f*, or their equivalent, for making the feed-rollers C C' self-adjusting, substantially as herein set forth.

3. In a machine for rossing and breaking bark, the combination of the lower deeply-indented feeding-roller C with the upper feeding-roller C', having its serrations projecting in a much less degree, substantially as and for the purposes specified.

4. The combination of the breaking-rollers G G, rossing-knife E, and self-adjusting feed-rollers C C, substantially as specified.

110,404.—Stone-Channeling Machine.—Francis C. Treadwell, Jr., New York, N. Y., and Ebenezer G. Lamson, Windsor, Vt.; said Treadwell assigns to said Lamson.

Claim.—1. In combination with a stone-channeling mechanism, a track or guide-frame, consisting of a lower supporting-rail and an upper guide-rail, supported in any suitable manner, constructed and operating substantially as described.

2. In combination with a stone-channeling machine, a track or guide-frame having a lower and an upper supporting and guiding-rail, with the adjustable braces for supporting the frame or track in an upright or inclined position, substantially as herein described.

3. The combination of the rail or track A, having the chain Y secured thereto, with the machine having the griping-wheel X and the pinions *m* and *n* and sliding clutch *o* all mounted thereon, the whole being arranged to operate substantially as described, for feeding the machine forward or backward on the track, as herein set forth.

4. The arrangement of the notched wheel M and the bifurcated lever *v*, in connection with the feed-wheel X for locking the machine fast on the frame at any desired point, substantially as set forth.

110,405. — Portable Drilling-Tool.—Claus Van Haagen, Philadelphia, Pa., assignor to himself and Anthony Van Haagen, same place.

Claim.—The combination of the casing A B, driving-spindle D, cutter-spindle F, gear *b b'*, screw M, nut L, and the screw-shaft N, or other devices, whereby motion may be communicated from the driving-shaft to the nut.

110,406. — Gear-Cutting Machine.—Claus Van Haagen, Philadelphia, Pa., assignor to himself and Anthony Van Haagen, same place.

Claim.—The combination of the worm G, its shaft *f*, screw J turning in a nut, J', and sliding on the shaft G, the stationary stops *r' s'*, fixed stop *r*, and adjustable stop *s* on the screw, and the sleeve H, wheel I, arm and pawl, or equivalent devices, whereby the screw may be turned in one direction with and in the other independently of the shaft *f*, as specified.

110,407. — Grooving-Tool. — Claus Van Haagen, Philadelphia, Pa., assignor to himself and Anthony Van Haagen, same place.

Claim.—The combination herein described, with the stock A, of the spindle B, gears *a a'*, tool-spindle C, and the stud *m*, or its equivalent.

110,408.—Silvering Glass.—Henry Balen Walker, New York, N. Y.

Claim.—The making and constructing a stool made of wood and glass, or wood and metal, or wholly of metal or glass, substantially in the manner and form as above described, and for the uses and purposes set forth, to be used in the process of silvering glass.

110,409.—Scrubber and Mop.—William Penn Walker and Ernest Henry Leseman, Toledo, Ohio.

Claim.—1. The method herein described, of fastening rubber strips in grooves by means of one or more side grooves and rods to each strip, substantially as herein set forth.

2. The combination of the head A and rubber strips B B, when said strips extend beyond the end of the head, have their lower edges cut at suitable intervals, and are fastened in the head by the rods *a*, all substantially as herein set forth.

110,410.—Ironing-Table Bureau.—Margaret White, Saratoga Springs, N. Y.

Claim. — The vertically-operating adjustable slides G G' for supporting the ironing-boards at any height desired, substantially as set forth.

110,411. — Cotton-Plow. — James Wiley, Warsaw, N. C.

Claim.—1. The metal bar A, bent and slotted as described, and having the flanged piece *d* in combination with the cross-bar B, and the scraper C having the peculiar form and set described, and having the slot *c*, when each is constructed and all are arranged together substantially in the manner and for the purpose described.

2. The sweep D, with its bars, braces, nuts, and screws, in combination with the cross-bar B, when each and all are constructed and arranged substantially as described.

3. The slotted bar B, with its bars, bolts, and braces, when so constructed and arranged that the sweep D and the teeth T T can be used interchangeably in the plow, substantially in the manner and for the purposes described.

110,412.—Lock.—Horatio Willard, Evansville, Ind.

Claim.—The combination of the spring *g* and the bolt *b*, passing through both sides of the case and furnished with two positive fastening notches that engage on the sides of the case, said bolt being operated directly by the key, as set forth.

110,413.—Chair.—Jackson C. Zimmerman, Thomaston, Ga.

Claim.—The combination, in a chair having horizontal braces or rounds E E, which extend from leg to leg, of the diagonal braces G G or the braces I I, or both, all as set forth and shown.

REISSUES.

4,203. — Manufacture of Paper-Pulp from Straw, &c. — Asahel K. Eaton, New York, N. Y.—Patent No. 41,982, dated March 22, 1864.

Claim.—1. Preparing paper-pulp from straw or other substances by subjecting it to a mechanical reduction, as described, commencing, with the early stages of the treatment, with the chemical solvent, and continuing the said mechanical reduction in connection with the chemical solvent, in the manner and for the purpose described.

2. Purifying the alkali held in solution in the refuse liquor by passing it through a filter constructed substantially as above described, sufficiently to enable me to use it again, and completely reproducing it, when necessary, by making it into combustible cakes, as set forth.

4,204.—Pump.—Chalkley Griscom, Lewis Griscom, and John P. Griscom, Mahanoy Plane, Pa. — Patent No. 95,242, dated September 28, 1869.

Claim.—1. The cross-heads K, made solid, with vertical grooves on their inner faces, and with angular lips on their backs which extend beyond the sides of the cross-heads and over the edges of the stationary guides L, all arranged between the steam and pump-cylinders of a double-acting steam-pump, substantially as set forth.

2. The combination of the cross-heads K, constructed as described, the piston-rods H, plunger-rods I, stationary guides L, and the crank-shaft M, with its arms *e* placed at right angles, all operating as set forth.

3. The combination of the induction and eduction pipes F and G, each with two curved branches, forming a central cone, arranged between and acting with the two clack-chambers E E, having X-shaped partitions and valves, and the pump-cylinders C D, all substantially as and for the purposes herein set forth.

4. The combination and arrangement of the steam-cylinders A B, piston-rods H H', stationary guides L L, cross-heads K K, crank-shaft M, pump-cylinders C D, clack-chambers E E, and the suction and discharge-pipes F and G, all constructed to operate substantially as and for the purposes herein set forth.

4,205.—Hasp for Trunk-Locks.—Louis Hillebrand, Philadelphia, Pa.—Patent No. 95,111, dated September 21, 1869.

Claim.—1. A hingeless spring hasp, whose free or staple end stands off from the trunk, when unlocked, in the manner described.

2. A hingeless trunk-hasp, having its body constructed wholly of, or in pieces united by, a strip of elastic metal, and operating in the manner and for the purpose described.

4,206.—Meter.—Jacob C. Horton, New York, and Samuel K. Hawkins, Lansingburgh, N. Y., assignors to the Manhattan Meter Company.—Patent No. 68,746, dated September 10, 1867.

Claim.—1. A valve or valves, for liquid-meters and other purposes, moved instantaneously at the extremity of the travel of the piston by means of power accumulated during the travel of said piston, substantially as shown and described.

2. The reciprocating grooved plate F, in combination with the oscillating valves, the arms J, bar K, stud K', and the spring and levers by which said stud is thrown from one groove to the other, substantially as shown and described.

3. The reciprocating grooved plate F, in combination with the stud K' and the levers and springs by which said stud is thrown from one groove to the other, as a means of operating oscillating valves, substantially as shown and described.

4,207. — Clock-Case. — Elias Ingraham, Bristol, Conn.—Design No. 3,830, dated February 15, 1870.

Claim.—The ornamentation of a clock-case by forming its edge into corrugations or transverse elevations and depressions, *c d*, substantially as shown and described.

4,208.—Table-Caster.—Division A.—Cyrus H. Latham, Lowell, Mass., assignor to Woods, Sherwood & Co., same place.—Patent No. 104,743, dated June 28, 1870.

Claim.—The caster herein described, consisting of the handle, cups, and legs of twisted wire, combined and arranged substantially in the manner described and specified.

4,209.—Cup for Casters, &c.—Division B.—Cyrus H. Latham, Lowell, Mass., assignor to Woods, Sherwood & Co., same place.—Patent No. 104,743, dated June 28, 1870.

Claim.—As a new article of manufacture, a cup, basket, or holder of twisted wire, constructed substantially in the manner and for the purposes set forth and specified.

4,210.—Material for Bearings and Packings.—Eliza Dexter Murfey, New York, N. Y., assignor to the Manhattan Packing Manufacturing Company, same place. Patent No. 105,361, dated July 12, 1870.

Claim.—1. A sheet of paper or other material coated or impregnated with plumbago or its equiv-

alent, and applied to a bearing or step, as described.

2. The said sheet prepared as described, and condensed under pressure.

3. A packing or bearing, consisting of a sheet saturated with rubber or its equivalent, and having a composition applied to and compressed on the surface of the same, as set forth.

4. The said sheet perforated and coated or impregnated as described.

5. The said coated or impregnated sheet applied to a step or bearing and polished, as set forth.

6. The combination, with a step or bearing, of the said sheet and a layer of felt or its equivalent, as specified.

4,211.—FRUIT-JAR.—Thomas Garrison Otterson, Philadelphia, Pa., assignor to S. B. Rowley.—Patent No. 36,853, dated November 4, 1862; reissue No. 2,977, dated June 9, 1868.

Claim.—A fruit-jar having the following features: a groove or recess in the exterior of the neck, below the mouth, the bottom of said groove or recess forming a continuation of an exterior shoulder on the jar, and a cover overlapping that portion of the jar above the said shoulder, and adapted to bear upon and compress a packing-ring resting upon the said shoulder, and being applicable to and removable from the packing-ring without turning it thereon.

4,212.—WAGON AND CAR-UNLOADING APPARATUS.—Noah Swickard, Galva, assignor, by mesne assignments, to Nicholas E. Phillips and John W. Cline, Knox county, Ill.—Patent No. 83,005, dated October 13, 1868.

Claim.—1. The tilting platform B, in combination with platform or floor A, as and for the purpose set forth.

2. Spring supports E, arranged and operating in connection with platforms A and B, for the purpose set forth.

3. The combination of spring supports E, lever F, and cam-shaft *f*, for the purpose set forth.

4. The combination of platform B with self-acting dogs G, for the purpose set forth.

5. The combination of platforms A and B with a stop device, I, for the purpose set forth.

6. The combination of platforms A and B with receiving-bin or chute C, operated substantially as described, for the purpose set forth.

7. The combination of platforms A and B with lid D, for the purposes set forth.

4,213. — CALENDAR CLOCK.—William A. Terry, Bristol, Conn.—Patent No. 79,026, dated June 16, 1868.

Claim.—1. The month-wheel D, constructed with an extra tooth in addition to thirty-one, as described, in combination with the operating mechanism which moves the month-wheel D forward at the end of the months, for the purpose of moving said wheel over a space equal to two or more of its teeth at the end of every month, substantially as described.

2. The arrangement of the pin A and pinion *g*, or their equivalents, in relation to the wheels D C, revolving together as described, so that the differential movement between the wheels shall take place at the end of each month, as herein specified.

3. The combination of the disk A with the wheel C, pins *b* and *c*, the pawl *a a'*, the stops *d l m n*, &c., the wheel D, the pinion *g* or its equivalent, and the pin A, constructed and operating substantially as described.

4. The combination of the disk A (having the month of the year marked thereon) and the pointer B, combined and operating together within a circle of figures representing the days of the months, so that the same pointer shall indicate the month and the day of the month, substantially as described.

5. The combination of the pin *b*, or its equivalent, with the dog or pawl *a a'*, the stops *d l m n*, &c., and the wheels D and C, each revolving upon a stationary axis and all operating together, substantially as described.

6. The combination of the parts named in claim 5, pinion *g*, and pin A, whereby the changes of the wheel C, which operates the month-indicator, shall take place between the last day of one month and the first day of the next month, substantially as described.

7. The combination of a leap-year indicator, and its operating mechanism, with a clock-calendar movement, combined and operating together, substantially as described, so that the relative position of the parts of said operating mechanism is indicated upon the dial by indicating the year relative to leap-year, for the purpose of more conveniently setting the calendar, as herein described.

4,214.—MACHINE FOR CUTTING NAILS.—Alonzo P. Winslow, Cleveland, Ohio.—Patent No. 108,225, dated October 11, 1870.

Claim.—The serrated-edged cutters J K, when arranged in relation to each other, to operate in the manner substantially as described, and for the purpose set forth.

DESIGNS.

4,522. — FRUIT-JAR CLAMP.—Peter John Biesenbach, Rochester, N. Y.

Claim.—The design for a fruit-jar clamp, as herein illustrated and described.

4,523.—TUCK-COMB.—Elias Brown, Wappinger's Falls, N. Y.

Claim.—The design for a tuck-comb, as shown and described.

4,524.—CLOCK-CASE.—Robert Dunn, Brooklyn, N. Y., assignor to Waterbury Clock Company, Waterbury, Conn.

Claim.—The design for a clock-case, as shown.

4,525. — SHIRRED GOODS.—Ansel Hecht, New York, N. Y.

Claim.—The design for shirred goods, as shown.

4,526. — WOVEN SHAWL-FABRIC.—Joseph Hodgson, Philadelphia, Pa., assignor to Thomas Dolan, same place.

Claim.—The design for a woven shawl-fabric, substantially as described and illustrated in and by the accompanying drawing.

4,527. — WOVEN SHAWL-FABRIC.—Joseph Hodgson, Philadelphia, Pa., assignor to Thomas Dolan, same place.

Claim.—The design for a woven shawl-fabric, substantially as described, and as illustrated in and by the accompanying drawing.

4,528. — WOVEN SHAWL-FABRIC.—Joseph Hodgson, Philadelphia, Pa., assignor to Thomas Dolan, same place.

Claim.—The design for a woven shawl-fabric, substantially as described and as illustrated in and by the accompanying drawing.

4,529.—TYPE.—John K. Rogers, Brookline, Mass.

Claim.—The design for printing-types, as shown.

4,530.—TYPE.—John K. Rogers, Brookline, Mass.

Claim.—The design for printing-types, as shown.

4,531.—TYPE.—Carl Schraubstädter, Brookline, Mass.

Claim.—The design for printing-types, as shown.

4,532.—WOVEN FABRIC.—Royal C. Taft, William B. Weeden, and James W. Taft, Providence, R. I.

Claim.—The design herein described, consisting of the single-threaded lines *a a a a a*, of equal sizes, of a contrasting color, equidistant, and arranged in series A, separated by spaces B, having a corresponding width with the series A, and relieved by spots of a contrasting color.

4,533. — MEDICINE-DROPPER. — Henry A. Tweed, New York, N. Y.

Claim.—The design for a medicine-dropper, as herein shown and described.

4,534. — BLOCK OF SOAP. — Anthony Van Haagen, Philadelphia, Pa., assignor to McKeone, Van Haagen & Co.

Claim.—The design for a block or cake of soap, substantially as described, and as represented in and by the accompanying drawing.

TRADE-MARKS.

109.—STOVE-POLISH.—James L. Prescott, North Berwick, Me.

110.—TOBACCO.—Reune R. Randolph, New York, N. Y.

111.—WATER-PROOF GOODS.—Charles Toppan, Wakefield, and Moses F. Winn, Woburn, Mass.

EXTENSIONS.

ROBERT BRYSON, of Schenectady, N. Y.—Letters Patent No. 16,204, dated December 9, 1856.

"Improvement in Machines for Husking Corn."

Claim.—The combination of the two endless aprons G I, corrugated rollers E F F, and guard J, when constructed, arranged, and operating as shown, for the purpose set forth.

JOHN NEVILLE, of Brooklyn, N. Y.—Letters Patent No. 16,214.—Dated December 9, 1856.

"Improvement in Making Cast-Steel."

Claim.—The within-described process of converting wrought-iron into cast-steel, consisting essentially in the use of the various compounds of cyanogen and of sal-ammoniac, either separately or in combination with each other, or with other ingredients, when mixed and fused with the wrought-iron which is to be thus converted.

SILAS S. PUTNAM, of Neponset, Mass.—Letters Patent No. 16,186, dated December 9, 1856.

"Improvement in Machines for Forging Iron."

Claim.—The arrangement of the four hammers operating in pairs, in the manner set forth, and actuated by a single central cam, as described.

WENDELL WRIGHT, of Bloomfield, N. J.—Letters Patent No. 16,254, dated December 16, 1856.

"Mode of Securing Springs in Upholstery."

Claim.—Securing the spring A to its seats B B by having annular grooves *a* made in the seats, one in each, and having the greater portion of the coils C at the ends of the springs made or bent in horizontal form and somewhat larger in diameter than the grooves *a*, so that they will have a requisite bearing on the seats and be retained by their elasticity within the grooves, as herein described.

C. O. CROSBY, of New Haven, Conn.—Letters Patent No. 16,266, dated December 23, 1856; reissue No. 3,687, dated October 26, 1869.

"Improvement in Machinery for Folding Paper."

Claim.—1. The combination, with a vibrating fly, of a folding-blade, which shall form a bight or double in the sheet for the first fold, as it is received from the press, and deliver the same to mechanism to complete the folds, whereby the sheets of paper may be folded direct from a printing-press, substantially as described and specified.

2. The combination, with a vibrating fly and folding-blade, of griping-bars, constructed, arranged, and operating substantially as described and specified.

3. The folding-blades, in combination with the fingers, arranged and operating substantially as described and specified.

4. The employment and use of jaws, one of which in each set is cut away, in combination with a folding-blade having portions cut away, so that the sheets of paper can be griped at the points where the blade is cut away, and firmly held during the retraction of the folding-blade from the jaws, substantially as described and specified.

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PATENTS.

110,414.—APPARATUS FOR SUPPLYING AIR.—Henry W. Adams, Philadelphia, Pa.

Claim.—The combination and arrangement of the wheel B, provided with compartments in the case A, pipes P, E, H, and *f*, gearing G, *g*, *i*, pulley N, cord *c*, and frame I, all constructed and operating as shown and described, as and for the purpose set forth.

110,415. — WOOD-SPLITTING MACHINE.—William A. Allen, Baltimore, Md.

Claim.—1. The combination of the feeder, reciprocating cutters, and the reciprocating plate, all substantially as specified.

2. The combination, with the cutters and the hopper, of the gate *a*, substantially as specified.

110,416. — RAILROAD-CAR VENTILATOR.—George B. Armstrong, Chicago, Ill., and George F. McLellan, Washington, D. C.

Claim.—A dust-guard and fan for railway travelers, consisting of the rod A, two or more arms B B B, and flexible material D, combined and operating substantially in the manner and for the purpose herein described and set forth.

110,417.—PLOW.—James Archer, Springfield, Wis.

Claim.—The construction and arrangement, with the double mold-boards C and plow-standard B, of the bar A, rear standard D, slotted plow-beam E, and key G, substantially as and for the purposes herein set forth.

110,418.—MACHINE FOR BURRING WOOL ON THE SKIN.—Edward H. Ashcroft, Lynn, Mass.

Claim.—The improved pelt-deburring machine, composed of the adjustable slide-bar or pelt-supporter, made as described, its adjusting-screws or devices as set forth, and the rotary series of blades

or beaters, all arranged in and combined with a supporting-frame, so as to operate in manner as specified.

110,419.—CULTIVATOR.—Robert H. Avery, Galesburg, Ill.

Claim.—1. The combination and arrangement of the elevated couplings H', K, and M, and connecting or link-rods O and P, with the plow-beams A of a cultivator, as and for the purpose substantially as set forth.

2. The chains a a, when combined and arranged to operate with the rods or bars M M and handles C C, and elevated couplings H and K, substantially as described, and for the purpose specified.

110,420.—COFFEE-POT STRAINER.—George A. Barron, Pembroke, Me.

Claim.—A coffee and teapot-strainer, made adjustable, or so as to be increased or diminished in diameter, and substantially in the manner shown and described.

110,421. — BOTTLE-FASTENING.—Benjamin Bates, Baltimore, Md.

Claim.—A bottle-fastening, consisting of the metal collar c, provided with eyes a a and hinged loop d, and fastening-string or wire g, by which the collar is secured around the neck and the cork in the bottle, substantially as shown.

110,422. — COUPLING FOR SHAFTING. — Charles Bean, Providence, R. I., assignor to Albert F. Allen, same place.

Claim.—A shaft-coupling or sleeve constructed in two longitudinal parts, united by an angular joint parallel with the shaft, and secured by tapering keys, substantially as shown and described.

110,423. — MEDICAL BITTERS. — Theodore Beck, Omaha, Nebraska.

Claim.—The composition of the medical bitters as above described, and manufactured of the within-named ingredients, in such proportions as above indicated.

110,424.—TAKE-UP MECHANISM FOR SEWING-MACHINES.—Walter Bennett, Springfield, Ill.

Claim.—A thread take-up, attached centrally to and moving with the vibrating arm of the sewing-machine, its back end being free to come in contact with a fixed stop on the upward movement, and with a projection on the foot-bar on the downward movement, as and for the purpose described.

110,425. — MIDDLINGS-PURIFIER.—Lemuel G. Binkley, Baughman, Ohio.

Claim.—1. The hinged deflectors O O^1 O^2, arranged in the chamber K with reference to the air-tube J, fan L, and hoppers M M^1 M^2, provided respectively with the spout N, gate m, and spout m^2, as herein shown and described, for the purpose specified.

2. The arrangement with the reels B and G, and conductors F H I, of the air-pipe J, chamber K, hoppers M M^1 M^2, spouts N I, and hinged deflectors O O^1 O^2, substantially as herein shown and described.

110,426.—THUMB-SUPPORTER.—James Sanford Borden, Bloomfield, Ill.

Claim.—An improved thumb-supporter, consisting of the socket A, band B, arms C, ring D, and tube E, arranged substantially as specified.

110,427.—METHOD OF PRODUCING ILLUMINATING-GAS.—John F. Boynton, Syracuse, N. Y.

Claim.—1. The use of nitrogen gas, prepared and carbureted, substantially as and for the purposes herein set forth.

2. The mixture of nitrogen and hydrogen, for the purposes herein described.

110,428. — PORTABLE FARE-BOX.—Alfred Bradley, New Orleans, La., assignor to himself and W. L. Cushing, same place.

Claim.—The double pivoted angular guards B H, and spring-plates or leaves F G, in combination with each other and with the box or case A, substantially as herein shown and described, and for the purpose set forth.

110,429.—CHURN-DASHER.—Robert Brown, Columbus, Miss.

Claim.—A churn dasher, consisting of the ring A, bars C and D, and the tube E, the latter for the attachment of the handle, all combined and arranged substantially as specified.

110,430, antedated December 9, 1870.—SAW-TEETH.—Isaiah Byrd and Turner Byrd, Jr., Calvin township, Mich.

Claim.—The tooth B, constructed as described, in connection with the shoulders b b' and projection c of the saw-plate A, and secured thereto by the rivets c c', as and for the purpose set forth.

110,431. — WIRE FOR MAKING PEGS FOR BOOTS AND SHOES.—Duncan H. Campbell, Sunderland, Scotland, and Erastus Woodward, Charlestown, Mass.

Claim.—As a new article of manufacture, a wire cable, of continuous size throughout, for attaching the soles to boots and shoes, formed from one central wire, a, or a column of wires, surrounded by one or more wires, b b b, of any desirable pitch, and united together by means of a solder or alloy, for the purpose as herein fully set forth and described.

110,432. — LUBRICATING COMPOUND FOR STEAM AND OTHER PACKING.—William M. Canfield, Philadelphia, Pa.

Claim.—1. A lubricating compound, composed of tallow, myrtle wax, Brazilian wax, beeswax, Japanese wax, German black-lead, American graphite, and asbestos, all combined in or about the proportions herein set forth.

2. A lubricating compound, composed of American graphite, myrtle wax, tallow, beeswax, and Brazilian wax, all combined in or about the proportions herein set forth.

3. A lubricating compound, composed of German black-lead, asbestos, Japanese wax, tallow, and beeswax, all combined in or about the proportions herein set forth.

110,433, antedated December 15, 1870.—BOOT-JACK AND DOOR-BUFFER.—Walter S. Chatham, Williamsport, Pa., assignor to John W. Riddell, same place.

Claim.—As a new article of manufacture, a boot-jack and door-buffer combined, substantially as herein described, and for the purposes set forth.

110,434. — UMBRELLA-HOLDER. — Almon Clarke, Sheboygan Falls, Wis., assignor of one-half his right to Charles A. Spencer, same place.

Claim.—1. The method of holding an umbrella so that it can be adjusted and secured at any desired altitude or angle, and in any direction.

2. The double bearing D, constructed and operated as described, and for the purpose specified.

3. The combination of the shaft C with the socket A, bearing B, and double bearing D, as described, and for the purpose specified.

4. The improved umbrella-holder, constructed, arranged, operated, and operating as specified.

110,435.—ASTRONOMICAL LANTERN.—James Freeman Clarke, West Roxbury, Mass.

Claim.—1. The within-described astronomical lantern, provided with one or more perforated maps of the heavens or portion thereof, operating

substantially in the manner and for the purpose set forth.

2. In combination with the above, the box or receptacle C, as and for the purpose described.

110,436.—TIDAL MOTIVE-POWER.—Walter R. Close, Bangor, Me.

Claim.—1. Obtaining a continuous revolution of a shaft, in a desired direction, by means of the cylinders E E', revolving in alternate directions on the shaft D D', and acting in connection with the stationary collar F, pawls e e', springs d d', and ropes or chains K K', all as shown and described.

2. The cylinders E E', in combination with the shaft D D', collar F, pawls e e', springs d d', ropes or chains K K', with the weights I I', floating weight or craft G, and the upright posts or standards C C', all as shown and described.

110,437.—DIE-PLATE FOR SCREW-CUTTING DIES.—William T. Cole, New York, N. Y.

Claim.—An improved shell, having the base-plate B, ribs E H I, and recesses F M, all cast in one piece, combined with a covering-plate, K, as shown and described.

110,438.—FOLDING-CHAIR.—Francis Colton, Brooklyn, N. Y.

Claim.—In combination with the frame A, provided with the elongated slots f f, the seat D, having attached to it the guides e and braces or supports E, and the rear legs G and braces I, I^2, J, and J^2, when the same shall be constructed and operate substantially as and for the purposes set forth.

110,439. — FASTENING FOR NECK-TIES.—William J. Cowing, Washington, D. C.

Claim.—The rider a, wings b, eye c, and pin d, all constructed and arranged to operate as specified.

110,440.—MACHINE FOR GROOVING BLOCKS FOR WOOD PAVEMENTS.—Perley D. Cummings, Portland, Me.

Claim.—The combination of the scorers I M, cutter P with the feeding device A' C' and the cutting-box, with its series of independent self-adjusting rollers.

110,441. — SELF-CLEANING LOCOMOTIVE SMOKE-STACK. — Samuel M. Cummins and Henry Isreal, Allegheny, Pa., assignors for one-third their right to Ransom C. Wright, same place.

Claim.—1. The pipe F, provided with stops or breakers O O O and openings N N N, in combination with pipes P and D, substantially as and for the purpose described.

2. The openings N N N, in combination with the passages B, for counteracting the draught on the tubes B, which communicate with the furnace, substantially as herein described.

110,442.—PRESS FOR HAY, COTTON, &c.—Matthew G. Cunningham, Corsicana, Texas.

Claim.—The combination and arrangement of the case A, frame B, follower C, rods F, cross head G, screw I, nut H, wheels M and N, and the sweep, all substantially as specified.

110,443.—HAY AND COTTON-PRESS.—Joseph K. Davis, Monticello, S. C.

Claim.—The uprights B B, provided with scarf or beveled joints A A, catches C C, and notches f f, as and for the purposes hereinbefore specified.

110,444, antedated December 15, 1870.—CARRIAGE-WINDOW.—James F. Dohan, Binghamton, N. Y.

Claim.—The outside section B, having the sharp teeth or points "uniformly" produced on its outer edge, in combination with the inside section C and glass D, substantially as and for the purpose herein described.

110,445. — GRAIN-SEPARATOR. — James W. Donaldson, Fairfield, Cal.

Claim.—The combination of the plate T with the projection Q, shaft O, and nut U, as described, for the purpose set forth.

110,446. — SNOW-PLOW FOR RAILWAYS.—Tiberius Dougherty, Philadelphia, Pa.

Claim.—1. The spring-wings c' at the side of the plow, substantially as and for the purpose described.

2. The railway snow-plow, consisting of the rotating shovels b, shafts c, gearing g' g, and driving-rods a, arranged in relation to each other and to the running wheels of the plow, substantially as and for the purposes described.

110,447, antedated December 10, 1870.—COMBINED BROADCAST SEEDER AND CULTIVATOR.—Joseph E. Fargo, Lake Mills, Wis.

Claim.—1. The feed-shaft C and sleeve c, shifter D, clutch b', pinion b, and gear a, arranged and operating as and for the purpose set forth.

2. The partially-fluted or recessed cylinders I, secured to the shaft C and rotating in the feed-box H, vibrating guard K, spring k, spout J, plate j, and shifter F, substantially as described, and operating for the purposes herein set forth.

3. The rock-shaft N, eccentrically journaled in the frame-standards E, and operated by means of the lever P, notched quadrant Q, dog R, bell-crank lever p, wire p', and tripper q, for raising the drag-bars L by means of the chains O, substantially as described.

4. The hemispherical washers l, in connection with the drag-bars L, when constructed and arranged as described and shown, and as and for the purpose set forth.

110,448.—DEVICE FOR SIGHTING AND FIRING ORDNANCE.—George K. Farrington, Alcatraz Island, Cal., assignor to himself, Lorenzo Hubbard, and C. W. M. Smith.

Claim.—1. The cascabel E provided with the recess G, in combination with the chambered vent P in the breech, as and for the purpose described.

2. The cascabel E having the recess I, when combined with the wedge H, as described, for the purpose set forth.

3. A piece of ordnance, constructed substantially as described, with chambers, recesses, wedge, weight, and rest, for the purpose set forth.

110,449. — LENS OR GLASS FOR HEAD-LIGHTS.—Henry C. Felthousen, Buffalo, N. Y.

Claim.—A front glass for head-lights, as a new article of manufacture, when cast solid in a single piece, and of the form shown and described.

110,450. — BUSHING FOR WARP-BEAMS.—Richard Ferguson, Louisville, Ky.

Claim.—1. The adjustable tapering metal sleeve A, having a longitudinal opening, B, with parallel sides, and an adjusting set-screw, C, in combination with a removable warp-beam and its shaft, constructed and arranged as described, and for the purpose set forth.

110,451.—SAW-MILL. — Charles M. Flint, Hancock, N. H.

Claim.—1. The combination and arrangement of the carriage B, its grooved ways C C, the bar or carrier E, the jaws m n, right and left screws q r, rod t, support plates o p, carrier and guide s, shaft F, wheels G G, bands a b a b, rack H, slider I, the pawl or pawls e d, stud e, cams K L, the toothed wheel M, catch-lever N, and cam O, the whole being applied and to operate together, sub-

sentially in manner as explained, so as to constitute an improved head-block for saw-mills, whereby, by whose operation, a log may be supported and presented and moved with reference to a saw, in manner as explained.

2. The combination for advancing the log bar E, the same consisting of the shaft F, wheels G G, bands *a b a b*, the rack H, the slider I, its pawl or pawls *c d*, the stud E, and the stationary cam K, and the adjustable cam L, the whole being arranged substantially in manner and so as to operate as set forth.

110,452.—DRIP-ATTACHMENT FOR UMBRELLAS. — Thaddeus Fowler, Tottenville, N. Y.

Claim.—The sponge *a* or other absorbent, in combination with the staff and cover of an umbrella, so as to receive and hold the drippings therefrom, and from which the water may be ejected by compression, substantially as and for the purpose described.

110,453.—WASHING-MACHINE.—Abram A. Gardner, Savannah, Mo.

Claim.—The arrangement of the cylinder, consisting of the pieces *b*, peripherical plates *c*, buckets *d'*, and rib *e*, as specified.

110,454. — INCUBATOR. — Jacob Graves, Reading, and Henry Graves, Boston, Mass.

Claim.—1. The burner S, provided with the beveled tube S' and regulator T, as and for the purpose set forth.

2. In combination with the burner S, constructed as described, the cylinder M, cork-float N', tube K, rod N, lever O, spring V, and crank U, arranged and operated substantially as described.

3. In combination with burner S, cylinder M, cork-float or piston N', tube K, rod N, lever O, spring V, and crank U, the valve P and wires R, substantially as set forth.

4. In combination with burner S, cylinder M, cork-float or piston N', tube K, rod N, lever O, spring V, crank U, and valve P, the cold-air tube W, substantially as set forth.

5. The combination of the artificial mother, shown in fig. 5, with burner S, cylinder M, cork-float or piston N', tube K, rod N, lever O, spring V, crank U, and valve P, substantially as set forth.

110,455, antedated December 22, 1870.—POWER-PRESS. — Albert D. Hamlin, Brooklyn, N. Y., assignor to Mays & Bliss, same place.

Claim.—1. The combination of the key or plug J, formed with a reduction, *f*, and made capable of turning, as described, the shaft G, having a groove, *e*, in it, the lever K, the disk I, with its projection L, and the trip or stop-lever M, substantially as specified.

2. The combination of the pitman F, arranged within the cheeks or sides *b b* of the mandrel C, and relatively to the box or guide E, for operation therethrough, and the bushes D D', made to fit the V-shaped edges of the cheeks *b b*, essentially as as shown and described.

110,456.—FLOUR-BOLT.—Cyrus T. Hanna, Keokuk, Iowa.

Claim.—1. The arrangement of the fast and loose ends of the tail-pieces F with the ends of the stationary and movable parts of the ribs C, substantially as herein shown and described, and for the purpose set forth.

2. The arrangement of the head-piece G, with the ends of the stationary and movable parts of the ribs C, substantially as herein shown and described, and for the purpose set forth.

110,457.—LAWN-MOWER.—Hubert C. Hart, Unionville, Conn.

Claim.—The combination of the main roller *e*, cam-shaft A, with cam *i j*, gearing *f g*, lever K, cutter *m n*, and the frame *a*, when the parts are constructed and arranged specifically as described, for the purpose set forth.

110,458. — CORN-PLANTER.—Charles Allen Haskell, Galena, Ill.

Claim.—1. In corn-planters, the truck-frame F, carrying a seed-dropping device and moving on the frame A, as and for the purpose set forth.

2. The frame-standards N, shaft O, pinion O', lever N', ratchet *e*, dog S, and latch *f*; the arm G, rod G', chain-wheels P P', chain Q, and dropper-shaft I, in connection with the axle A, driving-gear C', and truck-frame F, all arranged and operating substantially as described, for the purpose specified.

3. The slide-boxes L, catches *a*, catch-spring *a'*, and the slide-bars M provided with markers M', as and for the purpose set forth.

110,459. — CANAL-LOCK MECHANISM. — George Heath, Annapolis, Md.

Claim.—The hollow rock *a*, fitted and confined by a nut or stop upon the reduced portion of a vertical rod A, which serves as part of the mechanism for opening and closing canal-lock valves, substantially as and for the purpose described.

110,460, antedated December 24, 1870.—GAUGE FOR TURNING CLOCK-WORK.—Harry F. Henderson and James E. Ladd, Bristol, Conn.

Claim.—The improved gauging-tool herein described, consisting essentially of the shafts D *d*, socketed post *b*, tube *c*, collars *f f'*, spring *g*, screw and nut *j k*, and gauge-disk *l*, constructed and combined substantially as herein described.

110,461.—NON-CONDUCTING COMPOUND FOR COATING STEAM-BOILERS, &c.—John Hessing, Paterson, N. Y.

Claim.—The improved compound, consisting of the ingredients and compounded substantially in the manner specified.

110,462.—MACHINE FOR CUTTING THE ENDS OF HOOPS.—Lorenzo N. Howes, Swansey, N. H.

Claim.—The knives D D, arranged with their rear ends inclined toward each other in the sliding stock E, which is operated by the lever G, in combination with the tapering bed A, substantially as and for the purpose herein described.

110,463.—COMPOUND AND PROCESS OF REMOVING INCRUSTATIONS OF LIME FROM STEAM-BOILERS, METALS, &c.—J. Austin Hewett, Nora Springs, Iowa.

Claim.—The compound and process for dissolving lime and for cleansing steam-boilers, metals, mechanical instruments, and all kinds and descriptions of machinery whatever from the deposits of lime and from all corroding and impure substances which exist or may be found in water, either hard or soft, fresh or salt, separately or combined, with safety and without injury to the materials of which they are composed, substantially as described.

110,464.—LAMP.—Charles F. A. Hinrichs, New York, N. Y.

Claim.—1. The pipe *b*, passing from the reservoir *a* to the wick-cylinder *c*, and bent within the globe or ornament *e*, through which globe *e* the slide tube *f* for the standard *g* also passes, as and for the purposes specified.

2. The wick-cylinder *c* and movable collar *l*, in combination with a burner from which the wick hangs, substantially as and for the purpose set forth.

110,465.—MANUFACTURE OF LEATHER.—Frederick A. Holcomb, Grand Rapids, Mich., assignor to himself and Samuel B. Jenks.

Claim.—The use upon the surface of skins while they are in a wet condition, after coming from the tanning solution, a mixture of plaster of Paris and water, or of other substances having a similar nature or effect, in order thus to prevent the skins from drying so hard that they cannot be readily softened, especially such skins as have not been in strong tanning solutions.

110,466.—PROPULSION OF CANAL-BOATS.—Julius L. Hornig, Chicago, Ill.

Claim.—1. The drums or sheaved wheels C, provided with the central groove *a* and side grooves *b*, in combination with the rail A and the endless chain E, all constructed substantially as described and shown, for the purposes set forth.

2. The carriage B, provided with inwardly-projecting bosses *c* at the ends of the side frames thereof, and with the drums C, guide-wheels M, and grooved pulley F, all constructed and arranged substantially as described and shown, for the purposes set forth.

3. The guide-wheels M, traversing loosely upon a connecting-axle, constructed and arranged substantially as described and shown, for the purposes set forth.

4. The combination of the shaft G, rotated by suitable power upon a canal-boat, the pulley I, the brace H, the carriage B, provided with pulley F, drums C, and guide-wheels M, the endless chains J and E, and the rail A, all constructed and arranged substantially as described and shown, for the purposes set forth.

110,467.—FIRE-BOX FOR STOVES AND RANGES.—Marcus L. Horton, Windsor, Vt.

Claim.—1. The combination of the series of slats *g*, arranged as described, with the back-plate, and its series of perforated partitions *d*, all being arranged as and for the purpose of making a metallic lining for a furnace, as specified.

2. The combination and arrangement of the slatted check-plate G, made as described, with the series of slats *g*, arranged as set forth, and with the back-plate *c*, and its series of divisional perforated partitions *d*, all being arranged as explained.

3. The combination and arrangement of the fire-brick lining A, as set forth, with the metallic lining, as composed of the series of slats *g*, and the back-plate *c*, and its perforated partitions *d*, or of such and the check-plate G, as described, arranged as explained.

110,468, antedated December 9, 1870.—DEVICE FOR FILLING LOWLANDS.—George Howell, Philadelphia, Pa.

Claim.—The combination of the adjustable scooping-trunks G G with the boat F, the said trunks being constructed and arranged substantially as described, and discharging the dirt into a scow, T, as specified.

110,469.—REFINING OIL FROM COTTON-WASTE, &c.—Edgar T. Jarrold, Tottenville, N. Y., assignor, by mesne assignments, to himself, Henry S. Gerow, and Henry McLean, of New York City.

Claim.—The mode or process of refining oils and greases obtained from refuse cotton-waste and similar material, by distilling such oils or greases in connection with steam, either common or superheated, introduced into the contents of the still, and afterward treating the same with sulphuric acid and bichromate of potash, substantially as described.

110,470.—MEDICAL COMPOUND FOR CURE OF RHEUMATISM.—Nathaniel Jenkins, New Orleans, La.

Claim.—The above medical compound, substantially as and for the purposes described.

110,471.—SPRING-BED BOTTOM.—William B. Judson, Poughkeepsie, N. Y., assignor to L. P. Nelson, Jr.

Claim.—1. The combination of the springs S, made with straight sides, *s s*, at top and bottom, tubes *a a*, inclosing the straight sides from angle to angle, and packing placed between the tubes and the straight sides, all in the manner shown in the drawing, and described herein.

110,472, antedated December 17, 1870.—BASE-BURNING STOVE.—William Kaiser, Wilkesbarre, Pa.

Claim.—1. The arrangement and combination of the revolving depressible outer casing or ring *e* and the inclined rods *k k* and columns *h h*, as and for the purpose hereinbefore set forth.

2. The combination, with the revolving depressible ring or outer casing *e* and inclined rods *k k*, of the cylinder grate *d* and stationary grate *f*, substantially as and for the purpose hereinbefore set forth.

110,473.—SPICE-BOX.—Edward S. Kennedy, Birmingham, (Buchanan Post-office,) Pa.

Claim.—1. The spice-box A, made with two compartments and provided with caps D and adjustable perforated plates E F, whether used with or without a stand, substantially as herein shown and described, and for the purpose set forth.

2. The combination of the box A, made with two compartments, caps D, perforated pivoted plates E F, pivots B, and stand C, with each other, said parts being constructed and operating substantially as herein shown and described, and for the purpose set forth.

110,474.—SCYTHE-FASTENING.—Samuel U. King, Windsor, Vt.

Claim.—The described scythe-fastening, as constructed with the hooked clamp C, and its nut *b* arranged between the hooked abutment *g* and the toe-socket *c*, all being substantially as specified.

110,475. — SMUT-MACHINE. — William H. Kite and George S. Newman, Liberty Mills, Va.

Claim.—The combination and arrangement of the cylinder B, having the perforations *a* and *b*, with the shaft A, provided with scouring plates C C, upper fans E E, and lower fans F F, double funnels or diaphragms D D, spouts H, and casing L, all constructed and operating substantially as shown, and for the purposes set forth.

110,476. — ATTACHMENT FOR RATLINS.—John Calef Knowlton, Rockport, Mass.

Claim.—My improved ratlin attachment as composed of the yoke or clasp A, the screw-bolt C, the nut D, the thimble E, and the eye made in the ratlin in manner as described or represented.

110,477.—VINE AND WEED-CUTTER.—Harry Lawrence, New York, N. Y.

Claim.—The combination of the gathering-blades, rotary cutter, and the discharger, either mounted on an independent truck or on the truck of a potato-digging machine, all substantially as specified.

110,478. —WASHING-MACHINE. — Balsam Chaffin Lawson, Yolo county Cal.

Claim.—The combination of the circular bottom, the dasher G, the inclining wash-boards or racks C C, and the converging sides or beveled boards E E, in combination with axle M, pitman L, and weighted lever K, as constructed and shown, as the same is set forth in the foregoing specifications.

110,479.—KNITTING-MACHINE.—John Lee, Mark Lee, and William Carter, Needham, Mass.

Claim.—1. The yarn-guide carrier S, constructed and arranged substantially as specified.

2. The shifting rotary yarn-guide receiver Y, constructed, arranged, and operating substantially as specified.

3. The combination, with the receiver, of the springs X' and the spring-top 14, substantially as specified.

4. The yarn guides *a d b*, constructed and arranged substantially as specified.

5. The combination, with the rotary yarn-guide receiver Y, of the toothed racks *i j* and the oscillating shifting disks *l m* and pins *n*, the said disks and pins arranged for operating the receiver for changing the yard-guides, all substantially as specified.

6. The combination, with the disks *l* and *m* and pins *n n*, of the ratchet-wheels *w*, the pawl *x*, arms *y*, cam 7, springs *u*, sliding-pawl 3, and the spring 4, all substantially as specified.

7. The shifter 5, rod 11, lever 9, cam 7, and spring 13, combined and arranged substantially as specified.

8. The bar 24, provided with the latch-openers 25, constructed as described, and arranged relatively to the needles A and B, as and for the purpose specified.

9. The combination of the adjusting-bars 19, rods 20, screws 21, spring 15, with plates 16, bars 23, 18, and L, all substantially as specified.

10. The arrangement of the bar 18, the slotted bar 26, the spring-stops 27, and push-pins 28, substantially as specified.

11. The combination, with the receiver Y and the yarn-guide carrier, of the guard-wire 34, substantially as specified.

12. The combination, with the receiver, of the yarn-guide 29, substantially as specified.

13. The combination, with the cam-wheel O, of the sliding friction-roller Q and the shifting lever 36, the bar M, and the needle-bar L, substantially as specified.

14. The combination, with the gauge-screws 22, the rods 20, and the needles A, of the bar 24, arranged and operating substantially as specified.

110,480.—NEEDLE AND ITS CARRYING-ARM FOR SEWING-MACHINES.—George A. Lloyd, San Francisco, Cal., assignor to himself, George W. Smiley, James McMeehan, and Anthony Rosenfield.

Claim.—The divided needle *d*, having the loop *g* upon only one side, the said loop being made more rigid than the light elastic portion *e* situated below, when combined with the notched needle arm, as described, for the purpose set forth.

110,481.—COMPOUND FOR CLEANING CARPETS.—Leo. Marks, Cincinnati, Ohio.

Claim.—The carpet-cleaning compound, prepared and adapted to be applied, substantially as herein described and set forth.

110,482.—WASHING-MACHINE.—Moses S. Marshall, Somerville, assignor to John T. Folsom and John S. Folsom, Boston, Mass.

Claim.—1. The cylinder A, having ventilating-tubes D and convex perforated partition H, in combination with circular case E, having tube F, substantially as described.

2. The lid L, having flange I and projections N, in combination with cylinder A, having flanges J K and pivoted bolts O, substantially as described.

3. The weight R, in combination with cylinder A, substantially as described.

110,483.—CONSTRUCTION OF PRISONS.—Edwin May, Indianapolis, Ind.

Claim.—The vertical rods H, furnished with the hooked catches N N, and the vertical rods L, furnished with the lever M, in combination with the levers J J, attached to the lower ends of rods H and L, and connecting-rod K, arranged substantially as and for the purpose set forth.

110,484.—WATER-FAUCET.—Pierre A. Mayor, New York, N. Y.

Claim.—The sleeve B, when provided with the valve-seat *c*, in combination with the plunger D and spindle C, all constructed and operated substantially as described and specified.

110,485, antedated December 16, 1870.—CAMP-BEDSTEAD.—Amos Dunham McCoy, Alexandria, La.

Claim.—The combination of the side-pieces A A' and uprights E with the ridge-pole G, the bars H H', when these parts are made in sectional pieces, which are connected together by sleeve-joints, as herein described, and with a head-rest covered with slats *d*, when all the parts are constructed and arranged with respect to each other as described, for the purpose set forth.

110,486.—AUTOMATIC DOOR-BOLT.—Angus McKay, Montreal, Canada.

Claim.—The novel combination of the plate *c*, flanges *d* and *d*¹, inclined end *d*², bolt *f*, slot *g*, screw *g'*, incline A, shoulder A', bolt 5, slot *k*, screw *l*, spring *m*, stop-pin *n*, together with doors *a* and *b*, and recess for bolt 6 in the doorway, all working together substantially in the manner and for the purpose described.

110,487.—CHURN-DASHER.—James B. Mellor, New Hope, Mo.

Claim.—The improved churn-dasher above described and specified, consisting of the vertical revolving shaft B, having the arms *d* and *e* projecting from opposite sides downward at an angle of forty-five degrees, and the arms *c* and *f* projecting upward from the alternate sides at the same angle, said arms so arranged that the external ends respectively shall lie in the same horizontal plane.

110,488.—FILTER-TANK AND OTHER VESSELS USED IN REFINING SIRUPS, SUGAR, &c.—William Moller, Irvington, N. Y.

Claim.—Tanks, filters, and other vessels for sugar and sirups, constructed of iron, with a lining of cement and sand, substantially as and for the purpose herein shown.

110,489.—TREATING BESSEMER STEEL.—James Myers, Jr., Williamsburg, N. Y.

Claim.—The process herein set forth for converting the iron known as Bessemer steel into a workable steel, substantially as herein shown and described.

110,490.—BALANCED SLIDE-VALVE.—John Nesbitt, Concord, N. H.

Claim.—A slide-valve, A, having an exhaust-cavity cut therethrough, combined as described, with the case B, having puppet-valves E arranged to admit air to the interior of the steam-chest, at the time and in the manner set forth.

110,491, antedated December 15, 1870.—KEY FOR LOCKS.—Webster Park, Norwich, Conn.

Claim.—A lock-key, constructed as described, having a round, grooved stem A, in which is arranged an L-shaped lever or bit, B, so adjusted as to turn astride the edge of the lock-plate when entering a circular key-hole, substantially as and for the purpose set forth.

110,492.—GRAIN-BINDER.—La Fayette Parker, Davenport, Iowa.

Claim.—1. The combined grain-receiver and discharger F P and E E, constructed and operating substantially as described.

2. In combination with the preceding, the arm K', constructed and operating as described.

3. The combination of the sectional gear 38 and irregular spur-wheel 8, constructed as described, to impart an intermittent and irregular motion to arm K', as set forth.

4. The combination of the cam 48, cog-lever 19, sectional gear 39, and hollow rolling-shaft 21 with

the combined receiver and discharger, to cause it to open and discharge the bound sheaf, as shown.

5. In combination with the preceding, the slide 22, for the uses and purposes as described.

6. The combination of the compressing devices, consisting of the pulley Z, strap I, and strap I', and spring P, constructed and operating as described.

7. The combination of spring-stop 24 and rock-stop L with the cylinder-head G and arm K', as shown and described, for the purposes specified.

8. The vibrating twine-holder 3, in combination with spring 9, for the purposes shown and described.

9. The combination of the rod 2, twine-holder 3, and sliding-rack V, as shown and described, for purposes specified.

10. The twine-catch 5, constructed and operating as described, in combination with the circle 4, as and for the purposes specified.

11. The combined divider and guard M, constructed and operating as shown and described.

12. The combination of dog 13, stop N, bell-crank O, and cylinder-head G, arranged and operating as and for the purposes described.

110,493.—(Suspended.)

110,494.—COUNTERSINK.—Moses Magoon Pettee, Worcester, Mass.

Claim.—The improved countersink A, constructed of body C, having ear-pieces *a a*, knife-blade D, set-screws F G, and adjustable guard or lip H, substantially as described and for the purpose set forth.

110,495.—CLEANING WOOL, COTTON, &c.—Goldsbury H. Pond, Rutland, Vt.

Claim.—Immersing them in sulphide of carbon, naphtha, or benzole, to soften, dissolve, or saturate the excrements, oil, gum, dirt, and other impurities, and then sinking the fibrous materials or fabrics in water and allowing the impurities to rise to the surface of the water, with the sulphide of carbon, naphtha, or benzole and removing them from the surface of the water, leaving the cleansed or partially cleansed wool in water.

110,496.—GAS-RETORT AND HEATING-FURNACE.—Goldsbury H. Pond, Rutland, Vt.

Claim.—1. A gas-retort so constructed and arranged as that a fire may be made within it as a furnace for heating buildings, boiling, and cooking, while the fire is incandescent or very hot, close the draught-opening and smoke-escape, and supply steam, melted grease, &c., to the fire while it is hot, so as to make the gas with the fire made within the retort.

2. Arranging the steam or water-heating pipe in furnaces between the soap-stone or fire-brick lining and the outer case of the furnace, substantially as described.

3. In combination with the retort, the door J to close the opening I, constructed and arranged to operate substantially as described, for the purpose set forth.

110,497.—RAILWAY-CAR SPRING.—Albert Potts, Philadelphia, Pa.

Claim.—The plate C, provided with steps on its lower surface for compressing the springs successively, substantially as herein shown and described.

110,498, antedated December 17, 1870.—GRAIN-BINDER.—Francis W. Randall, Tekonsha, Mich.

Claim.—1. The reciprocating hook-bar T'' and sliding jaw T', in combination with a vibrating needle-bar, carrying the binding-twine and the spring-clamp *a'* operated in connection with the tying-cylinder M, the several parts being arranged and actuated substantially as and for the purpose set forth.

2. The knife K, actuated as described, in combination with the clamping devices *a'* and T' T'', the several parts being arranged to operate substantially as described.

3. The tying-cylinder M, rotating intermittently, and provided with spring-clamp *a'*, in combination with the inclosed sliding tube U, looping-rod V, and finger-bar F, said tube and bar having a differential and simultaneous movement imparted to them by means of the link-frame, as described, the several parts being arranged to operate substantially as and for the purpose set forth.

110,499.—LOCK-NUT.—James L. Randolph, Berkeley Springs, West Va.; assignor to S. L. Denny, Christiana, Pa.

Claim.—The plate C, cut and formed as described, with its spring for locking the nut, as and for the purpose set forth.

110,500.—NAIL FOR PICTURES, &c.—Thomas C. Richards, New York, N. Y.

Claim.—The combination, with the knob A, of the ring B, inserted within the periphery and on the under side of the same when in a plastic or molten state, and having its edge turned down over the plate C, which is adapted to receive a shank or nail, substantially as specified.

110,501.—PROPELLING APPARATUS FOR CARS.—John Roy, New Orleans, La.

Claim.—The grooved and suspended friction-wheels C C D applied to street-cars, as and for the purpose described.

110,502.—HANDLE FOR BARRELS, &c.—Minot S. Schofield, Stamford Conn.

Claim.—An improved self-adjustable handle for handling barrels, boxes, and other packages, consisting of the hand-piece A, made of any suitable form, and the jaws B and C, constructed and operating substantially as herein shown and described, and for the purpose set forth.

110,503.—WHIP-HOLDER FOR CARRIAGES.—Erastus W. Scott, Wauregan, Conn.

Claim.—The whip-holder as composed of two leaves, A B, provided with the prongs *c c d d*, cushions *f h*, and contractile screw *g*, and nut *i*, and formed and connected together all substantially in manner and so as to operate as set forth.

110,504, antedated December 16, 1870.—BOTTLE-FILLING APPARATUS.—Thomas Simmons and David H. Lowe, Brooklyn, N. Y.

Claim.—1. The combination of the exhauster, composed of the pipes D E, and the tube or tubular head-piece C, with the cork or stopper B, substantially as specified.

2. The combination and arrangement of the nut *b* with the tubular extension of the head-piece C, the stopper B, the pipes D and E, the collar *d*, and the screw-cap F, essentially as herein described.

110,505.—BREECH-LOADING FIRE-ARM.—James Smiles, Birmingham, England.

Claim.—1. The safety-catch or lever for preventing the accidental discharge of the gun, applied to the sliding sleeve and made to lock or engage the sleeve and bolt or plug together, substantially as hereinbefore described and illustrated in the accompanying drawing.

2. The arrangement or combination of parts, substantially as hereinbefore described and illustrated in the accompanying drawing, for permitting of the ready escape of the gas through the closing-bolt or plug in case imperfect cartridges are fired.

110,506.—PLOW.—Arthur C. Smith, Joyner's Depot, N. C.

Claim.—The hinged part E^2 of the mold-board E^1 E^2 and pivoted brace F, in combination with each other, with the stationary part E^1 of the said

mold-board E' F', and with the frame-work of the plow, substantially as herein shown and described, and for the purpose set forth.

110,507.—CABINET for SEWING-MACHINES. James E. Smith, Chicago, Ill., assignor to himself and Julius Ludwig, same place.

Claim.—The construction and arrangement of the walls A, wall sections A', front board D, flap E, and top F, in connection with the folding table C, substantially as and for the purposes herein shown and set forth.

110,508.—EYELET MACHINE.—Stephen N. Smith, Providence, R. I., assignor to the Union Eyelet Company, same place.

Claim.—The device for regulating the pressure upon the feeding-pawl, consisting of a cam N, rod M, lever L, rod O, nut P, and spring Q, all arranged to operate together as and for the purpose specified.

110,509. — BUCK-SAW. — Ariel B. Sprout, Muncy, Pa.

Claim.—The combination of the lever D with the bar E and stretcher C, for the purpose set forth and described.

110,510. — KEY FOR SHAFTING. — Nathan Stedman, Aurora, Ind.

Claim.—The improved key for shafting, having the concave face with chamfered-sided knife-edges, as explained.

110,511.—BAG-HOLDER.—Alfred D. Swogger, Worth, Pa.

Claim.—The extensible frame A B, having pawl and ratchet to hold it in any position, combined with the flooring *b*, posts *a c c*, and hopper *g*, as and for the purpose described.

110,512.—TURN-UP SEAT FOR CHURCHES, &c.—James P. Tibbits, New York, N. Y.

Claim.—1. The combination of the pivots *i*, bridle-rod F, and the slots *g g*, with the seat and standards, substantially as and for the purpose herein set forth.

2. The yielding cushion-covering strip *d*, supported by springs at the front of the seat, substantially as and for the purpose described.

3. The combination, with the seat, of strips *b* and *d*, furnished with pins *c* and *f*, substantially as and for the purpose herein described.

110,513.—CARRIAGE-BOW.—Isaac N. Topliff, Adrian, Mich.

Claim.—The straight part of the bow A, tubular and flattened at the lower end, the bow-socket D, consisting of two concave scalloped pieces, and the bent part of the bow B', all combined, constructed, and arranged as and for the purposes set forth.

110,514.—POTATO-DIGGER.—William Tripp, Mechanicsville, N. Y.

Claim.—The improved potato-digger, formed by the arrangement of the vertically-extended landside A, and the mold-board or share, provided with the broad and nearly flat extension B, and U or V-shaped recess D, all constructed as shown and described.

110,515, antedated December 10, 1870.—MACHINE FOR HEADING RIVET AND SCREW-BLANKS.—Victor De M. Upham, Brooklyn, N. Y.

Claim.—1. The die-plate *a*, with one or more die-openings, 59, and one or more semicircular grooves or recesses, 59, in combination with the die-block F or frame A, and the moving cutter and finger *d* and *e*, substantially as and for the purposes specified.

2. The construction and arrangement, relative to one another and to the die-plate of the finger and cutter *d* and *e*, of the brasses or bearings *g*, and wedges A, or their equivalents, substantially as shown and described.

3. The combination of the split and adjustable bushing Q, with the adjustable hammer-block E, substantially as and for the purposes set forth.

4. In combination with the subject-matter of the last preceding clause, the connecting-rod D and the eccentric C, on shaft B, substantially as shown and described.

5. For the purposes herein described, and in its relations to the other parts of the machine, the improved connecting-rod Y, the improvement in said rod consisting in making it in two pieces, lapped one on the other, and fastened together by rivets, bolts, or screws, substantially as described.

6. The combination of the shaft B, eccentric C, connecting-rod D, and hammer-block E, with a solid iron frame, constructed substantially as described.

7. The spring 20, arranged and combined with lever K, bolt *n*, connection Y, and cam *w*, in such manner that the spring keeps the end of the connection Y out of contact with the cam during a portion of the revolution, substantially as and for the purposes described.

110,516.—STILL FOR PETROLEUM AND OTHER OILS.—Samuel Van Syckel, Titusville, Pa.

Claim.—1. The combination, with the still B, of the steam-chandelier D, for introducing steam into the vapor of an oil-still, substantially in the manner and for the purposes described and specified.

2. The combination, with the still B, of the dome C and the steam-chandelier D, all constructed substantially in the manner herein described and specified.

110,517.—(Suspended.)

110,518.—HORSE-COLLAR PAD.—James F. Walsh, Hazel Green, Wis.

Claim.—The collar-pad, consisting of leather pieces A B, sheet-metal piece C, and short straps F, all combined, constructed, and arranged substantially as specified.

110,519.—TOY-HOOP.—Rivers Ward, Newark, N. J.

Claim.—1. A toy-hoop, provided with cross-bar or bars and stationary bells, the same being operated by means of a sliding plate carrying hammers, substantially as set forth.

2. The sliding metallic plate D, provided with a slot, *b*, stops or lugs *c c*, and a hammer or hammers, E E, substantially as and for the purpose described.

3. The spring F, arranged in connection with the bell A and sliding plate D, and operating substantially as and for the purpose specified.

110,520. — ADDING-MACHINE.—Francis F. Warner, Chicago, Ill.

Claim.—1. The annular plate B, having holes *b*, slot U, and projection Q, and having the numerals marked thereon, as described, substantially as specified.

2. The ratchet or hundreds-wheel C, with numbers marked thereon, as specified, and the spring S, with its projection *q*, in combination with the annular plate B, having a projection, Q, substantially as and for the purpose specified.

3. The hundreds-wheel C, having the incline surface of the ratchet-tooth *t* extending further out than the remaining teeth, for the purpose set forth, and substantially as specified.

4. The combination of the face-plate D, having apertures J K L M and a stop, P, and numerals marked thereon, as described, the annular plate B, hundreds-wheel C, and disk A, arranged substantially as specified.

110,521.—WINDLASS.—Enos Waterbury and George N. Waterbury, Stamford, Conn., assignors to G. N. Waterbury and A. M. Prior, same place.

Claim.—The combination of the bar-wheel E, with the slotted projection G, ratchet-wheel C, lever M, curved bars L, recessed disk or wheel K, and sleeve J, with each other and with the shaft A and drum I, substantially as herein shown and described, and for the purpose set forth.

110,522, antedated December 17, 1870.—PRINTERS' INKING-ROLLER.—Charles S. Westcott, Elizabeth, N. J., assignor to himself, John Austin, Rollin Germain, New York City, and William H. H. Williams, Middletown, Conn.

Claim.—1. An ink-roller, the body of which is composed of a composition of glue and treacle or glue and honey, such as is generally used in the formations of printers' ink-rollers, or of some other substance (not rubber or moss) of a similar nature which will be of the consistency and pliability requisite for the body of the roller, in combination with an external surface or a coating of solid rubber, either vulcanized or not, gutta-percha, or of leather or fibrous or textile material, or combined with rubber, gutta-percha, or some other suitable material, substantially as described.

2. An ink-roller, the body of which shall be of glue and treacle or glue and honey, or some other gintinous gum or pliable substance, (not India-rubber sponge or India-rubber moss,) and the external surface or coating of India rubber, gutta-percha, leather, cloth, or some other suitable material, substantially as set forth.

3. An ink-roller, the body of which shall be sponge, or sponge combined with glue, glycerine, or some other soft or gintinous substance suitable for the body of a printer's ink-roller, not including India-rubber sponge or India-rubber moss, combined with an outer skin or covering of India rubber, gutta-percha, leather, cloth, or some other suitable material, substantially as set forth.

110,523.—ROLLER-LIFTING POWER.—Elisha Whitcomb, Waterville, Ohio.

Claim.—1. The combination, substantially as described and shown, of the roller A and the standard B, for the purposes set forth.

2. The device herein described, wherein the roller A and standard B are constructed substantially as specified, and arranged to operate as and for the purposes set forth.

110,524.—LOOM.—Robert Whitehill, New York, N. Y., assignor to the Positive-Motion Loom Company, same place.

Claim.—1. The gears I K, having the slot and pin-connection, and arranged on different axes, in combination, substantially as described, with the shuttle and treadle-operating mechanism.

2. The combination, with the crank-shaft for operating the lay, of the slotted gear J, arranged in relation to said shaft, and engaging the pin *g*, as and for the purpose described.

3. The combination of the gears I, J, K, L, and M, and their slot and pin-connection *f g* and *i j*, with the crank-shaft E and cam-shaft F, substantially as herein described.

4. The endless shuttle-driving band, attached to the lay and driven through a shaft, P, which is attached to and oscillates with the lay, and which gears with a sleeve, Q, on one of the pivots *a*, on which the lay swings, substantially as herein specified.

5. The shuttle-driver, consisting of a plate or piece, *f*, attached to the shuttle-carrier, a plate or piece, *e*, attached to the endless band carried by the lay, and a connecting-pin or pivot, *s*, the whole combined and arranged to operate substantially as herein specified.

6. The combination of the gearing for operating the shuttle-driving band with the mechanism for driving the other parts of the loom by means of a slot and pin-connection, substantially as described, whereby the said band is made to move with an alternately-accelerated and retarded velocity, as and for the purpose herein specified.

110,525.—SUBSOIL-PLOW.—Tolbert G. Wilder, Camden, Miss.

Claim.—The herein-described subsoil-plow, consisting essentially of the beam A, standard C, share and heel-piece D, rigidly attached thereto, and pivoted and adjustable brace E, pins F F, and plates G G, when arranged as specified.

110,526.—LAMP.—Thomas Scott Williams, Boston, Mass., assignor to himself and Phillip S. Page, same place.

Claim.—1. The arrangement and combination of the guide or flaring mouth-piece D with the tube B, the wick-holders, the central passage, and the tube F, the whole being applied to the burner and the lamp-reservoir, substantially in manner as explained.

2. The combination of the wick-passages P P, on opposite sides of the flaring mouth-piece, with such mouth-piece, the tube B, the two wick-holders A A, and their passage C, arranged between them, all as set forth.

110,527, antedated December 17, 1870.—SEAT-GUARD FOR HOBBY-HORSES.—William L. Williams, New York, N. Y.

Claim.—1. The ring-guard *f*, hinged to the front standard *c*, so as to be thrown over the head of the hobby-horse, as and for the purposes specified.

2. The standard *h*, hinged at *m*, and provided with a latch, *p*, in combination with the ring *f*, hinged so as to turn over toward the head of the hobby-horse, substantially as and for the purposes set forth.

3. The standard *c*, (or *h*,) provided with a bearing-plate or base and straps, to pass around the hobby-horse, in combination with the ring-guard, for the purposes specified.

110,528.—RUNNING-GEAR FOR CARRIAGES. Jerome B. Withey, Detroit, Mich.

Claim.—1. The jack D, provided with ears *a*, as and for the purposes herein set forth.

2. The frame, consisting of the bars A B, in combination with the short axles or shafts C, jacks D, and reach E, substantially as and for the purposes set forth.

110,529.—MACHINE FOR MAKING BRUSHES. Oscar D. Woodbury, New York, N. Y.

Claim.—1. The combination of the inner bifurcated plunger L with the outer or hollow plunger K and nut or mouth-piece M, having a female thread in it, substantially as and for the purposes herein set forth.

2. The comb G and saw-shaped feeder J, constructed and arranged for operation together, essentially as specified.

3. The combination of the gange or twisted receiver I, with a device or devices for feeding the bristles to the device or devices by which they are inserted in the brush-stock, substantially as specified.

4. The centerer R, constructed to operate essentially as described, in combination with a device or devices for inserting the bristles in the brush-back.

5. The combination, with the plungers K and L, of an apparatus, S, for feeding the wire to or through the latter, and whereby said apparatus is made to move in common with the plungers, substantially as specified.

6. The combination, in one machine, of a bristle-feeding device or devices, a device or devices operating to double the bristles, to bind the wire spirally around the bunch and to insert or screw the latter into the brush-stock, together with an apparatus for supplying or feeding the wire through the folds formed by the doubling of the bristles, essentially as herein set forth.

110,530.—Boring-Machine.—Edward J. Worcester, Worcester, Mass.

Claim.—The combination, with the frame or upright B and the side-pieces C, of the rod D, provided at its end with right-and-left-hand screw-threads, the hand-piece F, and the nuts E fitting in the slotted pieces C and engaging with the screw-threads with which the ends of rod D are provided, said parts being constructed and operating substantially as shown and set forth.

110,531.—Cotton-Cultivator, Scraper, and Chopper.—John H. W. Young, Henderson, Texas.

Claim.—1. The combination, with the frame A and the axle B, of the blocks *b b*, handles *c c*, rack-posts *p p*, lock-bar *r*, and springs *s s*, substantially as and for the purpose specified.

2. The scraper-shank, when pivoted to the frame, and provided with a curved slot and set-screw, for the purpose of enabling the scrapers to be placed at any desired inclination to the line of the draft.

110,532.—Wood-Screw Machine.—James M. Alden, New York, N. Y., assignor to International Screw-Nail Company, same place.

Claim.—1. The combination, as set forth, of the gauge B with the bell-crank lever B^1 and the die C^1.

2. The tilt-pin H and flat hopper H^1, arranged relatively to the dies C^1 C^2 and to the threading-mechanism below, substantially as and for the purpose herein set forth.

3. The combination of the nozzle h^1 h^2, hopper H^1 and means for opening and closing it, guys h^4 h^5, and the threading-dies I^1 I^2, operating as and for the purpose set forth.

4. The arrangement of the movable rest K between the hopper H^1 and the loosely-holding-nozzle h^1 h^2, that it may be made to perform the double function of restraining the descent of a blank until the right period, and of holding down the blank which is being threaded, all as and for the purposes herein set forth.

5. The guys h^4 h^5, in combination with and arranged relatively to the compound nose h^1 h^2, reciprocating threading-dies I^1 I^2, and the hopper H^1, as and for the purposes herein set forth.

6. In combination, the several elements of the mechanism operated from the cam-shaft F, to wit: The cutting-off, griping, and pointing means; the gauge, and the means of operating it; the heading means, and the means of clearing the shaped blank from the dies and conducting it away, as and for the purposes herein set forth.

7. In combination, the several elements of mechanism operated from the crank-shaft J, to wit: The movable rest K or its equivalent, the opening and closing nose h^1 h^2, with means h^3 h^4 for locking it tightly while required, and the threading-dies I^1 I^2, all arranged to operate on blanks and to produce therefrom threaded screws or screw-bolts as herein specified.

8. In combination, the two complete trains or sets of mechanism herein described, to wit: The mechanism for producing the blanks, and the mechanism for threading the same, the latter mechanism receiving the blanks from the former in a uniform position through the hopper H^1 or its equivalent, operating successively to form a complete screw, as herein specified.

110,533.—Treadle.—Arthur M. Allen, New York, N. Y.

Claim.—1. The vibrating bar *d*, connected on each side of the fulcrum to a pedal, in combination with a crank, to which a revolving motion is to be imparted, substantially as described.

2. The centrally-pivoted pedals, having an alternating motion toward and from the operator, in combination with a single crank substantially as herein set forth.

3. The knee-bar A, in combination with a dog acting on the wheel, for the purpose of starting the same in the right direction, substantially as described.

110,534.—Cope for Casting Car-Wheels. Albert Alling, Chicago, Ill.

Claim.—1. A car-wheel cope, provided with a hollow or double-rim, the outer rim being adapted for attachment to the chill, substantially as described, for the purpose specified.

2. In combination with the double cope-rim, the chill, and the lugs G, the lugs M, substantially as described, for the purpose specified.

110,535.—Thread-Guide and Holder for Bobbin-Winding Machine. — William W. Altemus, Philadelphia, Pa.

Claim.—A holder of bent wire, having a U-shaped elastic end adapted to a similarly-shaped porcelain thread-guide, and retaining the same by its elasticity, as set forth.

110,536.—Paper-Bag Machine.—Charles F. Annan, Boston, assignor to himself and Herbert S. Merrill, Cambridge, Mass.

Claim.—A curved guide, consisting of side-pieces A A, provided with removable cross-bars B, and with or without a central strip, C, and brace D, substantially as and for the purpose set forth.

110,537.—Adjustable Cam. — Charles F. Annan, Boston, assignor to himself and Herbert S. Merrill, Cambridge, Mass.

Claim.—The within described adjustable cam, consisting essentially of the grooved blocks or enlargements D E, the distance between which may be varied, substantially as and for the purpose set forth.

110,538.—Portable Store-Room and Pantry.—Thomas A. Barrell, Maron, Ill., assignor to himself and William H. Austin, of same place.

Claim.—The combination, in one article of household furniture, of the box or chest Z and cupboard Y, when their various parts are constructed and arranged substantially as shown and described, and for the purpose herein set forth.

110,539.—Cotton-bale Tie. — George N. Beard, St. Louis, Mo.

Claim.—In combination, in the bale-tie A, herein described, of the rectangular slot *a* with the end-bars B B′, provided with the curved lips *a′* and central entering-slot *a*, and the strengthening-rib or projection D, when all these parts are constructed and arranged as shown and described, for the purpose set forth.

110,540. — Machine for Drying Paper and Other Fabrics.—Frederick Beck, New York, N. Y.

Claim.—1. The traverses *d*, which support the paper or other fabric to be dried, and which rest upon the endless ropes A A, having a revolving motion by means substantially such as herein described.

2. The arrangement of wheels *e*, at or near one or both ends of the traverses *d*, supported by ropes A A, in combination with stationary stops *f*, substantially in the manner and for the purpose herein set forth.

110,541.—Horse-Yoke.—A. B. Beaumont, Austerlitz, Mich.

Claim.—1. The hames A, pivoted to the cap-piece B, and made adjustable by means of the castings C, substantially as set forth.

2. The arrangement, on the bar K, of the toothed rods P P, wheel *d*, sleeves L L, guides *e*, and stops *e*, all substantially as shown and described.

3. In combination with the castings B and C, the the oscillating sockets H, when used substantially as shown.

4. The swivel-socket O, in combination with the spring M, when used to connect the bars K and N, substantially as shown.

5. The bars N and K, hames A, castings B and C, sockets H and O, rings L, rods P, spring M, and rack R, when all are combined so as to form a horse-yoke, substantially as shown.

110,542. — Grain-Thrasher, Separator and Cleaner.—Edgar M. Birdsall, Penn Yan, N. Y.

Claim.—1. The combination and arrangement of the tumbling-rod *a*, cross-piece *b* having coupling-jaws *f*, with clutch *e* provided with springs *e e*, and band *d*, all constructed and operated as shown and described, for the purpose set forth.

2. The combination of the bars *i k* in the cylinder F with the cast-steel teeth provided with the shank *g*, nut *l*, and brace *h*, all constructed and arranged as herein shown and described, for the purpose set forth.

3. The combination of the hollow spindle D, provided with the openings *m*, with the hollow crank Q having thread *r* and stop *p*, all constructed and arranged as shown and described, for the purpose set forth.

4. In the combination with the thrasher A, herein shown, the carrier H, supports K, windlass O, pulleys L, L, and M, and pivoted brace I, struts J, and ropes R, when said parts are constructed and arranged as and for the purpose set forth.

110,543.—Sifter.—Sanford O. Blanding, Vineland, N. J.

Claim.—1. The cover B, case A, and pivoted-handled sieve C, in combination, constructed and arranged substantially as described.

2. In combination with the handled sieve C and pivoted legs D, the beater-plates E, with curved ends, constructed and operating substantially as described.

110,544.—Water-Wheel.—John W. Bookwalter, Springfield, Ohio.

Claim.—The combination of the spherical or nearly spherical case and the removable cap upon its upper surface, to permit the removal of the wheel, the parts being constructed and arranged substantially as and for the purpose set forth.

110,545. — Combined Immersion and Steam-Bath.—John W. Caldwell, Cincinnati, Ohio.

Claim.—A bath-tub, adapted for immersion and for the application of vapor, and canopied by a cover which may be stored within the tub, all as described.

110,546.—Bridge. — Alexander McDonald Campbell, Newark, N. J., assignor to himself, Charles M. Bolen, and Frederick K. Day.

Claim.—1. The combination of the main cables A A around sustaining points P P of the abutment, and their anchorage on the bridge, substantially as set forth.

2. In combination with the continuous return-cables A A and E E, the cylinders P P and P P′, for obviating friction, substantially as set forth.

3. The compensating-levers H H, in combination with the return-cables A A and hangers G^1 G^2, as set forth.

4. The wedge-bearing B, in combination with the compensating-levers H H, as set forth.

5. In combination with the levers H H, the skew-backs C C C, the adjoining ones connected therewith for equalizing the weight upon all parts of the roadway, as set forth.

6. The combination of the girder-arches D D with the compensating-levers H H, as set forth.

7. The friction-pulleys M, in combination with the hangers G and G^2 and the cables A A, as set forth.

8. The tower-brace cables E E, in combination with the cylinders P P′, arranged and anchored, substantially as described.

9. The combination of the return-cables A A, compensating-levers H H, girders D D, and skew-backs C C C, with or without the tower-brace cables E E, substantially as set forth.

110,547.—Annunciator. — Jacob Capron, New York, N. Y.

Claim.—The stops *a*, acting directly upon the tumblers, combined with the rotating face-plates, as shown and described.

110,548.—Cultivator.—Joseph H. Carlow, Kidder, Mo.

Claim.—1. The combination and arrangement of the beams J K, adjustable bars I I′, pin i^2, strap L, and pin j^1, allowing the easy adjustment or removal of the beams, substantially as described.

2. The combination of the beams J K, upright N, rod Q, chain or cord P, and treadle R, as and for the purpose described.

110,549. — Cotton-Press. — Nash Cheek, Chapel Hill, N. C.

Claim.—1. In combination, with the horizontal frame H and the mechanism, herein described, for operating the same, the ratchet-bar L and hinged pawl M, arranged substantially as and for the purposes herein set forth.

2. The combination of the bed A, standards B, back-board C, bale-box D, follower G, frame H, ratchet-bars L L, toothed pawls J J, rods *a a*, levers K K, and hinged pawl M, constructed and arranged to operate substantially as and for the purposes herein set forth.

110,550.—Plow.—Josiah Clifton, Georgetown, Texas.

Claim.—The arrangement of the beam A, handles B B′, bar C, land-side D, share E E, rods *b b*, rounds G G, beam I, bar J, with plow K, and spring L, all substantially as shown and described.

110,551. — Clothes-Drier. — Emmons B. Corby, Bloomfield, N. J.

Claim.—A clothes-drier, consisting of the frame A, the base-plate B, made with a notched and shouldered flange, *b′*, arms D, and guard-plate E, when constructed and arranged as herein shown and described.

110,552.—Trunk.—Frederick K. Daggett, Boston, Mass.

Claim.—1. The improvement in trunks, herein described, which consists in protecting the ends with cast-metal right-angled frames C C′ G G′, connected by hinge-joints at the rear, as and for the purposes specified.

2. The metallic strap M, composed in two sections, secured respectively to the cover and body of the trunk, and connected by a hinge-joint at the rear, and by the locking devices at the front, as described.

3. The handle loops D, when the same are cast with the body-frames C C′, substantially as described.

110,553. — Preventing Incrustation of Steam-Boilers.—Charles James Adolph Dick, Paris, France.

Claim.—Preventing incrustation in and corrosion of boilers and other vessels containing water or other liquids, by continuously or intermittently feeding into the same, while under pressure or heated, (or into any appropriate vessel or chamber in connection therewith,) zinc or other equivalent metal or alloy.

110,554.—Land-Roller.—James W. Dilley, Macomb, Ill.

Claim.—The combination of the coupling *s* with the bars B and C, substantially as and for the purpose specified.

110,555. — WASHING-MACHINE. — William James Dodge, Syracuse, N. Y.

Claim.—1. The buckets, constructed with corrugated plates M M, with inlets and outlets K K and L L, division plates I I, as shown, in combination with the cylinder A and boiler G, as shown.

2. The square clothes-chamber, formed by the buckets, constructed with corrugated plates M M, in the manner shown, in combination with cylinder A and boiler G, as shown.

3. The detachable bearing, constructed with detachable plates E E, loops F F, in combination with boiler G, as shown and described.

110,556.—DRAWING-FRAME.—George Draper, Hopedale, Mass.

Claim.—The combination of the reinforce with the sliver draft-regulator, all being substantially as described.

110,557.—FASTENING CARRIAGE-WHEELS.—Wilson Elder, Mill Hall, Pa.

Claim.—1. The washer B and cap H, each having beveled faces, as described, and arranged to operate in conjunction, substantially as and for the purpose specified.

2. In combination with the washer B and cap H, the lugs *n* and *y*, when arranged upon the spindle of an axle, substantially as and for the purpose set forth.

110,558.—CARRIAGE-BUTTON.—Charles H. Field, Providence, R. I.

Claim.—The carriage-button herein described, having the driven shank A, with rotating eccentric head B cast on it, and separate conical washer C, substantially as shown and described.

110,559. — DISH-WASHER. — Ruth Filson, Robert D. S. Filson, and John D. Cope, Xenia, Ill.

Claim.—The box or tub A, with the inside dish-racks C C, of oscillating leaves, the whole being placed on rockers B B, substantially as and for the purposes herein set forth and shown.

110,560. — PERMUTATION-LOCK. — Charles Flesch, Rochester, N. Y.

Claim.—1. The construction of the cam C, with the hook *a*, cam-face *c*, and peripheral recess *b*, the whole arranged as described, and operating in the manner and for the purpose specified.

2. The combination, with the lever D and bolt E, of the arm G, provided with the spring *s*, which projects forward and bears under the pin *g*, the effect being to always hold said pin elevated in its slot, and thereby secure the stiff connection of the lever and bolt, as described.

3. In combination with the lock-bolt E and bolt-stem *r*, the single obtuse-angled elbow K, having its upper end armed with a roller, or equivalent stop *u*, which takes the strain from the lock-bolt, and provided with the depending latch L, which engages with the cam of the spindle I', as herein specified.

4. The combination and arrangement of the cam C, hook-bolt E, lever D, spring-arm G, and obtuse-angled elbow K, operating in the manner and for the purposes set forth.

110,561.—CHILD'S CARRIAGE.—Isaac Newton Forrester, Bridgeport, Conn.

Claim.—The combination of the carriage-body, the pushing-handle, the fixed axle in rear of the body, the hind wheels mounted on said axle, and the leading casters mounted and turning freely and independently of each other on spindles turning in the front part of the frame, all these parts being constructed and operating as hereinbefore set forth.

110,562.—TREATING HIDES AND MANUFACTURING LEATHER.—William H. Fuller, Brockport, assignor to himself and Gilbert J. Kingsbury, Rochester, N. Y.

Claim.—The method of tanning and "stuffing" hides and skins by means of the light and heavy oils herein mentioned, substantially in the manner set forth.

110,563.—CAR-WHEEL.—William Goodman, Boston, Mass.

Claim.—The general combination and arrangement of the elastic band *c*, the segmental blocks *e e*, and key-pieces *d d d*, the latter-mentioned blocks and keys being confined together by the bolts or pins *g g g*, and the whole operating in connection with the annular groove *b* of the body of the wheel to produce results before stated.

110,564.—APPARATUS FOR RAISING VESSELS. — John Emery Gowen, Boston, Mass.

Claim.—In combination with two or more floating caissons for buoying a navigable vessel, suitable barred or trussed platform, or their equivalents, for supporting or partially supporting the weight of the vessel where the said platform is suspended from the caissons by means of chains, or their equivalents, and the whole operating as explained.

110,565.—HAND CORN-HUSKER AND SHELLER.—James Madison Gray, Louisville, Ky.

Claim.—The hand corn-husker and sheller herein described, consisting of the hinged undulating plates A A, inclined interlocking edge-teeth *c c'*, shelling-teeth *c c'*, loop E, and strap D, when constructed and arranged for operation, as specified and shown.

110,566.—COOKING-RANGE.—William Hall, Quincy, Ill.

Claim.—1. The combination of the curved fire-back on No. 2, as working in connection with front draught only of slides A, without any side draught, and slating grate, in connection with dampers 1 2 3 4 5 6 7 8 9 10 11, to draw flame and smoke with redoubled force to various parts of the range, substantially as and for the purpose hereinbefore set forth.

2. The combination of said dampers and partition B with the four ovens, as and for the purposes hereto set forth.

3. The combination of flue-pipe E and dampers in water-tank, as and for the purposes set forth.

4. The combination of the steam-boiler F and angle flue-pipes E and main shaft D, substantially as and for the purpose hereinbefore set forth.

5. The elevated boiler F, provided with pipes H, regulated by faucets, as shown, and arranged in combination with the steam-heater and steam-table, as herein described.

6. The combination of my steam-heater K and my steam-table N, in connection with pipe J, substantially as and for the purpose hereinbefore set forth.

7. The combination of No. 6 section of steam-table with pipe P and pipe Q, in connection with pipe R, No. 2, connecting with pipe M and angle flue-pipe E, substantially as and for the purposes hereinbefore set forth.

8. The combination of my broiler-oven T, in connection with slide V and the balance-broiler W, substantially as and for the purpose hereinbefore set forth.

110,567.—METAL ROOF FOR BUILDINGS.—John S. Haywood, Rochester, Minn.

Claim.—1. The clip or cleats C, consisting of a single piece of tin, folded in the middle and having its ends hook-shaped, when applied as herein shown and described, for permanently securing the adjoining edges of a metallic roof to its sheathing, as set forth.

2. In combination with the upturned edges or ribs E of the adjoining metal sheets forming the roof, the cap F and clips or cleats C, when constructed and arranged as herein shown and described, and for the purpose set forth.

110,568.—HARVESTER.—George F. Hawley, Grand Rapids, Mich.

Claim.—1. The combination, substantially as herein described, of a series of revolving cutting-blades, *m m*, arranged to describe intersecting circles in a common horizontal plane, and to intermesh without overlapping and without contact, as herein set forth, with an upper fixed covering-plate, presenting thereto a shearing-edge above, and a finger-bar, H, and under plate M beneath, the whole operating in the manner and for the purpose specified.

2. The fifth-wheel E E', interposed vertically between the axle of the machine and the frame and bed-plate carrying the finger-bar and its gearing, to connect the same and to permit an inclination of the axle independently of the frame and bed-plate, all substantially as and for the purpose herein set forth.

3. The combination of the driving-wheel P with the axle of the machine by means of an interposed ball-and-socket joint, formed and operating substantially in the manner herein specified.

4. The concentric sliding arcs 7 and 8, suspended from one end of the curved bar F, and the slotted arm or bracket 9 secured to the other end thereof and to the annular plate E' of the fifth wheel, when combined with the bed-plate I, to support the same and permit an inclination thereof about a central longitudinal axis, all substantially as and for the purpose herein set forth.

110,569.—MECHANISM FOR OPERATING SEWING-MACHINES.—Elijah Leavitt Howard, Malden, assignor to George Augustus Whiting, Charlestown, Mass.

Claim.—1. The combination and arrangement of the lever or rocking-frame E, the shaft *a*, the wheels F *b*, the arm *e*, and pedal H, all being arranged or to be arranged with a driving-wheel, C, as set forth.

2. The combination and arrangement of the lever *k*, the rod *f*, and its screw *g*, the nuts *h i*, with the frame or lever E, the shaft *a*, and the wheels F *b*, all being arranged or to be arranged with a driving-wheel, C, as explained.

3. The combination and arrangement of the pedal H, and toggles *k f*, as set forth, with the frame or lever E, and its shaft *a*, and wheels F *b*, arranged as described.

4. The combination and arrangement of the rocker-frame or lever E, and its shaft *a*, and wheels F *b*, with the band *c*, and pulley A, the driving-wheel C, and the pedal H, or the toggles *k f*, or both pedal and toggles, all being to operate as described.

110,570.—HAT.—George Johnson, Philadelphia, Pa.

Claim.—A new and improved hat, the body or foundation of which is made of an open-woven fabric of stripe or splits of wood, as shown and described, and to which a suitable covering is attached.

110,571.—SLEIGH.—Alvarado Jones, Randolph, Wis.

Claim.—The method herein described of forming the beam and knees for one bench of a sleigh, of two pieces of timber halved together in the center, substantially as set forth.

110,572. — TRACE-BUCKLE. — William W. Kittleman, Bloomfield, Iowa.

Claim.—1. The body or box A, provided with rod *a*, loops *b b*, inclined slots *d d*, and lugs *e e*, all substantially as and for the purposes herein set forth.

2. The wedge B, passing under the lugs *e e*, and provided with rod *f*, pin *h*, and teeth *i i*, substantially as and for the purposes herein set forth.

3. The combination of the body A, having inclined slots *d d* and lugs *e e*, with the wedge B, having rod *f*, teeth *i i*, and pin *h*, all substantially as and for the purposes herein set forth.

110,573.—MACHINE FOR COOLING AIR AND FOR THE MANUFACTURE OF ICE.—Julius Kraffert, Hoboken, N. Y.

Claim.—The combination of the tubular chamber *h* and its inclosing-chamber *i*, with the double-acting air-pump and the compression-chamber.

2. The combination of the tubular chamber *h* and its inclosing-chamber *i* with the freezing-chamber *e*.

3. The combination of the tubular cooling-chamber *q* and its inclosing-chamber *r* with the freezing-chamber *e*.

4. The combination and arrangement of the freezing-chamber *e*, tubular expansion-chamber *h*, and the compression-chamber *c*, as described.

110,574.—FELTING-MACHINE. — Calvin P. Ladd, New York, N. Y., assignor to himself and James T. Sanford, same place.

Claim.—1. A felting-machine, the double steam-box Q Q, either with or without the compressing-rollers R R, in combination with the first felting-table, substantially as and for the purpose set forth.

2. The drum N, squeezing-roller T, and vat M, in combination with the two felters B B' C C', these parts being arranged for joint operation, substantially as described.

3. The cams K, cam-rods L L', and operating devices, in combination with platens B C, drum N, squeezing-roller T, and connecting devices, substantially as set forth.

110,575.—TRUNK.—John G. Lane, St. Louis, Mo.

Claim.—The frame A, front B, and lid D provided with the hooks or clasps N, the curved slotted guides I, thumb-screw L and rubber O and projection *a*, when all are combined to operate substantially as shown and specified.

110,576.—CURRY-COMB.—William E. Lawrence, New York, N. Y.

Claim.—1. The combination of a curry-comb, with an air-tube, substantially as described.

2. The combination of a curry-comb, with an air-tube and a bellows, substantially as described.

3. The adjustable combs C, fastened upon the rods F F, as described, in combination with the hollow frame or back A, the whole constructed substantially as and for the purpose set forth.

4. The adjustable comb M, secured upon the outside of the hollow-frame or back A by means of the rods N N and nuts O O, in combination with a handle P, substantially as described.

110,577. — IRONING-TABLE. — Johan Jacob Märki, Chicago, Ill., assignor to himself, William H. Lotz, and Carl Beer, same place.

Claim.—An ironing-board, consisting of the body A, having the hinged legs B, with the locking devices C *d*, or their equivalent applied thereto, substantially as described.

110,578.—FOLDING LOUNGE.—Michael Marso, Chicago, Ill.

Claim.—1. The arms G G, provided with pawls *d d*, in combination with rack or teeth *e e*, all arranged to operate substantially as and for the purpose described.

2. The hinged boards J J', in combination with the lounge, when said boards are arranged as to form, in connection with the lounge, either a chair or cradle, or both together, substantially as set forth.

3. The hinged back E, provided with hinged feet I I in combination with the pivoted arms G G, pins *b b*, pawls *d d*, and teeth *e e* in the boxes or castings H H, all substantially as and for the purposes herein set forth.

4. The rocker-blocks L L, hinged on the under side of the seat A, inside of the feet B B, and pro-

vided with spring-bars M M, all constructed as described, substantially for the purposes herein set forth.

110,579.—Axle-Skein.—Lorenzo Mayhew, Saratoga Springs, N. Y.

Claim.—The metallic partial skeins B B, connected by the tie *c*, in combination with the wooden axle A, substantially as specified.

110,580.—Car-Coupling.—William Henry Meadows, McMinnville, Tenn.

Claim.—The supplemental carrying-plate E of the coupling-hook D, hinged to the bumper C, and held in position by a spring F, in the manner and for the purpose described.

2. The combination and arrangement of the frame A B, bumper C, and its springs *c*, hook D, pivoted carrying-plate E, and its spring F, all arranged and operating as described.

110,581. — Carriage-Clip. — Francis B. Morse, Plantsville, Conn., assignor to himself and H. D. Smith & Co., same place.

Claim.—As an improved article of manufacture, a carriage-clip in which the edge is chamfered or reduced, from shank to shank, after the clip has been trimmed, substantially as and for the purpose set forth.

110,582.—Material for Bearings and Packings.—Eliza D. Murfey, New York, N. Y., assignor to the Manhattan Packing-Manufacturing Company, same place.

Claim.—1. A bearing or packing material consisting of gum and plumbago, or other powder combined.

2. The said material condensed or molded, as set forth.

3. A powder or paste for impregnating or coating strands, &c., consisting of gum and powder, and prepared as specified.

110,583.—Bearing and Packing Material.—Eliza Dexter Murfey, New York, N. Y., assignor to the Manhattan Packing-Manufacturing Company, same place.

Claim.—1. As an article of manufacture, a material for packings and bearings, consisting of a sponge impregnated with plumbago.

2. A sponge impregnated with plumbago and an adhesive or gummy material, substantially as and for the purpose described.

3. The process of impregnating sponge with powdered material by the use of glycerine or water, or equivalent fluid, as a vehicle for carrying the powder among the interstices of the sponge, and then extracting the said vehicle.

110,584.—The Manufacture of Materials for Journals, Bearings and Packings.—Eliza D. Murfey, New York, N. Y., assignor to the Manhattan Packing-Manufacturing Company, same place.

Claim.—1. The process herein described of combining filaments or fibers and powdered substances, that is, by depositing the loose fibers and powder in a uniform mass upon a plate and then consolidating the said mass.

2. Consolidating the mass of powder and fur or wool by subjecting it to the action of water, as set forth.

3. The process of combining fibers or filaments and powders by the action of currents of air, as described.

110,585.—Hay and other Presses.—Moses V. Northrup, Hornitos, Cal.

Claim.—The combination of the follower B, provided with large openings *d* in rear of the rope-grooves with the corresponding depressions *b* and pin *c* at the end of the rope-groove *a*, the whole constructed and arranged to operate as specified.

110,586.—Machine for Dressing Fence-Pickets.—William Nuelle and Joseph F. Nuelle, St. Louis, Mo.

Claim.—The arrangement of the cutter G, staybolt H, pin *h*, forming a pointing-device in combination with the frame A, substantially as set forth.

110,587.—Finger-Ring.—John S. Palmer, Providence, R. I.

Claim.—1. The improvement in the manufacture of plated metal finger-rings and bands, which consists in uniting the inner and outer gold surfaces at a point remote from their inner peripheries, substantially as and for the purposes specified.

2. As a new articles of manufacture, the finger-ring herein described, made of base metal plated with precious metal, and having its inner and outer plated surfaces connected at the outer periphery of the ring.

110,588.—Cooking-Stove. — Miles Pratt, Watertown, Mass.

Claim.—1. A hole, H, made in the back or side of the stove, to correspond with one of the boiler-holes in the top, in combination with the collar-plate J, for the stove-pipe, made to fit both the boiler-hole in the top and the hole in the side or back, so that the hole in the side or back may be closed with the cover of the boiler-hole, when the collar-plate is used in the boiler-hole, substantially as described.

2. In combination with the bar M, provided with the flange N, the lug Q, and button R, to hold the bar and lining in place.

3. In combination with the collar-plate for the stove-pipe above claimed, the buttons I I on each side of the opening H, to hold the collar-plate or boiler-cover in place, as described.

110,589.—Broiler and Toaster.—Josiah M. Read and John M. Smith, Boston, Mass.

Claim.—The above-described gridiron and toaster, with spring-catch E in the handle, flat bars F F at the sides and flat bars A A at the ends, and the two parts hinged together by the hooks H H, substantially as described.

110,590. — Shaft-Coupling. — Peter W. Reinshagen, Cincinnati, Ohio, assignor to himself and John H. Buckman, same place.

Claim.—In combination with suitable compressing devices B B', or equivalent, the spring sleeve A *a a'*, when the same is split from opposite ends and opposite sides, in the manner and for the purpose set forth.

110,591.—Lamp-Wick.—Daniel T. Robinson, Boston, Mass.

Claim.—A lamp-wick as composed of mica, for purposes hereinbefore stated.

110,592. — Lawn-Mower. — Luther Ross, Worcester, Mass.

Claim.—1. The arrangement of the driving-wheels, cutter-cylinder, and dead-knife, substantially as described, so that when the machine is in working position the axes of rotation of the wheels and cylinder, and the cutting line of the cylinder and dead-knife, are in the same, or substantially the same, vertical plane.

2. The described geared connection of the driving-wheels and cutter-cylinder, each driving-gear being a spur-gear *p* fixed upon the adjacent driving-wheel, and meshing into a pinion, *j*, on an intermediate *w*, turning on a stud-pin, *v*, projecting from the adjacent head, the intermediate meshing into and driving the fast-and-loose pinion *w* on the adjacent journal of the cutter-cylinder.

110,593. — Corset-Fastening. — Christian Schieck, New York, N. Y.

Claim. — The corset-fastening, constructed as herein shown and described; that is to say, consisting of a bracket, A, provided with lugs *a a*, forming bearings for the pin *b* carrying spring *d* on its axes, in connection with the oscillating hook B, with its projecting lug, and operating with the slotted plate C, substantially as herein shown and described.

110,594. — Tobacco-Pipe.—William Selfe, Cincinnati, Ohio.

Claim.—1. In the described connection with the bowl A and water-chamber M, the chamber F G H, pipes K L N, and suitable smoking-stem P, as described, and for the purpose specified.

2. The exterior circulating-chamber C *b b'* for air in the described relation to the elements of the preceding clause, as described, and for the purpose specified.

3. In combination with the elements of the first clause of claim, the cock T and two-way cock U, as described, and for the purpose specified.

110,595.—Seed-Sower.—Samuel H. Sheplar, San Francisco, Cal., and William G. Conklin, Portland, Oregon.

Claim.—1. The flange C, arranged spirally inside the cylinders A and B, substantially as and for the purpose described.

2. The stationary cylindrical section D, with its hopper E and distributing-trough E', substantially as and for the purpose above described.

3. A seed-sower, composed of two revolving cylinders, A and B, and section D, when united by a central shaft, G, substantially as above specified.

110,596.—Carpenter's Gauge.—Henry P. Sisson, Rutland, Vt.

Claim.—The beam A, the sliding-block B, cam-lever *c*, and metal plate *d*, when the whole are combined in the manner and for the purpose substantially as specified.

110,597.—Combined Tramway and Pavement.—Barzillai C. Smith, Burlington, N. J.

Claim.—1. The combination, with ordinary street-pavements of longitudinal girders of cast-iron, constructed substantially as set forth.

2. The recesses *m* in the ends of the girders, communicating with vertical holes *p* in the same, and adapted to the pins *n*, all substantially as set forth.

110,598.—Chair-Frame.—William Merion Smith, Columbus, Ohio.

Claim.—1. The strip A of bent wood, forming the back posts and the front and side rails of the seat, as specified.

2. In combination, the strip A, the strips B B, and the bracing and strengthening strips C C, substantially as specified.

3. In combination with the back posts and seats of a chair-frame, as described, the bent bars B B and the bracing and strengthening strips C C, substantially as specified.

110,599.—Portable Shield for Infantry and Artillery.—Harde Spears, Snow Hill, N. C.

Claim. — 1. A breast-work, formed of metal plates, suspended loosely upon hooks, substantially as and for the purposes herein set forth.

2. Metallic sheets suspended upon or from standards on the rear portion of limber or caisson-frames, combined with an additional plate suspended from and between two of said plates to protect the space between two of said limbers or caissons, substantially as and for the purposes herein set forth.

3. The combination of the sheets E E, having openings *b b*, and shutters *d d*, with the middle plate E, provided with port-hole *e*, openings *b' b'*, and shutters *f* and *d' d'*, all constructed, arranged, and suspended, substantially in the manner and for the purposes herein set forth.

4. The portable and adjustable defensive plates E E, with or without ports and shutters, substantially as and for the purposes herein set forth.

110,600. — Life-Boat. — James M. Starr, Fond Du Lac, Wis.

Claim.—1. A life-boat, having its body A divided into two equal compartments, hinged together and arranged to be locked by the spring catches *b*, lugs *d d*, and blocks *e*, and also having its bow C and stern D detachable, substantially as and for the purpose set forth.

2. The arrangement of the air-tight chambers H and H' in each section of the body of the boat, substantially as and for the purpose set forth.

3. The air-tubes J, when constructed and arranged as described, for the purpose of being adjusted along the sides of the boat, or of being moved out laterally from its sides, as and for the purpose set forth.

4. In combination with the body A and the bow C and stern D, the spring catches *e*, staples *d'*, and hooks *h*, for attaching the bow and stern compartments, as set forth.

5. In combination with the body A and detachable stern D, the tube *e'* and the divided and coupled shaft E, with the mechanism for operating the latter, when constructed and arranged substantially as and for the purpose set forth.

6. The combination of the hinged air-tubes J, collars *y*, arms I, and braces *a'*, when constructed and arranged as described, for the purpose set forth.

110,601.—Malt-Reservoir.—Charles Stoll, Brooklyn, N. Y.

Claim.—The arrangement of a tower, A, having double walls to keep out the moisture and light, and divided in three compartments *c d e*, one for the elevator and the two others to receive different kinds of malt, the elevator being provided with two spouts, one for each malt-compartment, and the malt-compartments being closed at the bottom by a common hopper provided with slides which allow of mixing the two kinds of malt or of discharging each kind of malt independent of the other, as herein shown and described.

110,602.—Safety Attachment for Railway Trucks.—Arnold Strauss, New York, N. Y.

Claim.—1. The sliding hooks A and A', hung in recesses of the axles near the inner sides of the wheels, and braced by the crossing-bars E and kept in position by the springs F, substantially as and for the purposes set forth.

2. The scrapers *a*, in combination with the hooks A, as and for the purpose set forth.

3. The springs F, in combination with the yoke H, the piece I, and the bolt J, as and for the purpose described and shown.

110,603. — Pocket-Brush. — Theodore F. Stumpf, New York, N. Y.

Claim. — A pocket-brush, as shown and described.

110,604.—Steam-Boiler.—Frederick Sulter, Cleveland, Ohio.

Claim.—The arrangement of the water-chamber G, smoke-pipes S S, and apertures K K, when constructed and combined with the boiler-cylinder, as herein described, and for the purposes set forth.

110,605. — Grain-Register.—William Z. Taylor, Burlington, Iowa, assignor to himself and John R. King, same place.

Claim.—The combination of the wheels E, F, and G, spring detents I and I', and projections *c'* on

wheel E, and f^1 on wheel F, all constructed and arranged relatively to one another, substantially as set forth.

110,606.—CARRIAGE.—Chauncey Thomas Boston, Mass.

Claim.—1. The divided side springs *l*, each formed as a plain leaf-spring, fastened at one end to the bottom of the carriage-body, and at their other ends to the rear axle and to a transom-bar, by means of joints and cut-under recesses *h*, when combined and arranged substantially as shown and described.

2. The cut-under metal boxes, and the body-bottom running unbroken between them, substantially as shown and described.

3. The divided side springs *l*, (forming the support for the body,) combined with a center perch, *p*, and braces *p*, running from the perch, substantially as shown and described.

4. In combination with the divided side springs and cut-under spaces, the connecting-yoke straps *q*, substantially as described.

110,607.—CLOTHES-DRIER.—William Tredenick, Providence, R. I.

Claim.—A clothes-rack, consisting of a back, A, having an upper bracket, C, provided with spring clips E, and a lower bracket, B, provided with arms D, pivoted to a wire, *d*, the whole constructed and arranged as shown and described.

110,608.—PEPPER AND SPICE-BOX.—A. E. Turnbull, Jr., Clifton, Ohio, assignor to Joseph H. Steele, New Haven, Conn.

Claim.—As an article of manufacture, a spice-box or package, constructed with a perforated portion to form a dredge, and combined with a cover for closing the perforations, substantially as herein set forth.

110,609.—MACHINE FOR CUTTING AND SHAPING METALS.—Claus Van Haagen, Philadelphia, Pa., assignor to himself and Anthony Van Haagen, same place.

Claim.—1. The sliding head-stock H, its spindle I, and pulley I^1, in combination with the traversing slide H^1, the counter-shaft I^2, moving laterally with the slide H^1, and the driving-pulley I^3 sliding on said counter-shaft.

2. The traversing-slide H^1, head-stock H, and screw J, in combination with the shaft G^1, and worm w^1, and with the worm-wheel w, screw J, clutch w^2, and screw-rod w^3, substantially as described.

3. The vertically-adjustable sliding-table B, and the nut a^2, vertical screw D, gears b b^1, and shaft D^1, in combination with the driving-pinion *c*, adjustable disk A carrying the pinions g g^1, and gear-wheels b^2 *f*, and c^1, and pinions *f*, *c*, and *c*, substantially as described.

4. The shaft G^1, capable of a limited longitudinal movement, in combination with a sleeve, K, carrying a notched disk, K^1, and having a spiral slot, into which projects a pin on the shaft G^1, with a disk, A, having a slot, s^1, and carrying independent pinions g g^1, and with an arm, L^1, carrying a slide on which are two pins, one adapted to a notch in the disk K^1, and the other to the slot s^1, so that the longitudinal movement of the shaft G^1 is made the means of turning the disk A and moving one of the pinions g g^1 into the gear with the wheel *f*.

5. The combination of the aforesaid arm L^1 having cam-like projections f^2 f^2 at its lower end, the said notched disk A carrying pinions g g^1, and pawl-catches *t t* adapted to the notches in the disk A, and operated by the cam end of the arm L^1, for the purpose described.

6. The combination of the subject-matter of the preceding claim, and the adjustable projections t^2 on the parts *t t*, for the purpose described.

7. The frame S, having wheels *r* running on ways w^1, and carrying a rotating counter-shaft, I^2, on which slides a pulley, I^3, in combination with the driving-shaft M and gears V V^1, or equivalent devices, for imparting a rotary motion to the counter-shaft, and with a shaft, I, rotating in a stock which travels horizontally in two directions at right angles to each other, substantially as set forth.

110,610.—COMPOUND FOR TREATING LEATHER.—Samuel S. Walbank, Superior City, Wis.

Claim.—The combination of the ingredients, when mixed and used in the quantities and proportions as herein described, and for the purposes set forth.

110,611.—TAP FOR OIL PACKAGE.—Albin Warth, Stapleton, N. Y.

Claim.—1. The ring O, formed with the guides *h* and hooks *i*, spring *l*, valve *g*, valve-seat *f*, and plate *a*, provided with the vent *c*, and spout *d*, the whole combined and operating together substantially as described.

2. In combination with the elements of the preceding claim, the hook *m*, substantially as described.

110,612.—TAP FOR OIL-PACKAGE.—Albin Warth, Stapleton, N. Y.

Claim.—The protecting-plate *d*, formed with the vent *c*, spout *f*, and a central depressed opening, in combination with the cup-shaped valve *b*, provided with the loops *g* and *h*, the former operated upon by a bar, *h*, the latter connected with the end of the spring *c*, the whole constructed and operating as described.

110,613.—GRAIN-RAKE.—Marcus M. Wells, Hartwick, N. Y.

Claim.—The rake and binding apparatus herein described, when constructed with concave teeth *c*, binding-platform *z*, and bent arms B and C, substantially as specified.

110,614.—WATCH-REGULATOR.—Charles V. Woerd, Waltham, Mass.

Claim.—In combination with the actuating-pinion, the eccentric for adjusting the pinion relatively to the segment-rack, substantially as described.

110,615.—FUR-SET BOX.—Clinton W. Fraser, Brooklyn, N. Y.

Claim.—The box A, combined with the case C, and suspending-rivet or screw *e*, arranged as described, for the purpose set forth.

110,616.—CHURN.—Joseph O. MaClaskey, Perth Amboy, N. J., assignor to himself and James E. Tyrrell, same place.

Claim.—The dasher-frames *e* *y* upon the shaft *d* and tube *f*, respectively, in combination with the gears *h* *i* and screw-socket *p*, receiving the end of the shaft *d*, the parts being constructed and acting as and for the purposes specified.

REISSUES.

4,215.—HOISTING-BLOCK.—Joseph A. Burr, Brooklyn, assignor to Burr & Co., New York, N. Y.—Patent No. 106,446, dated October 18, 1870.

Claim.—The metallic end-piece E, secured to the hook or fastening F of a pulley-block, as shown, and for the purposes described.

4,216.—SHOVEL-PLOW AND POTATO-DIGGER COMBINED.—James Millen Dick, Buffalo, N. Y., assignor to himself and William H. Albro, same place.—Patent No. 105,922, dated August 2, 1870.

Claim.—The frame with the straight bottom part A, angular face C, and beam B, being a continuation of back part A', all formed in one piece, in combination with the digger D, substantially as set forth.

4,217.—Division B.—HARVESTER.—Rufus Dutton, Yonkers, N. Y.—Patent No. 31,378, dated February 12, 1861; reissue No. 4,125, dated September 20, 1870.

Claim.—1. A hollow metal casing-plate, separate and apart from any driving or carrying-wheel, which casing-plate makes one side or main part of a box or case which incloses and protects the secondary gear-wheels of a mowing or reaping-machine, substantially as described.

2. A box or case, made substantially as described, of two casing-plates, separate and apart from any driving or carrying-wheel, which box or case incloses and protects the secondary gear-wheels of a mowing or reaping-machine.

3. A hollow metal casing-plate, separate and apart from any driving or carrying-wheel, which casing-plate makes one side or main part of a box or case which incloses and protects the secondary gear-wheels, and which casing-plate also supports a journal of the secondary gear-wheel-axle of a mowing or reaping-machine, substantially as described.

4. A box or case, made substantially as described, of two casing-plates, separate and apart from any driving or carrying-wheel, which box or case incloses and protects the secondary gear-wheels, and also supports the journals of the secondary gear-wheel-axle of a mowing or reaping-machine.

4,218.—BROILER.—James T. Page, Rochester, N. Y.—Patent No. 106,280, dated August 9, 1870.

Claim.—1. The rim A and handle *b*, made of a single piece of sheet metal, in combination with the wire-grating D, substantially as and for the purpose herein set forth.

2. The T-shaped slots or incisions *d d*, to receive the wire-strands *c c*, substantially as herein set forth.

3. In combination with the rim A and grating D, the drip-pan B, provided with the annular groove *h* and a central opening, substantially as and for the purposes herein set forth.

4,219.—RESERVOIR COOKING-STOVE.—George H. Phillips, Troy, N. Y.—Patent No. 88,585, dated February 2, 1869.

Claim.—1. A water-reservoir, constructed in such manner that it has a vertical flue through it, and, by the addition of one plate, a horizontal flue also running through the same, and uniting or combining the said reservoir with a cooking-stove, against the back of the stove, its upper surface flush with the stove-top, the said flue or flues of the reservoir being the only outlet of escape for the products of combustion from the stove to the exit-pipe, substantially in manner as described and set forth.

2. In combination with the reservoir so constructed, the plate C, forming the bottom of the horizontal flue E, substantially in manner as described and set forth.

4,220.—WATER-PIPE MACHINE.—John W. Stockwell, Portland, Maine.—Patent No. 106,424, dated August 16, 1870.

Claim.—1. The suspended and oscillating hopper F, adjustable slide Q, and auxiliary hopper-plate, all constructed and relatively arranged to form an improved feeding device for a pipe-molding machine.

2. The core G, grooved or slotted vertical rotary shaft P, rotary sleeve U, with its stud or pin A', and the trowels V, all constructed, combined, and operating substantially as and for the purposes herein set forth.

3. The device X Y for forming the tip of the pipe, constructed and operated substantially as described and shown herein.

4,221.—LAMP-CHIMNEY.—The Requa Patent Concave Burner and Chimney Company, New York, N. Y., assignee of E. B. Requa.—Patent No. 37,773, dated February 24, 1863.

Claim.—1. A lamp-chimney made with a circular base, *b*, a contraction, at *a'*, and a bulb flattened in the direction in which the flame spreads, substantially as specified.

2. A lamp-chimney made with the conical base, *b*, a flange at its lower edge, and the contraction *a*, between said base *b* and the flattened bulb, as and for the purposes specified.

3. A glass lamp-chimney, made with one side roughened or ground, as and for the purposes set forth.

4. A glass lamp-chimney, formed with the base *b* and contraction *a'*, in combination with the lamp-burner, having a flat-wick, substantially as set forth.

4,222.—GANG-PLOW.—George W. Hildreth, Lockport, N. Y.—Patent No. 18,397, dated October 13, 1857.

Claim.—1. The combination, with the frame A of a gang-plow, of crank-supports, M M', for the main carrying and supporting-wheels, whereby the height of the frame from the ground can be adjusted substantially as described.

2. A crank-axle-tree, for supporting the frame in a gang-plow, provided with a crank upon each end, one of which is adjustable and so secured to the axle-tree that the supporting wheels, which turn upon the ends of said crank axle-tree, can be adjusted in the arcs of circles, to run upon the same or different horizontal planes, for the purposes above described.

3. The combination, with the supporting axle-tree H in a gang-plow, provided with cranks at its ends, one of which is adjustable independently of the other, of a hand-lever for turning said axle-tree, for the purposes above described.

4. The combination in a gang-plow of the following elements, viz: A supporting axle-tree, provided with a crank at each end; two supporting-wheels, one on each crank; a hand-lever for turning the axle-tree and cranks, and a holding device for retaining the axle-tree and cranks in position when adjusted.

5. The combination, with the frame in a gang-plow, of a tongue or draft-pole, which can be raised and lowered, and also moved to the right and left, for the purposes stated.

6. The combination, with the plow frame of a laterally-adjustable supporting axle-tree H, for the purposes stated.

7. The combination, with a crank axle-tree, Q R, in a gang-plow, of an eye-bolt and nut, for retaining the crank and its supporting wheel in any desired adjusted position.

8. A cast metallic frame, for carrying the gang of plows, constructed substantially as above described.

9. A combined cast and wrought-iron frame for gang-plows, constructed substantially as shown and described.

10. The combination, with the cast-iron main frame, of a tool-box cast with said frame, substantially as shown and described.

11. The combination, with the frame and axle-tree in a gang-plow, of a metallic-plate connection J J'.

12. The grooved and toothed plow-attaching plates D E, substantially as and for the purposes set forth.

13. The combination in a gang-plow of a series of plows, having short and long land-sides, substantially as and for the purposes set forth.

DESIGNS.

4,535.—FRUIT-GATHERER.—James S. Barry and Alfred M. Barry, Albion, Mich.

Claim.—The design for a device for gathering fruit from trees, as shown.

4,536.—BACK OF A PLAYING-CARD.—Solomon L. Cohen, New York, N. Y., assignor to Lawrence & Cohen, same place.

Claim.—The design for the back of a playing-card, as shown and described.

4,537.—BACK OF A PLAYING-CARD.—Solomon L. Cohen, New York, N. Y., assignor to Lawrence & Cohen, same place.

Claim.—The design for the back of a playing-card, as shown and described.

4,538.—OIL-CLOTH PATTERN.—Henry Kagy, Philadelphia, Pa., assignor to Thomas Potter, Son & Co., same place.

Claim.—The design for an oil-cloth, as shown.

5,539.—OIL-CLOTH PATTERN.—Henry Kagy, Philadelphia, Pa., assignor to Thomas Potter, Son & Co., same place.

Claim.—The design for an oil-cloth, as shown.

4,540.—CARPET-PATTERN.—Hugh S. Kerr, Philadelphia, Pa., assignor to Israel Foster, same place.

Claim.—The design for a carpet-pattern, substantially as described and represented in and by the accompanying drawing.

4,541.—RAILWAY-CAR SASH-LOCK. — William H. Paige, Springfield, Mass.

Claim.—The design for a railway-car sash-lock, herein shown in the drawing and described.

4,542. — POULTRY-FOUNTAIN. — Beekman Van Gaasbeek, Mount Vernon, N. Y.

Claim.—The design for a poultry-fountain, substantially as shown.

4,543.—CHAIN. — Josiah V. Waldron and Charles F. Waldron, New York, N. Y.

Claim.—The design for an oblong rectangular link-chain, as herein described and shown at *A b a*.

4,544. — OIL-CLOTH PATTERN. — John T. Webster, New York, N. Y., assignor to Thomas Potter, Son & Co., Philadelphia, Pa.

Claim.—The design for an oil-cloth, as shown.

4,545. — OIL-CLOTH PATTERN. — John T. Webster, New York, N. Y., assignor to Thomas Potter, Son & Co., Philadelphia, Pa.

Claim.—The design for an oil-cloth, as shown.

4,546.—CASE OF A PARLOR-ORGAN.—George Woods, Cambridge, Mass.

Claim.—The medallion design for the front of a parlor or cabinet-organ, substantially as shown and described.

TRADE-MARKS.

112.—WHISKY.—H. Block & Co., Cincinnati, Ohio.

113.—BURNING-FLUID.—George M. Danforth, New York, N. Y.

114.—HONOLULU ORANGE-BITTERS. — Robert Des Anges, New York, N. Y.

115.—FERTILIZER. — Dugdale & Girvin, Baltimore, Md.

116.—FERTILIZER. — Dugdale & Girvin, Baltimore, Md.

117. — LEAD-PENCILS. — Eberhard Faber, New York, N. Y.

118.—FURNISHING-GOODS.—Fisk, Clark & Flagg, New York, N. Y.

119.—LIQUORS.—Charles H. Ross & Co., Baltimore, Md.

120.—MEDICAL COMPOUND. — Samuel S. Seely, Bath, N. Y.

121.—BURNING-FLUID.—Philip Weisenberger, Pittsburg, Pa.

EXTENSIONS.

EMANUEL ANDREWS, of Williamsport, Pa. Letters Patent, No. 16,223, dated December 16, 1856; reissue No. 2,290, dated June 19, 1866.

"Improvement in Machines for Grinding Saws."

Claim.—1. The combination, in a grinding-machine, of the following instrumentalities, viz: the revolving grinder, roller-bearing, and spring, substantially as set forth.

2. The combination, in a grinding-machine, of the following instrumentalities, viz: a revolving grinder, bearing for the article, and turning-frame for the grinder, substantially as set forth.

3. The combination, in a grinding-machine, of the following instrumentalities, viz: the revolving grinder, traversing-carriage for the same, bearing for the article, and mechanism to move the grinder along the surface of the article with varying speed, substantially as set forth.

4. The combination, in a grinding-machine, of the following instrumentalities, viz: the revolving grinder, bearing for the article, and pattern-holder of varying thickness at different parts of its length, substantially as set forth.

5. The combination, in a grinding-machine, of the following instrumentalities, viz: the revolving grinder, bearing for the article, and pattern-holder of varying thickness, both lengthwise and crosswise, substantially as set forth.

6. The combination, in a grinding-machine, of the following instrumentalities, viz: the revolving grinder, bearing for the article, and pattern-holder, whose thickness at different parts of its length can be varied by adjustment, substantially as set forth.

7. The combination, in a grinding-machine, of the following instrumentalities, viz: the revolving grinder, bearing for the article, and pattern-holder, whose thickness at different parts of its length and breadth can be varied by adjustment, substantially as set forth.

8. The combination, in a grinding-machine, of the following instrumentalities, viz: the revolving grinder, bearing for the article, pattern-holder, and spring to maintain a yielding pressure on the article during grinding, substantially as set forth.

9. The combination, in a grinding-machine, of the following instrumentalities, viz: the revolving grinder, bearing for the article, pattern-holder, spring to maintain a yielding pressure on the article during grinding, and mechanism to move the said pattern-holder past the grinder, substantially as set forth.

JOSEPH KINGSLAND, Jr., of Franklin, N. J. Letters Patent No. 16,278, dated December 23, 1856.

"Improvement in Paper-Pulp Engine."

Claim.—The method of regulating the feeding of the fiber to the grinder by varying the hydraulic pressure by means of an adjustable discharging

nozzle, or the equivalent thereof, substantially as herein set forth.

JOSEPH KINGSLAND, Jr., of Franklin, N. J. Letters Patent No. 16,239, dated December 16, 1856; reissue No. 745, dated June 28, 1859; reissue No. 1,380, dated January 6, 1863.

"Improvement in Machinery for Grinding Paper-Pulp."

Claim.—In an engine for reducing fibrous substances to pulp suitable for making paper, the combination of a rotating nut armed with blades suitable for reducing fibrous substances to pulp, a reservoir for containing fibers and water, and surrounding and inclosing the nut with its blades, a feeding aperture through which the fibrous substance and water is to be introduced into the reservoir, a discharge aperture to permit the escape of the water from the reservoir with the fibers when properly reduced, and to check the discharge, that the fibers may be retained under the beating action until properly reduced, and the means for inducing a current through the reservoir, the whole having a mode of operation substantially as herein described, and for the purpose specified.

JOSEPH KINGSLAND, Jr., of Franklin, N. J. Letters Patent No. 16,316, dated December 23, 1856; reissue No. 744, dated June 28, 1859; reissue No. 1,381, dated January 6, 1863.

"Improvement in the Process of Grinding Paper-Pulp."

Claim.—The process, substantially as herein described, of reducing fibers to pulp for the manufacture of paper, which process consists in causing the water, in which the fibers to be reduced are suspended, to pass in a current into, through, and out of a reservoir inclosing the beaters, and provided with a feeding-in and a discharge-aperture, so that the fibers shall be retained within the said reservoir, and under the action of the blades or beaters, until they are sufficiently reduced, and then follow the current of water to the discharge aperture, substantially as and for the purpose specified.

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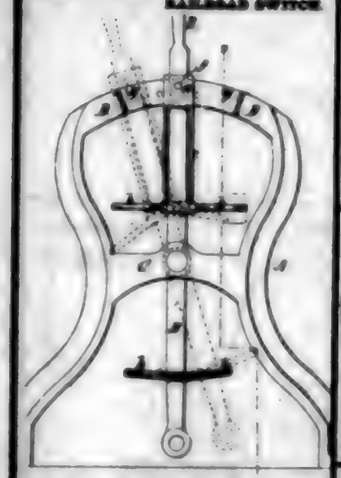
JANUARY 4, 1870.

98,469. C. A. AISING. ASPHALT PAVEMENT.

98,470. A. W. COX AND W. GANES. PRESS.

98,471. R. S. COX. CULTIVATOR.

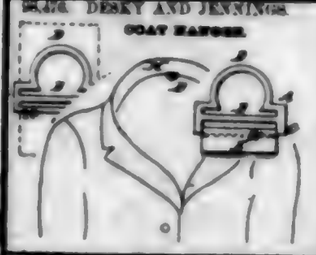
No.472. N. K. DALE. RAILROAD SWITCH.



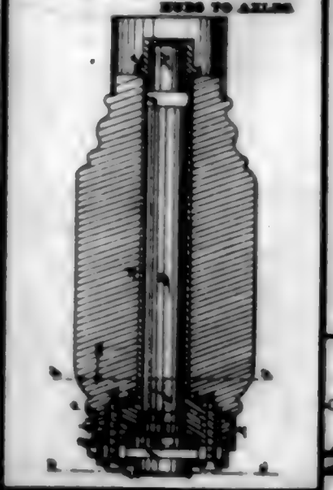
No.473. J. DAVIES. SPOKE SHAVE.



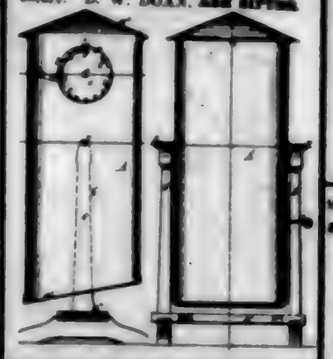
No.474. DESKY AND JENNINGS. COAT HANGER.



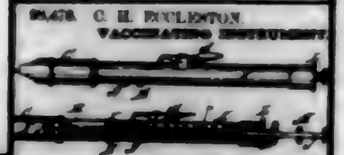
No.475. D. DALZELL. ATTACHING HUBS TO AXLES.



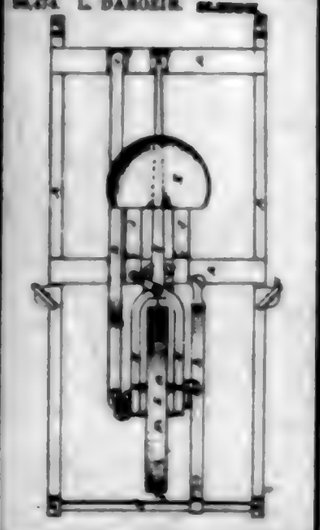
No.476. D. W. DOAN. ASH SIFTER.



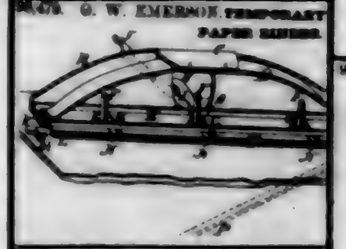
No.477. C. H. PINGLETON. VACCINATING INSTRUMENT.



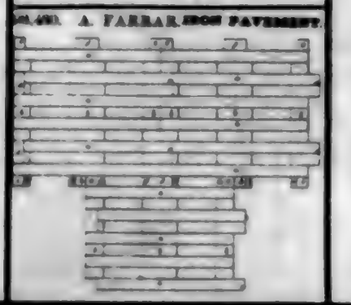
No.478. L. DAROEIR. MANGER.



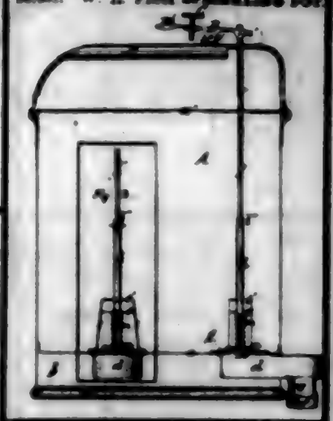
No.479. G. W. EMERSON. TEMPORARY PAPER SIGNS.



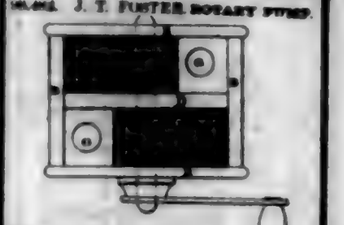
No.480. A. FARRAR. IRON PAVEMENT.



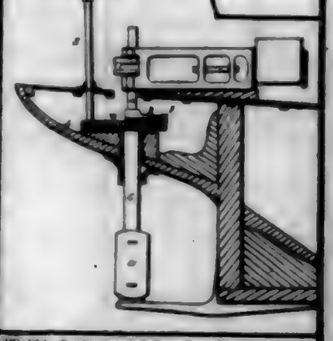
No.481. W. L. FISH. SPINNING POT.



No.482. J. T. FOSTER. ROTARY PUMP.



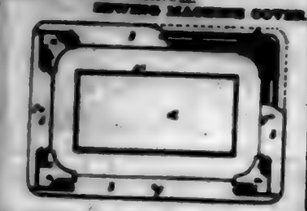
No.483. P. O. FOWLER. STEERING PROPELLER.



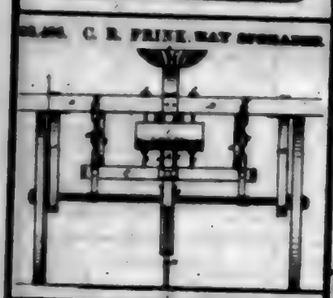
No.484. R. W. FOWLER. LAMP CHIMNEY.



No.485. B. F. FRENCH. SEWING MACHINE COVER.



No.486. C. R. FRINK. HAY SPREADER.



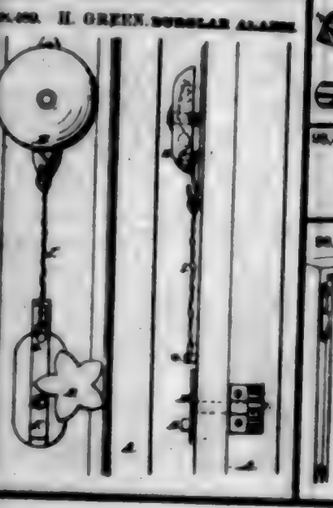
No.487. W. GRAHL. MANURE FORK.



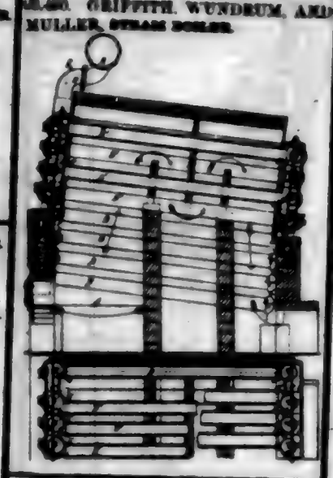
No.488. GOODWIN, GAMAGE, AND GOODWIN. CARRIAGE STEP GUARD.



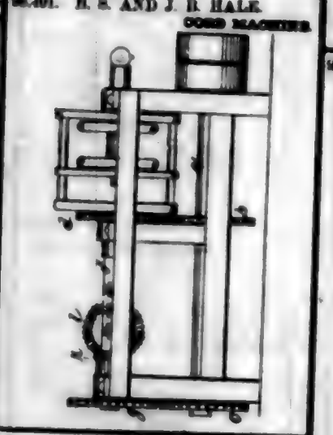
No.489. H. GREEN. BURGLAR ALARM.



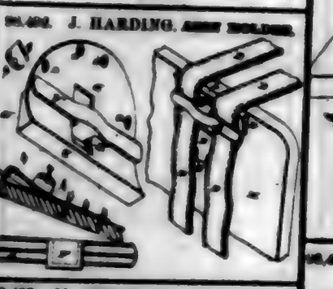
No.490. GRIFFITH, WUNDRUM, AND MULLER. STEAM BOILER.



No.491. B. S. AND J. B. HALE. CORD MACHINE.



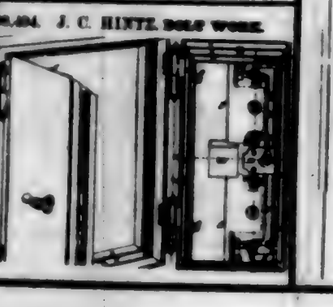
No.492. J. HARDING. ARMY BOILER.



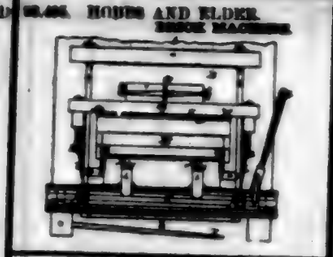
No.493. M. HEILMAN. FLY NET.



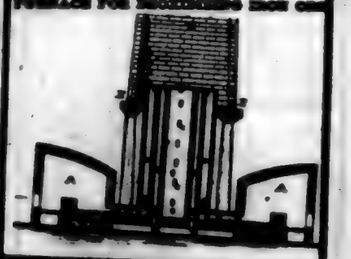
No.494. J. C. HINTZ. DOLL WORK.



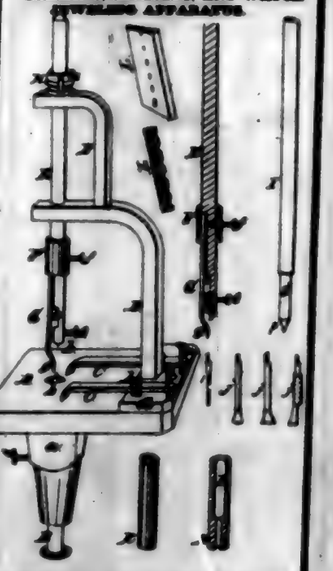
No.495. HOBBS AND ELDER. BRICK MACHINE.



No.496. A. W. HONSINGER. FURNACE FOR BRICKMAKING [illegible]



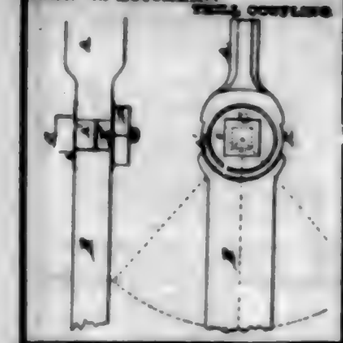
No.497. C. HOPKINS. BOILING, EVAPORATING AND VAPOR DRYING APPARATUS.



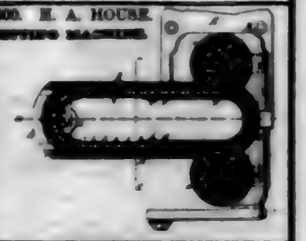
No.498. H. B. HORTON. CLOCK CALENDAR.



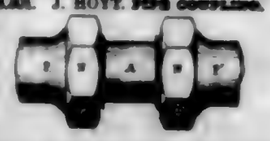
No. 509. R. HOTCHKISS. PIPE COUPLING.



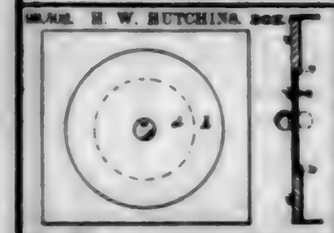
No. 509. H. A. HOUSE. SHAPING MACHINE.



No. 511. J. HOTT. PIPE COUPLING.



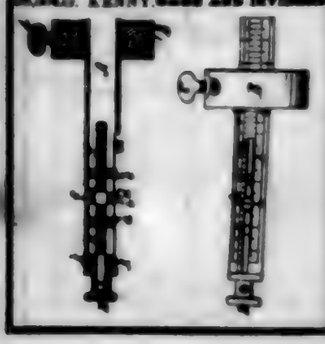
No. 512. H. W. HUTCHINS. BOX.



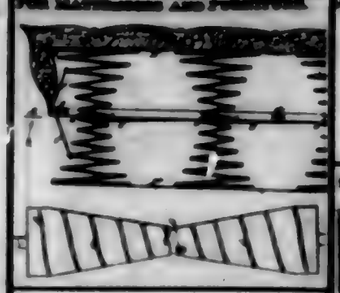
No. 513. E. J. JOHNSON. WATER FILTER.



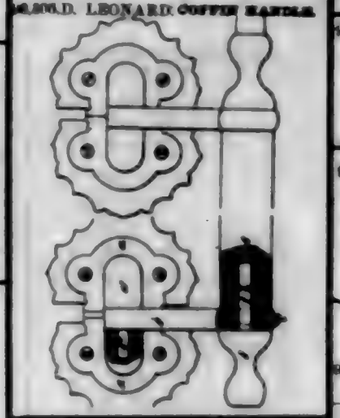
No. 514. G. KENNY. GAGE AND INVENTOR.



No. 515. S. P. KITTLE. SPIRAL SPRING FOR MATTRESSES AND FURNITURE.



No. 516. D. LEONARD. COFFIN HANDLE.



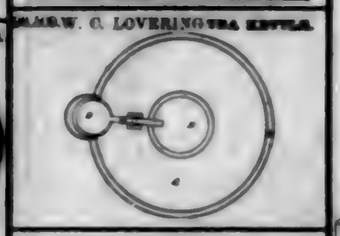
No. 517. J. O. LEWIS. BELT TIGHTENER.



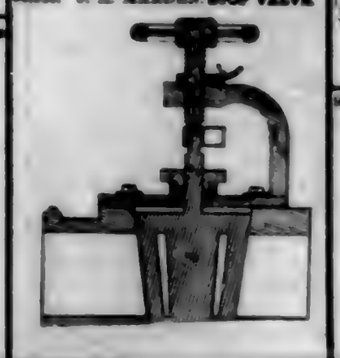
No. 518. J. B. LOVEJOY. CURTAIN FIXTURE.



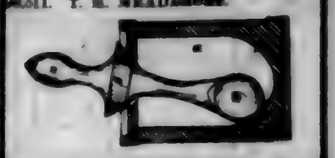
No. 519. W. C. LOVERING. TEA KETTLE.



No. 520. J. A. MARDEN. STOP VALVE.



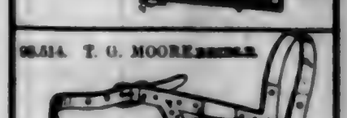
No. 511. T. H. MEADSHEET.



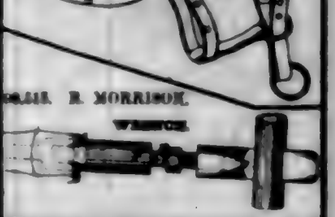
No. 512. J. J. MERVESP. ATTACHING BUTTONS.



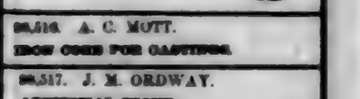
No. 513. E. M. AND J. E. MIX. INDICATOR LOCK.



No. 514. T. G. MOORE. BRIDLE.



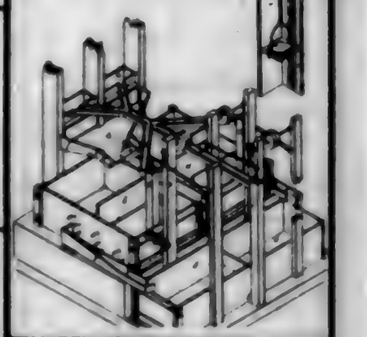
No. 515. R. MORRISON. WRENCH.



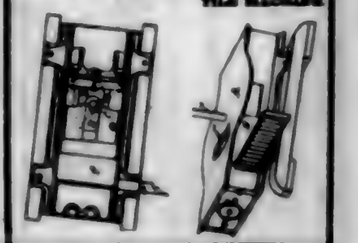
No. 516. A. C. MOTT. IRON CORES FOR CASTINGS.

No. 517. J. M. ORDWAY. ARTIFICIAL STONE.

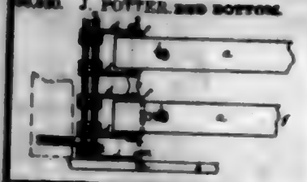
No. 518. A. F. W. PARTZ. COLLECTING GOLD FROM ORES.



No. 519. J. W. PENFIELD. TILE MACHINE.



No. 530. J. POTTER. BED BOTTOM.

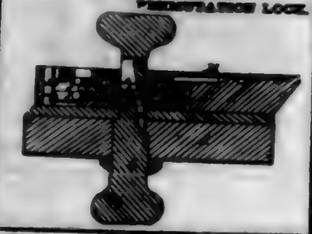


No. 531. W. A. RAWRAY. SHIRT SLEEVE.



No. 532. E. W. RANNEY. COMPOSITION FOR CONCRETE PAVEMENT.

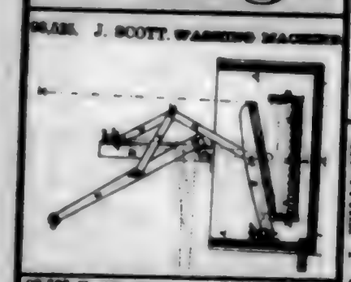
No. 533. J. P. SCHMUCKER. PERMUTATION LOCK.



No. 534. W. A. SCHNEIDER. STEAM TRAP.



No. 535. J. SCOTT. WASHING MACHINE.

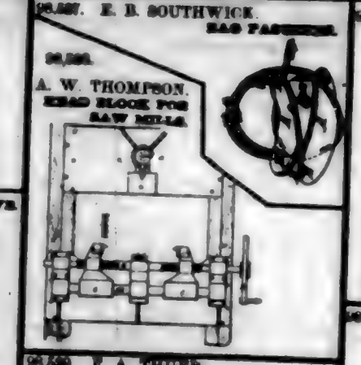


No. 536. H. W. SHEPARD. CAR BUFFER.



No. 537. E. B. SOUTHWICK. BAG FASTENER.

No. 538. A. W. THOMPSON. HEAD BLOCK FOR SAW MILLS.



No. 539. F. A. THUER. CARTRIDGE LOADER.



No. 540. T. B. TITUS. CASTING SLEIGH SHOES.



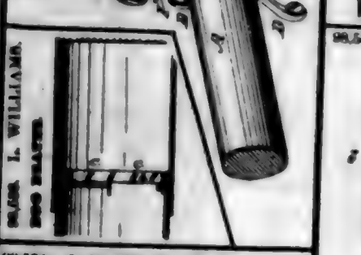
No. 541. M. VANBIBBER. HARROW.



No. 542. R. WANGEMAN. STOP FOR CURTAIN ROLLERS.



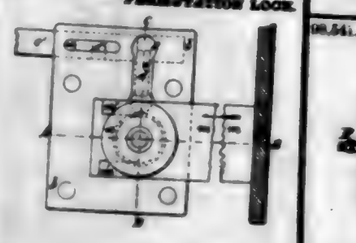
No. 543. L. WILLIAMS. PIPE BRACES.



No. 544. J. D. WILLIAMS. FIX FOR ROLLING AND PUDDLING FURNACE.

No. 545. A. D. WILLIS. MEDICAL COMPOUND.

No. 546. L. YALE Jr. PERMUTATION LOCK.



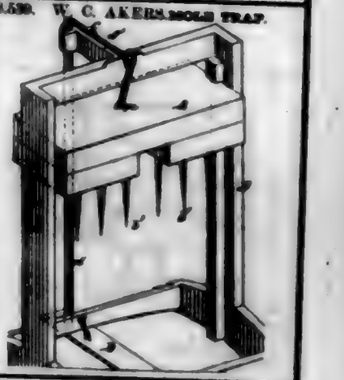
No. 537. J. AMSTERDAM. MANUFACTURE OF STEEL HEADED RAILS.



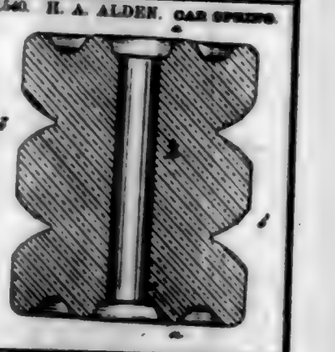
No. 538. J. ADAMS. CURTAIN FASTENER.



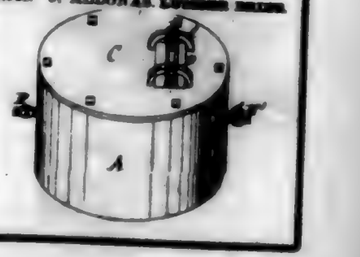
No. 539. W. C. AKERS. MOLE TRAP.



No. 540. H. A. ALDEN. CAR SPRING.



No. 541. J. ALLONAS. LUBRICATING VALVE.



No. 96,542. C. ALVORD.

No. 96,543. BAKER AND [illegible]

No. 96,544. BARBER AND WOLF.

No. 96,545. L. BEER. LOCK.

No. 96,546. T. G. BERING. RAILWAY RAIL CHAIR.

No. 96,547. BISHOP AND AGNEW.

No. 96,548. BLISS AND DAVENPORT.

No. 96,549. BOTTOMLEY AND GREENWOOD.

No. 96,550. R. BRADY. CUTTING AND [illegible]

No. 96,551. W. BROWN.

No. 96,552. BRYSON AND DUNLAP. WATER WHEEL.

No. 96,553. J. M. BURKE.

No. 96,554. CALL AND GRIFFIN.

No. 96,555. C. CERBIER. VENTILATING [illegible]

No. 96,556. G. F. CHAMBERLIN. WASHING MACHINE.

No. 96,557. M. C. CHAMBERLIN AND A. CLAWSON.

No. 96,558. CHANDLER AND BARTHOLOMEW. SAW MILL.

No. 96,559. J. CHATTIN. SCAFFOLD BRACKET.

No. 96,560. A. L. CHUBB. WHEEL CULTIVATOR.

No. 96,561. F. O. CLARKE. WATER WHEEL.

No. 96,562. G. F. J. COLBURN. BIRD CAGE.

No. 96,563. C. C. COLE. WHIFFLETREE.

No. 96,564. H. N. CONKLIN. SUSPENDER.

No. 96,565. COOMBS AND GRAY. BOBBIN MILL.

No. 96,566. W. COOPER. CLOTHES WRINGER.

No. 96,567. W. CULLINS. JOINT MOLD.

No. 96,568. J. D. CULVER. DRAG SAW.

No. 96,569. A. CUNNINGHAM. WHEEL PLOW.

No. 96,570. C. I. DEAN. PICKING GUARD.

No. 96,571. C. C. DENNETT. CONCRETE ARCH FOR BUILDINGS.

No. 96,572. N. DICE. BUCKLE.

No. 96,573. DICKASON AND CULP. FARM GATE.

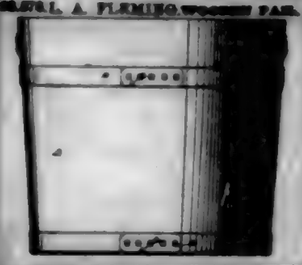
No. 96,574. E. DOREMUS. STAVE JOINTER.

No. 96,575. W. M. DOTY. PRUNING HOOK.

No. 96,576. ENSINGER AND FERTIG. BREAD CUTTER.

No. 96,577. E. FAY. LOCK.

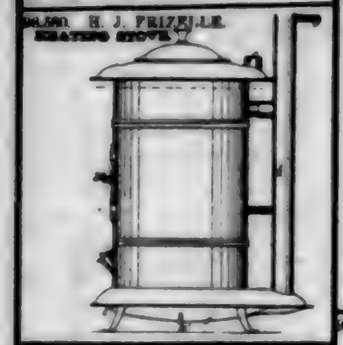
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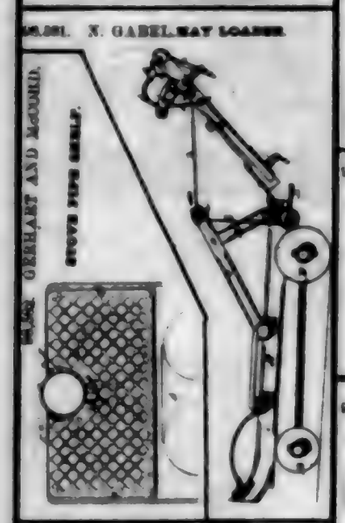
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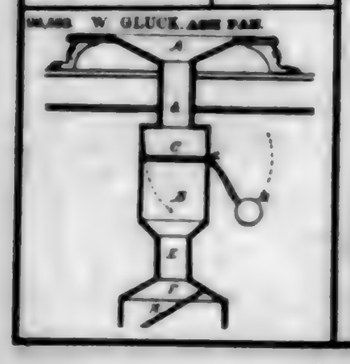
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98,581. N. GABEL. HAY LOADER.



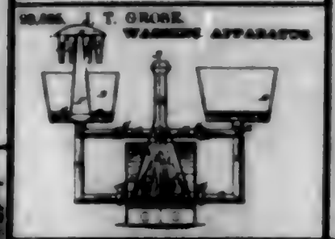
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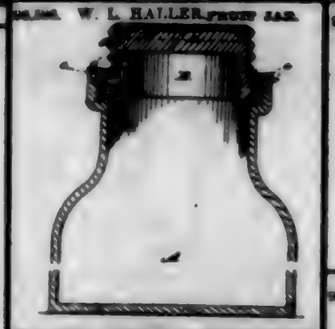
98,583. W. G. GREELY. CANE HOOK.



98,584. J. T. GROSE. WASHING APPARATUS.



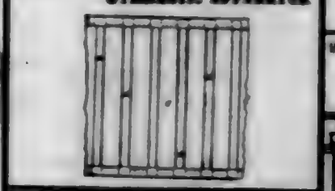
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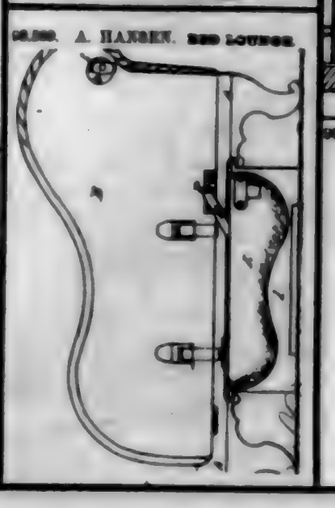
98,586. W. HANLON. GYMNASTIC APPARATUS.



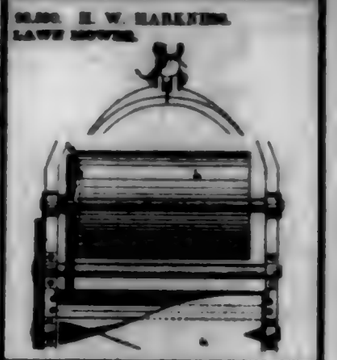
98,587. W. HANLON. GYMNASTIC APPARATUS.



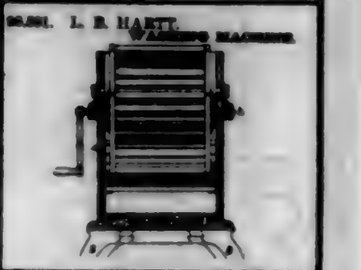
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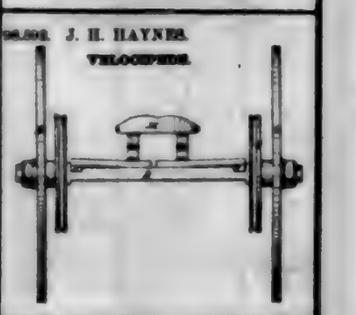
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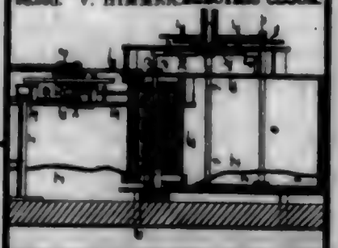
98,590. L. B. HARTT. WASHING MACHINE.



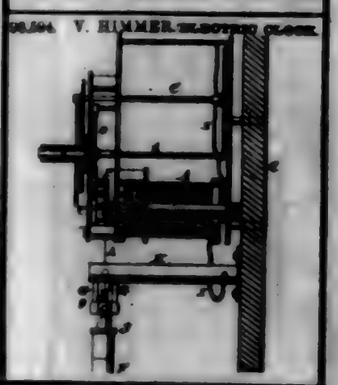
98,592. J. H. HAYNES. VELOCIPEDE.



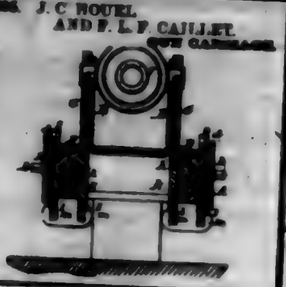
98,593. V. HIMMER. ELECTRIC CLOCK.



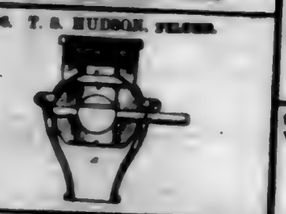
98,594. V. HIMMER. ELECTRIC CLOCK.



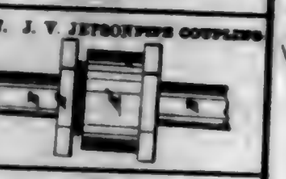
98,605. J. C. HOUEL AND F. L. F. CAILLET. GUN CARRIAGE.



98,606. T. S. HUDSON. FEEDER.



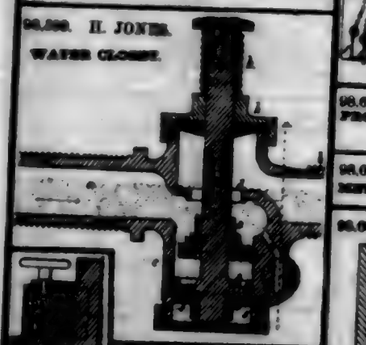
98,607. J. V. JETSON. PIPE COUPLING.



98,608. G. T. JOBSON. BOX.



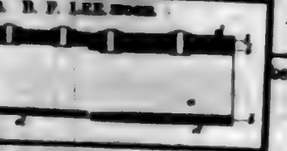
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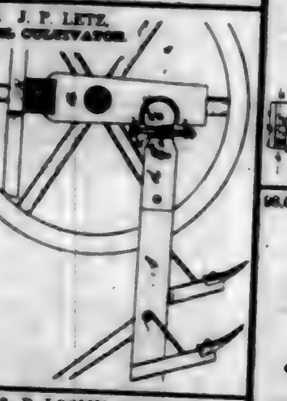
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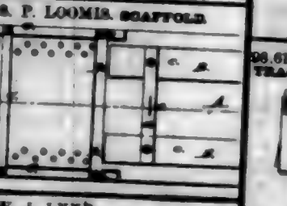
98,611. R. F. LEE. HOOK.



98,612. J. P. LETZ. WHEEL CULTIVATOR.



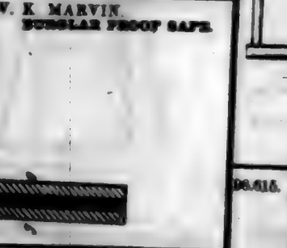
98,613. S. P. LOOMIS. SCAFFOLD.



98,614. W. J. LYND. PROCESS OF PREPARING COAL FOR SMELTING ORE.

98,615. W. J. LYND. COAL FOR METALLURGICAL OPERATIONS.

98,616. W. K. MARVIN. BURGLAR PROOF SAFE.



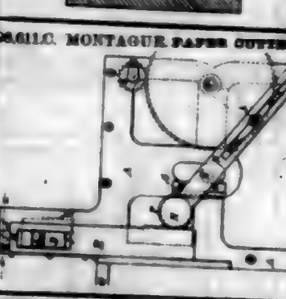
98,617. J. D. MICHAEL. MAIL BOX.



98,618. R. R. MILLER. FORGING CARRIAGE BRACKETS.



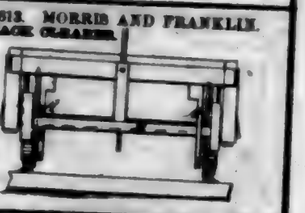
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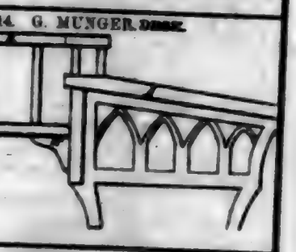
98,612. J. MONTGOMERY. BEE HIVE.



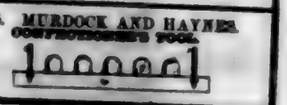
98,613. MORRIS AND FRANKLIN. TRACK CLEARER.



98,614. G. MUNGER. DESK.



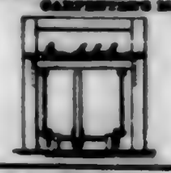
98,615. MURDOCK AND HAYNES. CONSTRUCTIVE TOOL.



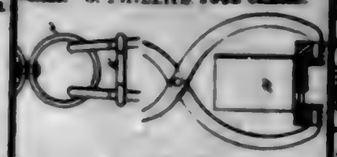
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98,617. G. M. NICKASON. CARPENTER'S MARKER.



98,618. D. PHILLIPS. TOOL CLASP.



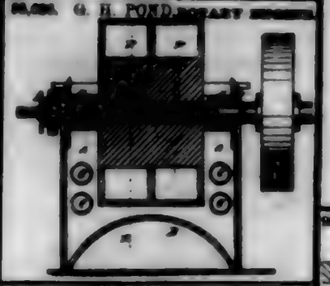
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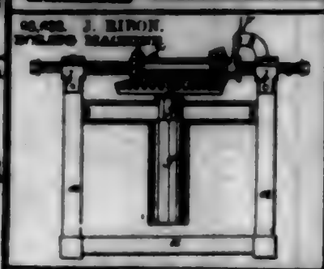
98,620. I. J. ORDWAY. RAILWAY MECHANISM.



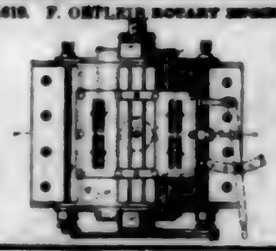
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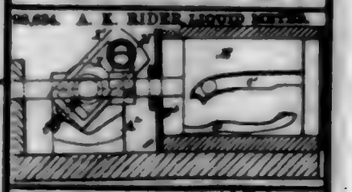
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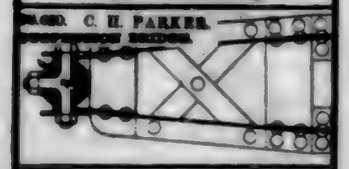
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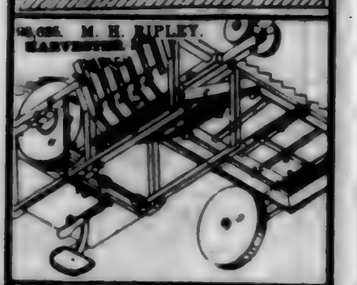
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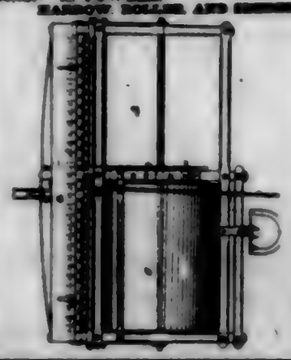
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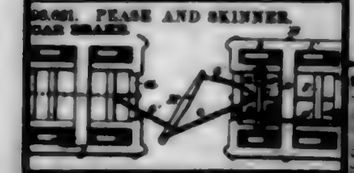
98,626. M. H. RIPLEY. HARVESTER.



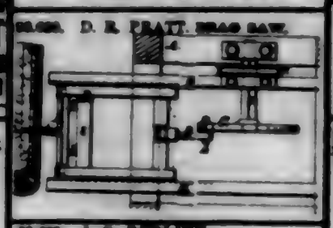
98,627. A. POWELL. HARROW, ROLLER AND SEEDER.



98,628. PEASE AND SKINNER. CAR BRAKE.



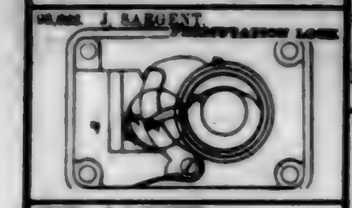
98,629. D. R. PRATT. HAND SAW.



98,630. ROBIN AND BURK. CARDING APPARATUS.



98,631. J. SARGENT. PERCUSSION LOCK.



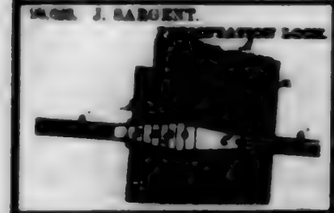
98,632. C. W. SANBORN. HORSE HAY RAKE.



98,633. J. G. REDLINE. HAT BODY HEATER.



98,634. J. SARGENT. PERCUSSION LOCK.



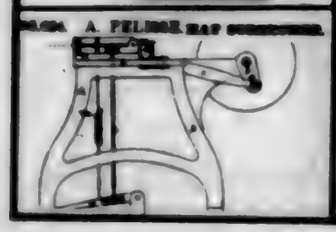
98,635. J. J. SCHILLINGER. REFRIGERATOR FOR PRESERVING.



98,636. W. O. REIM. EVAPORATING SCALES.



98,637. A. PELISSE. HAT FORMING.



98,638. O. W. REISINGER. SLIDE VALVE.



98,639. D. J. SLATE. PENNY SAVING.



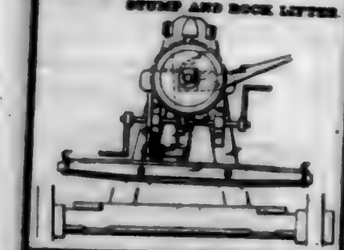
98,640. L. L. SLOSS. CULTIVATOR.



98,641. C. F. SMITH. TOY PISTOL.



98,642. S. SMITH. STUMP AND ROCK LIFTER.



98,643. W. P. K. SMITH. TOY MONEY BOX.



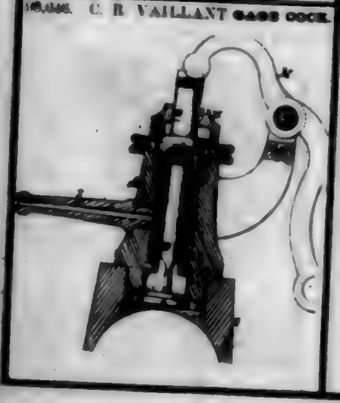
98,644. G. C. TAFT. WRENCH.



98,645. A. TUTTLE. PLANT PROTECTOR.



98,646. C. B. VAILLANT. GAGE COCK.



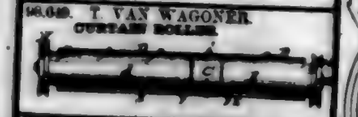
98,647. A. L. P. VAIRIN. WHEEL HARROW.



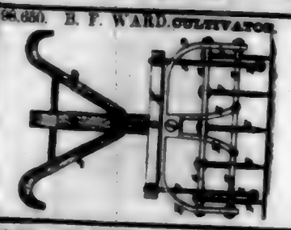
98,648. G. VAN SICKLE. SAND-CUTTER.



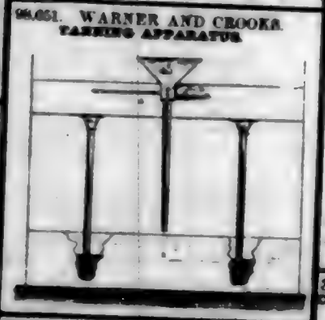
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98,650. H. F. WARD. CULTIVATOR.

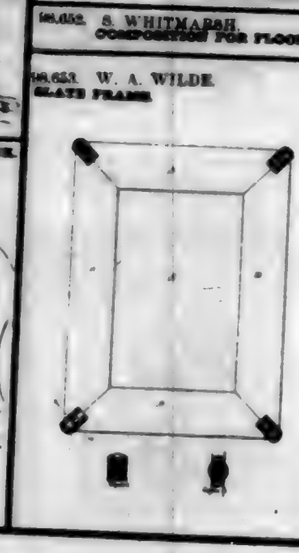


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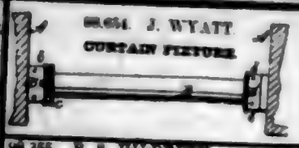


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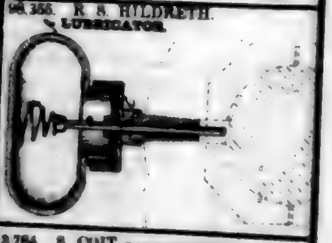
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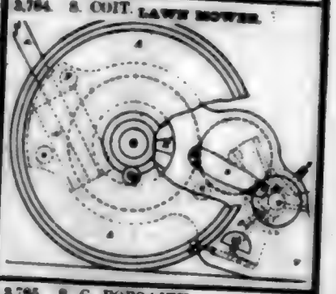
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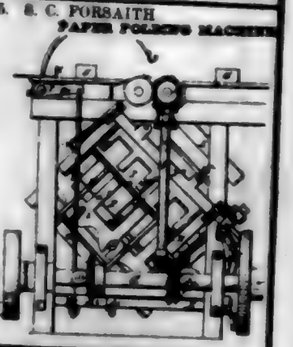
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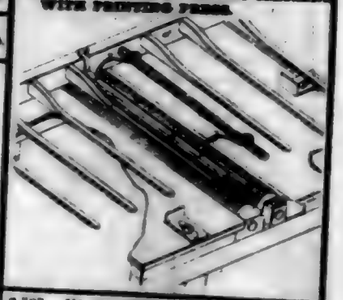
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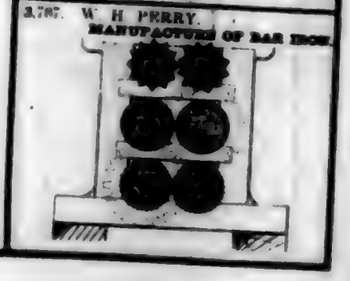
3,765. S. C. FORSAITH. PAPER FOLDING MACHINE.



3,766. S. C. FORSAITH. COMBINING PAPER FOLDING MACHINE WITH PRINTING PRESS.



3,767. W. H. PERRY. MANUFACTURE OF BAR IRON.



ILLUSTRATIONS OF PATENTS

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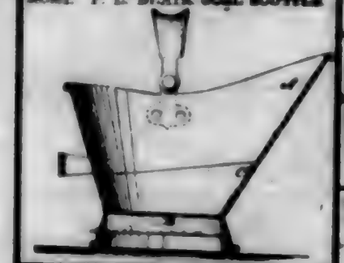
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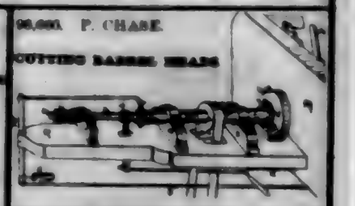
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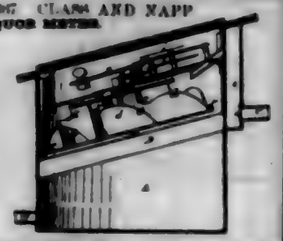
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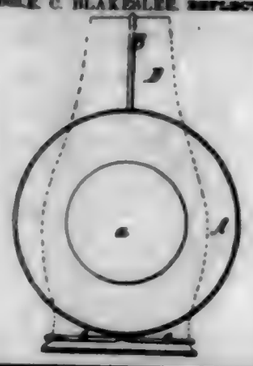
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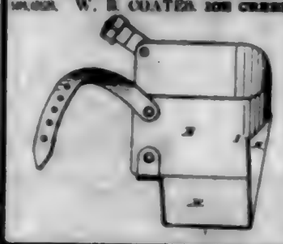
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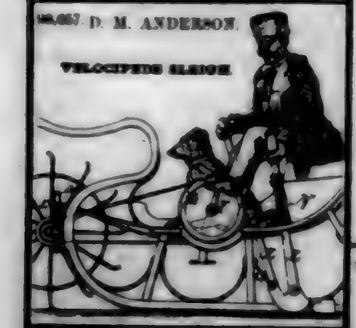
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98,665. W. B. COATES. ICE CREEPER.

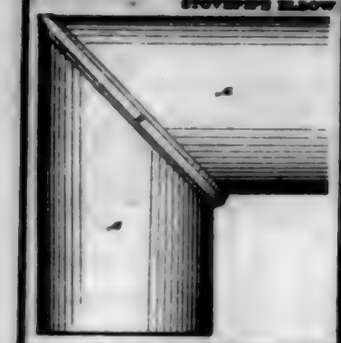


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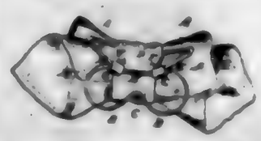


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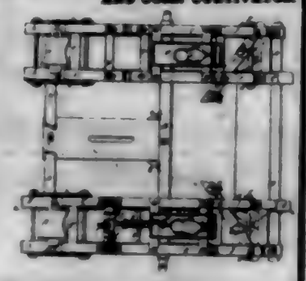
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98,661. J. B. BISHOP. RECEIVER.



98,660. N. BREED. CORN PLANTER AND CORN CULTIVATOR.



98,659. A. COURVOISIER. TIME CHECK.



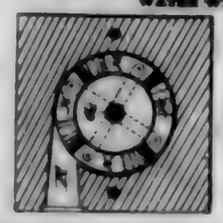
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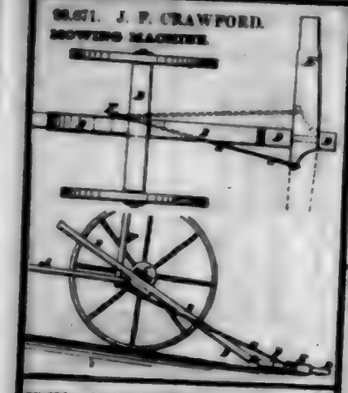
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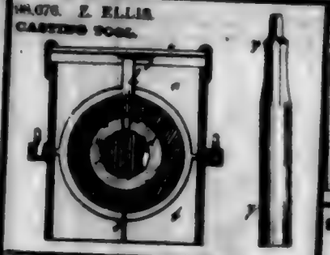
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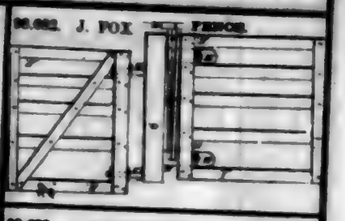
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98,676. Z. ELLIS. CASTING POOL.



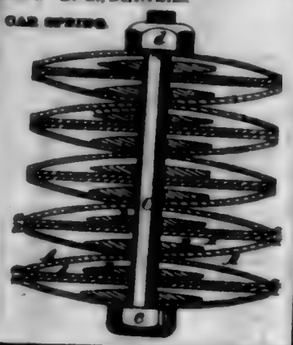
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98,677. S. D. ENGLE. WATER SUPPLY CAR.



98,672. D. G. DANIELS. CAR SPRING.



98,678. S. F. ESTELL. PROGRAMME CLOCK.



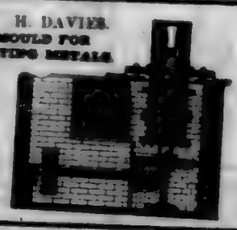
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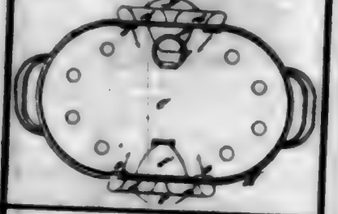
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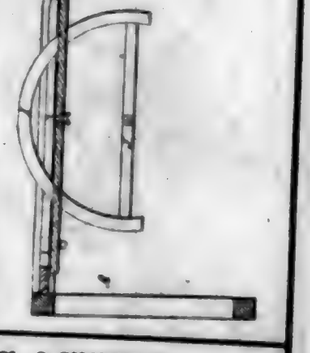
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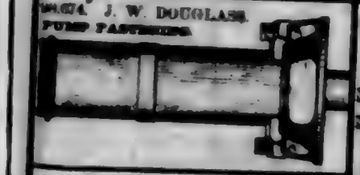
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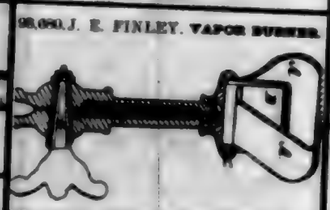
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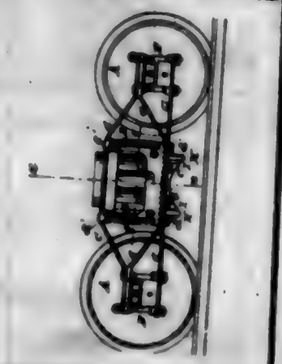
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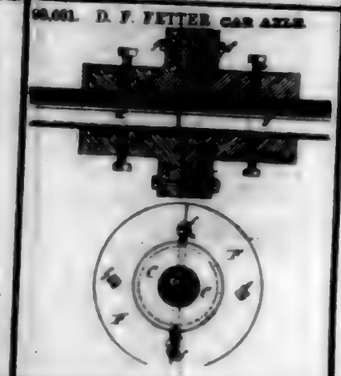
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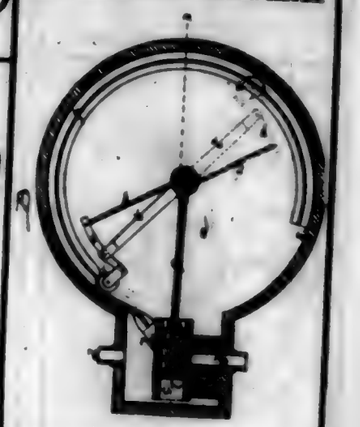
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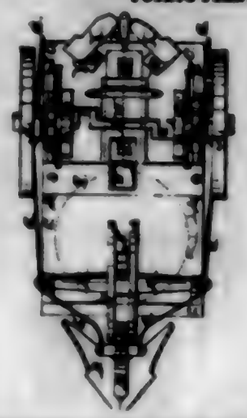
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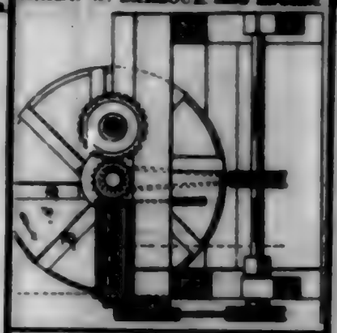
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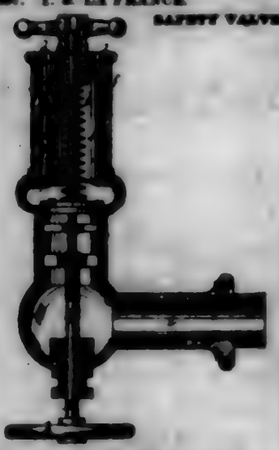
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98,698. J. W. BARBOUR. BAG HOLDER.



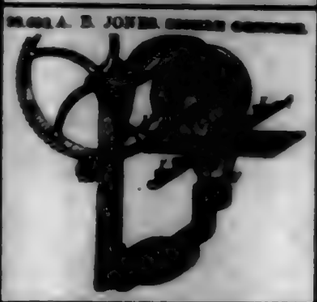
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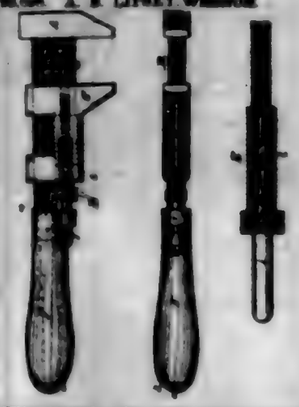
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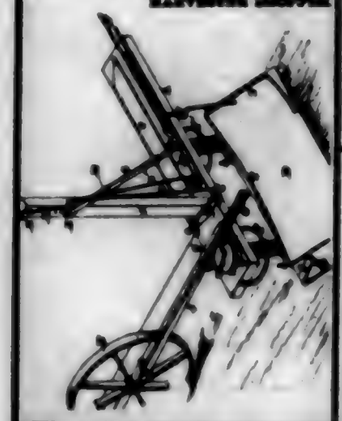
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98,702. A. S. LITSEY. WRENCH.



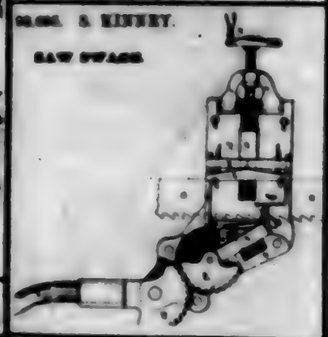
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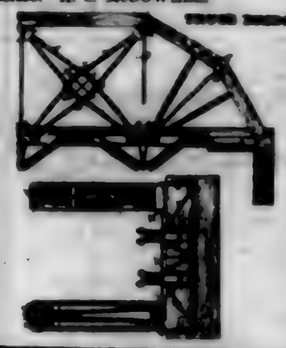
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98,705. S. KINNEY. SAW SWAGE.



98,706. H. S. McDOWELL. [illegible]



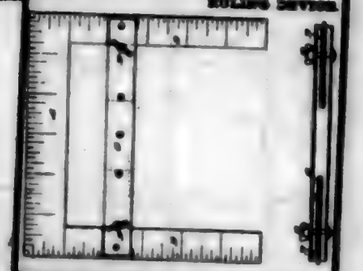
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98,708. C. G. MUSSELMAN. [illegible]

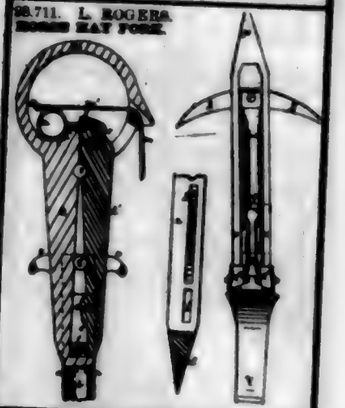


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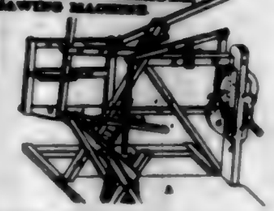


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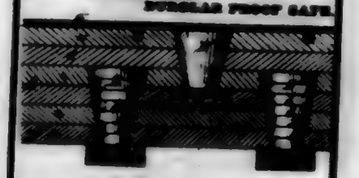


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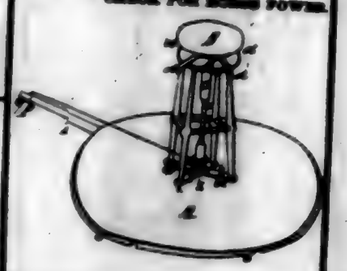
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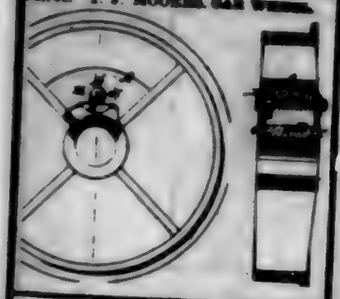
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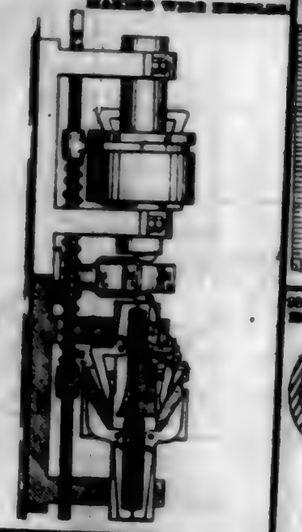
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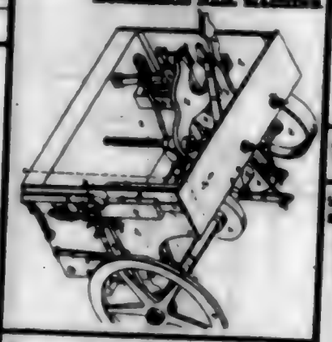
98,716. T. J. MOGERS. GAS VALVE.



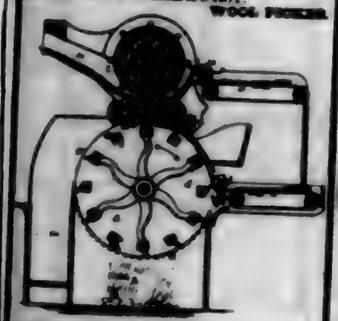
98,717. P. AND F. PHILIP. MAKING WIRE BRUSHES.



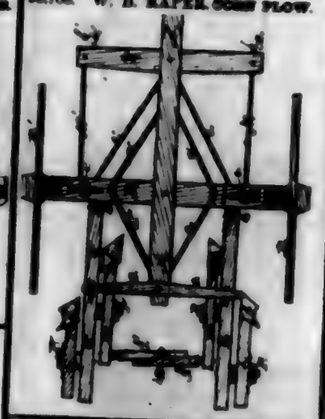
98,718. S. S. PUTNAM. [illegible] NAIL MACHINE.



98,719. S. R. PARKHURST. WOOL PICKER.



98,720. W. B. RAPER. CORN PLOW.

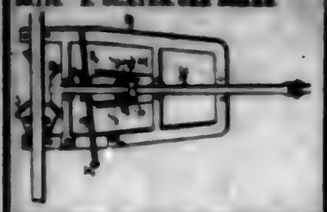


98,721. S. R. PARKHURST. [illegible] COTTON GIN.

98,722. D. RENSHAW. [illegible] DRIVER.



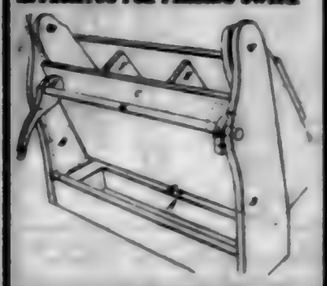
No.716. E. SLATER. CAR BRAKE.



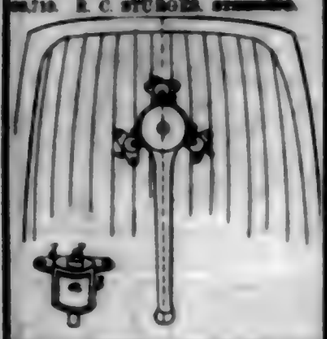
No.717. E. SMITH. PIPE COUPLING.



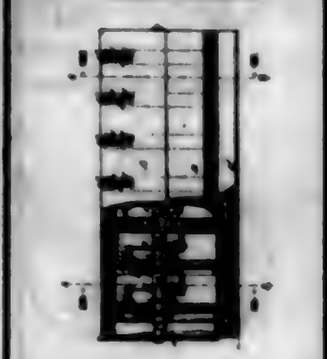
No.718. N. STOCKWELL. APPARATUS FOR FEEDING SWINE.



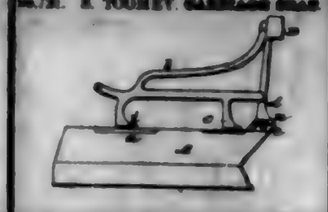
No.719. E. C. STURGES. STEAM-TRAP.



No.720. E. A. SWAIN. SHOWING MACHINE.



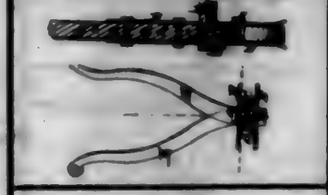
No.721. S. TOOMEY. CARRIAGE GEAR.



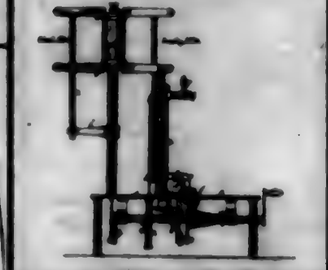
No.722. J. L. VAN WIRT. HORSE COLLAR.



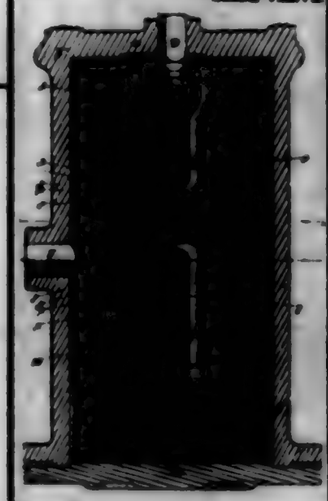
No.723. J. B. VEDDER. CAR COUPLING.



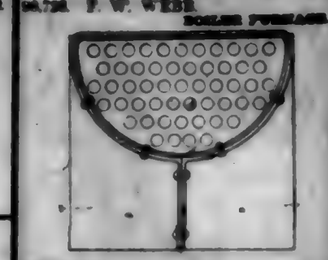
No.724. C. W. WAILEY. CUT-OFF VALVE GEAR.



No.725. G. I. WASHBURN. SLIDE VALVE.



No.726. F. W. WEBB. ROLLER FURNACE.

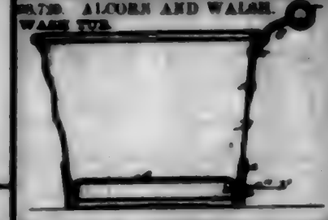


No.727. W. M. WELLING. COMPOSITION FOR KINDLING FIRE.

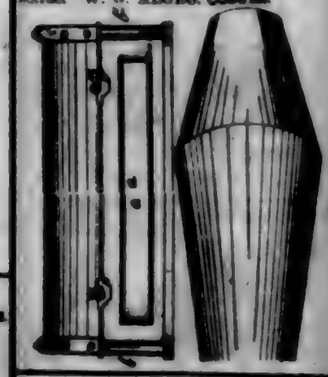
No.728. A. WILCOX. MOLDING'S PLANE.



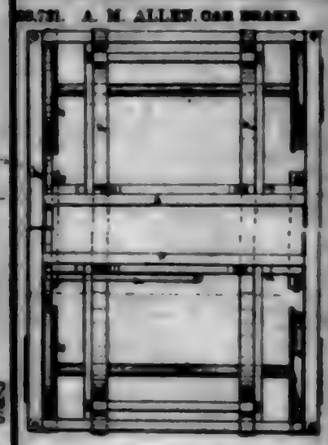
No.729. ALCORN AND WALSH. WASH TUB.



No.730. W. G. ALGEO. COFFIN.



No.731. A. M. ALLEN. CAR BRAKE.



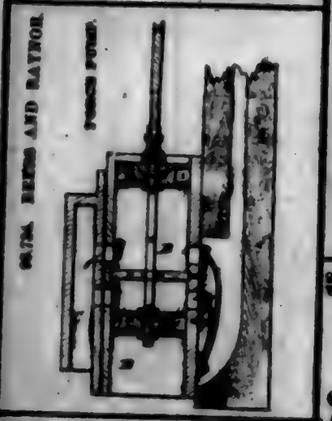
No.732. T. F. ALLYN. CAR SPRING.



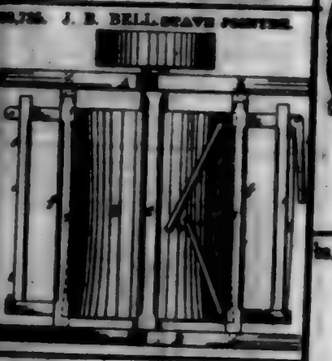
No.733. S. A. BARKER. COTTON THINNER.



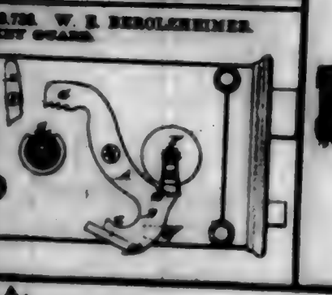
No.734. BEERS AND BATEMAN. FENCE POST.



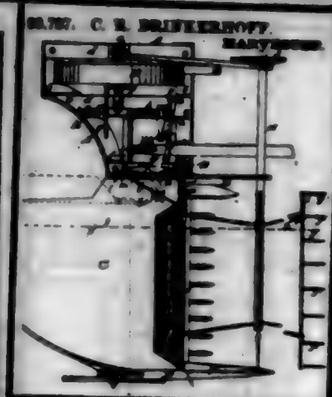
No.735. J. R. BELL. SHAVE POSTER.



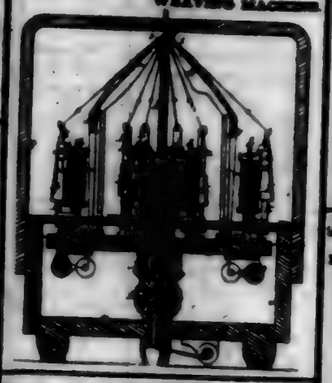
No.736. W. R. BEROLZHEIMER. BELT GUARD.



No.737. C. H. BRINKERHOFF. HARVESTER.



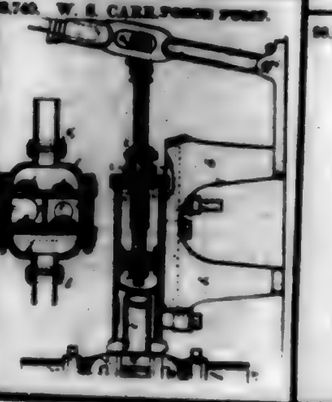
No.738. M. C. BRYANT. WEAVING MACHINE.



No.739. E. M. BUCKLEY. WATER WHEEL.



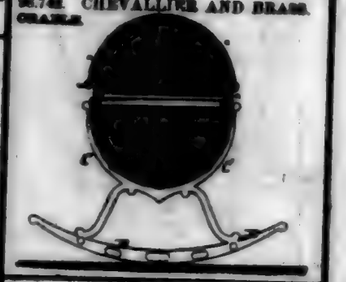
No.740. W. S. CARR. PUMPING ENGINE.



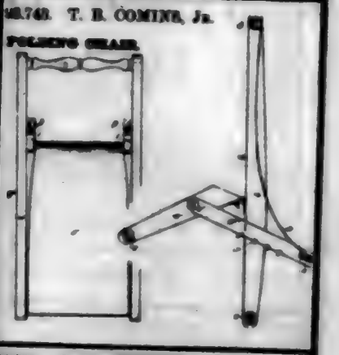
No.741. J. CHASE. WATER WHEEL.



No.742. CHEVALLIER AND BRASS. CHAIR.



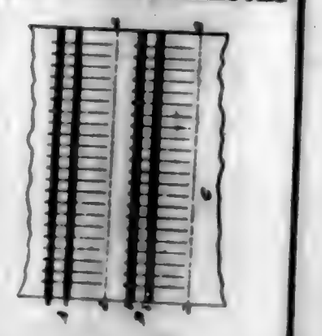
No.743. T. B. COMINS, Jr. FOLDING CHAIR.



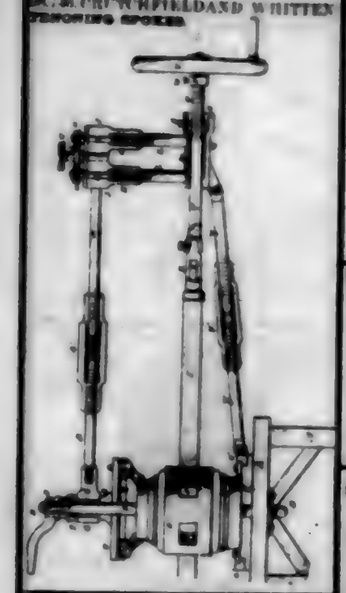
No.744. J. W. CREMIN. GAS BURNER.



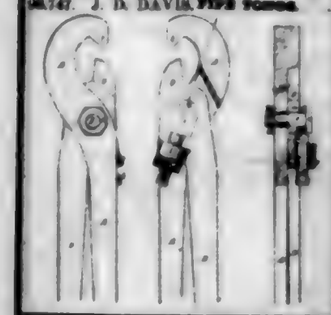
No.745. C. O. CROSBY. PAPERING PINS.



No.746. CRUMPFIELD AND WHITTEN. REPAIRING SPOKES.



No.747. J. D. DAVIS. PIPE TONGS.



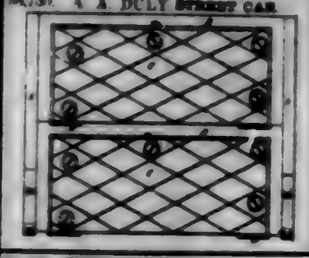
No.748. S. A. DAY. CARTRIDGE BOX.



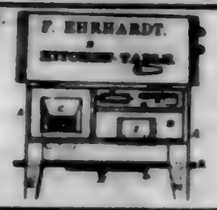
No.749. J. H. DORST. PAPERS.



No.750. A. A. DULY. STREET CAR.



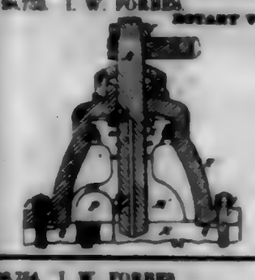
No.751. F. EHRHARDT. KITCHEN TABLE.



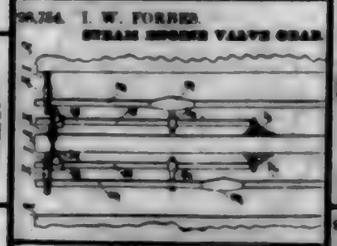
No.752. W. W. FIFIELD. CANE CORD GUIDE.



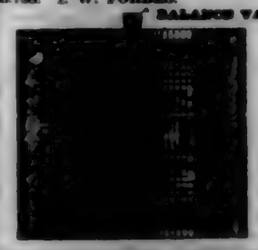
No.753. I. W. FORBES. ROTARY VALVE.



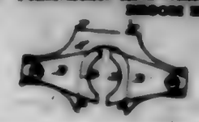
No.754. I. W. FORBES. STEAM ENGINE VALVE GEAR.



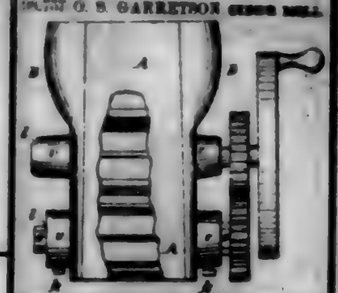
No.755. I. W. FORBES. BALANCE VALVE.



No.756. FRANKLIN AND CLARK. BRIDGE FASTENER.



No.757. G. S. GARRETSON. GRIST MILL.

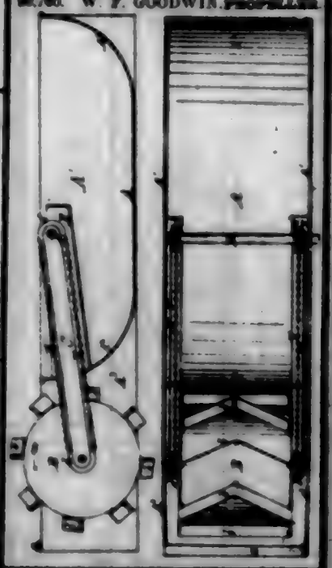


No.758. W. L. GILROY. PROCESS OF PRESERVING GREEN CORN.

No.759. M. A. GOODENOUGH. PLASTERING MACHINE.



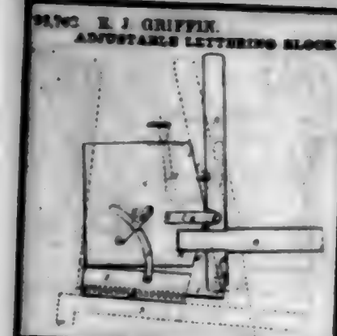
No.760. W. F. GOODWIN. PROPELLER.



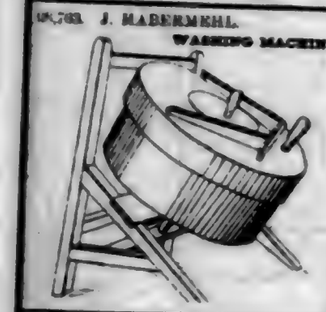
No.761. J. GOULD. SIDE RIVE.



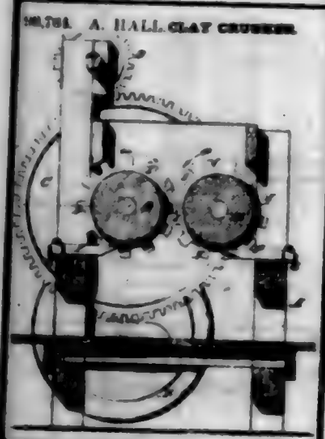
No.762. E. J. GRIFFIN. ADJUSTABLE LETTERING BLOCK.



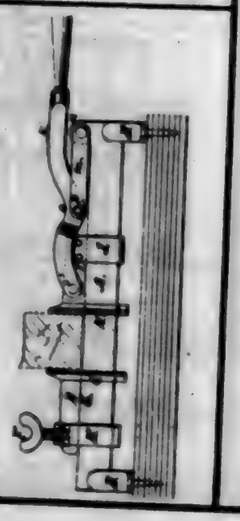
No.763. J. HABERMEHL. WASHING MACHINE.



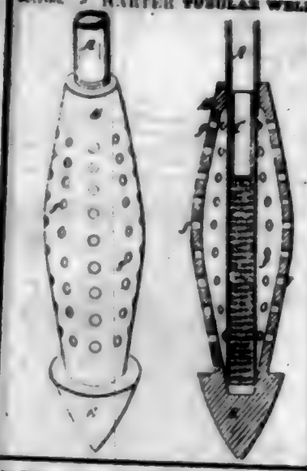
No.764. A. HALL. CLAY CRUSHER.



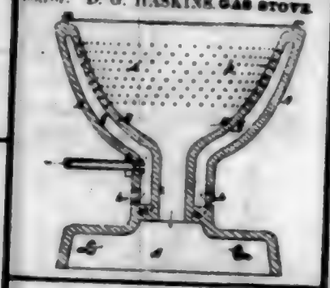
No.765. HALL AND FARRA. GATE AND DOOR CLAMP.



No.766. J. HARTER. TUBULAR WELL.



No.767. D. G. HASKINS. GAS STOVE.



No.768. CANCELLED.

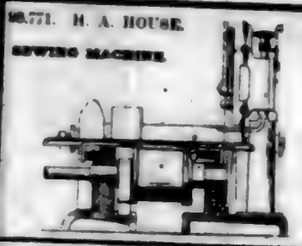
No.769. E. F. HOFMAN. FERRARY.



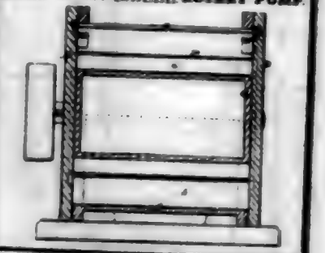
No.770. C. F. HORNBECK. GAS COUPLING.



No.771. H. A. HOUSE. SEWING MACHINE.



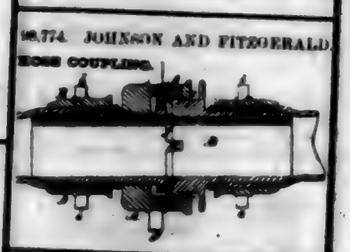
No.772. C. W. ISBELL. ROTARY PUMP.



No.773. A. P. M. JEFFERS. SPELLING BOX.



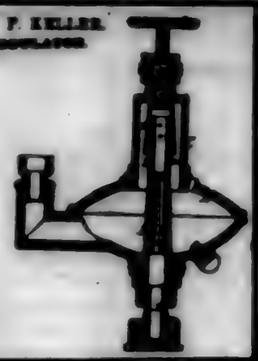
No.774. JOHNSON AND FITZGERALD. HOSE COUPLING.



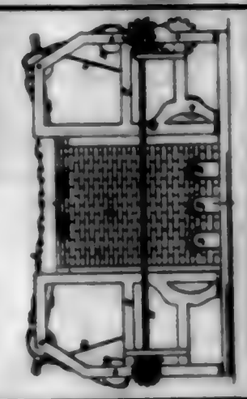
No.775. E. B. KEITH. CAR COUPLING.



98,776. P. KELLER. GAS REGULATOR.



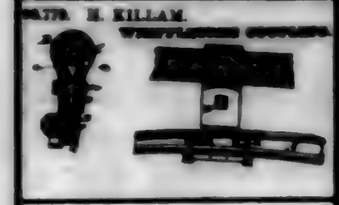
98,777. V. KELLER. HARMONIC GUN.



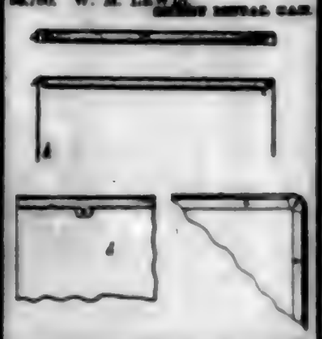
98,778. R. A. KENDALL. GRAIN CRADLE.



98,779. H. KILLAM. WHIFFLETREE COUPLING.



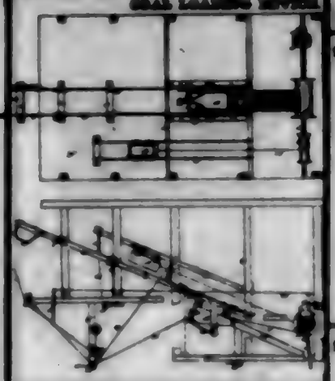
98,780. W. M. LEWIS. CARPET STRETCHING CASE.



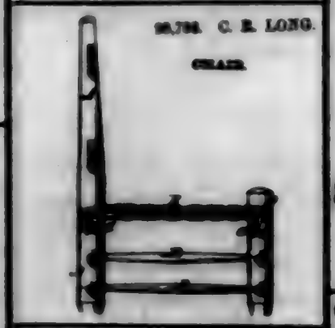
98,781. E. C. LOCK. GUN LOCK.



98,782. J. F. LOGAN. COAL LOADING DEVICE.

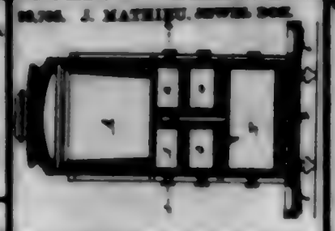


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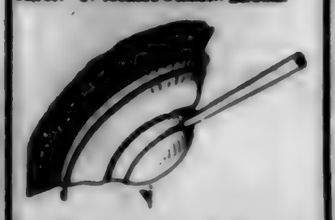
98,784. O. MARLAND. TRIMMING SPINNING.

98,785. J. MATHIEU. STOVE DOOR.

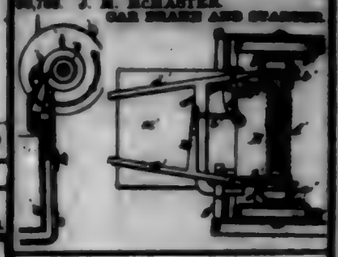


98,786. P. M. McGILL. ADJUSTABLE PUMP.

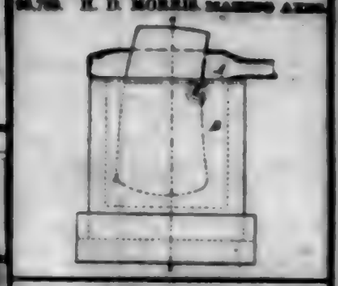
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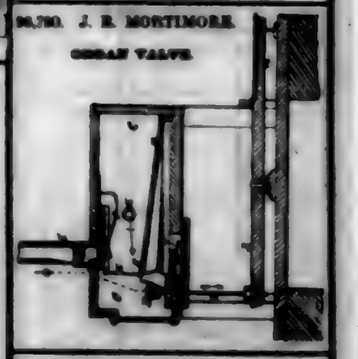
98,788. J. M. McMASTER. GAS BRACE AND SPANNER.



98,789. H. D. MORRIS. MARKING APPARATUS.

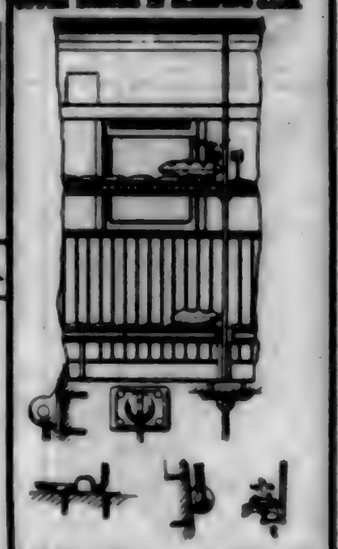


98,790. J. R. MORTIMORE. CHEAP VALVE.

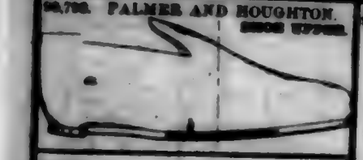


98,791. R. NORWOOD. IMPROVED PAVING BLOCK.

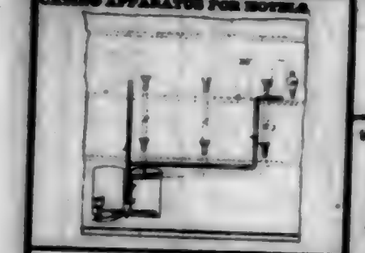
98,792. E. H. PAINE. IMPROVED METHOD OF SLAUGHTERING CATTLE.



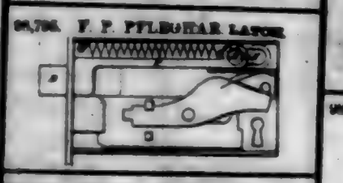
98,793. PALMER AND HOUGHTON. SHOE STIFFENER.



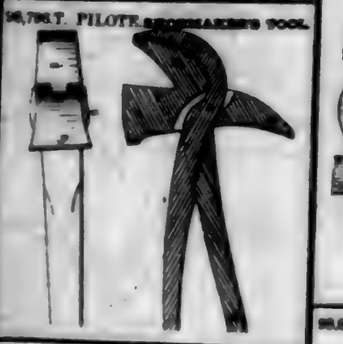
98,794. H. A. PATTERSON. CONDENSING CASING APPARATUS FOR BOILERS.



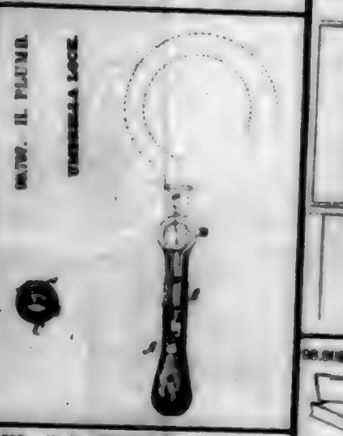
98,795. F. P. PFLUGHAR. LATCH.



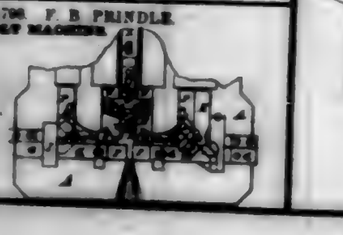
98,796. T. PILOTE. BROOMMAKER'S TOOL.



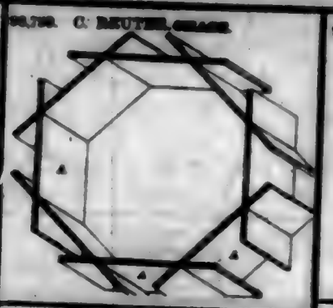
98,797. H. PLUMB. BOOT STRETCHER.



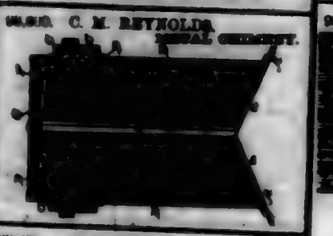
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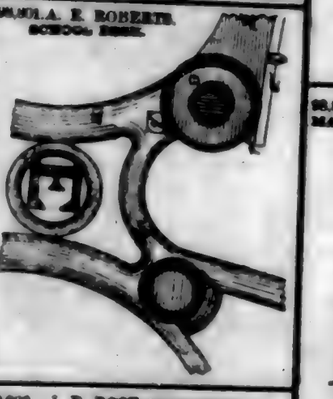
98,799. C. REUTER. GRAIN.



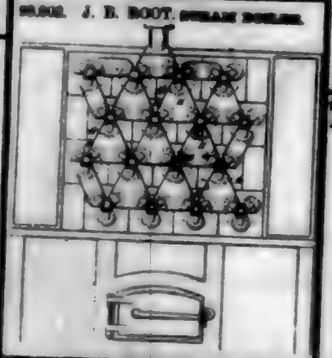
98,800. C. M. REYNOLDS. METAL CEMENT.



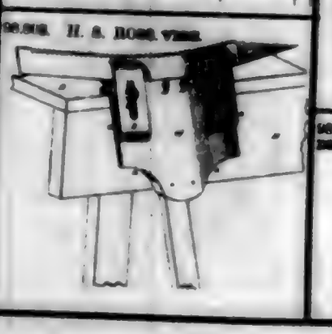
98,801. A. E. ROBERTS. SCHOOL DESK.



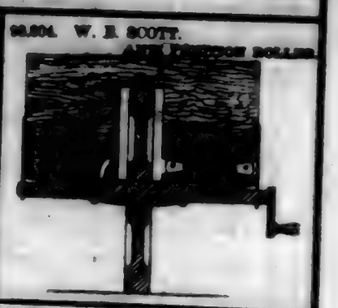
98,802. J. B. ROOT. STEAM BOILER.



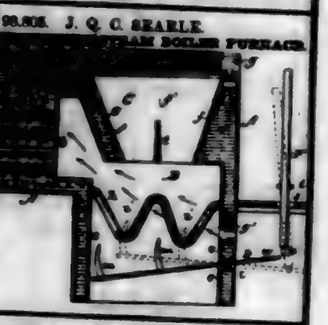
98,803. H. S. ROSS. VISE.



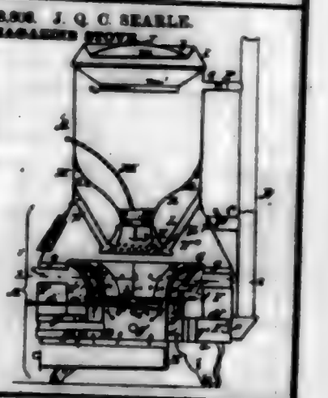
98,804. W. B. SCOTT. ANTI-FRICTION ROLLER.



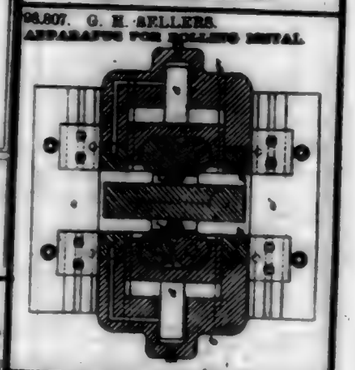
98,805. J. Q. C. SEARLE. STEAM BOILER FURNACE.



98,806. J. Q. C. SEARLE. MAGAZINE STOVE.



98,807. G. H. SELLERS. APPARATUS FOR ROLLING METAL.

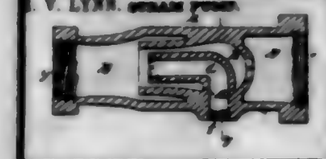


98,808. SMITH AND HARRIS. BRAKING APPARATUS.

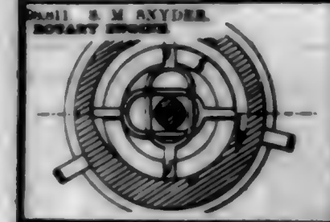


96,909. J. P. SMITH. MEDICINAL PREPARATION

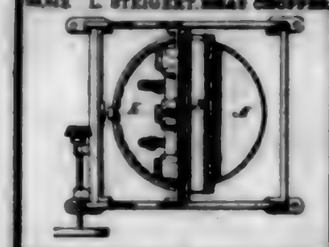
96,910. T. AND G. T. SNOWDEN AND J. V. LYNN. STEAM PUMP.



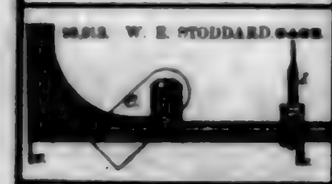
96,911. S. M. SNYDER. ROTARY ENGINE.



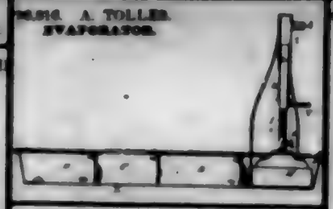
96,912. L. STEIGERT. MEAT CHOPPER.



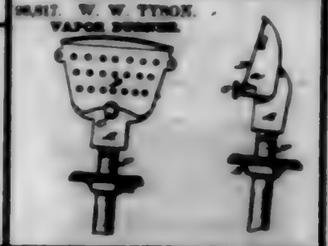
96,913. W. R. STODDARD. GAGE.



96,914. A. TOLLES. EVAPORATOR.



96,917. W. W. TYNON. VAPOR BURNER.



96,918. J. D. VAN ARNUM. COMPOSITION FOR COVERING STEAM BOILERS.

96,919. A. WANNER. VELOCIPEDE.



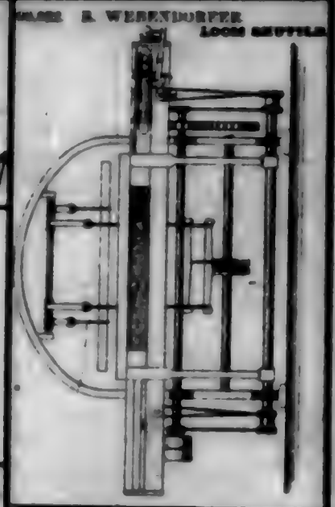
96,920. J. S. WARNER. CRYSTAL GRINDER.



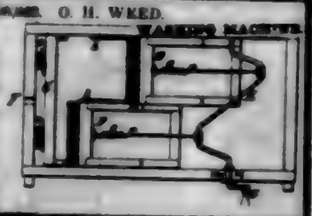
96,921. H. WELLINGTON. VAPOR BURNER.



96,922. B. WERENDORFER. LOOM SHUTTLE.



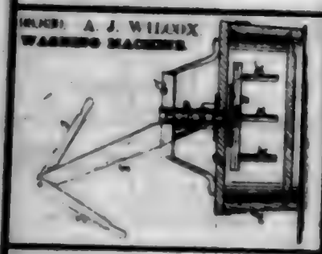
96,923. O. H. WEED. WASHING MACHINE.



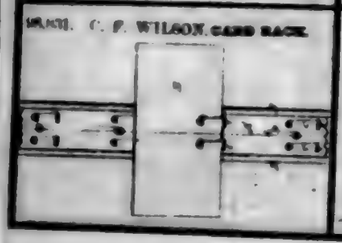
96,924. J. WHITESIDE. GRAIN SEPARATOR.



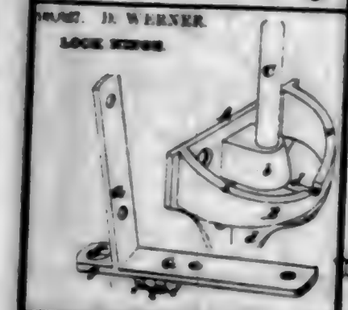
96,925. A. J. WILCOX. WASHING MACHINE.



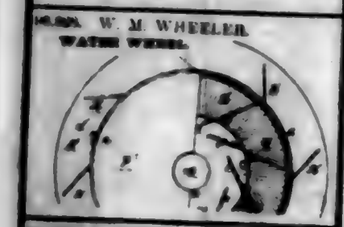
96,926. C. F. WILCOX. CARD RACK.



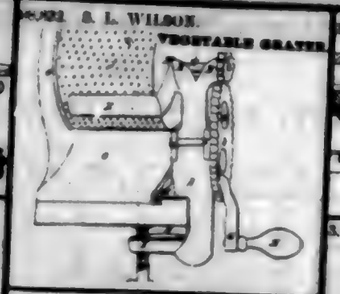
96,927. D. WERNER. LOCK RINGS.



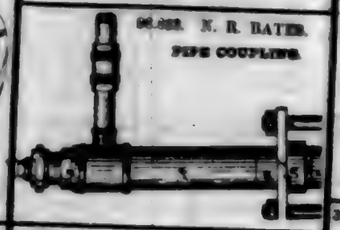
96,928. W. M. WHEELER. WATER WHEEL.



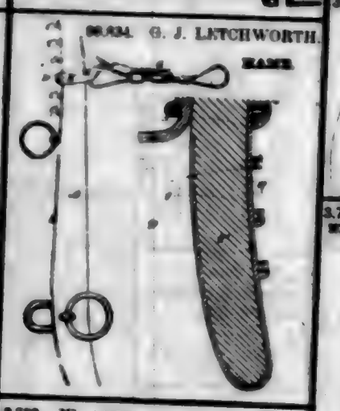
96,931. S. L. WILSON. VEGETABLE GRATER.



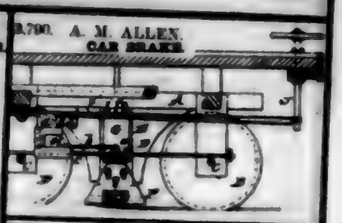
96,932. N. R. BATES. PIPE COUPLING.



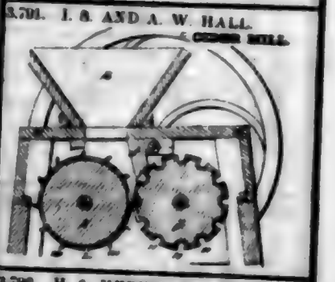
96,934. G. J. LETCHWORTH. RAKE.



3,790. A. M. ALLEN. CAR BRAKE.



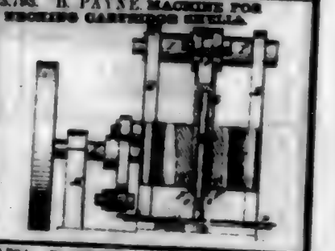
3,791. I. S. AND A. W. HALL. CORN MILL.



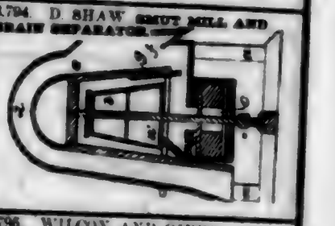
3,792. H. S. HEREMANCE. UMBRELLA SUPPORTER FOR VEHICLES.



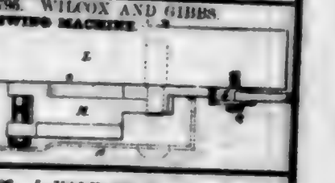
3,793. H. PAYNE. MACHINE FOR FINISHING CARTRIDGE SHELLS.



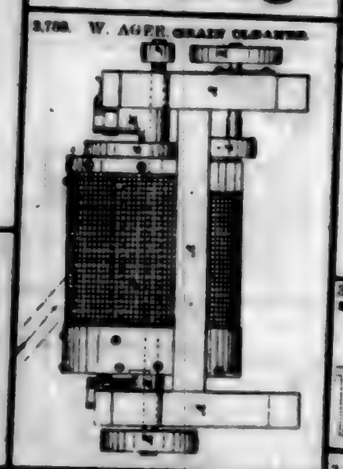
3,794. D. SHAW. SMUT MILL AND GRAIN SEPARATOR.



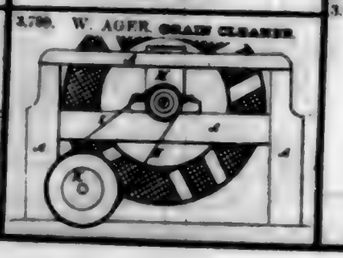
3,795. WILCOX AND GIBBS. SEWING MACHINE.



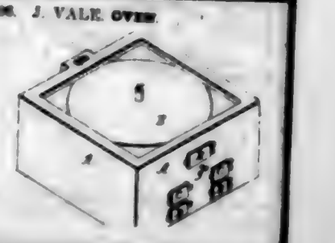
3,796. W. AGER. GRAIN CLEANER.



3,797. W. AGER. GRAIN CLEANER.



3,798. J. VALE. OVEN.



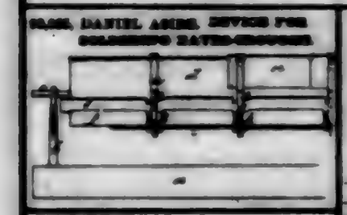
ILLUSTRATIONS OF PATENTS

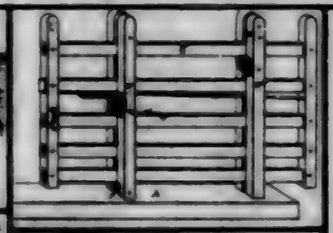
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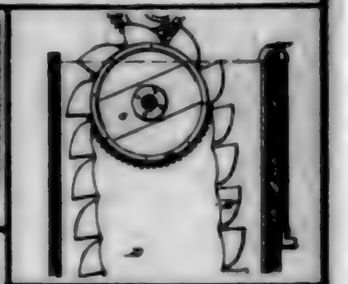
THE UNITED STATES PATENT OFFICE

JANUARY 18, 1870.

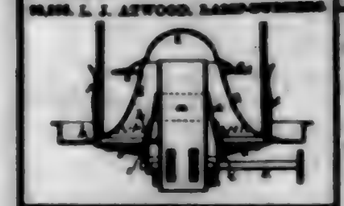
93,935. DANIEL AHIM. DEVICE FOR SHARPENING RATCH-HOOKS.







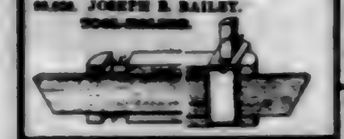
93,936. L. J. ATWOOD. LASH-FASTENER.



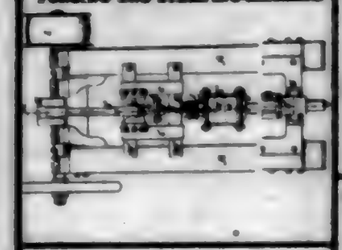
93,937. JOSEPH B. BAILEY. HOOP-DRIVER.



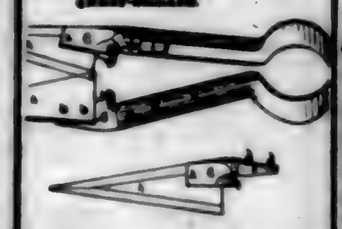
93,938. JOSEPH B. BAILEY. TOOL-HOLDER.



93,939. WM. BALL. FORGING AND STAMPING-MACHINE.



93,940. WM. B. BARNARD. LEVER-CLEANER.



93,941. ISAAC C. BENNETT. GATE.

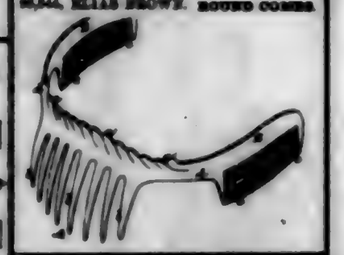
93,942. WILLIAM BATHRICK. VAPOR-BURNER.



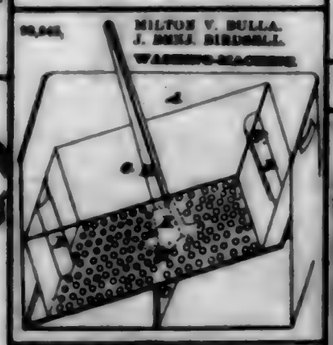
93,943. CHAS. BROMBACHER. COMBINED WIRE-CUTTER AND STRAIN.



93,944. ELIAS BROWN. ROUND COMBS.

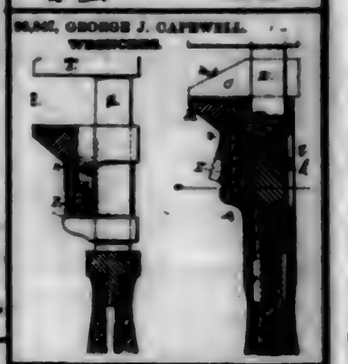


93,945. MILTON V. BULLA, J. BENJ. BIRDSELL. WASHING-MACHINE.

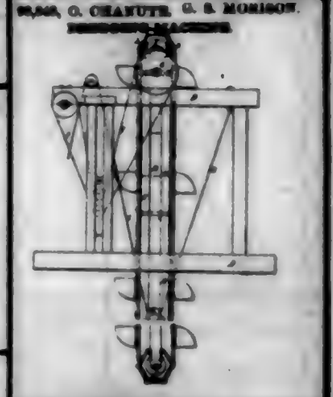


93,946. HORACE CALL. APPARATUS FOR TRANSMITTING POWER BY THE MEDIUM OF AIR.

93,947. GEORGE J. CAPEWELL. WRENCH.

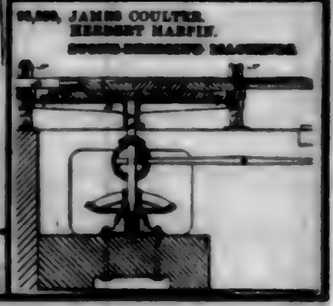


93,948. O. CHANUTE, G. S. MORISON. PUDDLING-MACHINE.



93,949. EDW. H. CLOWNER. FOOD FOR HORSES AND CATTLE.

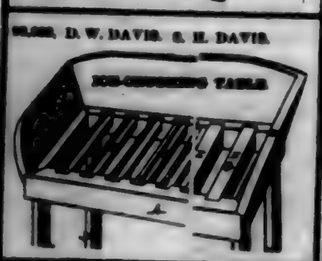
93,950. JAMES COULTER, HERBERT HARPIN. SPOKE-DOVETAILING MACHINE.



93,951. C. H. D'ARCUS. ADJUSTABLE RECLINING-CHAIR.



93,952. D. W. DAVIS, S. H. DAVIS. SOD-CONFINING TABLE.

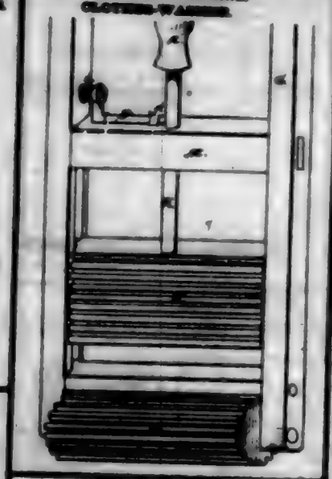


93,953. HENRY G. DAYTON. STILL FOR WHISKEY AND OTHER SPIRITS.

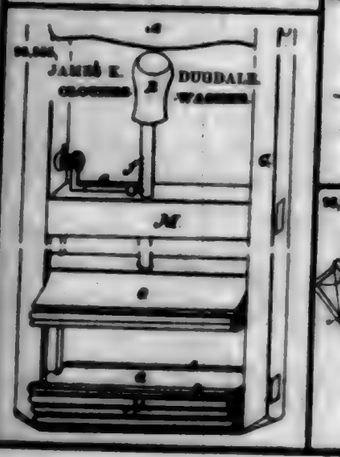


93,954. C. DITTMAN. EXPLOSIVE COMPOUND.

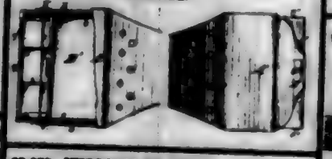
93,955. JAMES E. DUGDALE. CLOTHES-WASHER.



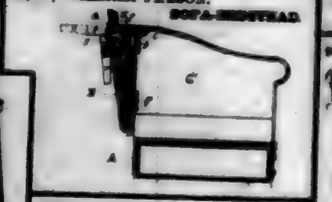
93,956. JAMES K. DUGDALE. CLOTHES-WASHER.



93,957. GEORGE W. ELLIOTT. SADDLE-RACK.



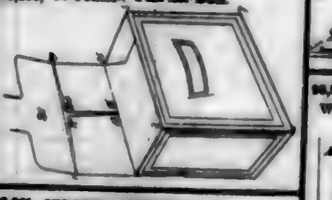
93,958. WILLIAM FARSON. SOFA-BEDSTEAD.



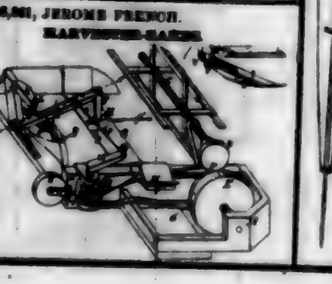
93,959. EDWARD G. FAST. TRAVELLING SLEEPING-CUSHION.



93,960. F. FIELD. PAPER BOX.

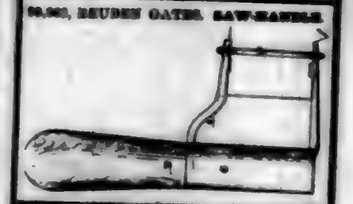


93,961. JEROME FRENCH. HARVESTER-RAKING.

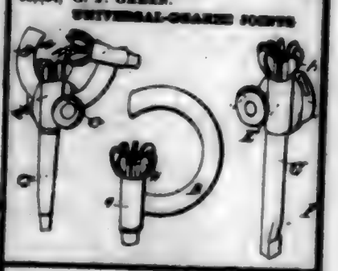


93,962. P. M. CRANE. COMPOSITION FOR EDWIN V. GARDNER, COATING SHIPS' BOATS.

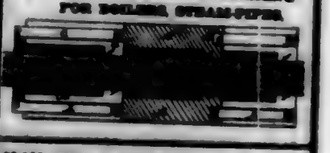
93,963. REUBEN GATES. SAW-HANDLE.



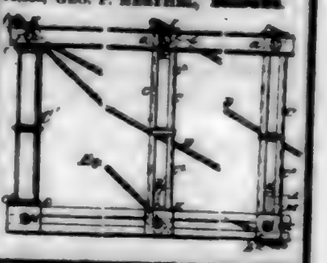
93,964. G. F. GREEN. UNIVERSAL-JOINTED JOINTS.



93,965. WASHINGTON HARRIS. SOD-CONFINING COVERING FOR BOILERS, STEAM-PIPES.



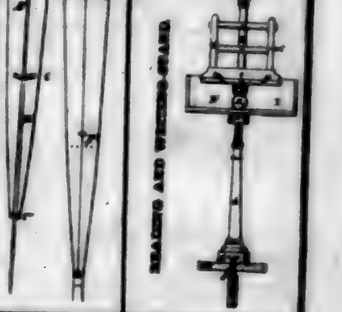
93,966. GEO. P. HERTHEL, Jr. SEWING-MACHINE.



93,967. JAMES O. HOLMES. STOP FOR THE RESTORE PART OF RECLINING-CHAIRS.

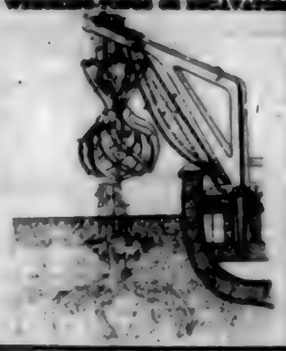


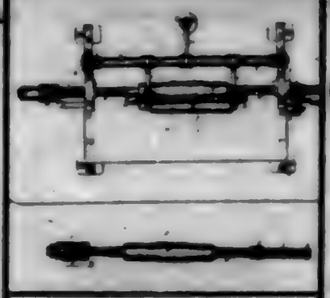
93,968. CAR. WILLIAM J. HOUGH.



93,969. GEORGE HOWELL. MARKING AND WRINGING-STAND.

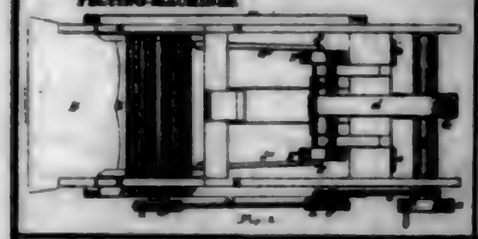
96,870, ROBERT HUNTER.
WRENCHING-TOOLS OR EXCAVATORS.





96,871, JOSEPH NICOL.
MODES OF BEDS FOR FORMING AXLES.

96,872, FREDERICK S. JENNINGS.
PULPING-MACHINES.





96,873, JAMES P. LABAR.
BASE-BURN. AND HOLDER.



96,874, GEO. W. LOBE.
STOVE-PIPE HOOK.



96,875, SIMON L. MADGE, ASSIGNOR TO HIMSELF AND ALLOT FOR PLOW-MOULD-BOARDS.

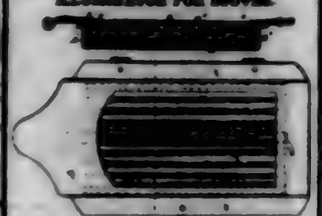
96,876, PETER MAYS, PRICE MAYS AND MEDICAL COMPOUND.

96,877, MILO MERRILL. HAY-KNIFE.

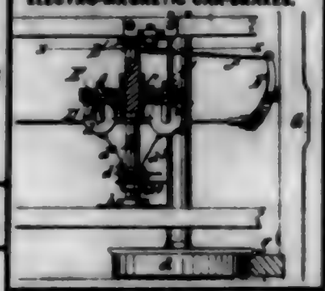


96,878, PH. MEYER, HENRY SCHILD, AND CIGAR-MACHINES.

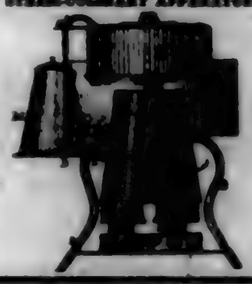
96,879, BENJAMIN HOYT.
ILLUMINATOR FOR STOVES.



96,880, JOSEPH OLMSTED.
ELECTRO-MAGNETIC CAR-BRAKES.



96,881, CLINTON J. PAINE.
STEAM-CULINARY APPARATUS.



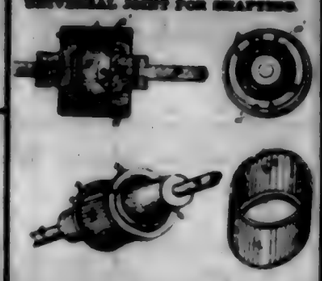
96,882, WILLIAM M. PHELPS, SAMUEL J. BURPEE, AND HEATING-STOVES.



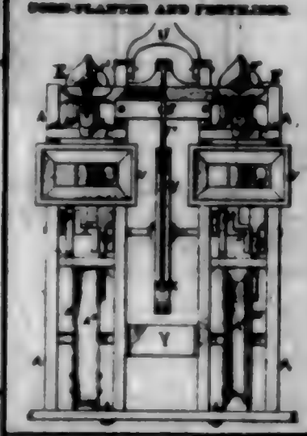
96,883, JOB. PHILIPPS.
MODE OF PRODUCING LIGHT BY THE COMBINATION OF SOLID AND LIQUID HYDROCARBONS.

96,884, FRANCIS PETER FORCHER.
MACHINERY FOR TANNING, DYEING, AND FOR OTHER PURPOSES.

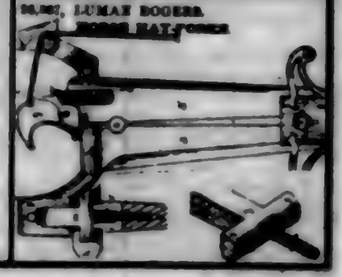
96,885, CYRUS ROBERTS.
UNIVERSAL JOINT FOR SHAFTING.



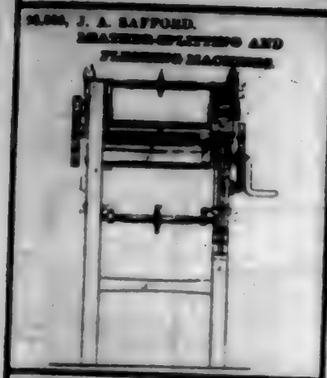
96,886, HENRY E. ROBERTS, GEO. E. ROBERTS, AND FURNITURE.



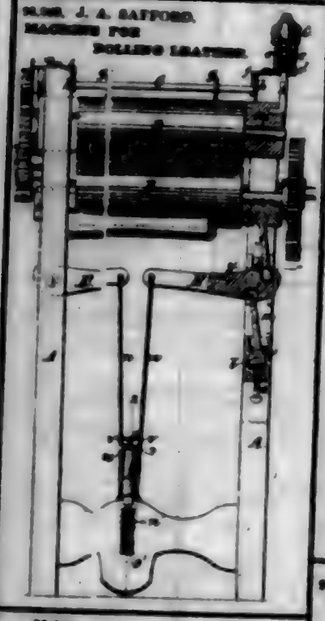
96,887, LUMAN ROGERS, AND HAY-CUTTER.



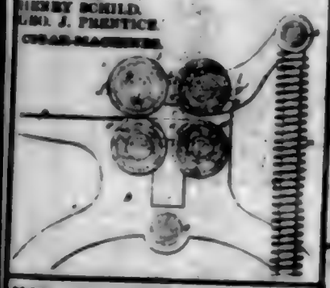
96,888, J. A. SAFFORD.
SHAVING-SPLITTING AND FLESHING MACHINES.



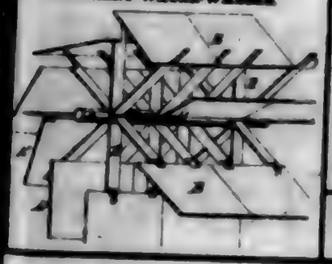
96,889, J. A. SAFFORD.
MACHINE FOR ROLLING LEATHER.



96,890, HENRY SCHILD, AND L. J. PRENTICE, AND CIGAR-MACHINES.



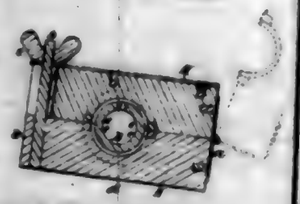
96,891, ARTAXERXES W. SOBY.
CURRENT WATER-WHEELS.



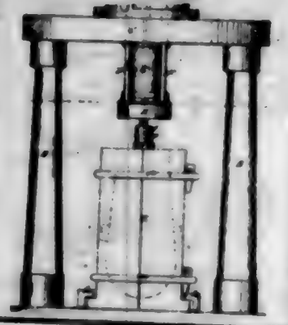
96,892, WATSON E. SPRAGUE.
PLANT-PROTECTORS.



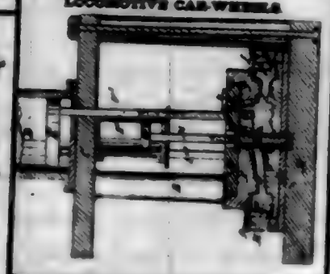
96,893, RICHARD STREET.
CLOSING LEAKS IN HOSE, PIPES, AND TUBES.



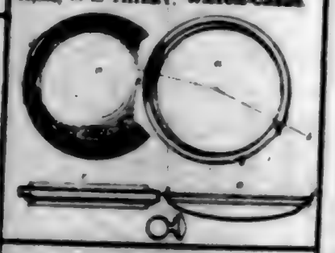
96,894, JOHN BLAKE TARR.
CASTING CANNON.



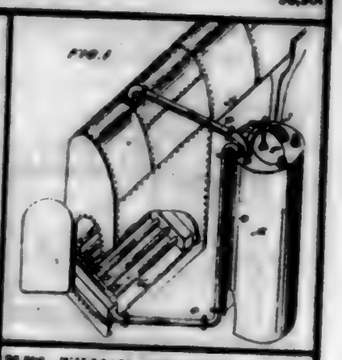
96,895, JOHN BLAKE TARR.
LOCOMOTIVE CAR-WHEELS.



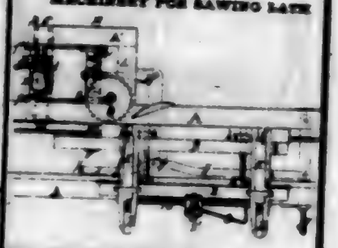
96,896, C. L. THIERY, WATCH-CASES.



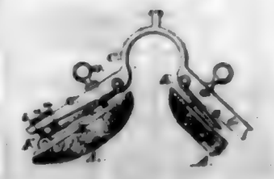
96,897, LEONARD THORY.
STEAM-DISHWASH FOR RENDERING LARD.



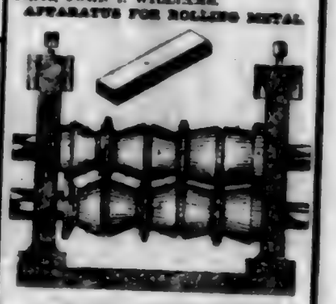
96,898, WILLIAM TUXWORTH.
MACHINERY FOR SAWING LATH.



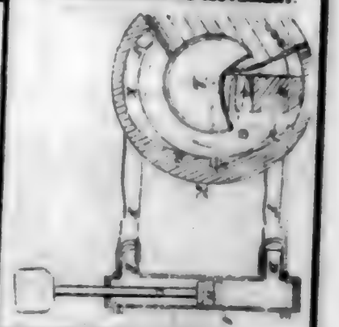
96,899, J. L. VAN WERT.
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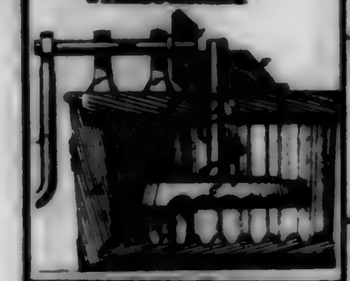
96,900, JOHN I. WILLIAMS.
APPARATUS FOR ROLLING METAL.



96,901, DE VOLSON WOOD, PNEUMATIC RECIPROCATING MOVEMENT.

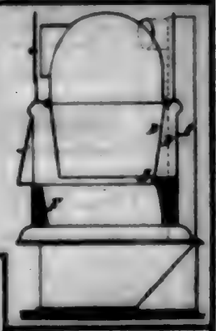


98,932. SQUIRE AISWORTH. WASHING-MACHINE.



98,933. GEO. W. BAKER. SCAFFOLD.

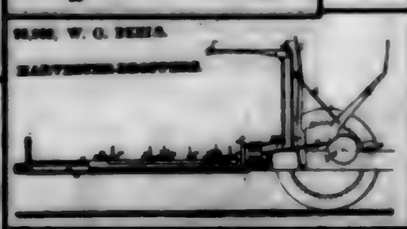




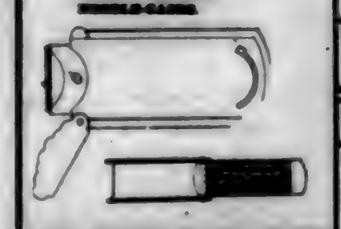
98,934. JOHN H. ATWATER. HEATING-STOVE.



98,935. W. G. BEHA. HARVESTER-RAKING.



98,936. WILLIAM AVERY. ALBERT FENTON. PLANING-GAUGE.



98,936. W. G. BEHA. HARVESTERS.



98,937. H. O. BEETON. PLASTIC ROOFING-COMPOUNDS.

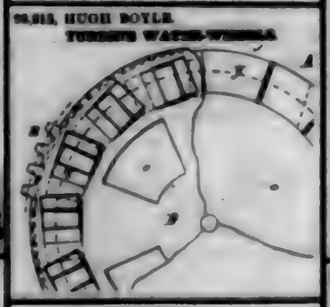
98,938. LEOPOLD BESTECHE. CASTER FOR FURNITURE.



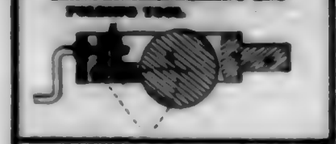
98,939. HORITZ BACHARACH. STEAM-ENGINE.



98,940. HUGH BOYLE. TURBINE WATER-WHEEL.



98,941. A. H. BAILY. WILL G. BEATTON. HEATING-CHAMBERLAIN AND FORGING TOOL.



98,942. W. H. BAILEY. CORRUGATED LATCH AND LOCK.



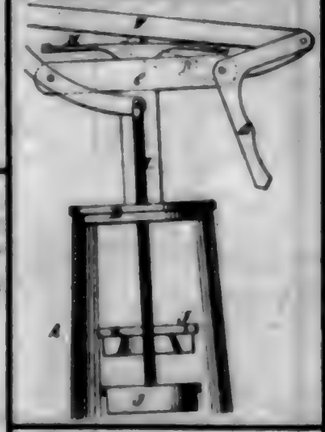
98,943. E. A. BOYETON. FURNACE FOR HEATING-SPOUTS.



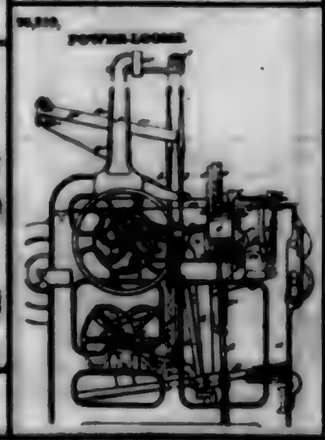
98,944. E. A. BOYETON. BAND-BURNING STOVE.

98,945. FRANKLIN W. BROOKS. SEAL-LOCKS.

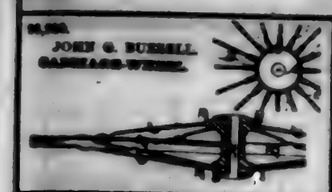
98,946. S. W. BRUCE. CHURNS.



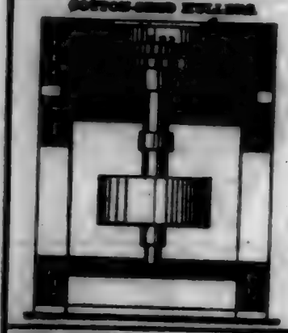
98,947. POWER-LOOMS.



98,939. JOHN G. BURRELL. GARDAGE-WHEEL.



98,940. W. P. CALLAHAN. D. R. DE RUSH. SUPPORT FOR SPELLING.



98,941. S. PARK COOK. SKIVING-KNIFE.



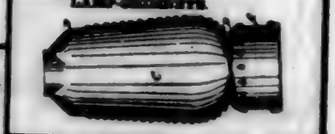
98,942. BENJAMIN F. CRANDALL. ROCKING-HORSE.



98,943. WM. R. DUNNING. COMPOUND RAILWAY-RAIL.



98,944. R. H. EAGLE. LAMP-ORNAMENTS.



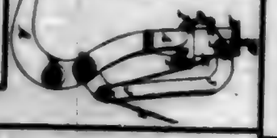
98,945. R. H. EAGLE. LAMP-ORNAMENTS.



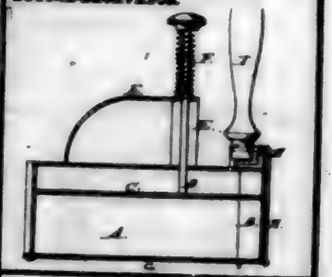
98,946. THOMAS A. CAMPBELL. APPARATUS FOR OILING WOOL.



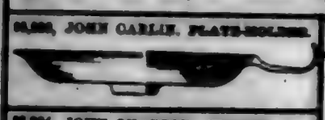
98,947. EDWIN G. CRANDALL. HORSE HAY-FORK.



98,948. H. J. EATON. DITCHING-EXCAVATOR.



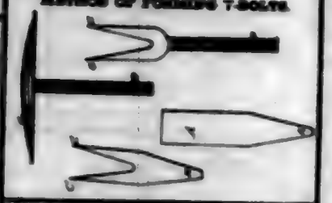
98,949. JOHN CARLIN. PLATE-ROLLING.



98,950. JOHN CHAFFEE. CHURN.



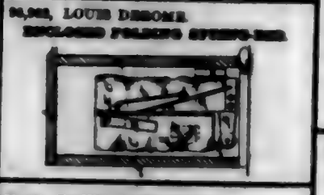
98,951. JOHN DEBLE. MEANS OF FORMING T-BOLTS.



98,952. JOHN CLARK. PIPE-BENDER.



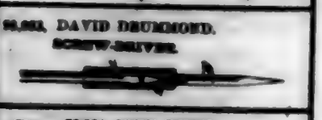
98,953. LOUIS DESOMS. ENGLISHED FOLDING STOVE-PIPE.



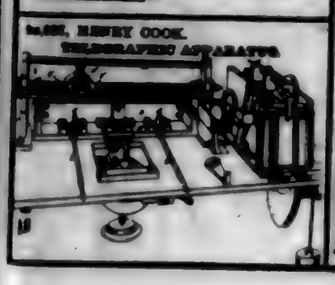
98,954. EDWARD GOGGAN. CHAIR-SEAT.



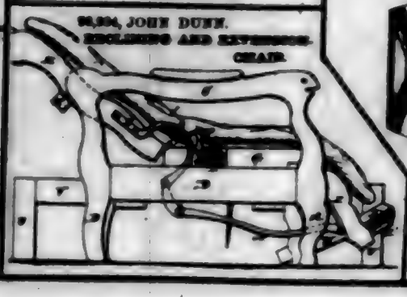
98,955. DAVID DRUMMOND. SCREW-DRIVER.



98,956. HENRY COOK. WHEELWRAPPING APPARATUS.



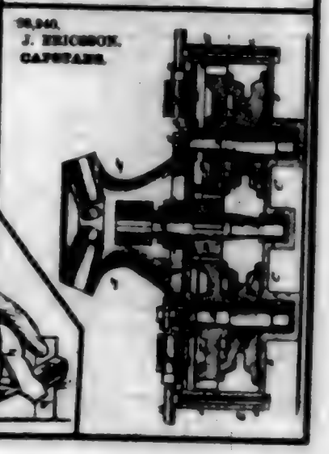
98,957. JOHN DUNN. RECLINING AND EXTENSION-CHAIR.



98,958. HOMER L. EVERS. WASHING-MACHINE.

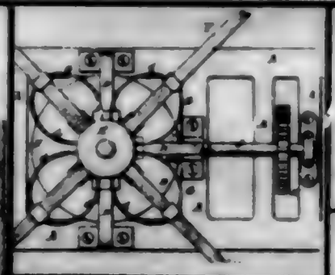


98,959. J. ERICSSON. CALORIAN.

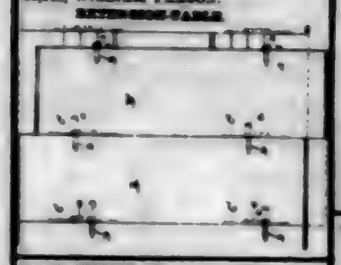


98,941. THOMAS R. EVANS.
WASHING-MACHINE.





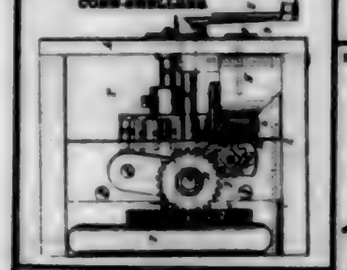
98,942. WILLIAM FARSON.
EXTENSION-TABLE.



98,943. CHRISTIAN L. FERRENGER.
SCREW-TAP.



98,944. SAMUEL FIELD.
CORN-SHELLERS.



98,945. D. D. FOLEY, Patent.

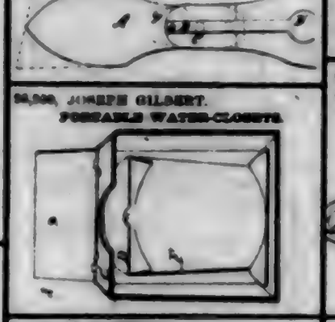


98,946. EMANUEL FORNEY.
JONAS SWAB.
HORSE HAY-FORKS.

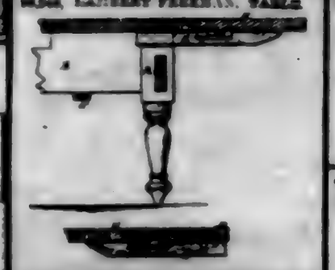


98,947. JAS. FRASER. HORSE-POWER.
WILLIAM THOMAS.

98,948. JOSEPH GILBERT.
PORTABLE WATER-CLOSETS.



98,949. LAMBERT FREEMAN, Patent.

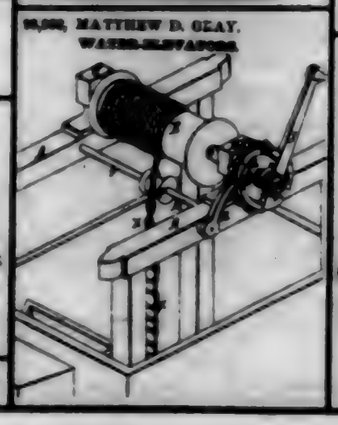


98,950. SELA W. GERELDS.
PUTTY-KNIFE.

98,951. E. A. GOODES.
THRESHING-MACHINES.



98,952. MATTHEW D. GRAY.
WATER-ELEVATORS.



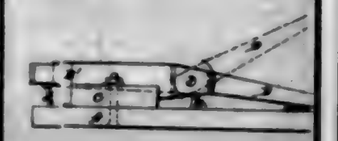
98,953. LOUIS GUTKNECHT.
BREAKWATERS.



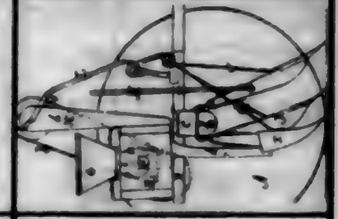
98,954. GEORGE H. HACKETT.
HAY-RAKE.



98,955. WILLIAM P. HALE.
MACHINE FOR FINISHING S. SKINS.



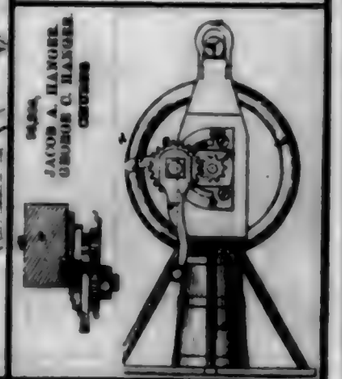
98,956. J. A. HALL.
COMBINED SPEEDER AND CULTIVATOR.



98,957. ROBERT HAMILTON.
ROAD-SCRAPERS.

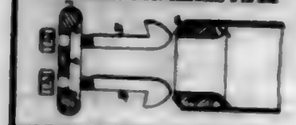


98,958. JACOB A. HANGER.
GEORGE C. HANGER.
CHURN.

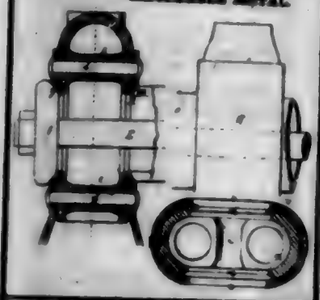


98,959. MRS. MARY J. HARBON.
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98,960. W. H. HARRISON.
JOINTS FOR METAL PIPES.



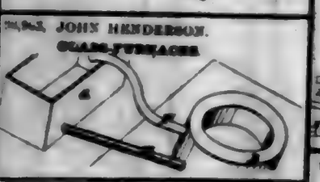
98,961. W. H. HARRISON.
CONNECTIONS FOR PIPES OF MALLEABLE METAL.



98,962. E. P. HASKELL, Lafayette.



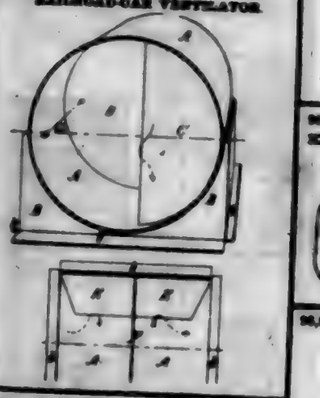
98,963. JOHN HENDERSON.
COAL-FURNACES.



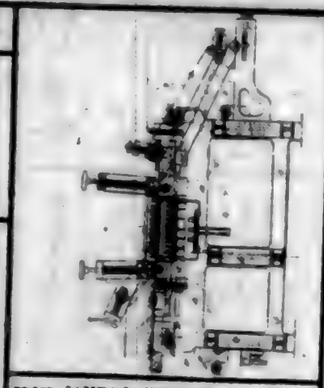
98,964. CHARLES W. HERMANCE.
COOKING-STOVE.



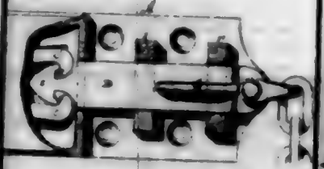
98,965. M. T. HITCHCOCK.
RAILROAD-CAR VENTILATOR.



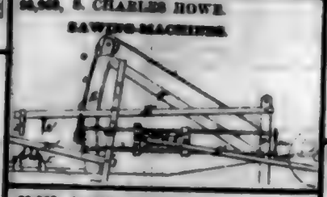
98,966. EDWARD HOLDEN.
APPARATUS FOR COOKING AND PREPARING WOOL.



98,967. JAMES L. HOWARD.
CAR-DOOR LOCKS.



98,968. S. CHARLES HOWE.
SAWING-MACHINES.



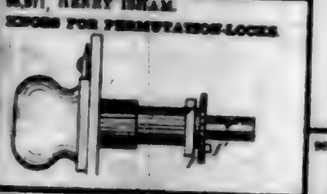
98,969. JAMES HOWLAND.
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98,970. BENJAMIN S. HYDE.
CULTIVATORS.



98,971. HENRY ISHAM.
KEYING FOR PERMUTATION-LOCKS.



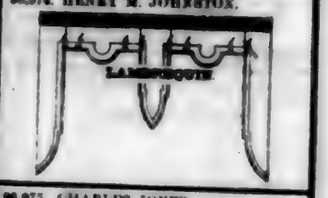
98,972. FRANCES B. ISHAM.
PERMUTATION-LOCKS.



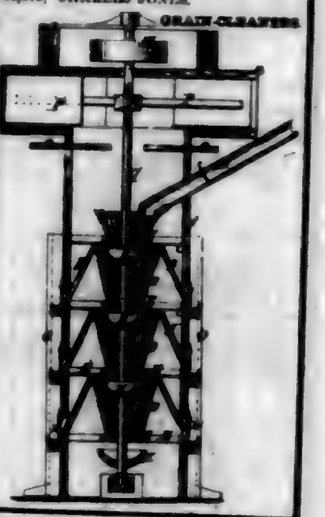
98,973. WM. H. JOESKEL, CHAIR.



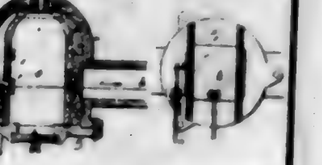
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LANDSCOUTH.



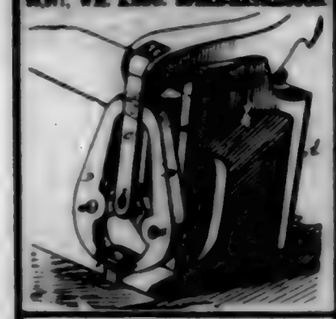
98,975. CHARLES JONES.
GRAIN-CLEANERS.



98,976. JAMES O. JONES. TUYERS.



98,977, WM. KROG. SPEED-REGULATOR.



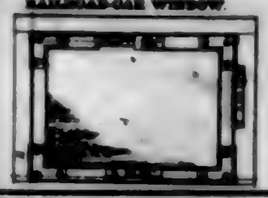
98,978, JOHN J. KIMBALL. FLOOD-GATE.



98,979, GEO. S. KNAPP. CHIMNEY-CLEANER.



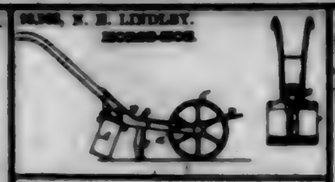
98,980, G. S. KNAPP. RAILROAD-CAR WINDOW.



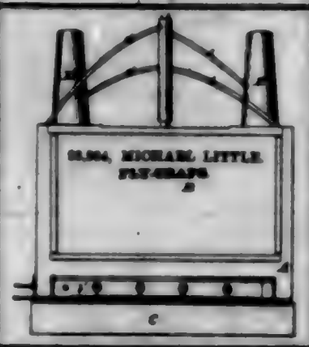
98,981, GEO. B. LEONARD. SHOW-CASE FOR SILKS, COTTONS.



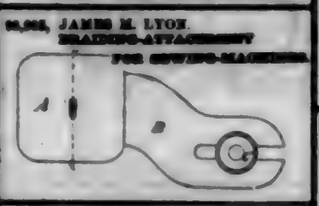
98,982, E. B. LINDLEY. HORSE-HOE.



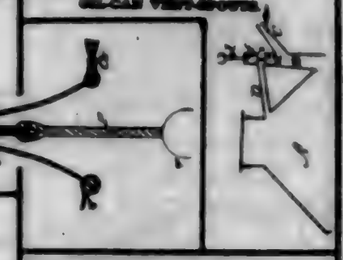
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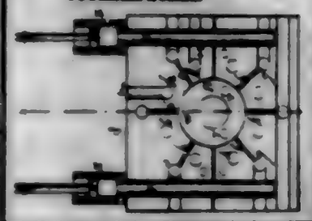
98,984, JAMES M. LYON. BRAIDING-ATTACHMENT FOR SEWING-MACHINES.



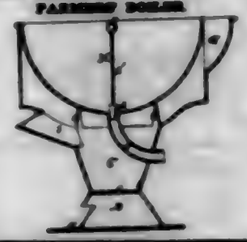
98,985, J. J. MAROT. OIL-CAN VENT-SPOUT.



98,986, JEREMIAH McILVAIN. JOURNAL-BOXES.



98,987, ALLEN F. MERRILL. PASSING BOBBIN.

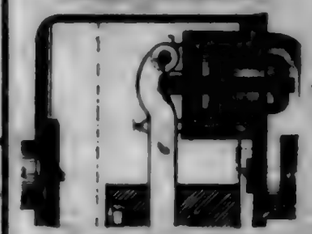


98,988, DAN. O. MOORE, FRANK REID. CLOD-PENDING.

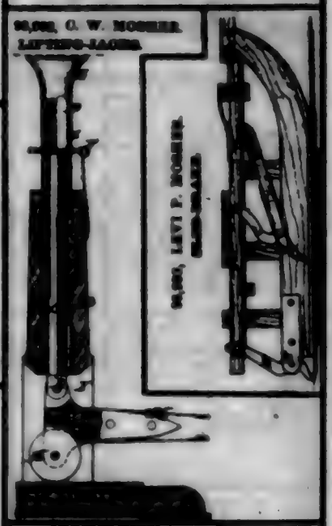
98,989, J. W. MOORE. SPRING-ATTACHMENT FOR CARRIAGES.



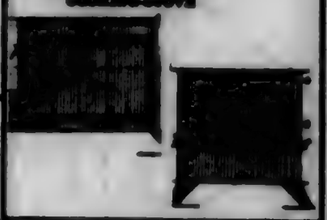
98,990, WILLIAM MORSE. LOCKED SAFETY-VALVE.



98,991, O. W. MOSHER. LIFTING-JACKS.



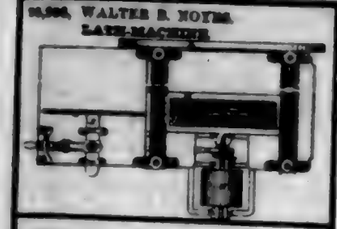
98,992, MARTIN J. MOSHER. GROOVING-GROUTS.



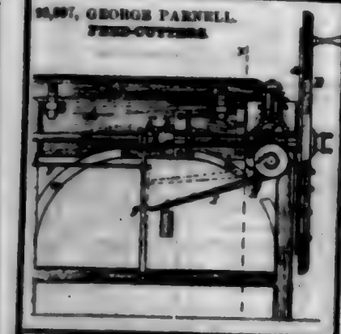
98,993, SEWELL NEWHOUSE. METALLIC CASKET.



98,986, WALTER B. NOYES. LATH-MACHINE.



98,987, GEORGE PARNELL. FEED-CUTTERS.



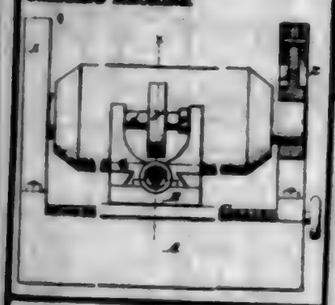
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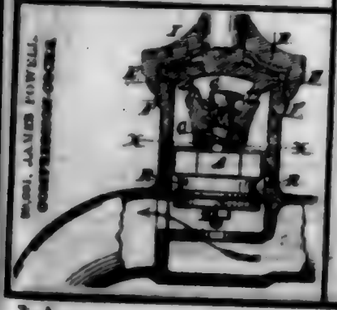
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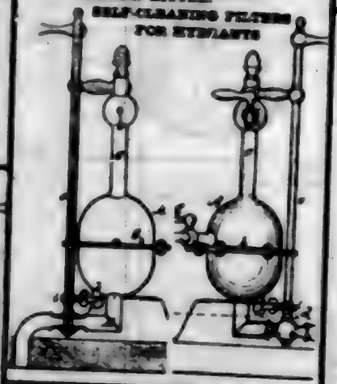
98,990, J. M. POOLE. CHURNING MACHINE.



98,991, JAMES POWELL. CONVERTIBLE CHAIR.



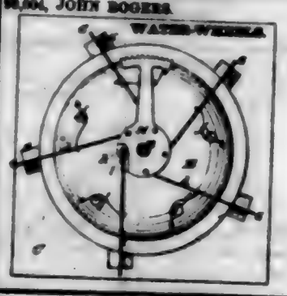
98,992, JOHN RAIBLE, MATTHIAS REIS, JOHANN RITTER. SELF-CLEANING FILTERS FOR STEAM-ENGINES.



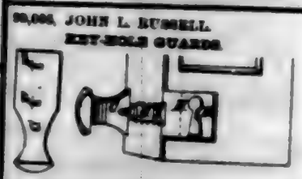
98,993, HENRY R. ROBBINS. PIPE-COUPLING FOR HEATING CARS.



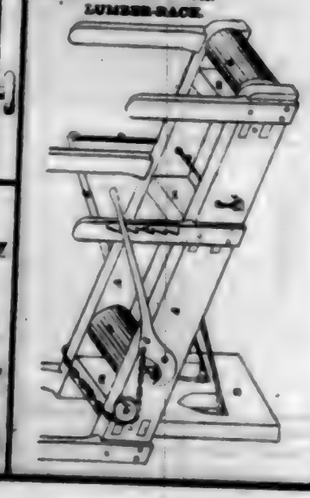
98,994, JOHN ROGERS. WATER-WHEELS.



98,995, JOHN L. RUSSELL. KEY-HOLE GUARDS.

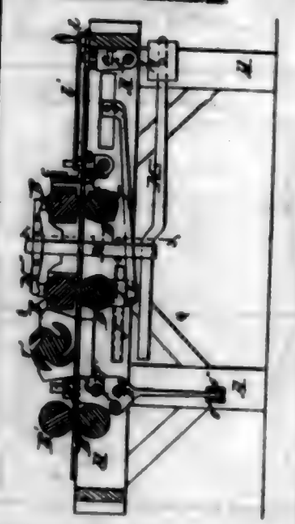


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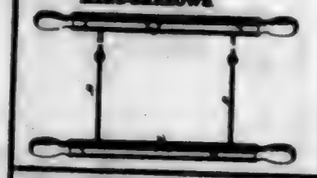


98,997, ELLIOT SAVAGE. ALLOYS OF MANGANESE.

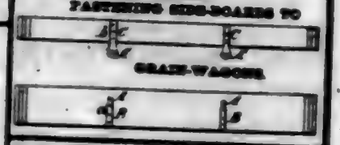
98,998, JOHN B. SCHENCK. PLANING-MACHINES.



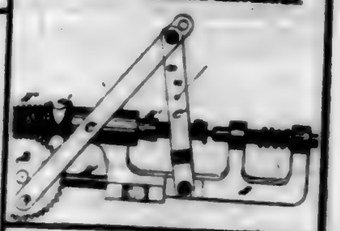
98,999, MINOT S. SCOFIELD. HAND-HARROWS.



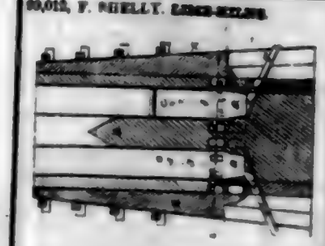
99,010, GEO. SEITZINGER. FASTENING SIDE-BOARDS TO GRAIN-WAGONS.



99,011, THOMAS SHANKS. BOBBIN-WINDERS FOR SEWING-MACHINES.



99,012, F. SHELLY. LINER-KILNS.



99,033, E. S. SHEPARDSON. LOOM.

99,034, E. S. SLATER. APPARATUS FOR STRAIGHTENING CARD-TEETH.

99,035, ELI SLATER. HOT-AIR FURNACE.

99,036, FRANCIS W. SLATER. SEWER-REGULATOR.

99,037. SMITH, LATROBE AND SMITH. TRUSSES OF MOVABLE LATTICE AND VALLETS.

99,038, GEORGE G. SMITH. SPINNING FRAME.

99,039, JAMES T. SMITH. PUDDLING-FLAMES FOR FURNACE.

99,040, JOHN JOSEPH, CHAS SMITH. [illegible]

99,041, T. ECK SMITH, JAMES MITCHELL. CLOTHES-SPRINKLER.

99,042, JOHN SPERRY. PICTURE-FRAMES.

99,043, HENRY SPLITDORF. SPRING TOY-BALL.

99,044, JEREMIAH STEVER. SHUTTLE-DRIVING MECHANISM FOR LOOMS.

99,045, CLEMENT ST. JAMES. SHELL-CONTINUING.

99,046, I. E. STODDARD. PHOTOGRAPHIC CAMERAS.

99,047, ALSON A. STONE. DIE FOR FORGING SHUTTLE-EYES.

99,048, ALSON A. STONE. DIE FOR FORGING SHUTTLE-SPINDLE HEADS.

99,049, GEO. W. STRAHAHAN. WASHING-MACHINE.

99,050, HENRY SWINEFORD. SIDEBOARD-FASTENER.

99,051, E. I. SYERS. COTTON-PLANTER.

99,052, CHAS. H. TEBBBATH. MODE OF COVERING [illegible]

99,033, F. W. THORLA. [illegible] HAT-FORMS.

99,034, ELWOOD TUSH. CORN-HARVESTER.

99,035, EDWIN TUTTE. TIES FOR HOLLOW WALLS.

99,036, CORNELIUS WALSH. TENNIS-RACKS.

99,037, JAMES WALSH. STIRRUPS.

99,038, P. H. WALSH, PUDDING-SPRINGS, G. C. EATON.

99,039, WILLIAM WEBSTER. SPINNING FOR LOOMS.

99,040, A. S. WELLINGTON. [illegible] COOKING-STOVE.

99,041, MARSHALL D. WELLMAN. STOVE-GRATE.

99,042, STEPHEN S. WILCOX, ELI J. COLBURNE. REVOLVING GRATES.

99,043, J. S. WILSON. WAGONS.

99,044, DANIEL LONG, JOHN PRESTON. LET-OFF MECHANISMS FOR LOOMS.

99,045, JOSEPH BANIGAN, GEORGE W. MILLER. MOULDS FOR VULCANIZING [illegible] PUDDLE-TUYE.

3,797, WM. H. GUILD. PUDDING AND BRAIDING SUGAR.

3,798, WM. CLEVELAND HICKS. BREECH-LOADING FIRE-ARMS.

3,799, JOHN H. LYMAN. GAUGE FOR CUTTING VENEERS.

3,800, ELIE MONEUSE, LOUIS DUPARQUET. STOVE-GRATE.

3,801, ROBT. SOOBER. COOKING-STOVE.

3,802, WM. M. STEVENSON. BALANCE SLIDE-VALVES. Horizontal Section.

3,803, F. H. NORTH, CHARLES PEEK, [illegible] FOR A BRIDGE.

ILLUSTRATIONS OF PATENTS

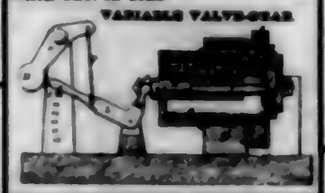
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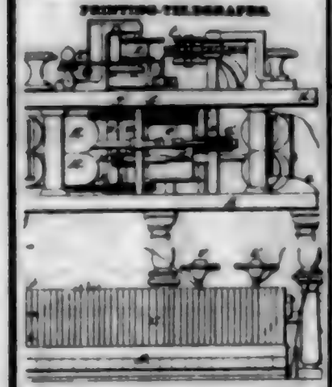
JANUARY 25, 1870.

99,048, H. C. ALEXANDER. CAR-COUPLING

99,049, GEO. M. BIRD. VARIABLE VALVE-GEAR



99,047, MILTON F. ADAMS. PRINTING-TELEGRAPHS



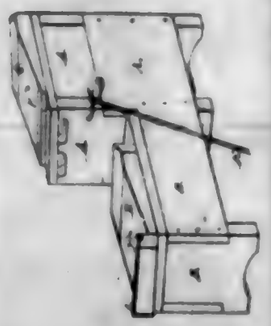
99,057, PETER BROADBROOKS. CUTTING-PINCERS



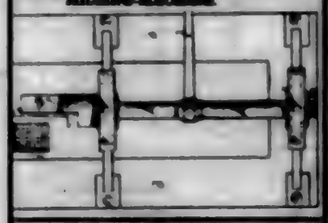
99,058, ARCHIBALD M. CHILEY. SPRING-BED BOTTOM



99,059, ANDREW C. BLACK. MILKING-APPARATUS



99,060, LUKE CHAPMAN. MILKING-MACHINE



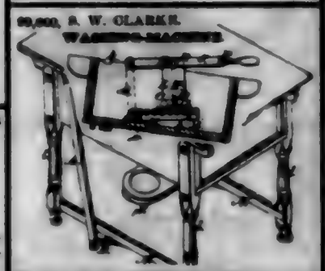
99,061, HENRY BAKER. STOVE-PIPE DAMPER



99,062, E. BOUNAY, Jr. DEVICE FOR APPLYING BRAID TO FABRICS IN SEWING MACHINES



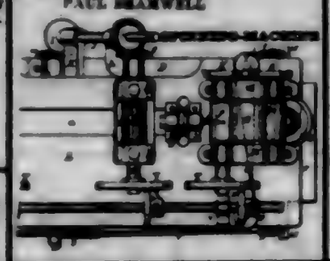
99,060, S. W. CLARKE. WASHING-MACHINE



99,056, CURTIS W. BALDWIN. ELEVATOR FOR HOISTING HUMAN BEINGS, MERCHANDISE, &c.



99,063, W. C. BRAMWELL, PAUL BRAMWELL. SPINNING-MACHINE



99,064, T. S. COFFIN. LIFTER FOR EXPANDING-TUBE



99,055, MARCUS L. BATTLE. INSTRUMENT FOR PLUGGING TEETH



99,051, ARTHUR TAPPAN BROKER. POCKET-FLASKS



99,050, WARREN B. BROWN. SEED-BOTTOM



99,052, F. COIGNET. MANUFACTURE OF ARTIFICIAL STONE

99,053, AARON CURTIS. PROPELLING



99,064, JOHN COX. MORTISING-MACHINE

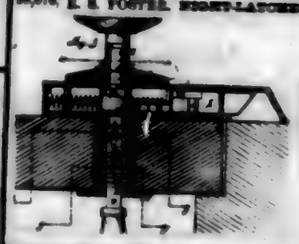


99,069, C. DITTMAR. EXPLOSIVE AGENT CALLED XYLOGLOIDES

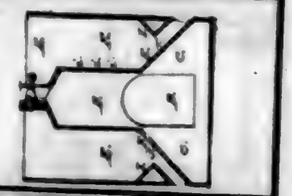
99,070, CARL DITTMAR. MANUFACTURE OF XYLOGLOIDES AND OTHER EXPLOSIVE AGENTS



99,076, E. S. FOSTER. RIDGE-LATCHES



99,077, W. A. GAY. GRAVEL HEATER



99,071, HESEKIAH DODGE. MACHINE FOR DISINTEGRATING WOOD FOR PAPER-PULP



99,078, EDWIN GOMEZ. CARTRIDGES



99,079, EDWIN GOMEZ. CARTRIDGES

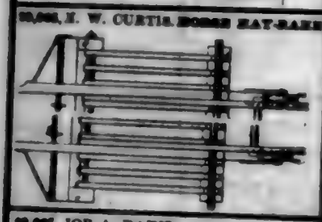


99,072, HAY DOWNIE, ISAAC BLUR HARRIS. SHOES FOR HORSES

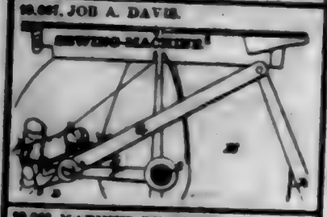
99,080, CHARLES GOOCH. CORK-EXTRACTORS



99,066, E. W. CURTIS. HORSE HAY-RAKE



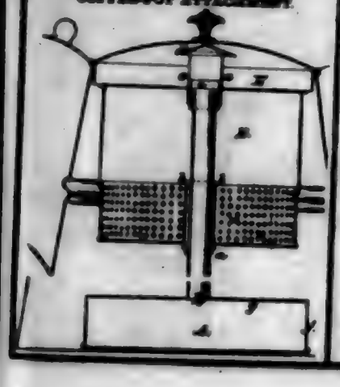
99,067, JOB A. DAVIS. SEWING-MACHINE



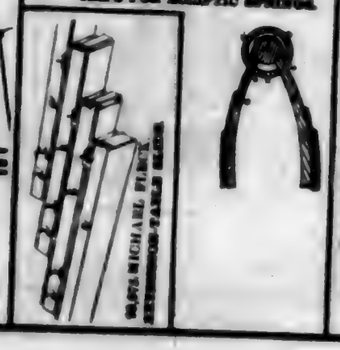
99,073, DAVID A. DREW. CARPET-CLEANING MACHINE



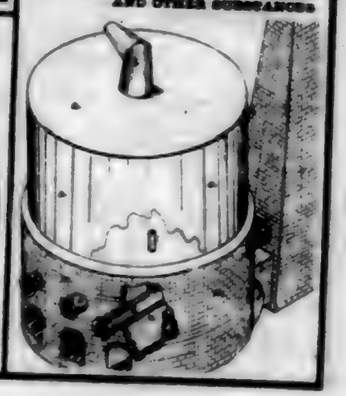
99,068, MARINUS DE GRAFF. COFFIN-POT ATTACHMENT



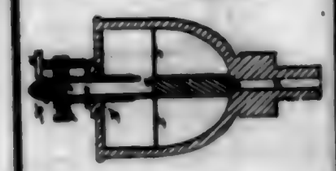
99,074, WILLIAM EVANS. CLIPS FOR ELASTIC SPRINGS



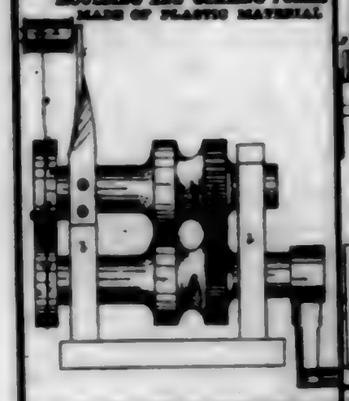
99,081, JOHN GRACIE. STILLS FOR HYDROCARBONS AND OTHER SUBSTANCES



90,092, HENRY HAMMOND.
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90,093, SAM. HART.
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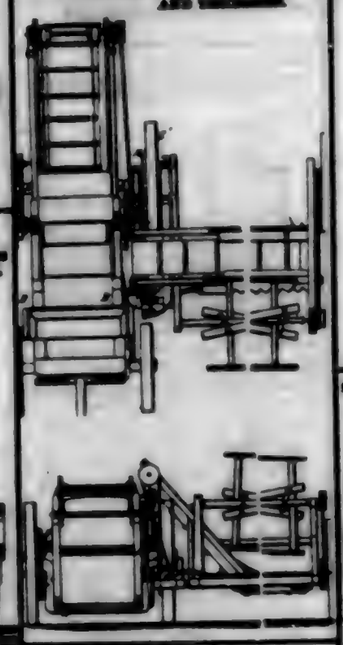
90,094, JOHN HARWOOD.
BOOT-STRETCHER.

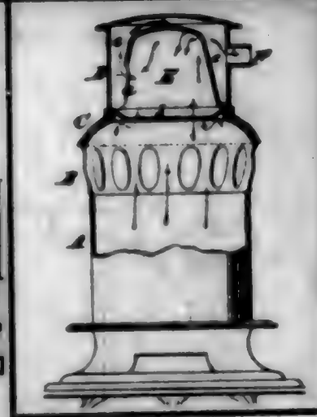


90,095, E. M. HENDRICKSON.
SUBMARINE-PROOF SAFES.



90,096, DAVID HOWELL.
COMBINED HARVESTER AND THRESHER.

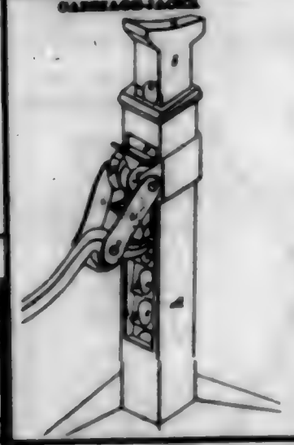




90,098, DENNIS LADD.
GRAIN-SEPARATOR.

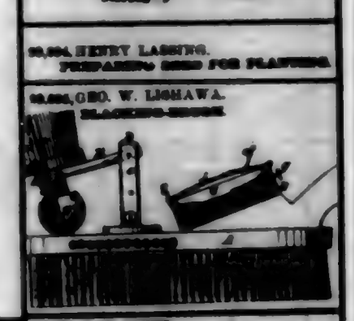


90,099, THOMAS W. JOHNSTON.
CARDBOARD-JACKET.

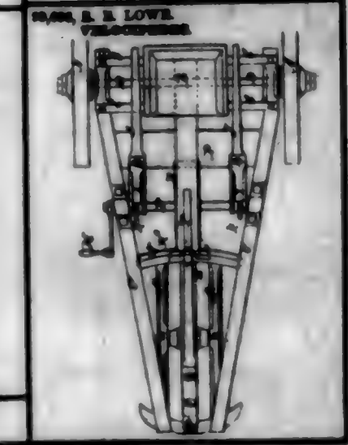


90,100, HENRY LASSING.
PREPARING SEED FOR PLANTING.

90,101, GEO. W. LIGHAWA.
BLACKING-HOUSE.



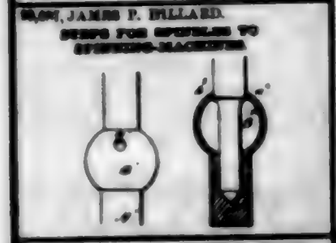
90,102, E. R. LOWE.
FRAME-FENCE.



90,103, H. H. HEWETT.
MARCUS B. FERGUSON.
COMBINED BASE-RINGS AND DOOR-FASTENER.

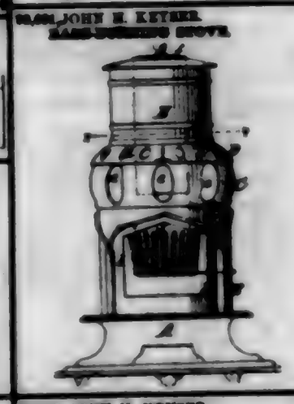


90,104, JAMES P. HILLARD.
STOPS FOR SPOOLERS TO STOPPING-MACHINES.



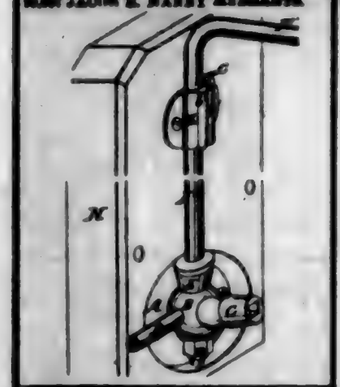
90,105, C. F. HINMAN MANUFACTURER OF COMPOSITION-SPOUT.

90,106, JOHN H. KEYSER.
BASE-BURNING STOVE.

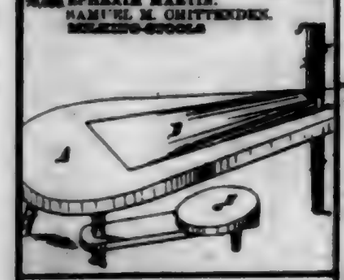


90,107, JOHN H. KEYSER
COAL-STOVE.

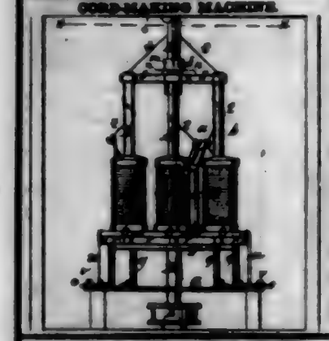
90,097 JACOB B. MANEY HERRMANN.



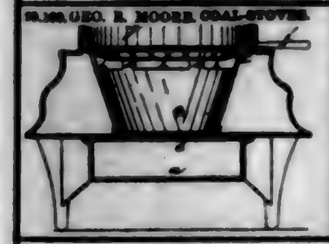
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SAMUEL M. OMITTENDEN.
MILKING-STOOLS.



90,099, JAMES McINTIRE.
CORD-MAKING MACHINE.



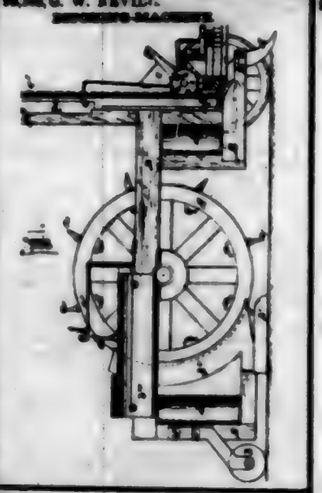
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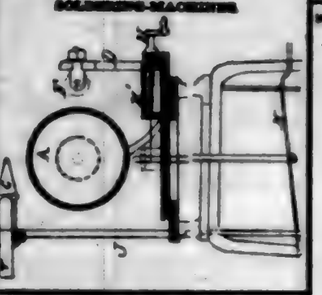
90,101 W. T. MORGANS.



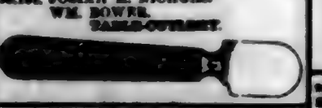
90,102 G. W. NEVILL.
SPOOLING-MACHINE.



90,103, DANIEL P. NEWELL.
SOLDERING-MACHINE.



90,104, JOSIAH H. NICHOLS.
WM. BOWER.
RAKES-OUTSHOT.

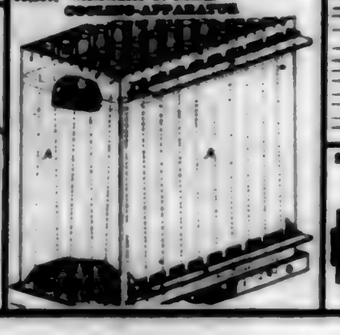


90,105, ALFRED PARAF.
METHOD OF FIXING FIGURINES TO FIBROUS AND TEXTILE MATERIALS.

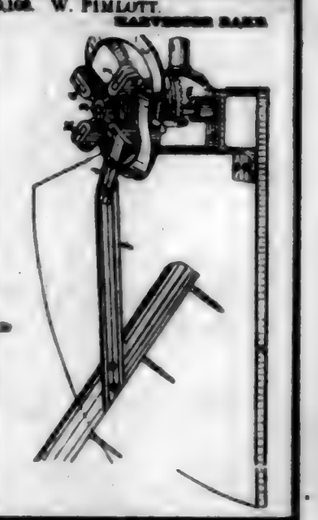
90,106, WM. P. PATTON.
WILLIAM A. MIDDLETON.
SODA-SIPHONS.



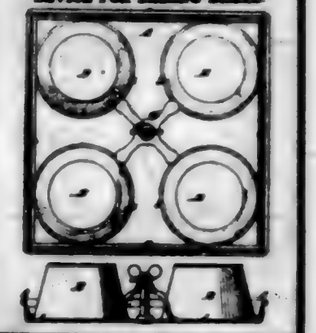
90,107, CHARLES F. PIKE.
COOLING-APPARATUS.



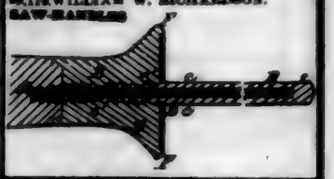
90,108 W. P. PIMLOTT.
HARVESTING RAKE.



90,109, ABRAM I. QUACKENBUSH.
GUILFORD HAWN.
DEVICE FOR RAISING SHEAF.



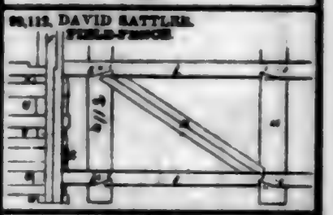
90,110, WILLIAM W. RICHARDSON.
SAW-HANDLES.



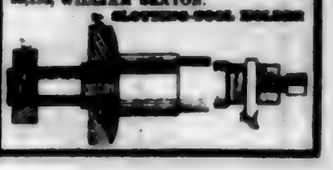
90,111, JOHN SALISBURY.
BORING-MOLDS.



90,112, DAVID SATTLER.
FIELD-FENCE.



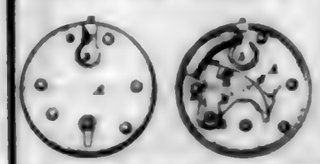
90,113, WILLIAM SEATON.
SLOTTING-TOOL HOLDER.



90,114. JAS. A. SINCLAIR.
GEO-WHEELED SULKY.



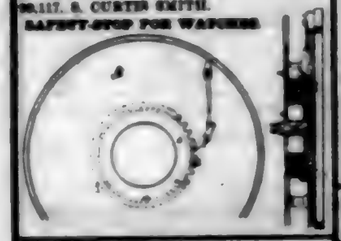
90,115. F. W. SMITH, Jr. PADLOCKS.



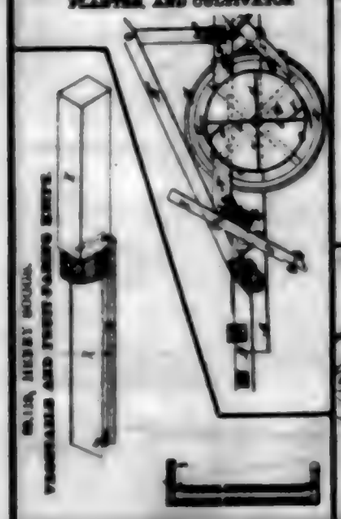
90,116. F. W. SMITH, Jr. PADLOCKS.



90,117. S. CURTIS SMITH.
SAFETY-STOP FOR WAGONS.

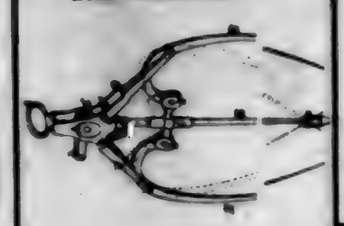


90,118. T. J. SMITH. COMBINED PLOW, PLASTER, AND CULTIVATOR.

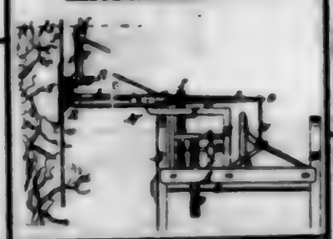


90,119. HENRY SOUDS.
THRASHER AND FEED-PASSING BELT.

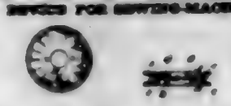
90,120. GEO. E. STEARNS.
BONNET HAT-FORMS.



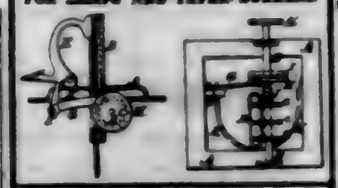
90,121. JAMES M. VAN ROSDALL.
OLIVER W. VAN ROSDALL.
RIDGE-TRIMMER.



90,122. J. S. WARNER. THREAD-TENSION DEVICE FOR SEWING-MACHINES.



90,123. WM. H. WEEKS.
AUTOMATIC LIGHTING-ATTACHMENT FOR LAMPS AND TAPER-BURNERS.

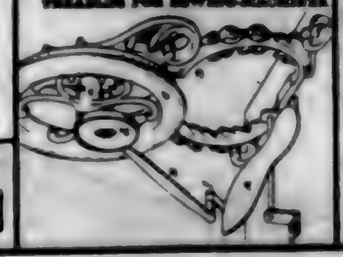


90,124. JOHN WEBSTER. COMPOSITION FOR LINING AXLE AND BOX-CASES.

90,125. J. P. WHITEHEAD.
RAILROAD TRACKS.



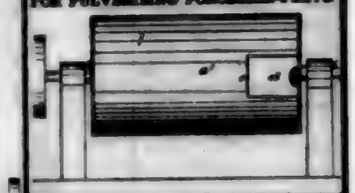
90,126. CHAS. H. WILLCOX.
THRASHING FOR SEWING-MACHINES.



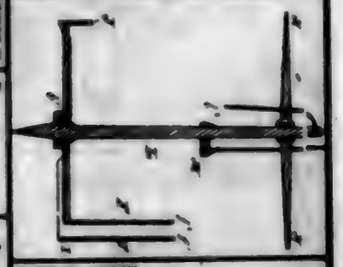
90,127. ARTHUR M. ALLEN
TOY BOBBILLER.



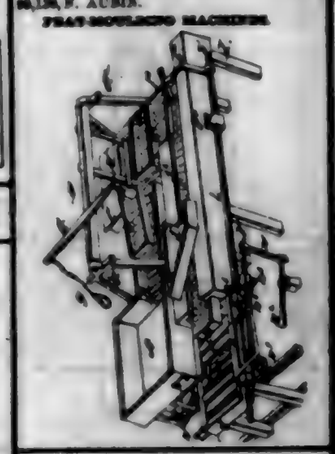
90,128. J. B. ALSING. APPARATUS FOR PULVERIZING PORCELAIN-PASTE.



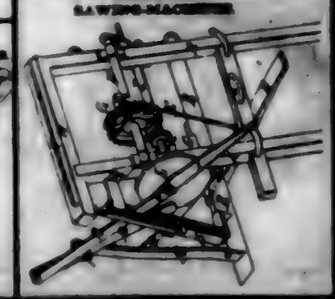
90,129. N. AUBIN. FRAT AUGER.



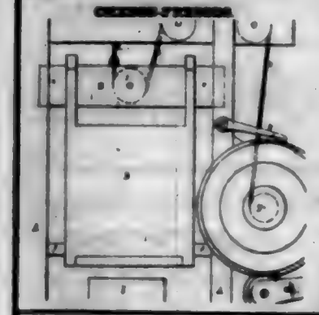
90,130. N. AUBIN.
FRAT-MOULDING MACHINE.



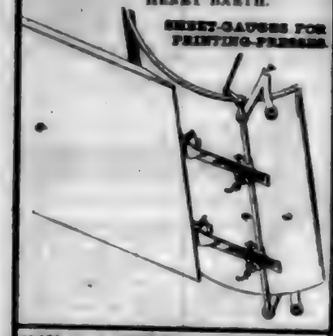
90,131. LOUIS BACH.
L. C. CHRISTLIP.
SAWING-MACHINE.



90,132. ALBERT G. BAGG.
CHIMNEY-TOPPING.



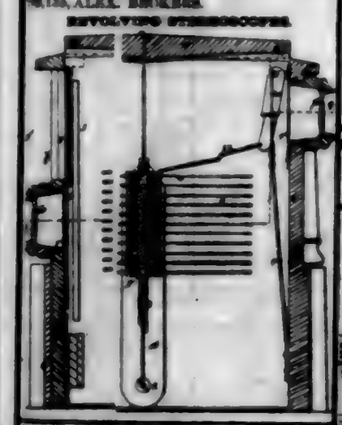
90,133.
HENRY BARTH.
SHEET-GAUGES FOR PRINTING-PRESSES.



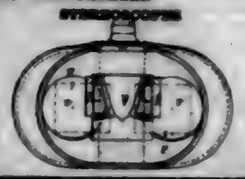
90,134. G. A. BECKER. FOUNTAIN-PENS.



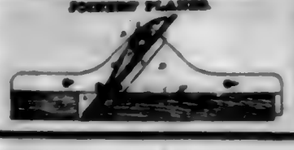
90,135. ALEX. BECKERS.
REVOLVING STEREOSCOPES.



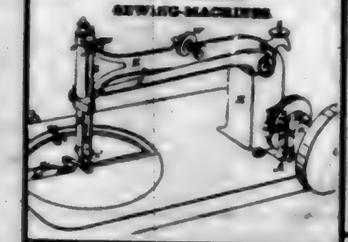
90,136. ALEX. BECKERS.
STEREOSCOPES.



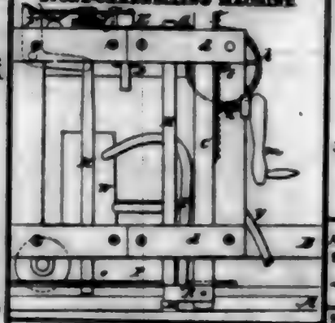
90,137. GEORGE CYRUS BECKWITH
JOINERS' PLANES.



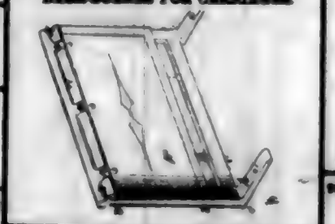
90,138. JOSEPH BENNOR.
SEWING-MACHINES.



90,139. VIRGIL W. BLANCHARD.
STONE-CHANNELLING MACHINE.



90,140. JOHN BLAND.
DASH-BOARDS FOR CARRIAGES.

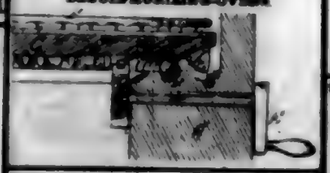


90,141. E. BOIVIN AND D. LOISEAU
PROCESS OF EXTRACTING, MANUFACTURING, AND REFINING SUGAR.

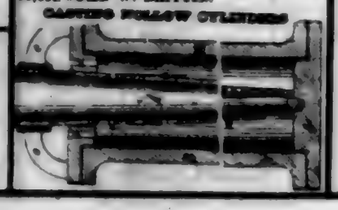
90,142. ELIJAH BOMAR.
RAILROAD-TIE LIFTERS.



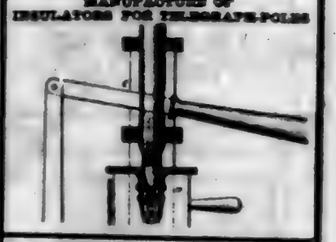
90,143. JOHN C. BREWSTER.
DESULPHURIZING-OVENS.



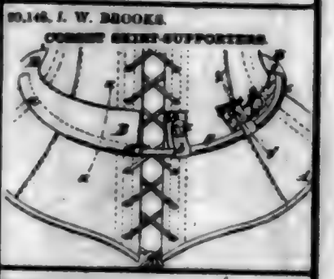
90,144. JOHN W. BRITTIN.
CASTING PISTON-CYLINDERS.



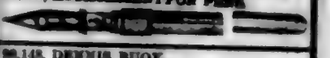
90,145. HOMER BROOKE.
MANUFACTURE OF INSULATORS FOR TELEGRAPH-POLES.



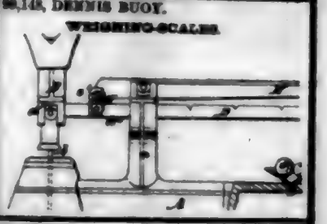
90,146. I. W. BROOKS.
CORSET SKIRT-SUPPORTERS.



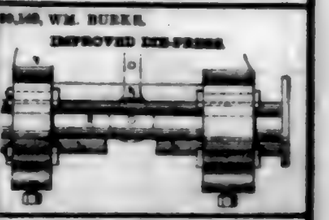
ALBERT G. BROWN. SEE-SEWING 90,147, ATTACHMENT FOR PINS.



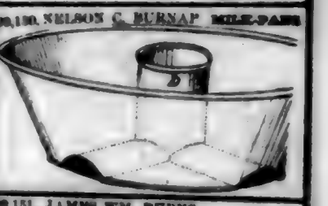
90,148. DENNIS BUOY.
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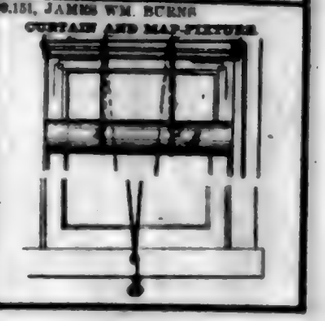
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90,150. NELSON C. BURNAP. MILK-PANS.



90,151. JAMES WM. BURNS.
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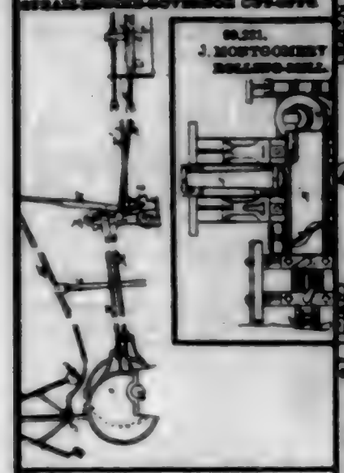
99,216, OLIVER T. MAY.
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90,229, GEO. MILBANK.
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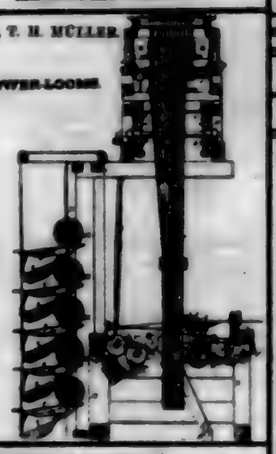


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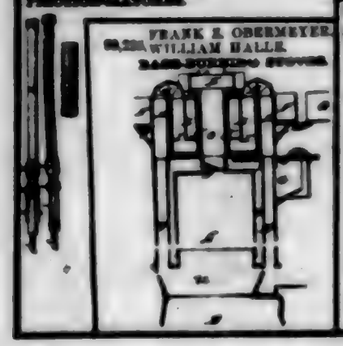
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90,235, FRANK E. OBERMEYER.
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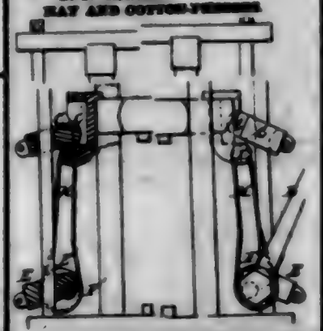
90,236, H. FARMELEE.
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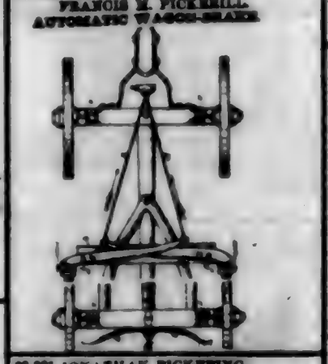


90,238, I. S. PATTEN.
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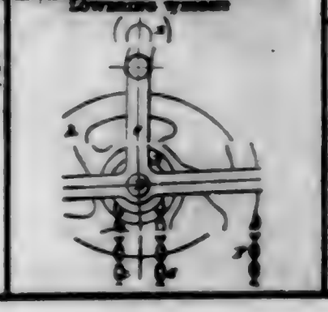


90,239, ROSWIN DORMAN PRENOVER.
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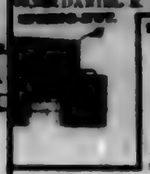
90,240, SAMUEL J. PICKERILL.
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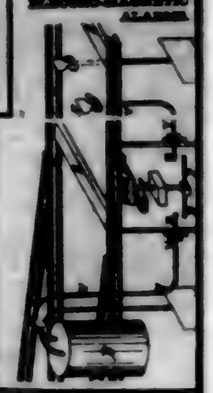
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90,242, DANIEL R. PRATT.
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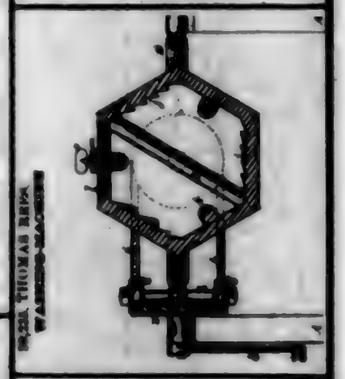
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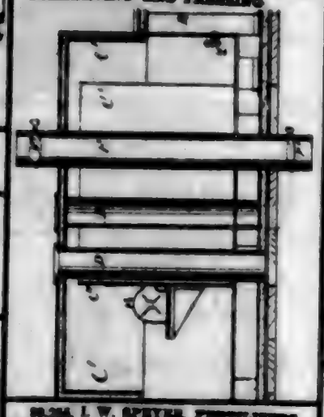
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90,252, AMOS SMITH. APPARATUS FOR
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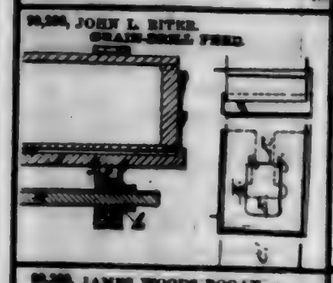
90,256, R. W. SQUIRES.
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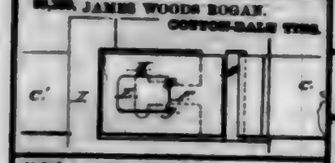
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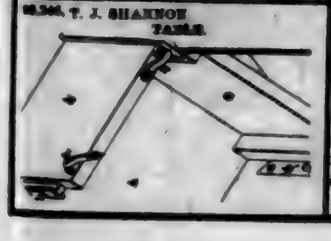
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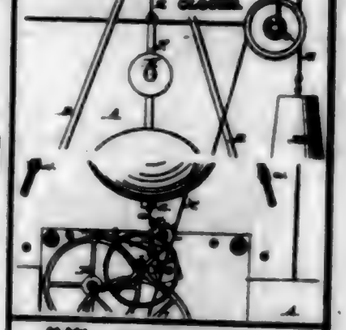
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90,268, THOS. THOMPSON.
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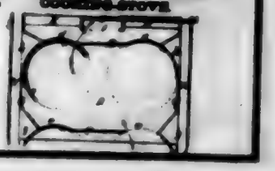


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90,270, S. CURTIS TRUBEE.
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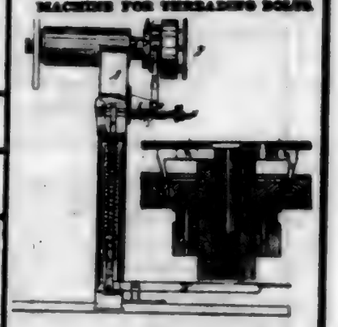
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90,293, W. J. CLARKSON. ANIMAL-TRAP.

90,294, JOHN COMMINS. [illegible].

90,295, PETER E. DEDRICK. BALING-PRESSES.

90,296, PETER E. DEDRICK. BALING-PRESSES.

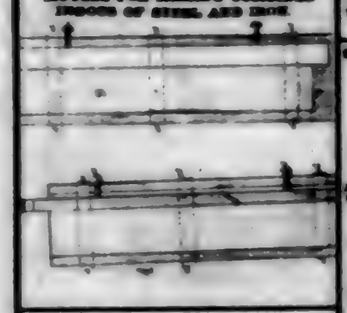
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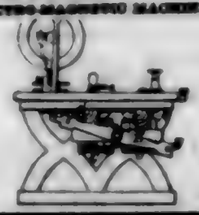
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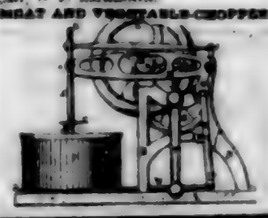
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No. 300, A. E. IMPAM. ELECTRO-MAGNETIC MACHINES.



No. 301, H. F. EMERSON. MEAT AND VEGETABLE-CHOPPER.



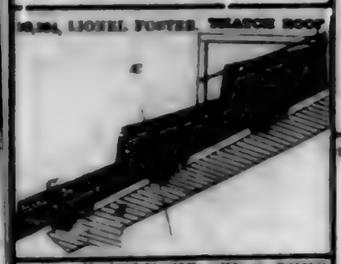
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No. 304, LIONEL FOSTER. SEAMING ROOF.

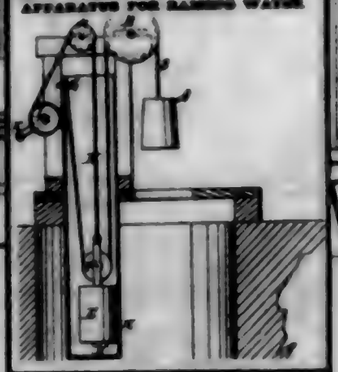


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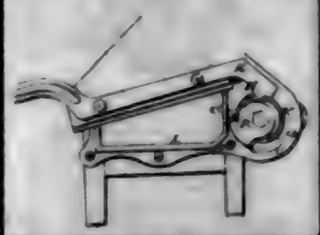


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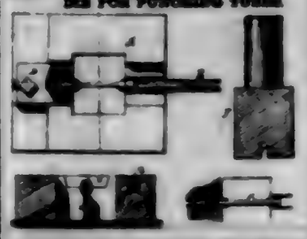
No. 307, J. L. GARLINGTON. APPARATUS FOR RAISING WATER.



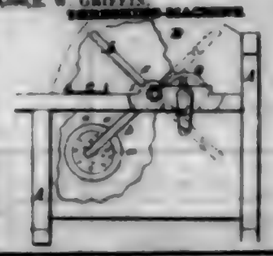
No. 308, G. S. GARTH. STRAW-CUTTER.



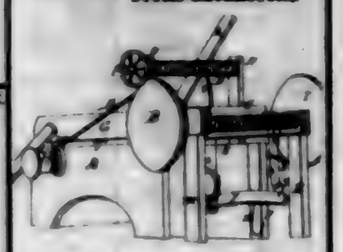
No. 309, JOHN GIBBS. PUNCH AND DIE FOR PUNCHING TUBES.



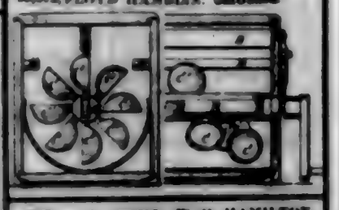
No. 310, E. W. GRIFFIN. THRASHING-MACHINE.



No. 311, ALBERT GUMMER. STUMP-EXTRACTOR.



No. 312, FLOYD HAMBLIN. GRATER.



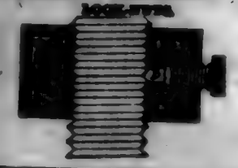
No. 313, W. G. HAMILTON. WATER-ELEVATOR.



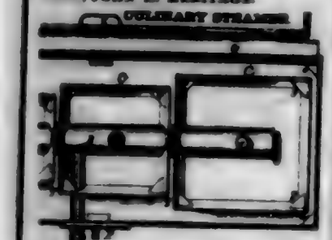
No. 314, J. P. HARLY. STREET-LAMP.



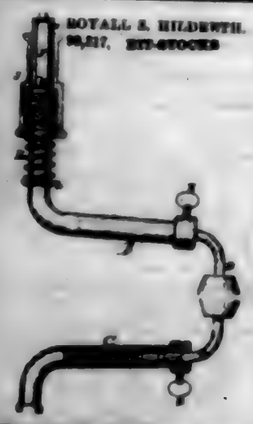
No. 315, GARET G. HERRMANN. LOCK-PINS.



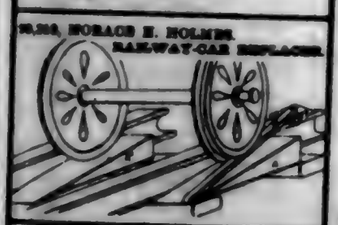
No. 316, JOHN H. HERITAGE. CULINARY STRAINER.



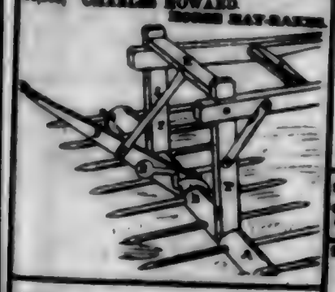
No. 317, ROYALL S. HILDRETH. SIT-STOCKS.



No. 318, HORACE E. HOLMES. RAILWAY-CAR REPLACER.



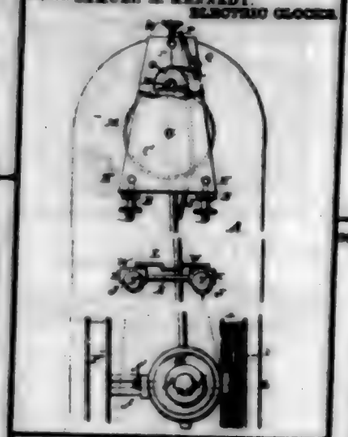
No. 319, CHARLES HOWARD. HORSE HAY-RAKES.



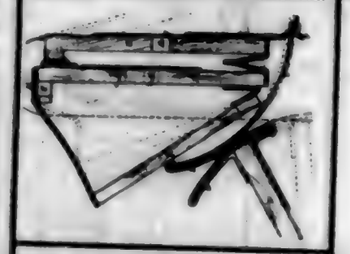
No. 320, J. E. JOHNSON. ELASTIC LANTERNS.



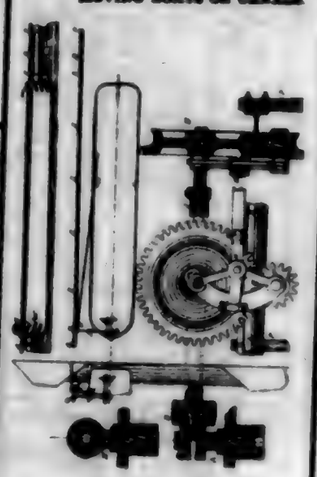
No. 321, SAMUEL A. KENNEDY. ELECTRIC CLOCKS.



No. 322, M. J. KERIGAN. BLOWING APPARATUS FOR ORGANS.



No. 323, W. R. KING. MACHINE FOR MOVING BOATS ON CANALS.

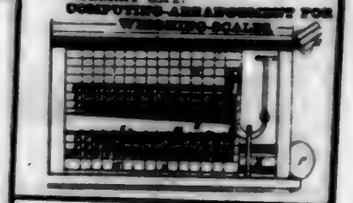


No. 324, WM. P. KIRKLAND. COMPOSITION FOR THE MANUFACTURE OF WATER, GAS, AND DRAIN PIPES.

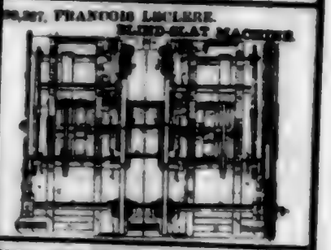
No. 325, DAVID S. KLIEF. SAFE-LOCKING.



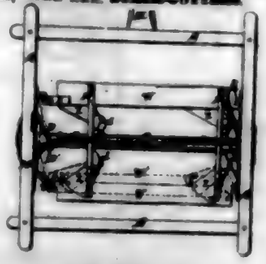
No. 326, H. D. LATHROP, ALBERT GAY. COMPUTING ARRANGEMENT FOR WEIGHING SCALES.



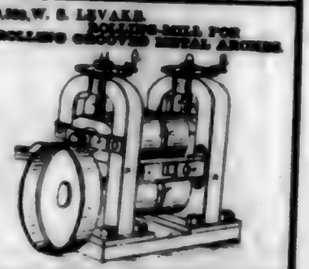
No. 327, FRANCOIS LEFEBVRE. BLIND-SLAT MACHINE.



No. 328, JOEL LEE. SCALE-CUTTING.



No. 329, W. S. LEVAKE. ROLLING-MILL FOR ROLLING GROOVED METAL ARCHES.



No. 330, JACOB LEVY. BOLTS FOR DOORS.

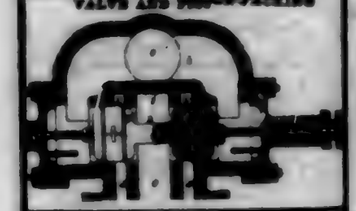


No. 331, WILLIAM H. LONG. HORSE HAY-RAKES.

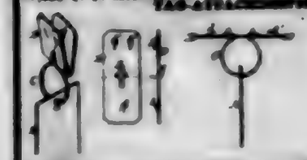


No. 332, ROBERT LOVE. COMPOSITION FOR PAINT.

No. 233, JOSEPH MARES.
VALVE AND PISTON-PACKING



No. 234 T. P. MARSTON.
GAS-ATTACHMENTS.



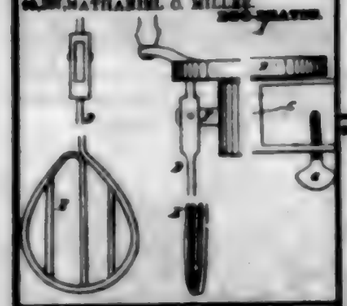
No. 235, JACOB McCLURE.
PENCIL-SHARPENING



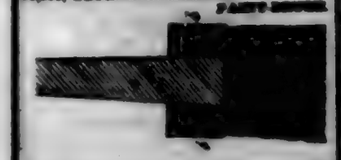
No. 236, W. MENDHAM.
PAPER FOLDING MACHINE.



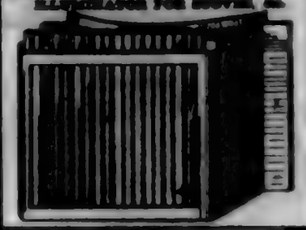
No. 237, NATHANIEL G. MILLER.
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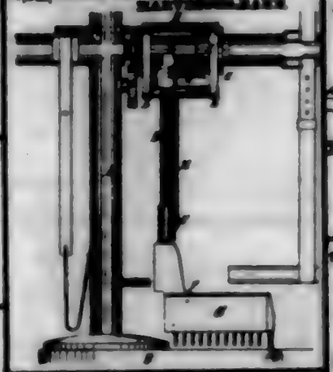
No. 238, GEORGE G. MORRIS.
PAINT-BRUSH.



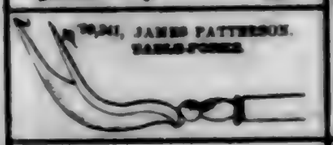
No. 239, BENJAMIN HOTT.
ILLUMINATOR FOR STOVES, &c.



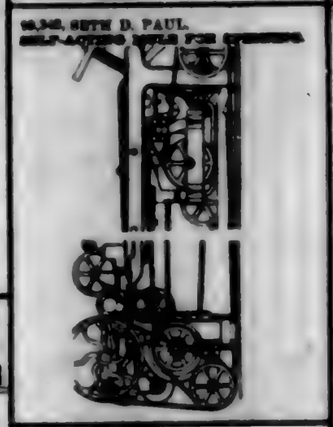
AARON PALMER.
No. 240, CHAS. W. PALMER.
HAY-[illegible]-RAKE.



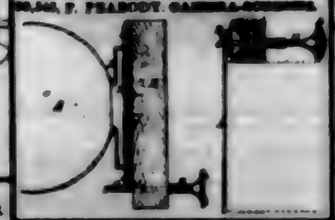
No. 241, JAMES PATTERSON.
RAILS-FORKS.



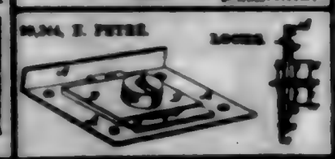
No. 242, SETH D. PAUL.
SELF-ACTING [illegible] FOR [illegible]



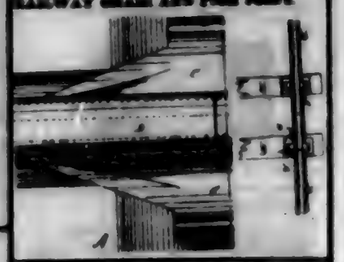
No. 243, P. PEABODY. CARRIER-SCREEN.



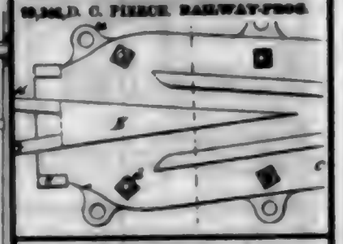
No. 244, E. PETER. [illegible]



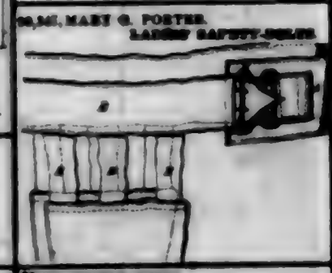
No. 245, D. C. PIERCE.
RAILWAY CHAIR AND PINS JOINT.



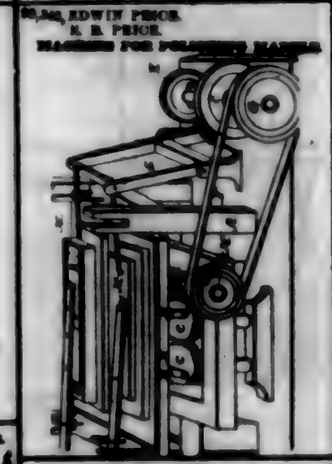
No. 246, D. C. PIERCE. RAILWAY-FROG.



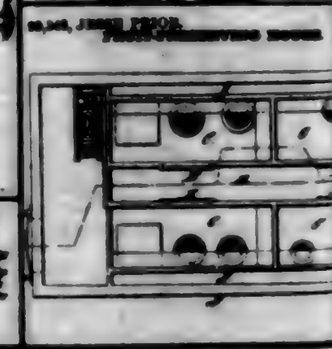
No. 247, MARY G. FOSTER.
LADDER SAFETY-[illegible].



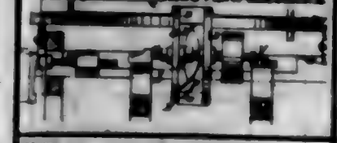
No. 248, EDWIN PRIOR.
E. B. PRIOR.
MACHINE FOR POLISHING HANDLES.



No. 249, JESSE PRIOR.
[illegible]



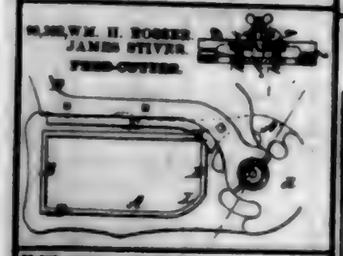
No. 250
W. G. RAOUL.
GROOVING-MACHINE.



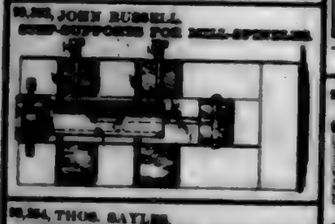
No. 251, W. G. RAOUL.
FARE-BOXES FOR RAILROAD-CARS.



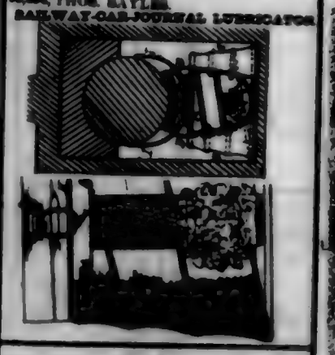
No. 252, WM. H. ROGERS
JAMES STIVER
PIPE-CUTTER.



No. 253, JOHN RUSSELL.
[illegible]

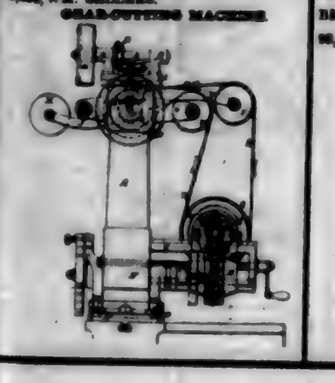


No. 254, THOS. SAYLES.
RAILWAY-CAR-JOURNAL LUBRICATOR.



No. 255, GUSTAVE SCHLUETER.
COMPOSITIONS FOR MOULDING FROM PLASTER OF PARIS.

No. 256, WM. SELLERS.
GEAR-CUTTING MACHINE.



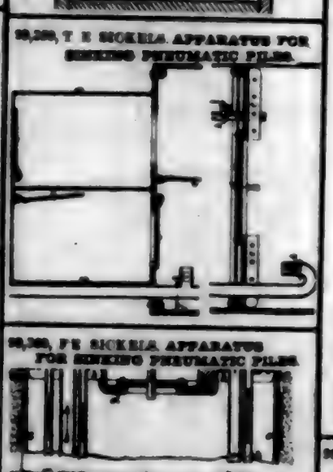
No. 257, ALEXANDER SWALES.
DEVICE FOR CONNECTING BOBBIN TO VEHICLES.



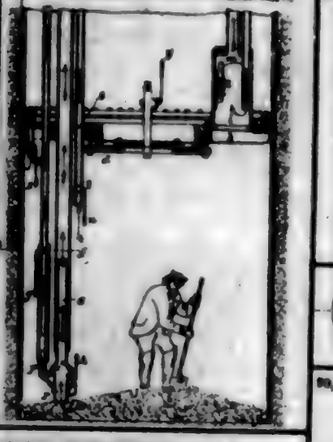
No. 258, GEO. W. SHAWE.
FIRE-ALARM SIGNAL-BOXES.



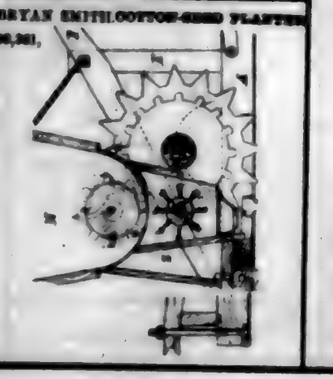
No. 259, T. S. SICKELS. APPARATUS FOR RAISING PNEUMATIC PILES.



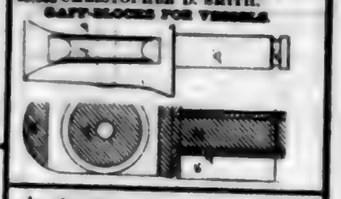
No. 260, T. S. SICKELS. APPARATUS FOR RAISING PNEUMATIC PILES.



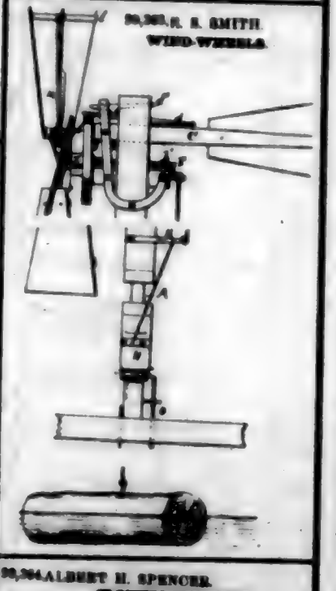
BRYAN SMITH. COTTON-SEED PLANTER.
No. 261,



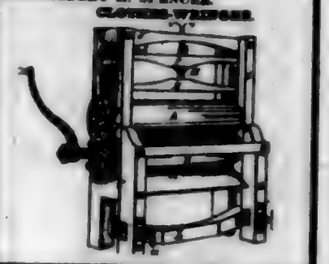
No. 262, CHRISTOPHER D. SMITH.
GAFF-BLOCKS FOR VESSELS.



No. 263, S. S. SMITH.
WIND-WHEELS.



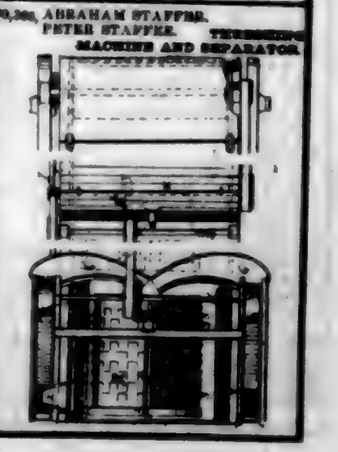
No. 264, ALBERT H. SPENCER.
CLOSING-WEDGES.

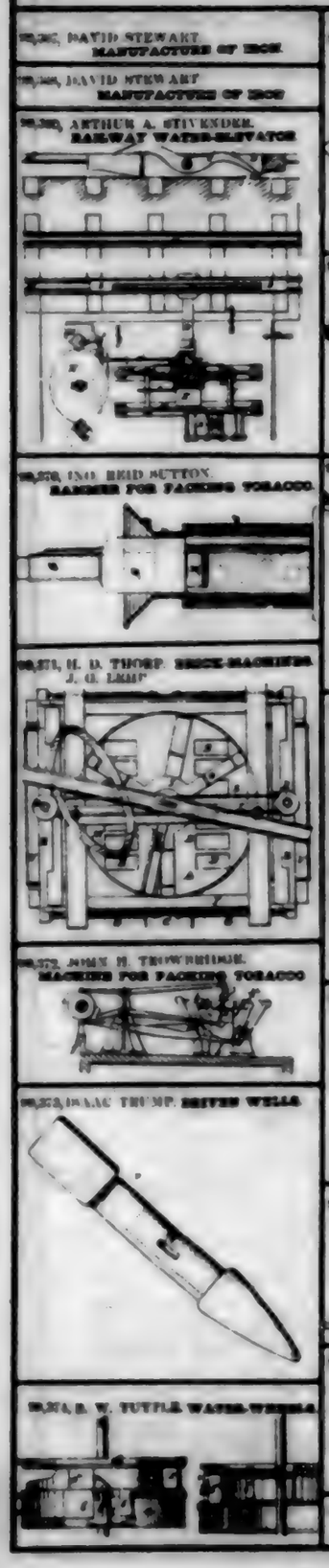


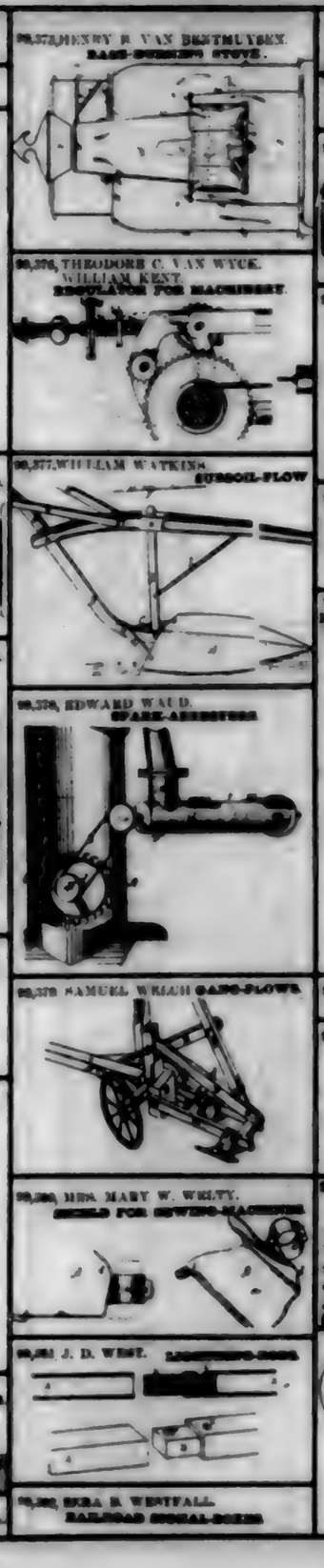
JOHN A. SPOONER, No. 265,
JOHN ELLERBY,
BUTTONS.

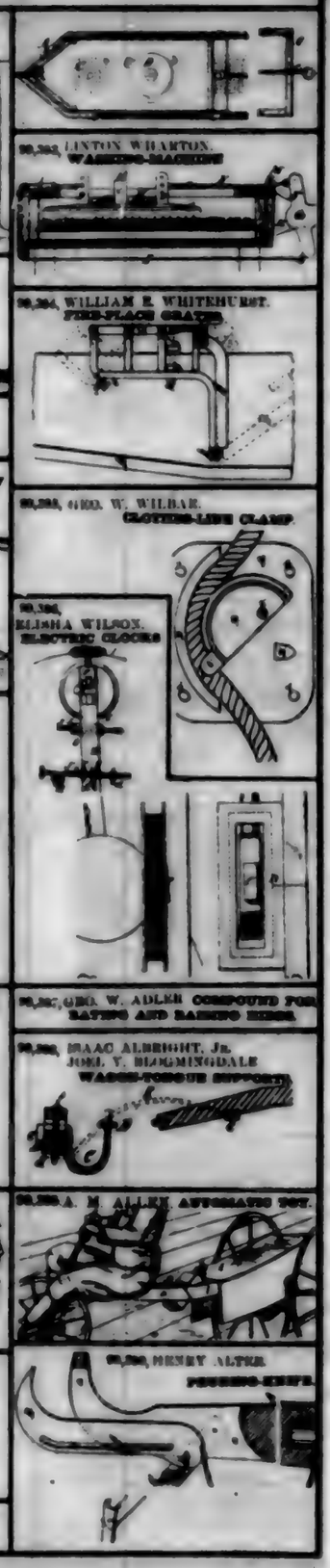


No. 266, ABRAHAM STAFFER.
PETER STAFFER.
TEDDING-MACHINE AND SEPARATOR.

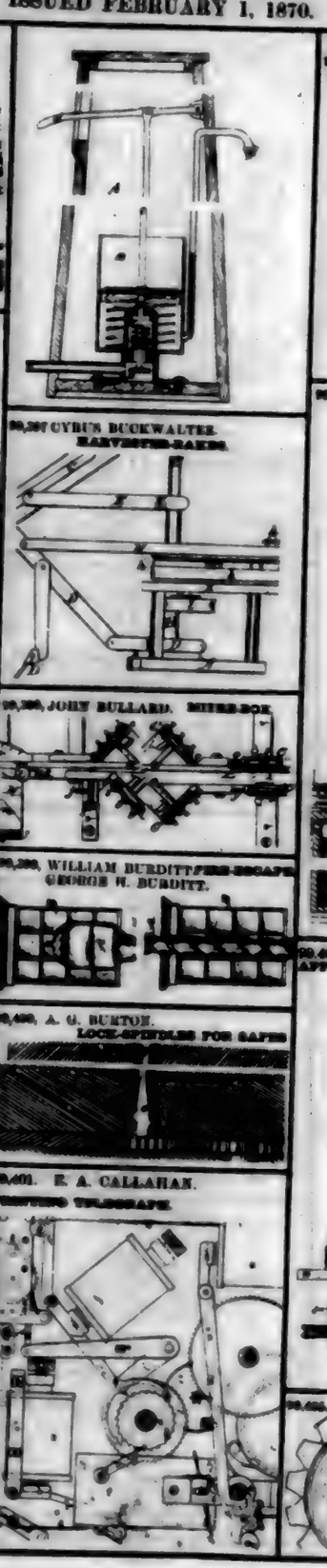


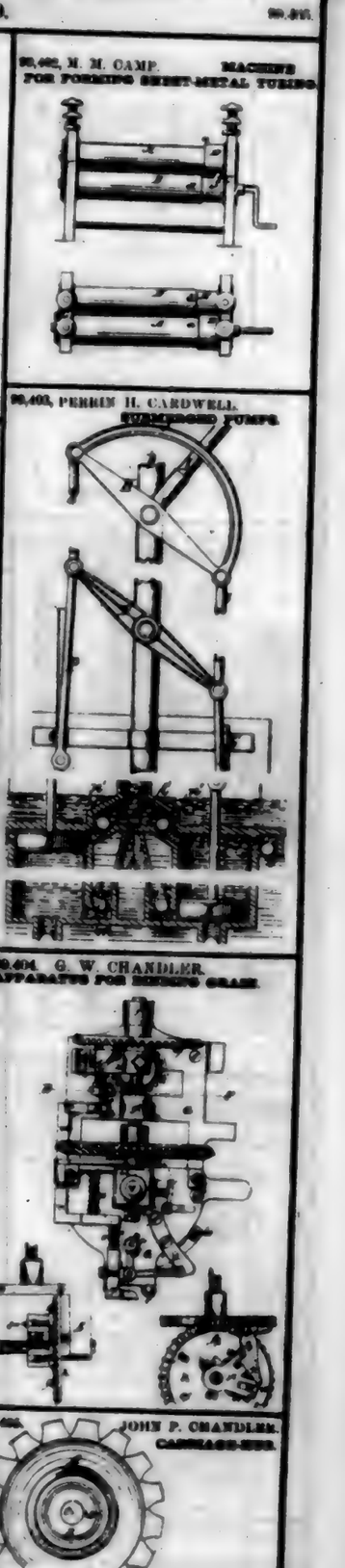


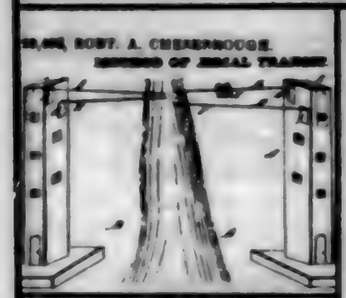


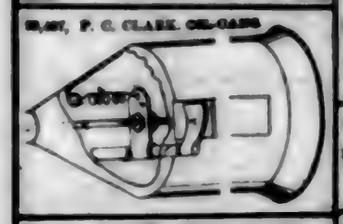


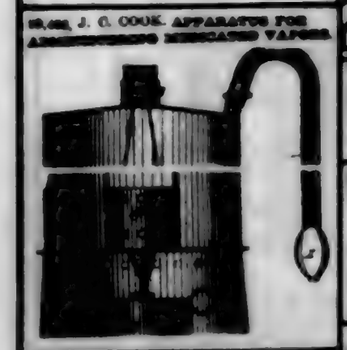


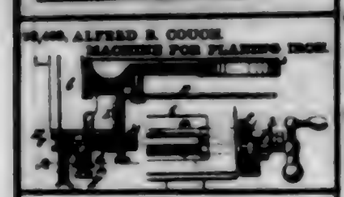


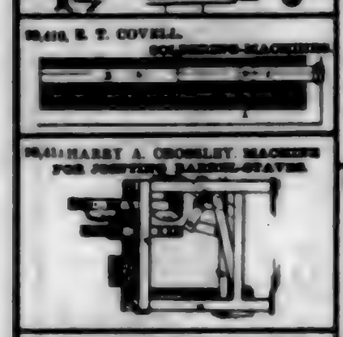




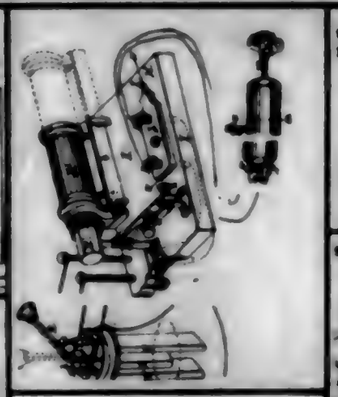


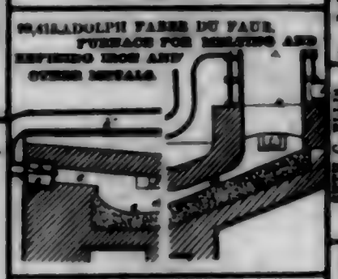


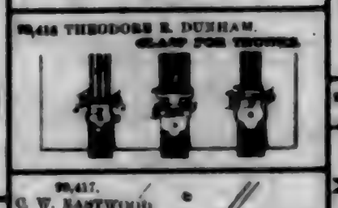
















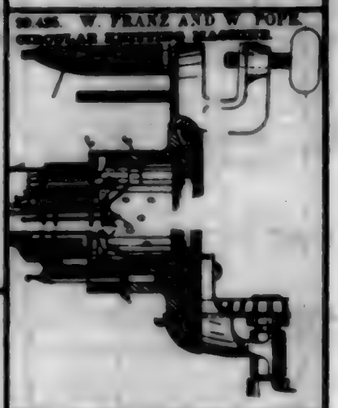


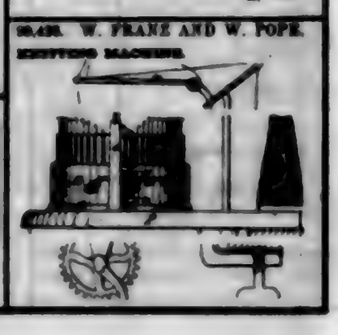




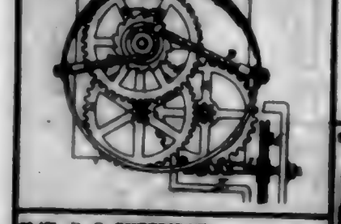


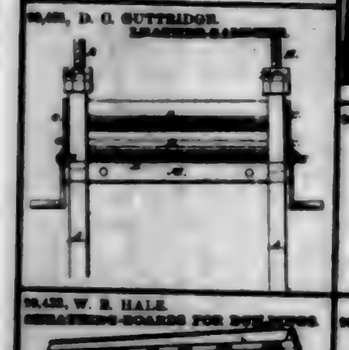




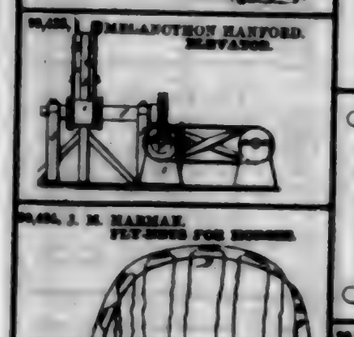




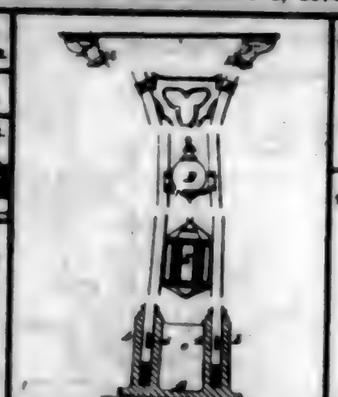






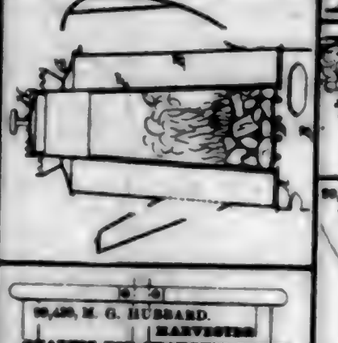


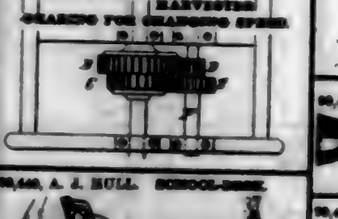




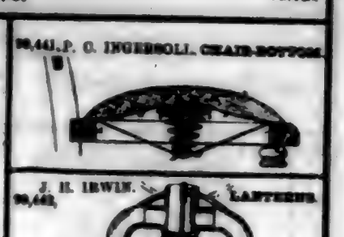


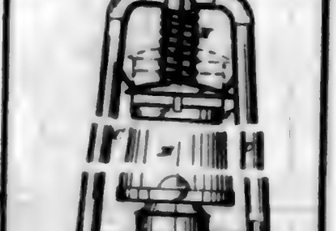


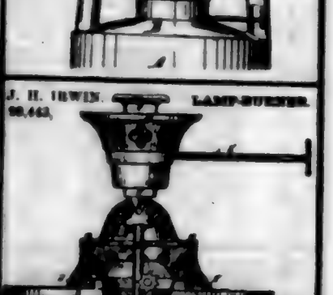




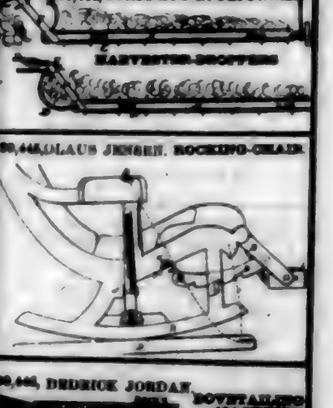














JAMES E. LARDELL.
LEROY H. SMITH. HAY-FORKS

PETER LOCKIE. WASHING-MACHINE

W. R. LOW AND A. ADAMS. HARVESTER.

CRAZIO LUGO.

JOHN McADAMS.

THOS. McMAHON.

FREDERICK MEYERS.

JAMES MONTGOMERY.

JOHN MORRAY.
WILLIAM OLINE, Jr.

J. P. MORLOT.

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D. A. MULLANE.
J. G. L. MURRAY.

DAVID MUNSON.

PETER MURPHY.

WILLIAM H. MURRAY.

J. NEWTON.
IRA BARFIELD.

FRED MORRIS.

NUMEN PACKARD.

C. E. PATRIC.

HENRY A. PEASE.

ISAAC PENNINGTON.

AURELIUS A. PERHAM. COMPOUND TOOL.

T. M. RICHARDSON. PLOUGHING-SET.

CHARLES F. PIKE. RAILWAY CATTLE-CAR.

A. K. RITTER. SHOULDER-BRACES.

JOSEPH P. POND. SELF-FEEDING WOOD AND COAL COOKING-STOVE.

E. ROBBINS. DECORATIVE SLAB FORMED FROM PLASTIC MATERIALS.

THOMAS ROBERTS. KNIFE-CLEANING MACHINE.

DANIEL B. PRATT. SPRING-HEADED SCREW-BOLT.

ADAM RAUCH. OIL-CLOSE CUTTER.

W. RHINELANDER. RAILWAY-CAR SPRING.

BRUNO RUDOLPH. ARRANGEMENT FOR HARDING GLOVES.

JEREMIAH RHOADS. CLAMP FOR FORMING HORSESHOE-CALKS.

JAMES P. RUSSELL. LAMPS.

P. B. RUSSELL. WAGON-JACK.

A. V. RYDER. HASP FOR TRUSS-LOCKS.

JUNIUS SCHENCK. METHOD OF PROTECTING THE BITS OF VULCANIZED INDIA-RUBBER OR CONDENSATION HOSE.

O. C. BRIGGS. HEAD-BLOCKS
GEO. SELDEN. FOR SAW-MILLS.

GIBSON SMITH. COMPOUND FOR COLORING AND PRESERVING THE HAIR.

MARSHALL P. SMITH.

JOB SMYTHE.
CHAUNCEY DEXTER. STOVE-PIPE SHELF.

J. G. SPRAGUE. HEDGE-TRIMMER AND STALK-CUTTER COMBINED.

H. L. STILES. BASE-BURNING PARLOR COOK-STOVE.

HENRY SWINEFORD.
SCAFFOLDS.

J. H. L. TUCK.
CORN-HARVESTER.

ROLLIN WHITE.
REVOLVING FIRE-ARMS.

ICHABOD B. TUTTLE.
MILK-TEMPERING AND COOLING APPARATUS.

WM. H. WHITELEY.
RAKES FOR HARVESTERS.

WILLM. STEER.

CHARLES WALL.
JOHN STEWART.
DRAWING-STANDS FOR FLAX RIMS.

GEO. C. TAFT.
TWEER-CUTTER.

GEO. C. TAFT.
MACHINES FOR DRILLING METALS.

DUNHAM WILKIN.
SHINGLE-MACHINE.

W. G. WARD.
BREECH-LOADING FIRE-ARMS.

GEO. W. TALBOT.
DYES FOR COLORING WOOL.

THEODORE D. TEAL.
PAINT FOR SHIPS' BOTTOMS.

JOHN HENRY THOMAS.
SEED-SOWER.

WILLIAM WILLIAMS.
SWIVEL-SHACKLE.

T. T. THORNE.
G. T. THORNE.
COTTON-PLANTERS.

CHARLES TOPTAN.
MANUFACTURE OF GAS FROM PETROLEUM.

J. WALL WILSON.
CAB-BRAKE AND STARTER.

THOS. WRIGHT.
BROOM FOR STABLES.

CHARLES BROWN.
BOOT-JACK.

HUGH YOUNG.
JAMES L. YOUNG.
STONE-CUTTING MACHINE.

D. R. AVERILL.
VARNISHES.

D. R. AVERILL.
THE MANUFACTURE OF VARNISHES.

ADAM WINGARD.
PADDLE-WHEELS.

HUGH YOUNG.
JAMES L. YOUNG.
TOOL FOR CUTTING STONE.

ISAAC BUSSEY.
COOKING-STOVE.

E. C. RUSSELL.
TREATMENT OF LEATHER.

WM. C. SCHMIDLIN.
J. W. DRISCOLL.
REFLECTOR FOR LAMPS.

EDWARD WRIGHT.
SELF-ACTING MULES FOR SPINNING.

ED. H. SITEMAN.
RAILWAY-BRAKE SHOE.

MRS. HANNAH G. SUPLEE.
NEEDLE FOR SEWING-MACHINES.

HANNAH G. SUPLEE.
NEEDLE FOR SEWING-MACHINES.

F. B. SESSIONS.
SAMUEL A. KNOX.
MOULD-BOARD FOR PLOWS.

GEO. B. FIELD.
H. L. HOTCHKISS.
PRINTING-TELEGRAPHS.

ILLUSTRATIONS OF PATENTS

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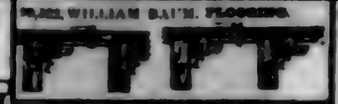
THE UNITED STATES PATENT OFFICE

FEBRUARY 8, 1870.

90,318 A. W. ALMQVIST, VALVE-GEAR. P. W. OFELDT.



90,322, WILLIAM BAUM, FLOORING.



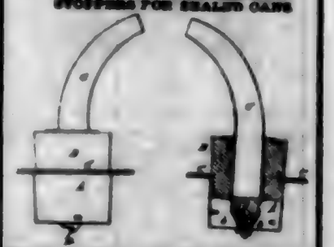
90,323, WM. L. BECKWITH, WINDOW-STOP.



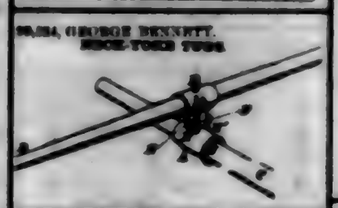
90,329, ISAC DUSSEY, WATER-CONDUCTOR FOR COOKING-STOVES.



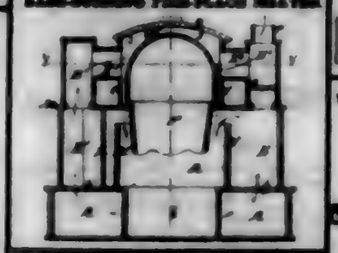
90,330, ALEXANDER CAMPBELL, PUNCTURING AND TUBULAR STOPPERS FOR SEALED CANS.



90,334, GEORGE BENNETT, HOOP-TOOTH TOOL.



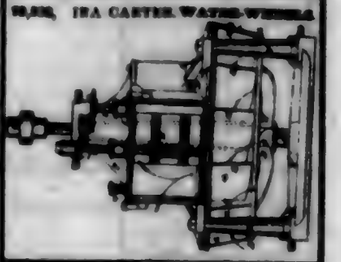
90,335, BENTLEY C. BIBB, PHILIP KLOTZ, HAND-PUSHING TWO-PLACE SEATER.



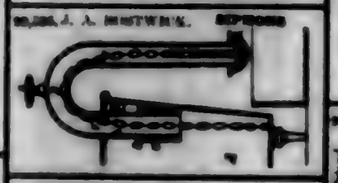
HIRAM CARPENTER, RAILWAYS.



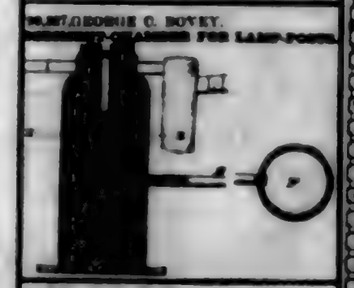
90,338, IRA CARTER, WATER-WHEELS.



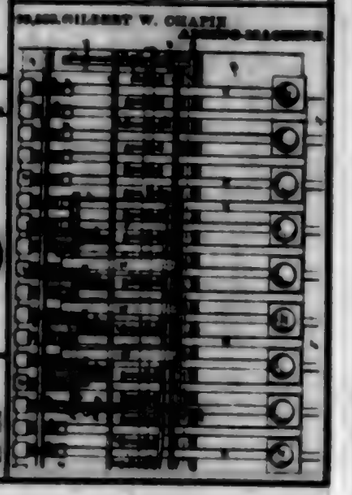
90,339, J. A. MOTWIN, [illegible]



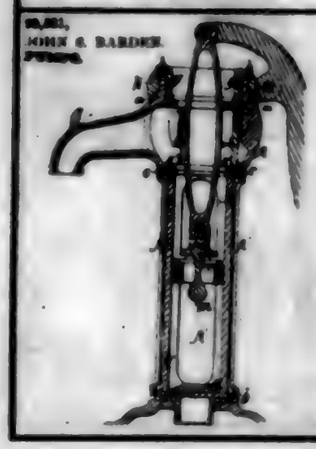
90,340, GEORGE C. BOVEY, [illegible] FOR LAMP-POSTS.



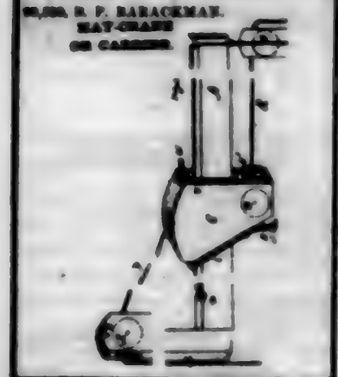
90,341, GILBERT W. CHAPIN, [illegible]



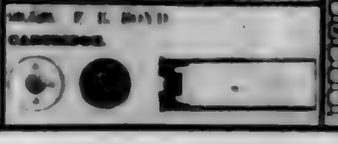
90,331, JOHN S. BARBER, [illegible]



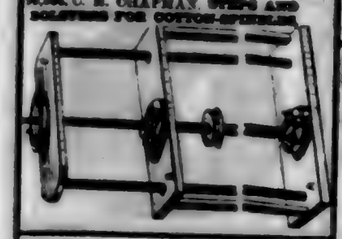
90,332, E. P. BARACKMAN, HAT-CRANE OR CARRIER.



90,336, [illegible]

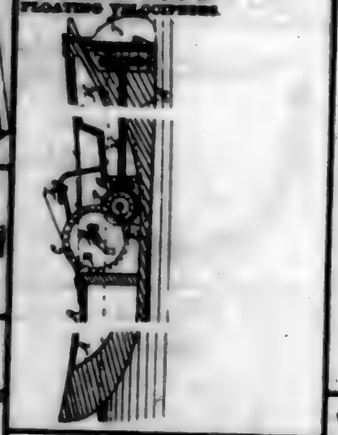


90,334, C. H. CHAPMAN, STRIPS AND SOLEPIECE FOR COTTON-SPINNERS.



90,341, R. D'HEUREUSE, MASHING GRAIN.

90,340, OLIVER A. DAVIS, FLOATING TELESCOPES.



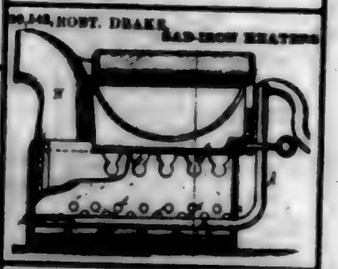
90,342, L. S. CLARK, SHIFTING CUTTER-HEELS.



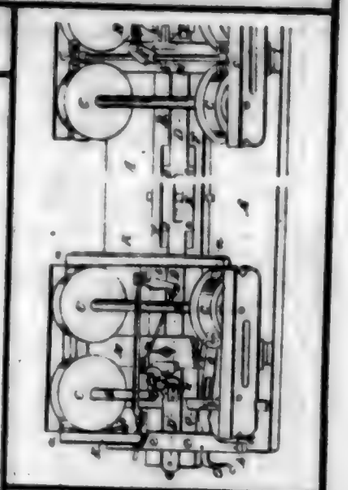
90,343, J. B. CLEMANS, SEED-DRILLS.



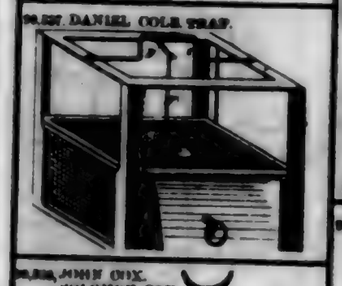
90,344, NOBT. DRAKE, HAND-HOE HEATERS.



90,345, GEO. D. EMERSON, TELESCOPES.



90,337, DANIEL COLE, TRAP.



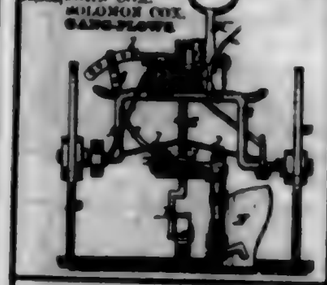
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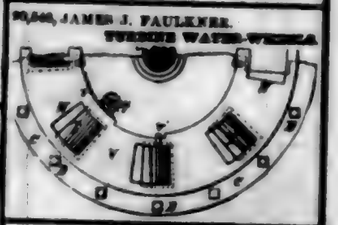
90,343, LEWIS DUVALL, HAND-CULTIVATORS.



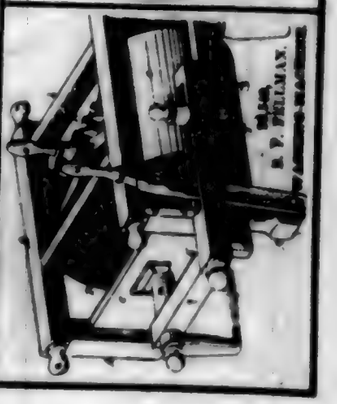
90,347, JOHN OIX, SOLOMON OIX, GANG-PLOWS.



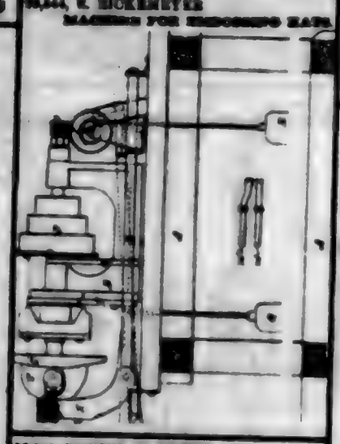
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90,349, [illegible]

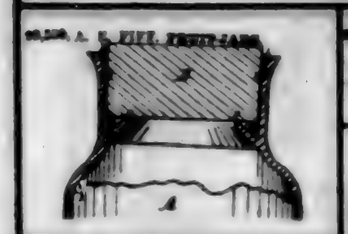


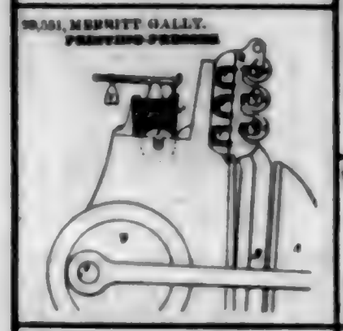
90,344, E. HICKMEYER, MACHINE FOR HOOPING CASKS.

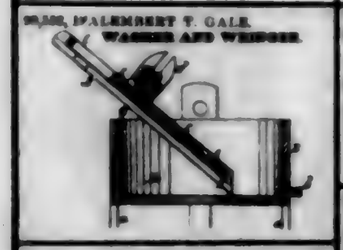


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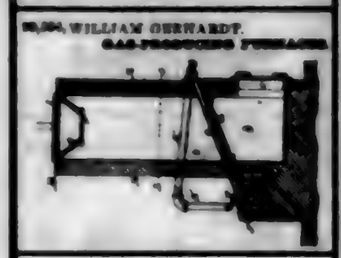


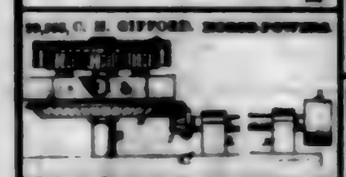


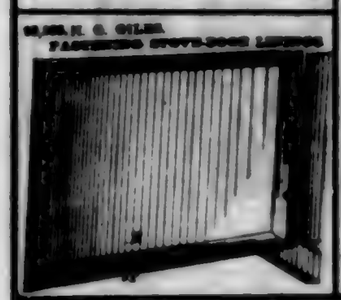

No. 99,331, MERRITT GALLY.
PRINTING-PRESSES.


No. 99,332, IPALEMBERT T. GALE.
WASHER AND WEDGES.

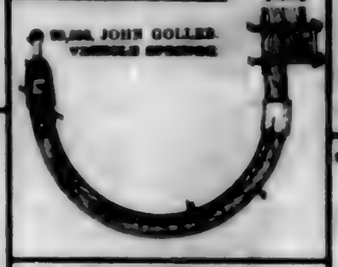

No. 99,333, E. L. GAYLORD. TRUSS-LOCKS.


No. 99,334, WILLIAM GERHARDT.
GAS-PRODUCING FURNACES.


No. 99,335, C. H. GIFFORD. HORSE-POWERS.

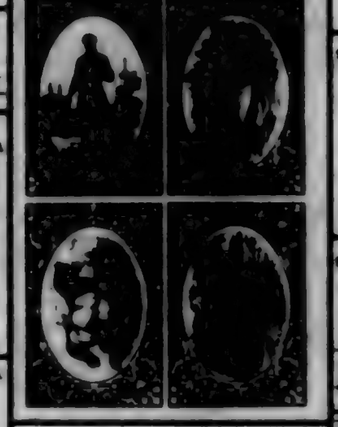

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FASTENING STOVE-DOORS LETTER.

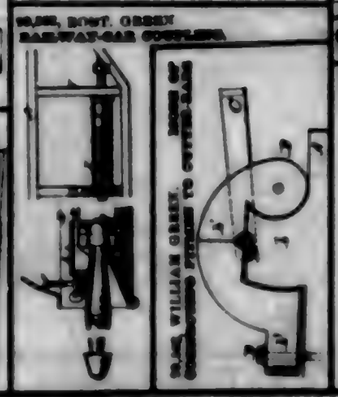

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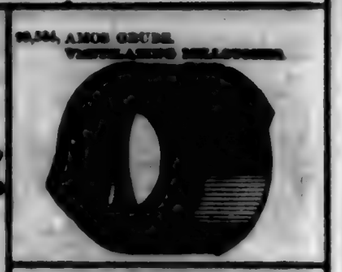

No. 99,338, JOHN GOLLER.
VEHICLE SPRINGS.

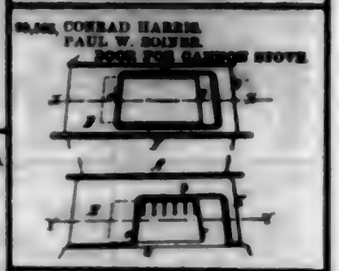

No. 99,339, O. F. GOODMAN.
HOOP-RING FOR HOES.

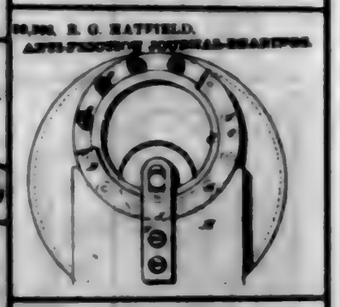

No. 99,340, GEORGE D. GOODSELL.
JOYCE R. BARNOCK.
CORN-STALK-CUTTING KNIVES.


No. 99,341, CALEB GOODWIN.
SCREENING PLATING-GAUGE.

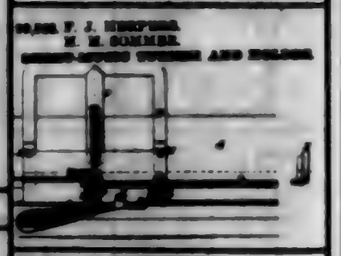

No. 99,342, ROYT. GREEN.
RAILWAY-BAR COUPLING.
No. 99,343, WILLIAM GREEN.
MACHINE FOR PLANING AND MORTISING FELLOES OF WHEELS.


No. 99,344, AMOS GRUBB.
VENTILATING MILLSTONES.


No. 99,345, CONRAD HARRM.
PAUL W. SOLMS.
DOOR FOR CASTING STOVE.


No. 99,346, E. G. HATFIELD.
ANTI-FRICTION JOURNAL-BEARINGS.


No. 99,347, GUSTAVUS L. HAUSKNECHT.
VELOCIPEDE.

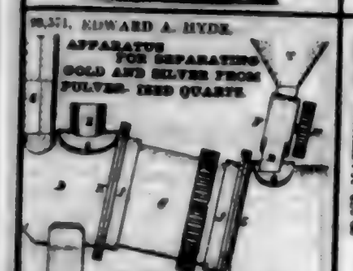

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H. M. SOMMER.
SAND-BOARD TURNER AND FEEDER.

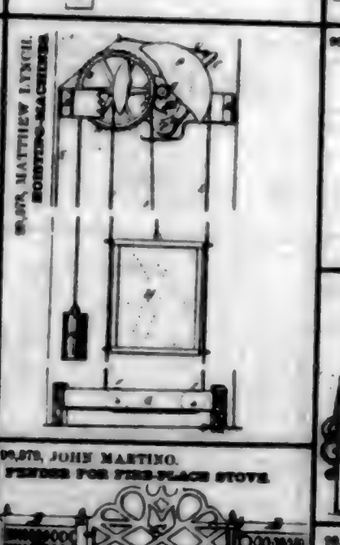

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WAGON WHEEL.


No. 99,326, JOS. S. HOYT. FURNACE.

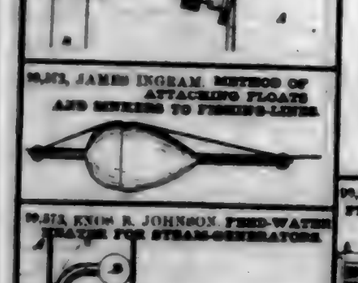

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KNIFE.

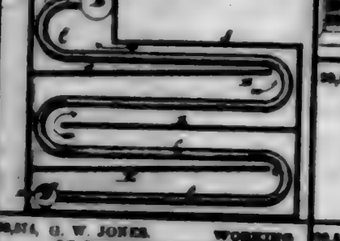

No. 99,328, HOWELL MULFORD.
GRATES.


No. 99,329, EDWARD A. HYDE.
APPARATUS FOR SEPARATING GOLD AND SILVER FROM PULVERIZED QUARTZ.

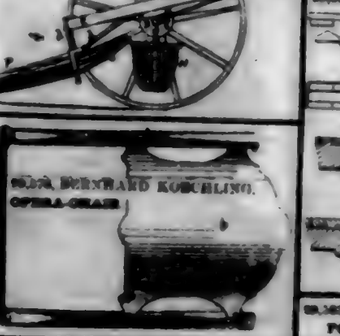

No. 99,330, MATTHEW LYNCH.
MORTISING-MACHINES.


No. 99,331, EDMUND D. NORORON.
ROT-AIR FURNACE.


No. 99,332, JAMES INGRAM. METHOD OF ATTACHING FLOATS AND SINKERS TO FISHER'S-LINES.

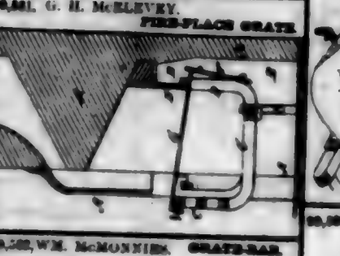

No. 99,333, KNOX R. JOHNSON. FEED-WATER HEATER FOR STEAM-GENERATORS.

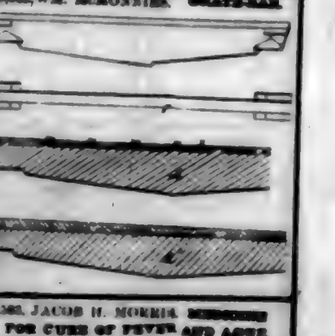

No. 99,334, G. W. JONES. WORKING OF SCRAP AND OTHER IRON.

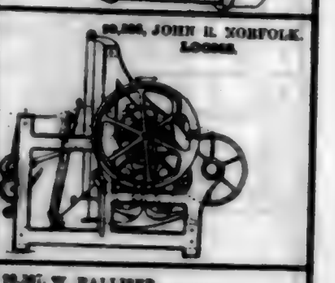

GEO. W. KNIGHT. POTATO-DIGGER.
No. 99,335.
No. 99,336, BERNARD KOECHLING.
OPERA-CHAIR.

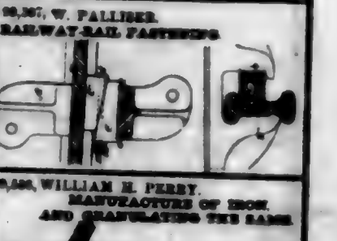
No. 99,337, JOHN MARTINO.
FENDER FOR FIRE-PLACE STOVE.

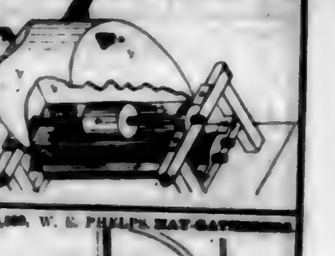

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FENDER FOR FIRE-PLACE STOVE.

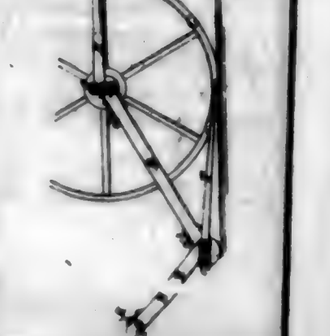

No. 99,339, G. H. McELVEY.
FIRE-PLACE GRATE.


No. 99,340, WM. McMONNIES. GRATE-BAR.
No. 99,341, JACOB H. MORRIS. MIXTURE FOR CURE OF FEVER AND AGUE.

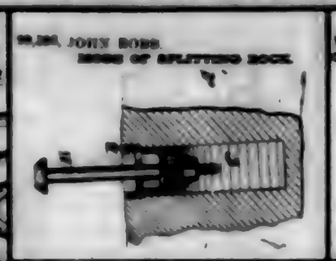

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LOOMS.

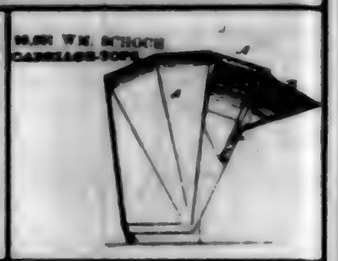

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RAILWAY-RAIL FASTENER.

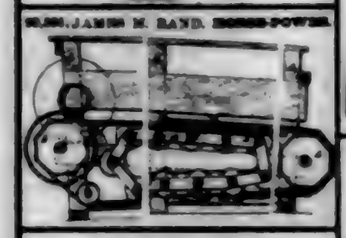

No. 99,344, WILLIAM H. PERRY.
MANUFACTURE OF IRON AND GRANULATING THE SAME.

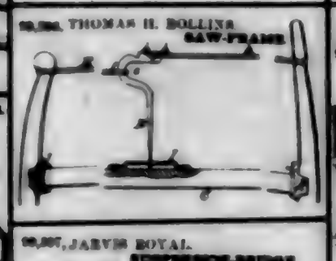

No. 99,345, W. E. PHELPS. HAT-GATHERER.

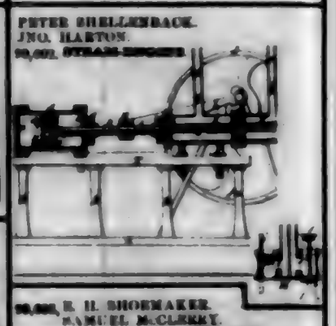


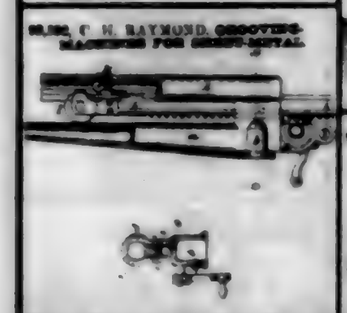




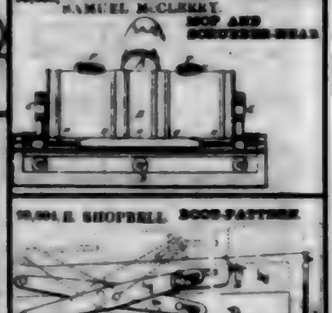


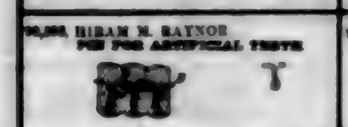


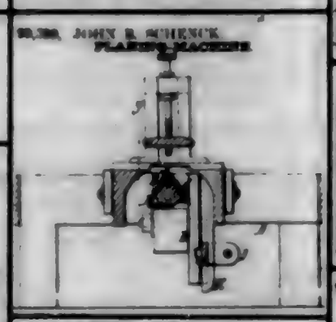




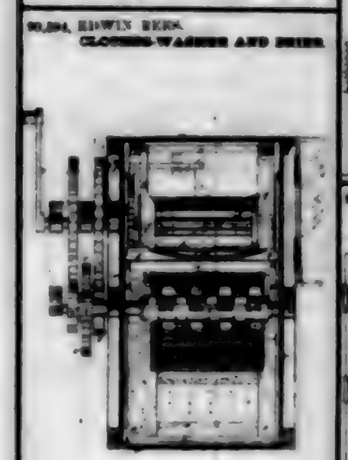


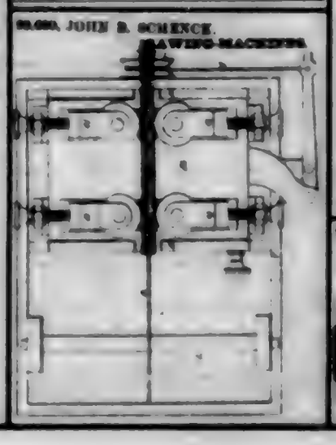






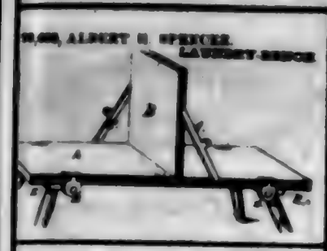


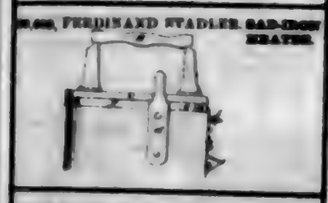






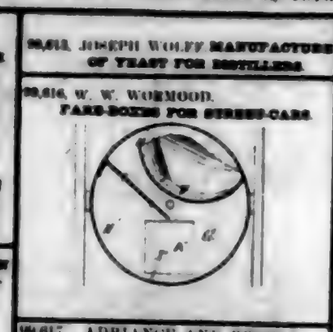






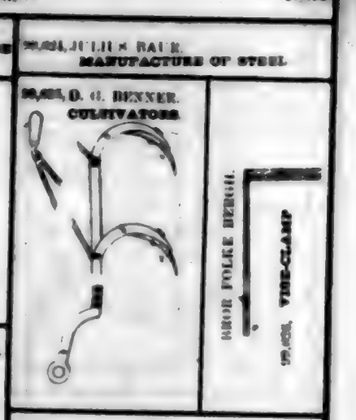




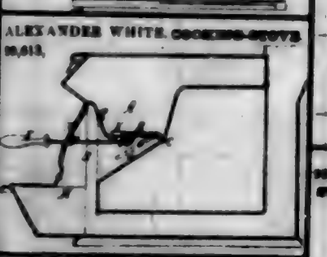


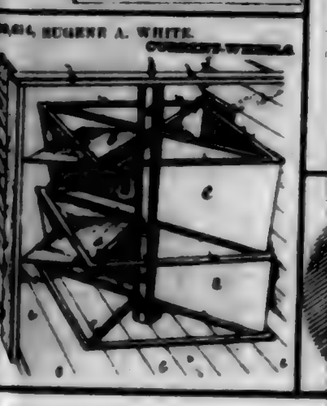




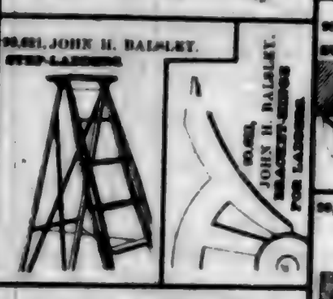


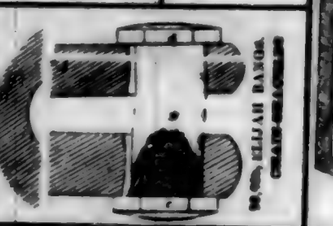


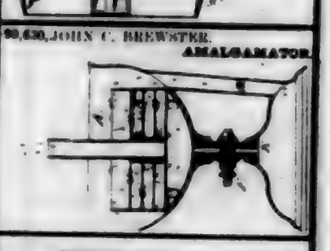






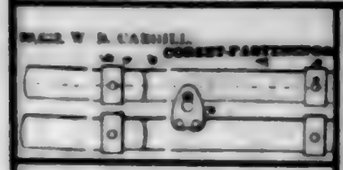


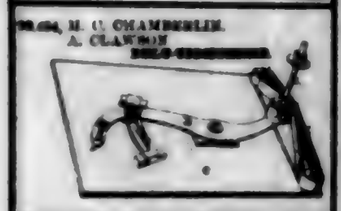


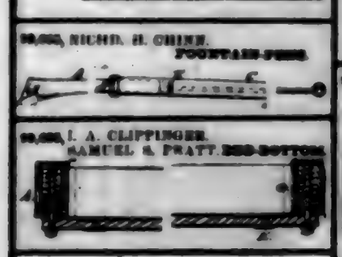


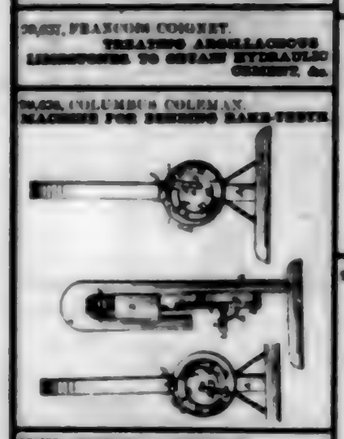


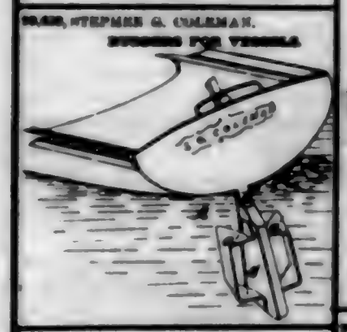


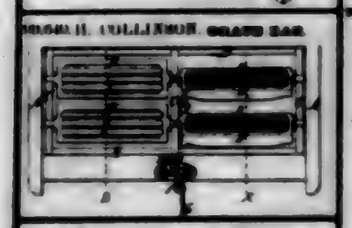


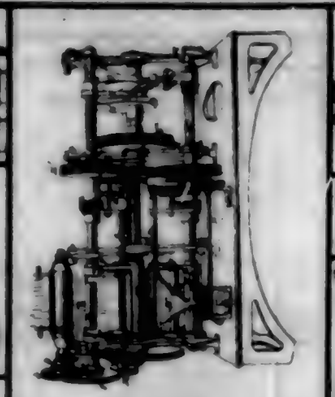


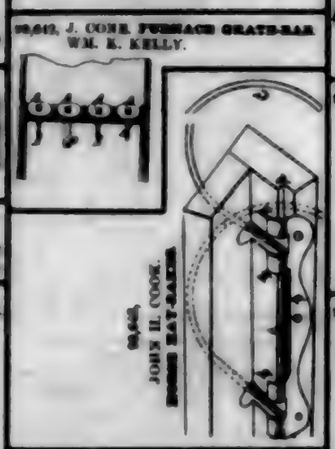


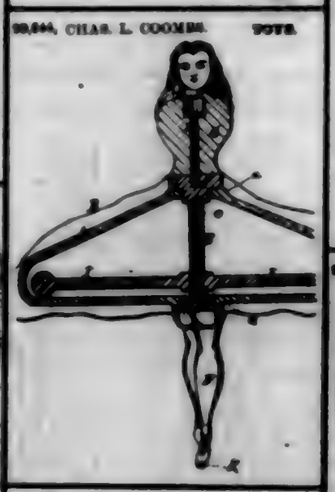


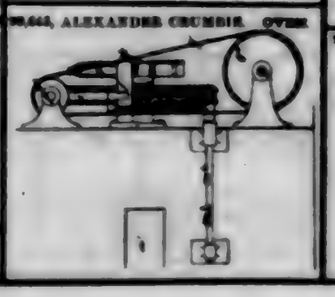


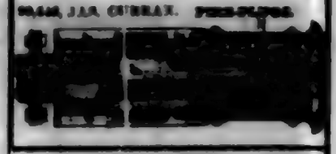


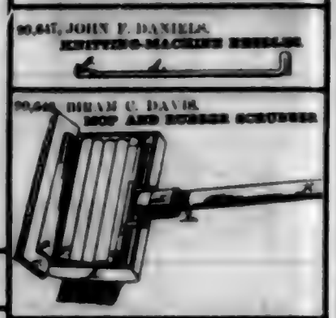




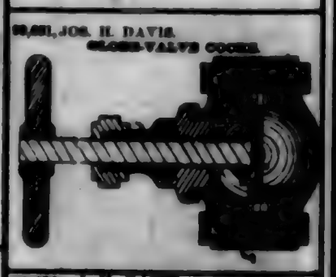


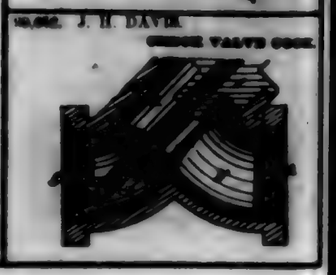


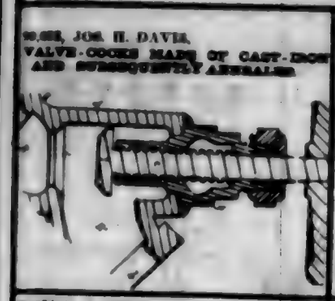




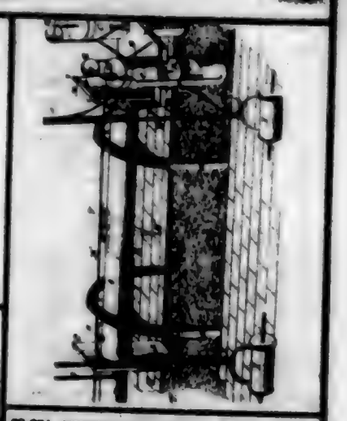






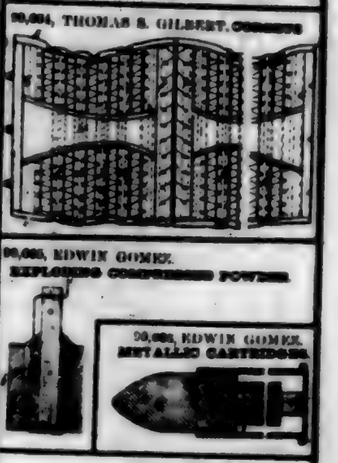


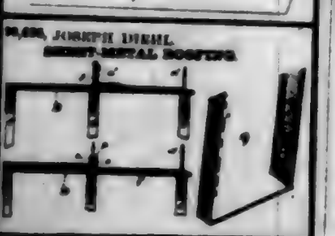


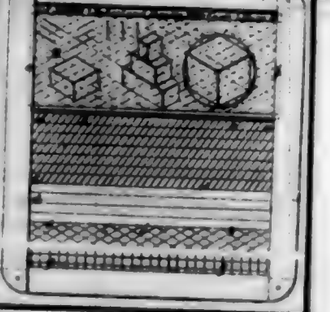


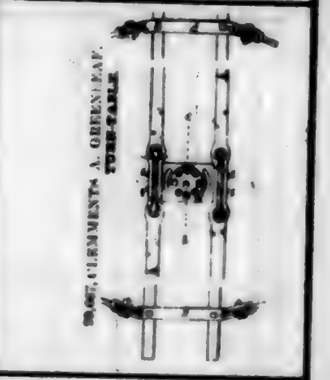


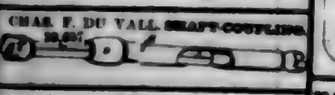


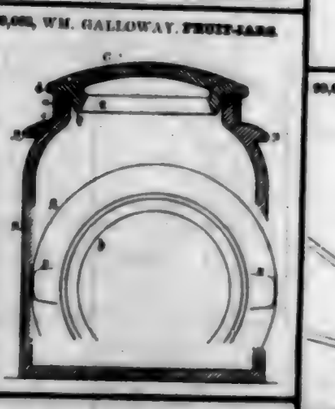


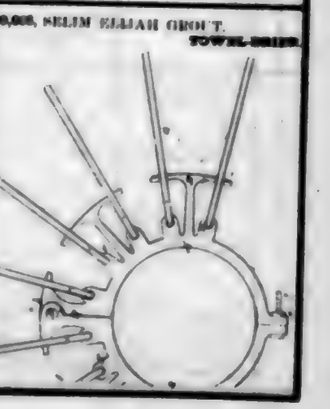












ILLUSTRATIONS OF PATENTS

ISSUED FEBRUARY 8, 1870.

A. C. HALLAM, JAMES W. McKEE. SPINNING-POWER.

CHARLES B. HOWE. TWISTING-TUBES FOR SPINNING.

DANIEL G. HOWELL. EXTENSIBLE ADVERTISING-FRAME.

D. G. HOWELL'S ADVERTISER

50 BU. CLOVER SEED FOR SALE

CASH PAID FOR OATS

FARM FOR SALE

WM. H. IVENS. DOUBLE-ACTING PUMPS.

WM. H. IVENS. DOUBLE CYLINDER FORCE-PUMPS.

ALBERT JEFFERS. MACHINE FOR MOULDING, ROUNDING CHANNELLING AND STAMP-ING SOLES OF BOOTS AND SHOES.

ASA JOHNSON. METHOD OF FORMING TEETH ON ROLLERS.

ASA JOHNSON. MACHINERY FOR CORRUGATING AND MOULDING SHEET-METAL.

JESSE JOHNSON. POWER WASHING-MACHINE.

CHARLES A. JOYCE. CROSS-HEAD CUTTER.

JOHN C. LOVE. VAPOR-BURNER.

JOHN M. MARLIN. CARTRIDGE-SHELL EXTRACTOR.

ROBERT W. McCLELLAND. CARRIAGE WHEEL.

WM. L. McDOWELL. REGISTER FOR AIR-FLUES.

JOHN C. MILLER. REVOLVING FIRE-ARMS.

DANIEL MOORE. OVENS.

C. K. MYERS. HARVESTER-CUTTERS.

NATHAN NORRIS, CHARLES S. BLACK, HORACE S. BLACK. WOOD-TURNING LATHE.

WM. B. OATLEY. STOVE-LIDS.

T. C. PAGE, GEO. W. HADLEY. CALIPERS.

SOLOMON HAVERMALE. SHIPPING AND UNSHIPPING HOOKS.

WILLIAM HOOPER. WRITING-DESK.

WILLIAM J. HOOPER, THEODORE HOOPER, ASSIGNORS TO OLIVER LUCAS. FOR DRYING FISH AND OTHER SUBSTANCES.

JOHN H. HUDDELL. WASH-BOARD.

WM. W. HUDDELL. SMELTING AND REFINING IRON.

ISAAC N. HUNTSMAN. RAILWAY-CAR BRAKE.

WALTER HYDE. ELEVATED RAILWAY.

CHARLES F. PALMER.
MACHINE FOR PACKING COTTON AND OTHER WASTE

ALONZO FOSTER.
LOOMS

JOHN P. RADLEY.

FRANCIS DRAKE, A. PELABON.
HAT-SIZING MACHINES

J. E. RANCH.
SCAFFOLD AND LADDER

DAN PERRY.

EDWARD REGAN.
PLANKING APPARATUS

JOSHUA PIERPONT.
DEVICE FOR SECURING SHOVELS AND PLOW-BEAMS TO STANDARDS

WILLIAM J. RICHARDS.
FERDINAND M. SOPER.
JOSEPH H. RICHARDS.
STRINGING AND TUNING PIANO-FORTES

DANIEL FOREHOT.
WILLIAM FOREHOT.

HAYNES L. RICHARDSON.
SPLINT FOR FRACTURE OF CLAVICLE

JOHN T. ROBINETT.
PUMPING-ENGINE

BENOIT BOUX.
AUGER GATE-HINGES

PHILANDER O. SABINS.

JOSEPH SEEBERGER.

GEO. SEWELL.
HOSE-COUPLINGS

THOMAS J. SHANNON.

AMENZO SHAVER.
LIFTING-JACKS

DANIEL SHERWOOD.
FOAMS-RACK

HENRY SHIRK.
TYRUS SHIRK.

JOHN W. X. SMITH.

WM. H. SMITH.
CARTRIDGES

D. E. SOMER.
DEVICE FOR VENTILATING AND COOLING OR WARMING BEDS

ALBERT H. SPENCER.
LOCOMOTIVE-SMOKE LOADER

CHAS. F. SPENCER.
BUTTON-FASTENERS FOR SHOES

J. H. STONE.
WATER-COOLER

DAVID STUART.
LEWIS BRIDGE.
FURNACE FOR FIRE-PLACE HEATERS

D. P. SWEET.
AUTOMATIC WATER CUT-OFFS

JOSEPH A. TATRO.
PROCESS OF TREATING PETROLEUM.

NATHAN THOMPSON.
NUTS FOR SCREW-BOLTS

JOSEPH TRENT.
DRAUGHT-BAR FOR HORSE-CARS

CHARLES M. TRIPP.
CLIP FOR HARNESS.

MAHLON P. TURNER.
STREET RAILWAY CAR.

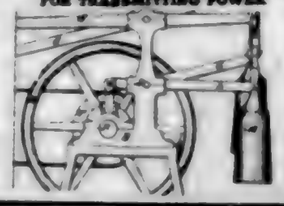
THOS. GEO. WALKER.
DANIEL S. YOUNG.
REMOVING VOLATILE MATTER FROM PEAT AND OTHER MATERIALS

BENJAMIN WIELAND.
WATER-ELEVATORS.

SALMON W. WILDER.
CLEANSING PAPER, WHEN REDUCED TO PULP, FROM COLORING MATTERS.

WILLIAM WILSH.
SAFETY-BOX FOR BANK POSTERS.

90,737, BLASIUS WILLIAMS. APPARATUS FOR TRANSMITTING POWER.



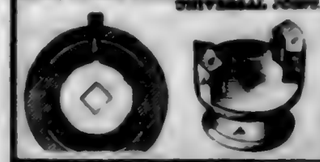
90,738, HENRY WURTZ. ARTIFICIAL FUEL.

90,739, HENRY WURTZ. COMPOSITION FOR MOULDINGS, PICTURE-FRAMES.

90,740, HENRY WURTZ. PREPARING ARSENIOUS GRAHAMITE.

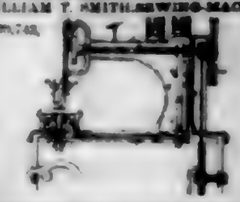
90,741, HENRY WURTZ. CHEMICAL PRODUCT CALLED FUSED OR ARSENIOUS GRAHAMITE.

90,742, ANTON ZWIEBEL. UNIVERSAL JOINT.

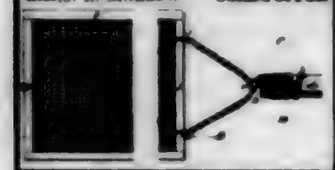


WILLIAM T. SMITH. SEWING-MACHINES.

90,744.



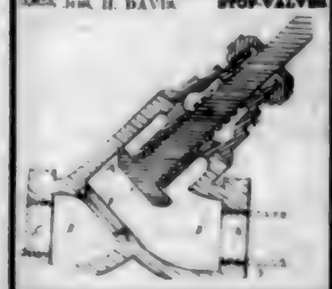
3,925, J. H. BIGELOW. CORN-POPPER.



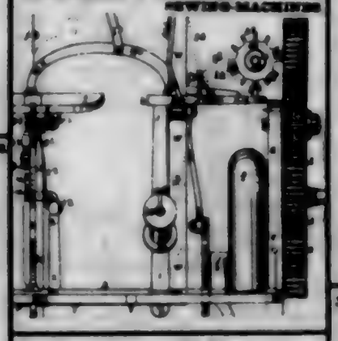
3,926, GEO. T. CHAPMAN. [illegible]



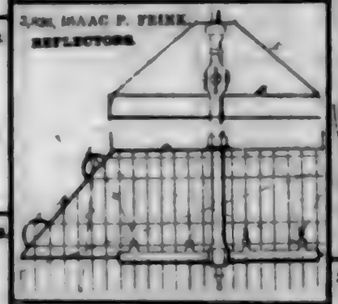
3,927, JOS. H. DAVIS. STOP-VALVES.



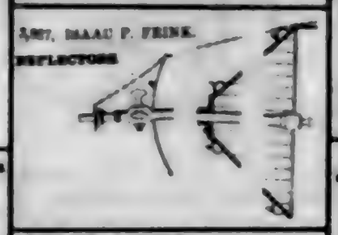
3,928, CHARLES L. DULANEY. SEWING-MACHINES.



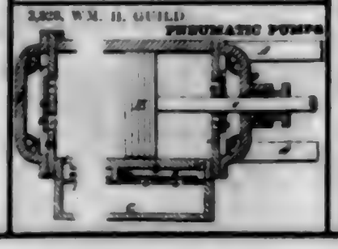
3,929, ISAAC P. FRINK. REFLECTORS.



3,930, ISAAC P. FRINK. REFLECTORS.



3,931, WM. H. GUILD. PNEUMATIC PUMPS.



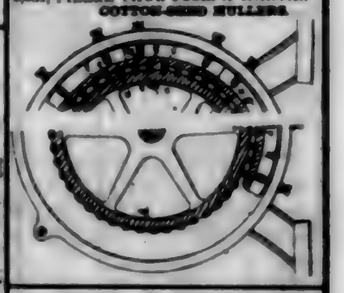
3,932, B. A. HILL. BRANCH STOP-COCKS FOR MAINS.



3,933, C. B. HUTCHINSON. MACHINE FOR GRINDING AND POLISHING APPLES, GRAPES, &c.



3,934, PIERRE PAUL JOSEPH MARTIN. COTTON-SEED HULLERS.



3,935, L. A. SALMON. [illegible] TOOL-RACKS.



3,936, [illegible]

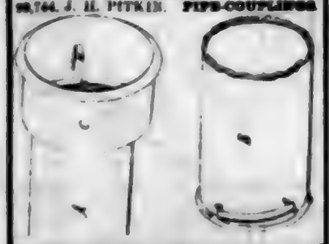


3,937, JOHN [illegible]

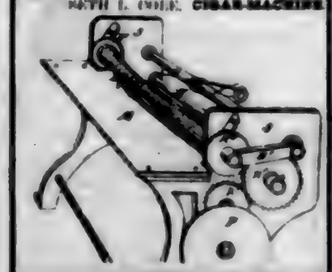


ILLUSTRATIONS OF PATENTS
ISSUED FROM
THE UNITED STATES PATENT OFFICE
FEBRUARY 15, 1870.

WM. D. ALFORD.
90,744, J. H. PITKIN. PIPE-COUPLINGS.



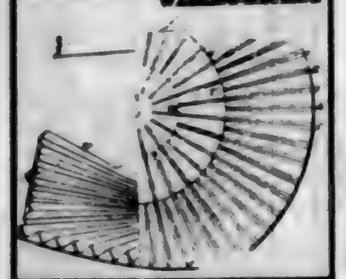
90,745, WM. G. AYRES.
SETH L. ODLE. CIGAR-MACHINE.



90,746, ROBT. BAYOX. CARPET.



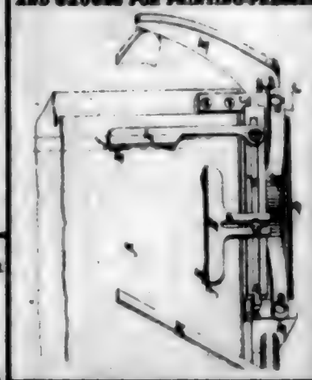
90,747, FORTUNE L. BAILEY. WASHING-MACHINE.



90,748, JAS. L. BAIRD. FIRE-PLACE BACK.



90,749, HENRY BARTH. GRIPPERS AND GAUGES FOR PRINTING-PRESSES.



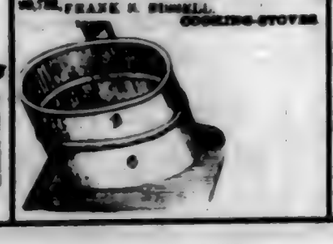
90,750, HARLEN BARTON. FRAME FOR DYEING IN VARIOUS COLORS FOR MANUFACTURE OF SCOTCH PLAIDS, &c.



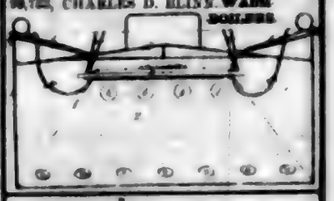
90,751, JOSEPH BELL. GOVERNORS FOR STEAM AND OTHER ENGINES.



90,752, FRANK H. [illegible] COOKING-STOVES.



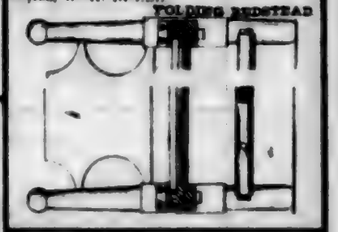
90,753, CHARLES D. BLINN. WASH-BOILERS.



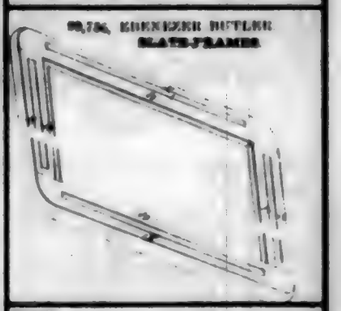
90,754, GAYDEN BROOKS, Jr. AIR-PISTOL.



90,755, W. H. BUELL. FOLDING BEDSTEAD.

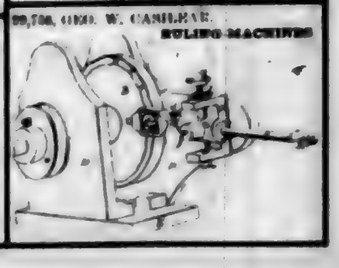


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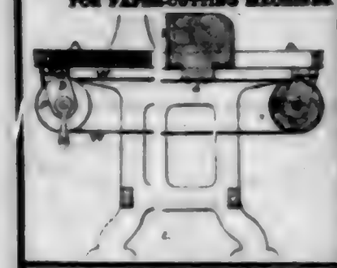


90,757, GEO. W. CAMLEAR. BANK NOTES, BONDS, REVENUE STAMPS.

90,758, GEO. W. CAMLEAR. RULING-MACHINES.



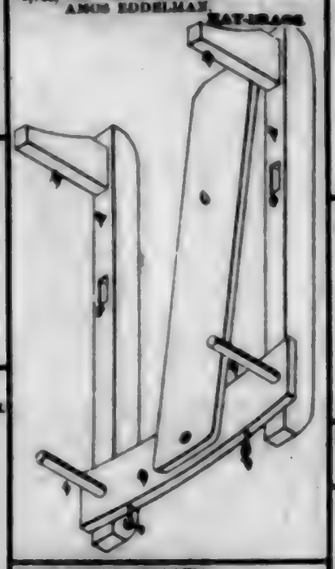
90,759, CYRIL C. CHILD, GAUGES FOR PAPER-CUTTING MACHINES.



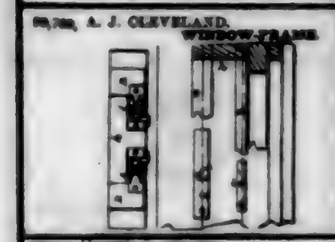
90,760, CHARLES H. DUNKS, SPRING-SEED BOTTOM.



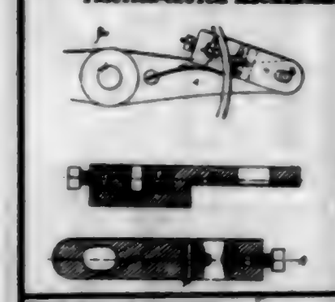
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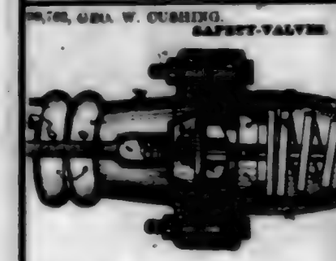
90,762, A. J. CLEVELAND, WINDOW-FRAME.



90,763, MOSES G. CRANE, A. M. POLSKY, FRICTION-CLUTCH MECHANISM.



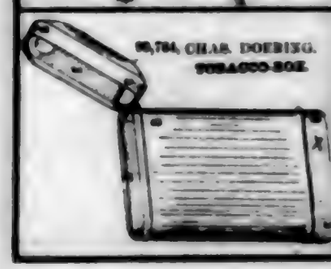
90,764, GEO. W. CUSHING, SAFETY-VALVE.



90,765, W. H. DANIELS, FRUIT JAR.



90,766, CHAS. DOERING, TOBACCO-BOX.



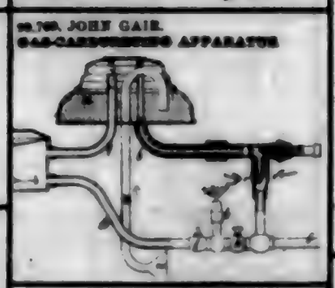
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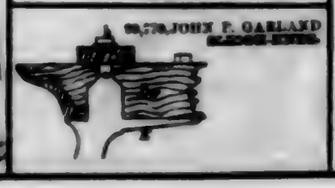
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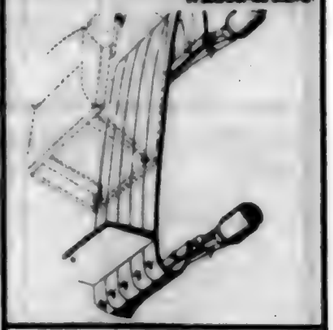
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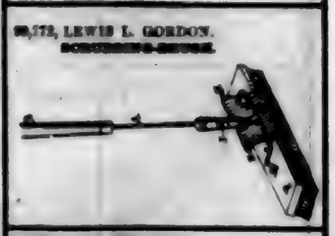
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90,771, LEWIS L. GORDON, WAGON-SPRING.

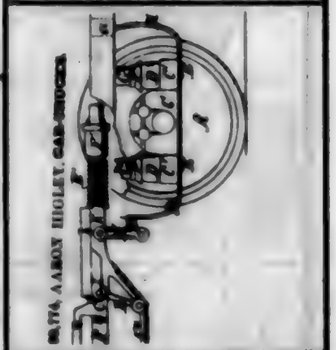


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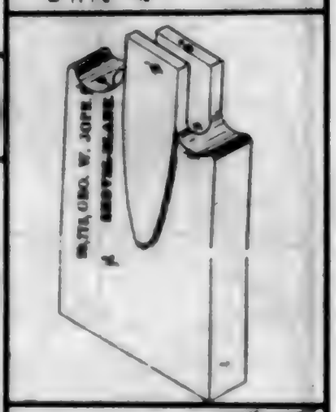


90,773, CARL GÜNTHER, PROCESS AND MATERIAL FOR ORNAMENTING TEXTILE FABRICS.

90,774, AARON HOLLEY, CAR-BRIDGE.



90,775, GEO. W. JOY, RESTRAINER.



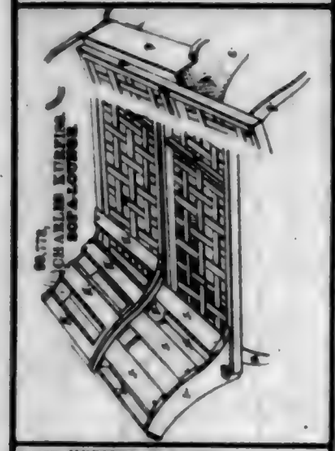
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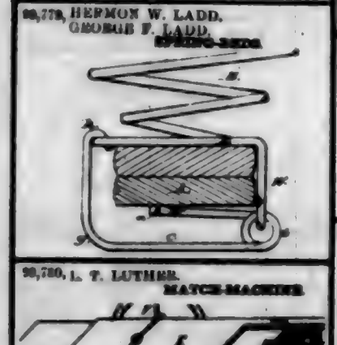
90,777, OLIVER KELLA, METALLIC STARTS.



90,778, CHARLES KURTZ, SOFA-LOUNGE.



90,779, HERMON W. LADD, GEORGE F. LADD, SPRING-SEAT.



90,780, L. T. LUTHER, MATCH-MACHINE.



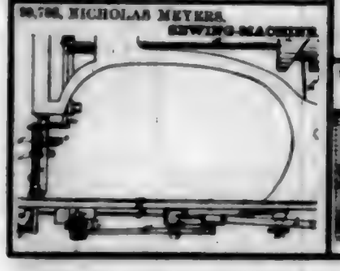
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90,782, SCHAUMORITZ MOSCHCOWITZ, APPARATUS FOR FRINGING CLOTH.



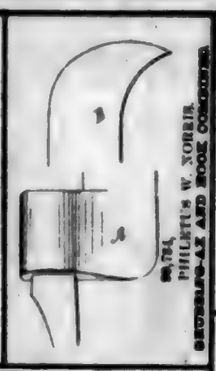
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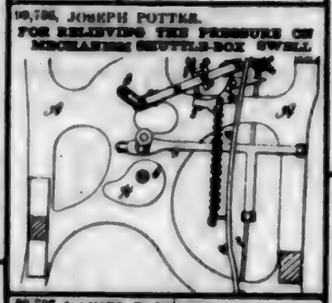
90,784, ELIAS G. LEET, PASTURING HARNESS TO CUTTERS.



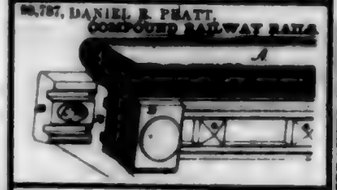
90,785, PHILETUS W. NORRIS, SECURING AXE AND HOOE CONCERN.



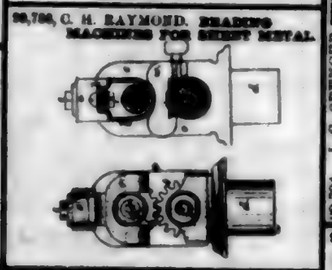
90,786, JOSEPH POTTER, FOR RELIEVING THE PRESSURE ON MECHANISM SHUTTLE-BOX SWELL.



90,787, DANIEL R. PRATT, CORD-GUARD RAILWAY RAILS.



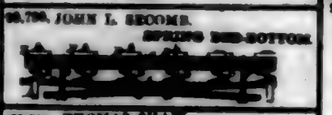
90,788, C. H. RAYMOND, BEADING MACHINES FOR SHEET METAL.



90,789, PATRICK SCANLAN, OIL-CANS.



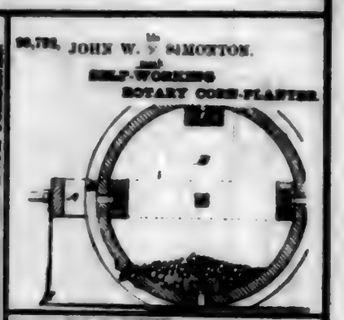
90,790, JOHN L. SECOMB, SPRING SIDE-BOTTOM.



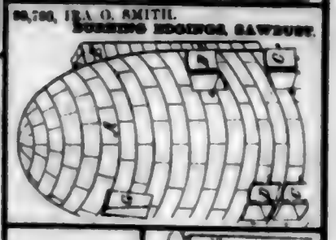
90,791, THOMAS SHAW, COMPOUND PROPELLER PUMPS.



90,792, JOHN W. & SIMONTON, SELF-WORKING ROTARY CORN-PLANTER.



90,793, IRA O. SMITH, BURNING HOOPING, SAWDUST.



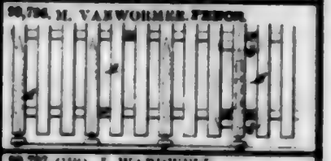
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90,795, CHARLES F. STEWART, LOOP FOR MAKING STRAP.



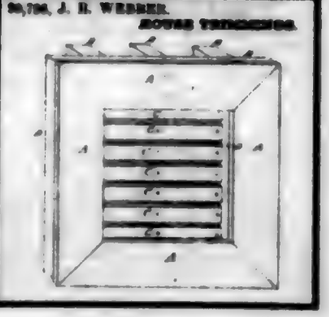
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90,797, GEO. J. WARDWELL, HARVESTER KNIVES.



90,798, J. R. WEBBER, HOUSE TRIMMING.

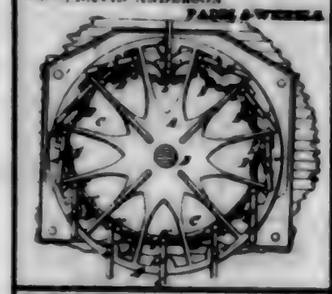


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90,800, J. A. ADAMS.
MODE OF COVERING MOLDS AND OTHER ARTICLES WITH A METALLIC SURFACE.

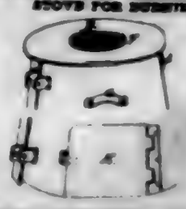
90,801, DAVID ANDERSON.
PADDLE-WHEELS.



90,802, PEREGRINE WHITE.
LUBRICATOR FOR BEARINGS OF SHAFTS.



90,803, HENDERSON WILLARD.
STOVE FOR BURNING STUMPS.



90,804, GEO. G. WISANS.
ELEVATING APPARATUS.



90,805, EDWARD J. WORCESTER.
DRILLING-MACHINE.



90,806, W. H. YOUNG.
FARE-BOXES FOR STREET-CARS.

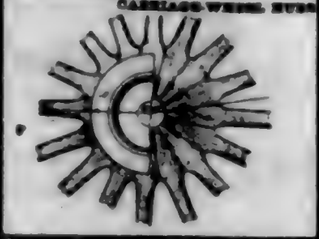


90,807, JOHN ADSTERDAM. PROCESS OF WELDING CAST OR REMELTED STEEL.

90,808, MOSES L. ANDREW.
PLANING-MACHINES.



90,809, SIMEON ATHA.
CARRIAGE-WHEEL HUBS.



90,810, LORING ATWOOD.
EDWARD RIPLEY.
WOOD-TURNING LATHE.



90,811, JACOB M. AUSTIN.
SOAP MIXTURE.

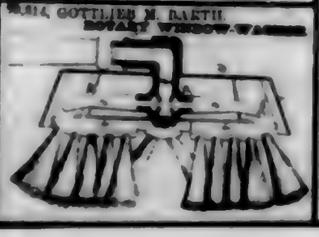
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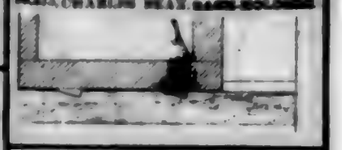
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SPRING FOR RAILWAY-CARS.



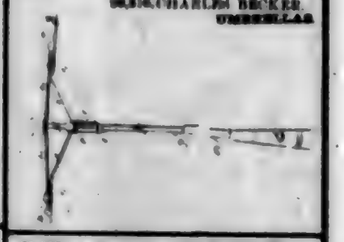
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ROTARY WINDOW-WASHER.



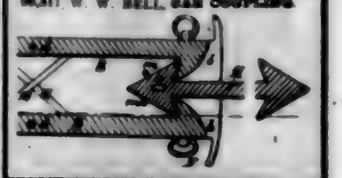
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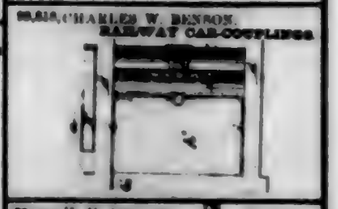
90,816, CHARLES BECKER.
UMBRELLAS.



90,817, W. W. BELL. CAR COUPLING.



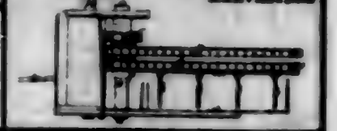
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RAILWAY CAR-COUPLINGS.



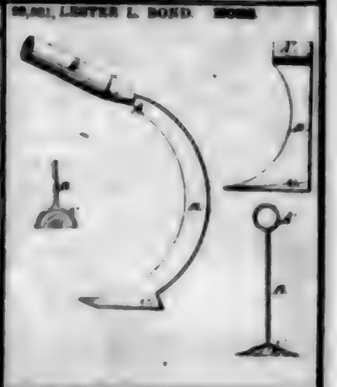
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E. H. KELLOGG.
C. A. PERATINE.
CHURNS.



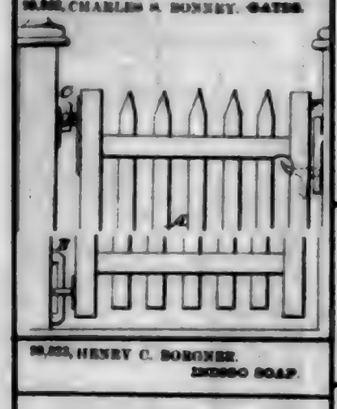
90,820, SAMUEL M. BINGMAN.
CORRUGATED IRON, AND RAKE FOR HARVESTING.



90,821, LESTER L. BOND. HOES.

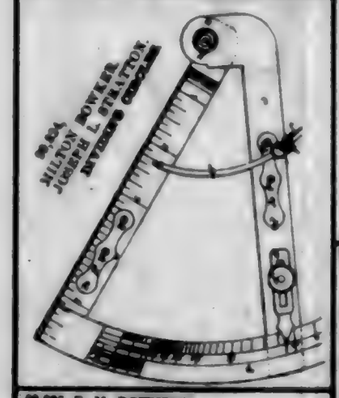


90,822, CHARLES S. BONNEY. GATES.

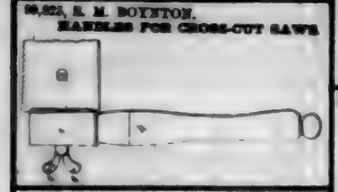


90,823, HENRY C. BORGNER.
INDIGO SOAP.

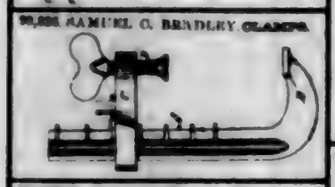
90,824, MILTON POWER,
JOSEPH L. STANTON.
BRIDGE CHECK.



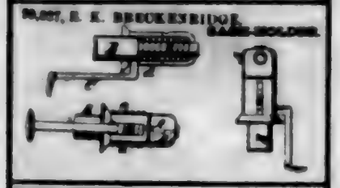
90,825, E. M. BOYNTON.
HANDLES FOR CROSS-CUT SAWS.



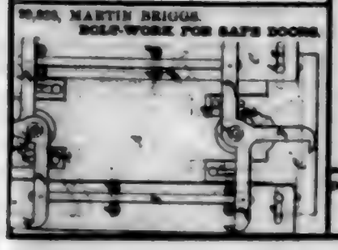
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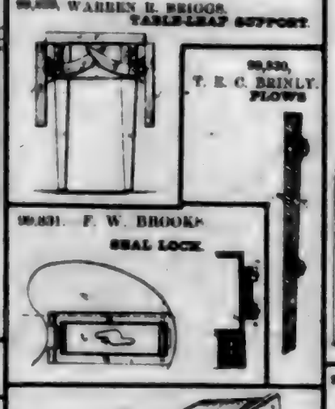
90,827, E. K. BRECKENRIDGE.
RAIL-BOLDER.



90,828, MARTIN BRIGGS.
BOLT-WORK FOR SAFE DOORS.

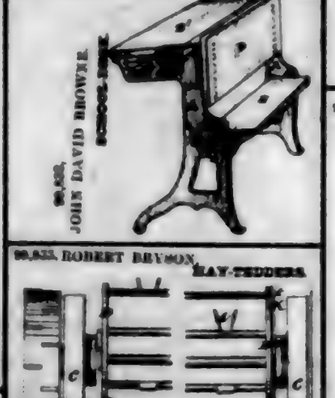


90,829, WARREN R. BRIGGS.
TABLE-LEAF SUPPORT.



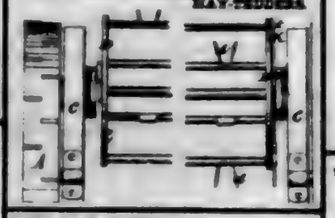
90,830, T. E. C. BRINLY.
PLOWS.

90,831, F. W. BROOKS.
SEAL LOCK.



90,832, JOHN DAVID BROWNE.

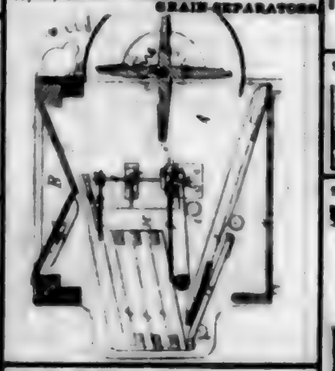
90,833, ROBERT BRYSON.
HAY-TEDDERS.



90,834, H. H. BUCHANAN.
BRIDLE.



90,835, HIRAM BURDICK.
GRAIN-SEPARATORS.

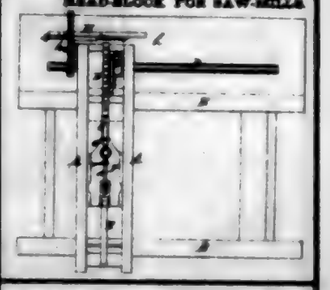


90,836, O. S. BURGER, Jr.
WASHING-MACHINE.

90,837, THOMAS BURGIN.
CURTAIN-FIXTURE.



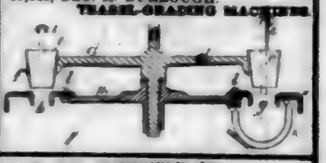
90,838, JOHN H. BURKET.
GEORGE BURKET.
HEAD-BLOCK FOR SAW-MILLS.



90,839, W. H. BURNS.
BOILER FURNACES AND FLUES.



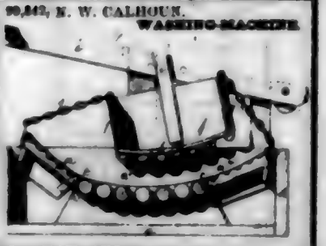
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TEASEL-GRADING MACHINE.



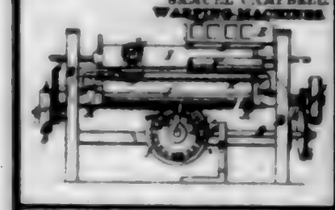
90,841, S. B. BUSHFIELD, Jr.
SLATE-FRAMES.



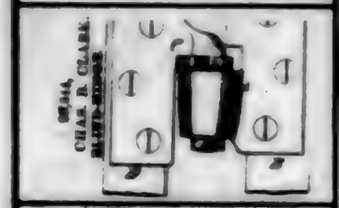
90,842, N. W. CALHOUN.
WASHING-MACHINE.



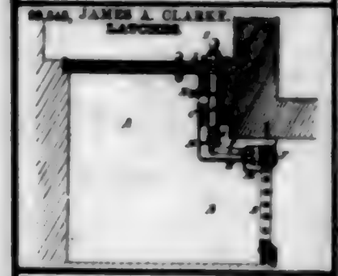
99,843. DUNCAN McFARLANE, SAMUEL CAMPBELL. WARPING-MACHINE.



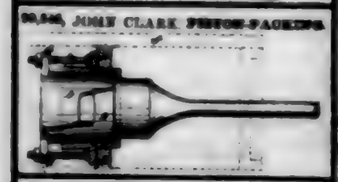
99,844. CHAS. B. CLARK. BLIND-HINGE.



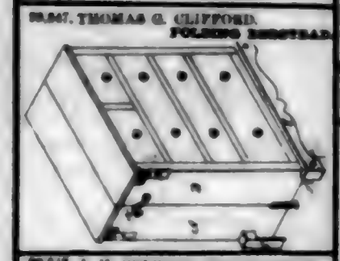
99,845. JAMES A. CLARKE. LASTING.



99,846. JOHN CLARK. PISTON-PACKING.



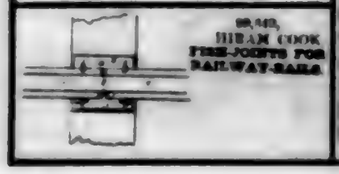
99,847. THOMAS G. CLIFFORD. FOLDING BEDSTEAD.



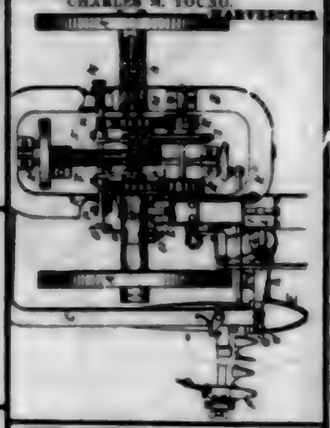
99,848. J. H. COLE. DIE AND PLUNGER.



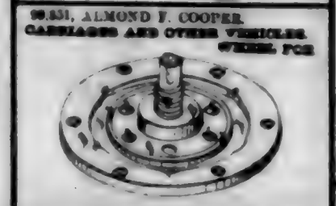
99,849. HIRAM COOK. FISH-JOINTS FOR RAILWAY-BARS.



99,850. GRANT T. COOLMAN, CHARLES M. YOUNG. HARVESTERS.



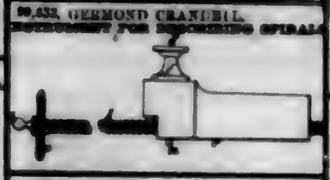
99,851. ALMOND F. COOPER. CARRIAGES AND OTHER VEHICLES. WHEEL FOR.



99,852. RICHARD D. COX. BRICK-KILN.



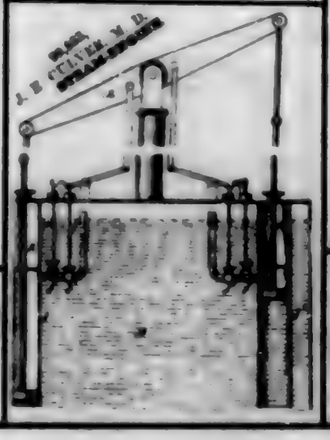
99,853. GERMOND CRANEBIL. INSTRUMENT FOR DESCRIBING SPIRALS.



99,854. JOHN D. CROCKER. PICTURE-FRAME FASTENING.



99,855. J. B. CRAVEN, JR. STEAM-ENGINE.

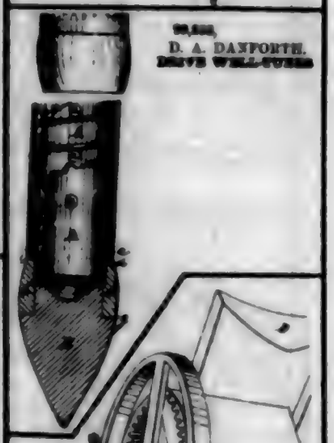


99,856. THOMAS H. CURREY. IMPROVED PAINT.

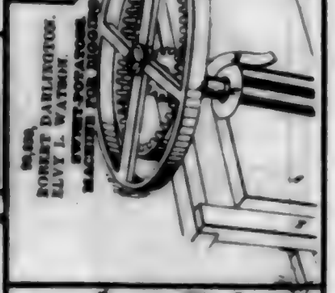
99,857. JOHN S. DAGGETT. TO FLOORS OF RAILROAD-CARS. DEVICE FOR ATTACHING SEATBOARDS.



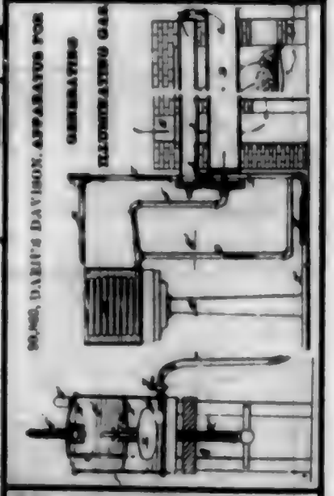
99,858. D. A. DANFORTH. DRIVE WELL-TUBES.



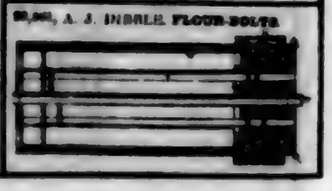
99,859. ROBERT DARLINGTON, ELVY L. WATSON. [illegible]



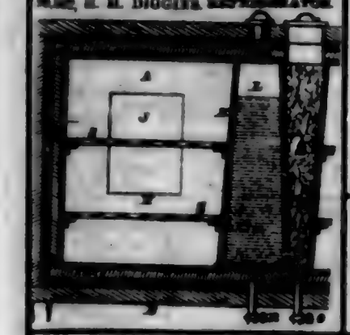
99,860. DARIUS DAVISON. APPARATUS FOR GENERATING GAS FOR ILLUMINATING PURPOSES.



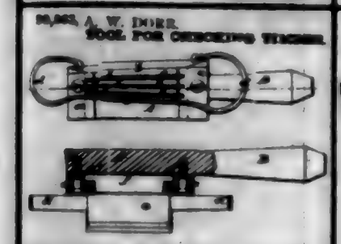
99,861. A. J. DEBOLT. FLOOR-BOLTS.



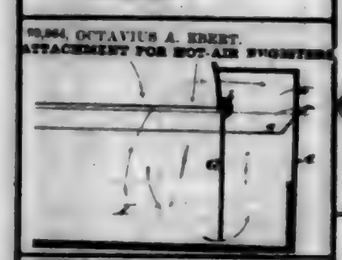
99,862. H. M. DIGGLES. REFRIGERATOR.



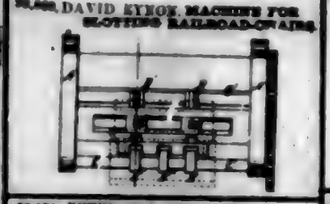
99,863. A. W. DORR. HOOK FOR CHECKING TRACES.



99,864. OCTAVIUS A. EBERT. ATTACHMENT FOR HOT-AIR FURNACES.



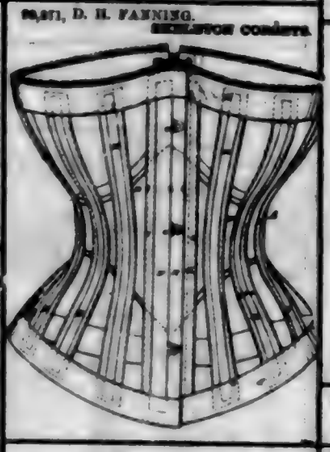
99,865. DAVID EYNON. MACHINE FOR MORTISING RAILROAD-CHAIRS.



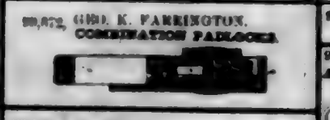
99,866. PETER FALARDO, GEO. H. SNOW. HAND CLOTHES-WASHER.



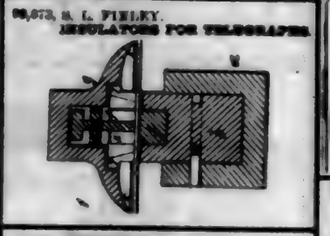
99,867. D. H. FANNING. SKELETON CORSETS.



99,868. GEO. K. FARRINGTON. COMBINATION PARLOCKS.



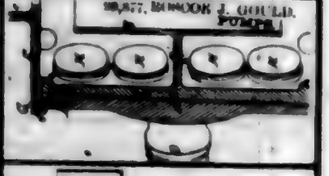
99,869. H. L. FINLEY. INSULATORS FOR TELEGRAPHS.



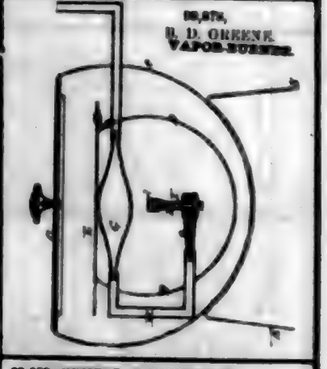
99,870. R. H. GILBERT. BLOWING APPARATUS.



99,871. BUNKER J. GOULD. PUMPS.

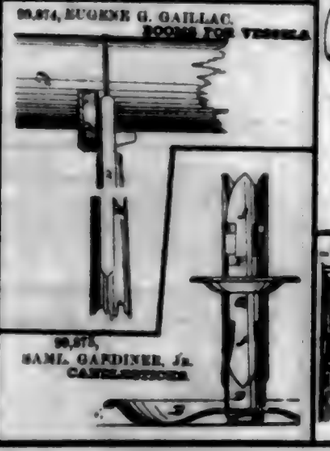


99,872. B. D. GREENE. VAPOR-BURNER.



99,873. ERNEST GREENFIELD. MANUFACTURE OF LOZENGES AND CONFECTIONERY.

99,874. EUGENE G. GAILLAC. BOOTS FOR VESSELS.

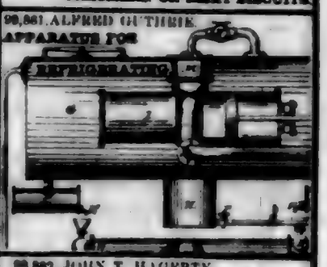


99,875. SAML. GARDINER, Jr. CANE-SOCKET.

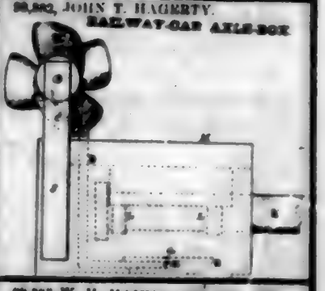


99,876. ERNEST GREENFIELD. CRACKERS OR MEAT BISCUITS.

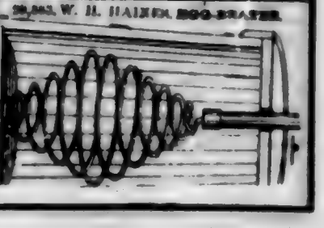
99,877. ALFRED GUTHRIE. APPARATUS FOR REFRIGERATING.

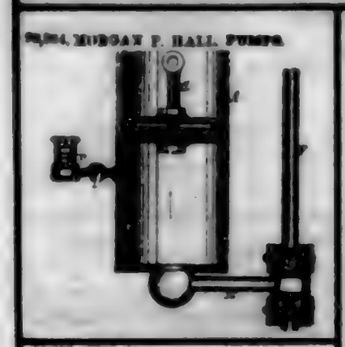


99,878. JOHN T. HAGERTY. RAILWAY-CAR AXLE-BOX.

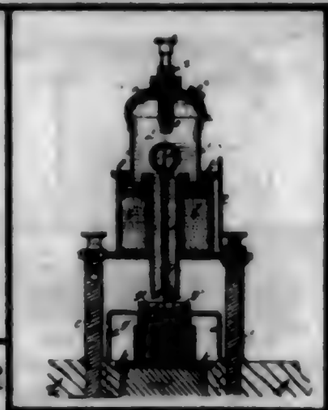


99,879. W. H. HAINES. EGG-BEATER.



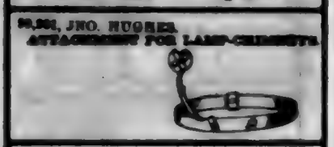


MORGAN P. HALL. PUMPS.

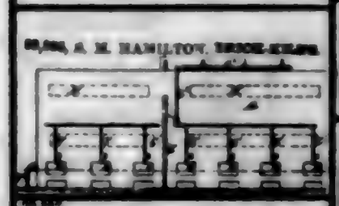




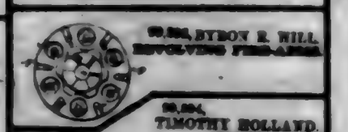
W. T. HOWARD.
OLIVER REEDER.



JNO. HUGHES.



A. M. HAMILTON. BRICK-KILNS.



BYRON E. HILL.



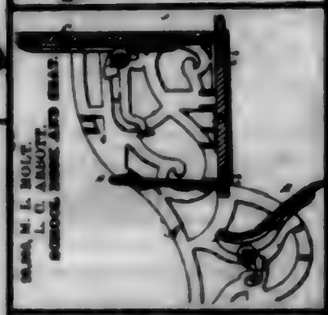
TIMOTHY HOLLAND.



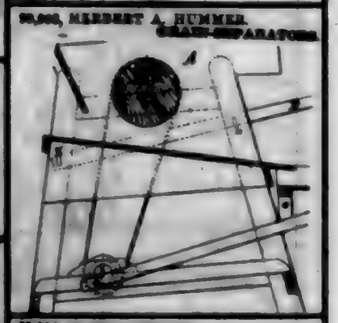
EDWIN JAMES HULBERT.
E. AUBIN.

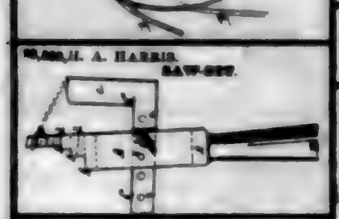


A. M. HAMILTON.

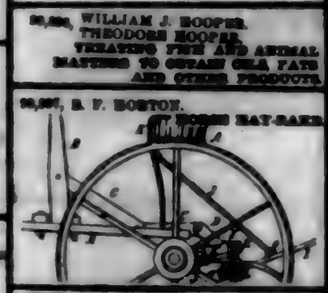


HERBERT A. HUMMER.





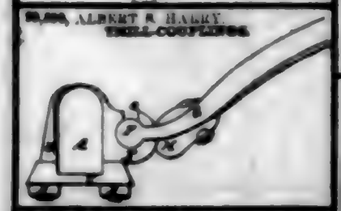
H. A. HARRIS.



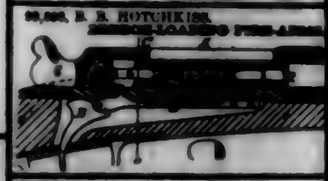
WILLIAM J. HOOPER.
THEODORE HOOPER.



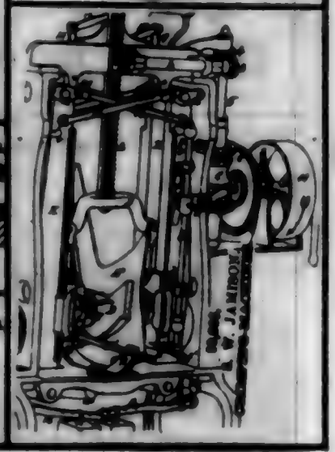
GEORGE H. JACKSON.



ALBERT S. HARRY.



E. B. HOTCHKISS.

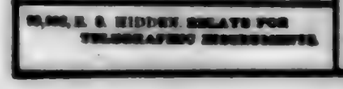




T. S. HATTERSLEY.

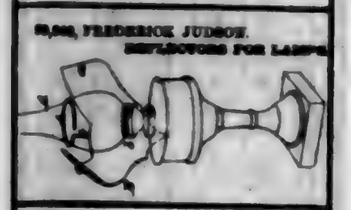


E. B. HOTCHKISS.

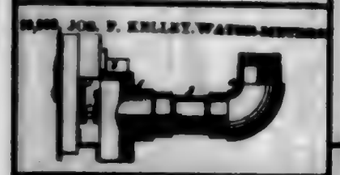


E. S. HIDDEN.

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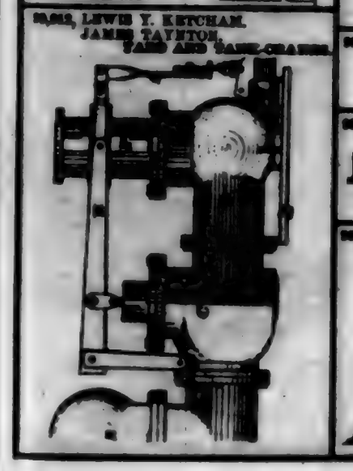
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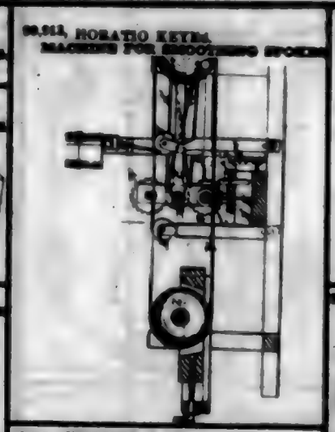
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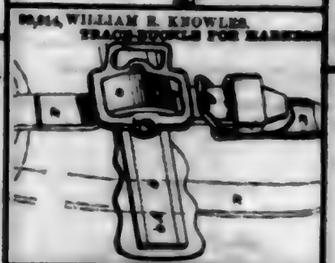
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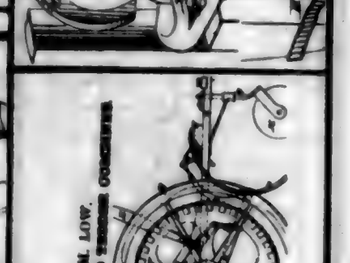
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CYRUS LITTLE.



WILLIAM B. KNOWLES.



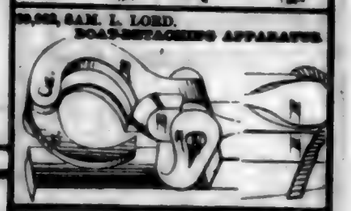
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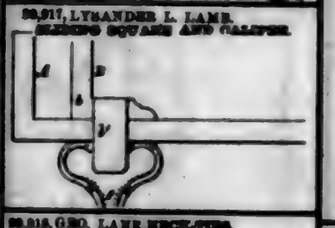
JOHN G. KRICHBAUM.



SAM. I. LORD.



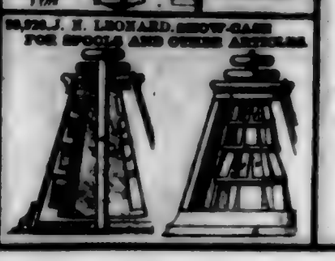
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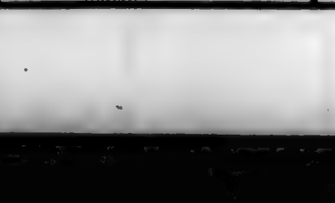
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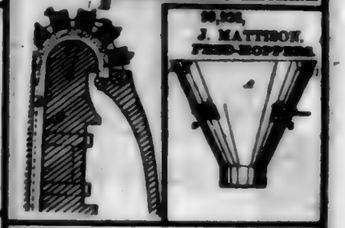
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M. LANGMORE.



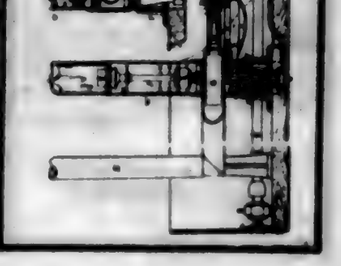
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ORAZIO LUGO.



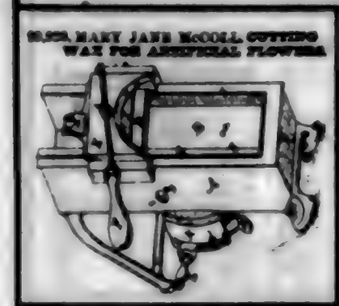
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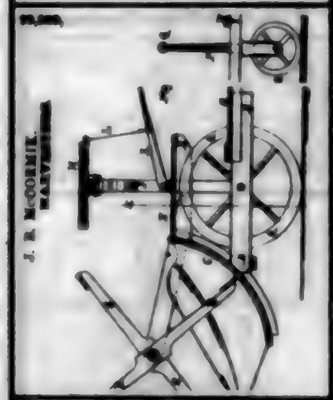
J. MATTISON.



HIRAM S. MAXIM.



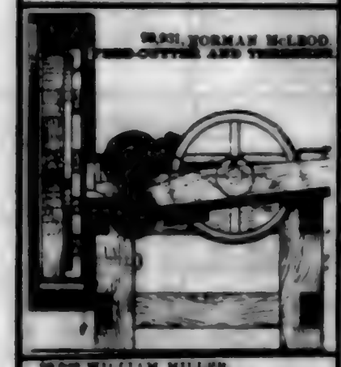
MARY JANE McCOLL. CUTTING WAX FOR ARTIFICIAL FLOWERS.



J. R. McCORMICK. REAPING-MACHINE.



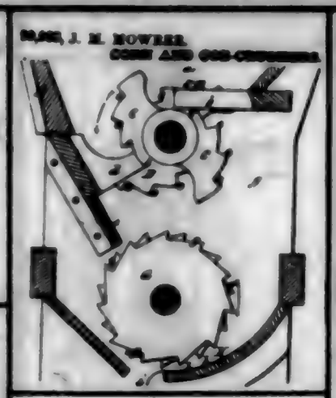
THOS. J. McHART. ARTIFICIAL CORNICE.



NORMAN McLEOD. CUTTER AND THRESHER.



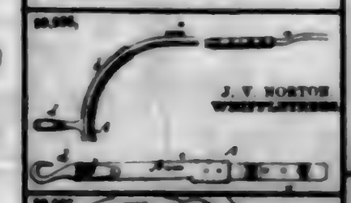
WILLIAM MILLER. WEATHER-STRIP.



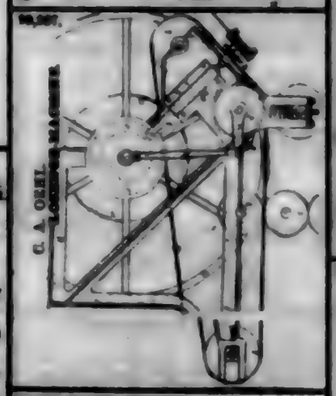
J. M. MOWER. CORN AND COB-CRUSHER.

C. MUIR. STOVE LINING AND FIRE BRICK.

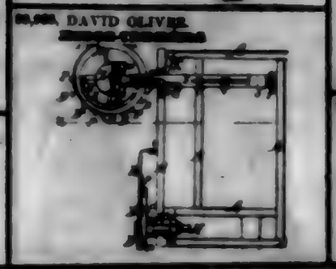
J. MURPHY. MANUFACTURE OF INDIA RUBBER AND GUTTA PERCHA GOODS.



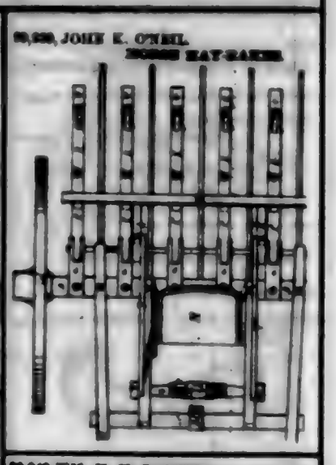
J. V. NORTON. WHIFFLETREES.



C. A. OSEL. LOOM FOR CARPET-WEAVING.



DAVID OLIVER. HORSE-CHECK.



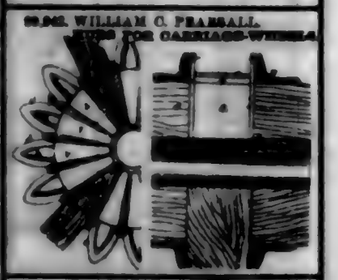
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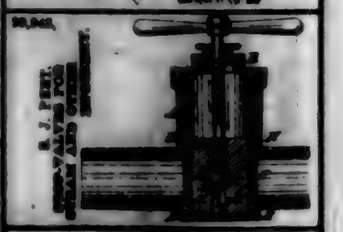
WM. H. H. PALMER. SHUTTLE-MACHINE.



EDWARD PARKER. SCAFFOLD BRACKETS.



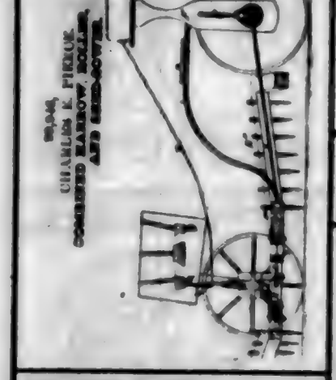
WILLIAM C. PEARSALL. HUB FOR CARRIAGE-WHEELS.



A. J. PERO. STEAM-VALVES FOR STEAM AND OTHER ENGINES.



ANTHONY PEPLE. PREPARING CERTAIN KINDS OF COTTON-WASTE FOR CLEANING MACHINERY.



CHARLES E. PIERCE. COMBINED HARROW AND ROLLER.



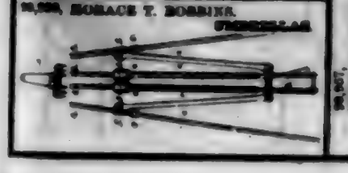
ALMON B. PRESTON. HAY-LOADER.



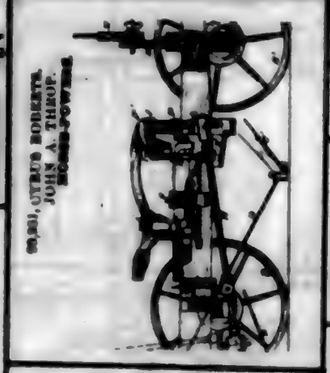
ED. RANDOLPH. RAILWAY-RAIL SPLICE.



DEXTER REYNOLDS. PROCESS AND APPARATUS FOR THE MANUFACTURE OF SALT.

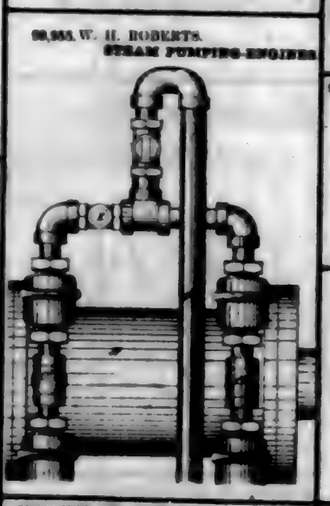


HORACE T. ROBBINS. TURNTABLE.

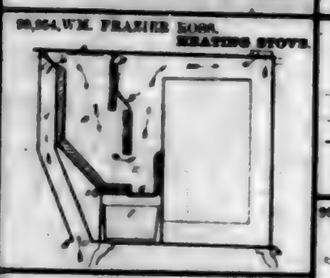


CYRUS ROBERTS, JOHN A. THROP. THRASHING-MACHINE.

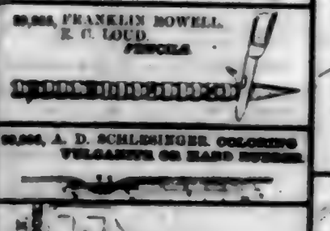
R. J. ROBERTS. PLATED SPRINGS.



W. H. ROBERTS. STEAM PUMPING-ENGINES.



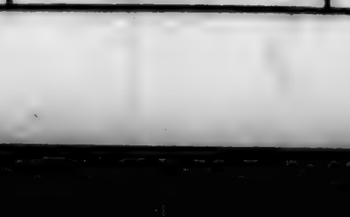
WM. FRAZIER ROSS. HEATING STOVE.



FRANKLIN ROWELL, E. C. LOUD. FENCES.



A. D. SCHLESINGER. COLORING VULCANITE OR HARD RUBBER.



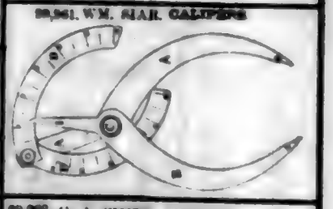
THOMAS SHAW. APPARATUS FOR FORGING METALS.

GEORGE V. SHEFFIELD, JOHN A. SHEFFIELD. MEDICAL COMPOUND.

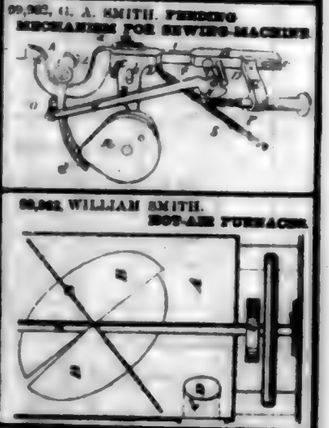
NICHOLS SHELTON. CRUTCH.



WM. SIAR. CALIPERS.



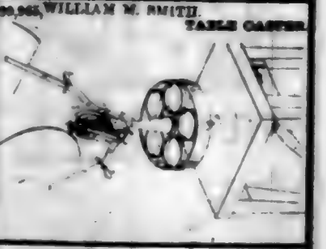
G. A. SMITH. FEEDING MECHANISM FOR SEWING-MACHINE.



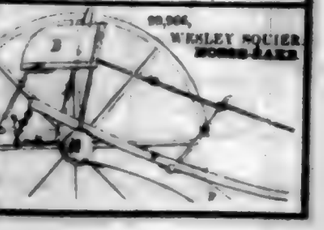
WILLIAM SMITH. BOG-AIR FURNACE.



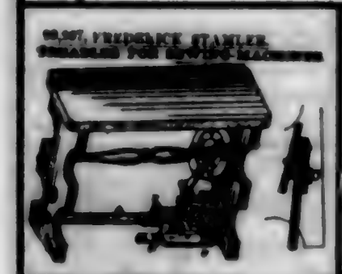
WILLIAM M. SMITH. COTTON-BALE TIES.



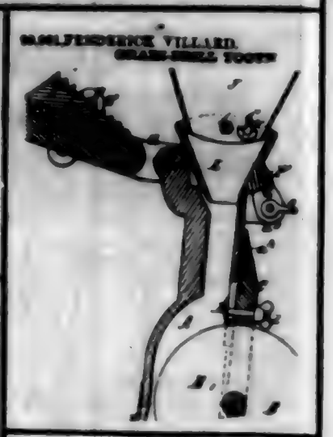
WILLIAM M. SMITH. TABLE CASTER.

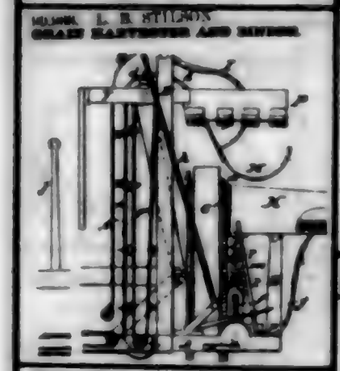


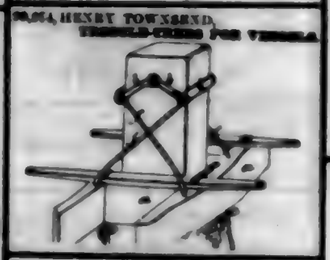
WESLEY SQUIER. HORSE-RAKE.

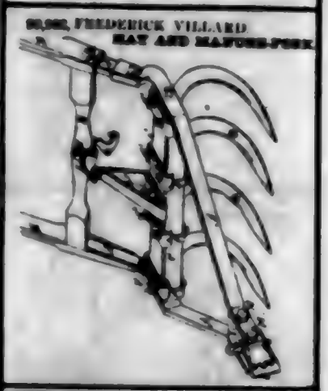


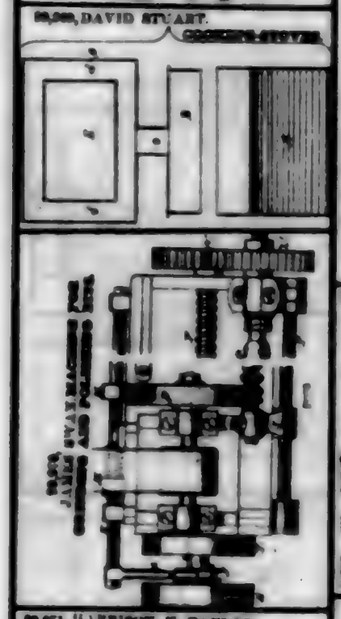


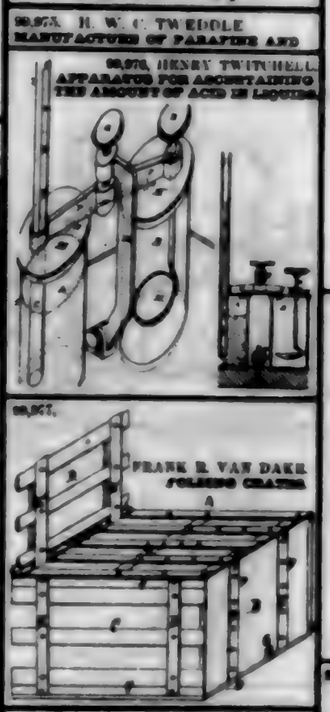


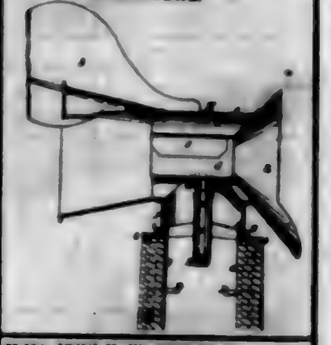


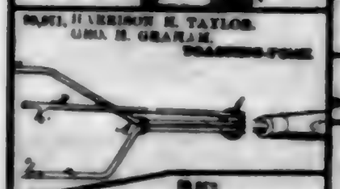












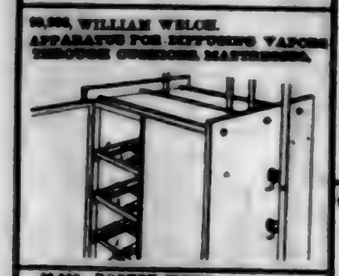


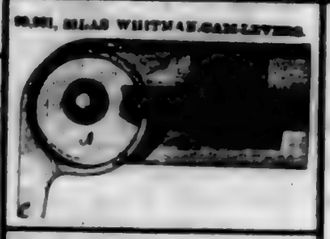


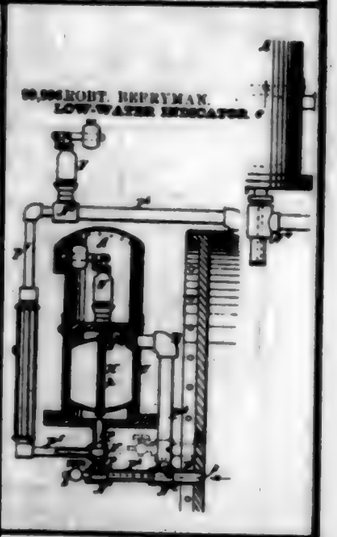


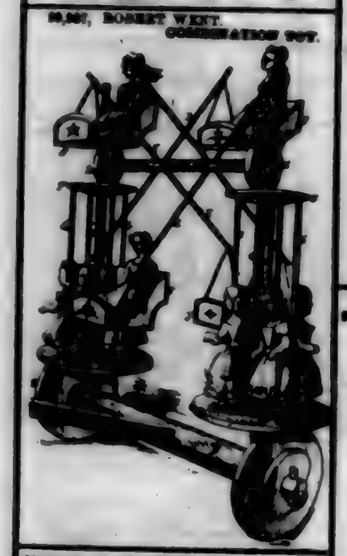


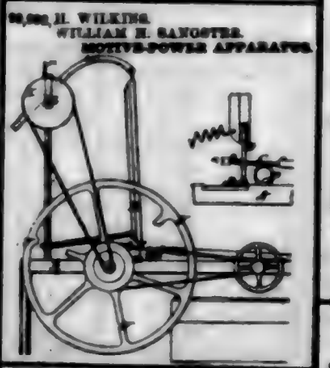






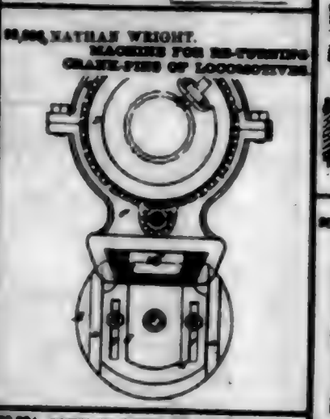


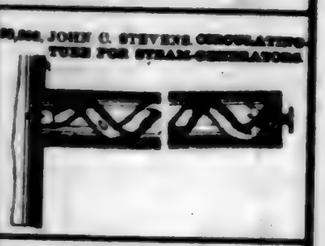


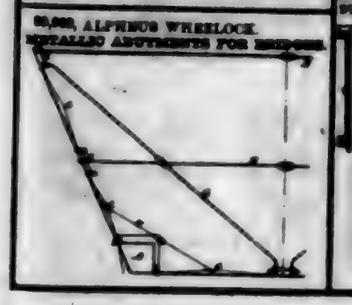


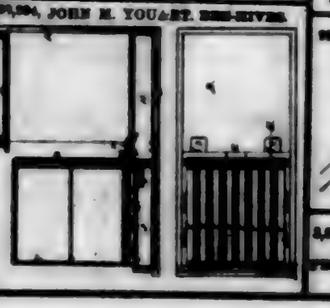












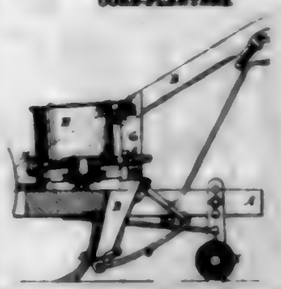




3,835, WM. W. AVERILL.
MANUFACTURE OF CAST-STEEL.

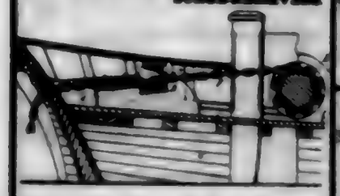


3,836, JAMES CAMPBELL.
WILLIAM CAMPBELL.
CORN-PLANTERS.

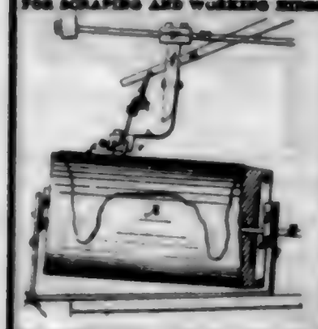


3,837. JOSEPH H. DEACON. ALCOHOLIC LIQUOR FROM THE RHUBARB PLANT.

3,838, J. J. EMERY.
E. E. EMERY.
SUBSOIL-SHOVELS.



3,839, HENRY LAMPERT. APPARATUS FOR SCRAPING AND WORKING HIDES.



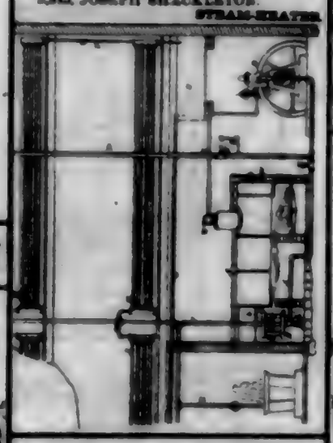
3,840, ORAZIO LUGO.
GUANO FROM FISH.
MANUFACTURE OF FERTILIZERS OR.

3,841, AMOS G. BOGGESS.
LEWIS SHAFFER.
RAILROAD-STATION TELEGRAPHS.

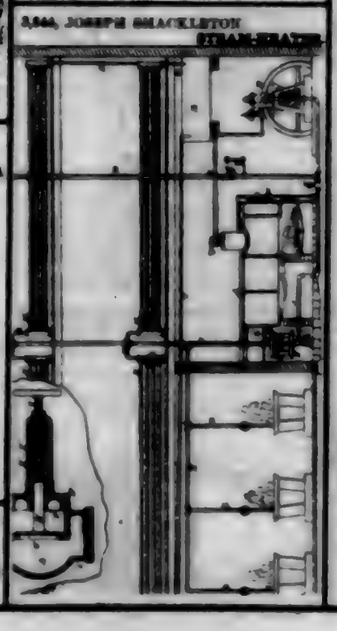


3,842, JUNIUS SCHENCK.
MANUFACTURE OF HOSE TUBING AND OTHER RUBBER FABRICS.

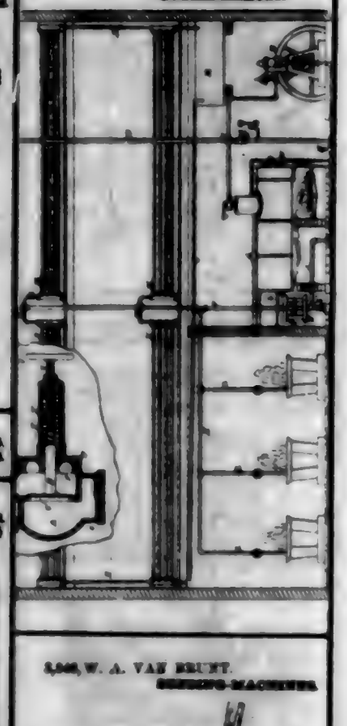
3,843, JOSEPH SHACKLETON.
STEAM-HEATER.



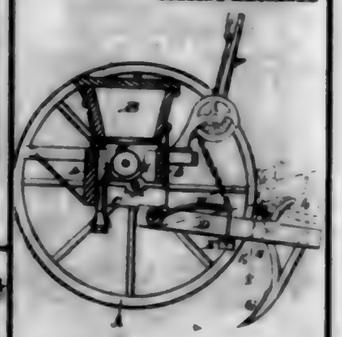
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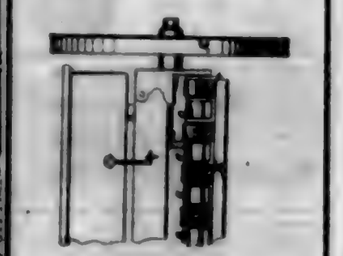


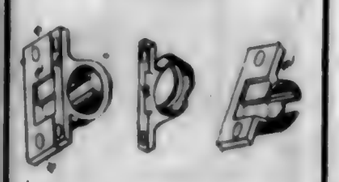
3,843, JOSEPH SHACKLETON.
STEAM-HEATER.



3,845, W. A. VAN BRUNT.
SEEDING-MACHINES.







ILLUSTRATIONS OF PATENTS

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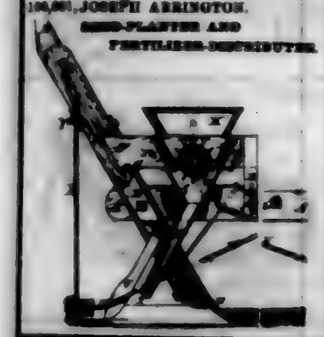
THE UNITED STATES PATENT OFFICE

FEBRUARY 22, 1870.

100,010, JOHN ANDERSON.
SUB-SOILER FOR SCRAPERS.



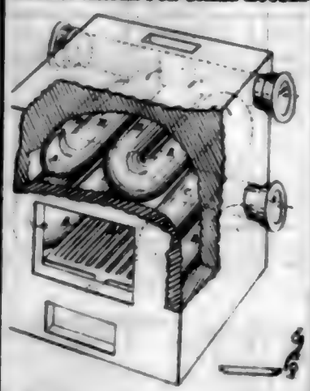
100,011, JOSEPH ARRINGTON.
SEED-PLANTER AND FERTILIZER-DISTRIBUTER.



100,012, A. B. CALDWELL. UMBRELLAS.



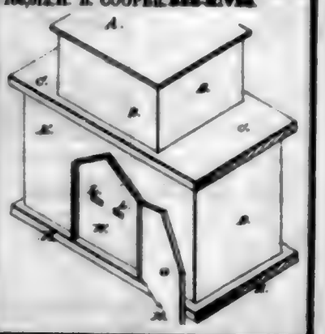
100,013, S. E. CHURDUCK.
WATER-HEATER FOR GRIST-BOXES.



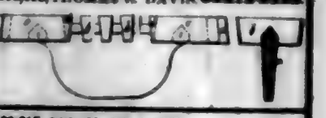
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IMPROVED HEAD-BLOCK.



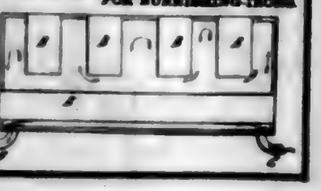
100,015, H. B. COOPER. BEE-HIVES.



100,016, THOMAS S. DAVIS. GRATE-BARS.

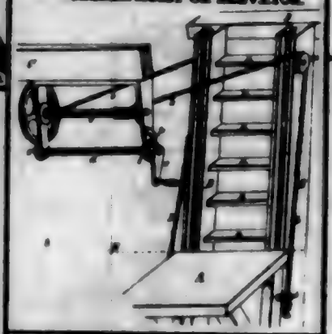


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STEAM-HEATER FOR BURNISHING-IRONS.

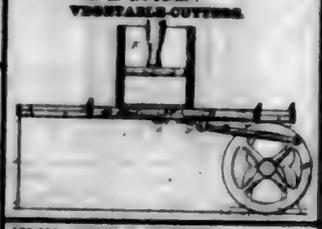


100,009, MARCAR WAHRAM SEYLIKOY.
MANUFACTURE OF WATER-PROOF FABRICS FROM WASTE RUBBER.

100,035, HENRY L. BOWERS.
CELLAR-BOOST OR ELEVATOR.



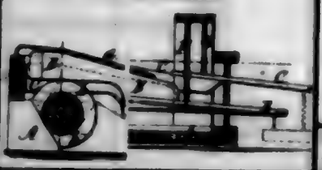
100,037, CHAS. J. MANN.
WM. A. BOYDEN.
VEGETABLE-CUTTERS.



100,038, JAMES F. BREWER.
COAL-SHOVELS.

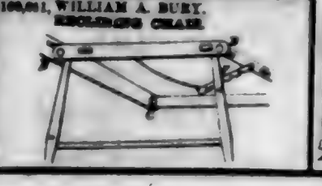


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RELEASING ACTION.

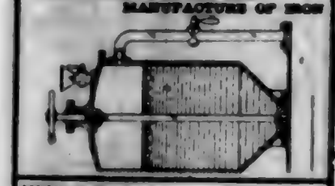


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SEAT-FASTENING.

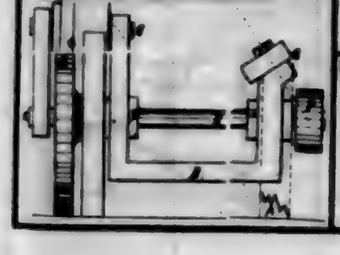
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REELING CHAIR.



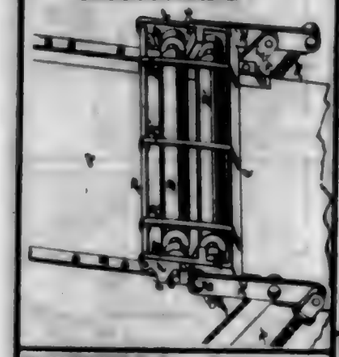
100,042, HENRY BESSEMER. PROCESSES AND APPARATUS FOR THE MANUFACTURE OF IRON.



100,043, JAMES M. BRUBAKER.
RAISING GRAIN-SHAFTS.



100,044, HENRY BARTH.
PRINTING-PRESSES.



100,018. HENRY A. BYRN, CHARLES BOYNTON. SWITCH SIGNALS.

100,019. H. E. BLONDOR. SIDE-RAKES FOR VESSELS.

100,020. THOS. ELKINS. SEWING AND BROOMING CANES AND QUILTING FRAME.

100,021. JOHN FAUPOR. HARROW HEAD.

100,022. JAS. H. FERGUSON. COLLAR AND HAMES FOR HARNESS.

100,023. OSWALD S. FEEHLAER. DOG-LOCK.

100,024. GEO. FROH. HOOF-GRASP.

100,025. H. GARDNER. CHURN.

100,026. JOHN W. GROGAN. BOOK-HINGE.

100,027. JOHN P. GRIBBS. APPARATUS FOR COOLING AND PURIFYING BEER, WATER, AND OTHER LIQUIDS.

100,028. L. S. GUY. [illegible] AND COOLING APPARATUS.

100,029. JOHN HAMILTON. PATTERSON. CASES FOR CONTAINING [illegible] INVENTIONS.

100,030. ALONZO HAMNER, DAVID GEM. RAILWAY-GAIN.

100,031. W. H. HARRIS. HALTERS.

GEO. D. HAWORTH. 100,032. CORE-PLASTERER.

100,033. M. HAYDEN. GRAIN-BINDER.

100,034. ADAM HIRT.

100,035. WILLIAM B. HRITER. HEAD-CUTTER.

100,036. AUSTIN D. HOFFMAN. REGISTERING-PUNCH FOR RAILROAD CONDUCTORS.

100,037. AUSTIN D. HOFFMAN. TELL-TALE.

100,038. JAMES SPOONER HOWARD. ELECTROPLATING WITH ANTIMONY.

100,039. WILLIAM H. H. IRWIN. COMPOUND FOR CURE OF CANCER, COLDS.

100,040. NATHAN I. MORSE. CULTIVATORS.

100,041. JAMES JACOBS. STEAM-GENERATORS.

100,042. A. G. JUDSON. PLOWS.

100,043. MARTINUS B. KIMM. COMPOUND TO REMOVE GREASE FROM CLOTH, SILK, PAPER, [illegible]

100,044. JAMES KIMMEL. FASTENING FOR GATES.

100,045. G. LANDRIN. CULINARY VESSEL.

100,046. JAS. H. DAVIS, EMMANUAL A. F. LEFEBURE. CLASPS FOR SECURING WEED-SOCKETS TO BASE-BOARDS.

100,047. PHILIP LEONARD. TOOL-HOLDER FOR GRINDSTONES.

100,048. JOHN B. LOMAS. THRESHOLDS FOR GRAIN.

100,049. JOHN SCHULTHEIS, GEORG LUTZ, MICHEL FLORENTIN. VEGETABLE-CUTTER.

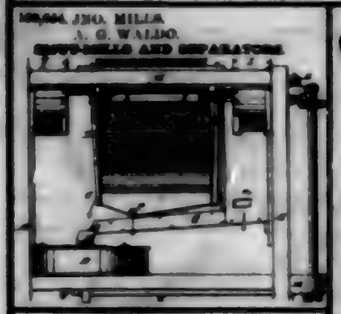
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100,051. J. McCAFFERY. HARVESTER.

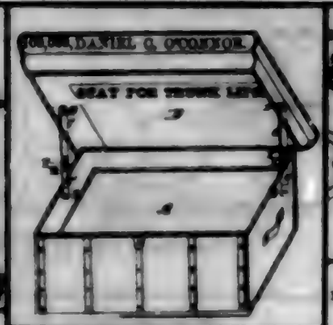
100,052. EDWARD MILLER. DUMPING-WAGON.

100,053. H. H. MILLER. MACHINE OF DIES FOR FORMING THE BRASS OF KEPO-BOLTS.

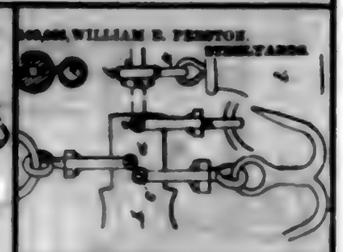
100,054, JNO. MILLS, A. G. WALDO. GRAIN-SHELLER AND SEPARATOR.



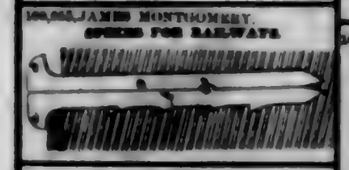
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100,056, WILLIAM B. PRESTON. STEERAGE.



100,057, JAMES MONTGOMERY. SPRING FOR RAILWAYS.



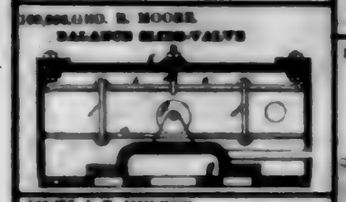
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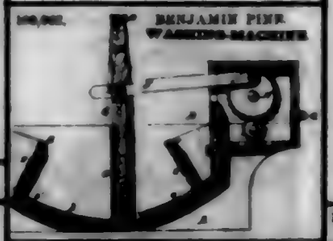
ROBERT PRICE, STOVE-LOCK. 100,059.



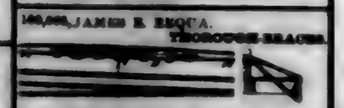
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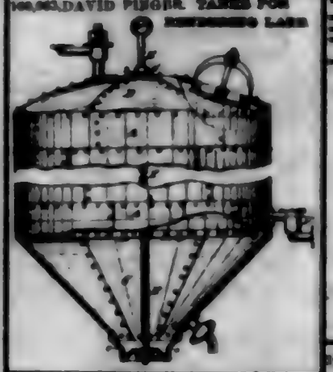
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100,062, JAMES E. BROCA. TRIGGER-BRACES.



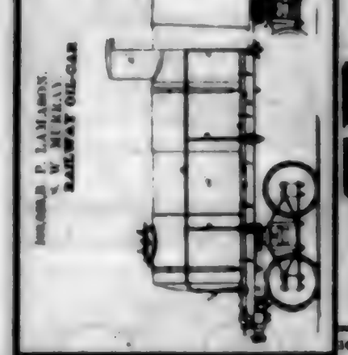
100,063, DAVID PIPER. TAKES FOR RESERVOIRS LABS.



100,064, GEO. H. REYNOLDS. BOOK-HOLDER.



100,065, MICHAEL P. LAHARDY, C. W. MURRAY. RAILWAY OIL-GAS.

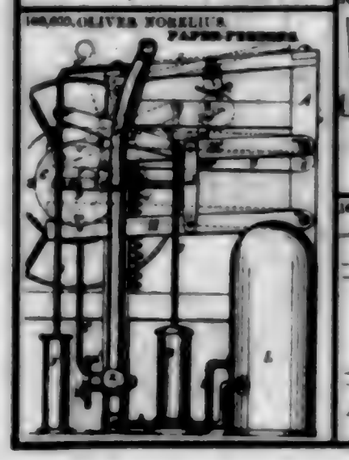


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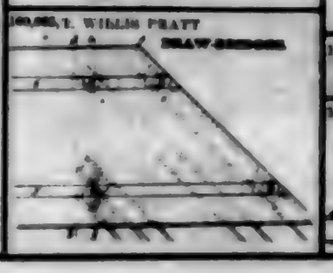


100,067, I. T. MULKEY. CEMENT FOR BRUSHES, BURRS, &c.

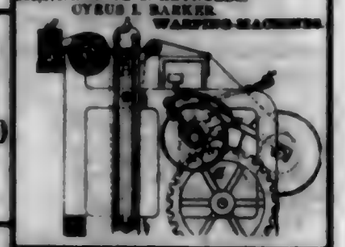
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100,069, I. WILLIS PRATT. DRAW-BRIDGES.

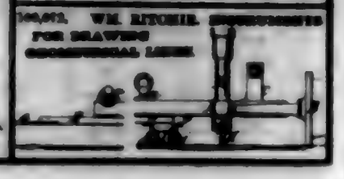


100,070, 100,071, JACOB C. REYNOLDS, CYRUS I. BARKER. WARPING-MACHINES.

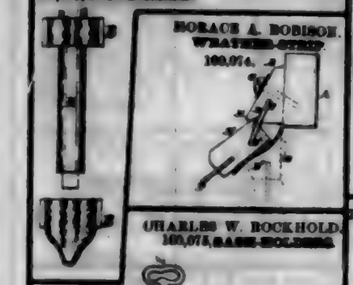


100,071, EDWIN T. BIGE. PROCESS OF BLEACHING AND CLEANING VEGETABLE FIBRES.

100,072, WM. RITCHIE. IMPROVEMENTS FOR DRAWING COMMERCIAL LIQUIDS.

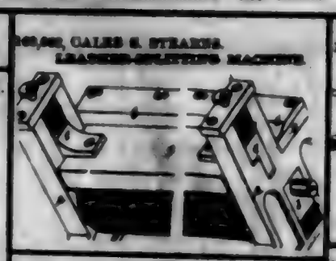


JOHN R. ROBERTSON. 100,073, STOVE-GRATE.

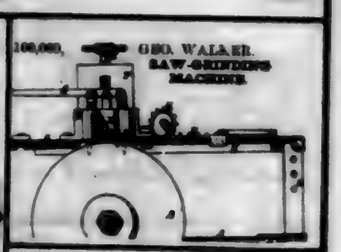


HORACE A. ROBISON. WEATHER-STRIP. 100,074.

GALES S. STRAUSS. LEATHER-SPLITTING MACHINE.



GEO. WALKER. SAW-GRINDING MACHINE.



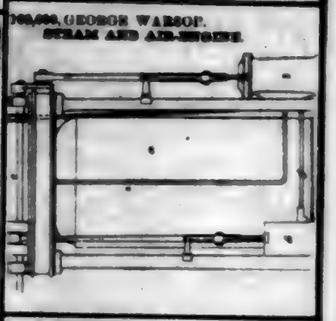
CHARLES W. ROCKHOLD. 100,075, SASH-HOLDERS.



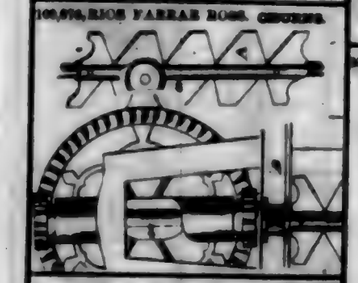
MATHIAS STEPHAN. SPRING-CHAIR FOR CHILDREN.



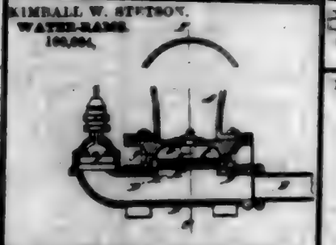
GEORGE WARROP. STEAM AND AIR-ENGINE.



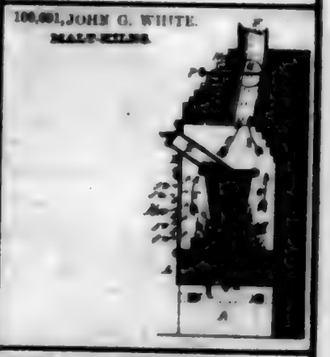
100,076, RICE FARRAR ROSS. GRATERS.



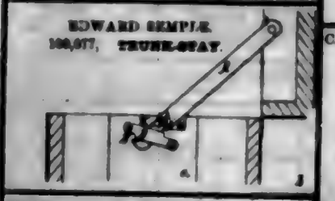
KIMBALL W. STETSON. WATER-RAMS. 100,077.



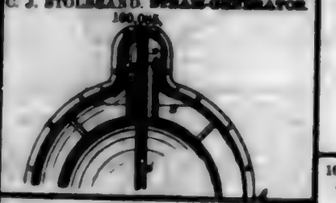
JOHN G. WHITE. MALT-KILNS.



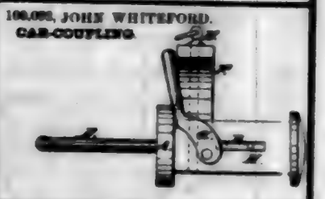
EDWARD SEMPLE. 100,077, TRUNK-STAY.



C. J. STOLBRAND. STEAM-GENERATOR. 100,078.



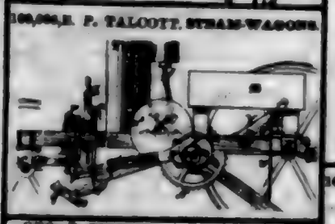
JOHN WHITEFORD. CAR-COUPLING.



DAVID B. SHIRK. HARVESTER-RAKE.



E. P. TALCOTT. STEAM-WAGONS.



LEWIS F. WHITING, FRANKLIN SMITH. SAFES.



GEO. E. TUCKETT. GAGE FOR CUTTING 100,027 AND TRANSPORTING TOBACCO.



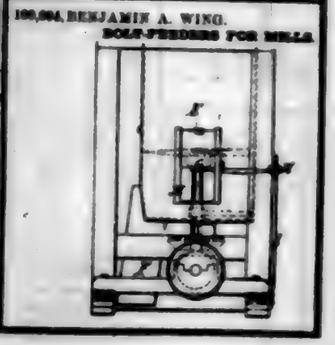
MONTGOMERY P. SIMONS. PAPER-PENDERS.



WILLIAM SNODGRASS. PORTABLE GAS-GENERATOR.



BENJAMIN A. WING. BOLT-FEEDERS FOR MILLS.



MYERS J. VAN AKEN. HORSE-FORK.



WM. D. ST. CLAIR. COMPOUND TO BE USED AS AN ARTICLE OF [illegible]

100,096, CHARLES ADAMS.
MACHINERY AND
DAY-BOOKKEEPING PAGE CLAMP.

100,097, HENRY A. ALDER.
VULCANIZING RUBBER SHOE.

100,098, JOHN ALLGAIER.
HAND-MOTIVE GARDEN-HOE.

HENRY ALTER. WHEEL-BARROW.

100,099, JONAS A. ANDERSON.
PHOTOGRAPHIC SCREEN.

100,100, JOHN L. ARDS.
RAILROAD-SWITCH.

100,101, C. J. BEAMAN.
ALARM-GUN.

OSCAR BELLMAN.
JOHN W. GARVER. HOT-AIR FURNACE.

100,103,
WILLIAM J. AVERY.
TUNIS LABBETEAUX.
POTATO-CULTIVATOR AND HILLER.

C. S. BENJAMIN.
EDWARD STORY.
PAINT-BRUSH.

100,105, E. B. BINGHAM.
MANUFACTURE OF PAPER.

100,106, GEO. W. BLAKE.
HEATER AND VENTILATOR.

100,107, CHARLES H. BOOTH.
CORN-PLANTER.

100,108, A. S. BAILEY.
IMPROVEMENT IN COAL-ELEVATORS.

100,109, C. F. BLISSINTON.
MACHINE FOR GROOVING SHEET-METAL.

100,110, A. B. BARNARD.
DOUBLE HAT-SANDER.

100,111, CHARLES J. BRADLEY.
COTTON-PLANTER.

100,112, JOHN L. BOOTH.
NEEDLE FOR SEWING-MACHINES.

100,113 JOSEPH BISHOP.
HOE-CULTIVATOR.

100,114, HENRY S. BROWN.
CLOTHES-DRIER.

100,115 WILLIAM BROWN.
TUBE-SCOURER.

100,116, HALL COLBY.
ALARTUM INSTRUMENT.

ABEL D. COOK.
100,118, JAMES GRAVES.
FEATHER-RENOVATOR.

100,121, WM. H. CRANDALL.
CHILDREN'S CARRIAGE.

JOHN H. CRANMILL.
100,122, WATCH-SPRING.

100,123, JAMES CASSEDAY.
IMPROVED SEAT FOR CARS, &c.

100,124, LEONARD CROFOOT.
BAG-HOLDER.

100,117, THOS. CRADWICK.
PORTABLE FURNACE.

100,126, J. H. DATES.
SEWING-MACHINE AND HAT-TRIMMER.

100,118, MILTON W. CLARK. BLIND-CLASP.

100,122, WILLIAM DAVIS.
JOSEPH WHILE. MACHINE FOR ROLLING CAR-COUPLING PINS.

100,126, JAMES M. A. DEW. FAUCETS.

100,127, HIRAM DILLAWAY. MOLD FOR FORMING BLOWN GLASSWARE.

100,128 JOHN D. DUNN. COMBINED COTTON-CHOPPER AND CULTIVATOR.

100,129, CHARLES H. EGGLESTON. GATES.

100,130, D. W. ELDREDGE.
WATCH-REGULATOR.

100,131, JAMES B. ELKINGTON.
MANUFACTURE OF COPPER AND IN SEPARATING OTHER METALS THEREFROM.

HARRY H. EVERTS.
100,132, CONSTRUCTION OF CHAIRS.

MABEL H. EVARTS.
IMPROVED EMBOSSER.
No. 139,

FRANK W. O. GROVER.
SEWING MACHINE.

EUGAR M. FOWLER.
No. 139, STREET PAVEMENT.

A. S. HALLIDIE.
GRIP PLANTS.

CALEB B. HEALY.
BRIDGE AND TRUSS-FRAMING.

JOSEPH [illegible] GALLIPO.
MACHINE FOR CUTTING SOAP INTO BARS.

THOS. R. HERD.
RAILWAY-CAR COUPLINGS.

JOSEPH HARRISON, Jr.
STEAM-GENERATORS.

THOMAS HERD.
COUPLING CARS.

BENJAMIN M. GARD.
ERNEST B. GARD.
No. 139, BRICK-MACHINES.

C. F. HARTMANN.
WIRE-FENCING.

C. L. GILPATRIC.
No. 139, STRAINER FOR COFFEE-POTS.

T. E. HICKCOX.
METALLIC ROOFING.

JACOB W. HILL, ROBERT SHRAW, THOMAS ROBERTS.
No. 139, STOVE.

No. 139,
J. H. GOODFELLOW.
HAIR-DYEING STOVE.

No. 139, LOCK FOR WAGON-SEATS.
EDGAR HITT.

GEORGE HAYES.
No. 139, SET-LOCKS.

ELIJAH E. HOLLEY.
No. 139, MAKING OF VESSELS.

E. K. HASLETT.
No. 139, FEED-WATER PURIFIER FOR STEAM-GENERATORS.

No. 139, FREDERICK HOLBACH.
QUADRANTS AND SEXTANTS.

No. 137, SALEM T. LAMB.
PITMAN-CONNECTION.

No. 138, SALEM T. LAMB.
PITMAN-JOINT FOR HARVESTERS.

PITMAN-JOINT FOR HARVESTERS.
No. 139, SALEM T. LAMB.

No. 140, JOSEPH LE COMTE.
SOLDERING-MACHINE.

No. 141, ARTHUR M. LESLIE.
RUFFLING ATTACHMENT FOR SEWING-MACHINES.

No. 142, J. W. LOW.
PUMPS.

No. 143, ORAZIO LUGO.
MANUFACTURE OF FERTILIZERS FROM ANIMAL SUBSTANCES.

No. 144, JOHN F. LYMAN.
CASES FOR SEATS.

No. 145, JAMES B. LYON.
STONE AND STUMP-EXTRACTOR.

No. 146, W. STINSON LORD.
FURNACE AND FIRES.

No. 147, PATRICK H. MACKAY.
ROOFING AND FLOORING.

No. 148, O. E. MALLORY.
POTATO-DIGGER.

No. 149, HARRIS H. MARGESON.
FENCE.

No. 150, JOSEPH R. MARSHALL.
SHEEP-SHEARING TABLE.

No. 151, HUGH L. McAVOY, ASSIGNOR TO
CAR-TRUCKS FOR CHANGE-LINES.

No. 152, WM. L. McDOWELL.
SAND-CURED IN PLASTER.
IMPLEMENT FOR UNDER-CUTTING.

No. 153, EDWD. T. McKEAN.
CAR-COUPLER.

No. 154, JOHN McPHERSON.
No. 154, SOLDERING-FURNACE.

FRANK KRANDELT.
FOG-BEATER.

No. 155, MARTIN T. LAMB.
STEAM CLOTHES WASHER.

100,175. GEORGE MILLER, Gretton on Rattler for Cleaning Castings

100,176. E. E. MILLER, Jacket for Carriage-Springs

100,177. E. E. MILLER, Brake for Pitch-Wheel Carriages

100,178. F. E. MORSE, Bed for Forming the Seams of Hind-Boots

100,179. JOHN M. MOTT, Devil-Well Tools

100,180. ALBERT L. MURPHY, Harvesters

100,181. EPHRAIM MYERS, Harvester-Reapers

100,182. W. FRANK NICHOLS, Water-Filter, Liquor-Cooler, and Refrigerator

100,183. A. B. G. NUSBAUM, Gas Apparatus

100,184. DAVID G. PAIGE, Safes

100,185. CHAS. H. PARKER, Hammer

GEORGE H. PERKINS, 100,186, Caps for Breaking Cans

100,187. ELI PETTEYS, Wagon

100,188. J. REYNOLDS, Subsoil Plows and Shafting Combined

100,189. GEO. H. RICHARDS, Shaper Attachment for Planers, &c.

100,190. H. RICHARDSON, Wagon-Brake

100,191. JOHN RIDER, Letter-Paper

100,192. E. G. ROOT, Gas-Coupling

100,193. JOHN ROSS, Road-Dragging Apparatus

100,194. J. B. SARGENT, Washing-Machine

100,195. EPHRAIM SARGENT, Loom

100,196. GEORGE W. SHAW, Separator to be Used in Distilling Liquors

100,197. B. O. SHEPARDSON, Apparatus for Towing Safes, &c.

100,198. DANIEL SIMMONS, Jr., Paper-Box Machine

100,199. J. G. SISSON, Lark Delana Stocking and Shaper

100,200. E. W. SKINNER, Harvesting-Machine

100,201. I. T. SMITH, Brake and Ratchet for Elevating and Lowering Stockings

100,202. LUTHER L. SMITH, Negative Plate for a "Grid" Battery

100,203. WM. SMITH, Steam-Engine Governors

100,204. ELIAS F. SNEIDER, Railway-Car Coupling

100,205. THOMAS S. SPRAKMAN, Furnace

100,206. A. J. SPENCER, Stopping-Bar for Furnaces

100,207. HELEN SKIN STARRETT, Fastening for Overshoes

100,208. L. STEVENS, Manufacture of Gas from Petroleum

100,209. ALEXANDER W. STEWART, Folding Chair

100,210. ANDREW H. SMITH, FREDK. A. STOHLMANN, Mechanical Lantern

100,211. B. F. STURTEVANT, Heating and Ventilating Apparatus

100,212. B. F. STURTEVANT, Grain-Drier

100,213. CHARLES THAYER, DAVID McPHERSON, Packing for Piston-Rods

100,214. NATHAN THOMPSON, Washing for Screw-Bolts

100,215. E. A. THRUSH, Grain-Planters

100,216. CHARL. G. TORREY, Screw-Propellers

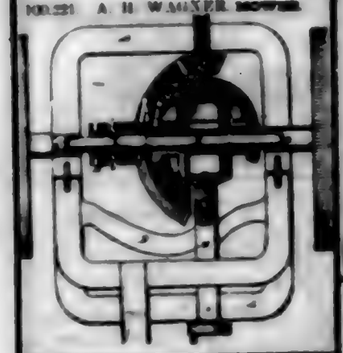
100,217. MICHAEL TROMLY, Regulating for Steam-Engines

100,218. FRIEDRICH ULRICH, Sheaves

100,219. JAMES H. VERITY, Press-Lasting

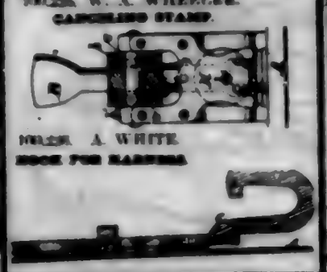
100,220. EDWARD VOIGT, Automatic Lantern

No. 221 A. H. WALKER. MOWER.

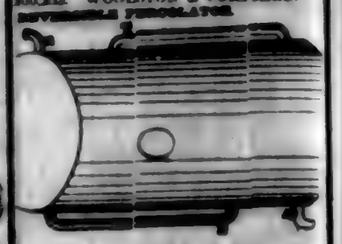


No. 226 W. A. WHEELER. CAMP-BLIND STAND.

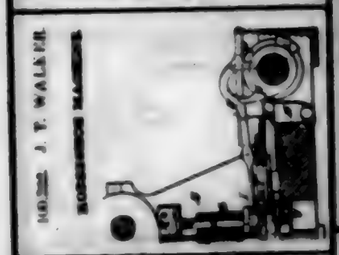
No. 228 A. WHITE. HOOK FOR HARNESS.



No. 229 WOOLSTON & CORFIELD. REVOLVING FUMIGATOR.



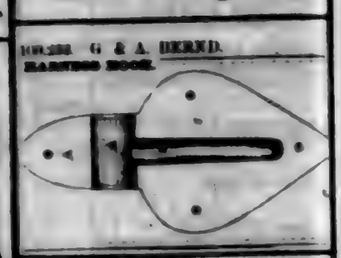
No. 227 J. T. WALKER. EDGE-SETTER MACHINE.



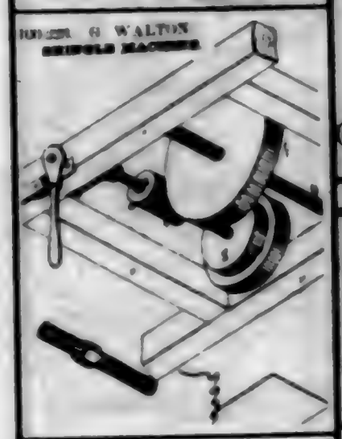
No. 227 R. WHITE. REVOLVER.



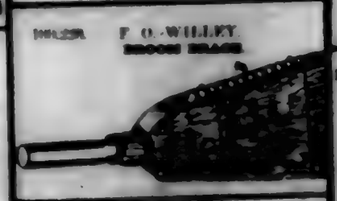
No. 230 G. & A. BERND. HARNESS HOOK.



No. 231 G. WALTON. SHINGLE MACHINE.



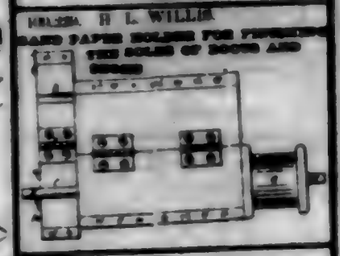
No. 232 F. O. WILLEY. BROOM HEAD.



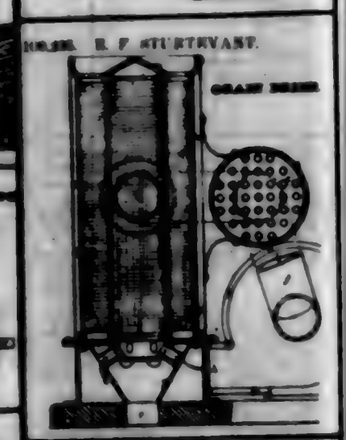
No. 234 A. BARTLETT. SPOKE NOCK.



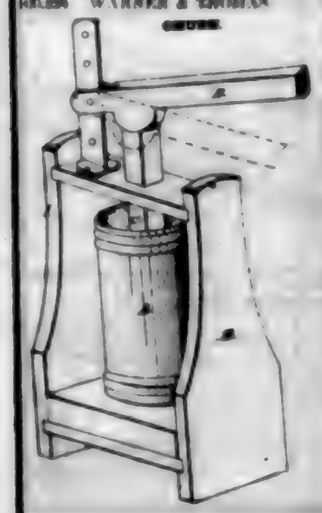
No. 233 H. L. WILLIS. HARD PAPER HOLDER FOR PERFORATING THE EDGES OF BOOKS AND PAPER.



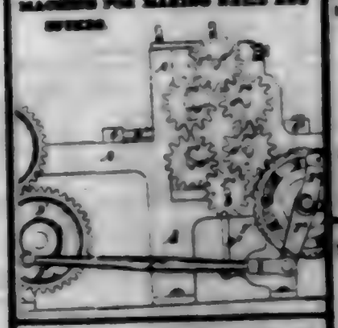
No. 235 E. F. STURTEVANT. GRAIN DRIER.



No. 236 WARNER & THOMAS. CHURN.



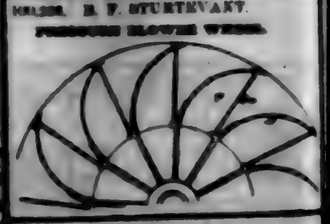
No. 237 T. WOOD. MACHINE FOR MAKING HALLS AND SPOKES.



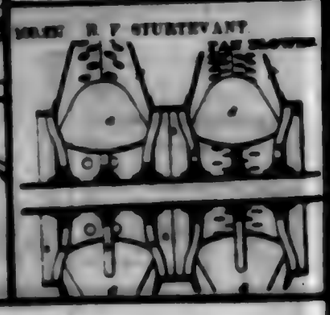
No. 238 C. F. WOODRUFF. SEEDER.



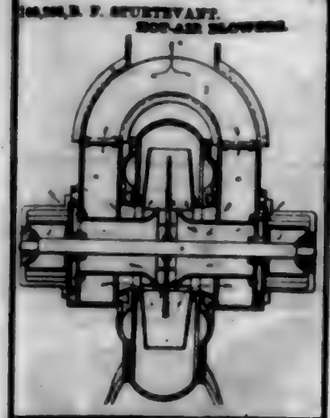
No. 239 E. F. STURTEVANT. PRESSURE BLOWER WHEEL.



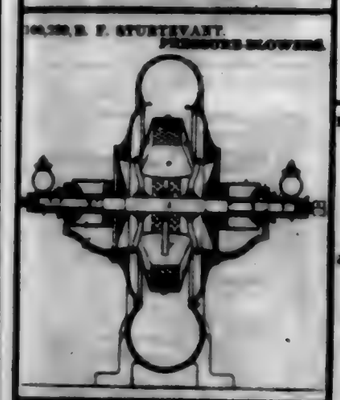
No. 240 E. F. STURTEVANT. BLOWER.



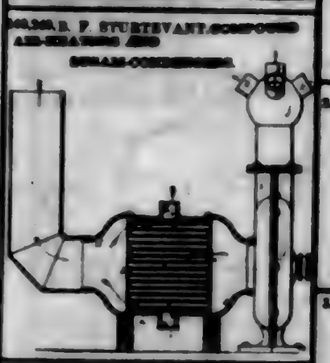
No. 240,239 E. F. STURTEVANT. BLOWER.



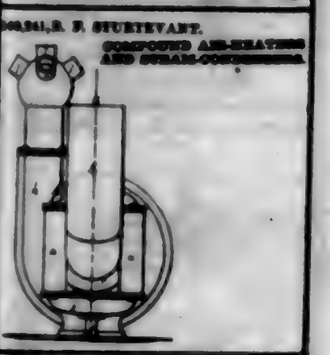
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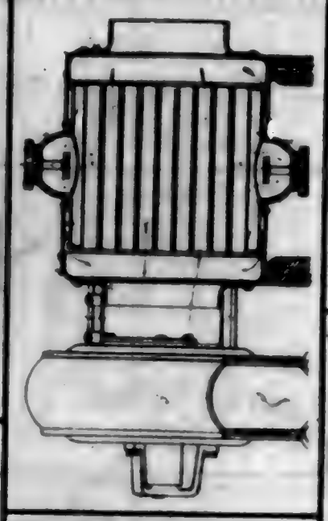
No. 240,240 E. F. STURTEVANT. COMPOUND AIR-HEATING AND STEAM-CONDENSING.



No. 240,241 E. F. STURTEVANT. COMPOUND AIR-HEATING AND STEAM-CONDENSING.



No. 240,242 E. F. STURTEVANT. BLOWER.

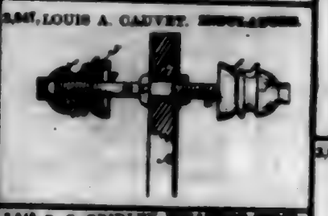


No. 240,243 E. F. STURTEVANT. MACHINE FOR MAKING TUBES TO TUBE-SHEETS.

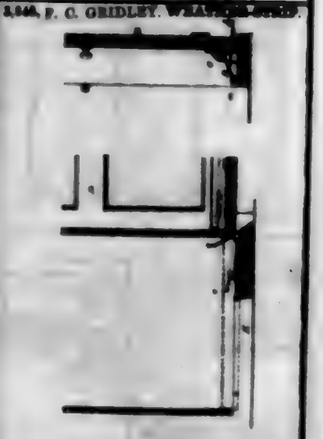


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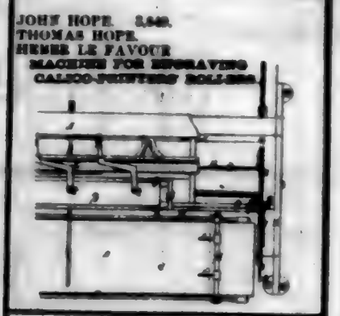
No. 2,647, LOUIS A. GAUVET. [illegible]



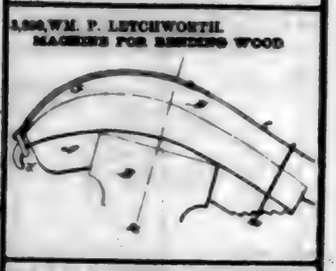
No. 2,648, F. C. GRIDLEY. WEAVER'S [illegible]



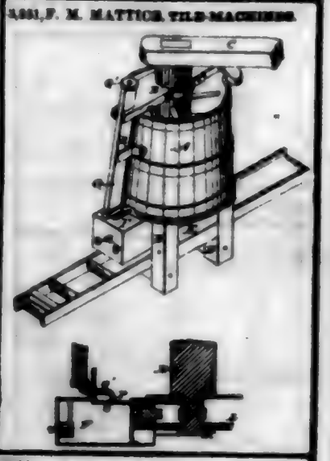
JOHN HOPE. 2,649.
THOMAS HOPE.
HENRI LE FAVOUR.
MACHINE FOR ENGRAVING CALICO-PRINTERS' ROLLERS.



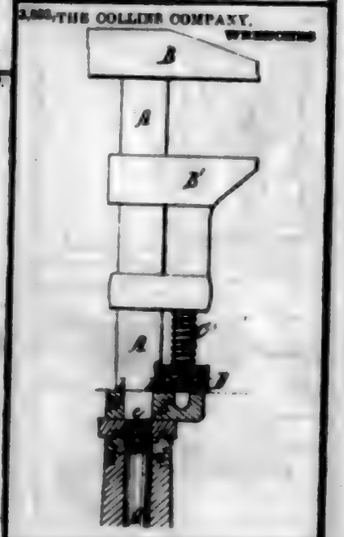
No. 2,650, WM. P. LETCHWORTH. MACHINE FOR BENDING WOOD.



No. 2,651, F. M. MATTICE. TILE-MACHINE.



No. 2,652, THE COLLIER COMPANY. [illegible]



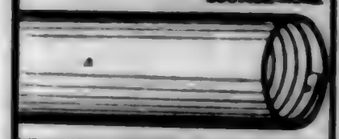
ILLUSTRATIONS OF PATENTS

ISSUED FROM

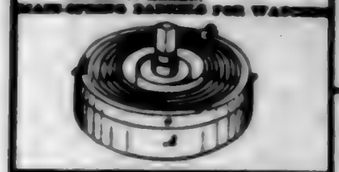
THE UNITED STATES PATENT OFFICE

MARCH 1, 1870.

100,344, ALBERT P. ALLEN.



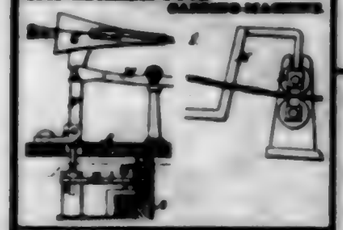
100,345, JOHN P. ALLEN.



100,346, JOHN P. ALLEN.
WILLIAM B. BANTA.



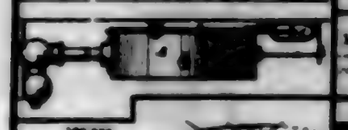
100,347, C. W. ANDERSON.



100,348, SMITH W. ANDERSON.



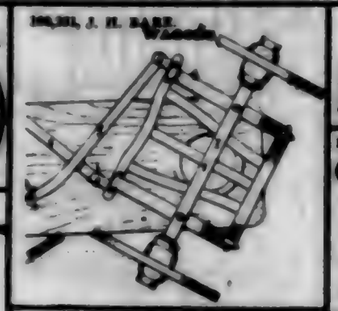
100,349, JOHN AINSWORTH.



100,350,
JOHN BACHELDER.



100,351, J. H. BABB.



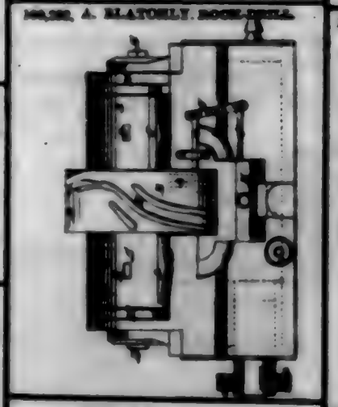
100,352, J. B. CAMPBELL.



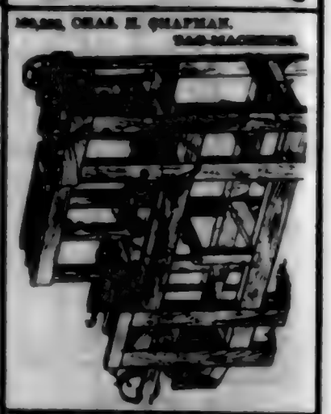
100,353, HENRY S. CARTER.

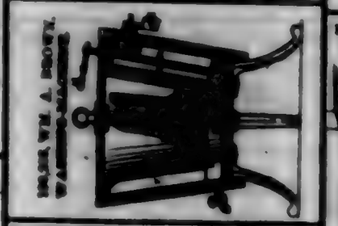


100,354, A. CHATOWAY.

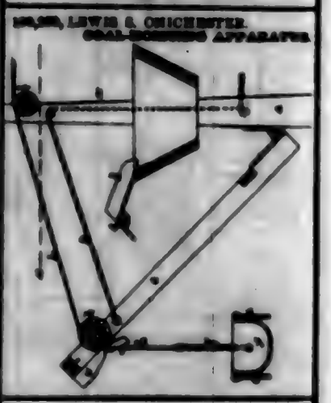


100,355, CHAS. H. CHAPMAN.

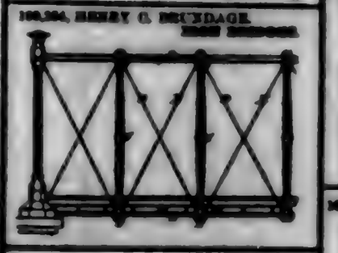


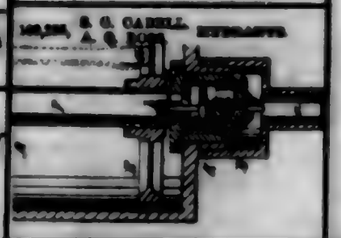


100,356, LEWIS S. CHICHESTER.

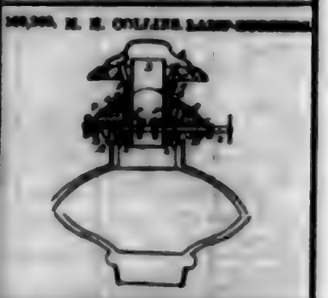


100,357, HENRY G. DECKDAGE.



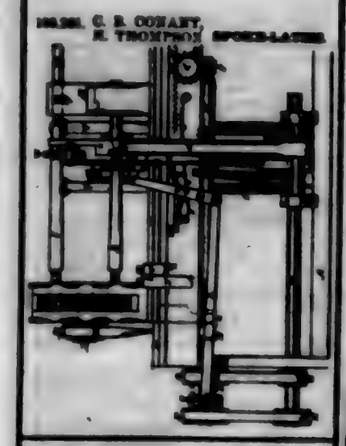


100,358, H. H. COLLIER.

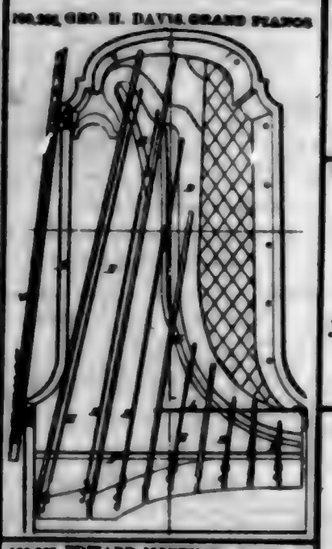


ISSUED MARCH 1, 1870.

100,359, C. B. COMANT,
H. THOMPSON.



100,360, GEO. H. DAVIS.



100,361, EDWIN DOUDEN.



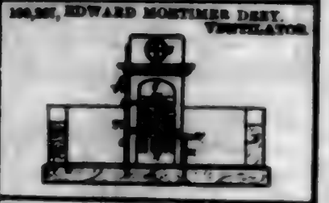
100,362, CLEAVELAND F. DUNDERDALE.



100,363, ALMOND F. COOPER.



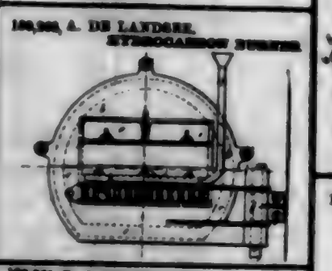
100,364, EDWARD MORTIMER DEEY.



100,365, J. A. GRANDALL.

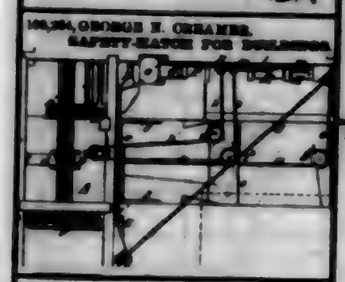


100,366, A. DE LANDER.



100,367, E. J. DE SMEDT.

100,368, GEORGE H. GERAMB.



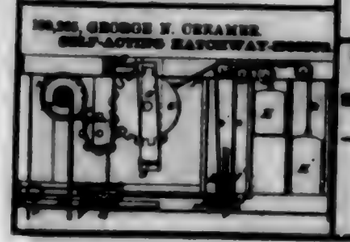
100,369, H. C. DE WITT.



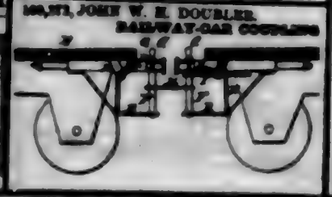
100,370, H. H. DONOR.



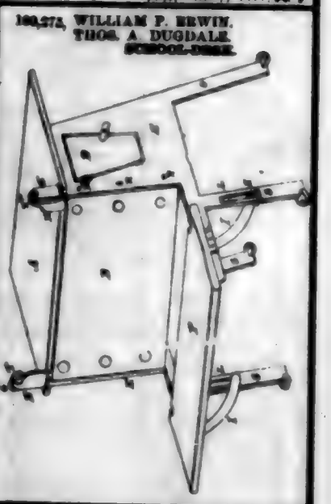
100,371, GEORGE H. GERAMB.



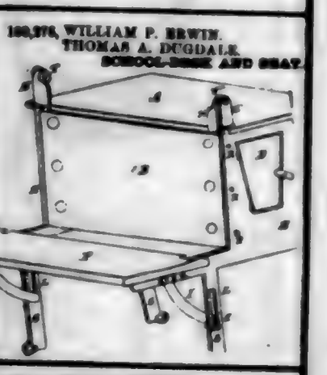
100,372, JOHN W. H. DOUBLER.



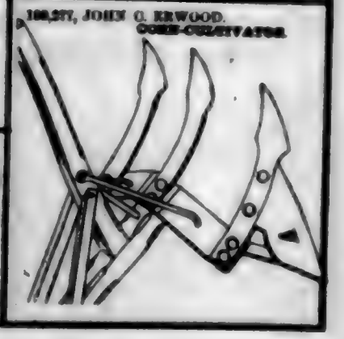
100,373, WILLIAM P. ERWIN.
THOMAS A. DUGDALE.



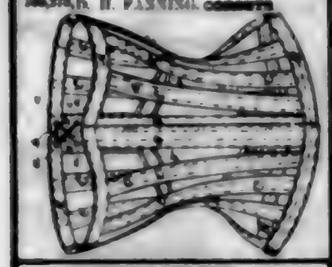
100,374, WILLIAM P. ERWIN.
THOMAS A. DUGDALE.



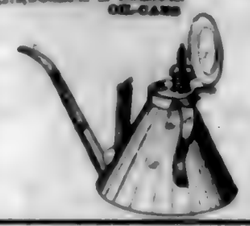
100,375, JOHN O. ERWOOD.



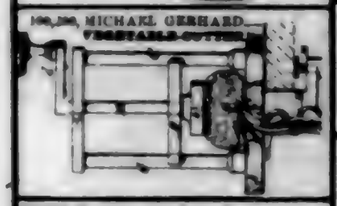
100,276, D. H. FANNING, CORSETS



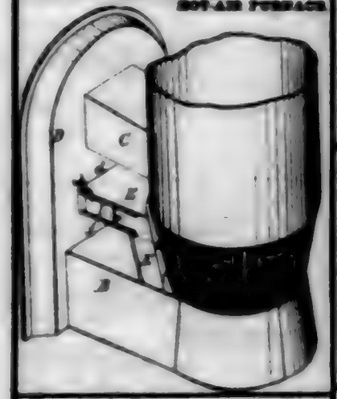
100,277, JOSEPH L. FOLSOM, OIL-CANS



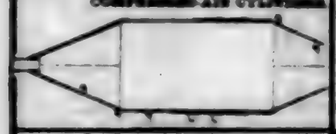
100,278, MICHAEL GERHARD, VEGETABLE-CUTTER



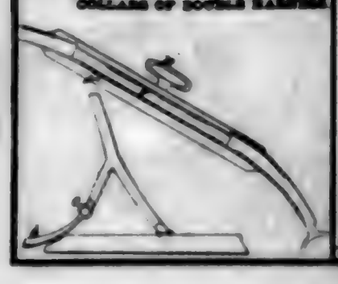
100,279, B. GOMMENGINGER, HOT-AIR FURNACE



100,280, GEO. W. W. GOODWYN, COMPRESSED-AIR CYLINDERS



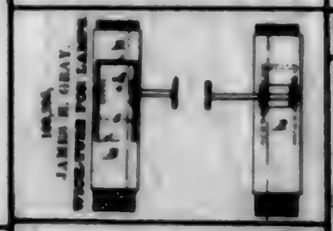
100,281, O. GRAHAM, BREASTPLATE FOR THE BREAST-COLLARS OF DOUBLE HARNESS



100,282, JOSEPH GRANDJOT, VENEERS



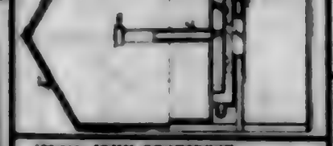
100,283, JAMES H. GRAY, PACKING FOR CAR-AXLES



100,284, CHARLES GREEN, CONSTRUCTION OF BARRELS AND PACKAGES



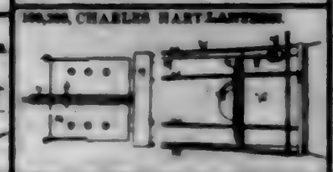
100,285, PATRICK GRIFFITH, PARLOR HOT-STOVE



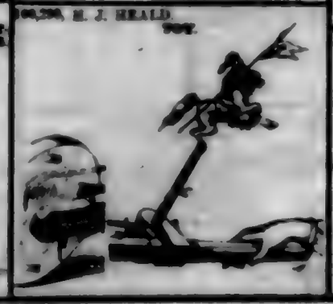
100,286, JOHN GROESBECK, ARMING-MACHINES



100,287, CHARLES HART, LANTERNS

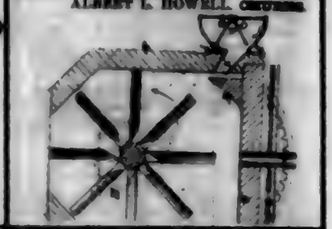


100,288, H. J. HEALD, TOY



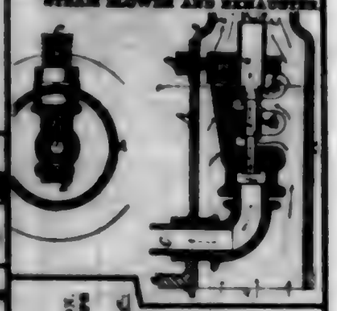
100,289, H. M. HEDDEN, FERROTYPE PLATE

100,290, CHARLES PATERSON HOLMES, ALBERT L. HOWELL, CRUSHER

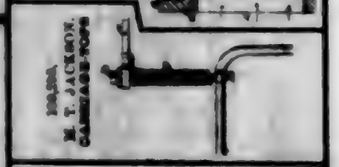


100,291, C. B. HOWARD, MANUFACTURE OF ARTIFICIAL FLOWERS

100,292, JOHN HOWARTH, STEAM BLOWER AND EXHAUSTER



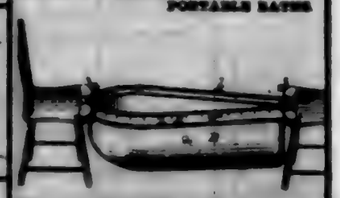
100,293, M. T. JACKSON, CARRIAGE-TOP



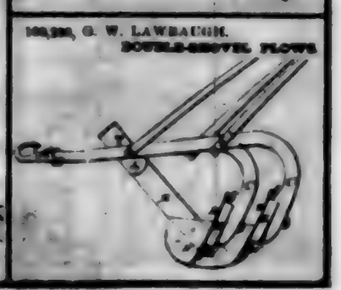
100,294, BEAUMONT JESSOP, GEAR-NUT



100,295, B. J. KEOWLTON, PORTABLE BATHS



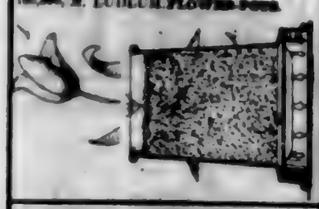
100,296, G. W. LAWBAUGH, DOUBLE-SHOVEL PLOWS



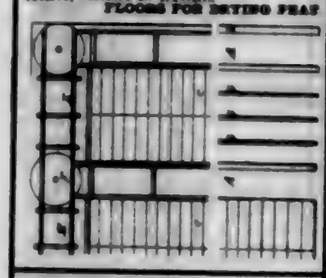
100,300, L. A. LIEBBEY, POLISHING-CRATE



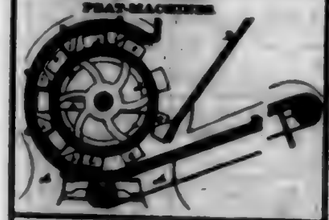
100,301, M. LUDLUM, FLOWER-POTS



100,302, JAMES B. LYONS, FLOORS FOR DRYING FRAP



100,303, JAMES B. LYONS, FRAP-MACHINES



100,304, H. F. MANN, SHAFT-COUPLING

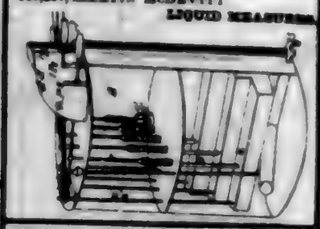


100,305, PHILIP MARQUARDT, MANUFACTURE OF POTTERY

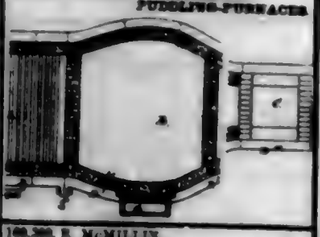
100,306, JOHN L. MASON, FRUIT-JARS



100,307, MARTIN McDEVITT, LIQUID MEASURES

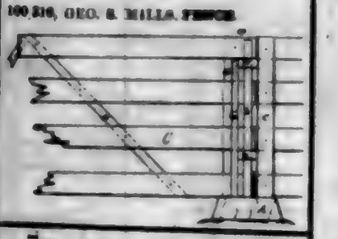


100,308, SAMUEL McLAUGHLIN, PUDDLING-FURNACES



100,309, E. McMILLIN, PURIFICATION OF COAL GAS

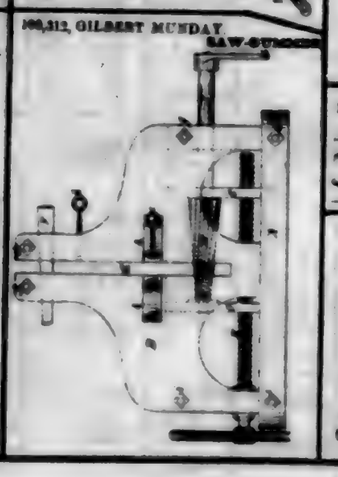
100,310, GEO. S. MILLS, FENCE



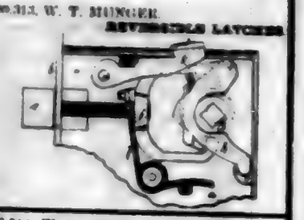
100,311, HOMER S. JONES, HARVESTER-GUARD



100,312, GILBERT MUNDAY, SAW-GUMMER



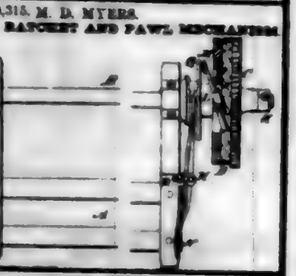
100,313, W. T. MUNGER, REVERSIBLE LATCHES



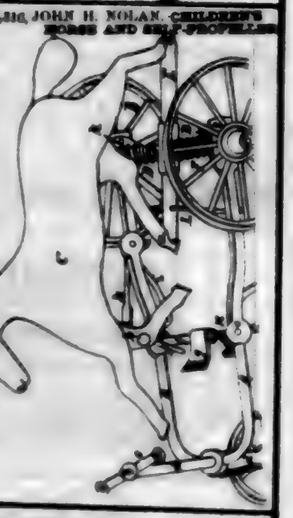
100,314, W. T. MUNGER, BOSS FOR DOOR-KNOBS



100,315, M. D. MYERS, RATCHET AND PAWL MECHANISM



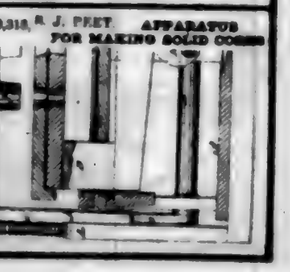
100,316, JOHN H. NOLAN, CHILDREN'S HORSE AND SELF-PROPELLER



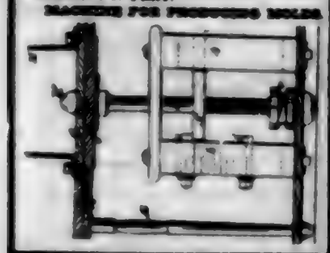
100,317, ELIAS A. PAINE, SHUTTLE FOR LOOMS



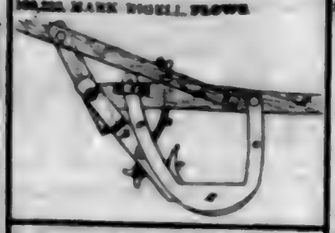
100,318, R. J. PEET, APPARATUS FOR MAKING SOLID COMBS



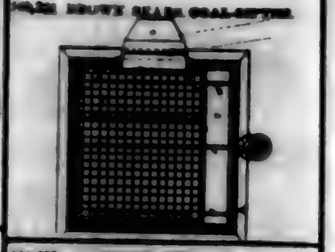
100,310, S. J. PEET.
MACHINE FOR PRODUCING MOLDS.



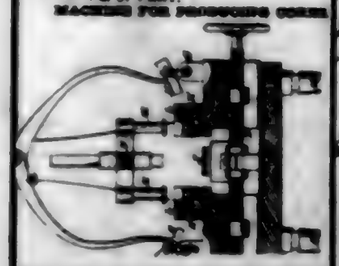
100,320, MARK BIGELL, PLOWS.



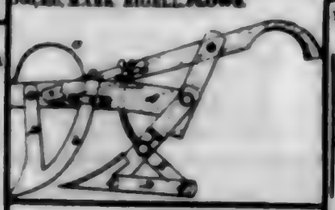
100,324, BROWN GRATE COAL-SIFTER.



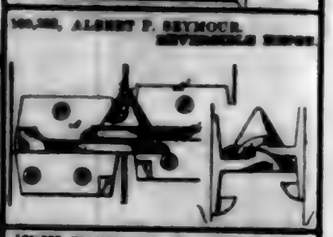
100,311, S. J. PEET.
MACHINE FOR PRODUCING CORES.



100,320, MARK BIGELL, PLOWS.



100,322, ALBERT P. SEYMOUR.
REVERSIBLE SWING.



100,321, L. A. PERRAULT, DOUBLE-COOKER.



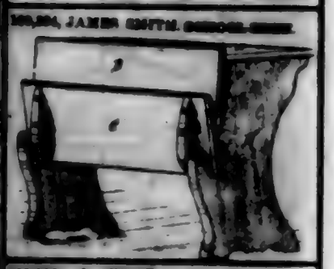
100,323, FREDERICK SHALLER.
RAILROAD-CAR SEAT.



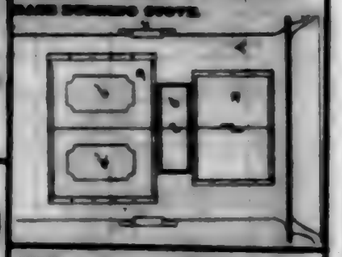
100,322, J. S. PERRY AND A. DICKEY.
BASE-BURNING STOVE.



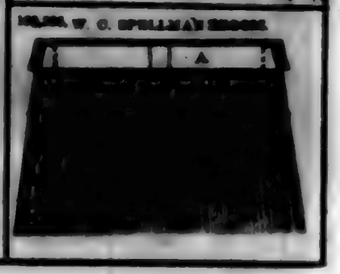
100,325, JAMES SMITH, SCHOOL-DESK.



100,326, J. SPEAR.
BASE-BURNING STOVE.



100,328, W. C. SPELLMAN, SHADE.



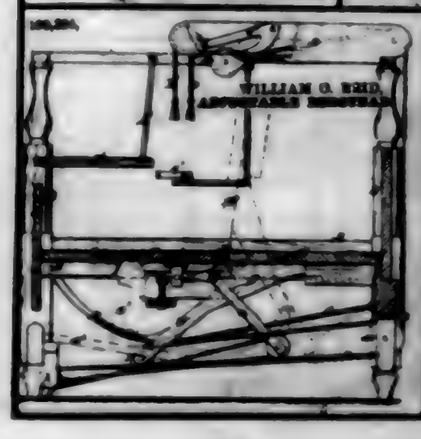
100,327, D. ROSENGER.



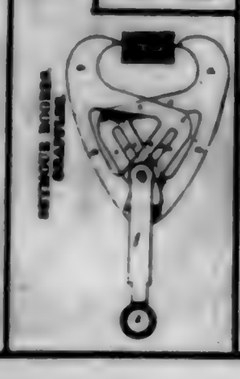
100,328, D. ROSENGER.



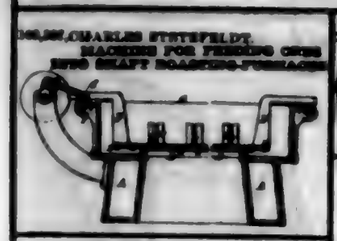
100,329, WILLIAM O. REED.
ADJUSTABLE SEAT.



100,330, STOVE-DOOR.



100,337, CHARLES STUTEFELDT.
MACHINE FOR FEEDING ORES INTO SHAFT ROASTING-FURNACES.



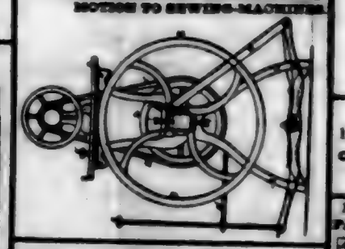
100,338, WILLIAM WELLINGTON.
CULTIVATOR.



100,339, JOSHUA F. TABBATT.
CALENDARS.



100,340, WILLIAM WELLINGTON.
APPARATUS FOR TRANSMITTING MOTION TO SEWING-MACHINES.

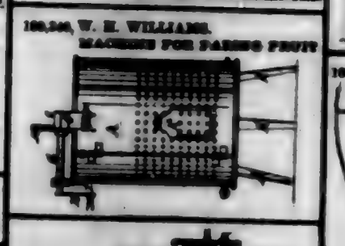


100,341, FR. WICKE,
JULIUS BRONNER,
THEODOR PETERSEN,
DR. G. SEHFUSS.
PRINTING FROM ENGRAVINGS.

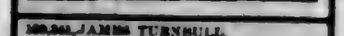
100,342, JAMES K. THOMPSON.
WOODEN PAVEMENT.



100,343, W. H. WILLIAMS.
MACHINE FOR PARING FRUIT.



100,344, E. PALMER TIFFANY.



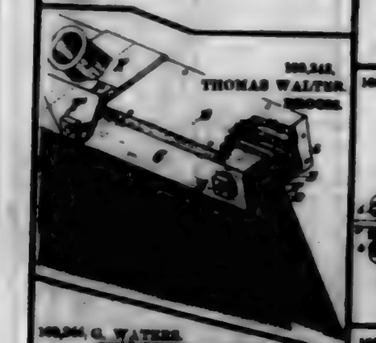
100,345, JAMES TURNBULL,
WILLIAM TURNBULL.
CHEMICAL FEEDER.



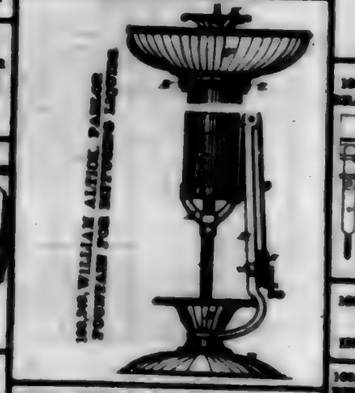
100,346, JAMES VANDERPOOL.
DEVICE FOR SECURING CARRIAGE AXLES.



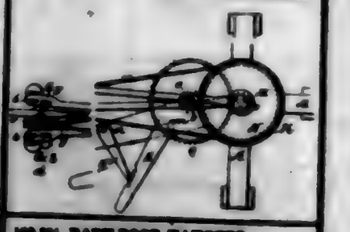
100,347, THOMAS WALTER.
HEDGE.



100,348, WILLIAM ALTICE, JAMES FOUNTAIN, and SETH HOLLOWAY.
CULTIVATOR.



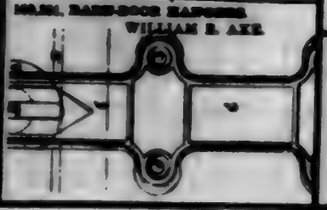
100,349, JOHN E. ATWOOD.
HORSE-POWERS.



100,350, C. WATERS.
FIRE-WATER PUMPER.

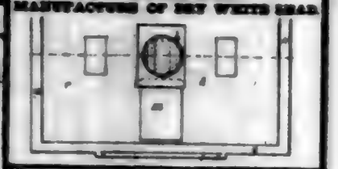


100,351, BASE-BOOK HANGERS.
WILLIAM B. AXE.



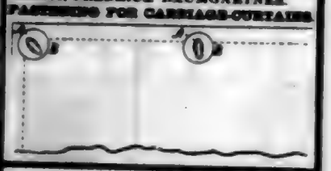
100,332, HENRY BARTHOLOMAY.
METHOD OF PRESERVING THE AROMATIC PRINCIPLE OF HOPS.

100,333, HAVEN O. BARTLETT.
MANUFACTURE OF BEST WHITE LEAD.



100,334, C. A. BAUMANN.
COVERING FOR STEAM BOILERS.

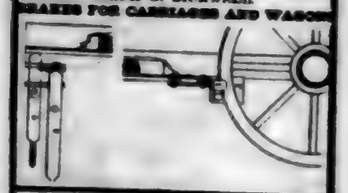
100,335, FREDRICK BAUMGARTNER.
FASTENING FOR CARRIAGE-CURTAINS.



100,336, JOSEPH HICK, VELOCIPEDE.

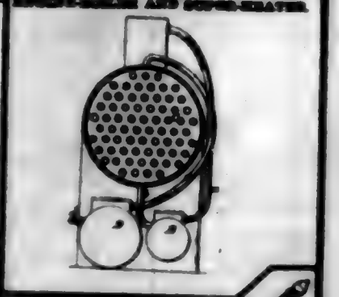


100,337, JOSEPH O. BICKWELL.
BRAKES FOR CARRIAGES AND WAGONS.



100,338, GEORGE W. BIRKS.
COMPOUND FOR PREVENTING INCRUSTATION IN STEAM-BOILERS.

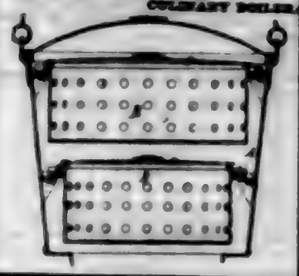
100,339, F. B. BLANCHARD, COMBINED STEAM-BOILER AND SUPER-HEATER.



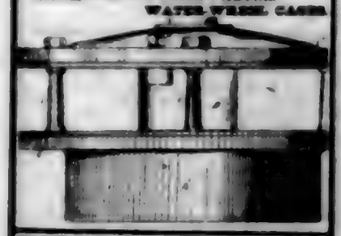
100,340, SANFORD O. BLANDING.
SIFTING-APPARATUS.



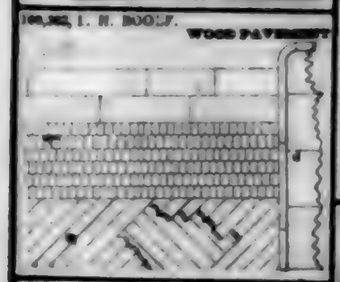
100,301 GEORGE W. BLISS.
CULINARY BOILER.



100,302, JOHN W. BOOKWALTER.
WATER-WHEEL CASES.



100,303, I. H. BOOLY.
WOOD PAVEMENT.

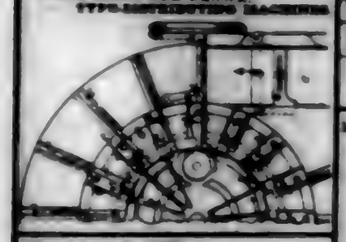


100,304, JOHN C. BRADY,
JAMES R. BRADY.
SNAP-HOOK AND SWIVEL.

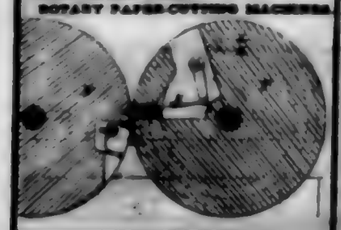


100,305, THOMAS BRISTOW.
MANUFACTURE OF MALLEABLE IRON.

100,306, OWEN LEE BROWN.
TYPE-DISTRIBUTING MACHINE.



100,307, RICHD. VOSE.
ROTARY PAPER-CUTTING MACHINE.



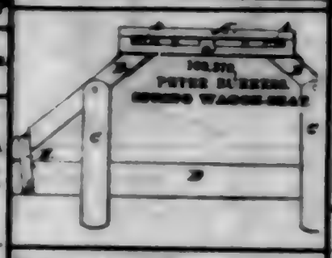
100,308, RICHD. VOSE.
MACHINE FOR PLANING AND SQUARING THE SIDE OF RECTANGULAR STEREOTYPE PLATES.



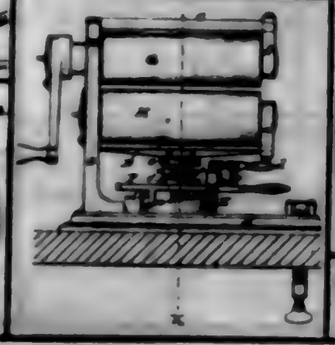
100,309, A. B. DURDICK, STOVE-PIPE DAMPERS AND VENTILATORS.



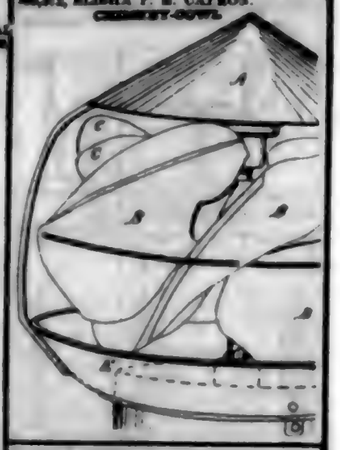
100,310,
PETER DURRER,
SPRING WAGON-SEAT.



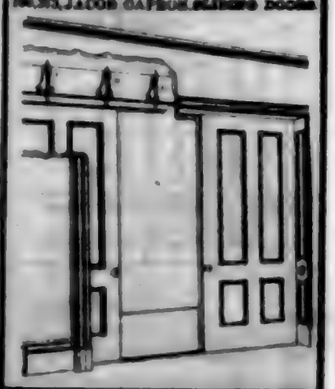
100,311, E. G. GABELL,
PASTING-MACHINE.



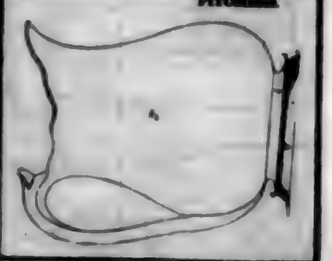
100,312, ELISHA P. H. CAPROT.
CHIMNEY-COWL.



100,313, JACOB CAPRON, SLIDING DOORS.

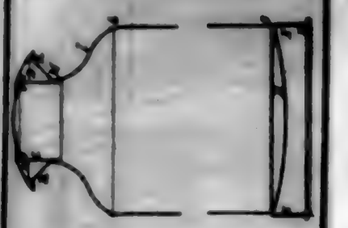


100,314, WM. B. CARLETON, SHIELD FOR FITCHES.



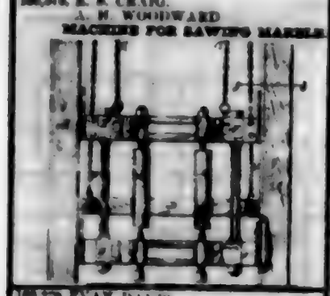
100,315, LEWIS H. CHASE.
CORN-PLANTER.

100,316, JOHN COCHRAN, MILK-CANS.

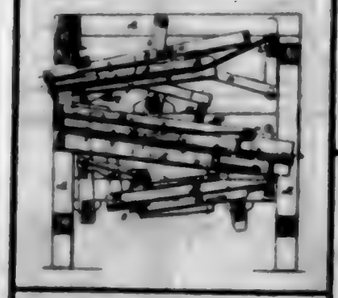


100,317, JOHN COCHRANE, CARPET.

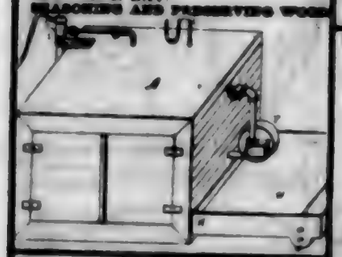
100,318, R. S. CRAIG,
A. H. WOODWARD.
MACHINE FOR SAWING MARBLE.



100,319, EVAN DAVIS.
GRAIN-SEPARATORS.



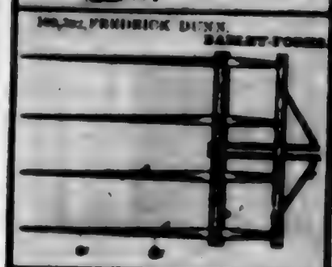
100,320, J. C. DAY.
SEASONING AND PRESERVING WOOD.



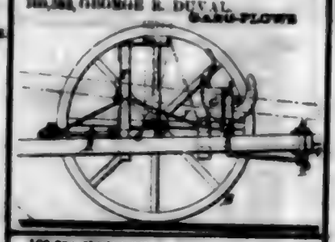
100,321, ARSENE DECASTRO.
HORSE-COLLARS.



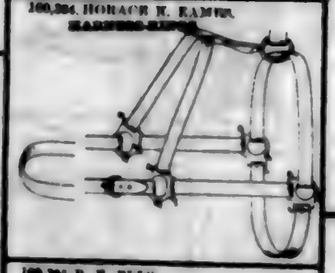
100,322, FREDERICK DUNN.
BARREL-TRUSS.



100,323, GEORGE R. DUVAL.
SAND-PLOWS.



100,324, HORACE H. EAMES.
HARVESTING-RAKE.



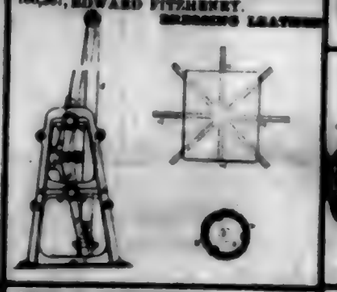
100,325, B. F. ELLIS.
SPRING-SEED BOTTOM.



100,326, C. J. EVERICKX, BEDSTEAD.



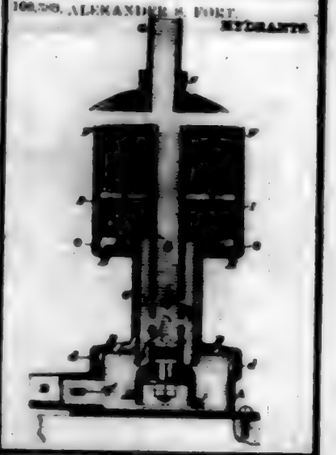
100,327, EDWARD FITZHENRY.
HARNESS LEATHER.



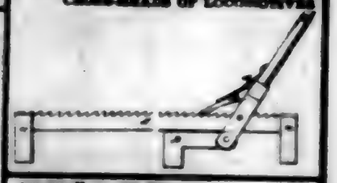
100,328, B. G. FITZHUGH.
WOOD-SPINNING.



100,329, ALEXANDER S. FORT.
HYDRANTS.



100,330, JOHN S. FUNK.
JACKS FOR MOVING THE CROSS-HEADS OF LOCOMOTIVES.



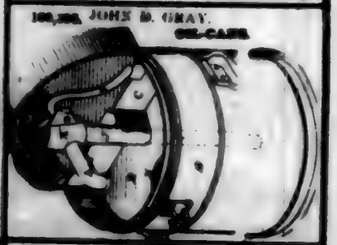
100,331, H. A. GAGE.
PAPER-CUTTING MACHINES.



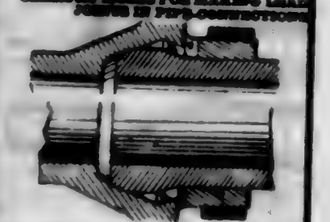
100,332, CHARLES O. GARDINER.
BOXES FOR CARS.



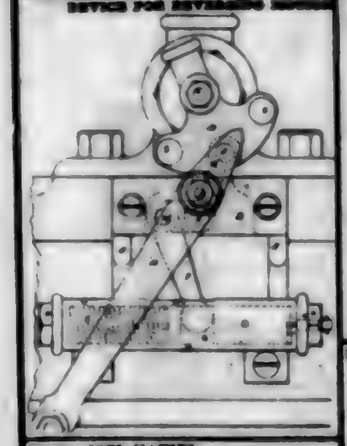
100,333, JOHN B. GRAY.
OIL-CANS.



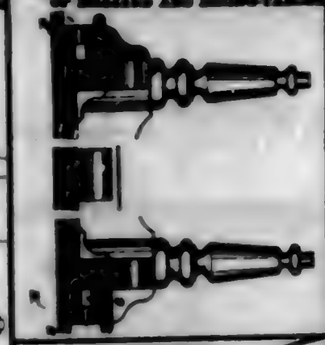
100,334, EDWARD GWYN.
CLAMPED SHIELD FOR MAKING LEAD JOINTS IN PIPE-CONNECTIONS.



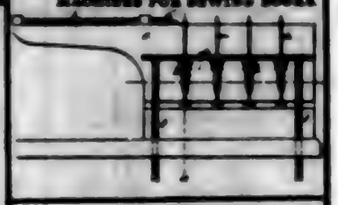
100,409. CHARLES P. HADLEY.
DEVICE FOR REVERSING MOTION.



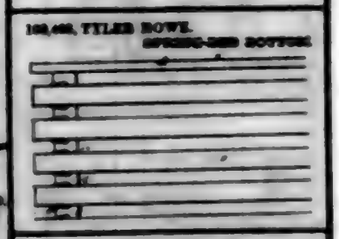
100,410. FRED. E. HELD, Germantown, Pa.
COMBINATION OF HEDDLE AND HEDDLE-FRAME.



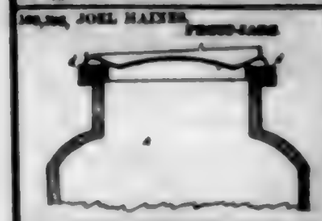
100,411. P. W. HOWE.
MACHINE FOR SEWING BOOKS.



100,412. TYLER HOWE.
SPRING-BED BOTTOM.



100,413. JOEL HAINES.
FRUIT-CANS.



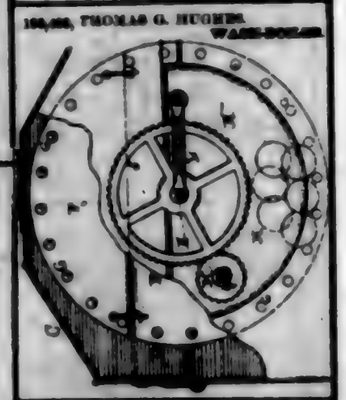
100,414. LOUIS HILLEBRAND, Paducah, Ky.
PARLOGRAPH.



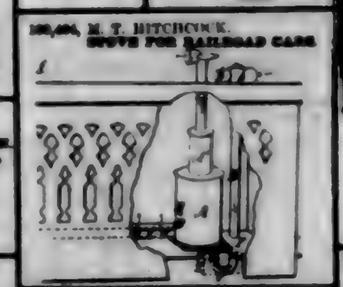
100,415. LOUIS HILLEBRAND, Paducah, Ky.
PARLOGRAPH.



100,416. THOMAS G. HUGHES, Washington, D. C.
WASH-BOILER.



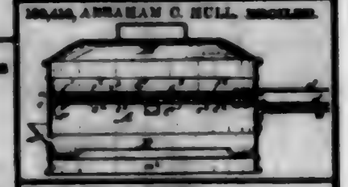
100,417. M. T. HITCHCOCK.
STOVE FOR RAILROAD CARS.



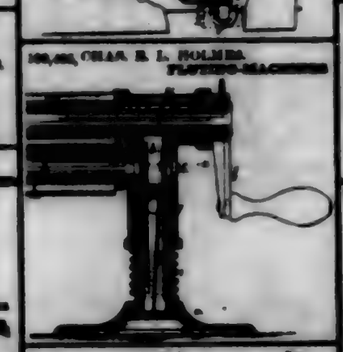
100,418. THOMAS P. HAMILTON.
SPOON, SKIMMER, AND COLANDER.



100,419. ABRAHAM C. HULL, Brooklyn, N. Y.
BROILER.



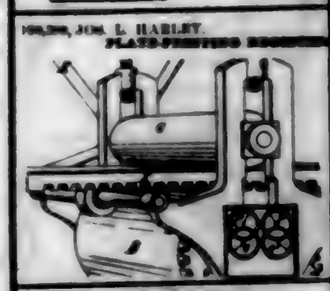
100,420. CHAS. R. L. HOLMES, Washington, D. C.
PLOWING-MACHINE.



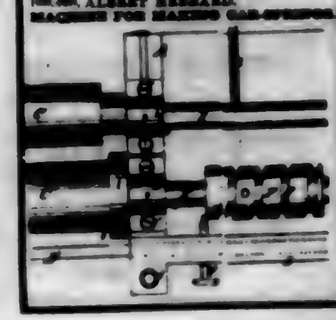
100,421. T. F. HAMMER, Cincinnati, O.
CAST-METAL LAMPS.



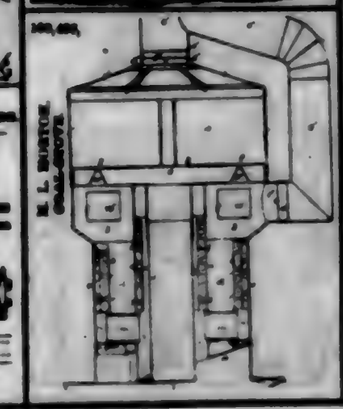
100,422. JOHN L. HARLEY, Cincinnati, O.
PLATE-PRINTING MACHINE.



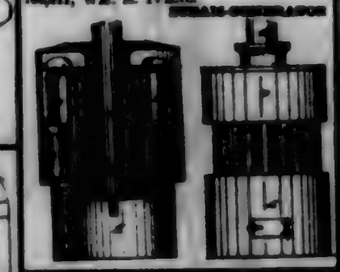
100,423. ALBERT HERBARD, Cincinnati, O.
MACHINE FOR MAKING CAR-SPRINGS.



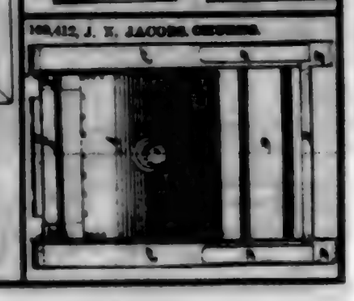
100,424. H. L. HINTON, Cincinnati, O.
CAR-STOVE.



100,411. WM. M. IVENS, Cincinnati, O.
STEAM-GENERATOR.



100,412. J. N. JACOBS, Cincinnati, O.
OVEN.



100,413. J. D. JAMES, Jr.
TIE-WORKING TOOLS.



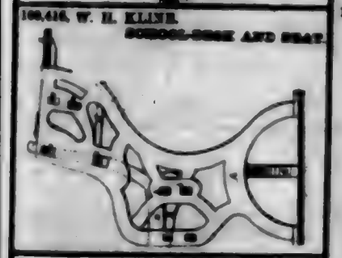
100,414. J. D. JAMES, Jr. Machine
FOR SEAMING METAL HOOPS.



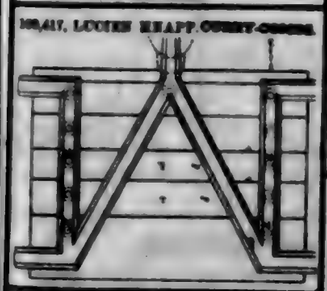
100,415. A. P. KEITH.
AERIAL CARS.



100,416. W. H. KLINE.
SCHOOL-DESK AND SEAT.



100,417. LOUIS KNAPP, Quincy, Ohio.
CURRY-COMBS.



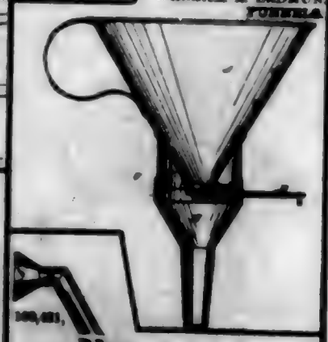
100,418. PATRICK LAUGHLIN.
CHURN-FRAME.



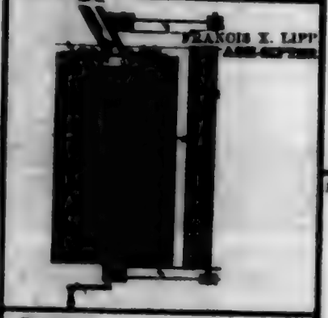
100,419. SEWALL LEACH.
RUBBER-COLLAR.



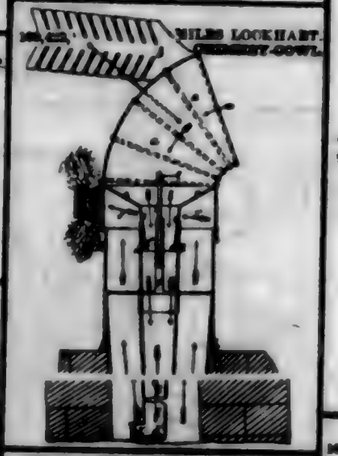
100,420. WILLIAM R. LEDMUN, Fishkill Landing, N. Y.
FURNACE.



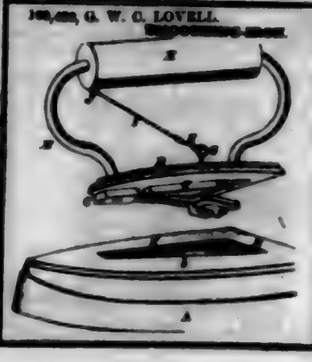
100,421. FRANCIS X. LIPP, Albany, N. Y.
ASH-SIFTER.



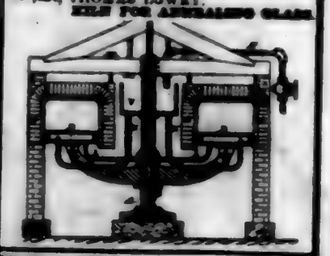
100,422. MILES LOCKHART, Cincinnati, O.
CEMENT-CHAIR.



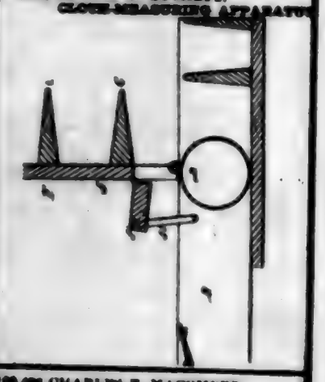
100,423. G. W. C. LOVELL.
BROOMING-MAT.



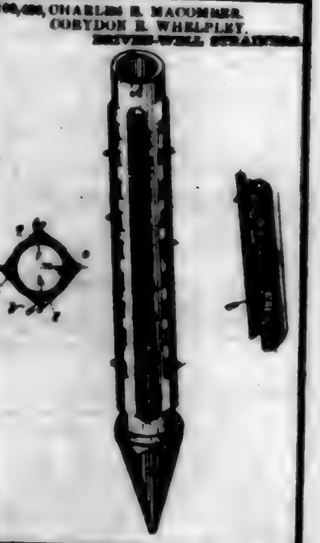
100,424. THOMAS LOWRY.
KILN FOR ANNEALING GLASS.



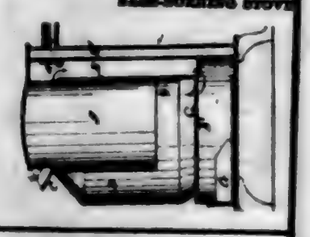
100,425. SAMUEL R. LUCKETT.
CLOTH-MEASURING APPARATUS.



100,426. CHARLES E. MACOMBER, Cincinnati, O.
OBEYDON E. WHELPLEY, Newport, Ky.
DRIVER-WELL STRAINERS.

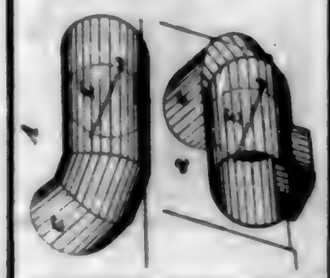


100,427. WILLIAM MAGILL.
RAGE-BURNING STOVE.

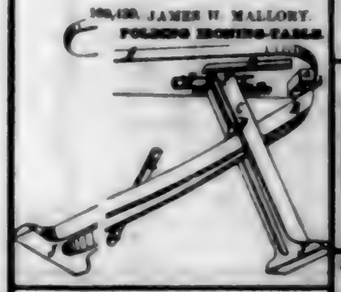


100,428. ARTHUR MAGINNIS.
WM. McCORMICK.
COLLECTING WASTE STEAM FROM BREWERIES AND BARS.

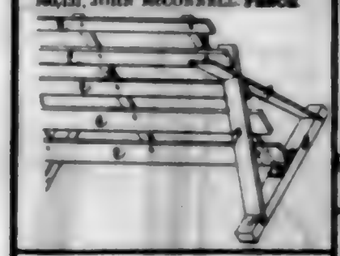
100,429. S. C. MAINE.
VENTILATOR FOR WINDOWS.



100,430. JAMES H. MALLORY.
FOLDING ironing-TABLE.



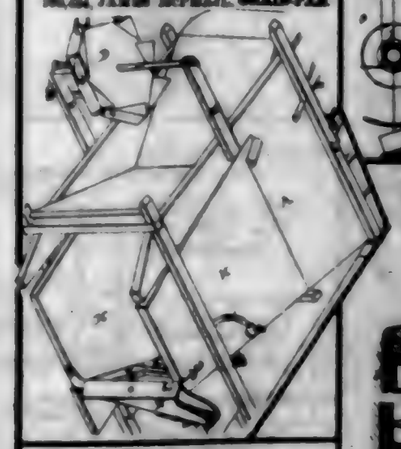
100,431. JOHN McCONNELL, PENCE.



100,432. GEORGE McKENZIE.
MANUFACTURE OF ILLUMINATING GAS FROM COAL AND OTHER MATERIALS.

100,433. GEORGE McKENZIE.
MANUFACTURE OF ILLUMINATING-GAS.

100,434. JAMES McFEAIL, GRAIN-FAN.



[illegible] J. B. NEWBROUGH
MANUFACTURE OF HARD STUDDS.

100,435. JAMES H. NEWTON.
MANUFACTURE OF CORRUGATED CLOTH AND PAPER FABRIC.

100,436.
T. J. NOTTINGHAM.
LUBRICATORS.



100,437. HARRISON OSBORN.
CLOTHES-LINE FASTENER.

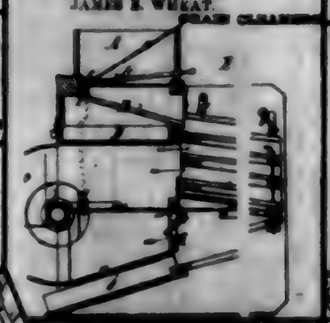


100,438. JOHN S. PEMBERTON. MEDICAL COMPOUND FROM GLOBE FLOWER.

100,439. ALFRED T. PERRINE.
AUGER FOR BORING SQUARE HOLES.



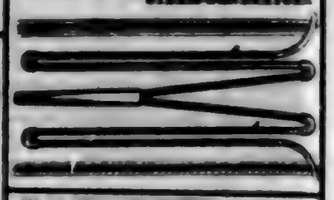
100,440. CHAUNCEY PERRY, JAMES B. WHEAT.
GRAIN-CLEANER.



100,441. A. WARNER PLATT.
SWITCH-CLOSURE FOR ELECTRO-MAGNETIC RAILROAD SIGNALS.



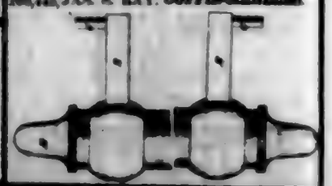
100,442. HENRY A. V. PORT.
STEAM-GENERATOR.



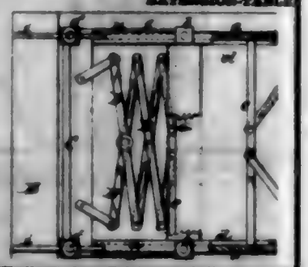
100,443. WILLIAM PRUETT.
SPRING SEAT FOR WAGONS.



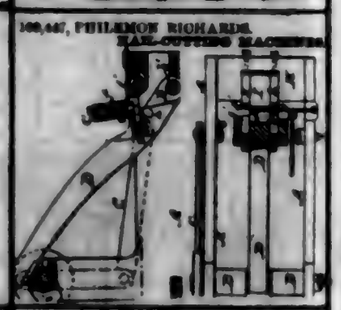
100,444. JAS. M. RAY. COFFIN-HANDLES.



100,445. WM. REICHENBACH, FERDINAND MORCHDIANTZKY.
EXTENSION-TABLE.



100,446. PHILEMON RICHARDS.
HAIR-CUTTING MACHINE.



100,447. J. P. RISHER.
JAMES E. BIRD.



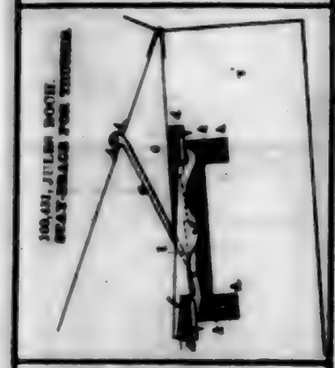
100,448. W. H. ROBERTS.



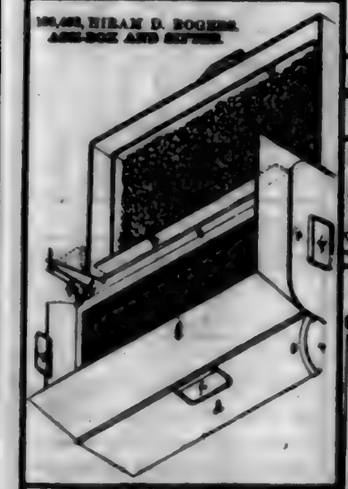
100,480. WILLIAM ROBINSON.
SAND-SHARER.



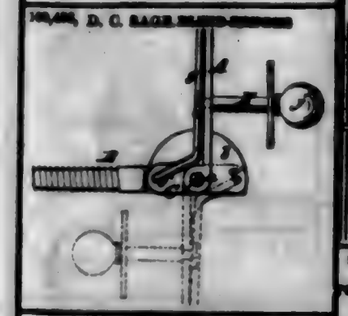
100,481. JULES ROUX.
PAY-ROLL OR CHECK.



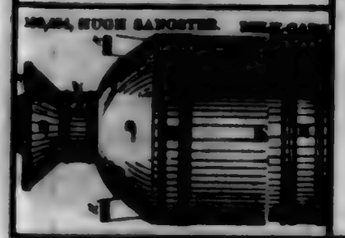
100,482. HIRAM D. ROGERS.
AIR-BOX AND SEPTUM.



100,483. D. C. SAGE.



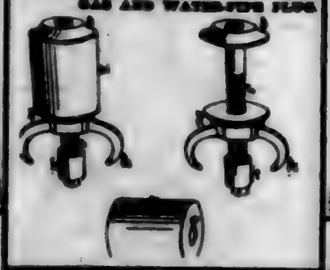
100,484. HUGH SANDITER.



100,485. EDWARD LEVI SARGENT.
BREECH-LOADING FIRE-ARMS.



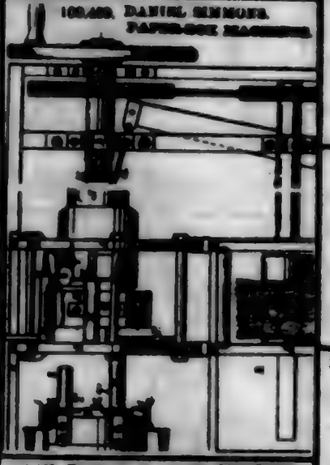
100,486. EVERETT P. SCHUTT.
GAS AND WATER-TUB PLUG.



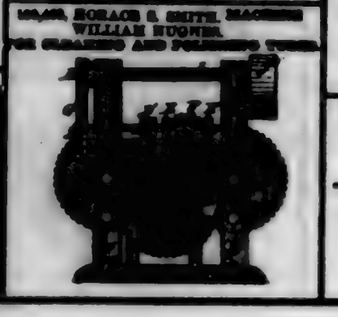
100,487. CHARLES U. SHEPARD, Jr.
PREPARING AMMONIATED SULPHURIC ACID FOR THE MANUFACTURE OF SUPERPHOSPHATE.

100,488. H. S. SHEPARDSON. [illegible]-BRACE.

100,489. DANIEL SIMMONS.
PAPER-BOX MACHINE.



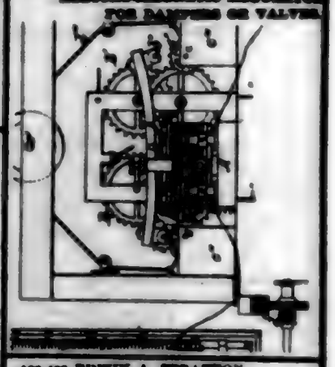
100,490. HORACE S. SMITH, WILLIAM HUGHES.
FOR CLEANING AND POLISHING TUBES.



100,491. WILLIAM D. ST. CLAIR.



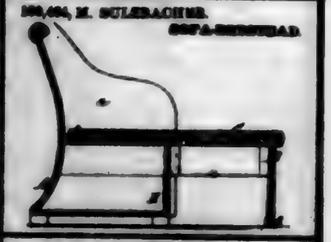
100,492.
MAGNETO-MAGNETIC REGULATOR FOR BALANCE OR VALVE.



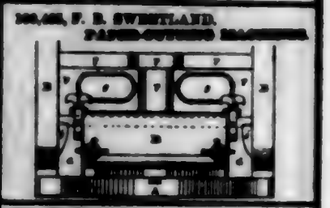
100,493. EDWIN A. STRATTON, CHARLES M. STRATTON.
SPRING-LEVEL.



100,494. M. SULZBACHER.
SOFA-BEDSTEAD.



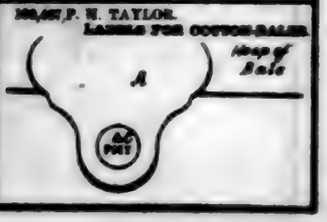
100,495. F. B. SWEETLAND.
PAPER-CUTTING MACHINE.



100,496. EDWARD LOUIS TAYLOR.
TOTE

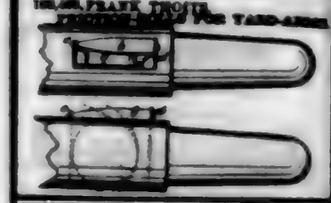


100,497. P. H. TAYLOR.
LASTING FOR COTTON-BALES.

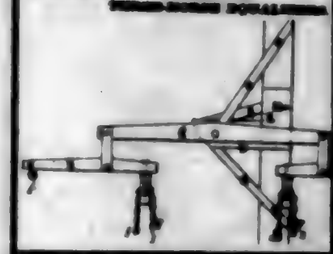


S. A.

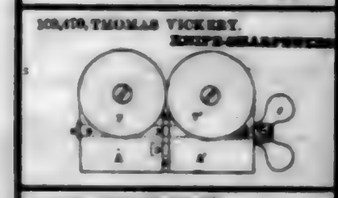
101,469, FRANK TROTH.
[illegible] FOR YARD-ARMS.



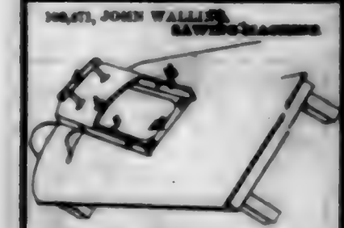
101,470, JOHN T. THORNTON.
[illegible]



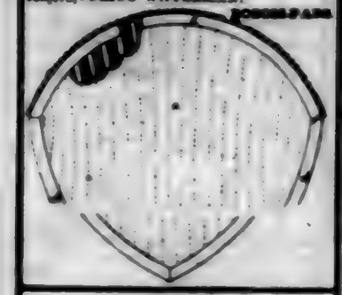
101,471, THOMAS VICKERY.
KNIFE-SHARPENER.



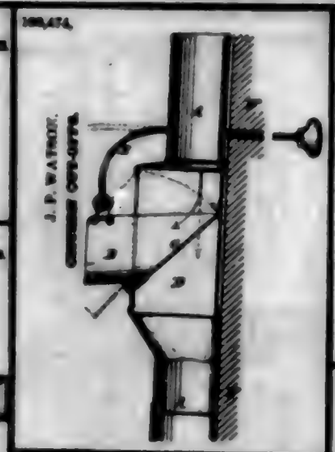
101,472, JOHN WALLER.
SAWING-MACHINE.



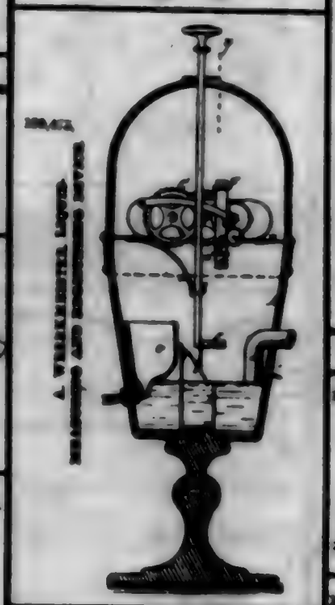
101,473, JULIUS WATERMAN.
[illegible]



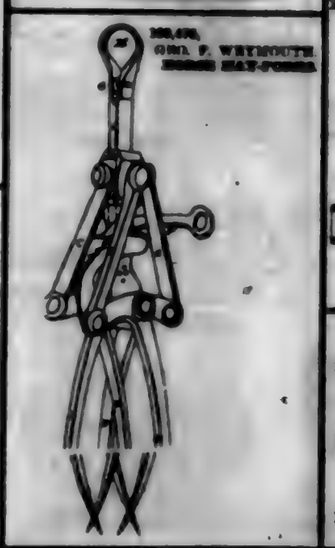
101,474, J. P. WATSON.
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101,475, A. WILLIAMSON LOCK.
[illegible]



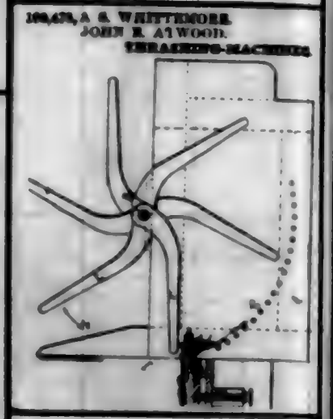
101,476, GEO. F. WEYMOUTH.
[illegible]



101,477, WM. B. WHITMORE.
[illegible]



101,478, A. S. WHITTEMORE.
JOHN R. ATWOOD.
THRASHING-MACHINES.

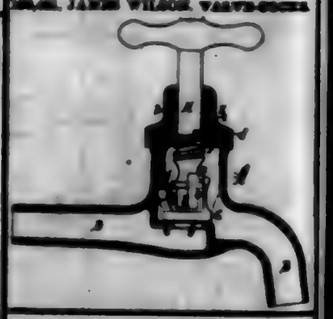


101,479. CANCELED.

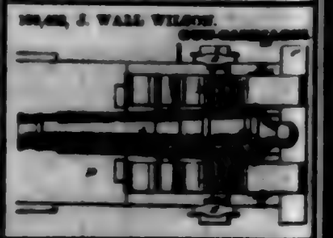
101,480, JULIUS WILCKE.
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101,481, JAMES WILSON.
[illegible]



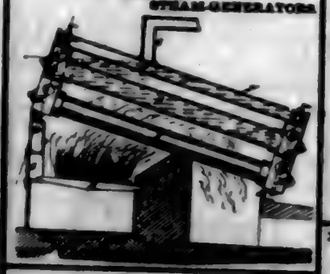
101,482, J. WALL WILSON.
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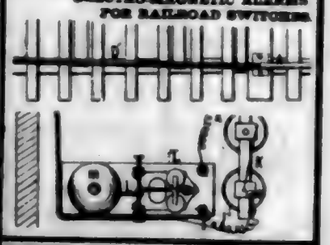
100,465, D. A. WOODBURY.
[illegible]



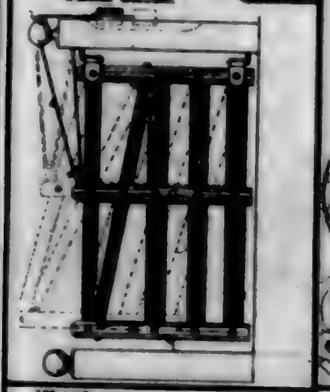
3,002, WM. P. ABENDROTH.
JOHN GRIFFITH.
G. W. WUNDRAM.
T. H. MÜLLER.
STEAM-GENERATORS.



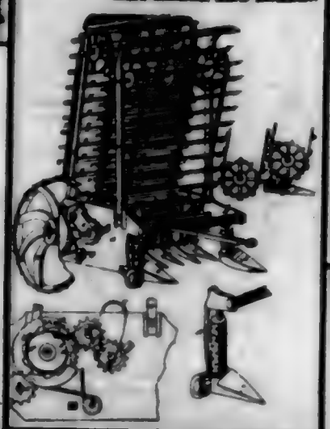
3,030, WM. A. CUMMINGS.
E. E. RICE.
ELECTRO-MAGNETIC ALARMS FOR RAILROAD SWITCHES.



100,484.
W. H. WRIGHT.
FARM GATES.



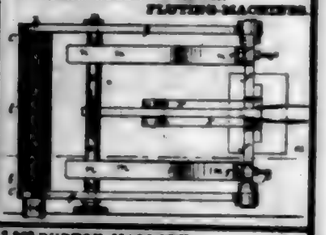
3,004, HORACE BAKER.
HAT-BLOCK AND LOADER.



3,000, WM. CLEVELAND HICKS.
BREECH-LOADING FIRE-ARMS.



3,001, MRS. SUSAN B. KNOX.
PLOTTING-MACHINE.



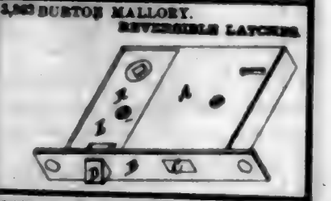
100,485
W. H. WRIGHT.
CATTLE-PENS.



3,005, JOHN P. BEATTY, MASS.



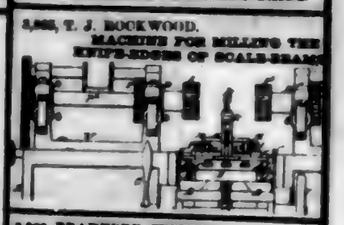
3,003, BURTON MALLORY.
REVERSIBLE LATCHES.



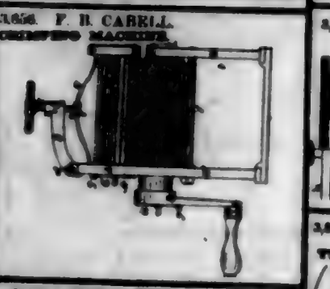
3,006, JOS. BECKENDORFER.
PENCILS.

3,064, L. F. ROBERTSON.
COMPOUNDS FOR TREATING HIDES AND SKINS.

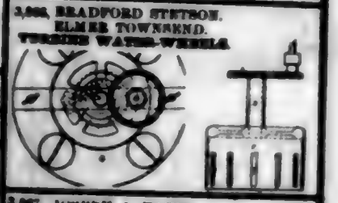
3,065, T. J. ROCKWOOD.
MACHINE FOR MILLING THE KNIFE-EDGES OF SCALE-BEAMS.



3,066, F. B. CARELL.
CRIMPING MACHINE.



3,068, BRADFORD STETSON.
ELMER TOWNSEND.
TURBINE WATER-WHEELS.



3,067, JOSEPH A. TATRO.
PROCESS OF TREATING PETROLEUM.

3,069, GEO. S. KELSEY, BUCKLE.

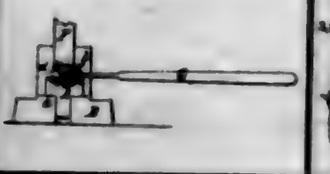


3,007, JAMES D. WHELPLEY.
JACOB J. STORER.
APPLICATION OF FUEL IN METALLURGIC AND OTHER FURNACES.

100,486, E. A. MOSHER.
[illegible]



3,008, O. M. DRAPER.
DEVICE FOR SWAGING CRATE-LINKS.



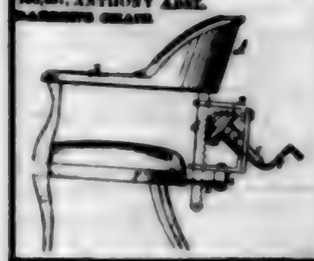
ILLUSTRATIONS OF PATENTS

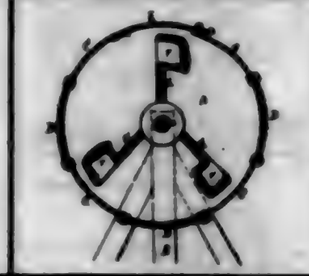
ISSUED FROM

THE UNITED STATES PATENT OFFICE

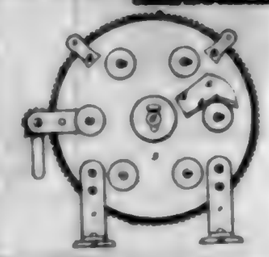
MARCH 8, 1870.

100,497. ANTHONY ADAM. CARRIAGE SEAT.

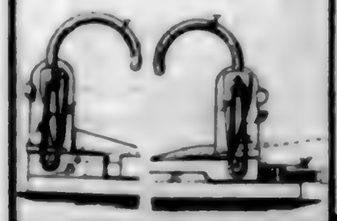




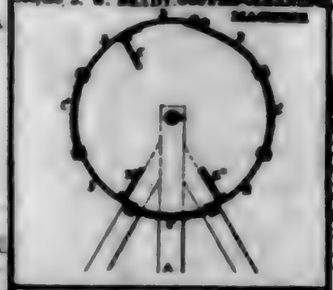
100,499. WILLIAM BUTTERFIELD. GRINDING-MACHINE.



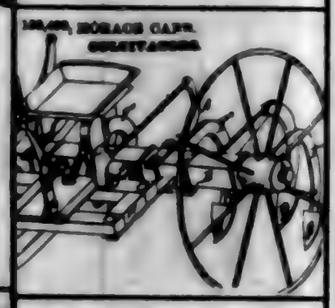
100,500. P. J. AYRES. TIRE-UPSETTING MACHINE.



100,501. J. W. BRADY. CUTTING-GRASS MACHINE.



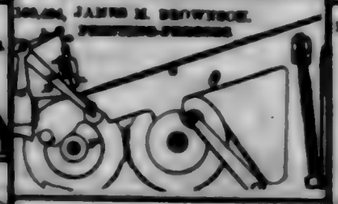
100,502. HORACE CARR. CULTIVATOR.



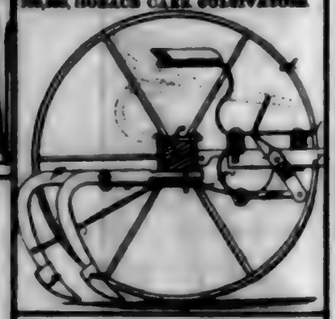
100,503. FRANCIS M. BACHMAN, SAMUEL BICKER. PASTURE.



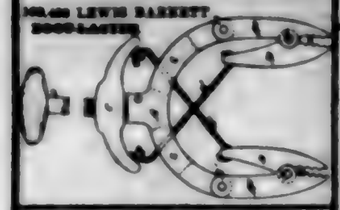
100,504. JAMES M. BROWNSON. FEEDING-TROUGH.



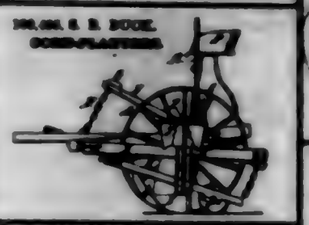
100,505. HORACE CARR. CULTIVATOR.



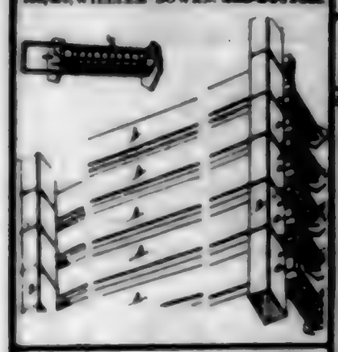
100,506. LEWIS BARRETT. DOOR-LATCH.



100,507. E. S. BOOK. DOOR-FASTENER.

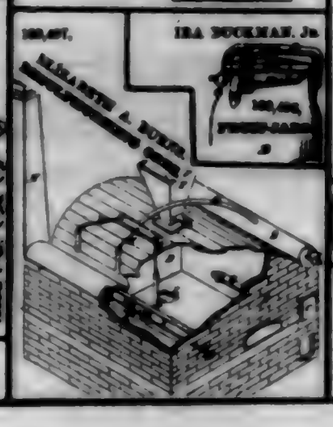


100,508. WILLIAM BOWER. BED-BOTTOM.

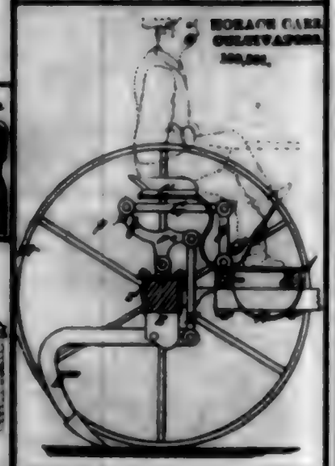


100,509. IRA BOOKMAN, Jr. FENCE-GAUGE.

ELIZABETH A. BOWER.

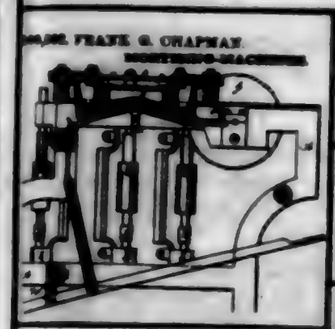


100,510. HORACE CARR. CULTIVATOR.



100,511. J. W. BRADY. CUTTING-GRASS MACHINE.

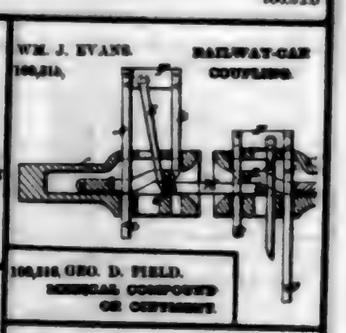
100,512. FRANK G. CHAPMAN. MORTISING-MACHINE.



100,513. EDWIN G. DOW. STOP FOR BILLIARD-TABLE.



100,514. WM. J. EVANS. RAILWAY-CAR COUPLING.

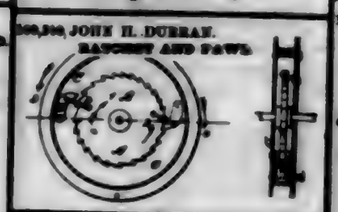


100,515. GEO. D. FIELD. MINERAL COMPOUND OR CEMENT.

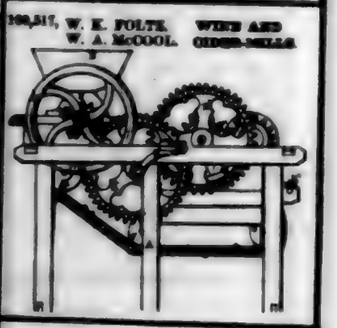
100,516. FRANK G. CHAPMAN. MACHINE FOR POLISHING WOOD.



100,517. JOHN H. DURRAN. RATCHET AND PAWL.



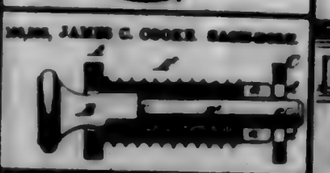
100,518. W. K. FOLTZ. W. A. McCOOL. WINE AND CIDER-MILLS.



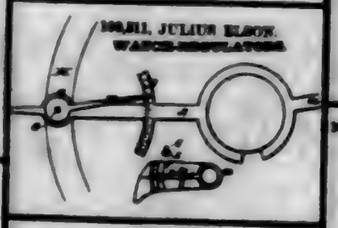
100,519. D. D. CODDING. BRACELET.



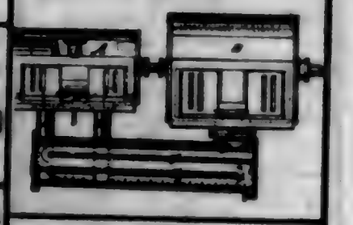
100,520. JAMES C. COOKE. SAW-GUARD.



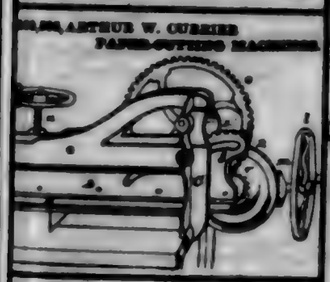
100,521. JULIUS ELSON. WATCH-REGULATOR.



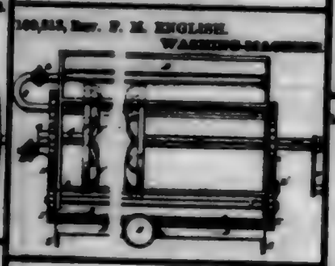
100,522. CHAS. E. EMERY. STEAM AND WASHING-APPARATUS FOR STEAM-BOILERS.



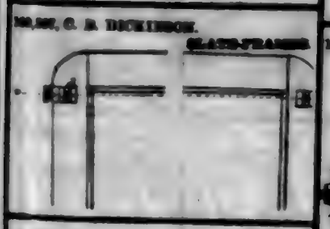
100,523. ARTHUR W. GURRIER. PAPER-CUTTING MACHINE.



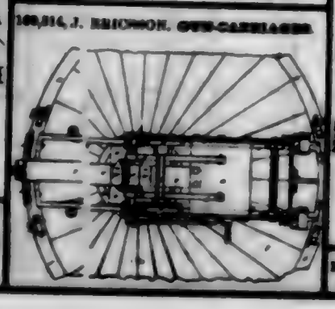
100,524. Rev. F. M. ENGLISH. WASHING-MACHINE.



100,525. C. B. DICKINSON. GLASS-FRAME.



100,526. J. ERICSSON. GUN-CARRIAGE.

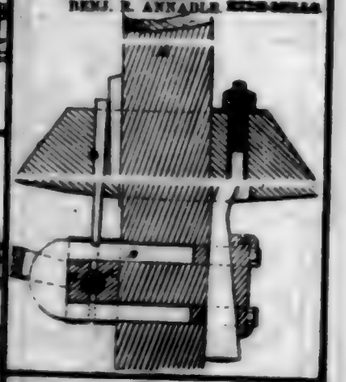


100,527. J. B. DIFFENDERFER. SCHOOL-DESK AND SEAT.

100,528. BOLAND S. FRAME. HORSE HAY-FORK.

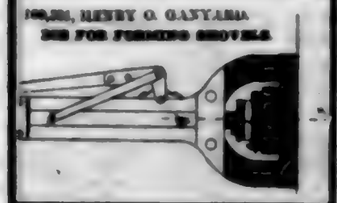


100,529. JOHN P. FRIEND. BENJ. R. ANNABLE. RIVE-HOLDER.

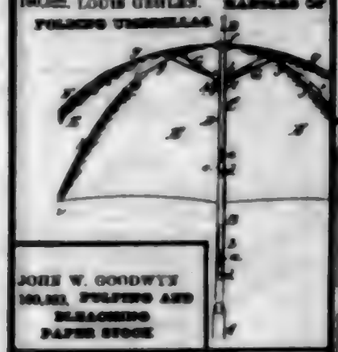


100,530. A. D. FULLMER. FASTENING.

100,531, HENRY O. GANYARD. SIDE FOR FURNISH SHOVELS.



100,532, LOUIS GEHLEN. RAISING OF PUMPING THERMELAS.

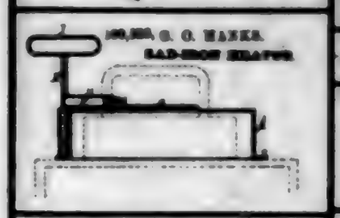


JOHN W. GOODWYN 100,533, PULPING AND BLEACHING PAPER STOCK

100,534. HENRY GREMA. SEE-SAW.



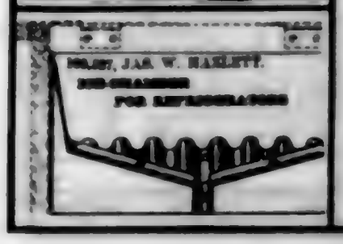
100,535, C. C. HAKES. RAIL-ROAD HEATER.



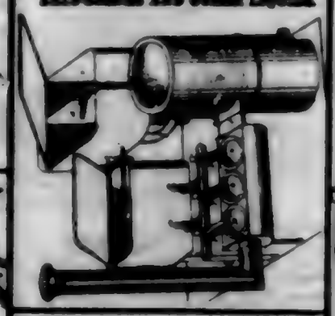
100,536, HENRY C. HARRIS. COTTON-SEED PLANTER AND FERTILIZER DISTRIBUTER.



100,537, JAS. W. HASLETT. SUB-CHANNEL FOR EMBANKMENTS.



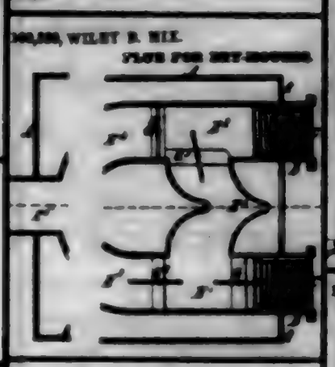
100,538, JACOB HEW. EVAPORATING SALT-BRINE AND OTHER LIQUIDS.



100,539, JOHNSON HIGGINS. STUMP-EXTRACTORS.



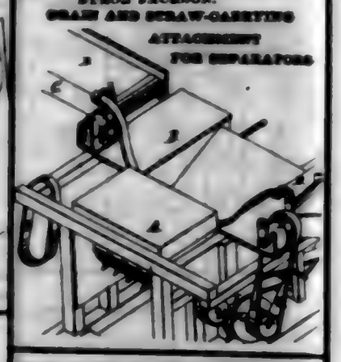
100,540, WILEY B. HIX. PLOW FOR SOD-BOTTOMS.



100,541, GEORGE P. HUNT. TUBE-FASTENING FOR STEAM-GENERATORS.



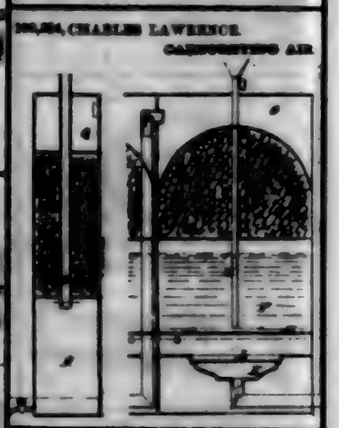
100,542, BENJAMIN F. JACKSON, BYRON JACKSON. GRAIN AND STRAW-CARRYING ATTACHMENT FOR SEPARATORS.



100,543, WILLIAM H. JOHNSON. RAIL-HEADING.



100,544, CHARLES LAWRENCE. CARBURETTING AIR.



100,545, WILLIAM LEE. CORRUGATIONS OF BOOT AND SHOE UPPERS.



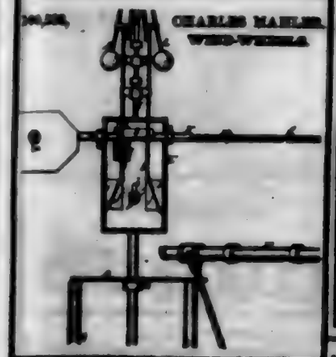
100,546 R. C. LOUD. STOVE-GRATE.



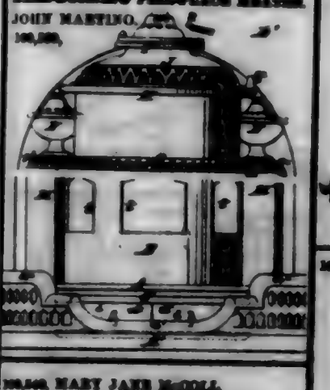
100,547 C. W. LOY. HELM-STOCK BRACE.



100,550, CHARLES MAHLER. WIRE-WINDER.



100,551, JOHN MARTINO. SAND-SCREENING FIRE-PLACE HEATER.



100,552, MARY JANE McCOLL. MANUFACTURE OF WAX-FLOWERS.

100,553, AUSTIN E. MASON. REVOLVING-SAWED VEIL.



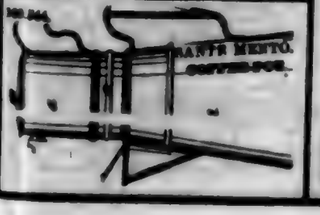
100,554, ASHER McCOMBER, MINA WARD. IMPROVEMENT FOR COUPLING RAILWAY-CARS.



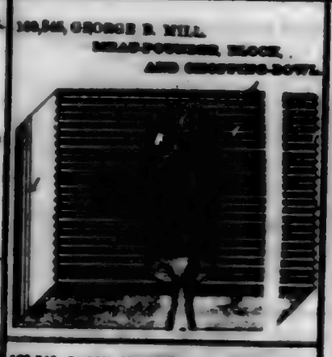
100,555, WILLIAM MELLER. RAILROAD-CAR HEATERS.



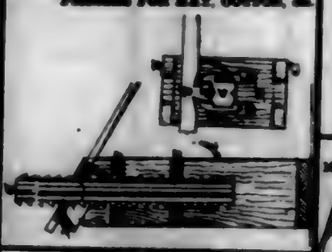
100,556 MANTE MENTO. COTTON-HOE.



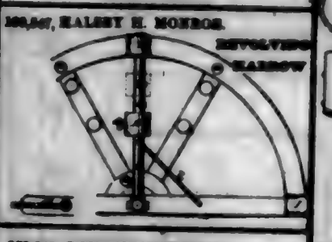
100,557, GROSSE B. MILL. MEAL-POUNDER, HOOK, AND GROOVED BOWL.



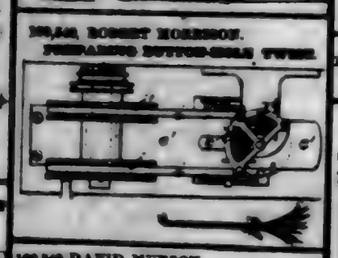
100,558, SAML. MILLER. PRESSING FOR HAY, COTTON, &c.



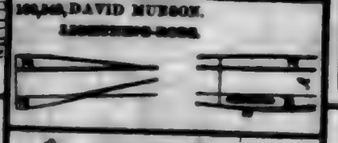
100,559, HALSEY H. MONROE. REVOLVING HARROW.



100,560, ROBERT MORRISON. FEEDING COTTON-HOLE TWINE.



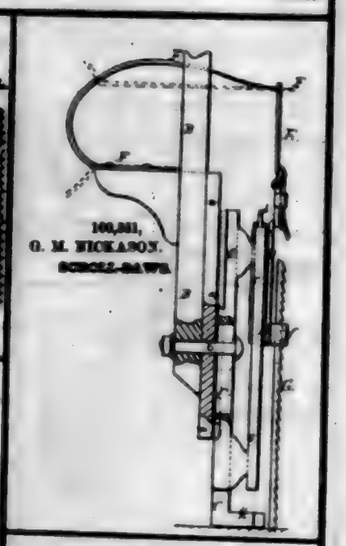
100,561, DAVID MUNSON. LIGHTNING-ROD.



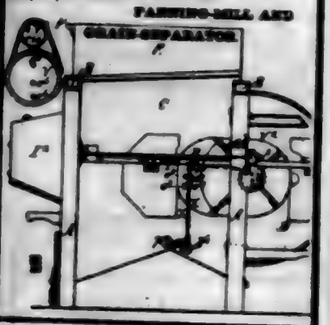
100,562, GEO. W. NEILL. RAISING-ACTION FOR UPRIGHT PIANO-FORTES.



100,563, M. M. NICKARSON. SCROLL-SAW.

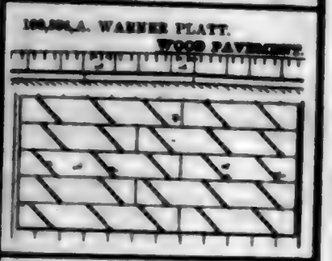


100,564, HARRISON OSBORN. FARMING-MILL AND GRAIN-SEPARATOR.

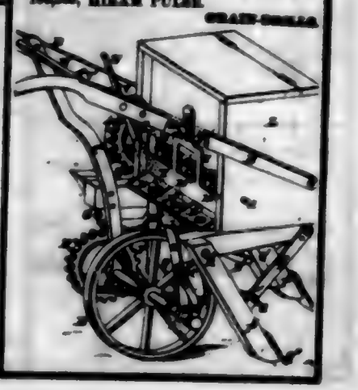


100,565, THOMAS L. OLDEN. PURIFYING ACETIC ACID.

100,566, A. WARNER PLATT. WOOD PAVEMENT.

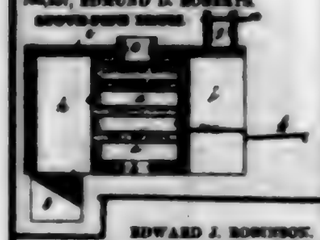


100,567, HIRAM PULER. GRAIN-SHELLER.



100,326, SUPPRESSED.

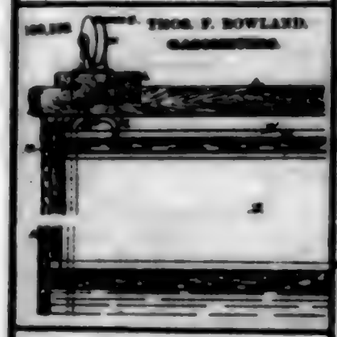
100,327, EDWARD D. ROBERTS.



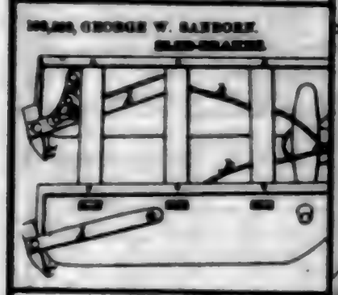
EDWARD J. ROBINSON.



100,329 THOS. F. ROWLAND.



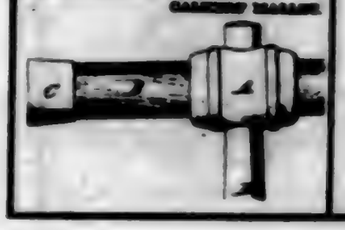
100,330, GEORGE W. SAUNDERS.



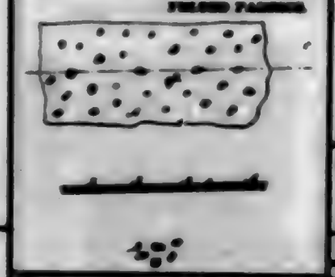
100,331, CARL SCHULTE.
THOMAS WARNER.



100,332, SAMUEL C. SEARLES.



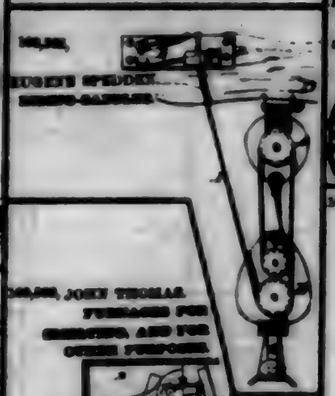
100,333, SIMON P. SIVER.



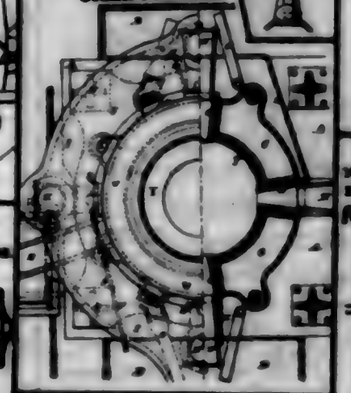
100,334, E. W. SMITH, Jr.



100,335,



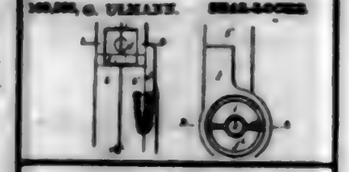
100,336, JOHN THOMAS.



100,337, WILLIAM L. THOMAS.



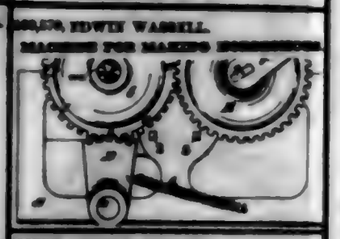
100,338, G. ULMANN.



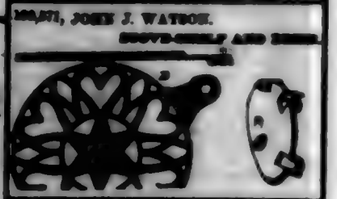
100,339, WILLIAM W. WAIT.



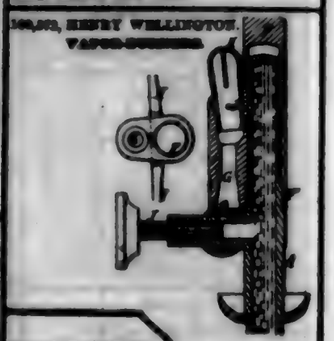
100,340, EDWIN WARRELL.



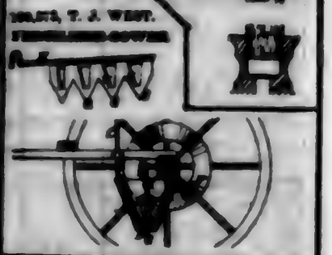
100,341, JOHN J. WATSON.



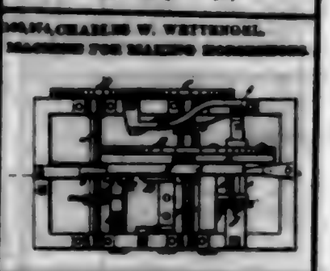
100,342, HENRY WELLINGTON.



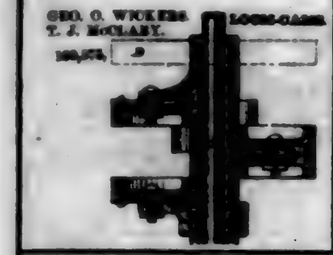
100,343, T. J. WEST.



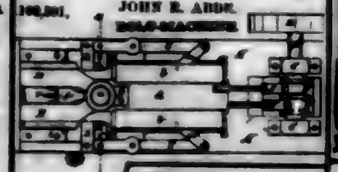
100,344, CHARLES W. WETTENGEL.



GEO. O. WICKERS.
T. J. MCCLARY.



100,331, JOHN R. ADDE.

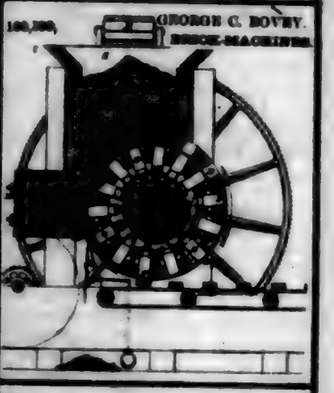




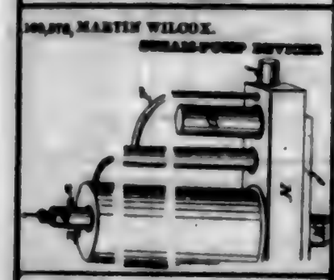
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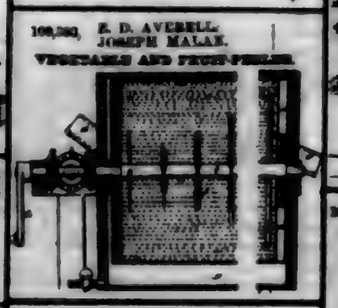
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100,334, MARTIN WILCOX.



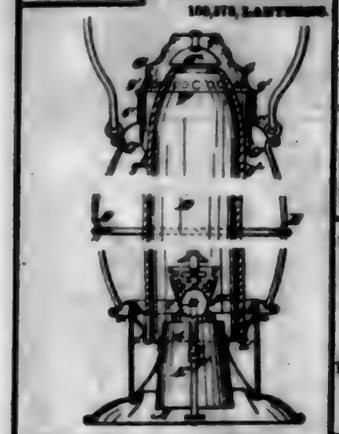
100,335, E. D. AVERELL.
JOSEPH MALAK.



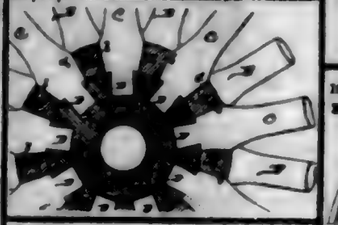
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ARNOLD WITTEMAN.



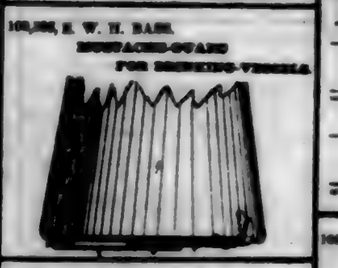
100,338, J. B. BAIRD.



100,339, ABNER BALDING.



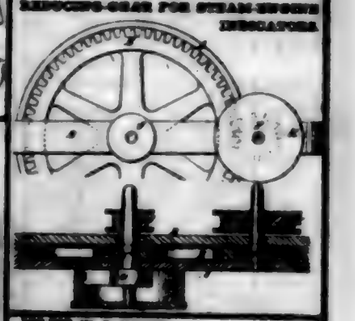
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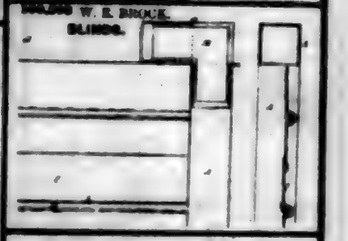
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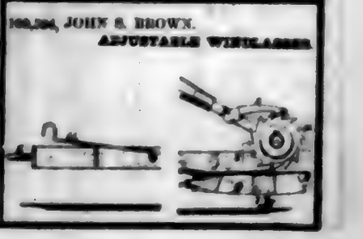
100,342, HENRY L. BREVOORT.



100,343 W. E. BROCK.



100,344, JOHN S. BROWN.



100,337, C. G. BAYLOR.

100,338 EZRA BLAKELEY.

100,339, ISAAC BOXSELL, Jr.

100,[illegible], JAMES BRYAN.

100,[illegible], ROBERT CLARKE. LAUNDRY-STIFFENING

100,[illegible], AUBY S. COOK.

100,[illegible], G. F. J. COLBURN. HAND-STOPPER FOR WASHING GLOVES

100,[illegible], SETH C. ELLIS. MACHINE FOR MAKING HASH

CORRUGATED HAY-KNIFE AND [illegible], PRESSING-BLOCK. DANIEL PASIG.

100,[illegible], JAMES D. BUTLER. LEG-REST AND TENSION DEVICE FOR SPOOLS OF SEWING MACHINES.

100,[illegible], JOAH L. COLE. MACHINE FOR FINISHING CURLED HAIR.

100,[illegible], JAMES FITZGERALD. BALANCE SLIDE-VALVE.

100,[illegible], JAS. CALLIHAN.

100,[illegible], MACK D. CONVERSE. HEAD-STOPPER

100,[illegible], GEORGE FLEMING. POLE-ADJUSTING APPARATUS.

100,[illegible], ANDREW CAMPBELL. PRINTING-PRESSES

G. W. COREY, THOMAS LOSEE. FLOATING SIDES.

100,[illegible], DEXTER CURTIS. PRESSES

100,[illegible], GEO. S. GLADDING. IMPROVED CORD-HOLDER FOR WINDOWS, &c.

H. C. CASE. ANIMAL-TRAP.

100,[illegible], E. J. DE KNIGHT. COMPOSITION FOR PRESERVING WIRES AND WOOD.

100,[illegible], SAMUEL H. DOCKSTADER. WELL-BORING

100,[illegible], WM. F. GOULDING. HARVESTER-RAKING

100,[illegible], CHARLES T. GRAVATT. DOOR-FASTENER

100,[illegible], G. F. HALL. MACHINE FOR REVERSING CONICAL VALVES.

100,[illegible], WILLIAM H. HALL. ELASTIC FOOTBOOT FOR HORSES' FEET.

100,[illegible], WM. HARDEY. VARIABLE CUT-OFF VALVE-GEAR.

100,[illegible], CALVIN HART. PANS-GAUGE.

100,[illegible], CHARLES B. HATFIELD. PAPER-BOX MACHINE.

100,[illegible], W. W. HAWLEY. GRAIN-WASHING TABLE.

MARSHAL HAYS. [illegible], WATER-GATES.

100,[illegible], DANIEL HEIGHE. PLOW.

ABRM. HEMINGWAY. SLIDE-VALVES.

R. T. HEPBY. CARRIAGE-SPRINGS.

100,[illegible], JAMES B. HERRINHOFF. SHUTTLE FOR SEWING-MACHINES.

100,[illegible], THEODORE A. HOFFMANN. ASPIRATORS FOR PREVENTING OVERHEATING OF GRAIN, &c.

100,[illegible], H. A. HOGEL. TREATING BLOOD FOR THE PREPARATION OF FERTILIZERS AND FOR OTHER PURPOSES.

100,[illegible], GEO. HOPSON. MACHINE FOR PUNCHING THE LEAVES OF ELLIPTIC SPRINGS.

100,[illegible], C. E. HUTSON. HOLLOW GRATE FOR STEAM-BOILERS.

100,[illegible], THEODORE HYATT. HEAT-RESISTING MATERIALS FOR SAFES, BANK-VAULTS, &c.

100,[illegible], BENJ. ILLINGWORTH. DEVICE FOR PACKING AND TRANSPORTING HOGS.

100,[illegible], J. HENRY JENNINGS. CHECKS FOR GAS-BURNERS.

THOMAS W. JOHNSTON. SPRING-BED BOTTOM

100,[illegible], H. D. JOHNSON, A. V. BARTWELL. SETTING SAWS.

E. JONES.
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MODE OF FURNISHING MIRRORS TO FURNITURE.

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A. C. RAND.
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WATER-CURRENT MOTORS.

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STUMP-EXTRACTORS.

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STOP-MOTION FOR SPOOLING-MACHINES.

WALTER SHAW.
FRUIT TRANSPORTATION BOXES.

FREDERICK H. SHEPARD.
HEELS OF RUBBER BOOTS AND SHOES.

100,674, FREDERICK M. SHEPARD.
SOLES OF RUBBER BOOTS AND SHOES.

DAVID A. SPRINKLE.
GAS-MACHINE.

L. IGNATIUS TRUDO. 100,691.
NUT-BEARER.

ROBERT D. SILVERWOOD.
WOOD-SPLITTING MACHINE.

100,683, THEODOR G. SPRINGER.
MACHINE FOR BENDING FELLOES.

100,692, JOSEPH P. TUTTLE. RAMPINS.

SAMUEL SIMPSON.
SPOOL-HOLDER AND REEL.

100,695, J. M. STAMP.
TOOL FOR LACING BELTS.

JACOB VALENTINE. RAILWAY-RAIL.
FRANCIS HARRIS, Jr.
CHAUNCY BARNES. 100,693, SPLICE.

APPARATUS FOR REFRIGERATING
100,687, D. E. SOMES, AND PRESERVING.

A. VAN PATTEN. 100,694,
J. F. KNIGHT.
RAIL-SPLICING.

100,697, GEORGE W. SWIFT.
HAY AND COTTON-PRESSES.

LOUDUS B. WALKER.
PLANING-MACHINE. 100,696.

COOLING AND PRESERVING-CASE.
100,688, D. E. SOMES.

100,698, LEWIS T. WEBSTER.
PLOW.

D. E. SOMES APPARATUS FOR COOLING
100,689, AND PRESERVING.

100,699, FRANK C. TIGHTHOFF.
ROOFING COMPOUND.

100,690, C. TELLIER.
MANUFACTURE OF ICE AND
COOLING AIR, LIQUIDS, &c.

100,697, ALFRED WEBB.
SELF-CLOSING AXLE-BOX-COVER.

100,700, G. TERWILLIGER.
SHOOTING-GAME.

100,686, WILLIAM WELLS.
SPRING-SIDE BOOTOES.

JOSEPH KLECKNER. CONSTRUCTION
OF CHIMNEYS AND FLUES. 100,702.

100,703, JESSE WOOD.
PLOW-CLEVIS.

100,688, CONSTRUCTION OF SUSPENSION-
BRIDGES. ADOLPH WEBER, JOHN KERSHAW.

JOSEPH KLECKNER.
100,704, CEMENT TO BE
USED IN BUILDING AND
REPAIRING
AND FOR CONSTRUCTING
FLUES AND OTHER PARTS
OF CHIMNEYS.

JOSEPH J. SHAFFER. RAILWAY
CURTIS C. STRICKETT. SWITCH.

100,701, JOEL L. WOODEN.
COLLAR AND HAME.

100,707.

2,869, JACOB B. BURKE.
VALVE-GEAR FOR STEAM-ENGINES.

100,702, WM. WRIGHT.
PUMP.

GUSTAVUS D. DOWS. 2,870,
CALVIN DOWS. TURNING-WASHER.
GEORGE S. CUMMINGS.

2,871, S. F. HESS.
PACKING-CASE FOR TOBACCO.

100,705, HENRY FOWLER.
BRUFF AND COLLAR-BOW.

2,872 W. J. NICHOLS AND A. G. RAND.
APPARATUS FOR THE MANUFACTURE OF GAS.

100,706, HENRY H. HARMON.
DOVETAILING-MACHINE.

2,873 W. J. NICHOLS AND
A. G. RAND.
MANUFACTURE OF GAS.

G. W. COLE. CORN-SCALE CUTTER.
2,874.

W. FOOS. 2,875. WATER-WHEEL.
JOHN W. BOOKWALTER.

2,876.
JOHN K. CESEL.
HORSE-HAY-FORKS.

2,877, C. D. PAGE. LENS-HOLDER.

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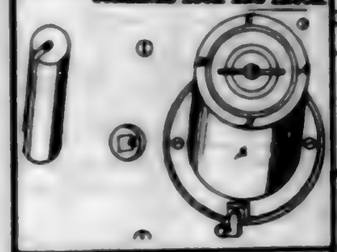
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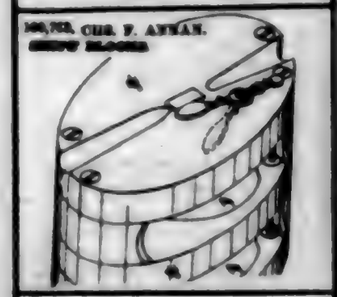
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MARCH 15, 1870.

160,709, GEO. S. ALLEN.
COMBINED LOCK AND LATCH.



160,710, CHR. F. AYRAN.
SHOP BLOCKS.



160,711, TIMOTHY BAKER.



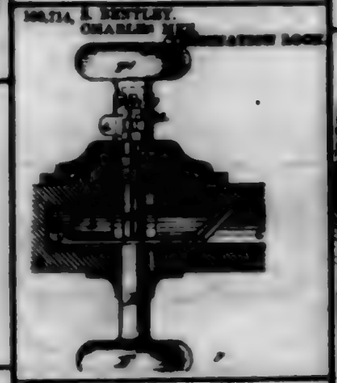
160,712, WM. E. BARTHOLOMEW.
PLANE-TRAMMEL.



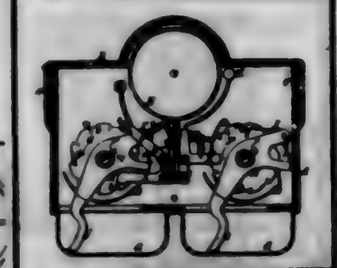
160,713, SAFFORD BECKWITH.
CULTIVATOR-STEERER.



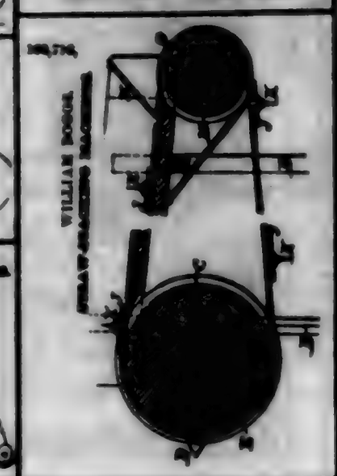
160,714, S. BENTLEY.
CHARLES BIE.



160,715, F. BLACKBURN AND G. W. WOODSIDE.



160,716,



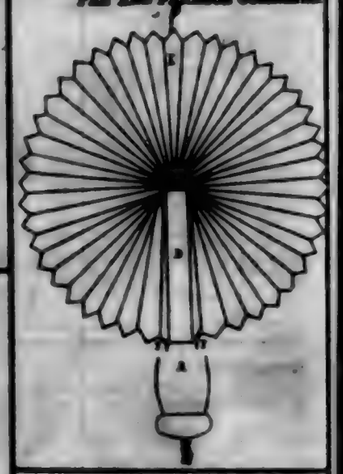
160,717, LEMOT BOYETON. BREACHABLE
W. F. SWEET.
HANDLES FOR KNIVES AND FORKS.



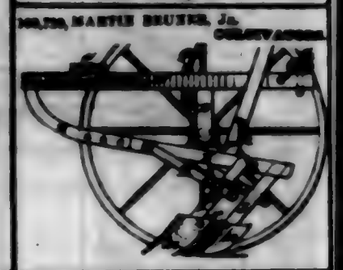
160,718, LEVERETT BRAINARD.
BAG-WEIGHER AND DUSTER
FOR MEASURING PAPER STOCK.



160,719, JOSHUA BROOKS.
FAN AND PARASOL.



160,720, MARTIN BRUNER, Jr.



160,721, JAMES BULGER.
FAUCETS.



160,722, JAMES H. BUTLER.
MACHINE FOR SAWING LATH.



160,723, CHAS. S. CHAFFEE.
A. WARING.
METHOD OF SHOEING SOLES TO BOOTS AND SHOES.

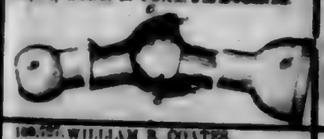


160,724, A. S. CLARK.
BOOT AND SHOE-HEAVE.



160,725, OSCEOLA W. CLARK, ASSIGNOR, TO CLAY GAS-RETORTS BURNING TRAY.

160,726, HORT. B. COAR. PIPE-JOINTS.



160,727, WILLIAM B. COATES.
CONCRETE AND WOODEN PAVEMENTS.



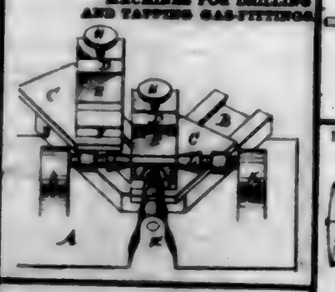
160,728, HENRY B. S. COLTON.
SAFETY-ATTACHMENT FOR SOCKETS.

160,729, JOHN COMMINS.
FERTILIZER.

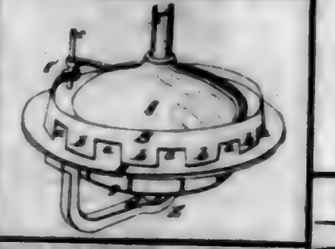


160,730, HIRAM M. CONKLIN.
COMPOUND FOR MAKING CONCRETE PAVEMENTS.

160,731, RICHARD T. CRANE.
MACHINERY FOR DRILLING AND TAPPING GAS-FITTINGS.



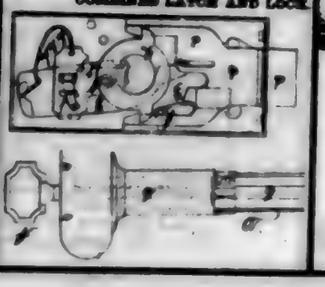
160,732, ELEAZER P. CROCKER.
TURBINE WATER-WHEELS.



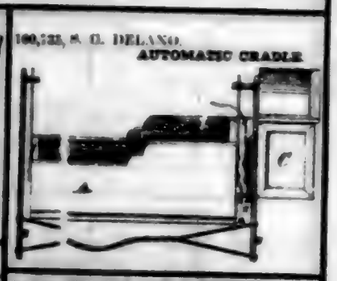
160,733, J. C. CRUMMY, FOLDING-CHAIR.
A. A. PARSONS.



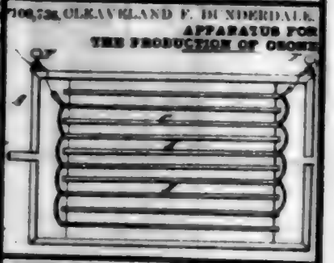
160,734, CHARLES L. DEAN.
COMBINED LATCH AND LOCK.



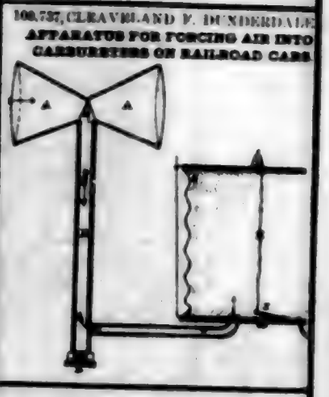
160,735, S. G. DELANO.
AUTOMATIC CRADLE.



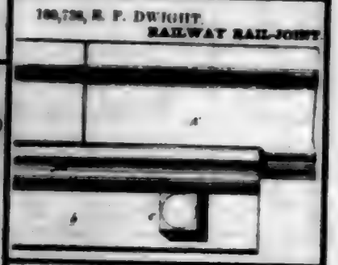
160,736, CLEAVELAND F. DUNDERDALE.
APPARATUS FOR THE PRODUCTION OF OZONE.



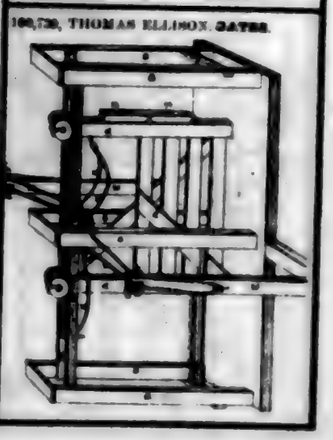
160,737, CLEAVELAND F. DUNDERDALE.
APPARATUS FOR FORCING AIR INTO CARBURETERS ON RAILROAD CARS.



160,738, E. P. DWIGHT.
RAILWAY RAIL-JOINT.



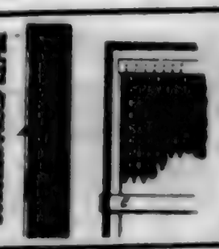
160,739, THOMAS ELLISON. GATES.



100,740, X. EVERGE, CORN-SHELLER



100,741, JOHN M. EVENS, BURGLAR-PROOF SAFE



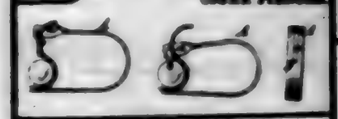
100,742, JOSEPH C. FIELD, LAWN-MOWERS



100,743, MIRANDA FORT, PLOWS



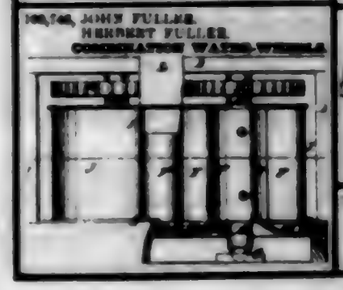
100,744, HORACE H. FOSTER, CIGAR PRESSES



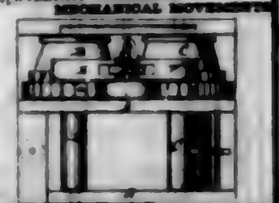
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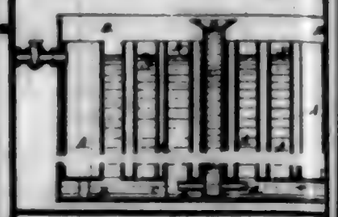


100,746, JOHN FULLER, HERBERT FULLER, COMBINATION WATER-WHEELS

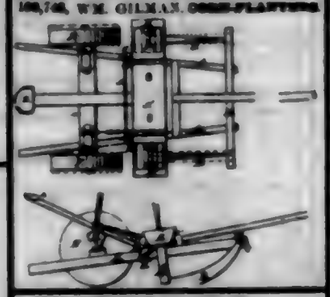


100,747, WILLIAM GARRISON, MECHANICAL MOVEMENTS

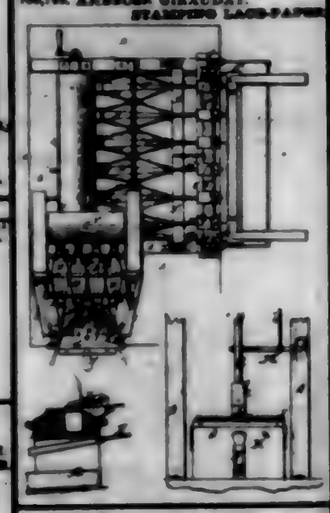




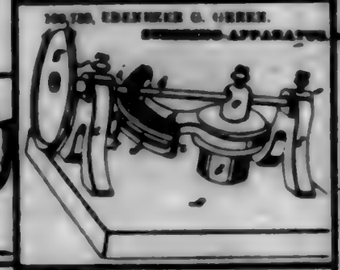
100,748, WM. GILMAN, CORN-PLANTING



100,749, AMBROSE GIRAUDAT, STAMPING LACE-PAPER



100,750, EBENEZER G. GREEN, SPINNING-APPARATUS

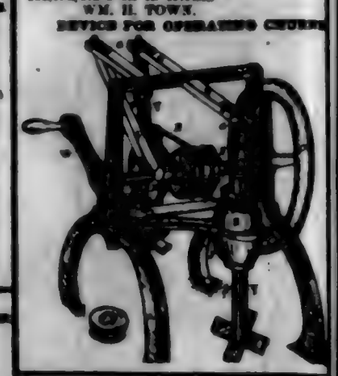


100,751, JOHN GRINDROD, COPING FOR WALLS

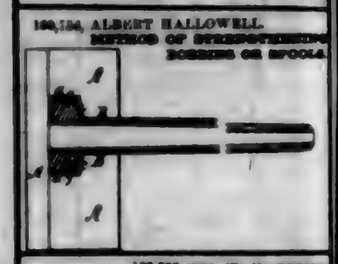


100,752, THEODORE GRÜNDMANN, APPARATUS FOR COOLING BEER AND OTHER LIQUIDS

100,753, EDGAR R. HALL, WM. H. TOWN, DEVICE FOR OPERATING CHURN



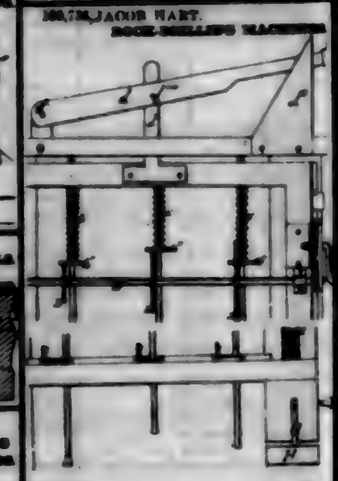
100,754, ALBERT HALLOWELL, METHOD OF STRETCHING AND ROLLING ON SPOOLS



100,755, WM. W. HARDING, PAPER-MAKING MACHINERY



100,756, JACOB HART, HOOP-SHAVING MACHINES



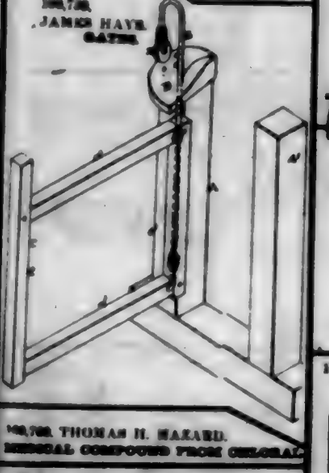
100,757, LEWIS HART, SCREW-DRIVER



100,758, G. G. HATHORN, FARE-BOXES FOR RAILROAD CARS



100,759, JAMES HAYE, GATES



100,760, THOMAS H. HAZARD, MINERAL COMPOUND FROM CHLORALS

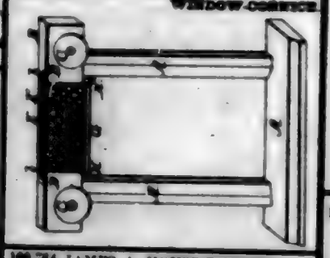
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100,762, DANIEL HILL, PLANING-APPARATUS



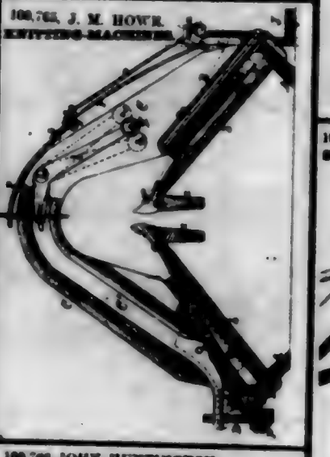
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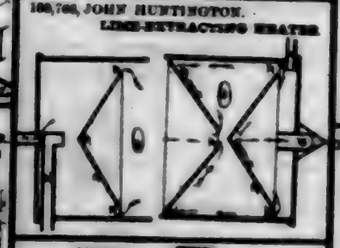
100,764, JAMES A. HOUSE, FEEDING-MECHANISM FOR SEWING-MACHINE



100,765, J. M. HOWE, KNITTING-MACHINE



100,766, JOHN HUNTINGTON, LINT-EXTRACTING HEATER



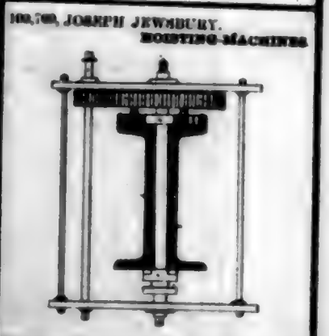
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100,768, HIRAM INGRAHAM, BOBBINHORN



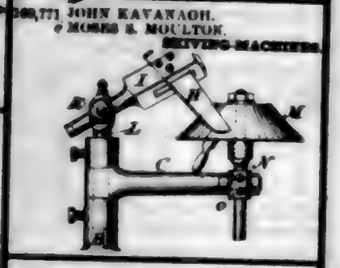
100,769, JOSEPH JEWSBURY, HOISTING-MACHINES



100,770, W. O. JOHNSON, STUMP-EXTRACTORS



100,771, JOHN KAVANAGH, & MOSES S. MOULTON, SEWING-MACHINES



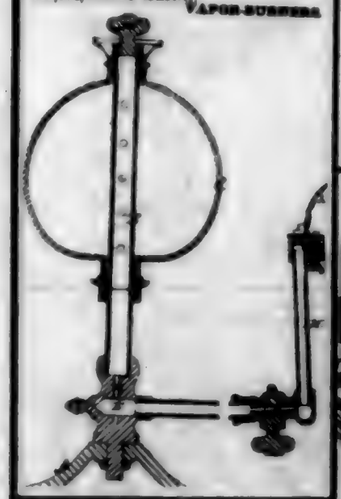
100,772, DANIEL KELLY, CONVEYING-ATTACHMENT FOR LATHES



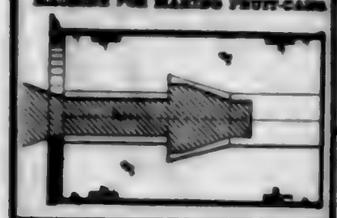
100,772, WM. H. KELLY.
APPARATUS FOR LIGHTING GAS BY ELECTRICITY



100,773, ISAAC KLINE.
VAPOR-BURNER.



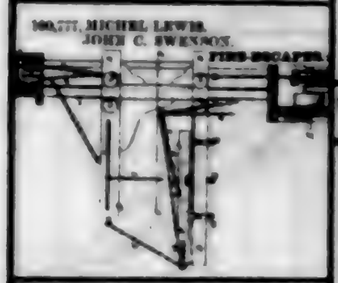
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MACHINE FOR MAKING FRUIT-CANS.



100,775, CHARLES PHILIPP LENZ.
EXTENSION TABLE.

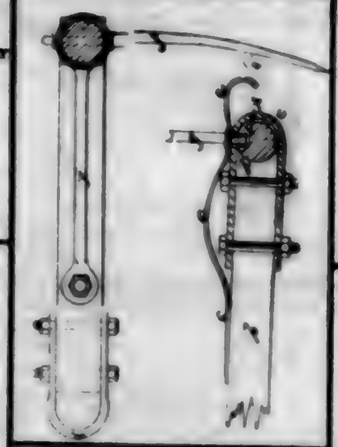


100,776, MICHEL LEWIS.
JOHN C. SWENSON.
FIRE-ESCAPE.

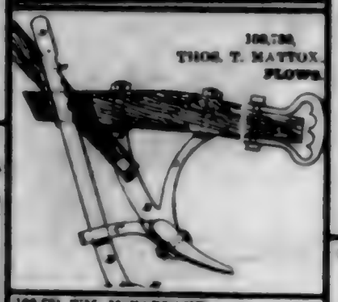


100,777, THOMAS F. LONGAKER.
MACHINE FOR CLEANING STABLES.

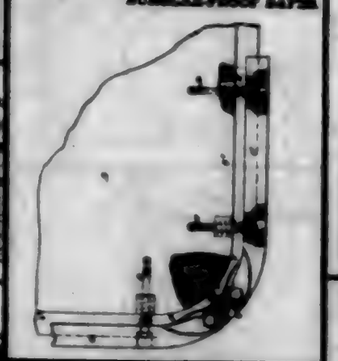
100,778, MYRON W. LYMAN.
AERIAL-TRAP.



100,779,
THOS. T. MATTOX.
PLOWS.



100,780, WM. McFARLAND.
BURGLAR-PROOF SAFES.



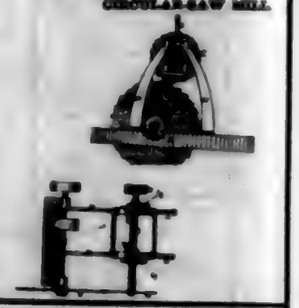
100,781, OREN C. MILLER, RACHEL WITT, AND M. COATES.
WATER-PIPE ATTACHMENT.



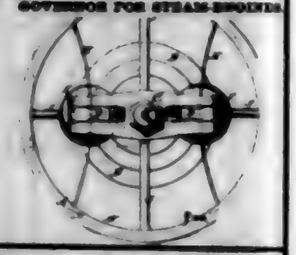
100,782, E. E. MILLER.
JIG FOR FORMING PIECE-PLATES.



100,783, JNO. MILLS.
A. G. WALDO.
CIRCULAR-SAW MILL.



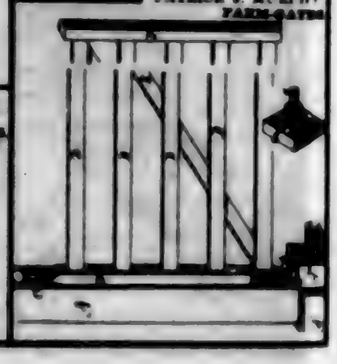
100,784, THOS. MOORE.
GOVERNOR FOR STEAM-ENGINES.



100,785, SOLOMON S. MOYER.
SIPHONS.

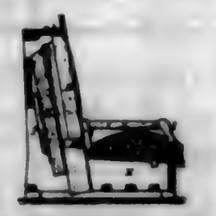


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JOSEPH H. MURPHY.
PATRICK J. MURPHY.
FARE-BOXES.

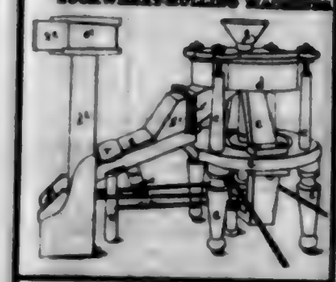


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PREVENTING THE
STEALING OF BOATS.

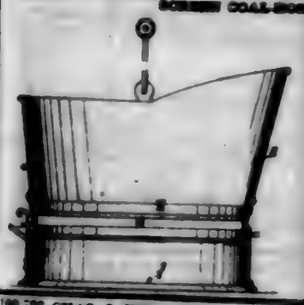
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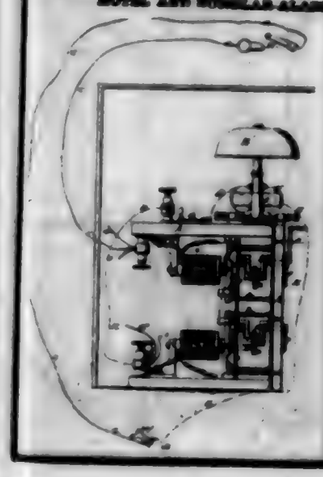
100,789 THOMAS NELSON.
HOOP-WEIGHT-SETTING MACHINE.



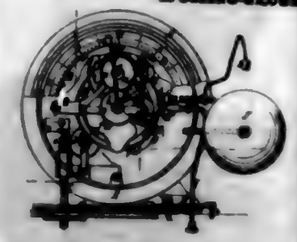
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REUBEN WEAVER.
SCREEN COAL-HOD.



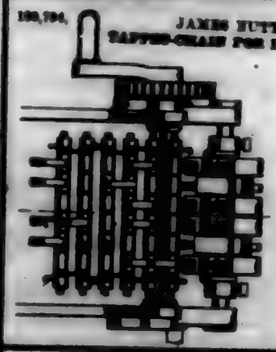
100,791, CHAS. S. NOE.
HOTEL AND BURGLAR-ALARM.



100,792, RICHARD H. NORRIS.
SPOOLING-GAUGE.



100,793,
JAMES NUTTALL.
TAPPING-CHASE FOR LOOMS.



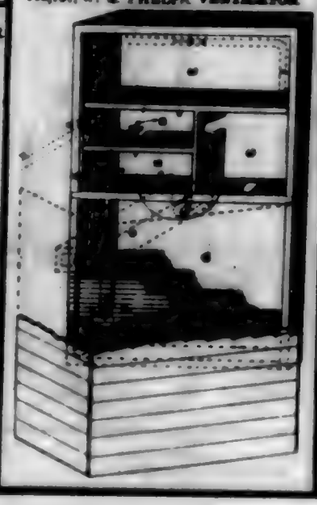
100,794, JOHN PATTERSON.
COAL-OAR AND TRUCK-WHEEL.



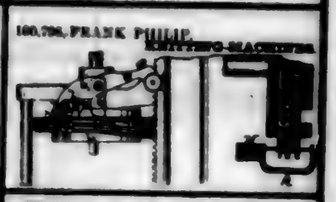
100,795, WILLIAM W. PETTEE.
PRESSER-FOOT FOR SEWING-MACHINES.



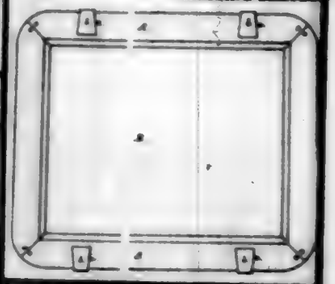
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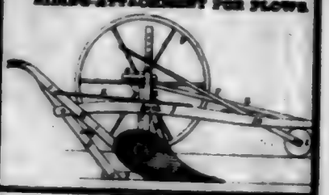
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KNITTING-MACHINE.



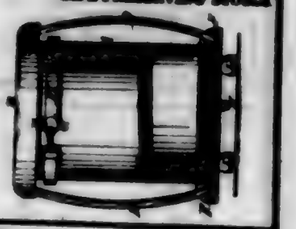
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WRITING-SLATES.



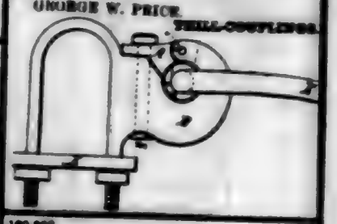
100,799, A. R. PORTER.
A. L. PORTER.
RISING-ATTACHMENT FOR PLOWS.



100,800, HENRY T. PRATT.
LIFE-PRESERVING SPOONS.



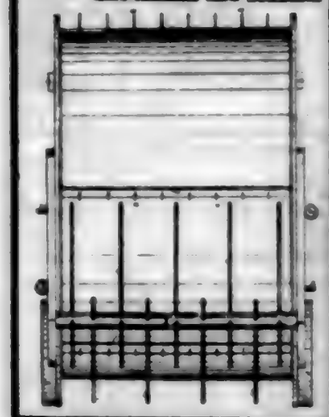
100,801,
GEORGE W. PRICE.
SHELL-COUPLINGS.



100,802, JNO. C. RANKIN.
CLOTHES-LIFT HOLDER.



100,804 GEO. H. BRISTER.
HAY-RAKING AND LOADING.



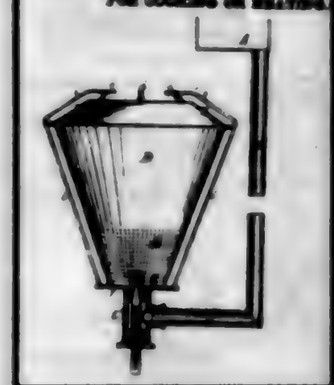
100,805 FRED. L. BOELL.
SAFETY-ATTACHMENTS FOR POCKETS.



100,806 JOHN ROOT. PAPER BOX.



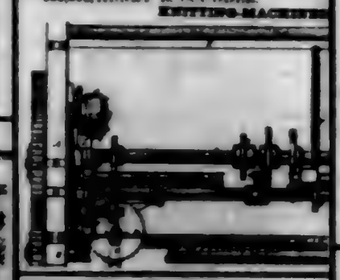
100,807 HERMAN S. HANOSH.
FOR COOKING OR HEATING.



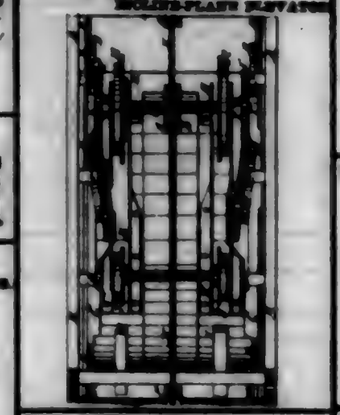
100,808 LEONHARD SCHMIDT. GRATER.



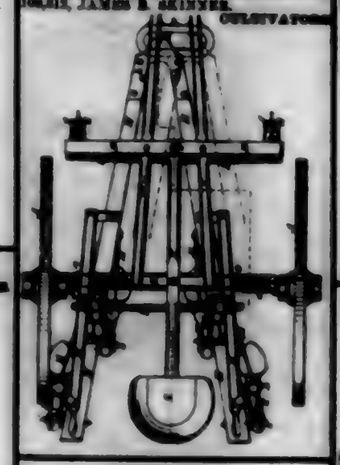
100,809 HENRY B. SCUDDER.
KNITTING-MACHINE.



100,811 THOS. B. SIMONTON.
HORSE-PLANE ELEVATOR.

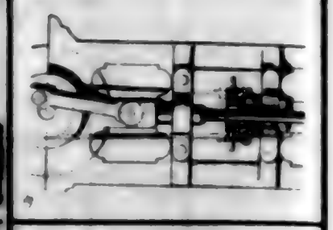


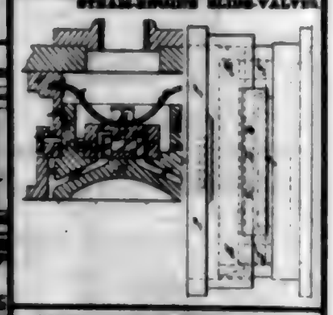
100,812 JAMES B. SKINNER.
CULTIVATOR.



100,813 JAMES SKIPP.
SCOURING MACHINE.

100,814 ANDREW J. STEVENS.
STEAM-ENGINE SLIDE-VALVE.

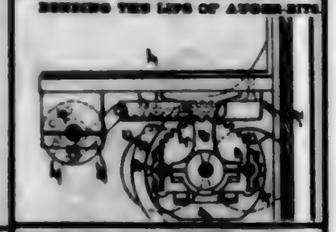




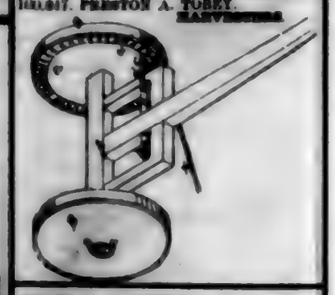
100,815 WILLIAM STIRK.
CORRUGATED CORN-MARKER, PLANTER, AND CULTIVATOR.



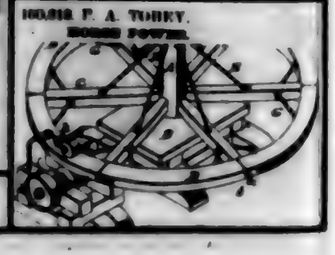
100,816 JAMES SWAN. MACHINE FOR BENDING THE LEGS OF ANGLE-IRON.



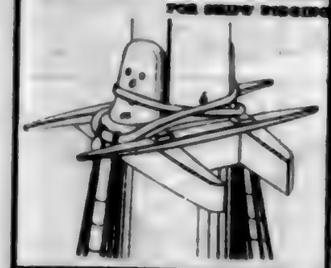
100,817 PRESTON A. TOBEY.
HARVESTER.



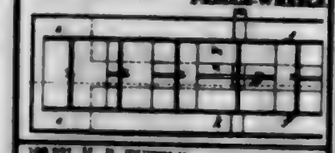
100,818 P. A. TOBEY.
HORSE POWER.



100,819 HENRY TOWNSEND.
CHEEK-PIECES AND SHROUD-TOKEN FOR SHIPS' RIGGING.



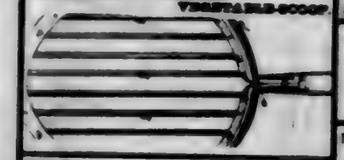
100,820 BENJAMIN W. TUCKER.
PADDLE-WHEELS.



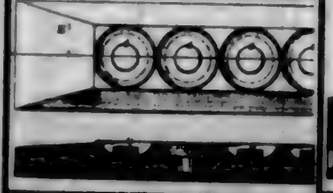
100,821 H. P. TUTTLE.
HAND INDICATOR FOR SHOWING THE COURSE OF VESSELS.



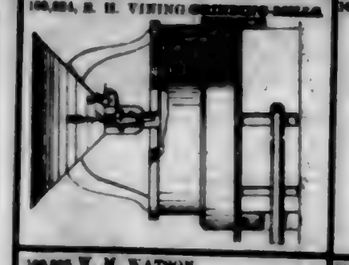
100,822 JOHN F. UNGLISH.
VEGETABLE-SCOOP.



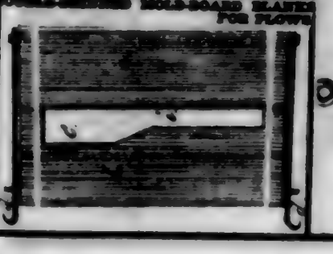
100,823 SAMUEL VANSTONE.
DIE FOR MAKING GLOVE-RINGS.



100,824 E. H. VINING. SHEARING-SHEARS.



100,825 W. M. WATSON.
DIE OR FORMER FOR MAKING CURVED-SHEARED MOLD-BOARD BLADES FOR PLOWS.



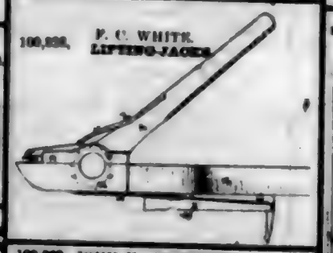
100,826 ALBERT S. WELLS.
LADLES FOR POURING METALS.



100,827 GEO. WHITBECK. HORSE-FORK.



100,828 P. C. WHITE.
LIFTING-JACKS.



100,829 JOHN H. WHITNEY.
SLUICE-BOXES FOR GOLD-MINING.



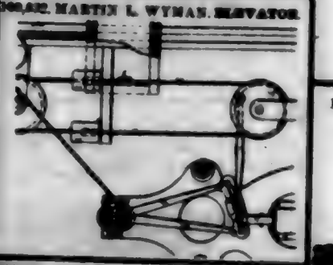
100,830 JOSEPH WHITTINGHAM.
REVERSIBLE EDGE-LASTING.



100,831 STANLEY R. WORRELL.
APPARATUS FOR WASHING AND ELEVATING LUMBER.



100,832 MARTIN L. WYMAN. ELEVATOR.



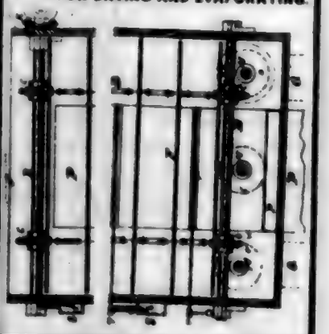
100,833 A. G. ZIEMING.
LOCKS FOR SHIPS' PUMPS.



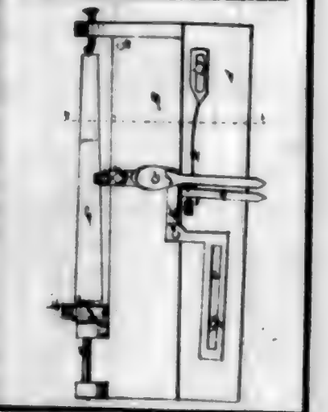
100,834 JOHN B. ADAMS.
TRACK-LAYING MACHINE.



100,835 CHARLES ALDER. APPARATUS FOR DRYING AND EVAPORATING.



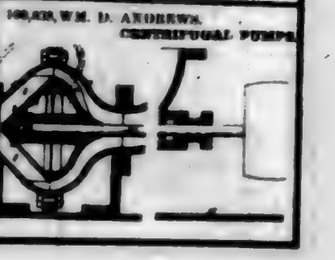
100,836 GEO. F. ALMY. SPOKE-LATHE.



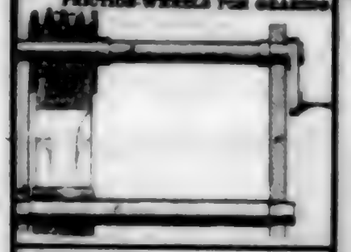
100,837 SAML. J. ANDERSON.
RAILWAY-CAR COUPLING.



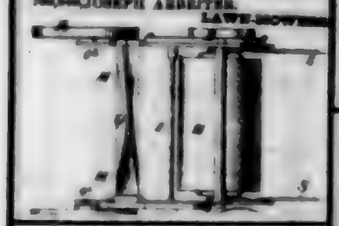
100,838 WM. D. ANDREWS.
CENTRIFUGAL PUMP.



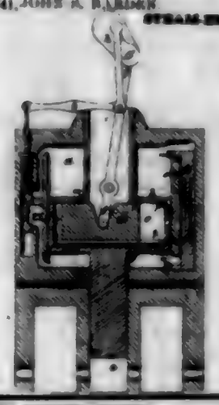
100,838, WM. D. ANDREWS.
FRICTION-WHEELS FOR GEARING



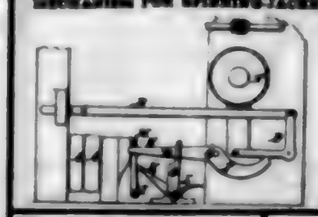
100,839, JOSEPH ARBEITER.
LAWN-MOWER



100,840, JOHN S. BARNES.
STEAM-ENGINES



100,841, JOSEPH BARON.
BELT-SHIPPING MECHANISM FOR SPINNING-JACKS

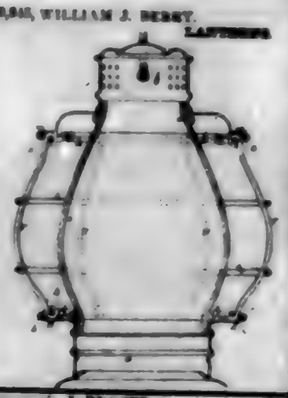


100,842, A. BELT.
HEDGE FENCE.



WITNESSES: ISAAC WILLIAM HERBERT, [illegible]

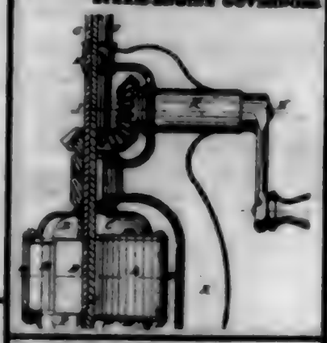
100,843, WILLIAM J. BERRY.
LANTERNS



100,844, L. J. BLADES.
JNO. MAHONEY.
LIFTING-JACK.



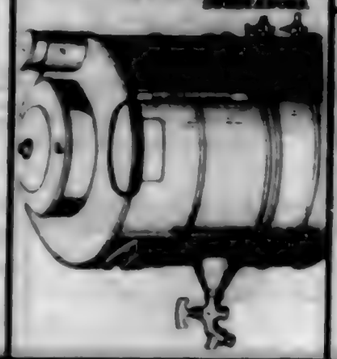
100,845, HORACE BOARDMAN.
STEAM-ENGINE GOVERNORS.



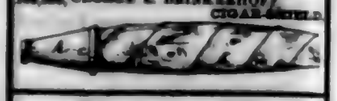
100,846, MYRON T. BOULT.
CARVING WOOD.



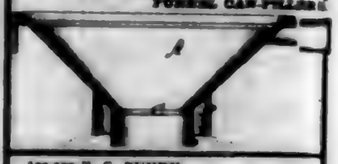
100,847, LOUIS BRAUER.
APPARATUS FOR MAKING EXTRACTS AND DECOCTIONS FROM COFFEE, TEA AND OTHER SUBSTANCES.



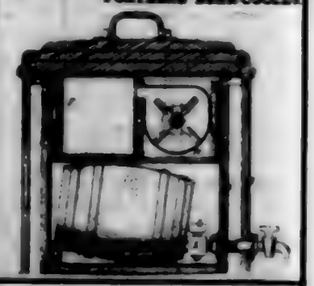
100,848, GEORGE E. BRINKERHOFF.
CIGAR-SHIELD.



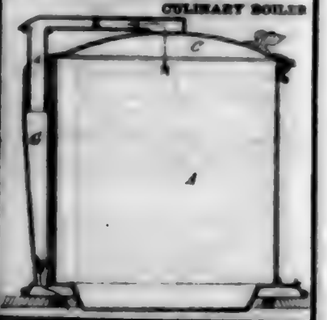
100,849, H. L. BRUNDAGE.
R. DOWNING.
FURNACE CAR-FILLER.



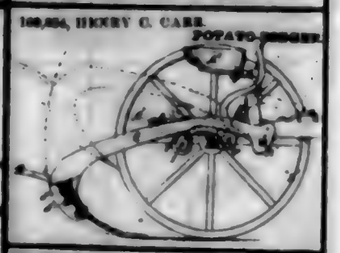
100,850, E. C. BUNDY.
PORTABLE BEER-COOLER.



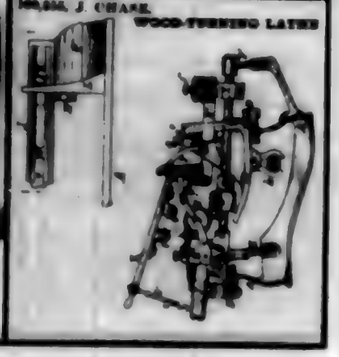
100,851, FERDINAND M. CARNES.
CULINARY BOILER.



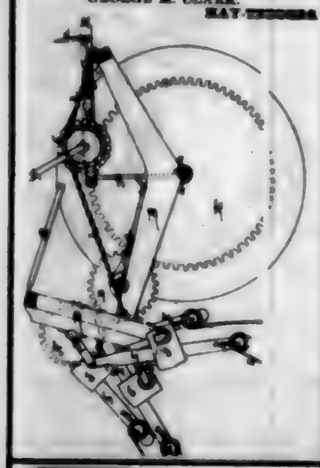
100,852, HENRY C. CARR.
POTATO-DIGGER.



100,853, J. CHASE.
WOOD-TURNING LATHE.



100,855, THOMAS J. CLARK.
GEORGE M. CLARK.
HAY-TEDDERS.



100,856, W. J. CLARK.
DOG-CARRIERS.



100,857, WEBSTER M. CLAYTON.
STAIR-RODS.



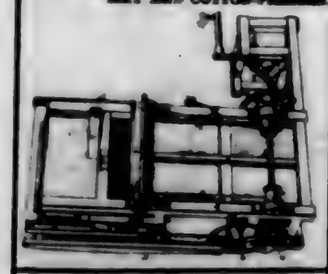
100,858, D. H. B. COFFIN, Jr.
CAPSTANS.



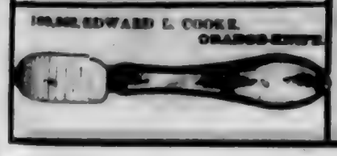
100,859, CHARLES COLE.
RAILWAY-CAR AXLES.



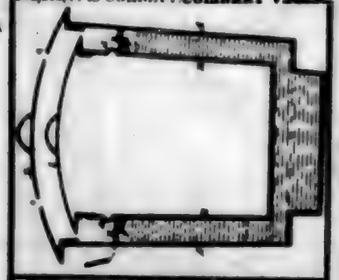
100,860, E. H. COLE.
G. P. COLE.
HAY AND COTTON-PRESSES.



100,861, EDWARD L. COOKE.
ORANGE-KNIFE.



100,862, C. E. CORBETT, CULINARY VESSEL.



100,863, FREDRICK A. COWLES.
BODY-LOOP FOR CARRIAGES.



100,864, CHAUNCY O. CROSBY.
PAPER BOX.



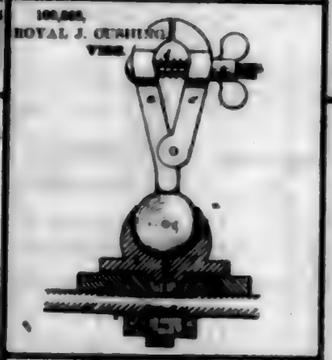
100,865, DANIEL H. CROSS.
PHOTOGRAPHIC-PLATE HOLDER.



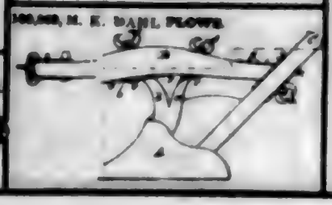
100,866, WILLIAM CURRAN.
DEFLATORS.



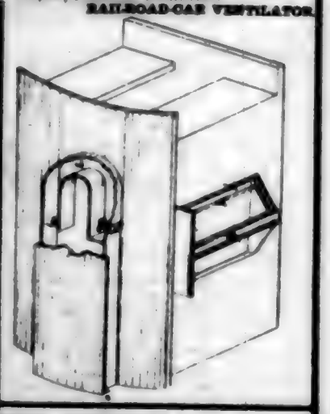
100,867, ROYAL J. CUSHING.
VISE.



100,868, H. E. DAHL.
PLOWS.

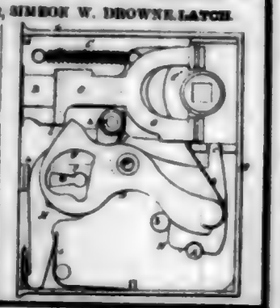


100,869, SAMUEL DARLING.
RAIL-ROAD-CAR VENTILATOR.

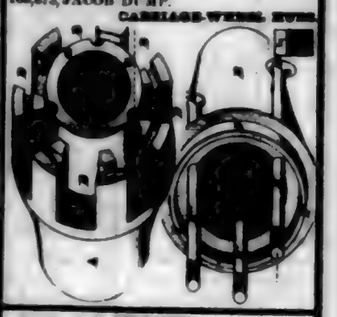


100,870, JUAN YNDRO DIAZ.
MANUFACTURE OF FERTILIZERS.

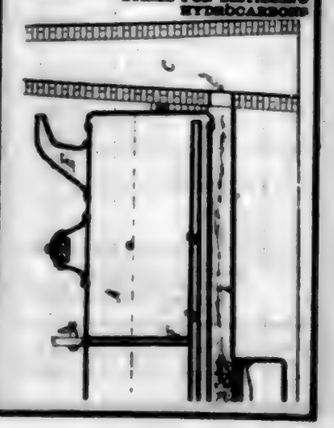
100,872, SIMEON W. DROWNE.
LATCH.



100,873, JACOB DUMP.
CARRIAGE-WHEEL HUB.



100,874, J. B. EDWARDS.
STILLS FOR DISTILLING HYDROCARBONS.



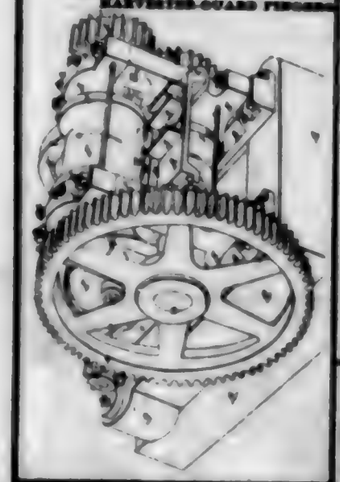
100,875. STEPHEN D. ELY.
MODE OF LUBRICATING THE WHEELS IN TREAD-POWERS.



100,876. ALONZO FARRAR.
PROCESS OF TREATING ACID SEDIMENT FROM OIL-REFINERIES.

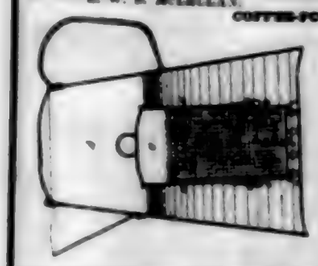
100,877. ALONZO FARRAR.
COMPOSITION TO BE USED FOR PRINTING OR PAINTING ON SURFACES.

100,878. JEROME FANNER.
MACHINE FOR MANUFACTURING HARVESTER-GUARD FINGERS.



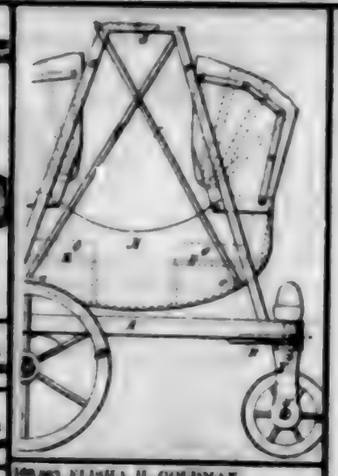
100,879. W. B. FERRIS.
BURROUGHS BRACE FOR WHEELS-CASES.

100,880. JAMES F. FITCH.
E. G. DEVOE.
E. W. B. McLELLAN.
COFFEE-POT.

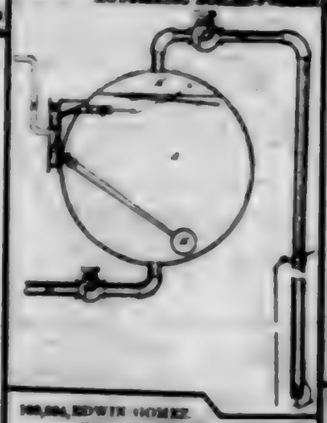


100,881. CHRISTIAN FLAMMER.
PROCESS OF MAKING GLASS SHOW-CASES, &c.

100,882. WILLIAM H. FLANIGAN.
CONSERVED CARRIAGE CHAIR SWING AND BAIT-WELL.



100,883. ELISHA H. GOLDMAN.
AUTOMATIC BOILER-FEEDER.



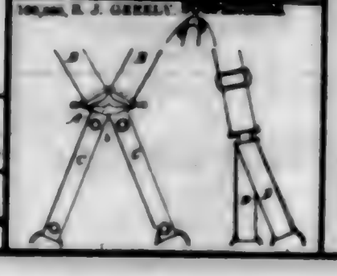
100,884. EDWIN GOMEZ.
TOMPION AND CARTRIDGE.



100,885. DANIEL J. GORTON. PUMP.



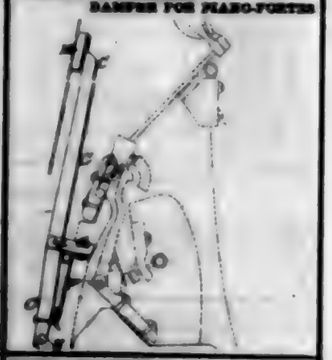
100,886. E. J. GERELY.



100,887. JOHN S. HASBROUCK.
APPARATUS FOR ELEVATING AND LOWERING GEAR.



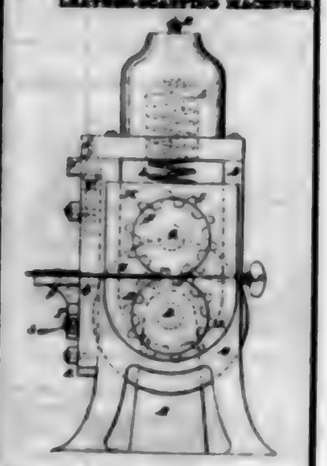
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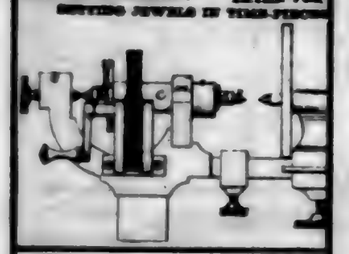
100,889. CORNELIUS E. HAYES.
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100,890. CHARLES H. HELMS.
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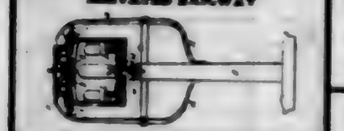
100,891. H. H. HESKETT. LATHE FOR SETTING JEWELS IN TIMES-PIECES.



100,892. GEO. S. HEWITT.
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100,893. BENJ. L. HOOD.
HENRY O. HOOD.
EZRA W. CLARK, JR.
ELEVATED RAILWAY.



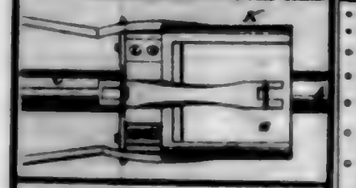
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100,895. WILCOX J. HUBBARD.
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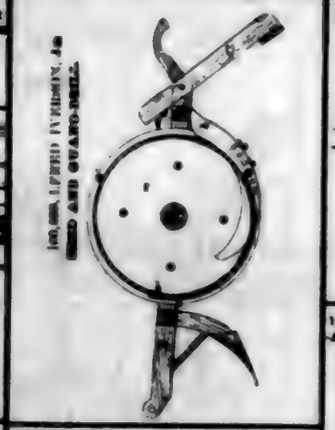
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100,897. F. E. HUNT.
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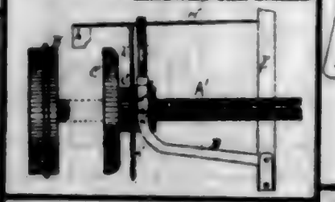
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LEVER AND GUARD-BOLT.



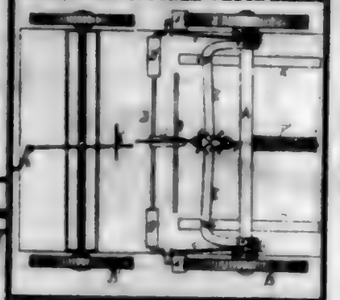
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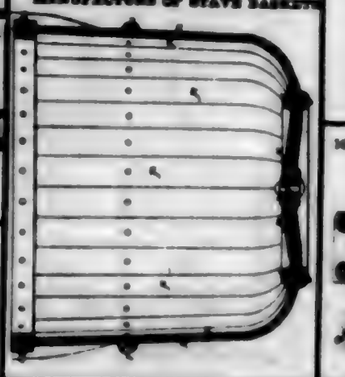
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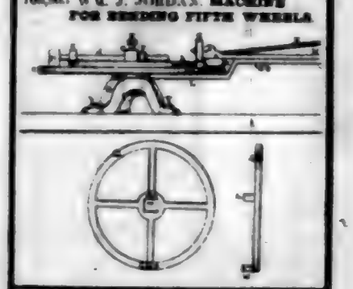
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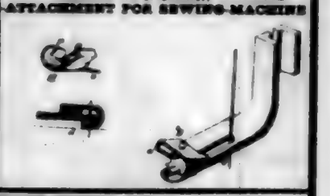
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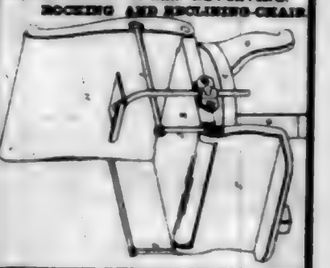
100,903. WM. J. JORDAN. MACHINE FOR BEADING FIFTH WHEELS.



100,904. AMASA C. KASSON. BINDING ATTACHMENT FOR SEWING-MACHINE.



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100,906. CAMILLE KREUT. LIFE-PRESERVER.



100,907. HENRY LAMPERT.
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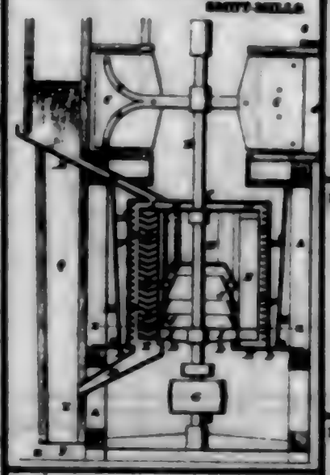


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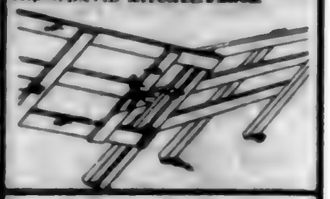
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100,910. DANIEL W. MARMON.
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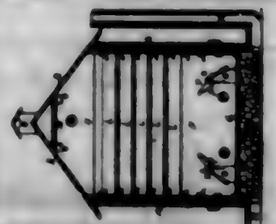
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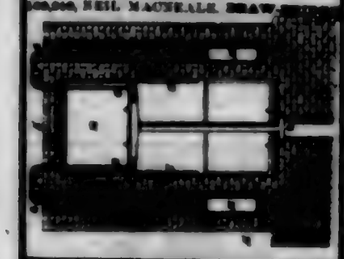
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100,913. JAMES B. MAY. PHOTO-ENGRAVING



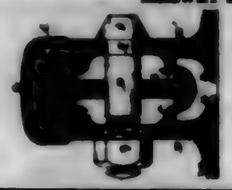
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100,915. THOMAS R. A. MERRILL.
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100,916. PHILEMON MERRYMAN.
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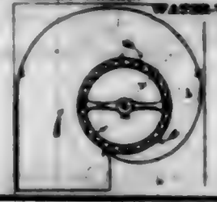
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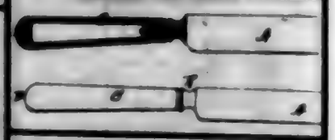
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WASHING-MACHINE



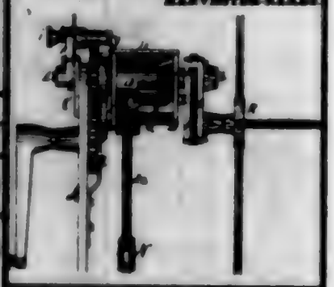
100,919. ALEXANDER F. MURRAY, HENRY GREEN.
WATER-WHEEL



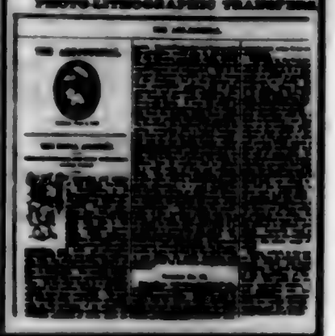
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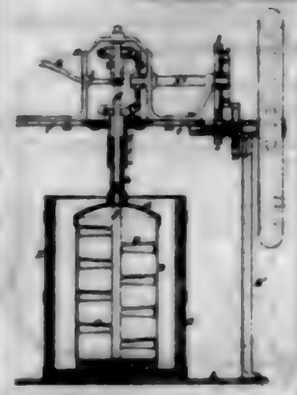
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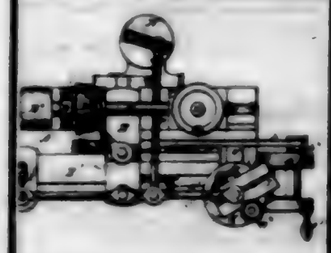
100,922. ISAAC REHN.
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100,923. THOMAS MILLS, GEO. M. MILLS.
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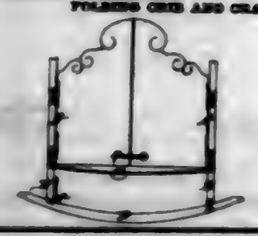


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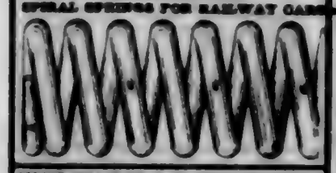


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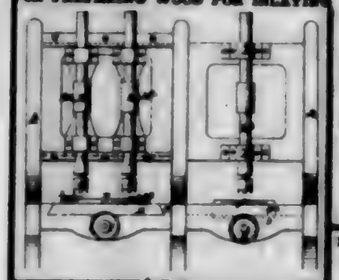
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100,926. F. W. RHINELANDER.
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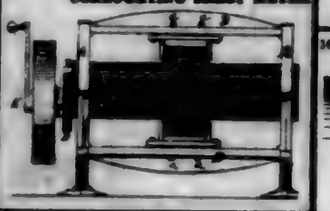
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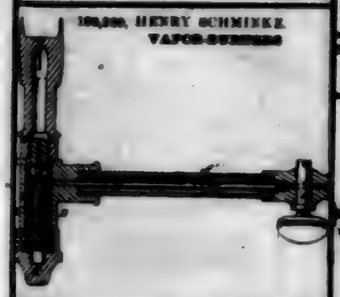
100,928. JOHN ROOT.
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100,929. FRANKLIN ROYS. MACHINE FOR CORRUGATING SHEET METAL



100,930. HENRY SCHMINKE.
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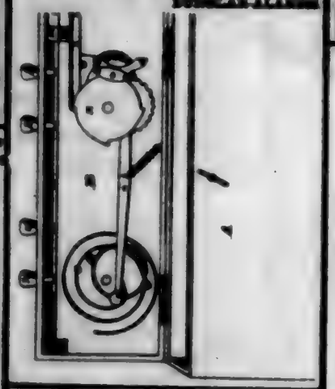


100,931. THOMAS C. SCRUTON.
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100,932. JOHN SEE.
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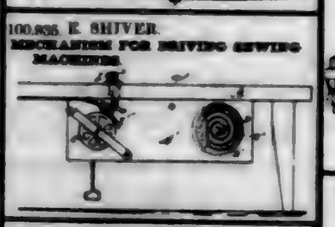
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100,936. J. C. SHULER. EXTRACTING TURPENTINE FROM PINE-TREES



100,937. LORENZO SIBERT.
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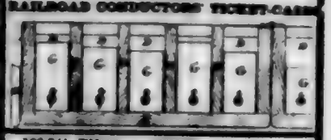
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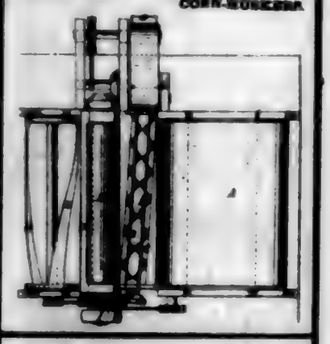
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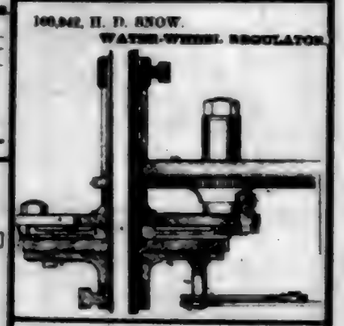
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100,942. H. D. SNOW.
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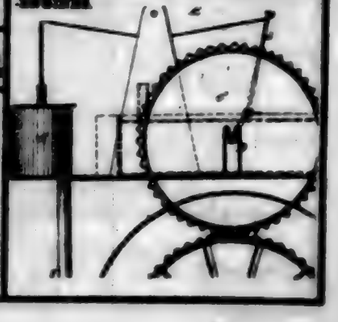
100,943. S. M. SNYDER. RAILWAY GATE



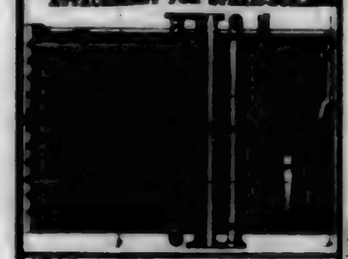
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100,945. S. SOREL. MANUFACTURE OF ARTIFICIAL STONE

100,946. NATHERLY SPNAR. COMBINED CURRENT-WHEELS AND CONDENSING-ENGINES.



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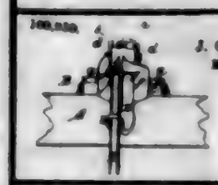
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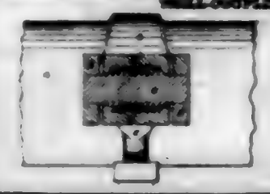
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100,952, ROBERT J. S. THOMPSON. AXE-GRINDER

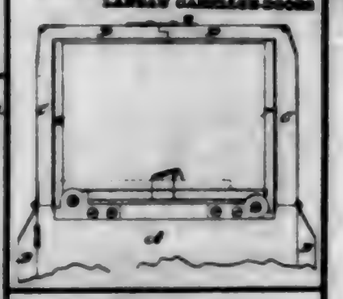


100,953, JOSEPH TREAT. MANUFACTURE OF BOBBIN-NUT.

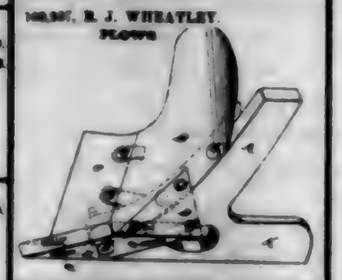
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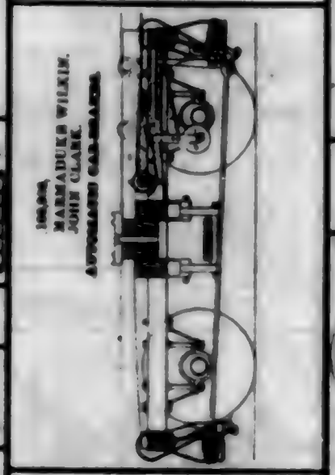
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100,957, R. J. WHEATLEY. PLOWS

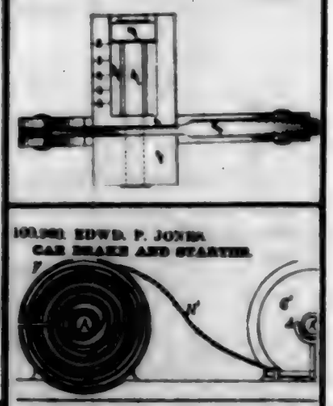


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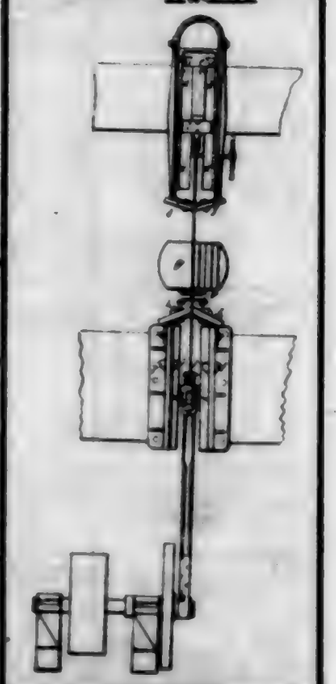


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100,960, EDWD. P. JONES. CAR BRAKE AND STARTER

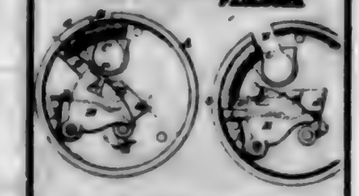


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1,979, IRA T. PAYNE. AWNING

1,980, FREDERICK BOOS. PAIL-HOOK



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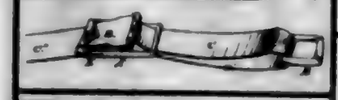
MARCH 22, 1870.

100,961. I. ADAMS, Jr. ELECTRO DEPOSITION OF METALS.

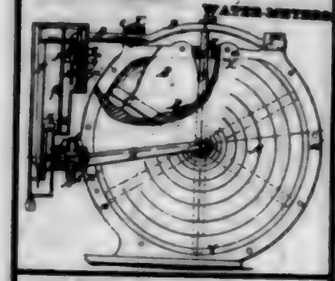
100,962, J. F. ADAMS. PHOTOGRAPHIC SHOW-CASE



100,963, MOSES ADAMS. BOOKLESS



100,964, A. W. ALMQVIST, F. W. OFELDT. WATER-METERS



100,965, ARON ANDERSON. TABLE-LEAF SUPPORT



100,966, U. W. ARMSTRONG, IRA KEENEY. RUBBER CONNECTION FOR MOSQUITO-NET FRAMES



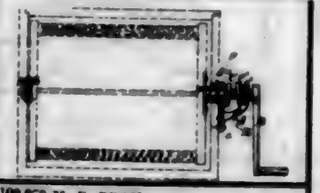
100,967, OSBORNE BARKER. ARRANGEMENTS FOR DOUBLE AFRICALS



100,968, FERDINAND BLIESNICK. BOAT AND SIDE-SEINE



100,969, C. BLUST, MATTHAU HARBSTER. CHUCK-DOGGING CRANK-FIXTURE



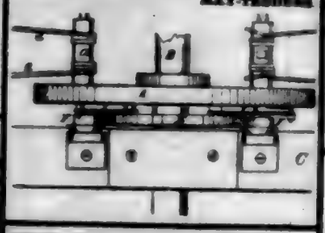
100,970, M. P. BRAY. FASTENINGS FOR CORSETS



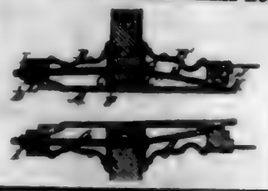
100,971, WILLIAM G. BROWN. FOOTSTOOL FOR CHURCHES



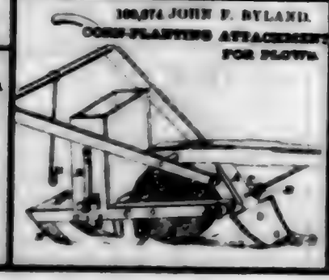
100,972, JAMES M. BURDICK. RAT-TRAPS



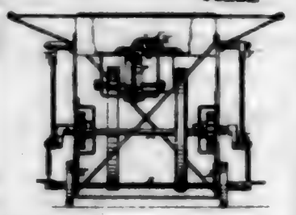
100,973, BRADLEY BUSH. CARRIAGE-WHEEL HUBS.



100,974 JOHN F. BYLAND. CORN-PLANTING ATTACHMENT FOR PLOWS.



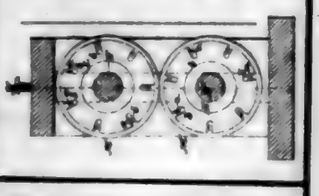
100,975, GEORGE CAMPBELL. FORGE.



100,976, D. H. CHAMBERLAIN. DEAD-EYES FOR WIRE RIGGING



100,977, D. H. CHAMBERLAIN. FRICTIONAL GEARING



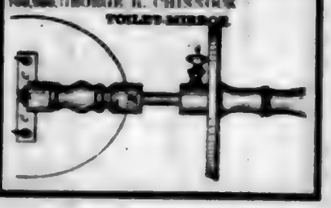
100,978, LUKE CHAPMAN. WRENCHES



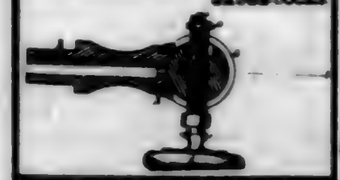
100,979, THOMAS W. CHATFIELD. HOT-AIR FURNACE



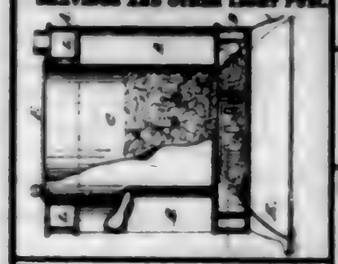
100,980, THEODOR H. CHINNOCK. TOILET-MIRROR



100,991, JOHN S. CHRISTOPHEL.
BATTER-COCKS



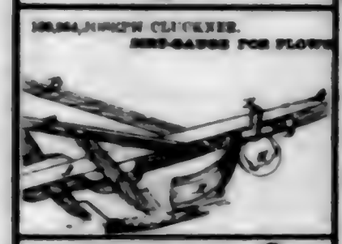
100,992, ORLANDO CLARKE.
BASE-BURNING STOVE FOR BURNING AND OTHER LIGHT FUEL.



100,993, ORLANDO CLARKE.
MOTIONAL STEAM-GENERATOR.



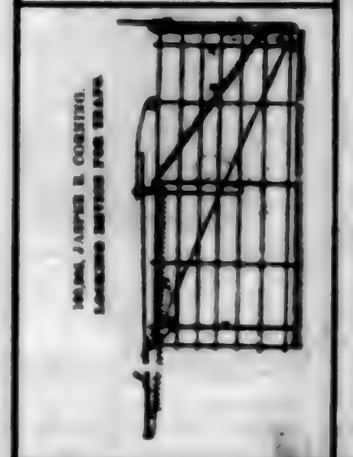
100,994, JOSEPH CLUCKER.
BIRD-GAUGE FOR PLOWS.



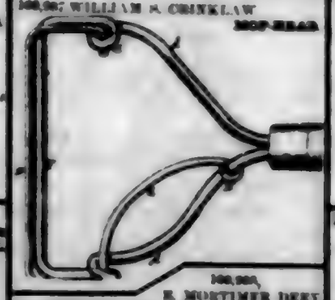
100,995, THOS. CODWELL.
CUFF-SUPPORTER.



100,996, JASPER E. CORNING.
LOCKING DEVICE FOR TRAPS.



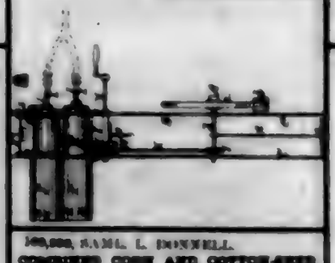
100,997, WILLIAM S. CRINKLAW.
MOP-HEAD.



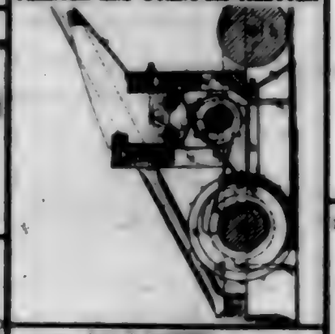
100,998, E. MORTIMER DERY.
FASTENINGS FOR STUDS OR BUTTONS.



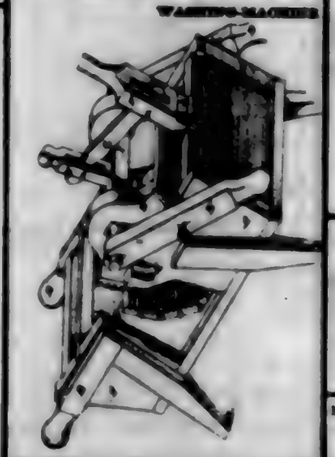
100,999, EDWARD MORTIMER DERY.
PLOWING-MACHINE.



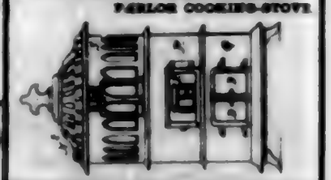
100,1000, SAML. L. DONNELL.
COMBINED CORN AND COTTON-SEED PLANTER AND GUANO-DIS-TRIBUTER.



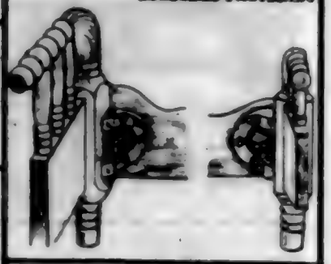
100,1001, JAS. T. DOSTOE, STEPHEN G. BUBANK.
WASHING-MACHINE.



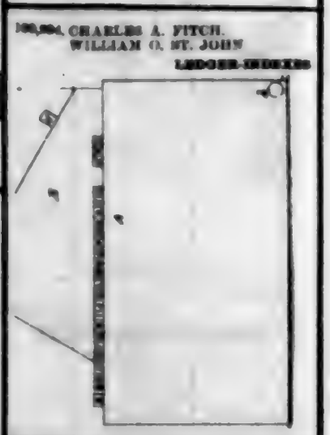
100,1002, WM. DOYLE.
BASE-BURNING PARLOR COOKING-STOVE.



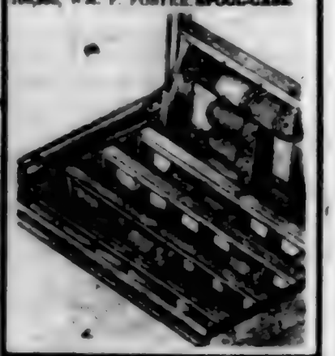
100,1003, C. H. FISHENDEN.
HEMMING AND FASTENING.



100,1004, CHARLES A. FITCH, WILLIAM O. ST. JOHN.
LEDGER-INDEXES.



100,1005, WM. F. FOSTER.
SPOOL-CASE.

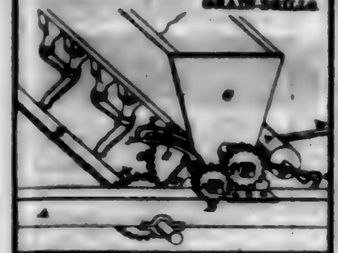


100,1006, JOHN FRESLAND, DANL. WARD.
RAILWAY RAIL-JOINT.



100,1007, EDWARD S. FRYE.
REMOVING COLORS FROM LEATHER.

101,005, JESSE P. FULGHUM.
GRAIN-DRILLS.



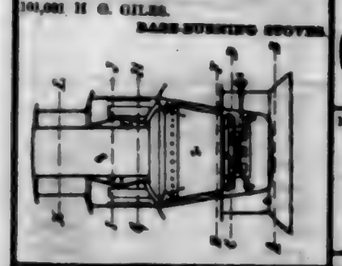
101,006, ADOLPH GEISE.
RAILWAY-CAR COUPLINGS.



101,007, H. G. GILES.
BASE-BURNING STOVE.



101,008, H. G. GILES.
BASE-BURNING STOVES.



101,009, L. D. GILMAN.
STOP-VALVE.

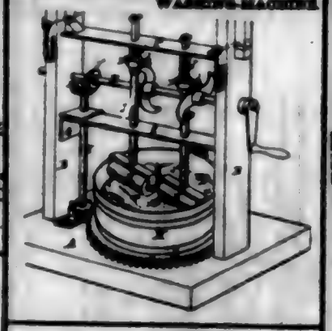


101,010, WILLIAM GODDAIRE, GEORGE STEAD.
REMOVING WASTE ALKALI USED IN OIL-REFINING.

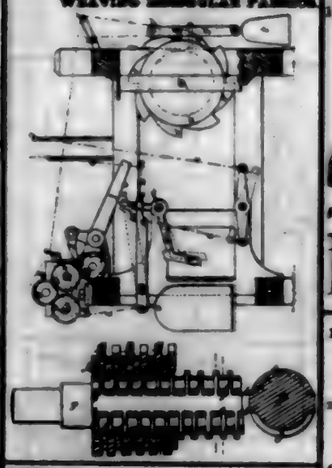
101,011, WM. F. GOODWIN.
PROPELLING CANAL-BOATS.



101,012, WM. F. GOODWIN.
WASHING-MACHINE.



101,013, A. GOULLIOUD.
LOOM FOR WEAVING IRREGULAR FABRICS.



101,014, MELLVIN B. GREEN.
BASE-BALANCER.



101,015, ANTHONY HANKEY.
BED-PLATE FOR BAG OR PAPER-MACHINES.



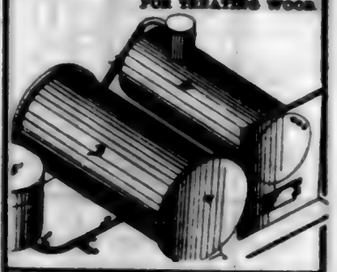
101,016, NAT. HASKELL.
EXTRACTING COPPER FROM ITS ORES.

101,017, H. W. HASLOCK.
SCREW-NUT.

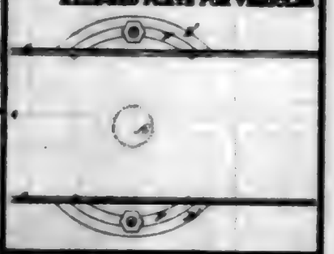


101,018, MORITZ HATSCHEK.
APPARATUS FOR PRODUCING SULPHUROUS ACID.

101,012, IRA HAYFORD.
THE PROCESS AND APPARATUS FOR TREATING WOOD.



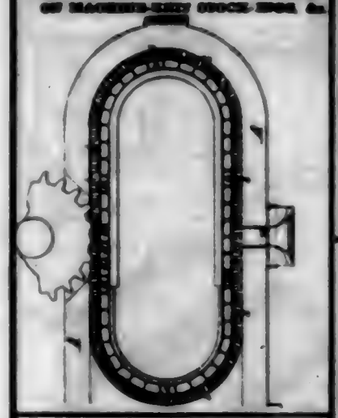
101,013, JOHN HENRY.
BOLSTER AND AXLE-BED PLATE FOR VEHICLES.



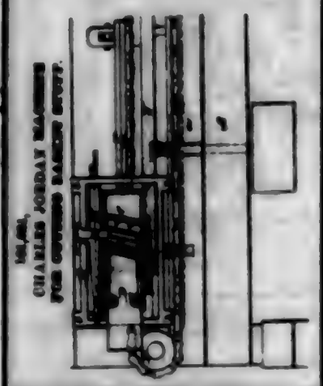
101,014, JOHN HENRY.
WAGON-STANDARD.



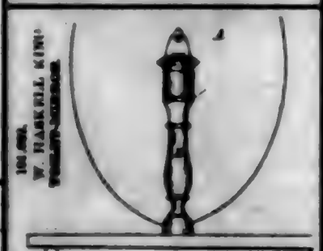
101,044. HENRY A. HOUSE
MEANS OF PRODUCING SILVANITE OR MACHINE-MADE STOCK-BRICK, &c.



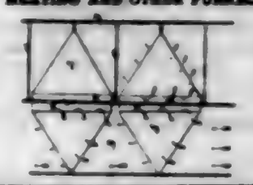
101,045. CHARLES JORDAN, Jr.
MACHINE FOR CUTTING BARBING NUTS.



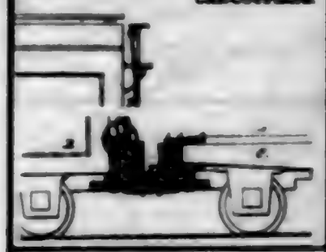
101,046. W. HASKELL KING
TRUSS-BRIDGE



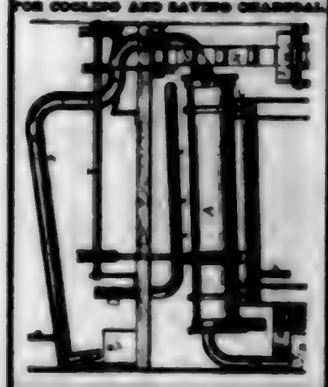
101,047. THOS. HYDER.
JOSEPH BENNETT.
HEATING AND OTHER FURNACES.



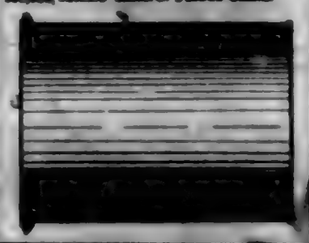
101,048. WM. MILLER INGERSOL
CAR-COUPLING



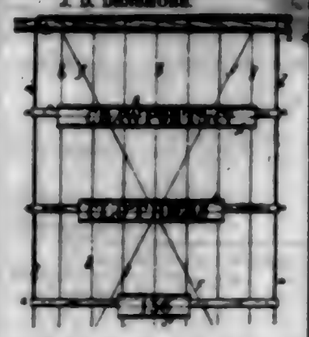
101,049. GUSTAVUS A. JASPER.
APPARATUS
FOR COOLING AND SAVING CHARCOAL.



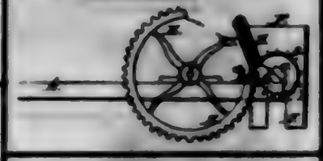
101,050. HAAS KLEIN. SHUTTER-BLIND



101,051. P. A. LA FRANCE, assignor
J. D. DENSMORE.



101,052. WARREN KIETON, GRANTEE
JOHN MAXSON.

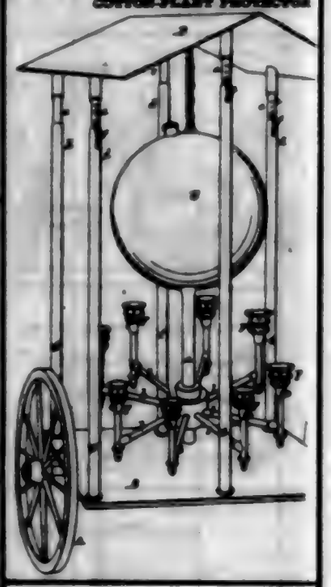


101,053. CATHERINA LAMBERT.
WOVEN TEXTURE.

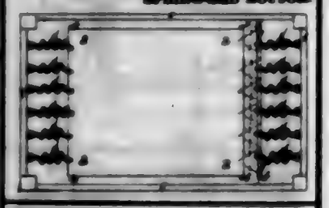


101,054. LOUIS F. LASTRETO.
MEDICINAL BEVERAGE

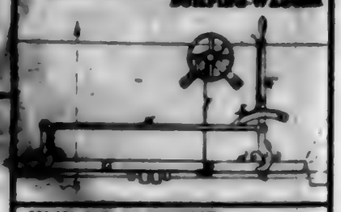
101,055. AUGUSTE LE BLANC.
COTTON-PLANT PROTECTOR



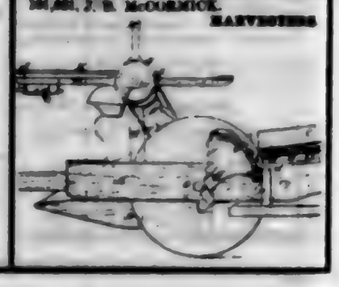
101,056. GEORGE W. LOOMIS.
SPRING-BED BOTTOM



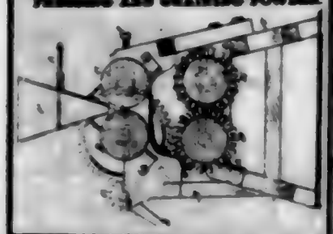
101,057. VIRGIL H. LYON.
DUMPING-WAGGON



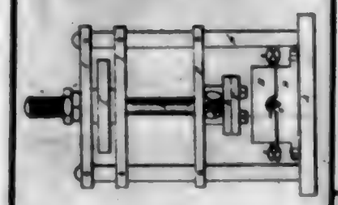
101,058. J. H. McCORMICK.
HARVESTERS



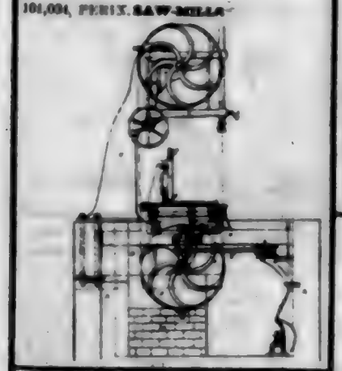
101,032. PAUL A. OLIVER. MACHINE FOR PEELING AND GRATING POTATOES.



101,033. SAMUEL JOSEPH PERT.
DANIEL SAWYER.
MACHINES FOR FORMING MOULDS.



101,034. PERRIX. SAW-MILLS.



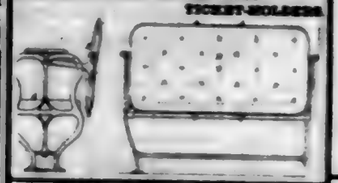
101,035. THOMAS P. PETERSON.
APPARATUS FOR PURIFYING WATER FOR THE MANUFACTURE OF ICE.



101,036. THOS. H. POWERS.
WATER-WHEELS



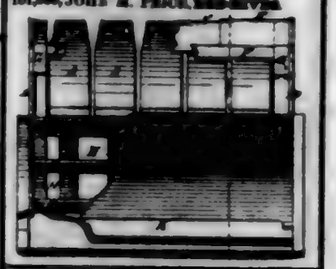
101,037. ONSVILLE EVANS PRAY.
TICKET-HOLDERS.



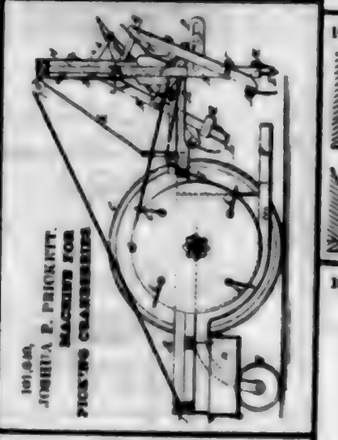
101,038. JACOB PRICE. GANG-PLOWS.



101,039. JOHN M. PRICE. HARVESTER.



101,040. JOSHUA P. PRICKETT.
MACHINES FOR CHAMFERING SPOKE-TENONS.



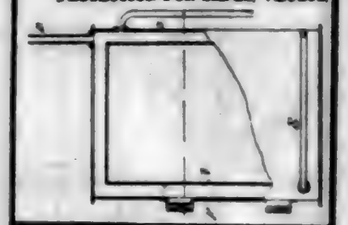
101,041. SAXON J. RAYMOND
KNIFE FOR SPLITTING WOOD.



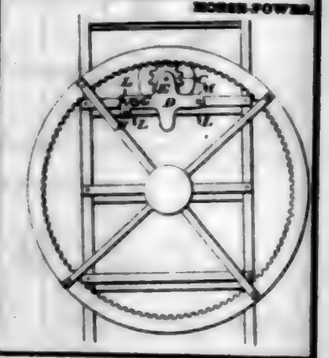
101,042. DAVID RINKLE.
STORAGE BITTERS.

101,043. P. A. ROBERTS.
CAR-HOLDER FOR HORSES.

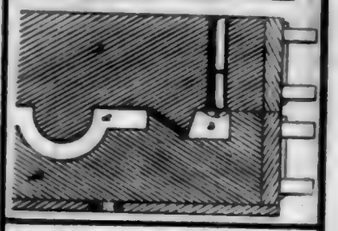
101,044. JOHN A. ROBERTSON. STEAM
PROTECTOR FOR SAFES, VAULTS.



101,045. F. W. ROBINSON.
HORSE-POWER.



101,046. H. ROSS. CASTING METAL.

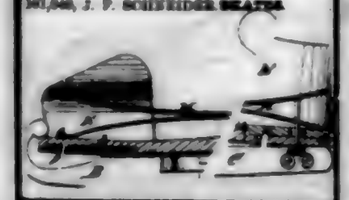


101,047. THEODORE BOWELL.
SHAFT-COUPLING.

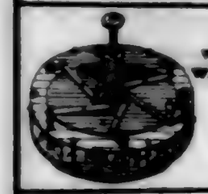


101,048. JOHN BOWLEY. TREATING COAL PRODUCTS TO OBTAIN HOMOGOL.

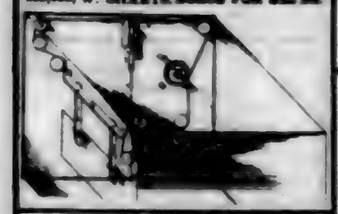
101,048, J. P. SCHNEIDER, SEATER.



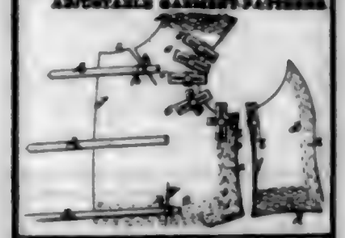
101,049, W. L. SELLICK, WATER-WHEEL.



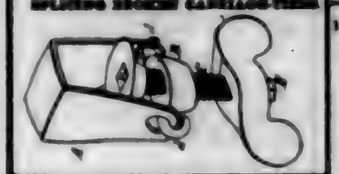
101,051, W. SHARTS, HOLDS FOR SAFES.



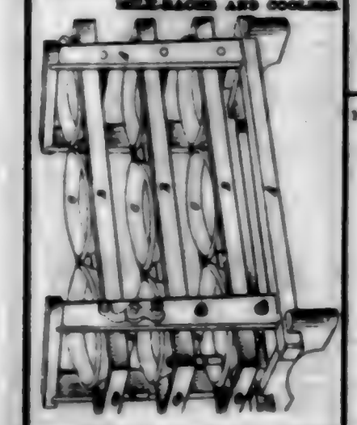
101,052, SAMUEL SHAWCROSS, ADJUSTABLE GARMENT-PATTERNS.



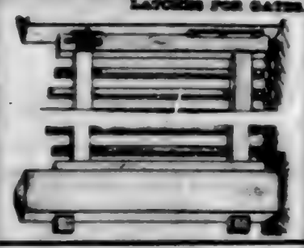
101,053, ALFRED B. SHRAFFER, HAND-SCREW AND CLIP FOR SPLICING BROKEN CARRIAGE-TIRES.



101,054, LAWSON SHIPMAN, BELT-RACER AND COOLER.



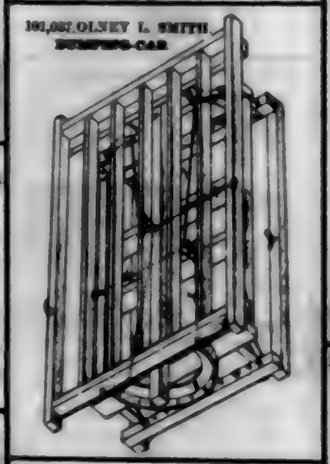
101,055, WARREN SHUMARD, LATCHES FOR GATES.



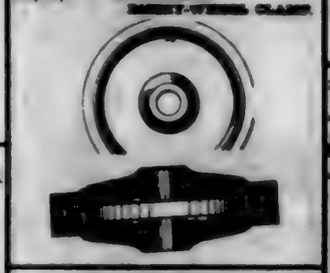
101,056, D. T. SINGLETON, PLOWS.



101,057, OLNEY L. SMITH, DUMPING-CAR.



101,058, E. A. SCWERDTFF, BELT-WRENCH CLAMP.



101,059, THOMAS SWEENY, WATER-MOTORS.



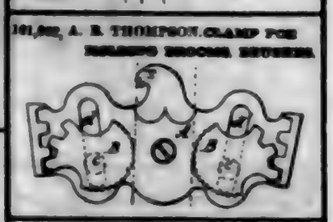
101,060, J. OSCAR TABER, COMBINED MOWER AND HEDGE-TRIMMER.



101,061, A. P. TAYLOR, SHARPENING HARVESTER-KNIVES.



101,062, A. B. THOMPSON, CLAMP FOR HOLDING BROOM HEADING.



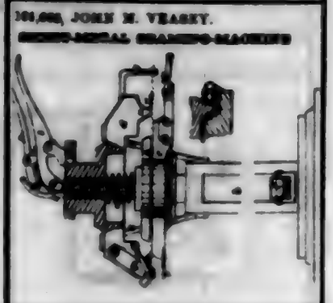
101,063, H. UHBY, GRAIN-DOOR.



101,064, H. UHBY, GRAIN-DOOR.



101,065, JOHN M. VEASEY, METAL-SEDAL STAMPING-MACHINE.



101,066, WILLIAM WESTLAKE, ATTACHMENT FOR LAMP-BURNERS.



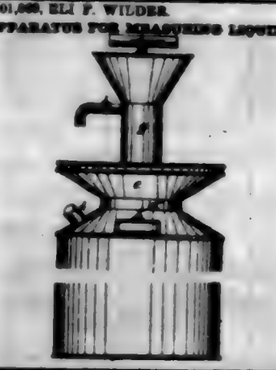
101,067, JAMES D. WHELPLEY, JACOB J. STOBER, MANUFACTURE OF IRON AND IN THE APPARATUS THEREFOR.



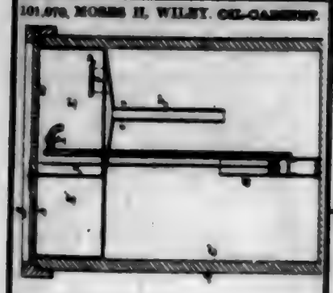
101,068, A. W. WHITNEY, F. A. WHITNEY, F. A. WHITNEY, TURNING AND SHEET-IRON WORKING ROLLS.



101,069, ELI F. WILDER, APPARATUS FOR SEASONING LIQUIDS.



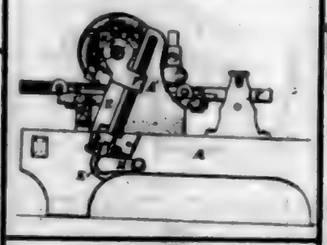
101,070, MORRIS H. WILEY, OIL-CABINET.



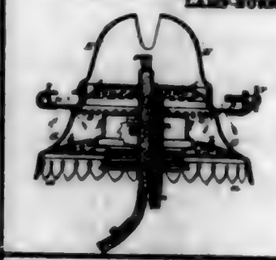
101,071, THOS. R. WOOD, COMPOUND TO BE APPLIED TO ROOFING.



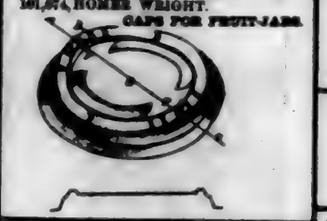
101,072, GEORGE E. WOODBURY, PLANING-MACHINES.



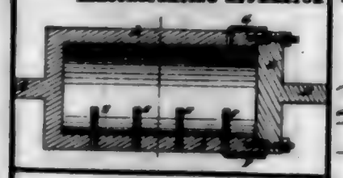
101,073, DAVID PITCAIRN WRIGHT, CEPHAS BUTLER, LAMP-BURNERS.



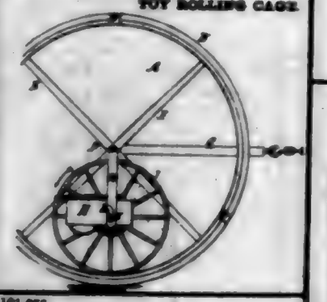
101,074, HOMER WRIGHT, CAPS FOR FRUIT-JARS.



101,075, HOWELL W. WRIGHT, REDUPLICATING APPARATUS.



101,076, ARTHUR M. ALLEN, TOY ROLLING CAGE.



101,077, WM. J. ANDREWS, COTTON-CULTIVATOR.

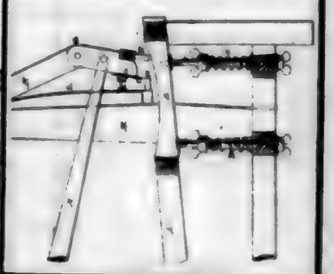
101,078, WILLIAM AURICH, VAPOR-BURNERS.



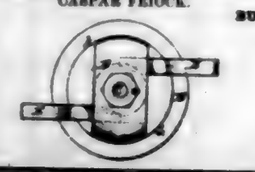
101,079, JAS. F. BABCOCK, SPRINGS FOR RAILROAD CARS.



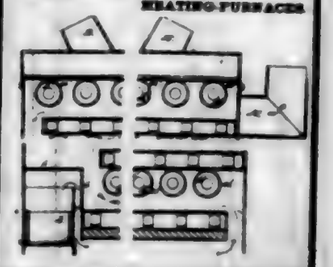
101,080, JAMES T. BARNSTEAD, MACHINES FOR SCRAPING LEATHER.



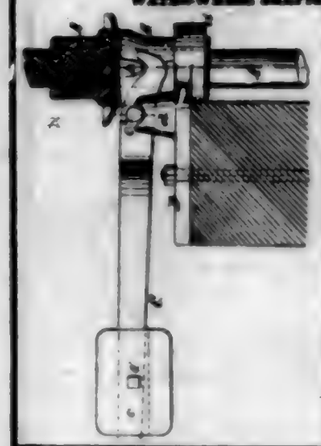
101,081, JOSEPH P. APPLEGATE, CASPAR FEIOCK, SAWS.



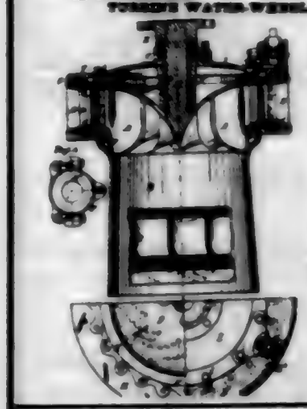
101,082, WM. D. BARTLETT, HEATING-FURNACES.



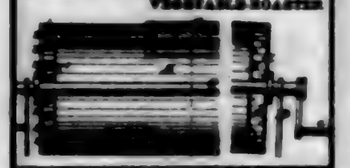
101,092, WM. BAYLEY.
ADJUSTABLE BEARING FOR WATER-WHEEL SHAFTS.



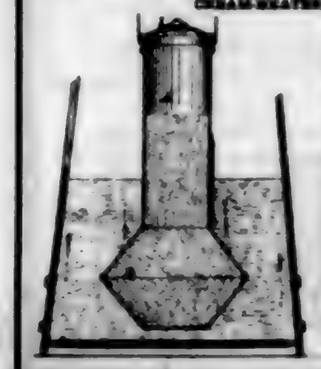
101,094, WM. BAYLEY.
A. B. CROWELL.
TURBINE WATER-WHEELS.



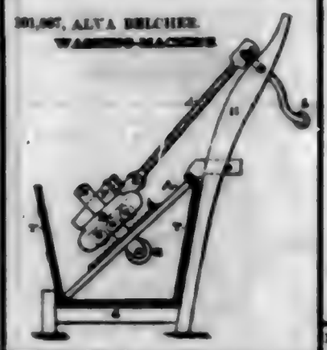
101,095, C. G. BAYLOR.
VEGETABLE-ROASTER.



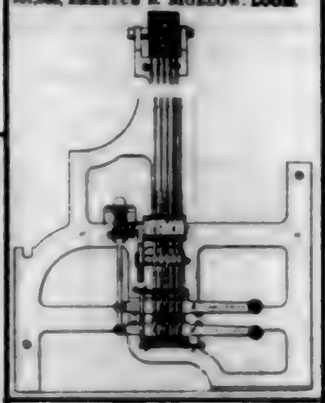
101,096, JAMES C. BEDDOE.
JOHN S. COON.
CREAM-HEATER.



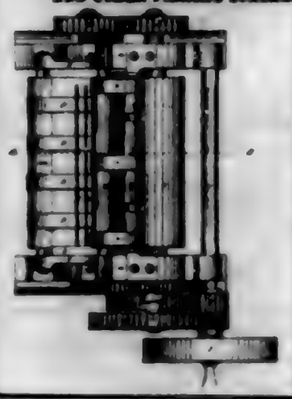
101,097, ALVA BELCHER.
WASHING-MACHINE.



101,098, ERASTUS B. BIGELOW. LOOM.



101,099, ERASTUS B. BIGELOW.
MACHINES FOR CRUSHING RAGS AND CURING FURNISH STALKS.



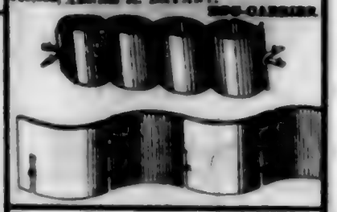
101,100, O. A. BINGHAM. CHAIR-SEAT.



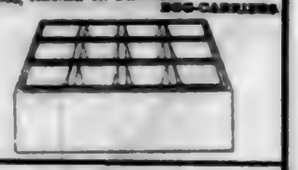
101,101, C. C. BROWN.
CRUSHER.



101,102, ABNER H. BRYANT.
HOG-CARRIER.

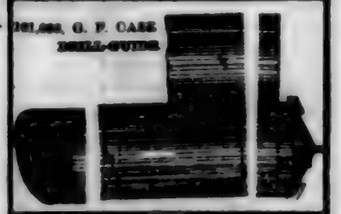


101,103, ABNER H. BRYANT.
HOG-CARRIER.



101,104, EDGAR D. BURRILL.
MEDICAL COMPOUND.

101,105, G. P. CASE.
DRILL-GUIDE.

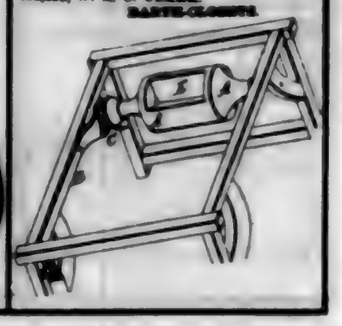


101,106 GEORGE W. CHATFIELD.
MEDICINE OR COUGH-SIRUP.

101,107, WM. A. CLARK.
CARRIAGE-AXLES.



101,108, W. R. C. CLARK.
SAFETY-CLOSETS.



101,099, WILLIAM CLEMSON.
SAW-SWAGER.

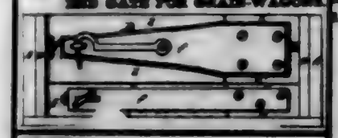


101,100, D. C. COLBY.
STREET PAVEMENT.

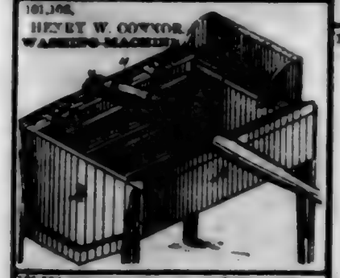


101,101,
JAS. R. COLE. COMPOSITION FOR THE MANUFACTURE OF TOBACCO PIPES, STEMS, AND CIGAR-HOLDERS.

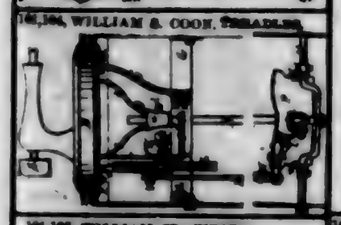
101,102, CHARLES H. COMSTOCK.
RED GATE FOR GRAIN-WAGONS.



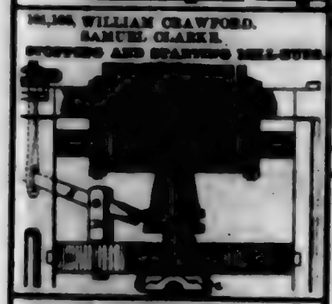
101,103,
HENRY W. CONNOR.
WASHING-MACHINE.



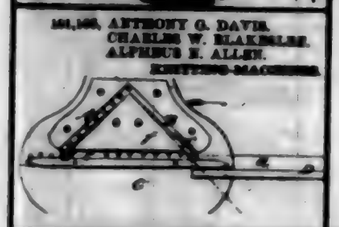
101,104, WILLIAM S. COOK. THRASHER.



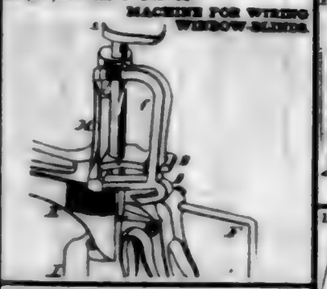
101,105, WILLIAM CRAWFORD.
SAMUEL CLARKE.
STUFFING AND STAPLING MILL-SUPS.



101,106, ANTHONY G. DAVIS.
CHARLES W. BLAKESLEE.
ALPHEUS H. ALLEN.
KNITTING-MACHINE.



101,107, BIRAM C. DAVIS.
MACHINE FOR WIRING WINDOW-SCREENS.



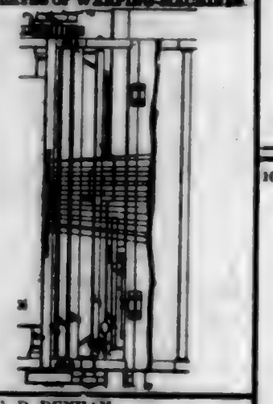
101,108, CHARLES T. DAY. SEATER.



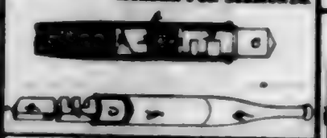
101,109, ELIPHALET DOUGHERTY.
SPED-SPINDLES.



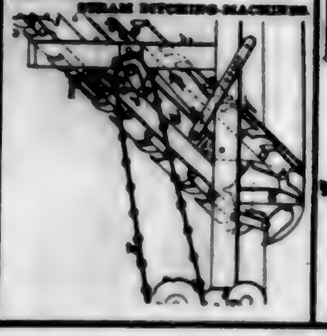
101,110, ISAAC C. DOWNER.
HORACE DOUK.
DROP-WIRE SUPPORTING-BARS OR PLATES OF WARPING-MACHINES.



101,111, G. D. DURHAM.
MOLDING FOR DIAMONDS.



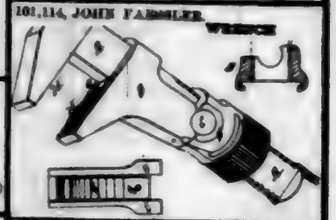
101,112, A. J. DYE.
CREAM BEATING-MACHINE.



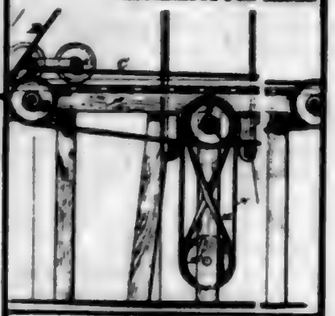
101,113, JOHN ERPELDING. LUNCH-BOX.



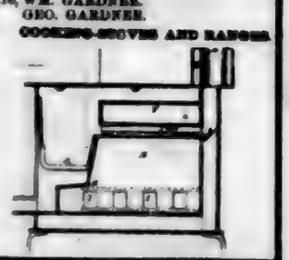
101,114, JOHN FARMER.
WRENCH.



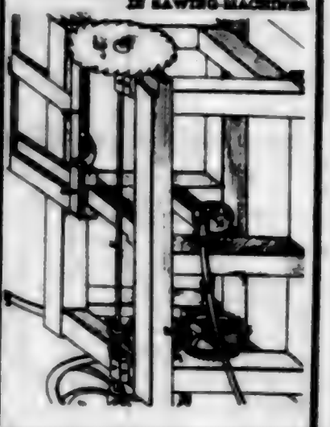
101,115, WM. B. FRUE.
CAR TRACK AND OPERATING APPARATUS FOR MINES.



101,116, WM. GARDNER.
GEO. GARDNER.
COOKING-STOVES AND RANGES.



101,117, HOFFMAN D. GILLESPIE.
RE-SAWING-MACHINE.

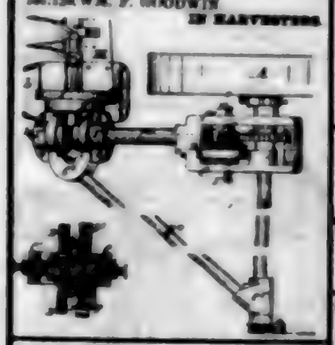


101,116. JULIUS WENDELL, E. W. GILLES. FOLDING DESK.



101,117. W. B. GLEASON. CORN-PLANTER HARROW OR PULL.

101,118. WM. F. GOODWIN. IN HARVESTERS.



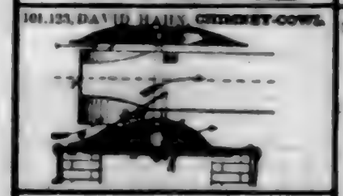
101,119. SAMUEL C. GREENE. HOLDERS FOR METALLIC CARTRIDGE-CASES.



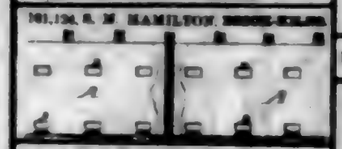
101,120. CHARLES T. GRIMES. HORSE HAY-FORKS.



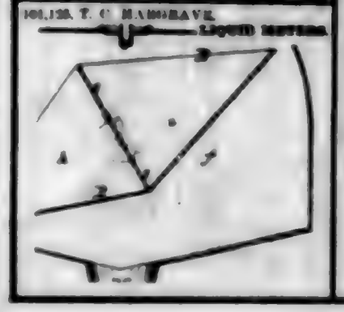
101,121. DAVID HAHN. CHIMNEY-COWL.



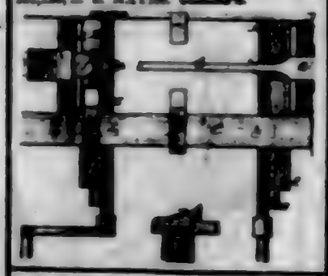
101,122. S. M. HAMILTON. HOOP-SKIRT.



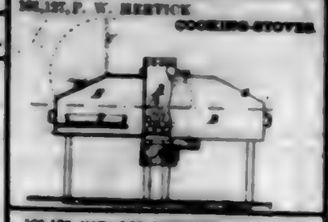
101,123. T. C. HANSHAW. LIQUID METERS.



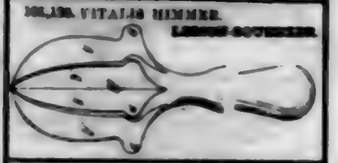
101,124. E. B. HAYES. CLAMPS.



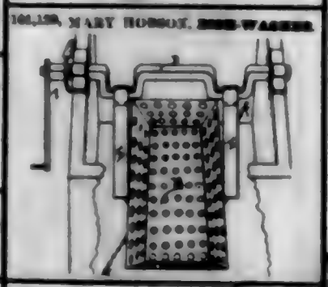
101,125. P. W. HERTICK. COOKING-STOVES.



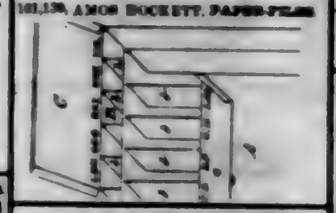
101,126. VITALIS HIMMER. LAWN-SPRINKLER.



101,127. MARY HOBSON. HOOP-SKIRT.

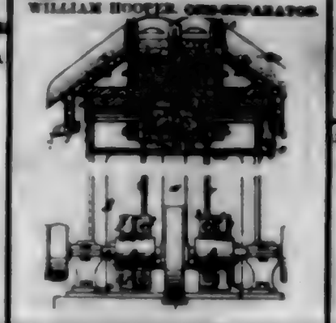


101,128. AMOS HOCKETT. PAPER-FILER.

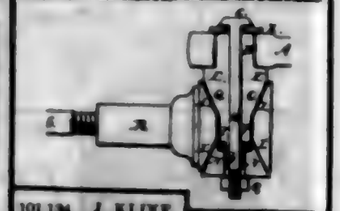


101,129. H. A. HOGEL. PENCIL-CASE.

101,130. WILLIAM HOOVER. ORE-SEPARATOR.



101,131. P. H. KEITH. GAME-REGISTER.



101,132. J. KLINE. HARVESTER CRANK AND PIN.



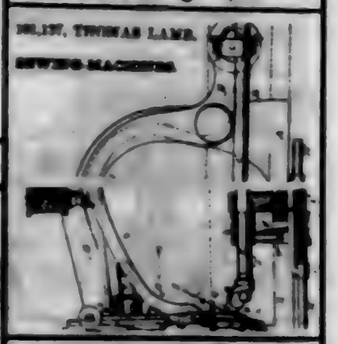
101,133. HENRY KNAPP. TREE-PROTECTOR.



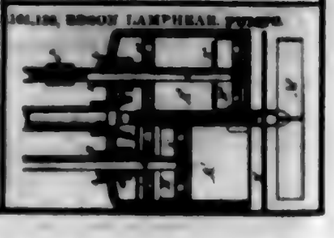
101,134. J. C. KURTZ. BROADCAST SEEDER.



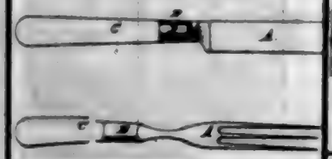
101,135. THOMAS LAMB. SEWING-MACHINE.



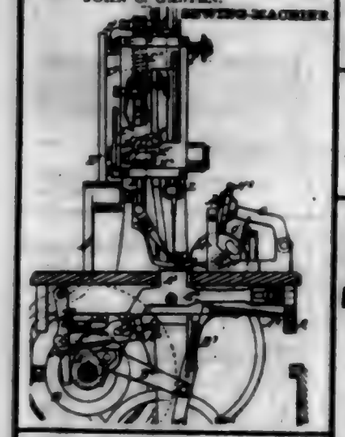
101,136. SIMON LAMPHEAR. PUMP.



101,139. E. G. LAMSON. TABLE-CUTLERY.



101,140. RALPH LAWYER, JOHN C. GASTEN. SEWING-MACHINE.



101,141. SHERROD S. LITTLE, HENRY P. WESTCOTT. HARNESS-FASTENING.

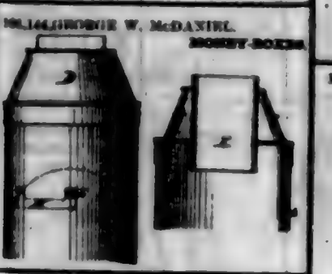


101,142. HENRY LOEWENBERG. MEMS FOR THE MANUFACTURE OF IMITATION-STRAW GOODS.

101,143. A. G. MANN. TUYERE.

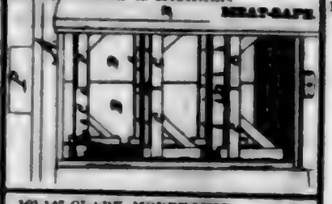


101,144. GEORGE W. McDANIEL. MONEY-BOXES.

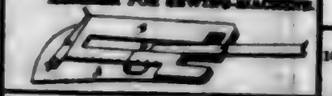


101,145. JNO. A. McKINNON. MEDICAL COMPOUNDS FOR THE CURE OF COLIC.

101,146. GEORGE L. MICHAEL. MEAT-SAFE.



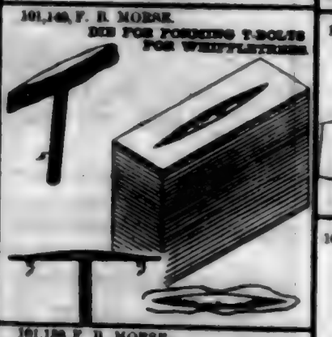
101,147. CLARK MOREHOUSE. NEEDLE FOR SEWING-MACHINES.



101,148. ROBERT M. MORRILL. SAND-SCREENS FOR IRON TUBE-WELLS.



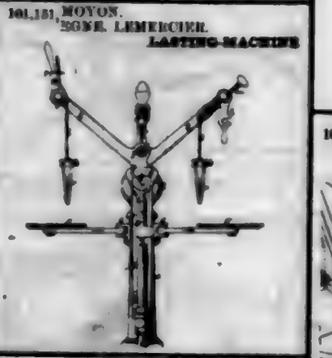
101,149. F. B. MORSE. DIE FOR FORMING T-BOLTS FOR WHIFFLETREES.



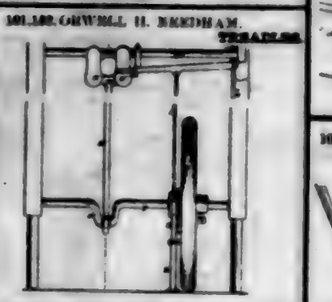
101,150. F. B. MORSE. CARRIAGE-STEPS.



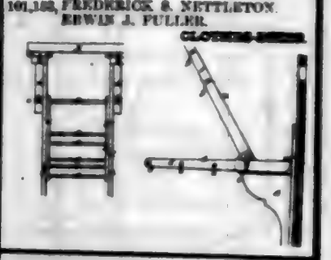
101,151. MOYON, EGNE. LEMERCIER. LASTING-MACHINE.



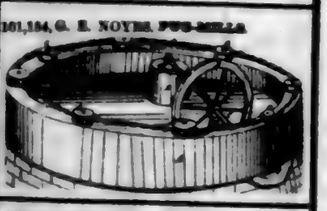
101,152. ORWELL H. NEEDHAM. TEDDERS.



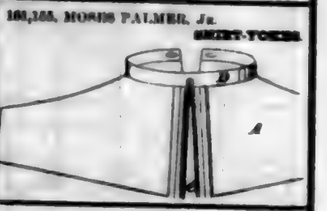
101,153. FREDERICK S. NETTLETON, ERWIN J. FULLER. CLOTHES-DRIER.



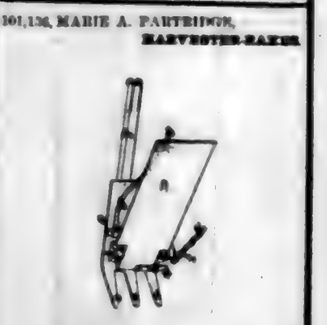
101,154. G. E. NOYES. PUG-MILLS.



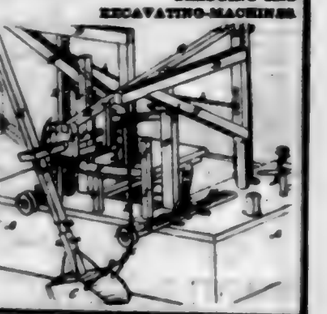
101,155. MORIS PALMER, Jr. SHIRT-YOKES.



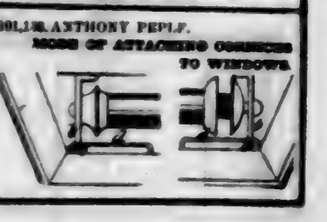
101,156. MARIE A. PARTRIDGE. HARVESTER-RAKER.



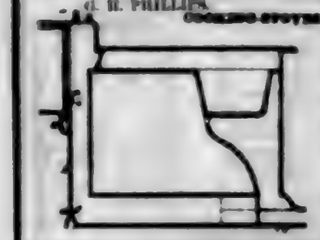
101,157. WALTER H. PEARSON. DREDGING AND EXCAVATING-MACHINES.



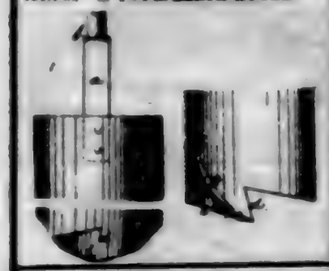
101,158. ANTHONY PEPLY. MODE OF ATTACHING CORNICES TO WINDOWS.



No. 169. C. H. PHILLIPS. COOKING-STOVES.



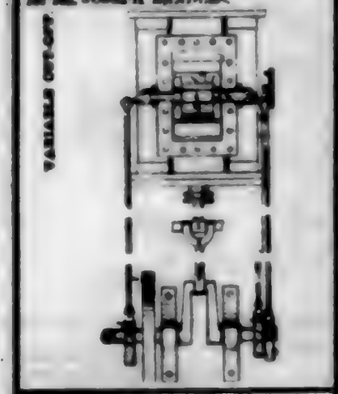
No. 169. S. POPE. HARVE ADOBE.



No. 169. JOSEPH H. PUTTA. SPRING FOR BED-BOTTOMS.



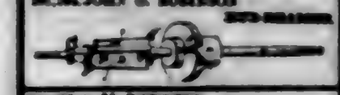
No. 169. JOSEPH BAXTER. VARIABLE CUT-OFF.



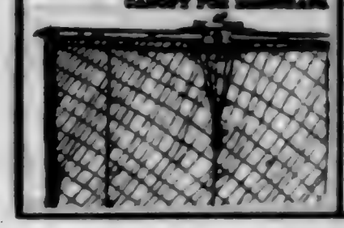
No. 169. CHAS. L. RICHARDS. SPRING-BEDS.



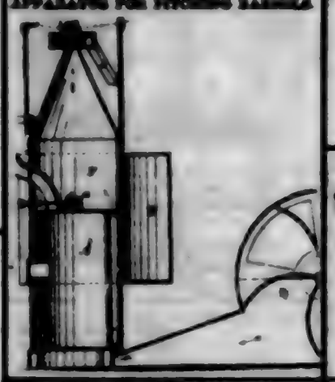
No. 169. JOHN G. ROBINSON. BED-BOTTOM.



No. 169. A. M. BODGERS. CARPET FOR HOUSE-FLOORS.



No. 169. RICHARD ROSENBACH. APPARATUS FOR PITCHING BARRELS.



No. 169. A. H. SAWYER, C. KENISTON. MACHINE FOR STRENGTHENING BOOT AND SHOE-SHANKS.



No. 169. C. F. SCHULER. HEATING AND VENTILATING.

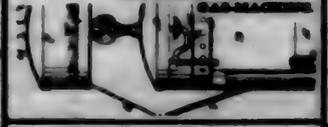


No. 169. DANIEL SHERWOOD. RAKE-GUARD.



No. 169. JOHN P. SIMONDS. SHEET FOR PRINTING STAMPS, HEADS AND CHECKS.

No. 171. H. JULIUS SMITH. ELECTRO-HYDROGAMOUS GAS-MACHINE.



No. 169. JOHNSON H. SMITH, WILLET FISHER. METALLIC CORNER-GUTTERS FOR CARRIAGE-BODIES AND SEATS.



No. 172. S. A. SMITH. LOOM-REEDS.

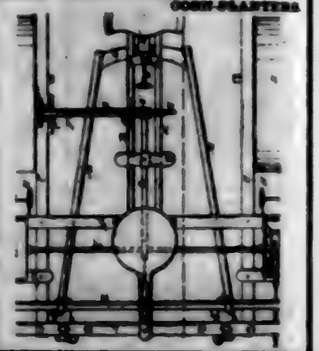


No. 174. CHARLES SPEAR. SUBMARINE TUNNELS.



No. 173. DANIEL SPILL. MANUFACTURE OF XYLOIDINE AND ITS COMPOUND.

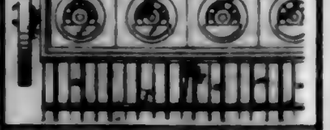
No. 170. PHILIP S. STAKNIS. CORN-PLANTERS.



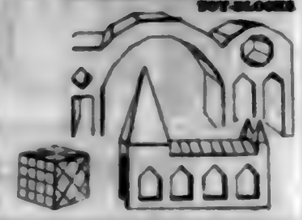
No. 171. WALTER S. STEVENSON. COOKING-STOVE.



No. 170. W. D. STROUD. PRESSES AND CULTIVATORS COMBINED.



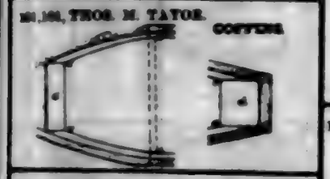
No. 170. A. B. SWIFT. CONSTRUCTING AGRICULTURAL CUT-BLOCKS.



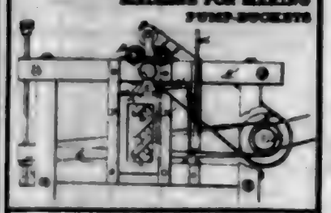
No. 169. SAML. G. TAYLOR. COFFIN-CLAMPING.



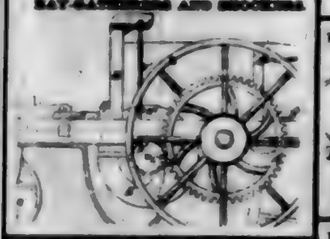
No. 169, THOS. M. TAYOR. COFFINS.



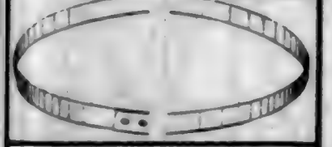
No. 162, JOHN P. TEMPLE. MACHINE FOR MAKING PUMP-BUCKETS.



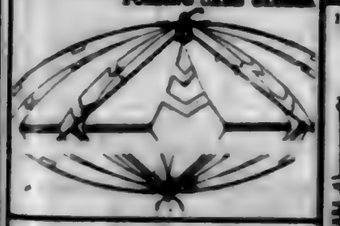
No. 163, CLARK M. TERRELL. HAY-GATHERING AND SHOCKING.



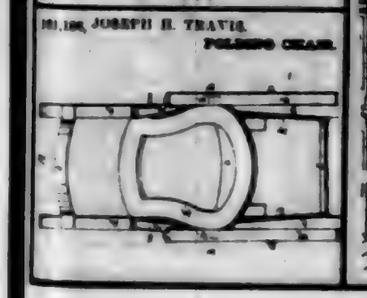
No. 166, WM. P. THOMSON. ADJUSTABLE CHURN-DOOR.



No. 165 DENNIS TOWNSEND. FOLDING CANE GLOBES.



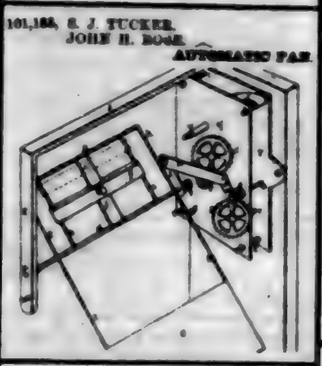
No. 168, JOSEPH H. TRAVIS. FOLDING CHAIR.



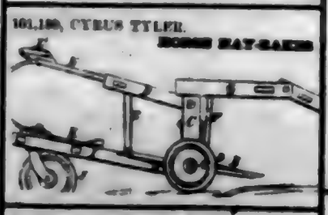
No. 167, LUCIUS E. TRUESDELL. RAILROAD-CAR AXLES.



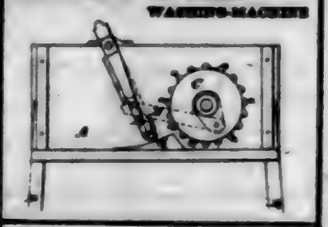
No. 165, S. J. TUCKER, JOHN H. ROSE. AUTOMATIC FAN.



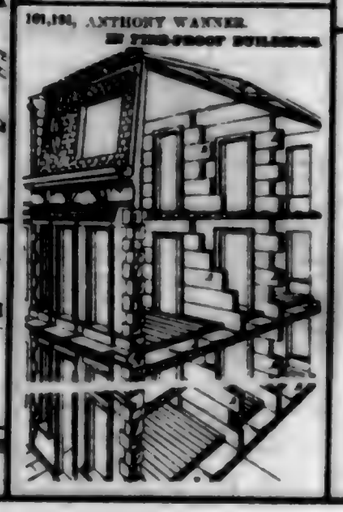
No. 169, CYRUS TYLER. HORSE HAY-RAKES.



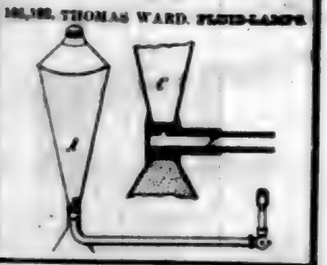
No. 169, JOHN D. VAN DUSEN. WASHING-MACHINE.



No. 161, ANTHONY WANNER. FIRE-PROOF BUILDINGS.

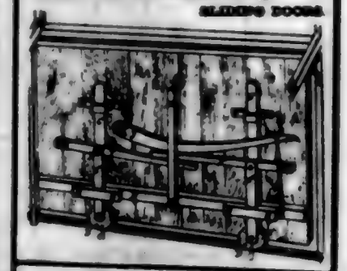


No. 162, THOMAS WARD. FLUID-LAMPS.



No. 160, ALEXANDER WARFIELD. MANUFACTURE OF SOAP.

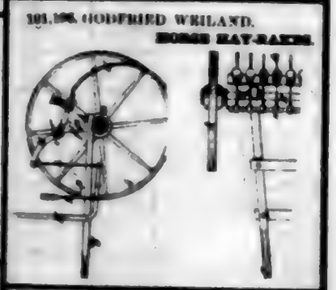
No. 164, WM. B. WATERHOUSE. SLIDING DOORS.



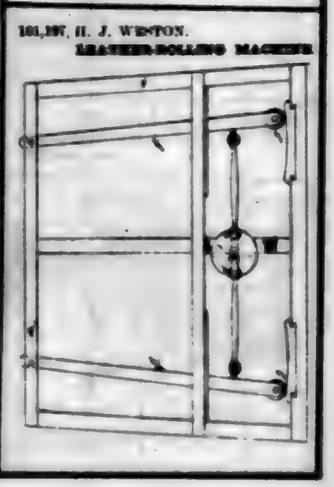
No. 160, JULIUS WATERMAN. BOOT-SHIRTS.



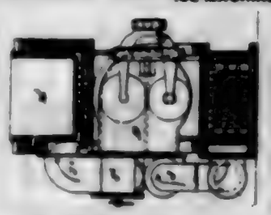
No. 166, GODFRIED WEILAND. HORSE HAY-RAKES.



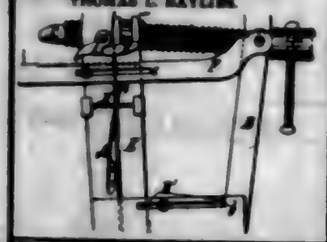
No. 167, H. J. WESTON. LEATHER-ROLLING MACHINE.



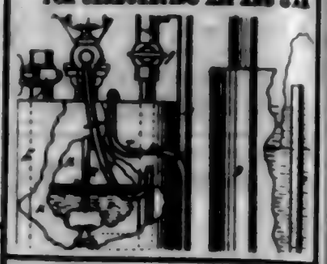
101,199 FRANZ WEIDHAUSEN. ICE-MACHINES.



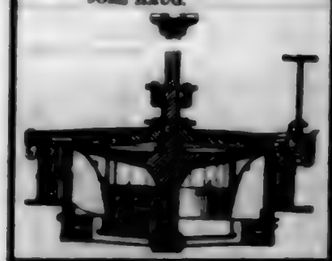
3,200, EDWIN CRAWLEY. THE THOMAS L. RAYLIEN.



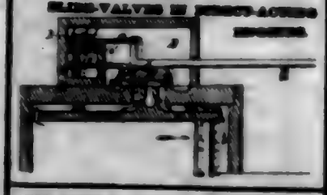
3,201. ARTHUR BARRARIN. APPARATUS FOR CARBURETING AIR AND GAS.



101,202, A. E. WOLF. WATER-WHEELS. JOEL HAUG.



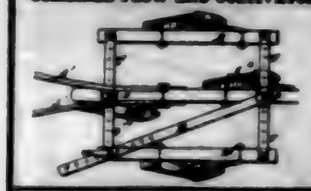
3,203, OSO. W. HUBBARD. OPERATING WM. S. CONANT. SLIDE-VALVES IN RECIPROCATING ENGINES.



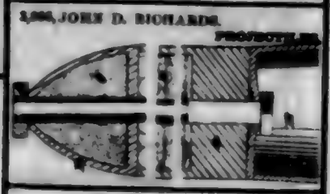
3,204. E. HOE PRINTING-PRESSES.



101,205, JOHN WOLPERT. COMBINED PLOW AND CULTIVATOR.



3,205, JOHN D. RICHARDS. PROTECTOR.



3,206, A. THOMAS. PORTABLE FORGING-APPARATUS.



101,207, W. D. WOODS. KEYED-FASTENING.



3,207, T. J. SULLIVAN. SAFES.



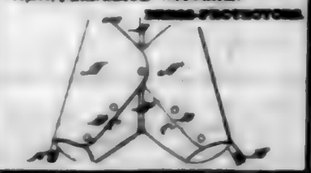
101,208, ALBERT F. SIEGLER. VAPOR-BURNER.



3,208, FORRESTER MANUFACTURING CO. SAMUEL WILMOT. PUMP.



101,209, FREDERICK WITTRAM. MINING-PROTECTOR.



3,209, ROBT. M. WILDER. HIRAM B. ROBINSON. MINING-DRILL.



3,210, THEODORE BRIEMANN. FIRE AND WATER-PROOF PAINT AND CEMENT.

3,211. GEO. C. WINCHESTER. CHAIN-GEAR.



3,212, WESLEY CHASE. SEWER.



3,213. E. F. ANDERSON. TRACTION WHEEL.

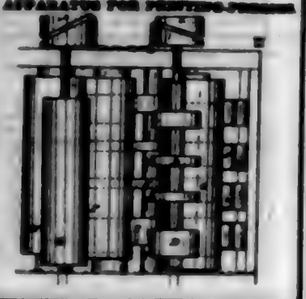


3,214. GEO. QUENTHER. E. H. HEYMANN. MANUFACTURE OF GLUE.

3,215. CALVIN G. UDELL. MINE-CARRIER.



3,216. VALENTIEN WOOD. ASSIGNOR TO J. B. BUTTERLIN. VALENTIEN WOOD. APPARATUS FOR PRINTING-PRESSES.



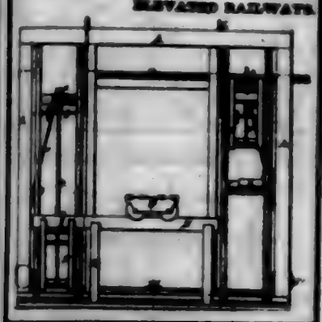
ILLUSTRATIONS OF PATENTS

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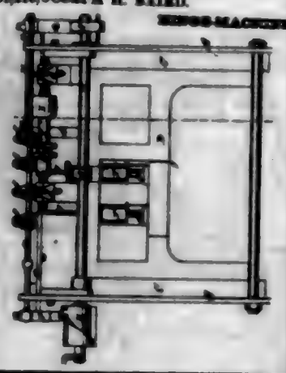
THE UNITED STATES PATENT OFFICE

MARCH 29, 1870.

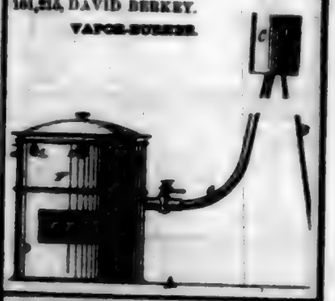
101,206, JOHN M. ABBOTT. ELEVATED RAILWAYS.



101,210, JOSEPH H. BAIRD. MINING-MACHINERY.



101,214, DAVID BERKEY. VAPOR-BURNER.



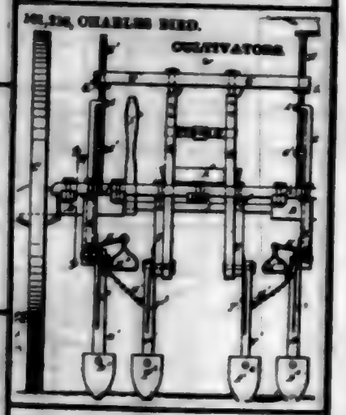
AUTOMATIC CARRIAGE-AXLE. 101,208, ALONZO ALCOTT.



101,211, THO. W. BARTHOLOMEW. SUSPENDERS.



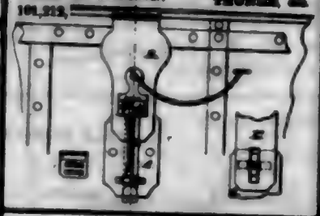
101,215, CHARLES BIRD. CULTIVATORS.



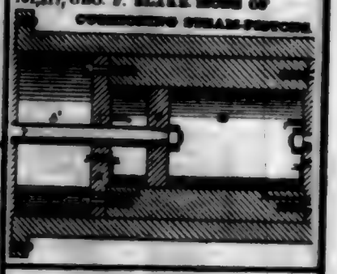
101,209, JOHN P. ALLEN. COTTON-SEED PLANTERS.



S. THOMPSON BARTON, ASSIGNS FOR JOHN W. AFFROY. 101,212, TRUSSES, &c.



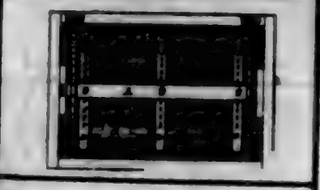
101,217, GEO. F. BLAKE. MODE OF CONDENSING STEAM-PISTONS.



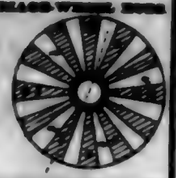
101,207, ALLEN S. AFGAR. SCREW AND SCREW-DRIVER.



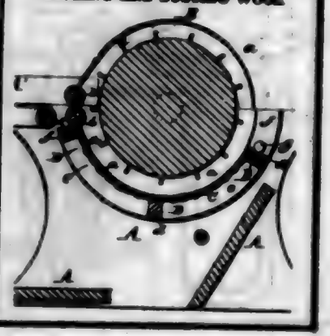
101,213, W. S. ROWLAND, OTIS W. BEAN. APPARATUS FOR TANNING LEATHER.



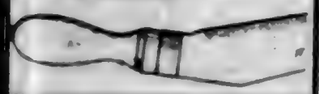
101,216, W. J. ARRINGTON. CARRIAGE-WHEEL HUBS.



101,218, HILTON BLISS. MACHINE FOR PICKING AND DUSTING WOOL.



101,210, KNIVES. NOYES E. BABCOCK. ROBBIE D. GOODSELL.



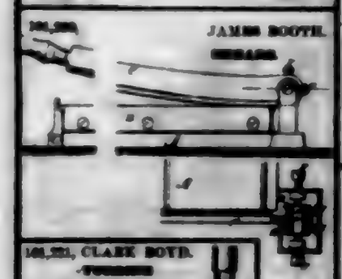
101,214, F. BELLINGER. FIRE-MARSHAL.



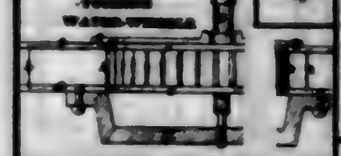
101,219, CHARLES E. OLIVER. BRACING-HARNESS.



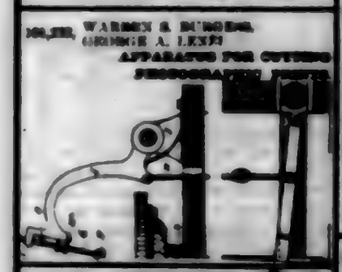
101,220, JAMES BOOTH. SPADE.



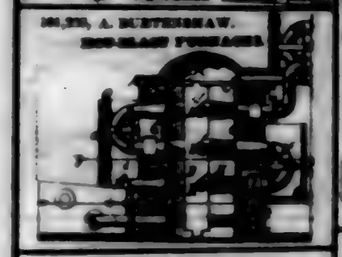
101,221, CLARK BOYD. WATER-WHEEL.



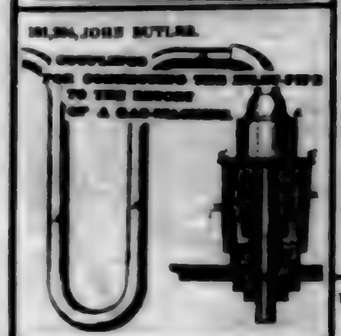
101,222, WARREN S. BURGESS, GEORGE A. LEST. APPARATUS FOR CUTTING PHOSPHORATED LIMES.



101,223, A. BURTENSHAW. BOX-BLANK FORMING.



101,224, JOHN BUTLER. COUPLING FOR CONNECTING THE SOLID PIPE TO THE HINGE OF A GATE-VALVE.



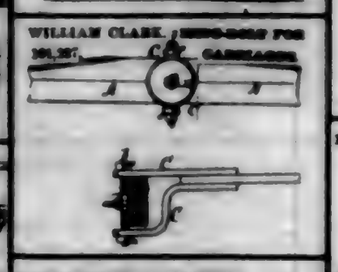
101,225, JOHN M. CASE. STEAM-BOILER FURNACE.



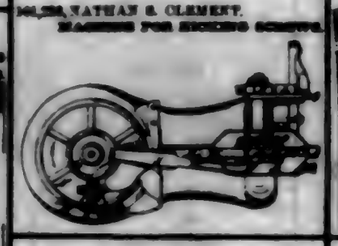
101,226, GEO. R. CHANDLER. WASHING-MACHINE.



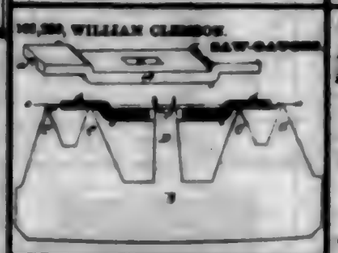
WILLIAM CLARK. APPARATUS FOR 101,227 CARBURETING GAS.



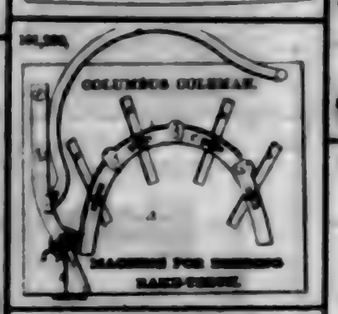
101,228, NATHAN S. CLEMENT. MACHINE FOR BENDING SCYTHES.



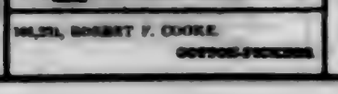
101,229, WILLIAM CLEMSON. SAW-GAUGE.

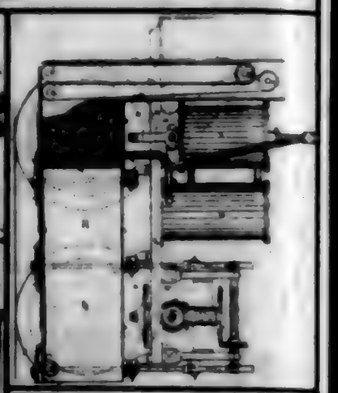


101,230, COLUMBUS COLEMAN. MACHINE FOR BENDING HAND-CHAIN.

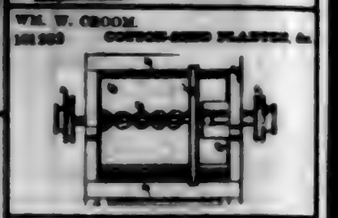


101,231, ROBERT F. COOKE. COTTON-PICKER.

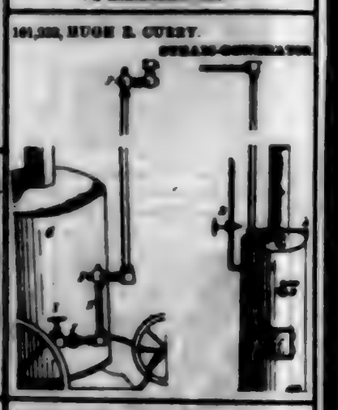




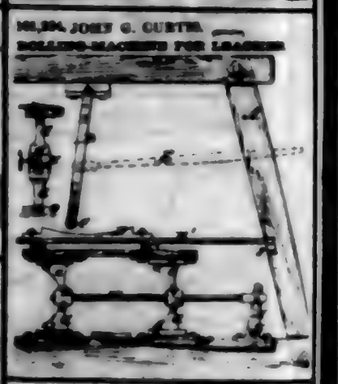
WM. W. CROOM. 101,232 COTTON-SEED PLANTER &c.



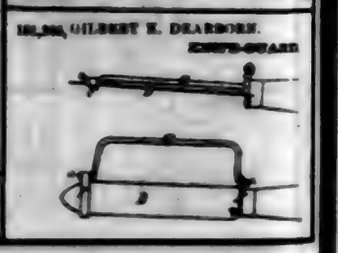
101,233, HUGH S. CURRY. STEAM-GENERATOR.



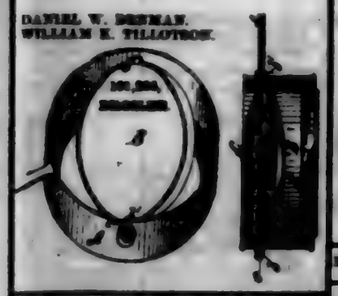
101,234, JOHN G. CURTIS. ROLLING-MACHINE FOR LEASHES.



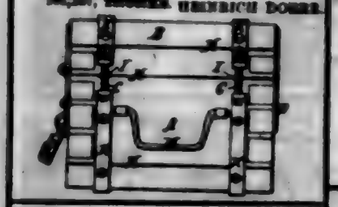
101,235, GILBERT K. DEARBORN. CHECK-GUARD.



DANIEL W. DEEMAN, WILLIAM H. TILLOTSON. 101,236 HARVESTER.



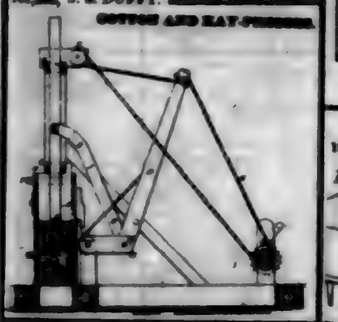
101,237, [illegible] HEINRICH DOHRE.



101,238, JOHN DU BOIS, ASSIGNOR TO E. F. BEUGLER. FOR COTTON-SEASON, PULLEYS, &c.



101,239, J. S. DUFFY. COTTON AND HAY-PRESSES.



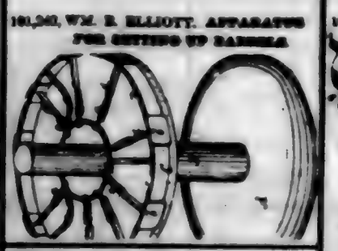
101,240, A. H. DWIGHT, WILLARD W. B. CHAMBERS. CULTIVATORS.



101,241, ASAHEL N. ELLIOTT. MATCHING FOR GRAIN-SEATS.



101,242, WM. B. ELLIOTT. APPARATUS FOR SETTING UP BARRELS.

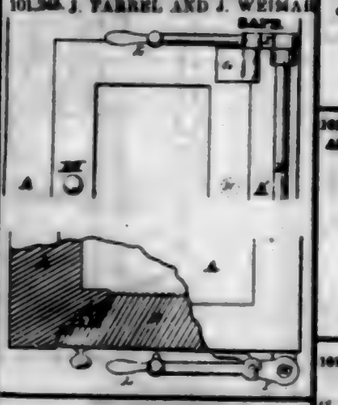


101,243, ELIHU ENGLAND. FANNING-MILL.

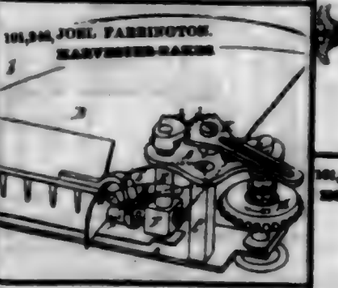
101,244, CHARLES ESTABROOKS. CULTIVATOR-TOOTH.



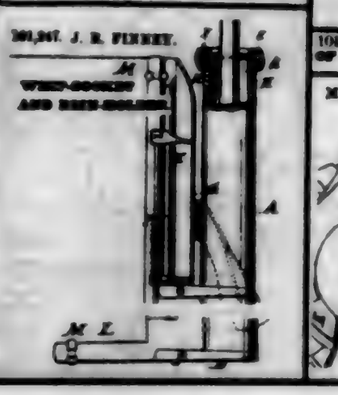
101,245, J. FARREL AND J. WEIMAR. SAFE.



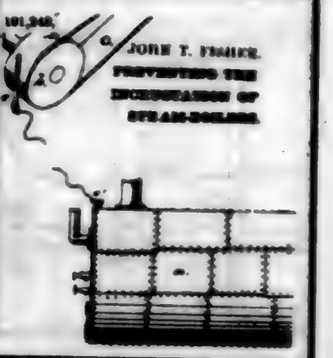
101,246, JOEL FARRINGTON. HARVESTER-RAKING.



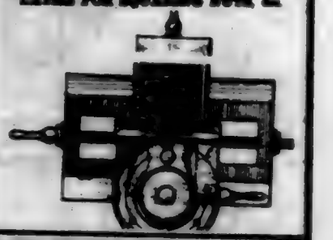
101,247, J. R. FINNEY. WIND-ENGINE AND BELT-SHIFTER.



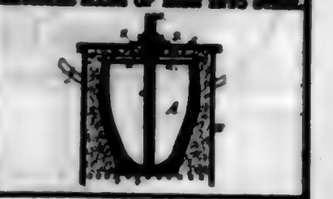
101,248, JOHN T. FISHER. PREVENTING THE INCRUSTATION OF STEAM-BOILERS.



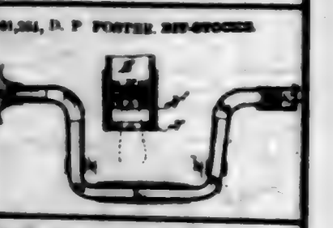
101,249, JAMES FLOWER. LATHE FOR SQUARING BOTH &c.



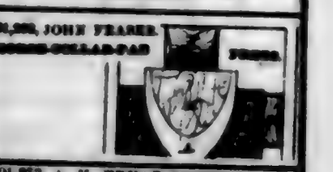
101,250, HIRAM G. FOLSOM, ASSIGNOR TO ARMORED MAINS OF HIGH HYD. PRESS.



101,251, D. P. FOSTER. DIE-STOCKS.

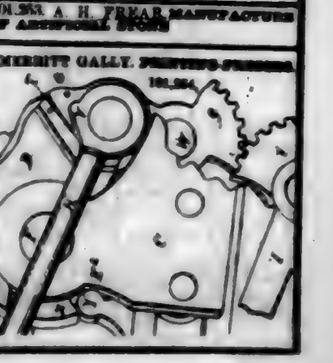


101,252, JOHN FRASER. SCREW-CUTTING-TAP.



101,253, A. H. FREAR, MANUFACTURE OF ARTIFICIAL STONE.

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101,300, EVERETT G. HAMMOND.
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101,301, LIVERUS HULL.
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101,307, I. P. MAGOON. FEED-WATER HEATER FOR LOCOMOTIVES.

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101,300, WM. D. McCLURE. STONE-DRILLS.

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101,306, HENRY M. PAINE. ROTARY HYDRO-PNEUMATIC PUMPS.

101,307, SAMUEL PEARSON. ATTACHMENT FOR SHOVELS.

101,308, MICHAEL POWELL. WAGON-BRAKES.

101,309, ELI S. PRIME. GAUGE-BOXES.

101,310, FRED. L. PURROY. VELOCIPEDE.

101,311, R. RAMSEY AND C. STAFFORD. RAILWAY GATE.

101,312, E. C. REYNOLDS. BOAT-DETACHING APPARATUS.

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101,314, S. D. SANDERS. COMPOSITION ROOFING.

101,315, S. D. SANDERS. MACHINE FOR COMPRESSING WOOD TENONS.

101,316, THOMAS SCANTLIN. STOVE-RISER.

101,317, CASPAR SCHMITT. PIPE-BENDER.

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101,319, THEODORE SCHWARTZ. PROCESS OF OBTAINING ACETIC ACID FROM WOOD.

101,320, THEODORE SCHWARTZ. TREATING WOOD TO OBTAIN USEFUL PRODUCTS.

101,321, ANNA M. SMITH. WASHING-MACHINE.

101,322, C. J. SMITH. MOLDS FOR SAFETY-GUARDS FOR GANG-SAWS.

101,323, GEORGE W. SMITH. WATER-METERS.

101,324, MYRON H. SMITH. GRAIN-SEPARATORS.

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101,326, JOSEPH SPERRY. BED-BOTTOMS.

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101,328, JOHN L. WARREN. OVAL-TURNING TOOL.

101,329, JONATHAN BURNS WEST. DEVICE FOR TIGHTENING CARRIAGE-TIRES.

101,330, EBBARD THOMPSON WHITE. APPARATUS FOR TANNING HIDES.

101,332, JOHN L. WHITING. IMPROVED HOOPS.

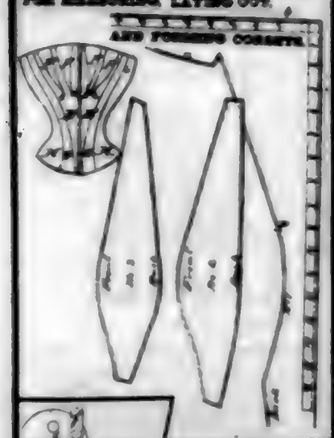
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101,334, JOSEPH C. WIGHTMAN. STEAM WATER-ELEVATOR.

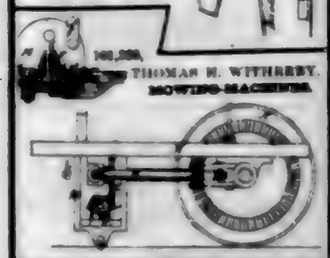
101,335, CALEB WILLIAMS. IMPROVED WASHING-MACHINE.

101,336, JOHN P. WILLIAMS. COOPER-POT.

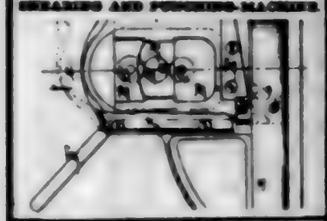
101,267, MOLLIE WILLIAMS. DEVICE FOR MEASURING, LAYING OUT, AND FORMING CORSETS.



101,268, THOMAS H. WITHERBY. MOWING-MACHINES.

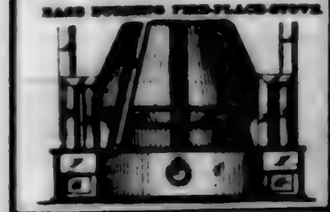


101,269, THOMAS H. WITHERBY. SHEARING AND PUNCHING-MACHINE.



101,270, LOUIS WOLFF. LUBRICANT FOR SPINNING BOLLER, &c.

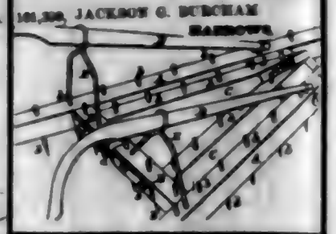
101,271, WM. S. WOOD. BASE-BURNING FIRE-PLACE-STOVE.



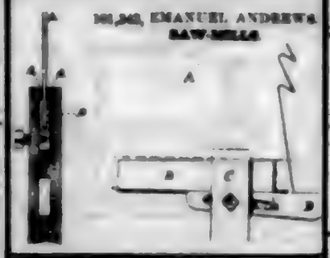
101,272, NELSON S. ALLEN, ISRAEL S. BROOKS, JAMES BOOD, AND JASPER HAYDEN, CULTIVATOR.



101,273, JACKSON G. BURCHAM. HARROWS.



101,274, EMANUEL ANDREWS. SAW-MILLS.



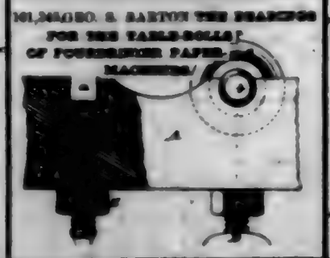
101,275, WM. X. BARTHOLOMEW. FENCE-CAMS.



101,276, TIMOTHY COFFIELD. FENCE.



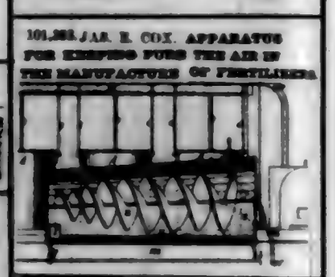
101,277, BD. S. BARTON. THE BRACKETS FOR THE TABLE-ROLLS OF FOURDRINIER PAPER-MACHINES.



101,278, H. S. COPELEY. RIVETS.



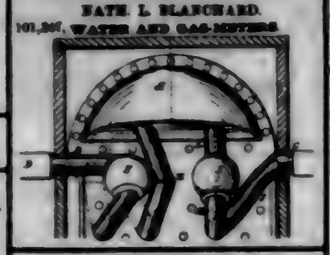
101,279, JAS. R. COX. APPARATUS FOR KEEPING FURS FREE FROM AIR IN THE MANUFACTURE OF FERTILIZERS.



101,280, ALBERT BETTELEY. WOOD PAVEMENTS.



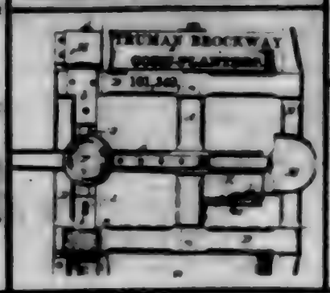
NATH. L. BLANCHARD. 101,281, WATER AND GAS-METERS.



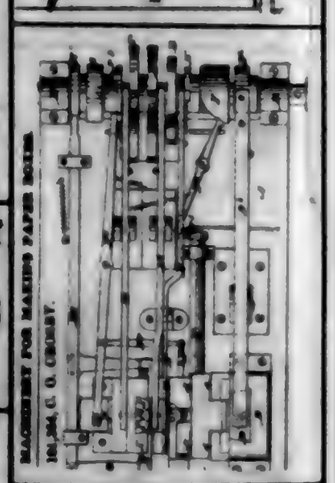
SAMUEL REEVE REVOL. MEASURING 101,282, APPARATUS FOR GAS-WORKS.



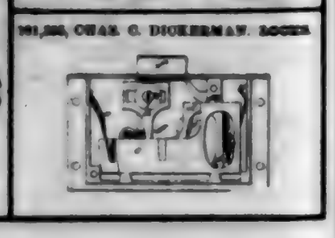
TRUMAN BROCKWAY. 101,283, CORE-PLASTERING.



MACHINERY FOR MAKING PAPER BOXES. 101,284, C. G. CROSBY.



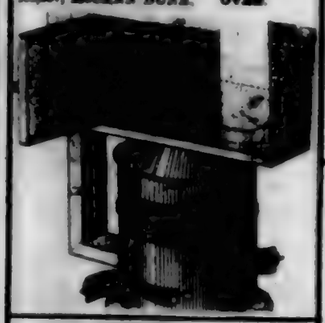
101,285, CHAS. C. DICKERMAN. LOCKS.



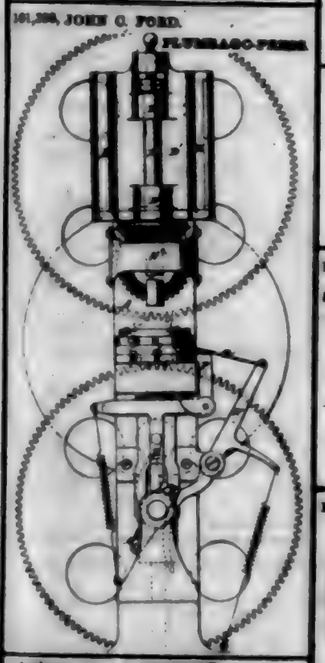
101,286, ELLIS DOTY, H. RICHARDSON. MACHINE FOR SHEARING METAL.



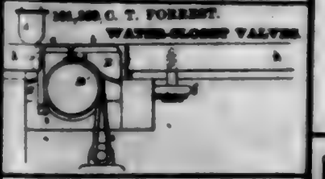
101,287, McCANN DUNN. OVEN.



101,288, JOHN C. FORD. FLUTE-BASS-PEDAL.



101,289, C. T. FORREST. WATER-CLOSET VALVE.



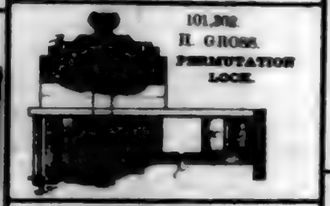
101,290, WILLIAM H. FORTNEY, WILLIAM B. SHRAFFER. HORSE-RAKE.



101,291, ANN L. H. GRAHAM. [illegible]



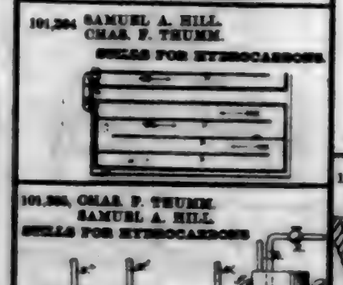
101,292, H. GROSS. PERMUTATION LOCK.



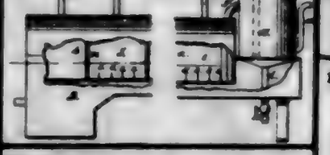
101,293, THOS. HALL. IMPROVED COVER FOR SEWING-MACHINES.



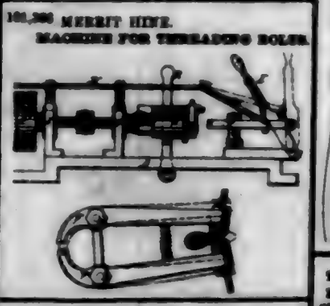
101,294, SAMUEL A. HILL, CHAS. F. THUMM. STILLS FOR HYDROCARBONS.



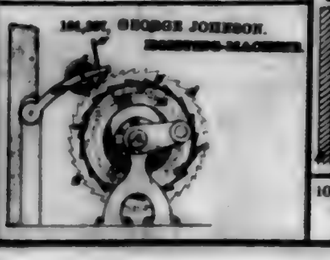
101,295, CHAS. F. THUMM, SAMUEL A. HILL. STILLS FOR HYDROCARBONS.



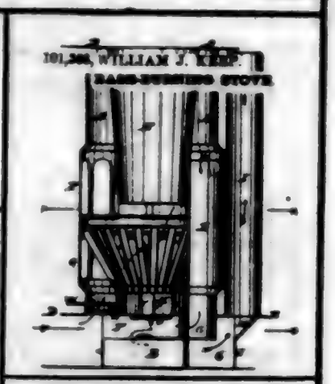
101,296, MERRIT HINE. MACHINE FOR THREADING BOLTS.



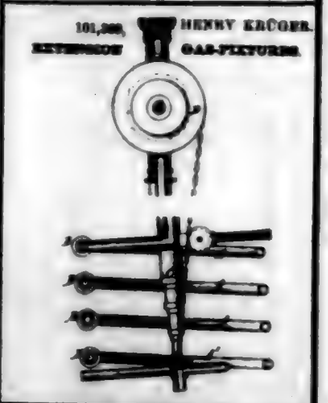
101,297, GEORGE JOHNSON. SEWING-MACHINE.



101,298, WILLIAM J. KERR. BASE-BURNING STOVE.



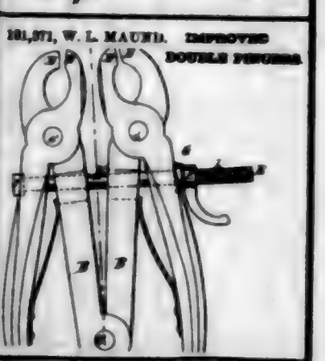
101,299, HENRY KRÜGER. EXTENSION GAS-FIXTURE.



101,300, G. A. LLOYD. IMPROVED CARRIAGE-AXLE.



101,301, W. L. MAUND. IMPROVED DOUBLE PISTONS.

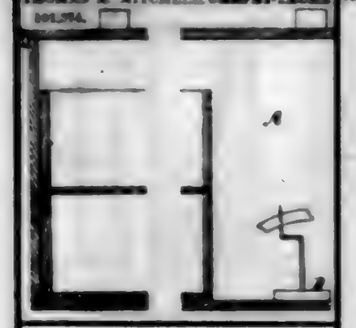


101,302, WM. N. McINNIS. ELECTRO-MAGNETIC ANNUNCIATORS.

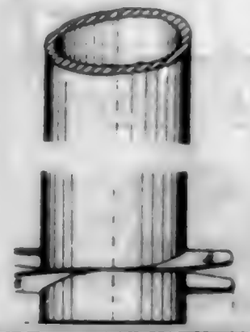


101,303 D. M. MEFFERD. PRESERVING VEGETABLES, FRUITS, &c.

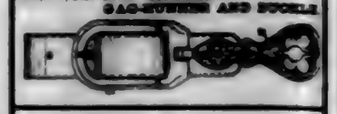
THOMAS A. MITCHELL, CARPET-TACKS
101,374.



101,378, CHAS. H. PARKER.
SCREW-PILING



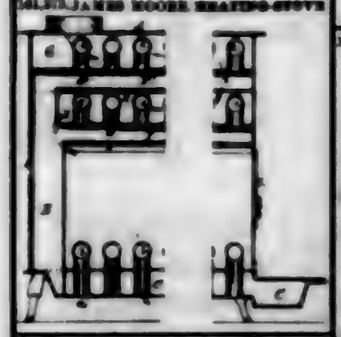
101,386, SEVERIN SIEBOLD.
BAG-RUNNER AND BUCKLE



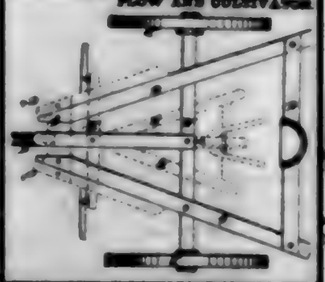
101,387, SEVERIN SIEBOLD.
THRUST LINING.



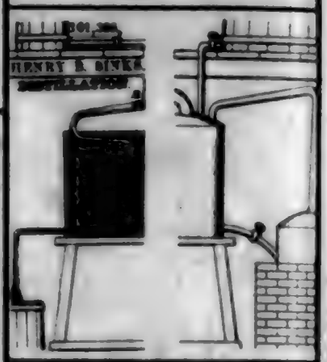
101,373, JAMES MOORE, HEATING-STOVE



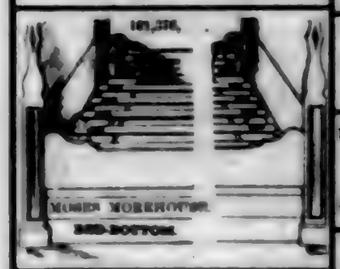
101,382, C. L. REID. CONVERTIBLE PLOW AND CULTIVATOR.



101,384, HENRY B. SIVER. [illegible]



101,376,



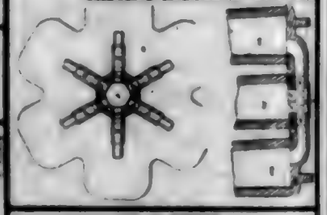
MOSES MORRISON.
SAD-BOTTOM.

101,385, M. RICHARDSON.
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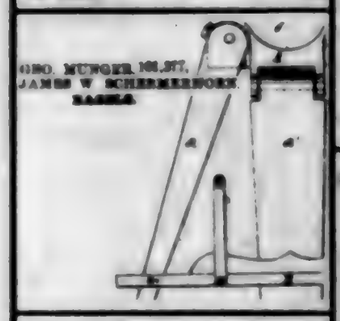
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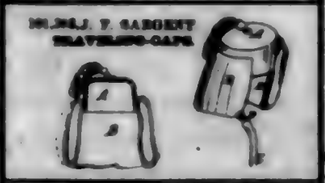
101,389, FRED. J. SLADE.
CASTING BOOTS IN GROUPS.



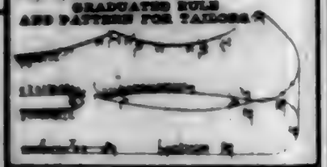
GEO. MUNGER, 101,377.
JAMES W. SCHERMERHORN.
SAGELS.



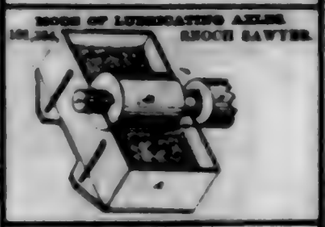
101,379, J. F. SARGENT.
HATCHING-CAPS.



101,390, WILLIAM H. SMITH.
GRADUATED RULE AND PATTERN FOR TAILORS.



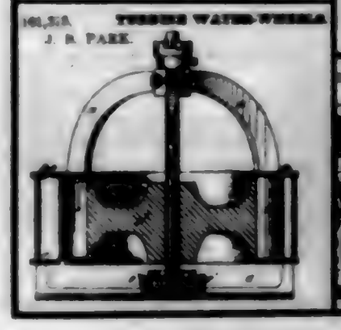
MODE OF LUBRICATING AXLES.
101,380. SHOCH SAWYER.



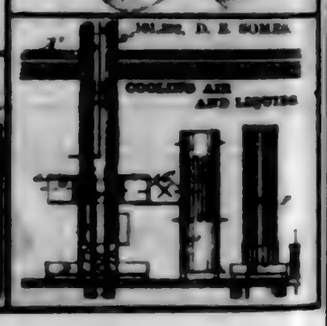
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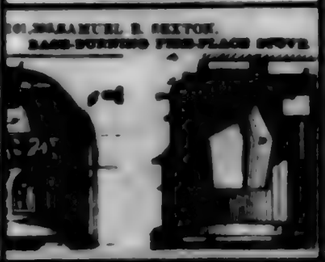
101,375, TURBINE WATER-WHEELS
J. B. PARK.



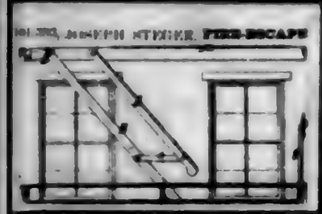
101,392, D. E. SOMES.
COOLING AIR AND LIQUIDS



101,393, SAMUEL B. SEXTON.
BASE-BURNING FIRE-PLACE STOVE.

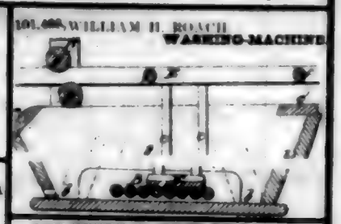


101,393, JOSEPH STEERE. FIRE-ESCAPE



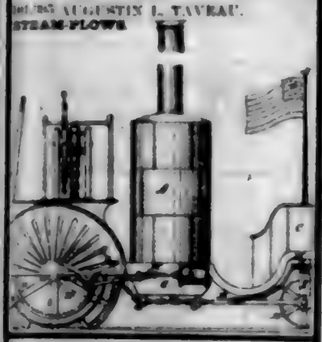


101,400, WILLIAM H. ROACH.
WASHING-MACHINE



101,394, C. A. STEVENS. PACKING JOURNALS AND OTHER PARTS OF MACHINERY

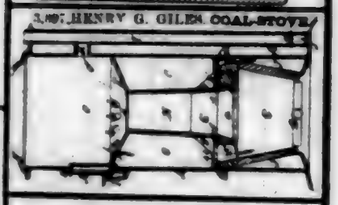
101,395, AUGUSTIN L. TAVEAU.
STEAM-PLOWS.



101,401, PIERCE W. FARRELL.
WATER-WHEELS



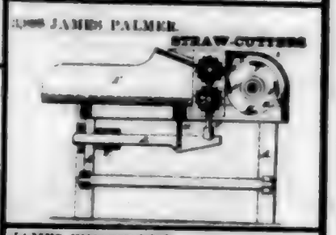
3,397, HENRY G. GILES. COAL-STOVE.



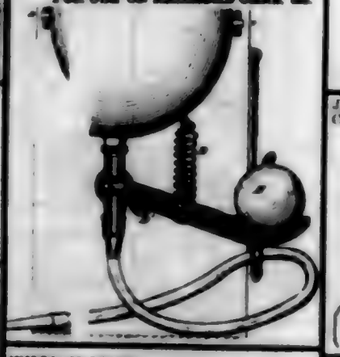
CHARLES H. CUSHMAN.
101,402. HOSE-COUPLINGS



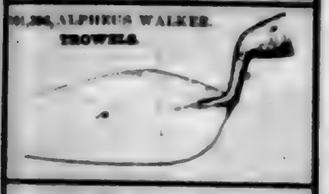
3,398 JAMES PALMER.
STRAW-CUTTERS



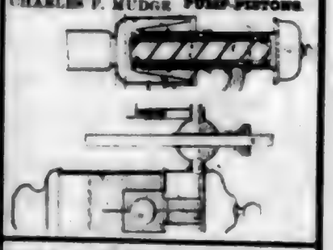
H. C. STEWART.
R. T. BEADLEY 101,404.
AUTOMATIC FIRE-EXTINGUISHER FOR USE ON RAILROAD CARS &c.



101,396, ALPHEUS WALKER.
TROWELS



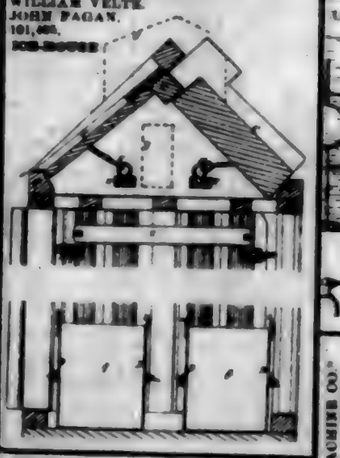
JAMES WILSON, 3,399.
CHARLES F. MUDGE. PUMP-PISTONS.



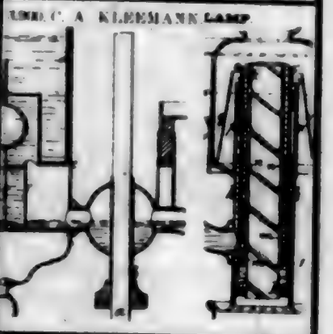
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SAWING-MACHINES.



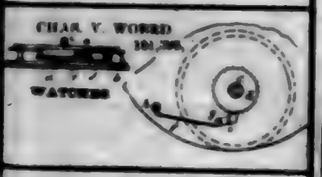
WILLIAM VELTE.
JOHN PAGAN.
101,405.
HOE-HOUSES.



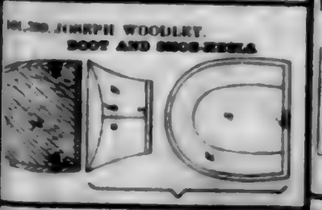
3,400 C. A. KLEEMANN. LAMP.



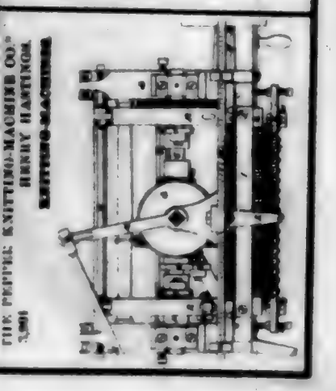
CHAS. V. WORRD
101,398.
WATCHES.



101,399, JOSEPH WOODLEY.
BOOT AND SHOE-KNIFE.



3,401
THE PEPPER KNITTING-MACHINE CO.
HENRY HASTINGS
KNITTING-MACHINES.



HOOK-HASPS ATTACHMENT.
ROBERT WYATT.
101,406.



101,407, PIERCE W. FARRELL.
ANTI-FRICTION JOURNALS

101,406, C. HART SMITH.
PROCESS OF PREPARING PAPER FOR ROOFING AND SIMILAR PURPOSES.

101,408, HIRAM C. STOUFFER.
IMPROVED ELEVATOR.



ILLUSTRATIONS OF PATENTS

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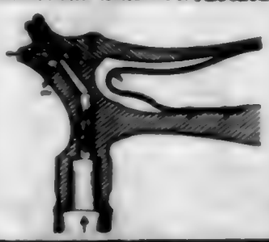
THE UNITED STATES PATENT OFFICE

APRIL 5, 1870.

101,409, J. R. ALEXANDER.
LAMP-SHADE SUPPORTERS



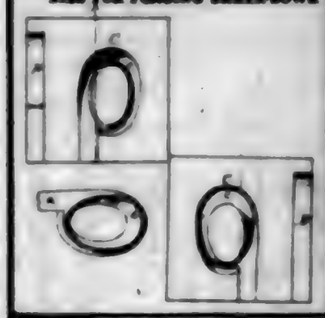
101,410, JOHN ASHCROFT, PASCEVE.



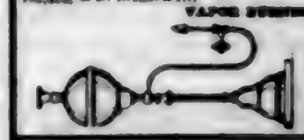
101,411, RICHARD MEADE BACHE.
HEADED GRADUATED SCALE



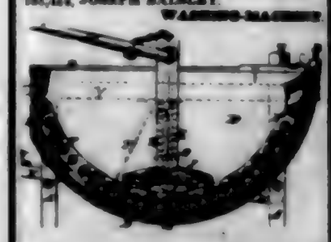
101,412, GILBERT B. BAILEY.
DIES FOR FORGING SHEAR-BOWS



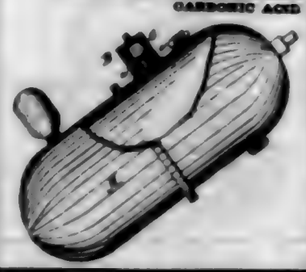
101,413, G. D. BALDWIN.
VAPOR BURNER



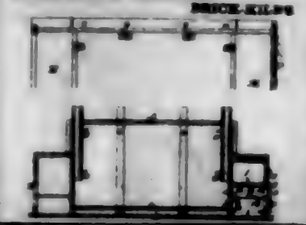
101,414, JOSEPH BALSLEY.
WASHING-MACHINE



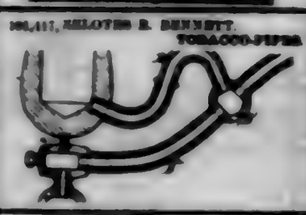
101,415, BENJAMIN BATES.
APPARATUS FOR GENERATING CARBONIC ACID



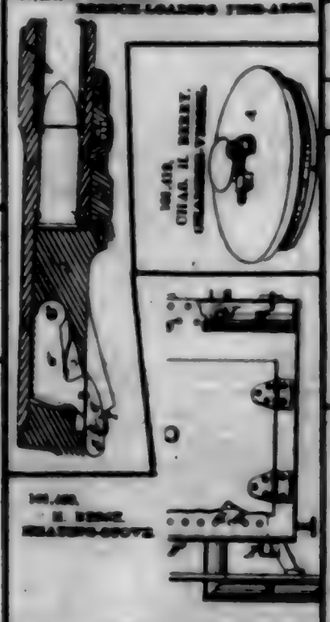
101,416, OLIVER BENNETT.
BRICK-KILNS



101,417, ELEUTHE B. BENNETT.
TOBACCO-PIPES



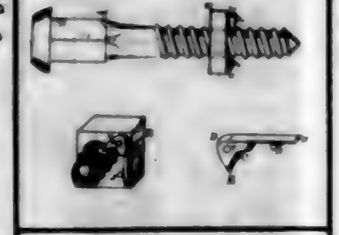
101,418, H. BERDAN.
BREECH-LOADING FIRE-ARMS



101,419, CHAS. H. BERRY.

101,420, [illegible]
H. BINGE.
HEATING-STOVE.

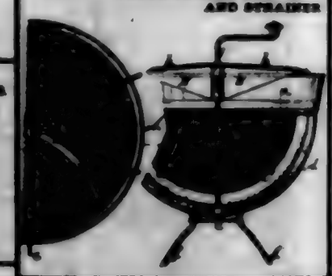
101,421, WILLIAM BLAIR.
CAR-COUPLING



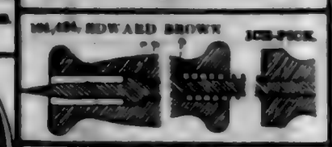
101,422, LANNING BONNELL.
HOT-AIR FURNACE



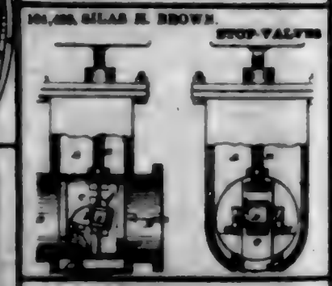
101,423, ALONZO T. BOOS.
LUCIUS MILLS.
FLOUR-SIFTER, COLANDER AND STRAINER



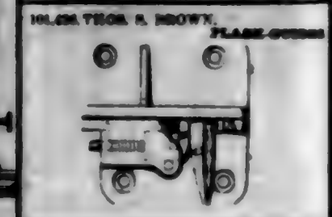
101,424, EDWARD BROWN. ICE-PICK.



101,425, SILAS H. BROWN.
STOP-VALVE



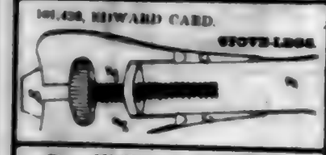
101,426, THOS. S. BROWN.
FLASK-[illegible]



101,427, ARTHUR CADE.
LAMP-WICK FEEDER



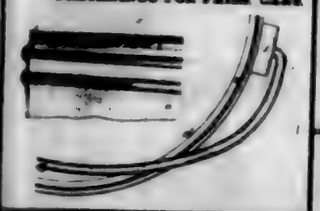
101,428, EDWARD CARD.
STOVE-LEGS.



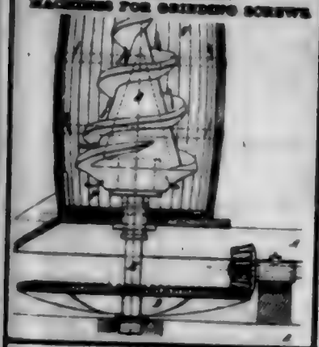
101,429, E. P. CARTER.
WAGON-TONGUES.



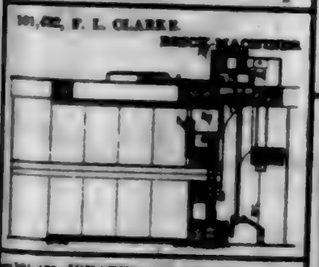
101,430, JOHN K. CHACE.
FASTENINGS FOR PANS CARS.



101,431, EDWIN CHAMBERS
CYRUS CHAMBERS,
MACHINES FOR GRINDING SCREWS.



101,432, F. L. CLARKE.
BRICK-MACHINES.



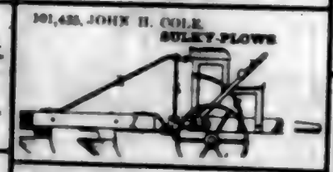
101,433, JONATHAN M. CLARK.
STEAM-GENERATORS.



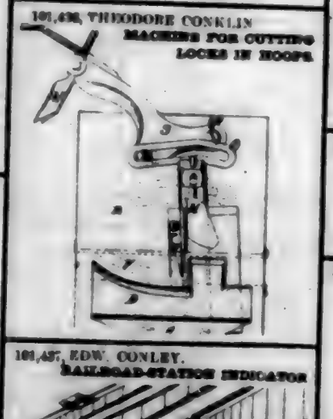
101,434, JONATHAN M. CLARK.
STEAM-GENERATORS.



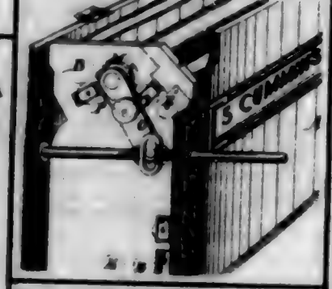
101,435, JOHN H. COLE.
SULEY-PLOWS.



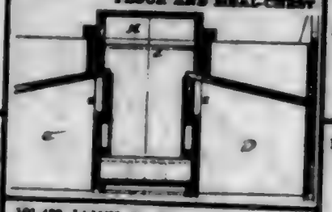
101,436, THEODORE CONKLIN
MACHINE FOR CUTTING LOCKS IN HOOPS.



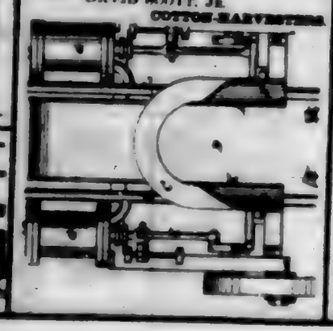
101,437, EDW. CONLEY.
RAILROAD-STATION INDICATOR



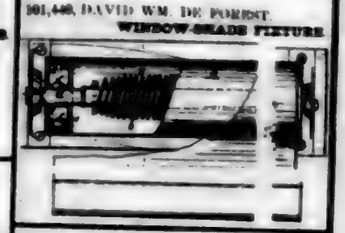
101,438, JOHN M. DASHIELL.
FLOUR AND MEAL-CHEST



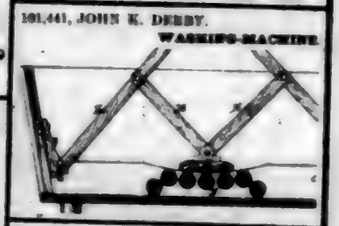
101,439, JAMES DAVIS, Jr.
DAVID SCOTT, Jr.
COTTON-HARVESTERS.



101,440, DAVID WM. DE FOREST.
WINDOW-SHADE FIXTURE.



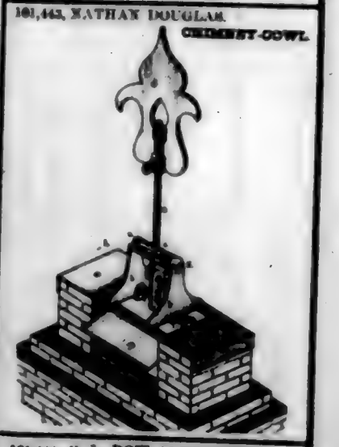
101,441, JOHN K. DEBBY.
WASHING-MACHINE.



101,442, CHARLES R. DONNELLAN.
TAPE-LINE BOXES.



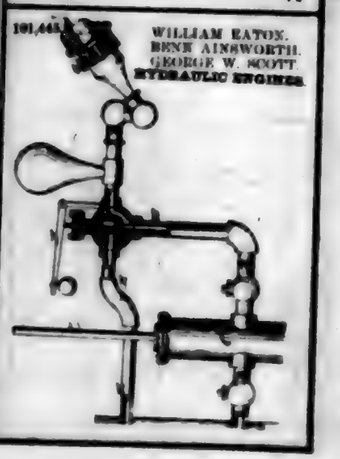
101,443, NATHAN DOUGLAS.
CHIMNEY-COWL.



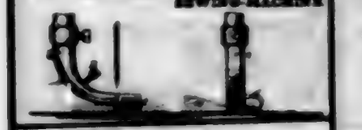
101,444, O. L. DOW. BUTTER-WORKER.

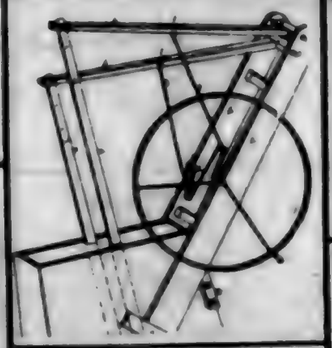


101,445, WILLIAM EATON.
RENE AINSWORTH.
GEORGE W. SCOTT.
HYDRAULIC ENGINES.

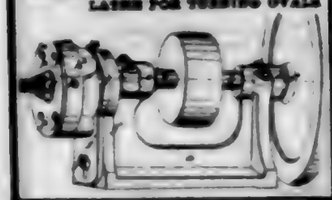


101,446. J. L. BIX.
RUFFLING-ATTACHMENT FOR SEWING-MACHINE.





101,447. B. KICKMEYER.
LATHE FOR TURNING OVALS.



101,448. GEORGE A. FAIRFIELD.
KNIFE, PIE-CRACKER, AND PICKER.



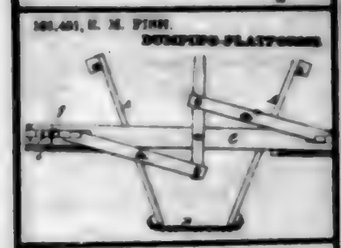
101,449. E. M. FERGUSON.
IN HOT-BLAST OVENS OR FURNACES.



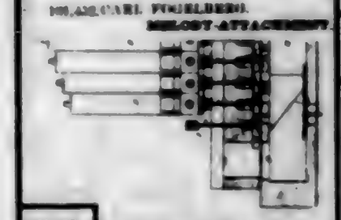
101,450. LEVI W. PIFIELD.
LIFTING-JACK.



101,451. E. M. FISH.
DUMPING-PLATFORMS.



101,452. CARL FICHELBERG.
MILCH-ATTACHMENT.

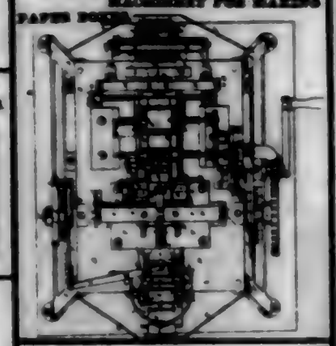


101,453. ALBION W. FOSTER. CRUETS.

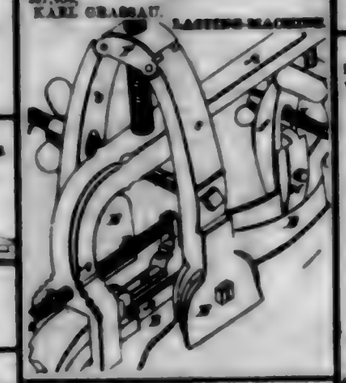
101,454. LEON PAUL GARCIN.
LIFTING-JACK.



101,455. FREDK GATES.
MACHINERY FOR MAKING PAPER BOXES.



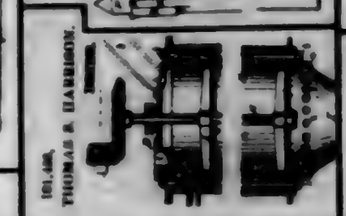
101,456. KARL GRASSAU. LASTING-MACHINE.



101,457. ANNIE J. HALL. PIPING-ROLLERS.



101,458. THOMAS A. HARRISON.



101,459. EDGE E. HAUGHWOUT.
ANIMAL-TRAP.

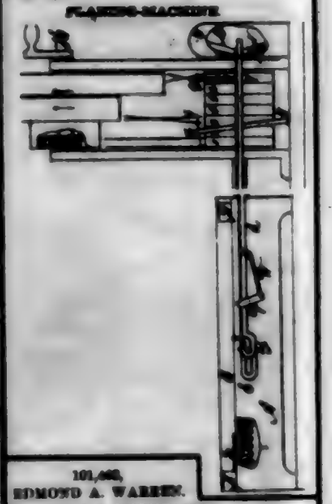


101,460. IRA A. HERBARD.
HARVESTER-CUTTERS.



101,461. J. HEROLD. WATER PROOF COMPOSITION FOR HARNESS, LEATHER, &c.

101,462. ALFRED M. HILLS.
PLANING-MACHINE.



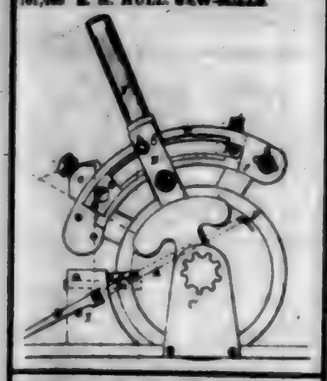
101,463. EDMOND A. WARREN.
WILLIAM C. HORNPAGE.
ROCKING-CHAIR.



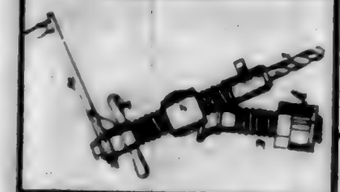
101,464. ELIAS H. HULL.
CASING FOR WATCHES.



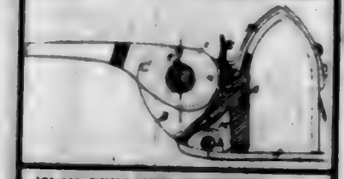
101,465. E. H. HULL. SAW-SETTER.



101,466. JAS. E. HUNTER.
HAND DRILLING-MACHINE.



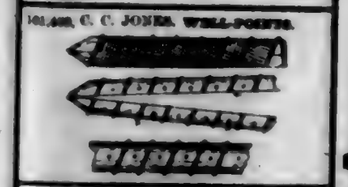
LEONARD A. JOHNSON.
101,467. CARRIAGE-CLIP.



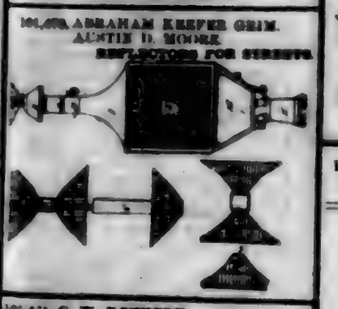
101,468. BENJAMIN JOHNSTON.
FURROWING-CULTIVATOR.



101,469. C. C. JONES. WELL-POINTS.

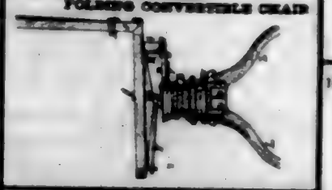


101,470. ABRAHAM KEEPER GRIM.
AUSTIN D. MOORE.
REFLECTORS FOR STREETS.

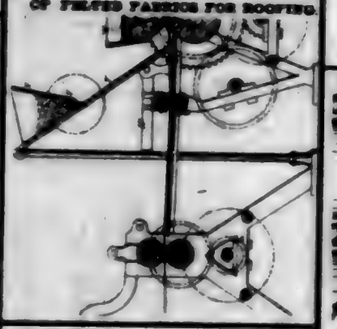


101,471. C. W. KENNEDY.
STAPLE MACHINE.

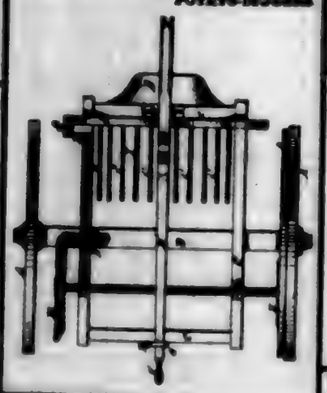
101,472. WM. B. KINBALL.
FOLDING CONVERTIBLE CHAIR.



101,473. SAMUEL KINOAN.
MACHINES FOR THE MANUFACTURE OF FELTED FABRICS FOR ROOFING.



101,474. MELVIN W. KNOX.
POTATO-DIGGERS.



101,475. GEO. D. LEONARD.
COUNTER SHOW-CASE.



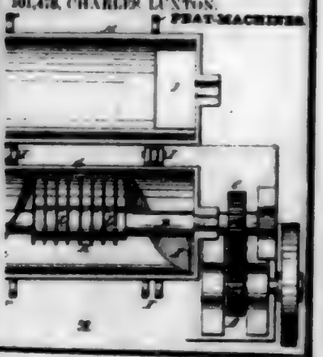
101,476. D. G. LITTLEFIELD.
BASE-BURNING STOVE.



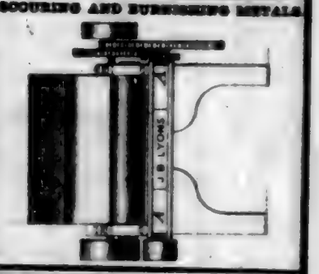
101,477. J. A. LITTLEFIELD. COMBINED SQUARE, PROTRACTOR, LEVEL.



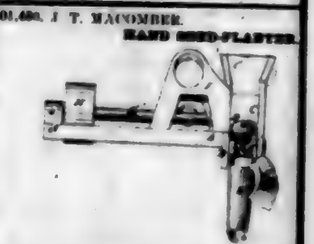
101,478. CHARLES LUXTON.
FLAT-MACHINES.



101,479. JAS. B. LYONS. MACHINE FOR SCOURING AND BURNISHING METALS.

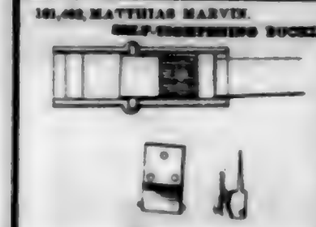


101,480. J. T. MACOMBER.
HAND SHED-PLASTER.



101,481, CHARLES MAJOR. SAW-FRAME.

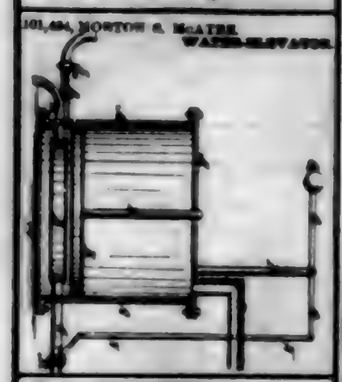
101,482, MATTHIAS MARVIN. SELF-TIGHTENING BUCKLE.



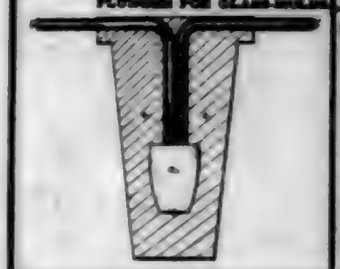
101,483, WILLIAM D. MASON, ARTHUR T. RICE. BAR-BAND.



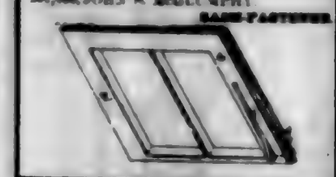
101,484, NORTON C. McATEE. WATER-ELEVATOR.



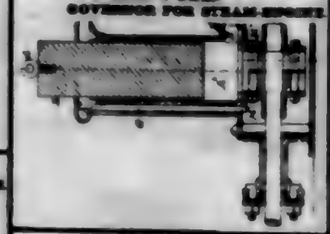
101,485, JOHN McCORD. PLUNGER FOR GLASS-MOLDS.



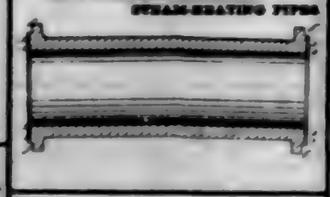
101,486, JOHN S. McGLUMPHY. SASH-FASTENER.



101,487, H. D. McMASTER, ABRAHAM DALE. GOVERNOR FOR STEAM-ENGINES.



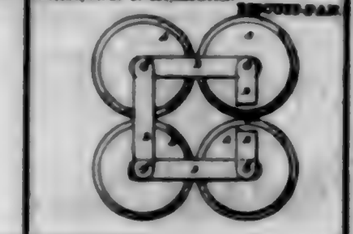
101,488, WILLIAM MENDHAM. STEAM-HEATING PIPES.



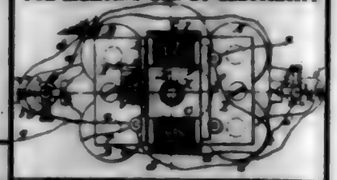
101,489, FERDDK. MEXER. RETURNING SEED.



101,490, JNO. C. MILLIGAN. BISCUIT-PAN.



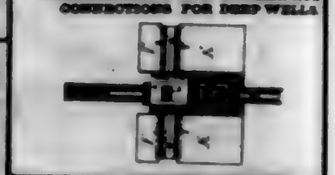
101,491, WALTER J. MORRIS, WM. J. REID. APPARATUS FOR LIGHTING GAS BY ELECTRICITY.



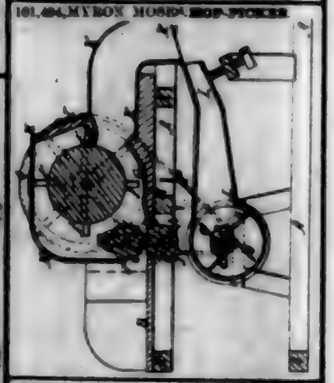
101,492, L. MORRISON. SAW-SWAGING A. G. HARMS.



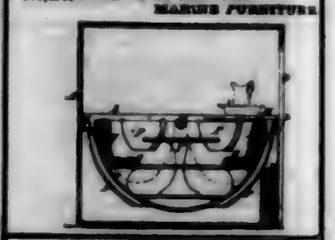
101,493, MAWELLUS A. MORSE. WALKING-BEAM AND SUCKER-ROD CONNECTIONS FOR DEEP WELLS.



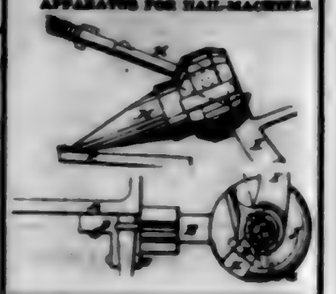
101,494, MYRON MOSHER. HOP-PICKER.



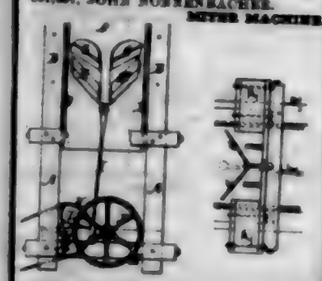
101,495, LORENZO D. NEWELL. MARINE FURNITURE.



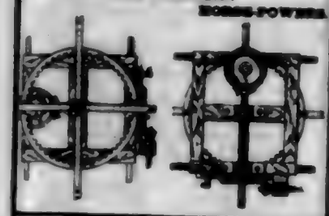
101,496, JAMES BOLAN. FEEDING APPARATUS FOR NAIL-MACHINES.



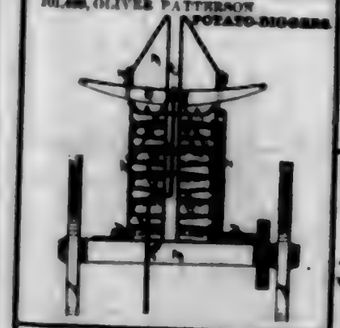
101,497, JOHN NOFFSINGER. MYER MACHINE.



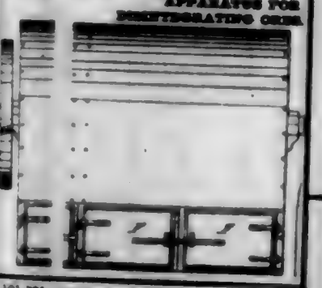
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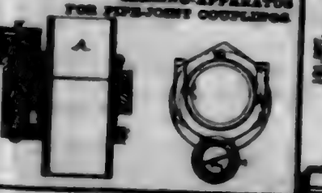
101,499, OLIVER PATTERSON. POTATO-DIGGERS.



101,500, ALMARIN B. PAUL. APPARATUS FOR DESULPHURATING ORES.



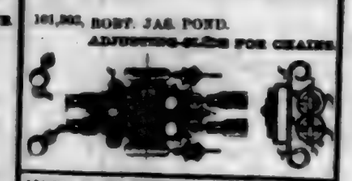
101,501, CHARLES PERKER. SEALING APPARATUS FOR PIPE-JOINT COUPLINGS.



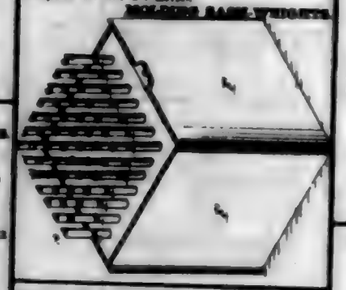
101,502, OLIVER H. PERRY. WOOD-TURNING LATHES.



101,502, ROBT. JAS. POND. ADJUSTING-SLIDE FOR CHAINS.



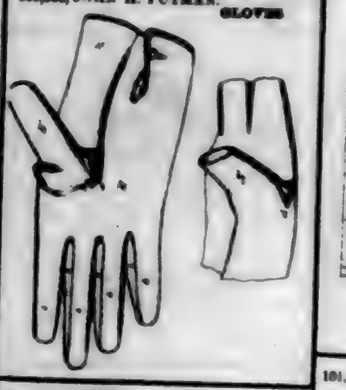
101,504 W. W. PULLIS. MOLDING SASH-WEIGHTS.



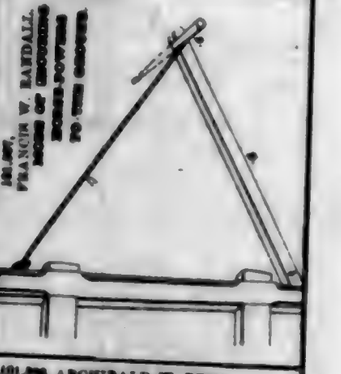
101,505, T. C. PURDY. FRUIT-JARS.



101,506, JOHN H. PUTMAN. GLOVE.

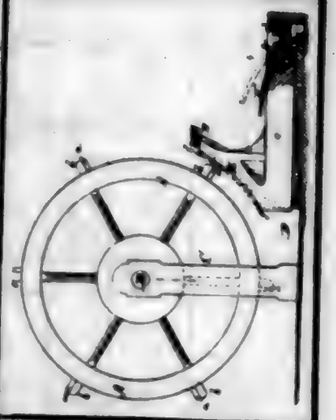


101,507, FRANCIS W. RANDALL. MODE OF SECURING HANDLES TO THE BODIES OF SPOONS.

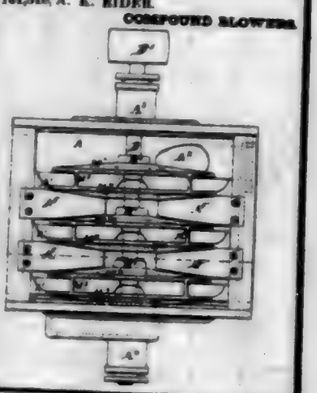


101,508, ARCHIBALD W. REID. MACHINES FOR COOLING AND RETURNING OUT LEADERS.

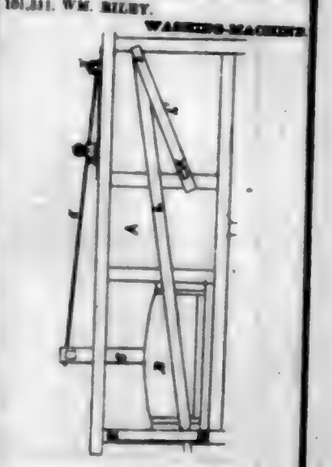
101,509, MERRITT RICHARDS. REVOLVING PLOW-COLTER.



101,510, A. K. RIDER. COMPOUND BLOWERS.



101,511, WM. RILEY. WASHING-MACHINE.



101,312. D. C. BEPLEY, Jr. GLASS LAMPS

101,317. T. SAVAGE. OAT-FEED-POTS

101,323. GEO. V. SOOBEY. SEATING

101,313. L. D. ROBERTS. MACHINES FOR MAKING HORSESHOES

101,318. LEONARD SAWYER. CARRIAGE-PROP

101,324. E. C. SCOVILLE. HORSE HAY-FORKS

101,314. I. L. RUNK. FARMING-MILLS. B. R. THARP.

101,319. WILLIAM SCARLETT. CARRIAGE SEATING

101,325. GEORGE SCOTT. BRICK AND TILE-MACHINES

101,320. JOHN D. SCHAUB. CABBAGE-CUTTERS

101,315. HENRY SANGSTER. DOOR-COLLAR

101,321. FRANCIS SCHERR. CARRIAGE-AXLES

101,316. HUGH SANGSTER. TIN PAIL

101,322. JOHN SCHROEPFEL. WILLIAM DELL. HARROW AND BARK-CUTTER

101,326. D. N. SELLEN. SPRING-BED BOTTOM

101,327. JAMES E. SHARP. ELEAZER AINSWORTH. FREDERICK A. RABBATON. COVERING FOR STEAM-BOILERS

101,328. E. SHOPBELL. PATTERNS FOR SHOES

101,333. THOS. SOMERVILLE-FAUCHER

101,329. FREDK. J. SMITH. JIG FOR MAKING CHORD-BAR SEAMS

101,334. S. R. SPRING. SODA-FOUNTAINS

101,330. BENJ. H. SNAVELY. SEPARATORS

101,335. HENRY STEPHENSON. WM. THOMPSON. WILLIAM GREAVES BLAKE. ORNAMENTAL-SCROLL TYPE

101,331. P. SNYDER. G. PASTORE. SAW-SETS

101,336. GARLAND B. ST. JOHN. CULTIVATORS

101,332. WM. H. SOLEY. GEORGE SUTER. FRICTION CALENDER ROLLS FOR PAPER

101,337. GARLAND B. ST. JOHN. ATTACHMENT TO SEEDING-MACHINES

101,338. ROBERT STOUT. BOREHOLDING-TOOL

101,339. J. W. SURSA. GANG-PLOWS

101,340. AUGUSTIN L. TAVEAU. REVOLVING GULLY-HARROW AND SEEDER COMBINED

101,341. ISAAC D. TAYLOR. NUT-LOCK PLATE

101,342. JOHN TEED. COUNTER RIVET

101,343. JAMES TEMPLE. CAR-COUPLINGS

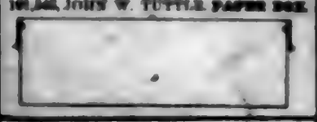
101,544, JOHN A. THOMPSON.
PROCESS AND APPARATUS FOR SUPPLYING PURE WATER TO BOILERS.



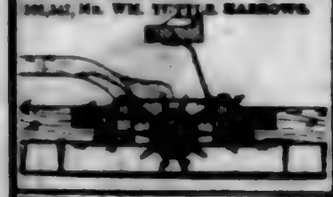
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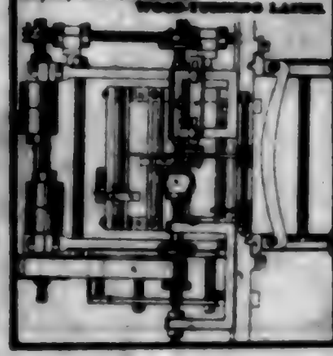
101,546, JOHN W. TUTTLE. PAPER BOX.



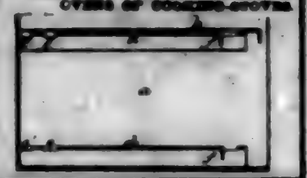
101,547, Mrs. WM. TUTTLE. HARROWS.



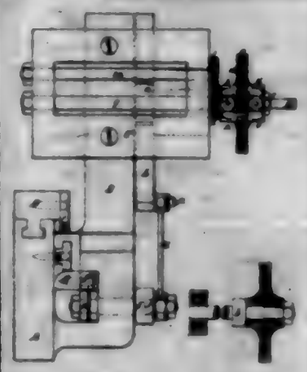
101,548, J. J. URMSTON.
WOOD-TURNING LATHE.



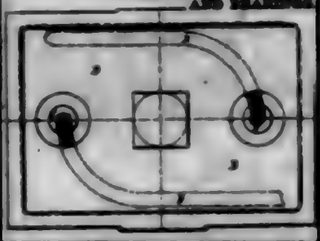
101,549, SAMUEL S. UTTER. HEATING THE OVENS OF COOKING-STOVES.



101,550, HORATIO B. WEAVER.
FEED FOR IRON-PLANERS.



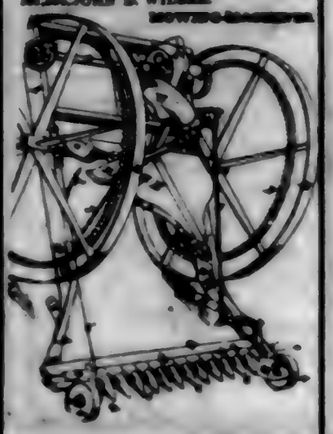
101,551, ISAAC P. WENDELL.
LUBRICATING JOURNALS AND BEARINGS.



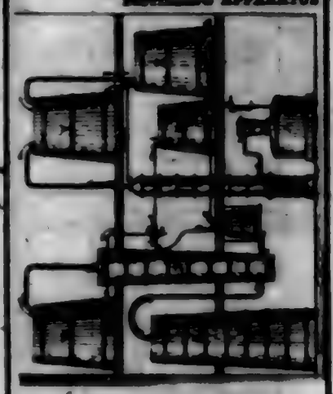
101,552, SYLVESTER P. WHEELER.
MANUFACTURE OF ARTICLES OF COMPRESSED WOOD.

101,553, SYLVESTER P. WHEELER.
PROCESS OF TREATING WOOD.

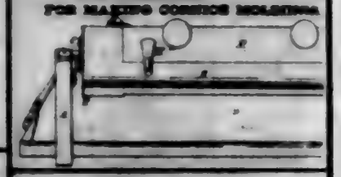
101,554, JOHN D. WILDER.
MOWING-MACHINES.



101,555, LUDWIG WOLFF.
CONDENSATION AND FEEDING APPARATUS.



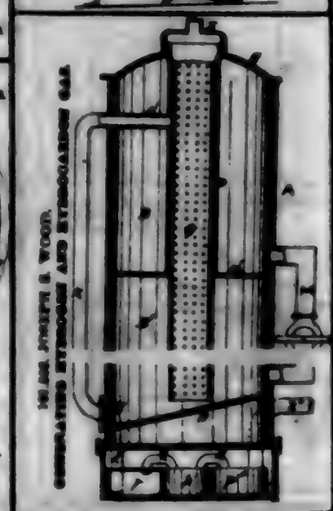
101,556, C. L. WOOD. MACHINE
C. A. SHERIDAN.
FOR MAKING CORRUGATED MOLDINGS.



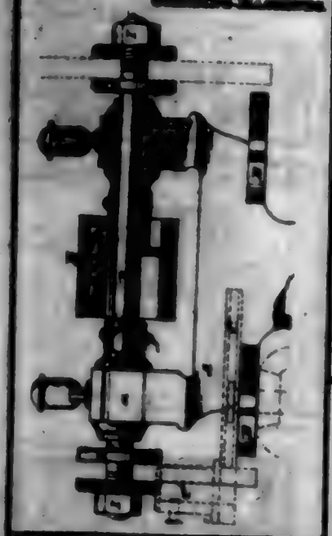
101,557, JOSEPH S. WOOD.
APPARATUS FOR GENERATING AND CARBURETING HYDROGEN GAS.



101,558, JOSEPH S. WOOD.
GENERATING HYDROGEN AND HYDROCARBON GAS.



101,559, THOS. H. WORRALL.
CORNICE-MACHINERY.



101,560, EDMUND TESSE.
TELE-COUPLINGS.



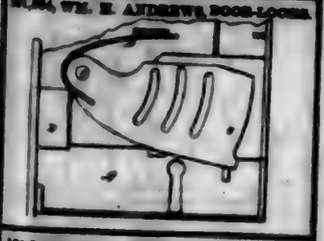
101,561, WILLIAM D. YOUNG.
CURLING-ROD FOR PAPER CIGAR-LIGHTERS.

101,562, C. ALDEN.
PREPARING TOMATOES AND OTHER FRUITS AND VEGETABLES TO BE USED AS FOOD.

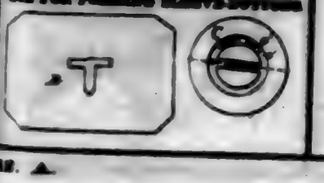
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AIR-GUN.



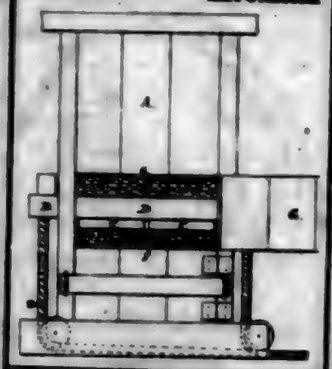
101,564, WM. H. ANDREWS. DOOR-LOCKS.



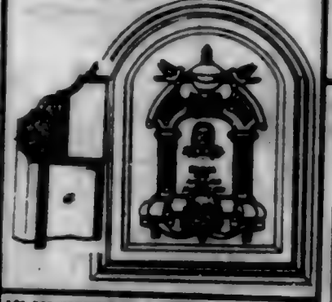
101,565, HENRY ASHLEY.
MILK FOR FURNISHING SLEEVE-BUTTONS.



101,566, G. H. ATLWORTH.
HAY-PRESSES.



101,567, H. F. BAILEY.
TABLETS FOR TOMBS.



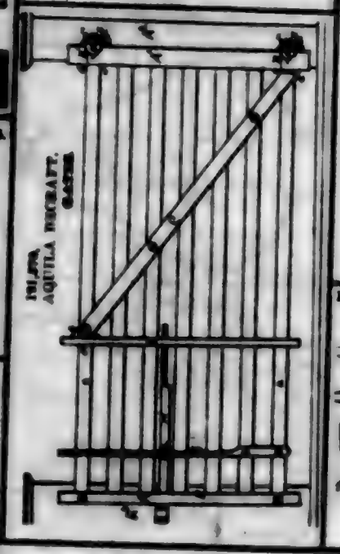
101,568, HENRY B. BARBER. GUN-SIGHTS.



101,569, RILEY L. BASSETT. HARROWS.



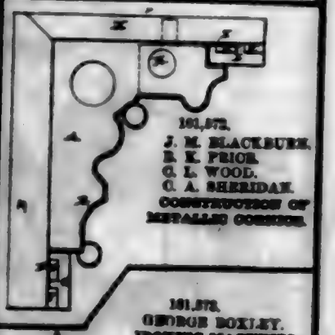
101,570, AQUILLA BREWART. GATE.



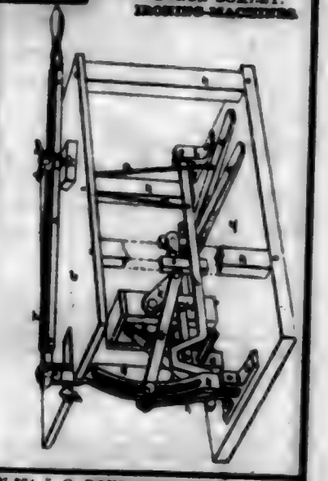
101,571, O. BRIGNER.
PRUNING-SHEARS.



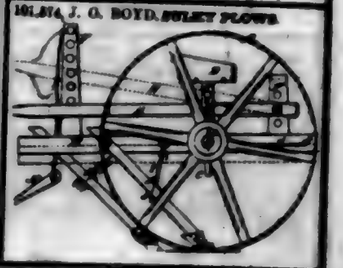
101,572,
J. M. BLACKBURN.
B. K. PRIOR.
C. L. WOOD.
C. A. SHERIDAN.
CONSTRUCTION OF METALLIC CORNICE.



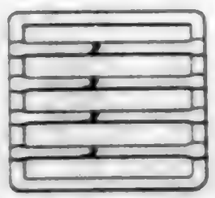
101,573,
GEORGE BOXLEY.
IRONING-MACHINES.



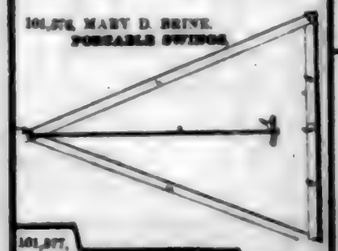
101,574, J. G. BOYD. SULKY PLOWS.



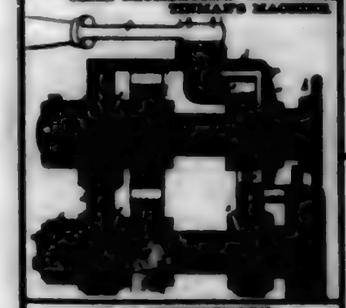
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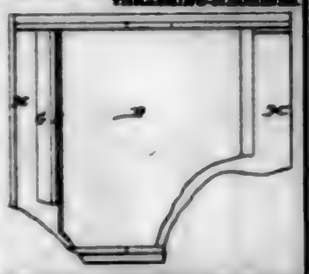
101,576, MARY D. BRIVE. PORTABLE SWING.



101,577, CHAS. BROMBACHER. TENDER'S MACHINE.



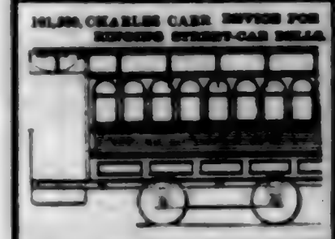
101,578, WM. H. BUTTERWORTH. THRASHING-MACHINE.



101,579, JOHN BUSBY. WATER-WHEELS.



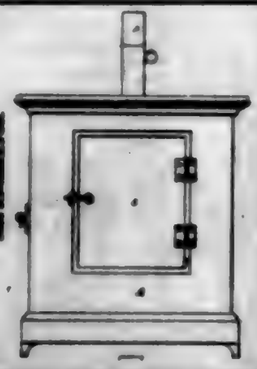
101,580, CHARLES CARR. DEVICE FOR RINGING STREET-CAR BELLS.



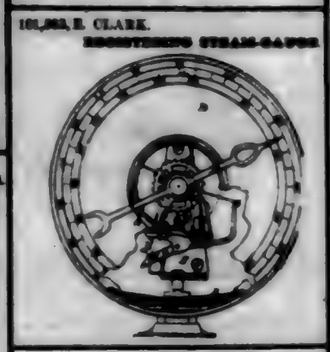
101,581, EBENEZER CATE. HORSESHOE.



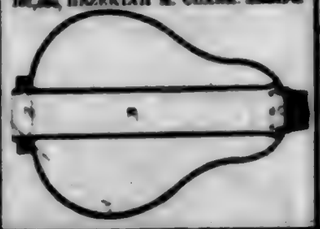
101,582, A. J. CHASE. REFRIGERATOR.



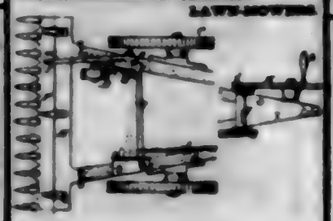
101,583, E. CLARK. REGISTERING STEAM-GAUGE.



101,584, HEZEKIAH M. CLARK. LAMPS.



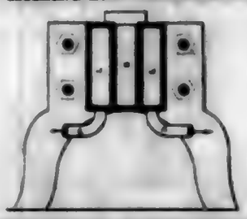
101,585, CHARLES M. CLINTON. LAWN-SPRINKLER.



101,586, T. M. CLUXTON. WAGON-AXLES.



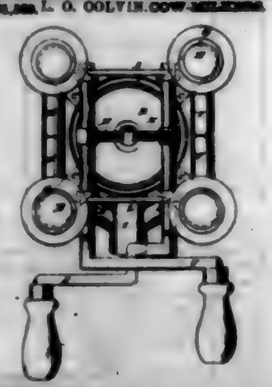
101,587, EDWARD F. COFFIN. MOLDING AND CLARIFYING SUGAR.



101,588 EDWARD S. COLTON. REFRIGERATOR.



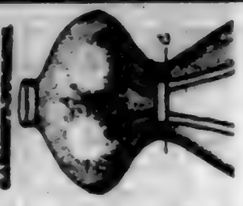
101,589, L. O. COLVIN. COW-MILKING.



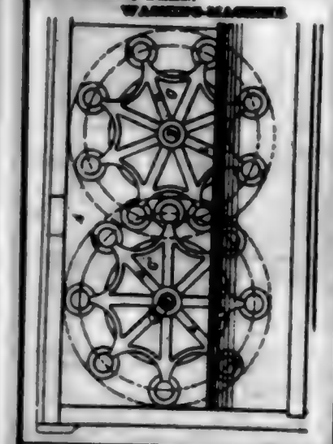
101,590, T. COWING. WOOD PAVEMENT.



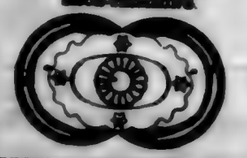
101,591, A. H. DAVIS.



101,592, CYRUS DEAN. WASHING-MACHINE.

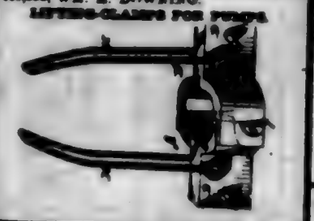


101,593, WILLIAM P. DEMAREST. HOOP-TENSIONER.

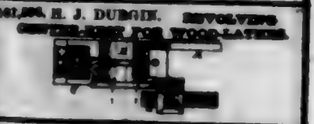


101,594, H. J. De GROOT. COMPOSITION ROOFING, PAVING, &c.

101,595, WM. H. DOWNING. LIFTING-CLAMPS FOR PUMPS.



101,596, H. J. DUBOIS. REVOLVING CENTRE-REST FOR WOOD-LATHES.

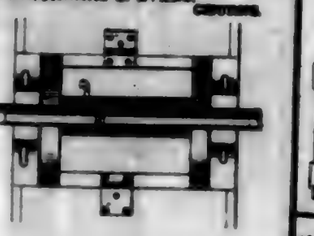


101,597, GEORGE W. ELDRIDGE. FIRE-KINDLING.

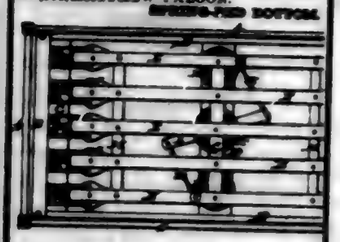
101,598, ROBERT ENGELS. TOOTH-PUNCH.



101,599, THOMAS R. EVANS. CRUSHER.



101,600, MATTHEW FALOON. SPRING-PAD BOTTOMS.



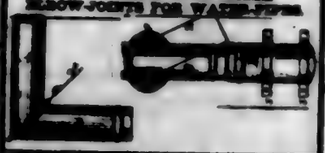
101,601, P. FANNING. WIRE-CONNECTOR FOR WIRE FENCE.



101,602, Dr. JOSEPH FANTOU. GALVANIC SHOE-SOLES.



101,603, J. D. FIELD. ADJUSTABLE ELBOW-JOINTS FOR WATER-PIPES.



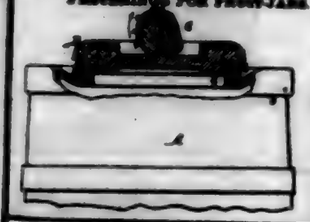
101,604, A. C. FLETCHER. ARCHIVE FOSCAL AND REVENUE STAMP.



101,605, CARL FOGELBERG. MELODY ATTACHMENT FOR ORGANS.



101,606, WM. GALLOWAY. FASTENING FOR FRUIT-JARS.

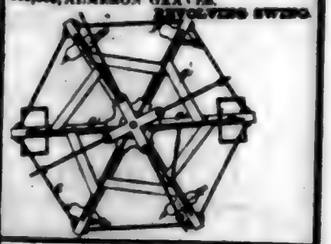


101,607, CHARLES T. GIBSON. PAIL-COCK.

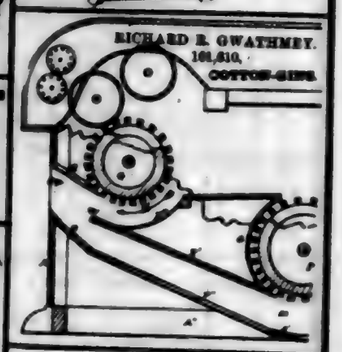
101,608, M. T. GLIMDAL. BRICK-MOLD.



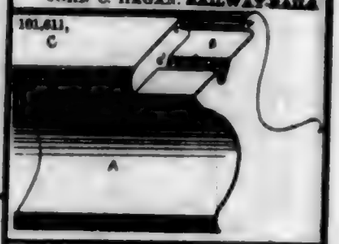
101,609, ALMERON GRAVES. REVOLVING SWING.



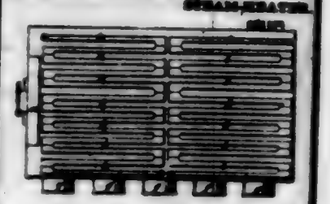
101,610, RICHARD R. GWATHMEY. COTTON-GIN.



101,611, JOHN C. HAGAN. RAILWAY-RAILS.



101,612, FREDRICK P. HALLBERG. STEAM-HEATER.



101,613. VALENTINE H. HALLOCK. HOE-CUTTING MACHINE

GEORGE HORTER. 101,618. HORSE-COLLARS

A. A. HOTCHKISS. 101,620. HORSE-RAKE

101,621. JNO. HULBERT, Jr. PORTABLE FURNACE

101,622. DANIEL H. HULL. BOILER AND WASHING-MACHINE

101,623. R. HUMPHREY. HORSE COLLAR.

101,624. OLIVER E. HUNTER. MANUFACTURE OF STEEL.

101,625. J. J. KARLEY. CONSTRUCTION FOR THE MANUFACTURE OF FEMORIS MACHINES.

101,626. A. S. KEAGY. FIELD-ROLLERS

101,627. J. M. KEEP. SLOTTING-PADS

101,628. FR. KILIAN. FOLDING CHAIR

101,629. TOBIAS KOHN. PICTURE-CORD

101,630. BENJAMIN F. KOLLER. SCRUBBING-BRUSH

101,631. H. P. C. KRUMM. GOVERNOR FOR REGULATING LOCOMOTIVES

101,632. JOHN H. LARBY. PERMUTATION LOCK

101,633. DANIEL LEW. Jr. WINDMILL-PANCHES

101,634. NATHL. E. LYNCH. VARIABLE CUT-OFF-VALVE GEAR.

101,635. THOMAS A. MAKIBBIN. ROOFING

101,636. JAMES W. MALOY. PRESSURE-GAUGES

101,637. J. M. MARLIN. CARTRIDGE EJECTOR.

101,638. C. J. McALISTER. FLOORING

101,639. E. D. McINTOSH. BRAKE TO PREVENT REVERSE MOTION OF DRIVING WHEEL IN SEWING MACHINES.

101,640. S. P. McELVEY. SEWING-MACHINE

101,641. L. O. F. MEYER. MANUFACTURE OF SAFETY MATCHES

101,642. C. H. MILLER. CANE FASTENER.

101,643. JOHN MILLER. WASHING-MACHINE

101,644. D. MILIA. SEWING MACHINES FOR BOOTS AND SHOES.

101,645. JAMES MOORE. FIRE-PLACES

101,646. JOHN H. MORRIS. HORSE HAY-RAKES

101,647. MARCUS MORTON. BEE-HIVES.

101,648. WM. B. MOSES. FURNITURE-PAD.

101,649. A. L. MUNSON. HAND STAMPS.

101,650. HIRAM NELSON. FOR CROZING BARRELS.

101,615. C. V. HEMENWAY. HOOP-MACHINES

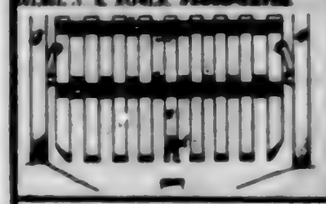
101,616. JOSEPH H. HANEL. SELF-FEEDING SAWS.

101,617. W. M. HENDERSON. DIRECT ACTING CONDENSING STEAM ENGINE.

101,618. JOHN E. HAWKINS. BRAID-MACHINE.

101,619. GEORGE A. HIGGINS. CLOSET FOR CANS.

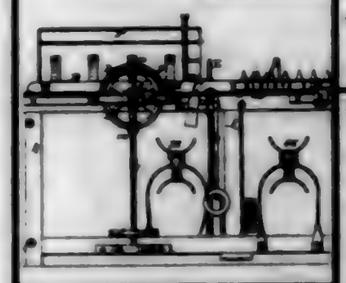
101,671. A. R. TOWLE, FLOOD-GATES.



101,672. M. V. TOWLE, CHECKED-CASE.



101,673. JOSIAH OUTHOUDT, LATH-MACHINE.



101,674. JOHN FELT OSGOOD.

101,675. FREDERIC INGERSOLL PALMER, DRAWL.

101,676. OLIVER PALMER, HAND-FASTENING.



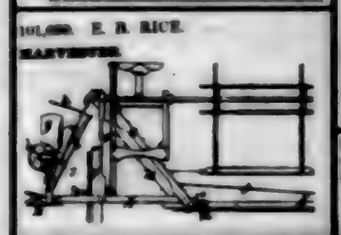
101,677. WALTER W. POWERS, REVERSING-PORT.



101,678. THOS. E. PURCHASE, FURNACES AND OTHER FURNACES.

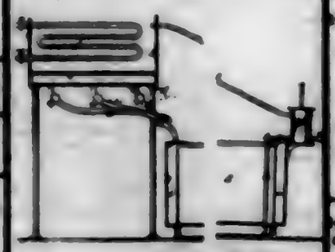


101,679. E. B. RICE, HARVESTER.



101,680. CAM CELED.

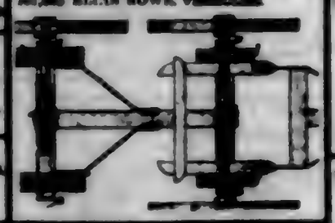
101,681. LOUIS T. ROBERTSON, PARSING BY INCLINATION.



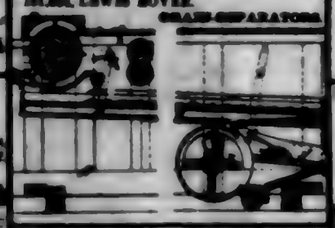
101,682. JOHN A. ROBERTS, [illegible].



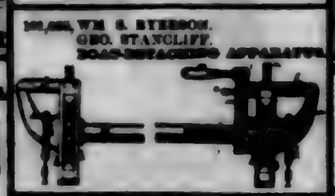
101,683. ELIAS ROWE, VEHICLE.



101,684. LEWIS ROYER, GRAIN-SEPARATOR.



101,685. WM. S. BYERSON, GEO. STANCLIFF, ROAD-SCRAPING APPARATUS.



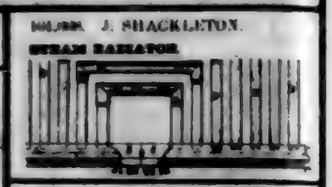
101,686. JOHN B. SHUETTE, [illegible].



101,687. GEO. H. SEYMOUR, CAR-BRAKE.



101,688. J. SHACKLETON, STEAM RADIATOR.



101,689. J. SHACKLETON, STEAM HEATER.



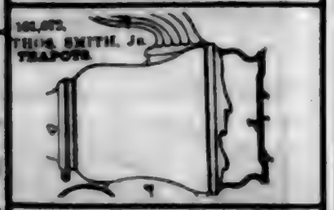
101,690. CALVIN W. SHERWOOD, SCHOOL-DESK.



101,691. CALVIN D. SMITH, CHAIN-BRAT.



101,692. THOS. SMITH, Jr., TRAP.



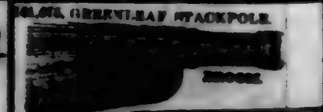
101,693. W. A. SMITH, [illegible].



101,694. CHRIS. S. SOUTHWICK, DAVID H. BARKER, RUT-LOCK.



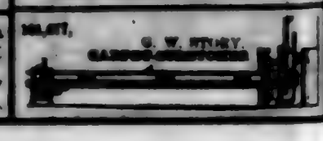
101,695. GREEN-SAW STACKPOLE, [illegible].



101,696. RUFUS O. STEVENSON, SUPERIOR COOKING-FURNACE.



101,697. [illegible], G. W. STONEY, CANNON-[illegible].



101,670. M. V. TAFT, SUSPENSION RAIL-TRUCK.

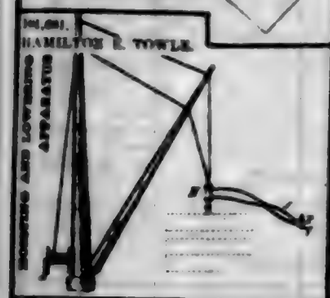


101,671. HERMANN TEATS, COMPOSITION FOR CLEANING PLATE AND GLASS.

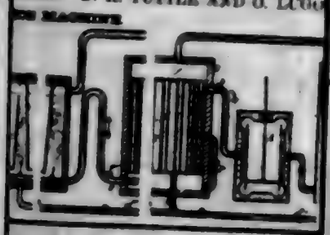
101,672. EDGAR C. TEN EYCK, CAR-HOLDING.



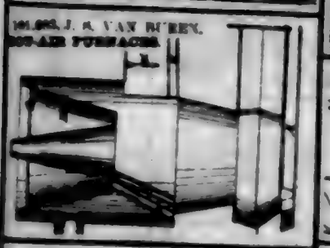
101,673. HAMILTON E. TOWLE, HOISTING AND LOWERING APPARATUS.



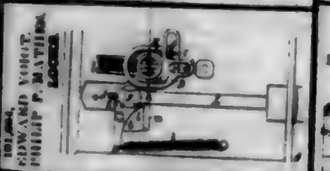
101,674. D. K. TUTTLE AND O. LUCO[illegible], [illegible] MACHINE.



101,675. J. S. VAN BUREN, HOT-AIR FURNACE.



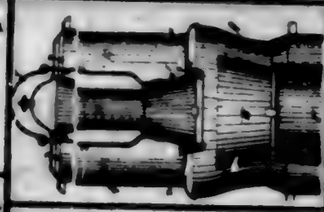
101,676. EDWARD VOIGT, PHILIP P. MATHER, LOCKS.



101,677. CHARLES W. WESTOVER, COMPOSITION FOR PAINT. CEMENT.

101,678. ALEXANDER WHITE, CAST-BUSHING STOVES.

101,679. A. L. WHITMORE, [illegible] CALIPERS.



101,680. CARMI H. WILLIAMS, HOOP-MACHINE.

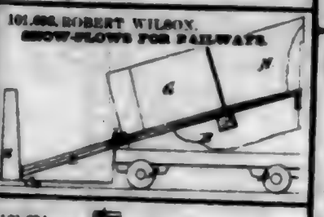


101,681. WILLIAM H. WILLIAMS, STREET-PAVEMENT.



101,682. L. B. WILSON, BLOW-[illegible].

101,683. ROBERT WILSON, SNOW-FLOWS FOR RAILWAYS.



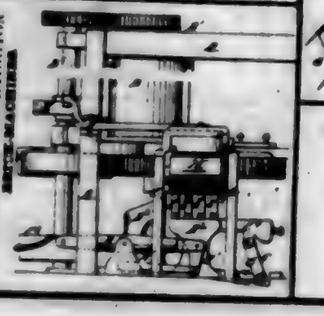
101,684. WILLIAM WIMER, CAR-COUPLINGS.



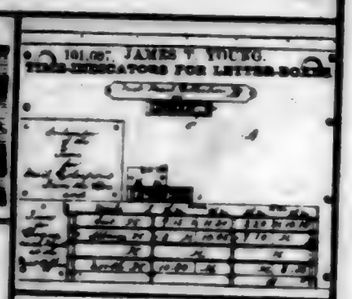
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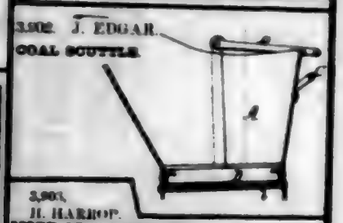
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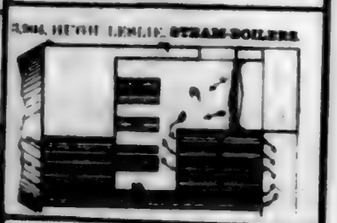


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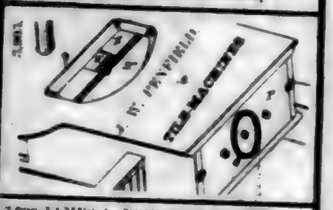


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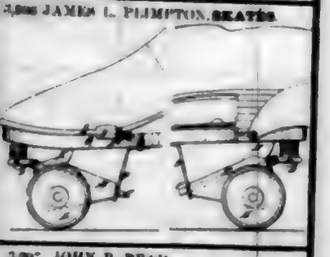
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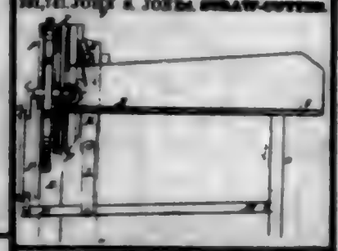
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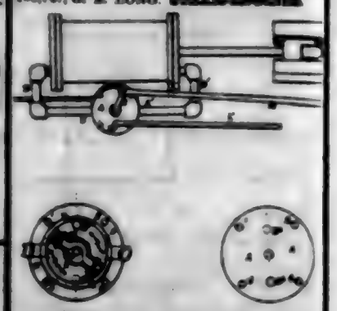
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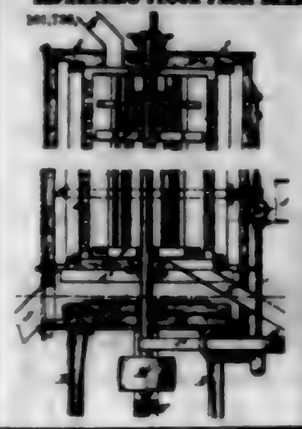
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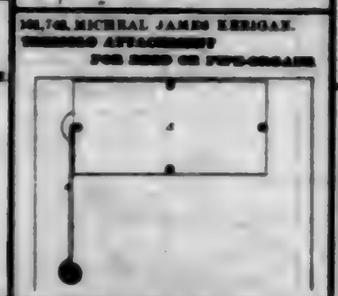
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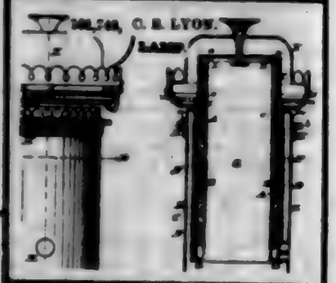
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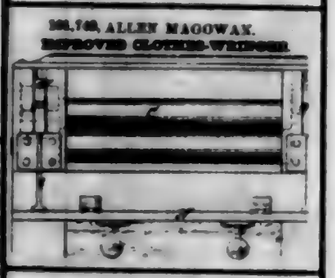
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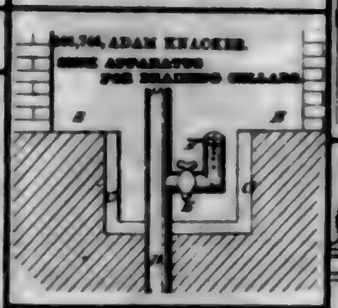


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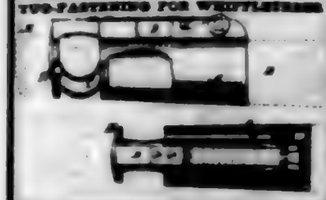


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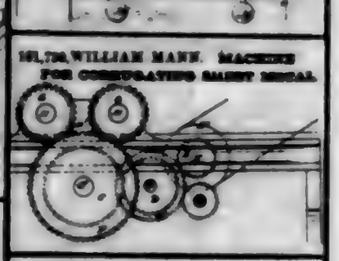
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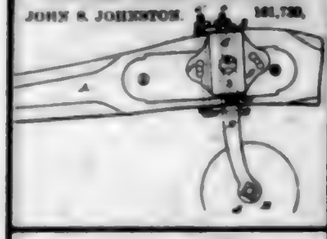
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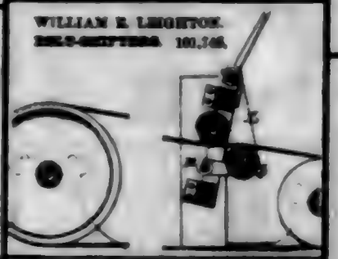
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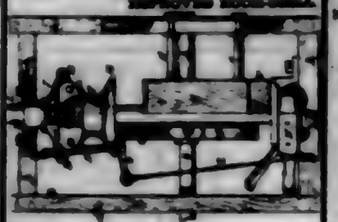
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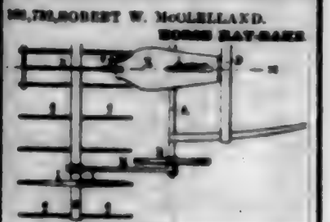
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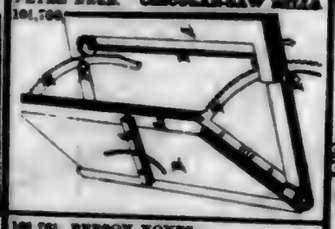
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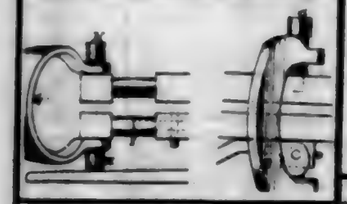
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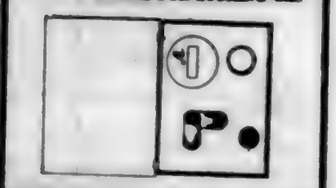
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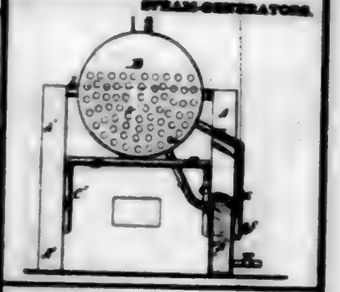
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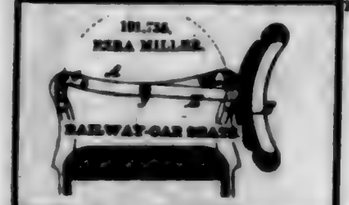
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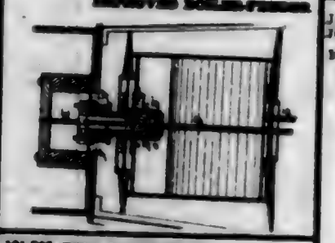
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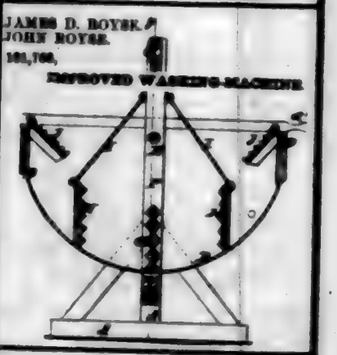
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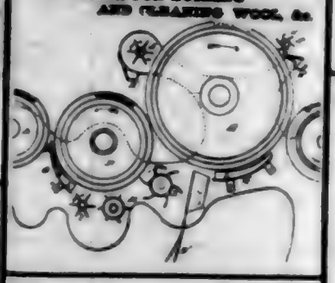
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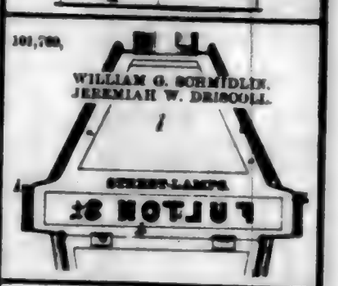
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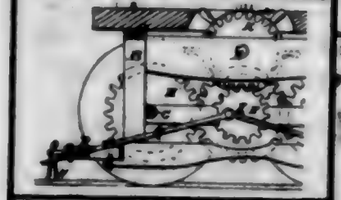
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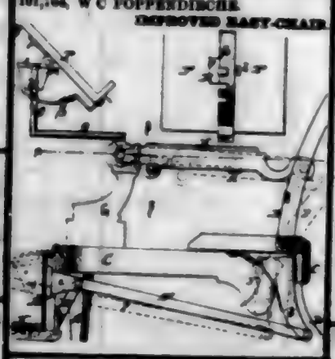
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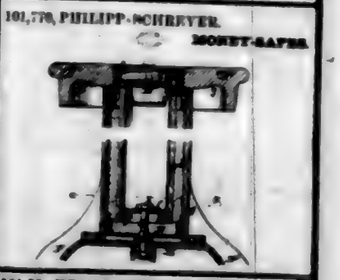
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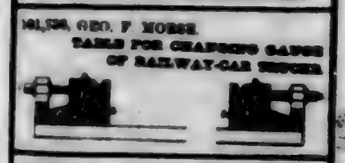
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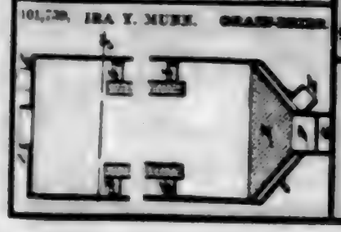
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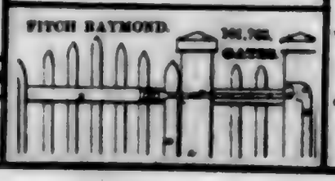
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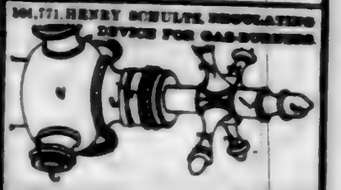
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101,806. AND EXTINGUISHING GAS
ALMON N. ALLEN.
RODNEY H. DEWEY.

101,807. A. C. AKOONA. GAS-GUN.

ATTACHING SPOKES TO SPINDLES.
101,808.
MATTW. ANDREW.

101,809, L. AUGS. ASPINWALL.
CORN-HUSKERS.

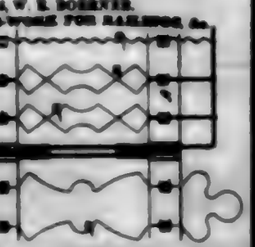
101,810, MAHLON B. ATKINSON.
CHURNS

101,811 SOLOMON H. AUSTIN.
CLOTH-STRETCHING MACHINES.

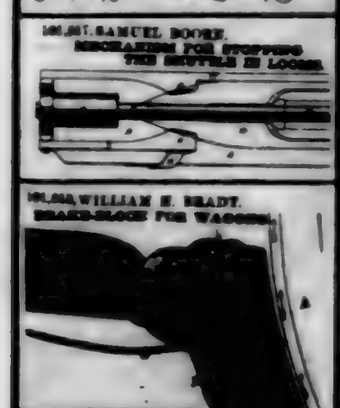
101,812,
JOHN G. BAKER.
APPARATUS FOR TANNING
BY INFILTRATION.

JONAH H. BIGELOW.
IMPROVED STAND
FOR TEA AND
COFFEE-POTS.
101,813.

101,813 G. H. BLAKESLEY.
TUBULAR SHAFTS FOR CLOSETS.



101,814 W. B. BOERNER.
WIRE-WORK FOR RAILROADS, &c.



101,815 SAMUEL BOORE.
MECHANISM FOR STOPPING THE SHUTTLE IN LOOMS.



101,816 WILLIAM H. BRADY.
BRAKE-BLOCK FOR WAGONS.



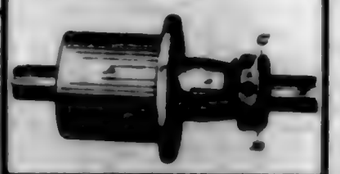
101,817 R. L. BRAESTON.
SCREW-COLLAR BLOCK.

101,818 CHAUNCEY BUCKLEY.
SPECTACLE-FRAMES.

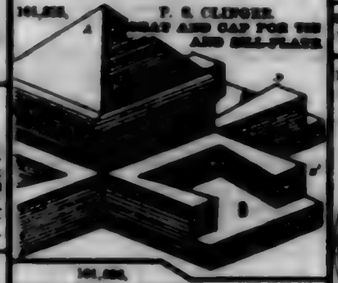
101,819 A. J. CARLETON.
SPOKE-SOCKET FOR CARRIAGE WHEELS.

101,820 JOHN M. CHERVER.
SHEA-STRIPE CARPETING AND EMBOSSED MATTING.

101,821 MILTON W. CLARK.
COMBINED PULLEY AND CLAMP.



101,822 P. S. CLIPPER.
HEAD AND GAG FOR THE AXLE-BLOCK.



101,823
JOHN JOSEPH CLOSE.
BREECH-LOADING FIRE-ARMS.

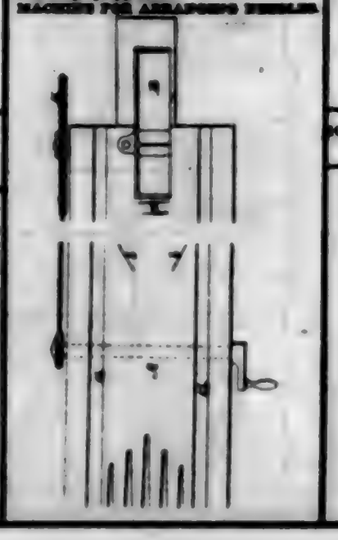


101,824 MARSHALL COWING.
RAILROAD-GAME VALVES.

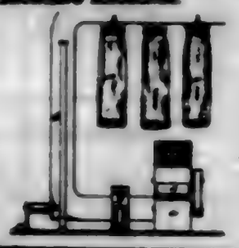


JAMES P. CRAMPTON.
JEREMIAH H. BANKS.
101,825, JOHN H. INGERSOLL.
MANUFACTURE OF ARTIFICIAL FUEL.

101,826 C. O. CROSBY.
MACHINE FOR ARRANGING FIBRILLÆ.



101,827 H. CRUMP.
DROPPER COLLECTING ATTACHMENT TO BROADCAST MACHINES.



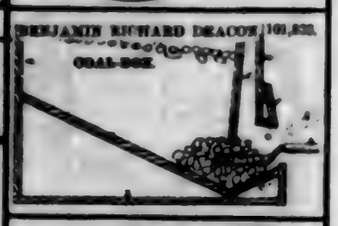
101,828 GEO. CUSTER.
TOOL-CASE FOR BLACKSMITHS.



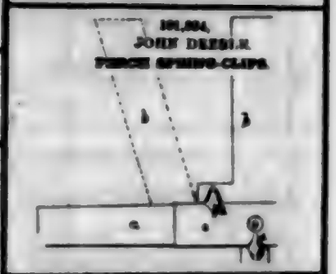
101,829 H. CHWATAL.
PENDULUM-GAUGES.



BENJAMIN RICHARD DRACOTT 101,830.
COAL-BOX.



101,831
JOHN DESSIR.
PERCH SPRING-CLIPS.



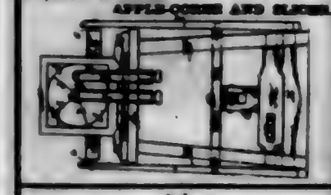
101,832 CHAS. DIEBOLD, MANUFACTURE OF BUILDING-BLOCKS FROM SLAG.



101,837.
SAMUEL O. DIX.
BAG-FASTENING.



101,838 R. J. DODD.
APPLE-CORER AND SLICER.



101,839
PATK. J. DWYER.
OIL-CANS.



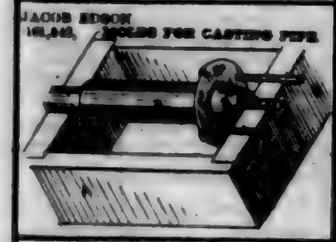
PETER ECKFORD.
JAMES ECKFORD.
PISTON-ROD PACKING.
101,840.



JACOB EDSON.
HOSE-COUPLINGS.
101,841.



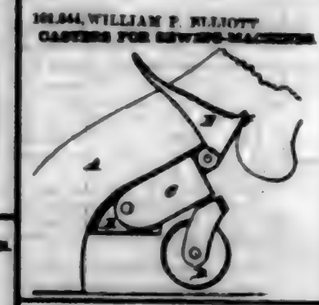
JACOB EDSON.
101,842. MOLDS FOR CASTING PIPE.



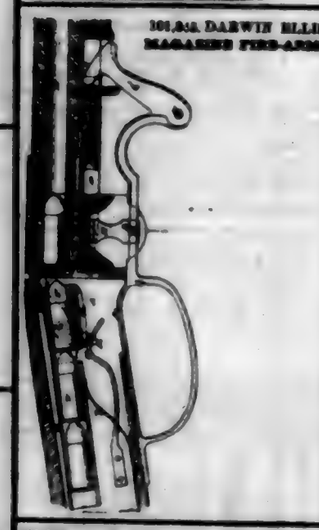
CASTING FOR SEWING-MACHINES.
101,843, WILLIAM P. ELLIOTT.



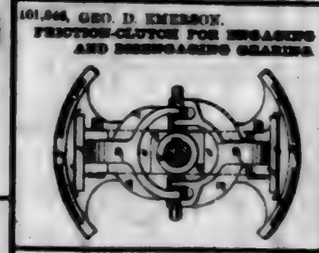
101,844, WILLIAM P. ELLIOTT.
CASTERS FOR SEWING-MACHINES.



101,845 DARWIN ELLIS.
MAGAZINE FIRE-ARMS.



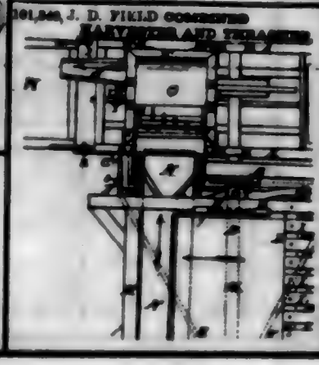
101,846, GEO. D. EMERSON.
FRICTION-CLUTCH FOR ENGAGING AND DISENGAGING GEARING.



CHRISTIAN L. FEHRENEN.
101,847. PERFUME EJECTOR.

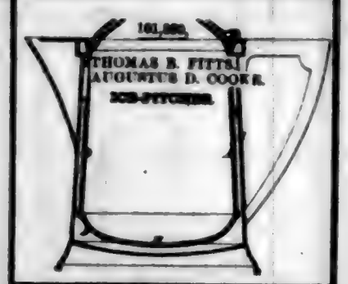


HORACE EVERETT.
SHEET-METAL CANS.

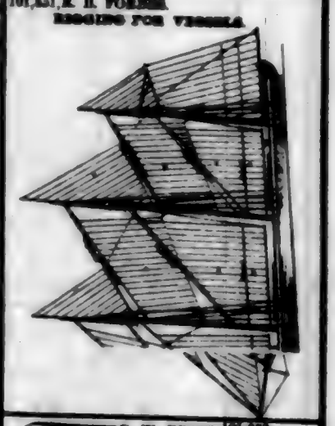


101,849 J. D. FIELD ASSIGNOR TO [illegible]

101,850 THOMAS B. FITTS.
AUGUSTUS D. COOKE.
BOB-PITCHERS.



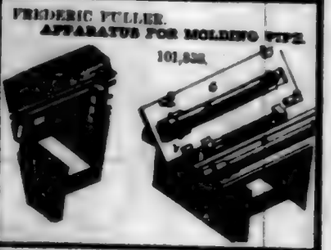
101,851, R. B. FORBES.
RIGGING FOR VESSELS.



F. W. FROST, 101,852.
STEPHEN L. HAYWARD.
ROTARY BLOTTERS.



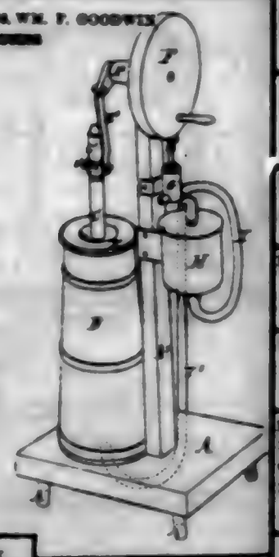
FREDERIC FULLER.
APPARATUS FOR MOLDING PIPE.
101,853.



OLIVER S. GARRETSON, SASH-PULLEYS.
101,854.



101,858. WM. F. GOODWIN.
OVENS



101,859.
PETER B. GOTTSTEIN.
IMPROVED CABOLE FOR MINING USE.

101,860. JAMES GRESHAM.
GUTTARD IMPROVED.





A. FIERRE GUTOT.
MEAN WHEEL WATER

JOHN WILLIAM GUDDEN.
GARDEN-WEEDER.

101,862, STUART GWYNN. IMPROVED COMPOSITION OF MATTER, CALLED "METALINE," FOR JOURNALS, BEARINGS, &c.

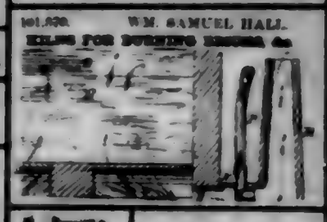
101,863, STUART GWYNN.
IMPROVED COMPOSITION OF MATTER, CALLED "METALINE," FOR JOURNALS, BEARINGS, &c.

101,864, STUART GWYNN.
IMPROVED COMPOSITION OF MATTER, CALLED "METALINE," FOR JOURNALS, BEARINGS, &c.

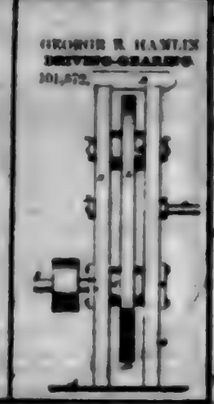
101,865, STUART GWYNN.
IMPROVED COMPOSITION OF MATTER, CALLED "METALINE," FOR JOURNALS, BEARINGS, &c.

101,866. S. GWYNN. PROCESS OF FORMING COMPOSITIONS OF MATTER, CALLED METALINE, FOR JOURNALS, BEARINGS, STEPS, AND OTHER ARTICLES LIABLE TO FRICTION.

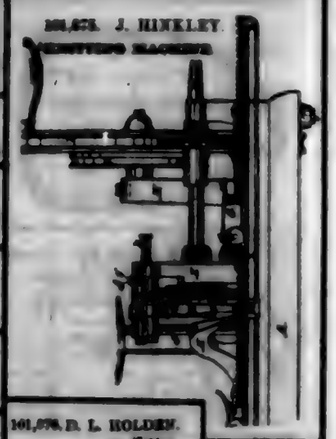
101,870. WM. SAMUEL HALL.
KILNS FOR BURNING BRICKS, &c.



GEORGE R. HAWLIN.
SEWING-CHARMS
101,872.



101,873. J. HINKLEY.
SCOURING MACHINE.



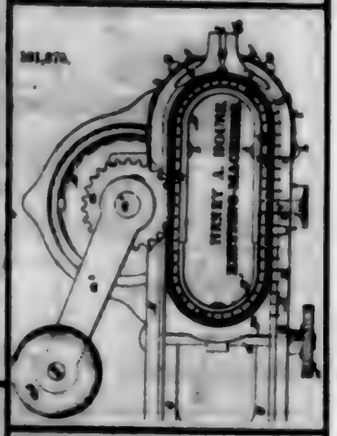
101,876. D. L. HOLDEN.
APPARATUS FOR THE MANUFACTURE OF ICE



JOHN W. HOLLINGSWORTH.
MOLDS FOR METALS.
101,877.



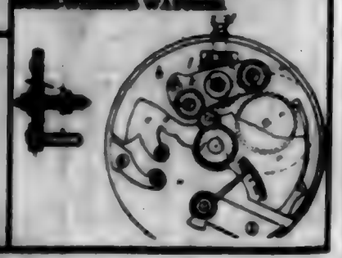
101,878.



101,879. THEODORE HYATT. MEANS AND GOVERNING REFRIGERATORS AND REFRIGERATOR-CARS.

101,880. SAMUEL W. HEAM.
PAINTS AND VARNISHES.

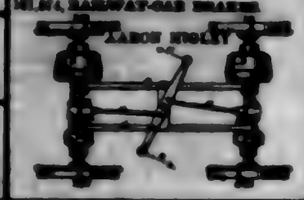
101,881. CHAS. E. JACOT.
SPEED-INDICATING WATCHES.



101,871. ANSON HARDY.



101,874. RAILWAY-CAR BRAKE.
JABOB HYOLY



IMPROVED
101,861, STUART GWYNN. COMPOSITION OF MATTER, CALLED "METALINE," FOR JOURNALS, BEARINGS, &c.

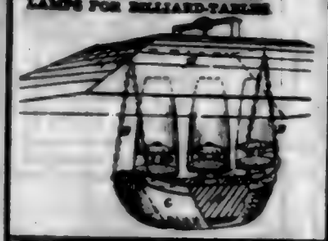
101,867. STUART GWYNN. IMPROVED COMPOSITION OF MATTER, CALLED "METALINE," FOR JOURNALS, BEARINGS, &c.

101,868. STUART GWYNN. IMPROVED COMPOSITION OF MATTER, CALLED "METALINE," FOR JOURNALS, BEARINGS, &c.



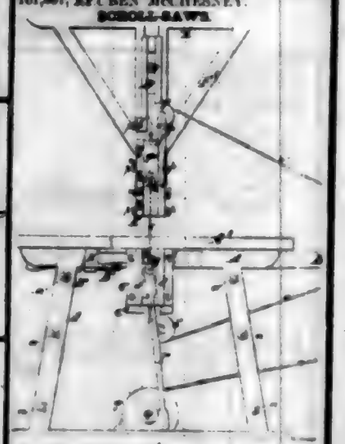
101,882. ROBERT JEWELL.
IMPROVED BEDSTEAD AND LOUNGE.

101,883. RUDOLPH KLEEMANN.
LAMPS FOR BILLIARD-TABLES.



101,885, ANGUS McALPIN.
MOULDS FOR METAL.

101,886, REUBEN McCHESNEY.
SCROLL-SAWS.

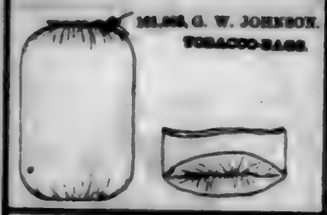


JOHN FREDERIC KUBLY. 101,884.
CHARLES FREDERIC CRAILSHEIM.
BOTTLES FOR GASEOUS LIQUIDS.

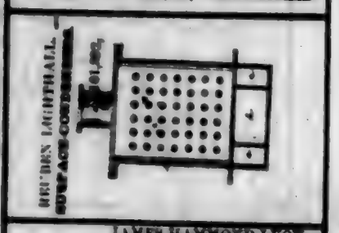


101,887.
N. H. LEBBY.
ORE-WASHING MACHINES.

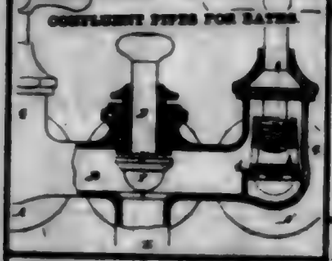
101,888. G. W. JOHNSON.
TOBACCO-BAGS.



T. GRAHAM LIEBENAU ASSIGNOR, FOR A. G. BRADLEY. 101,889. CLOCK-SEALS.



101,890. HENRY JONES.
CONSTANT FIRE FOR BATHS.



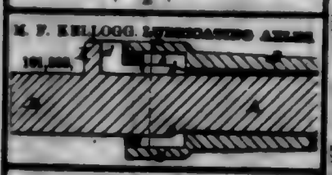
REUBEN LIGHTHALL.
SURFACE-CONDENSER.



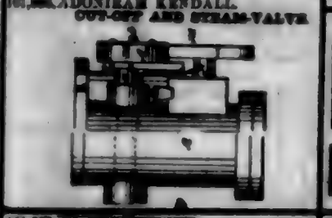
JAMES HAMMOND LYON.
PORTABLE FURNACE.



M. F. KELLOGG. LUBRICATING AXLES.
101,891.

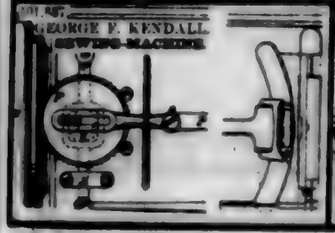


101,892. ADONIRAM KENDALL.
CUT-OFF AND STEAM-VALVE.

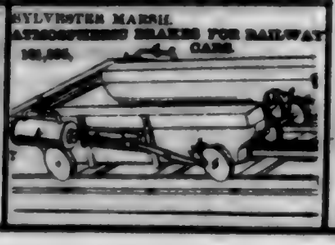


101,893. SAFES.
OBADIAH MARLAND.

101,894. GEORGE F. KENDALL.
SEWING-MACHINE.

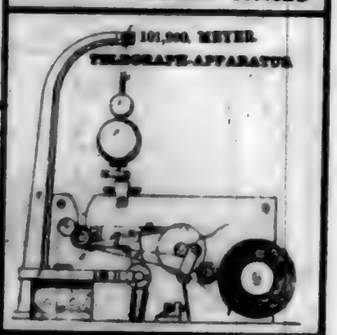


SYLVESTER MARSH.
ATMOSPHERIC BRAKES FOR RAILWAY CARS.
101,895.



101,896. LEVIE ALBERT MESSINGER.
PAINT OR COATING FOR SHIPS' BOTTOMS.

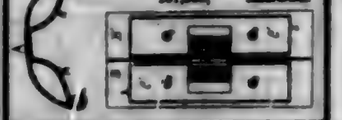
101,897. MEYER.
TELEGRAPH-APPARATUS.



101,891. WILLIAM A. MIDDLETON.
IMPROVED BROOM-HEAD



GEORGE FRANKLIN CUTTER.
101,899. RIVETS.



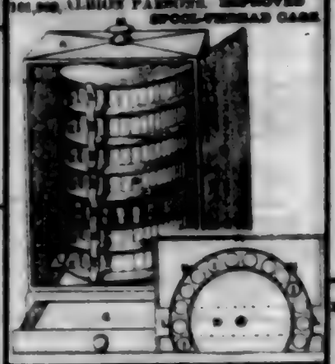
101,910. ALBION RANSOM.
RESERVOIRS FOR COOKING-STOVES



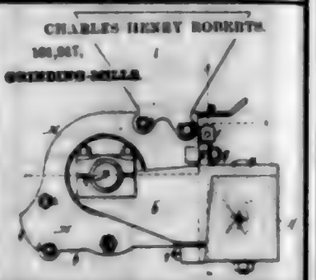
LEON EUGENE CAMERON MOORE.
JAMES SHOCKEY HAMILTON.
101,902. LAMPS



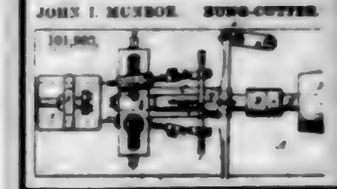
101,909. ALBION PARSONS. IMPROVED SPOOL-THREAD GAGE.



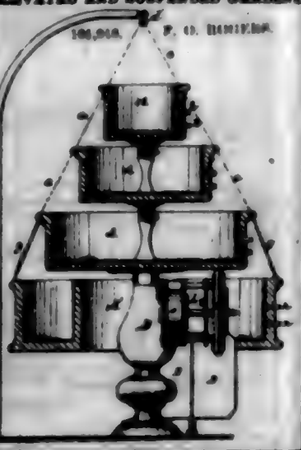
CHARLES HENRY ROBERTS.
101,917. GRINDING-MILLS.



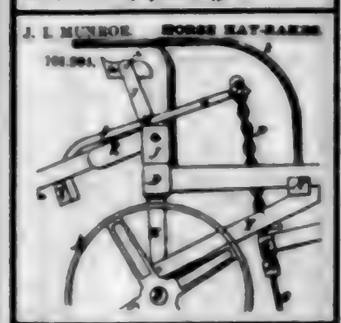
JOHN I. MUNROE. BUNG-CUTTER.
101,892.



ELEVATED AND SUSPENDED GARDENS.
101,918. F. O. RANDEL.



J. I. MUNROE. HORSE HAT-RACK.
101,894.

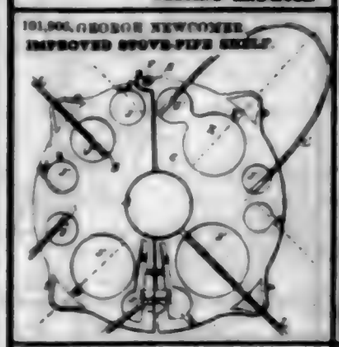


JULIA W. D. PATTEN.
101,910. IMPROVED EXTENSION TRAVELING-BAG

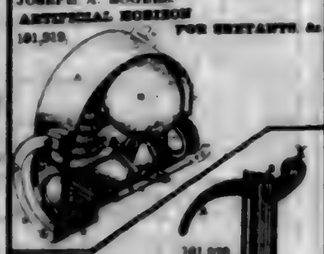


101,905. JOHN MURPHY.
INDIA RUBBER PACKING BELTING AND HOSE.

GEORGE NEWCOMER.
IMPROVED STOVE-PIPE SHELF.



JOSEPH A. ROGERS.
ARTIFICIAL HORIZON FOR SEXTANTS, &c.
101,919.



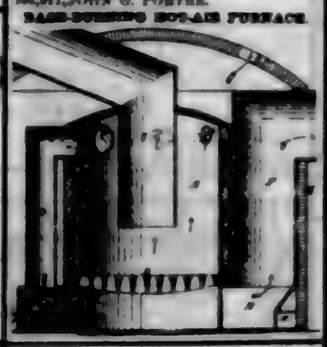
JOSIAH BORRAKER.
101,920. IMPROVED LIFTING-JACK.



101,907. J. H. O'NEIL.
NAPKIN-BASKETS



101,911. JOHN G. FOSTER.
BASE-BURNING HOT-AIR FURNACE.



101,913. ADDISON C. BAND. WEDGE.



101,914. A. C. BAND. WEDGE.



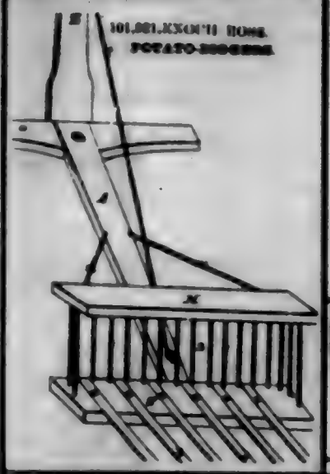
101,915. ADDISON C. BAND. WEDGE.



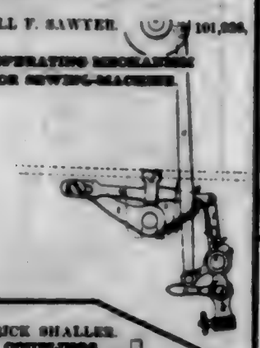
101,916. ADDISON C. BAND. WEDGE.



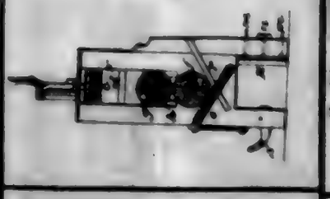
101,921. EXCELSIOR HOE.
POTATO-DIGGERS.



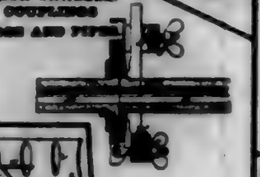
NOWELL F. SAWYER. 101,926.
FEED-OPERATING MECHANISM FOR SEWING-MACHINES.



101,922. JOHN O. ROTH.
IMPROVED CLOTHES-WRINGER.



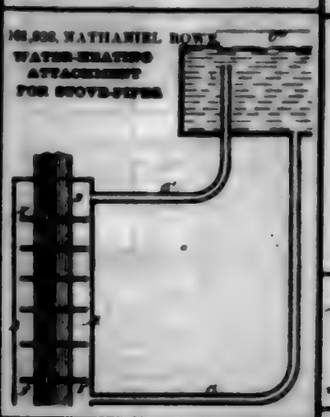
FREDERICK SHALLER.
101,927. COUPLINGS FOR HOSE AND PIPES.



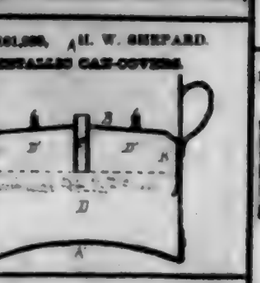
101,928. JAMES SHEEDY.
GAS-HEATING.



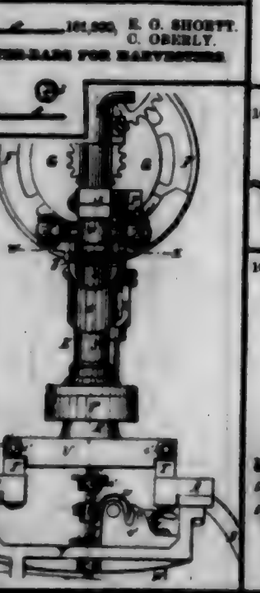
101,923. NATHANIEL ROWE.
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101,929. H. W. SHEPARD.
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101,930. E. G. SHORTT. C. OBERLY.
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BENJAMIN F. SYDER. CASTERS FOR SEWING-MACHINES.
101,924.



101,931. THOMAS SANDBACH. JOSEPH W. FOWLER. IMPROVED WELL-BORER.



101,931. E. J. STROUD. IMPROVED LEATHER CUTTING-PRESS.

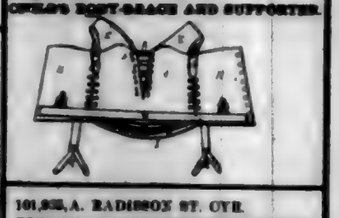
101,932. DAVID FRANCIS SMITH.
PAPER-COLLARS.



101,933. THOMAS S. SPEAKMAN.
LUBRICATING AXLE-BOXES.

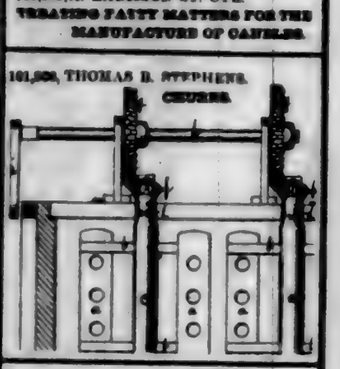


101,934. LINDA SPIGELMYER.
CHILD'S BODY-GRASP AND SUPPORTER.

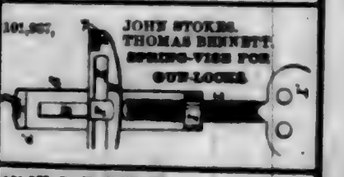


101,935. A. RADISSON ST. CYR.
TREATING FATTY MATTERS FOR THE MANUFACTURE OF CANDLES.

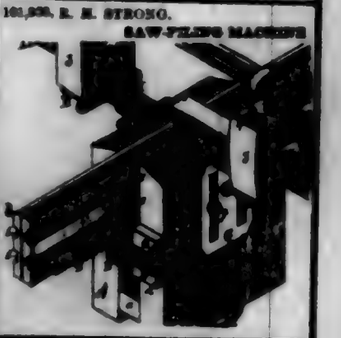
101,936. THOMAS B. STEPHENS.
CHURNS.



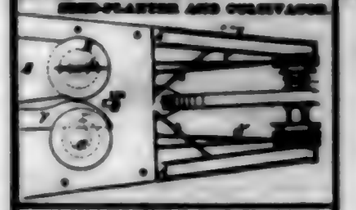
101,937. JOHN STOKES. THOMAS BENNETT.
SPRING-VISE FOR GUN-LOCKS.



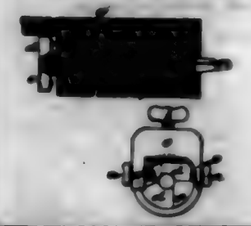
101,938. E. H. STROUD.
SAW-FILING MACHINE.



101,940, W. B. STROUD. SEED-PLANTER AND CULTIVATOR.



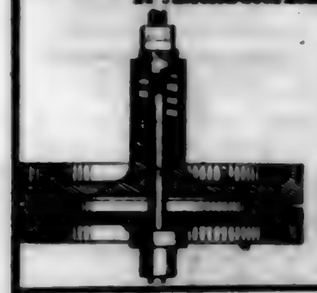
101,941, G. W. TOMPKINS. DEVICE FOR TURNING SPOKES.



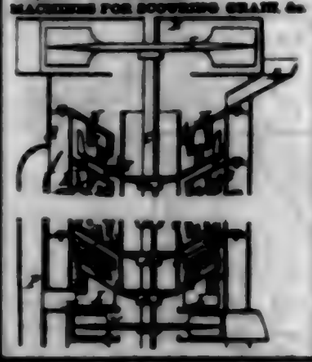
101,941, WM. WHARTON, Jr. RAILWAY-SWITCHES.



101,942, BENJ. TATHAM. REGULATING POWER CONVEYED BY TRAVELING BELTS OR BANDS.



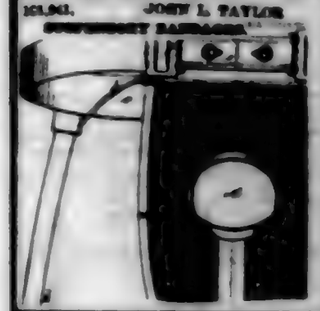
101,943, B. T. TRIMMER. MACHINERY FOR SOWING GRASS, &c.



101,944, LE ROY S. WHITE. IMPROVED BOX FOR FORMING CARRIAGE-SHACKLES.



101,945, JOHN L. TAYLOR. SPRING-SEAT RAILROAD.



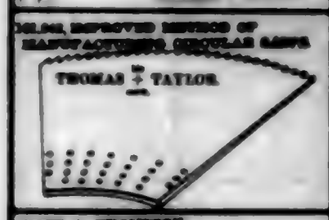
101,946, JOSEPH TRUMP. COTTON-SEED PLANTER.



CHARLES H. WIGHT. 101,947, HEDDLES.



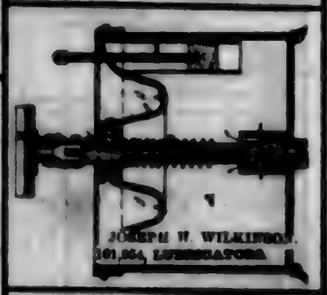
101,948, THOMAS J. TAYLOR. IMPROVED METHOD OF MANUFACTURING CIRCULAR LAMPS.



101,949, FERRAND G. WALLACE. WHEELS FOR VELOCIPEDES.



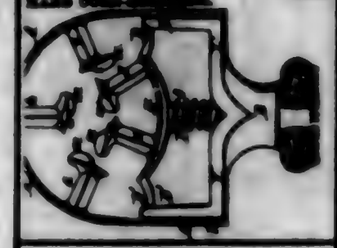
JOSEPH H. WILKINSON. 101,950, LUBRICATORS.



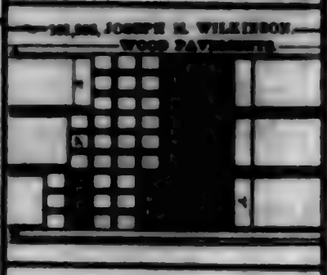
JOHN A. THOMPSON. 101,951, IMPROVED LADDER.



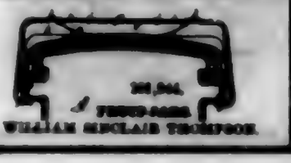
THEOPHILUS WEAVER. 101,952, HAND CORN-PLANTER.



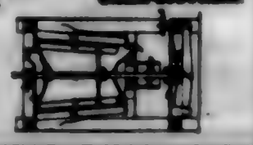
101,953, JOSEPH H. WILKINSON. WOOD PAVEMENTS.



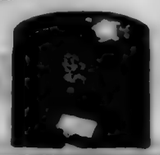
101,954, WILLIAM SINCLAIR THOMPSON.



VALENTIN WEINHARTER. 101,955, GRAIN-SEPARATOR.



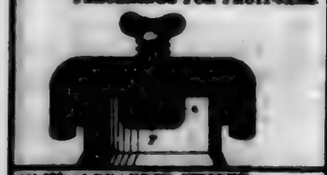
101,956, E. WILLARD. LAMPS.



HENDERSON WILLARD. IMPROVED CHAIR. 101,957,



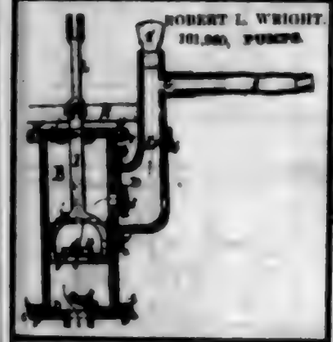
101,958, THEODORE F. WOODWARD. FASTENINGS FOR FRUIT-JARS.



101,959, ALEXANDER WRIGHT. ADJUSTABLE CARRIAGE-SEATS.



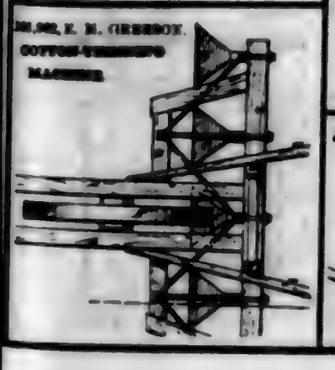
ROBERT L. WRIGHT. 101,960, PUMPS.



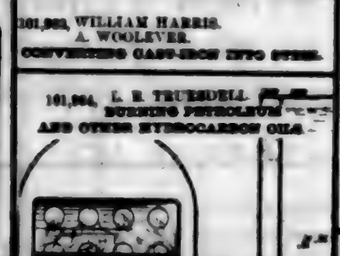
101,961, J. B. ALEXANDER. LAMPS.



101,962, E. H. GIBBONS. COTTON-PLANTING MACHINES.



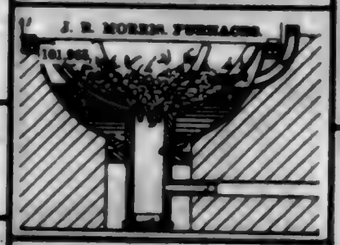
101,963, WILLIAM HARRIS, A. WOOLEVER. CONVERTING CAST-IRON INTO STEEL.



101,964, I. R. TRUESDELL. BURNING PETROLEUM AND OTHER HYDROCARBON OILS.



J. B. MORRIS. FURNACES. 101,965,



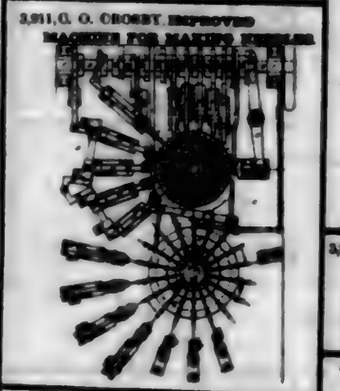
101,966, FELIX MAKE. RAIN-FAUCETS.



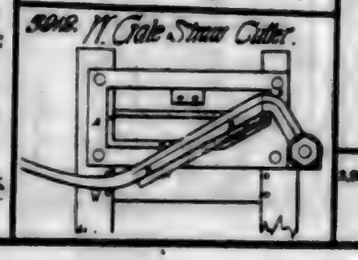
RAILROAD-CAR VENTILATOR. 3,910, P. R. HITCHCOCK.



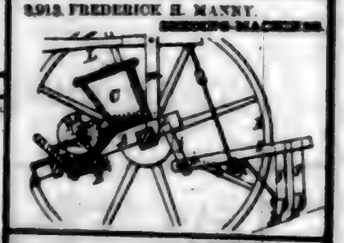
3,911, C. C. CROSBY. IMPROVED MACHINE FOR MAKING SPRINGS.



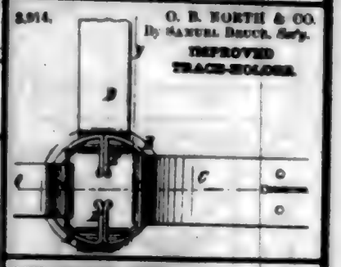
3,912, W. Gale Straw Cutter.



3,913, FREDERICK H. MANNY. REEDING-MACHINES.



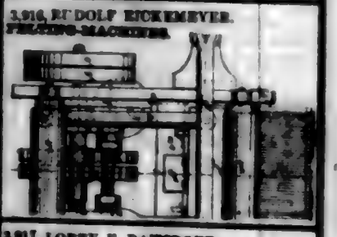
3,914, O. B. NORTH & CO. By SAMUEL BRUCE, Sec'y. IMPROVED TRACE-HOLDER.



3,915, MORTON JUDD, A. D. JUDD. CASE-FASTENERS.



3,916, RUDOLF EICKEMEYER. FEEDING-MACHINES.



3,917, LOREY F. RAYCROFT. SPRINKLERS.



3,918, LORING COBB. WRENCHES.



G. RATURF. RAILWAY-CAR WHEELS. 3,919,



3,920, SHELDON INGALLS KELLOGG. CONVERTING CAST INTO STEEL.

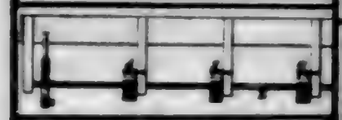
ILLUSTRATIONS OF PATENTS

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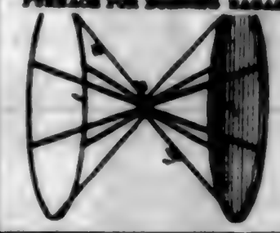
THE UNITED STATES PATENT OFFICE

APRIL 19, 1870.

101,967, I. J. W. ADAMS. APPARATUS FOR MEASURING BOARDS.



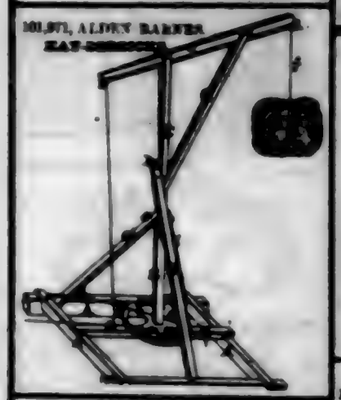
101,968, JOHN ARTUS SPIRES. FURNACE FOR BURNING BAGASSE.



101,969, HAYDN M. BAKER. MANUFACTURE OF STEEL FROM CAST OR PIG-IRON.

101,970, H. G. BALFOUR. ROOFING MATERIAL.

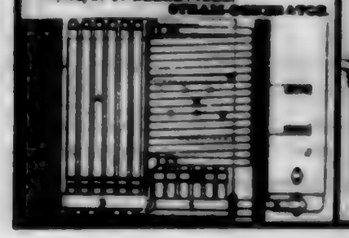
101,971, ALDEN BARNES. HAT-BLOCKING.



101,972. ORLANDO BARTO. VENTILATOR.



101,973, J. F. BELLEVILLE. STEAM-GENERATOR.

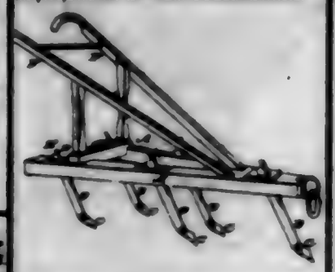


101,974, MARTIEN H. BÖTTGER. COMPOUND FOR BOOTS AND SHOES.

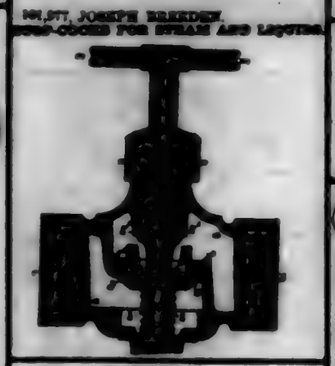
101,975, JAMES E. BOUTELLE. LATHE-SPINDLE.



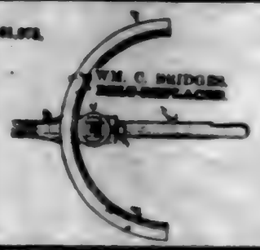
101,976, JACOB BOWER. CULTIVATORS.



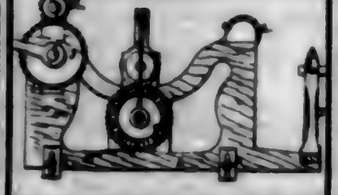
101,977, JOSEPH BRESNEN. STOP-COCKS FOR STEAM AND LIQUIDS.



101,978. WM. C. BRIDGES. HEAD-BLOCK-LATHE.



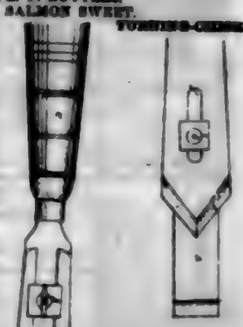
101,979 T. M. BRINTNALL. CLOUD-MEASURING APPARATUS.



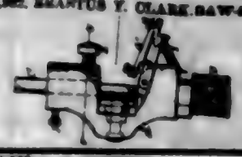
101,980, IRA BROWSON. SHIFTING RAIL FOR SLEIGHS.



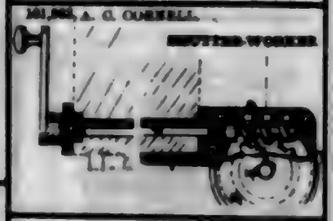
101,981, E. T. BUTTLER. SALMON SWEET. TURNING-CHUCK.



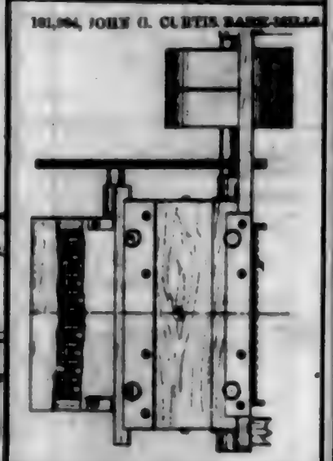
101,982, ERASTUS Y. CLARK. SAW-SETS.



101,983, A. C. CORNELL. SHUTTER-WORKER.

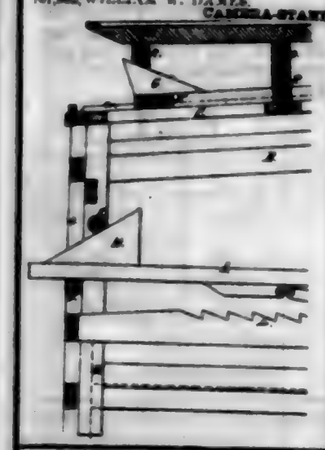


101,984, JOHN G. CURTIS. BARB-MILLS.

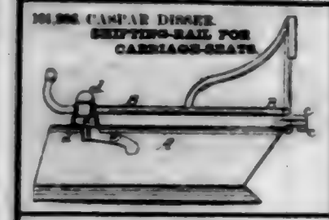


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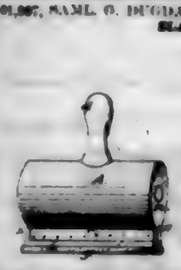
101,985, WILLIAM W. DAMES. CAMERA-STAND.



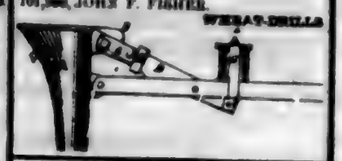
101,986, CASPAR DISSER. SHIFTING-RAIL FOR CARRIAGE-SEATS.



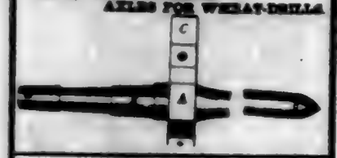
101,987, SAML. O. DUGDALE. SLATE-WASHERS.



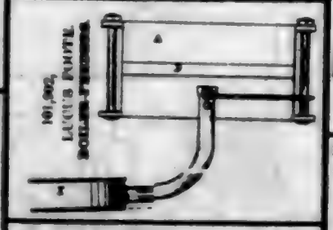
101,988, JOHN F. FISHER. WHEAT-DRILLS.



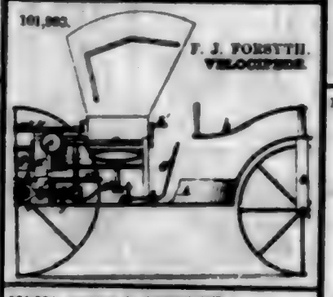
101,989, JOHN F. FISHER. AXLES FOR WHEAT-DRILLS.



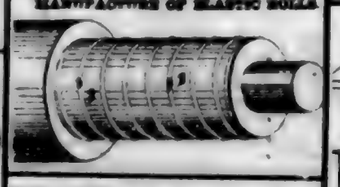
101,990, LUCIUS FOOTE. BOILER-FURNACE.



101,992. F. J. FORSYTH. VELOCIPEDE.



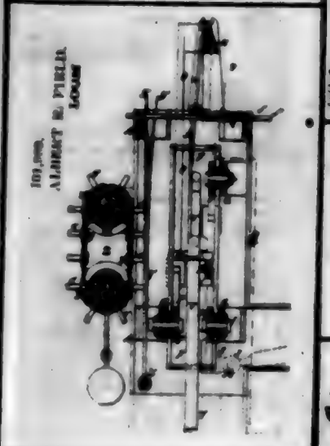
101,994, JAMES B. FORSYTH. MANUFACTURE OF ELASTIC BELTS.



101,995, JOHN V. B. ELDREDGE. BINDER FOR SEWING-MACHINES.



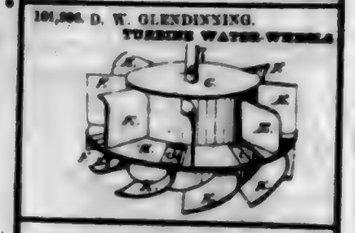
101,996, ALBERT B. FIELD. LOOM.



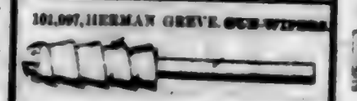
101,993, JOHN H. GLEIM. PUMP-SPOUTS.



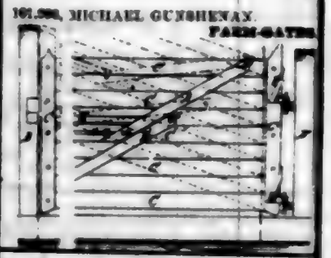
101,998. D. W. GLENDINNING. TURBINE WATER-WHEELS.



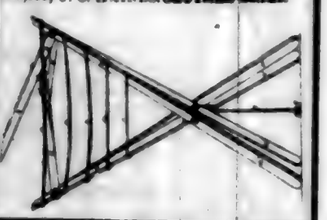
101,997, HERMAN GREVE. GUN-WIPERS.



102,000, MICHAEL GUNSHENAN. FARM-GATES.



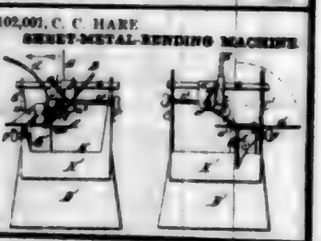
101,999, J. C. HAINES. CLOTHES-DRIER.



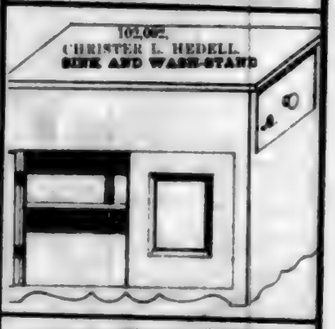
102,003, ANDREW J. HANNA. SINGLE-TREE.



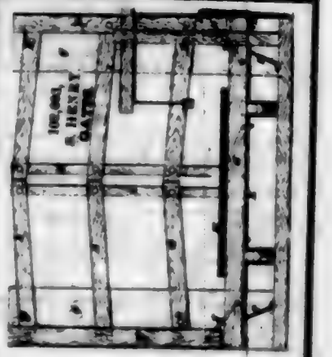
102,001, C. C. HARE. SHEET-METAL-BENDING MACHINE.



102,002, CHRISTER L. HEDELL. SINK AND WASH-STAND.



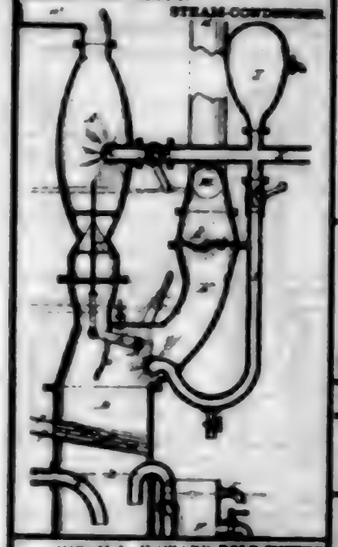
102,004, A. HENRY BATES.



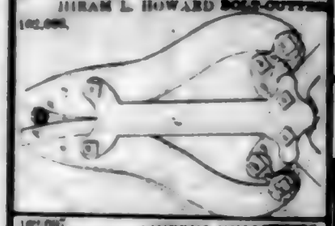
102,044, C. RIPPENSTEEL. CORN-PLANTER.



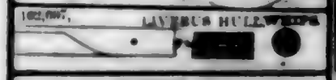
102,045, JOHN HOUPT. STEAM-CONDENSER.



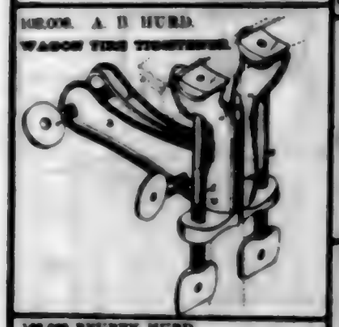
102,046, HIRAM L. HOWARD. BOLT-CUTTER.



102,047, LIVERUS HULL. WRENCH.



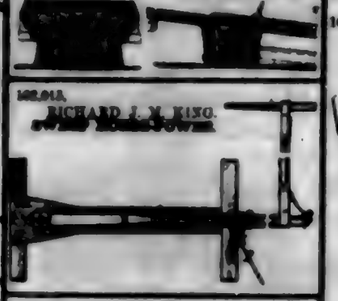
102,048, A. B. HURD. WAGON TIRE TIGHTENER.



102,049, REUBEN HURD. WAGON-BRAKE.



102,050, J. E. JONES. EXPANSION JOINT FOR PIPES.



102,051, DEDRICK JORDAN, JOSEPH DILL. COVE-PLANTING-MACHINE.



102,052, WILLIAM KELLY. CLOSET AND BED.

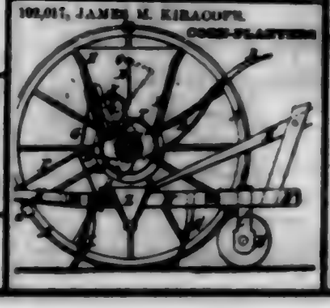


102,053, A. F. KELLAM, J. JAS. M'HOCK. PROPELLING FORWARD.

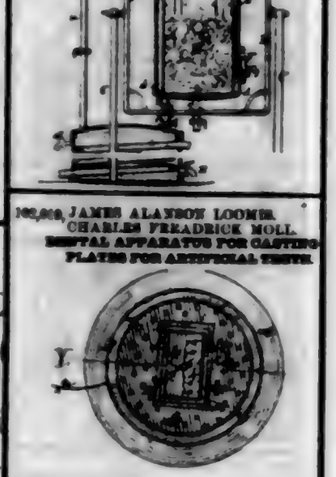


102,054, JOSEPH KIRTLAND. SEALS.

102,055, JAMES M. KIRKWOOD. CORN-PLANTER.



102,056, JAMES ALANSON LOOMIS, CHARLES FREDERICK MOLL. DENTAL APPARATUS FOR CASTING PLATES FOR ARTIFICIAL TEETH.



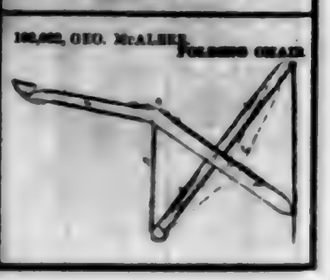
102,057, HECTOR MACKINNON. SMOKE-STACKS.



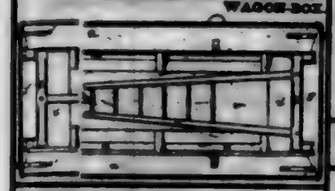
102,058, JONAH MARCHANT. CHIMNEY-STOVES.



102,059, GEO. McALEER. FOLDING CHAIR.



102,042, F. G. McCLELLAN. COMBINED HAY-RACK AND WAGON-BOX.

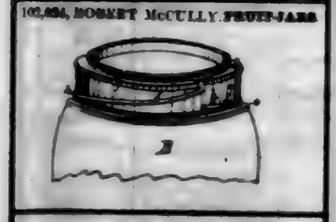


102,043, ABEL MISHLER. DOOR-SPRINGS.



102,044, J. MOOG. MEANS OF TREATING TRACING-PAPER.

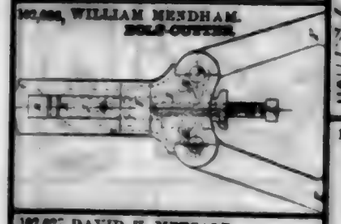
102,045, ROBERT McCULLY. FRUIT-JARS.



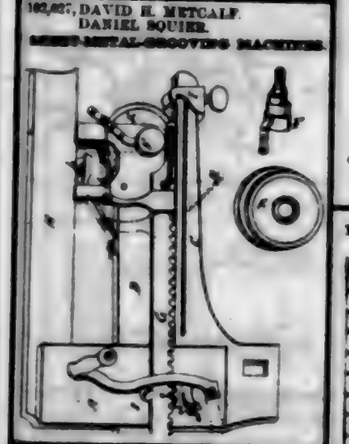
102,046, E. R. McGREGOR. AXLES AND THEIR BOXING.



102,047, WILLIAM MENDHAM. BOLT-CUTTER.



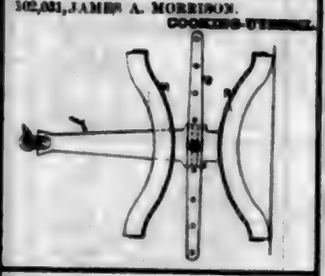
102,048, DAVID H. METCALF, DANIEL SQUIER. METAL-METAL-GROOVING MACHINE.



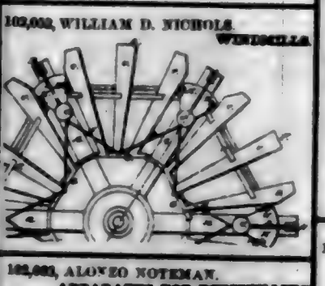
102,049, HENRY W. MILLAR. AGRICULTURAL STEAMER.



102,031, JAMES A. MORRISON. COOKING-UTENSIL.



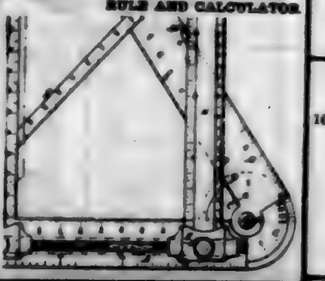
102,032, WILLIAM D. NICHOLS. WINDMILLS.



102,033, ALONZO NOTEMAN. APPARATUS FOR REBOTTLING AND RECTIFYING SPIRITS.



102,034, NILS OCKERLUND. RULE AND CALCULATOR.



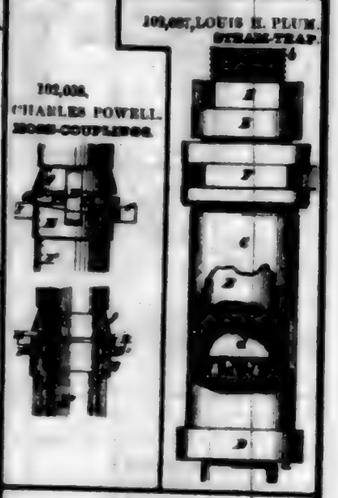
102,035, THOMAS PEMBERTON, GEORGE ARTHUR PEMBERTON. ALARM AND OTHER SEALS.



102,036, JOHN L. PFAU. ATTACHMENT FOR HEATING-STOVES.

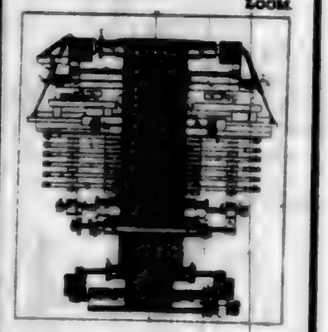


102,037, LOUIS H. PLUM. STEAM-TRAP.

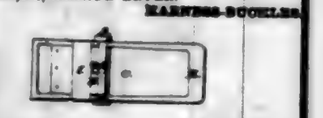


102,038, CHARLES POWELL. HOSE-COUPLINGS.

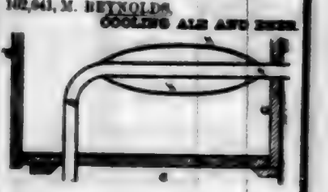
102,039, PIERRE FRANÇOIS RAMEL, JEAN DROGAT. LOOM.



102,040, GEORGE REYER. HARNESS-BUCKLES.



102,041, M. REYNOLDS. COOLING ALE AND BEER.



102,042, FRANCIS RICHARDSON, Concrete

102,047, GEO. HUSTON, Pipe Packing

102,048, J. H. RAYFORD, Shingle-Machine Hog-Plates

102,054, WILLIAM SHAW, Stretching-Machine

102,043, GEO. F. ROSE, Railway-Rail Splice

102,050, C. A. STANLAY, Reaping Apparatus

102,055, W. S. SHOEMAKER, Buffing-Wheel

102,044, PHILIP HENRY ROSE, MILLER BARNEY HUDSON, Stove-Pipe Thimble

102,045, JOHN RUSSELL, THEODORE T. MOREAU, Washing-Machine and Boiler

102,049, THOS. M'ANTLIN, Funnel Gas-Filler

102,051, O. SCHEUERELL, Cartridge-Case

102,052, JOHN SELLORS, Horse-Collar Cap

102,053, JAMES P. SHELEY, ARTHUR WALSH, Water-Wheel Regulator

102,057, ANTHONY RUTHROFF, Rotary Pump

102,058, O. J. SMITH, Wrenches

102,059, CHARLES W. SNYDER, Heating-Stove

102,060, LEWIS A. STAVE, Clothes-Dryer

102,060, GILBERT STOVER, Turning Water-Wheels

102,061, WILLIAM M. STUART, Roofing Composition

102,062, B. F. STURTEVANT, Blowers

102,063, B. F. STURTEVANT, Fan-Blowers

102,064, ANTHONY B. SWEETLAND, Refrigerator

102,065, CHARLES TAYLOR, Saw-Mills

102,066, ALEX'R. THOMPSON, Drill

102,067, JOSEPH WOOD TUTTLE, JULIUS PETERSON, Bleaching-Rooks

102,068, WM. VAN ANDEN, Machine for Making Wrought-Iron Chairs for Railroads

102,069, JAMES R. VAN EPPS, Dovetailing-Machine

102,070, CHARLES VIGNERON, Machine for Moulding Glass Buttons

102,071, EDWARD WIARD, Rabbeting-Gage for Plow

102,072, JOSEPH C. WILSON, Locomotive and Car-Brake

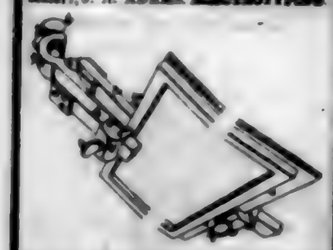
102,073, URIAH S. WOLFF, Feeding Apparatus for Nail-Machine

102,074, ALVIS H. WOODARD, Self-Fastening

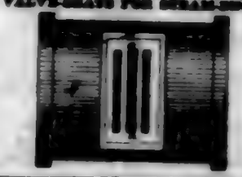
102,075, EDWIN L. ABERCROMBIE, Tool-Handle

102,076, JOHN J. ADAIR, Buckles

102,077, J. A. ADAMS. ELECTROTYPING.



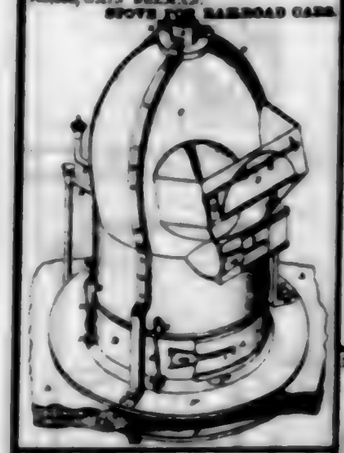
102,078, Q. S. BACKUS.
PROCESS FOR FACING VALVES AND VALVE-SEATS FOR STEAM-ENGINES.



102,079, ALBERT BAXTER.
WHEEL-GEAR FOR CARRIAGES.



102,080, GAIN BEEMAN.
STOVE FOR RAILROAD CARS.



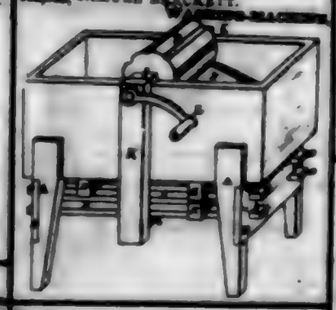
102,081, LYMAN BICKFORD.
GRAIN-DRILL SEEDER.



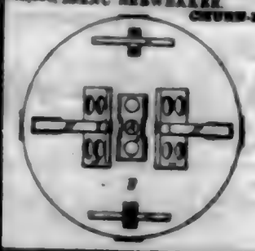
102,082, ALMON W. BOOMER.
JOHN P. HASKINS.
BINDERS FOR SEWING-MACHINES.



102,083, SAMUEL BRACKETT.
WASHING-MACHINE.



102,084, ISAAC BREWBAKER.
CHURN-DASHER.



102,085, ISAAC W. BROWN.
GLOBE-VALVE.



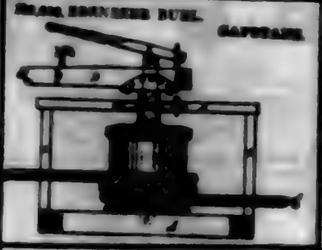
102,086, LORENZO W. BROWN.
HOT-AIR FURNACE.



102,087, CHARLES BRUSO, 2ND.
BOOK.

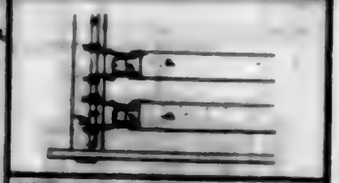


102,088, EBENEZER BUEL.
CAPSTAN.

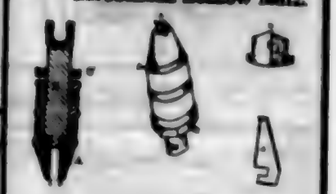


102,089, J. H. BULL.
SPRING-BED BOTTOM.





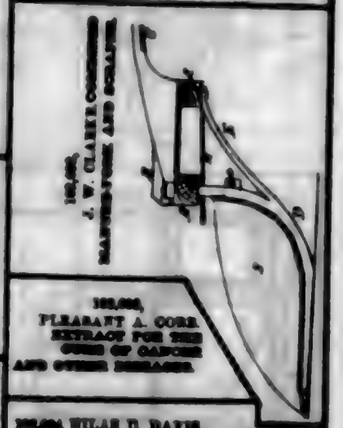
102,090, CHAS. E. BUTLER.
ADJUSTABLE HOLLOW AUGER.



102,091, JAS. A. CLARK.
MANDRELS OF SAW-MILLS.

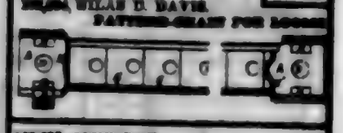


102,092, J. W. CLARK, Assignor to himself and SCALE.
MANUFACTURE AND SCALE.



102,093,
PLEASANT A. COBB.
EXTRACT FOR THE CURE OF CANCERS AND OTHER DISEASES.

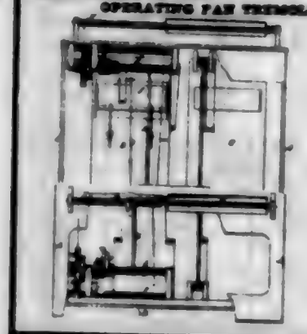
102,094, WILLIS D. DAVIS.
PATTERN-CHART FOR LOOMS.



102,095, JOHN DAY.
SHINGLING SLATE.

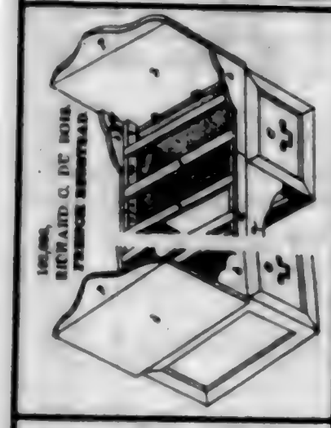


102,096, JOSEPH H. DOW.
OPERATING FAN TREADLES.



102,097, NELSON H. DOWNE.
CONCRETE PAVEMENTS.

102,098,
RICHARD G. DE BOIS.
FRENCH BEDSTEAD.



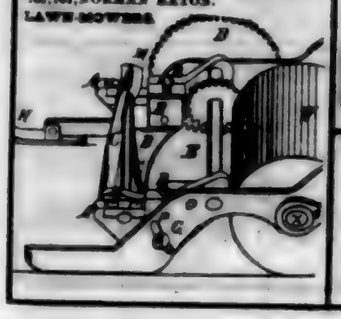
102,099, GEO. W. DUBUISSON.
TRUSS-COUPLING.



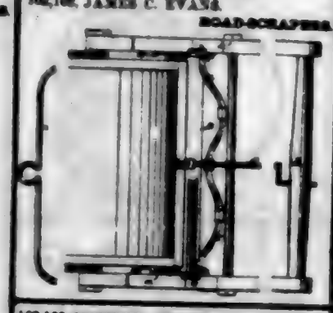
102,100, CHAR. H. EASTE.
HAME-ATTACHMENT.



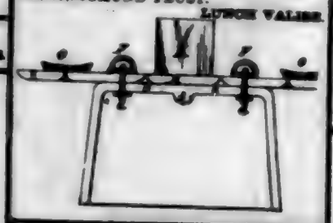
102,101, NORMAN EATON.
LAWN-MOWERS.



102,102, JAMES C. EVANS.
ROAD-SCRAPERS.



102,103, SIGMUND FEUST.
LUNCH VALISE.



102,104, JAMES B. FORSYTH.
JOHN J. HALEY.
ELASTIC BOLLS.



102,105. C. A. FOSTER.
COMBINATION TOOL.



102,106, CALVIN A. FOSTER.
SICKLE-SHARPENER.



102,107, JAMES S. FRENCH.
WHEEL FOR LOCOMOTIVE LAND CONVEYANCE, AND COAL-HOISTING APPARATUS.



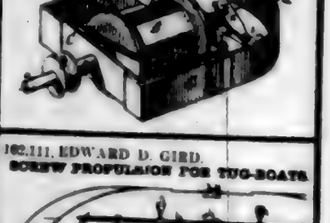
102,108, P. W. FROST.
SHUTTER-FASTENING.



102,109, A. X. C. GAVARD.
METALLIC CARTRIDGES.



102,110, A. GIRAUDAT.
WIRE-COVERING MACHINES.



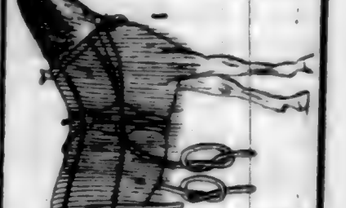
102,111, EDWARD D. GIRD.
SCREW PROPULSION FOR TUG-BOATS.



102,112, A. GOODMAN.
H. GOODMAN.
SAWING-MACHINES.



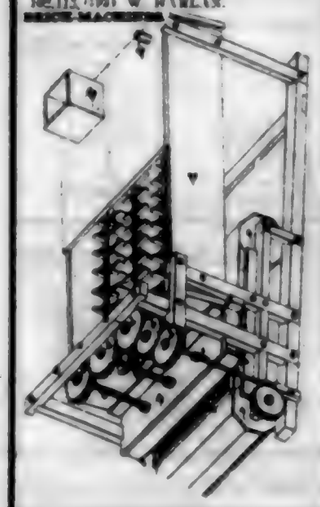
102,113, JOHN GRAHAM.
FLY-NETS FOR HORSES.



102,114,
EDWARD HALL.
FRANCIS D. SEARL.
STOVE-PIPE SHELF, HEATER, AND DAMPER.

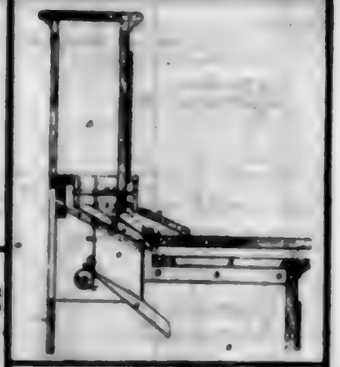


102,113, (1793) W. HARLAN. BRICK-MACHINES.

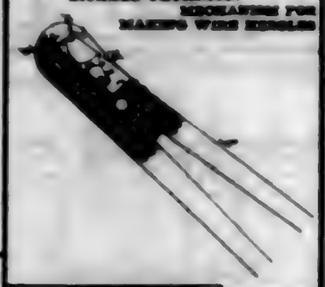


102,121, JOHN HENDERSON. BOOKBINDING.



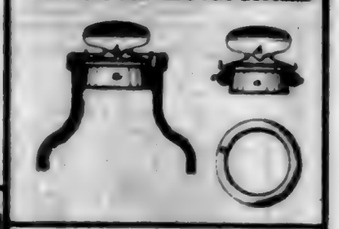


102,122, EMIL T. HERTLE, RICHARD THOMPSON. MECHANISM FOR MAKING WIRE NEEDLES.



102,123, AUGUST HERZOG. COVER FOR TABLES, FLOORS, &c.

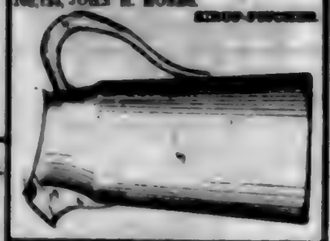
102,120, HENRY W. KETCHAM. STOPPERS FOR JARS AND BOTTLES.



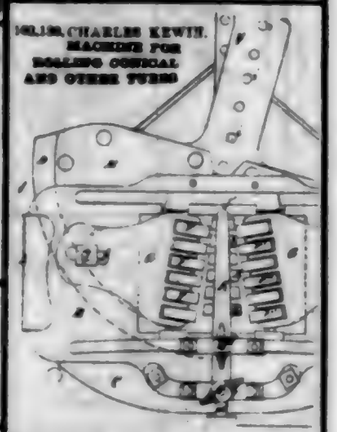
102,116, WASHINGTON HARRIS, WILLIAM HOWELL. NON-CONDUCTING COVERING FOR STEAM-BOILERS.



102,124, JOHN H. HORNE. SIDING-SUPPORTER.



102,119, CHARLES KEWIN. MACHINE FOR ROLLING CONICAL AND OTHER TUBES.



102,117, ALLEN HAWKES. PIE-STAMPER AND CUTTER.

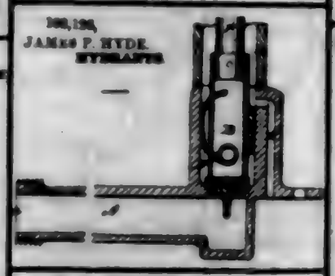


102,125, JOH. HOF, PHILIPP BRENNER. SHOES FOR SHUTTERS.

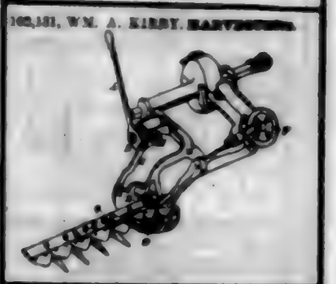


102,118, H. B. HECKEL. MINERAL PAINT.

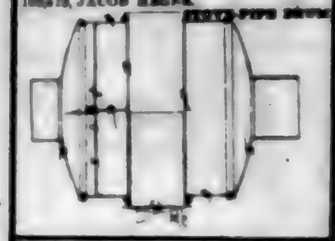
102,126, JAMES P. HYDE. EYELETS.



102,131, WM. A. KIRBY. HARVESTERS.



102,119, JACOB HEGER. TRAP-PIPE BEND.



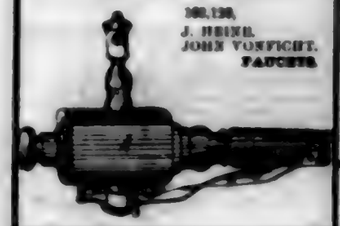
102,127, DAVID JEWETT. AXLE-BOX FOR CARRIAGES.



102,128, JOSEPH G. KITTREDGE. HINGE FOR SAFE-DOORS.

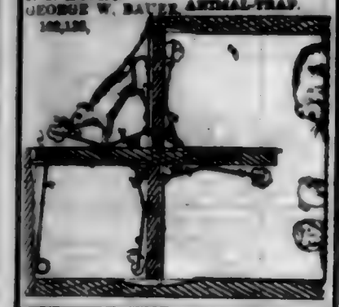


102,130, J. HEINE, JOHN VONFICHT. FAUCETS.

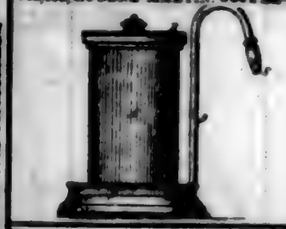


102,129, HARVEY GLOSSUP, GEORGE BAKER JEWETT

J. O. KOPAS, GEORGE W. BAUER. ANIMAL-TRAP. 102,133.

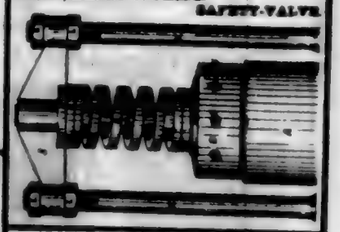


102,136, EUGENE MARTIN. COFFEE-URN.



102,146, CHARLES MOTIER NEE. MANUFACTURE OF STEEL.

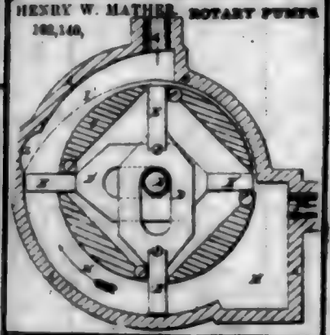
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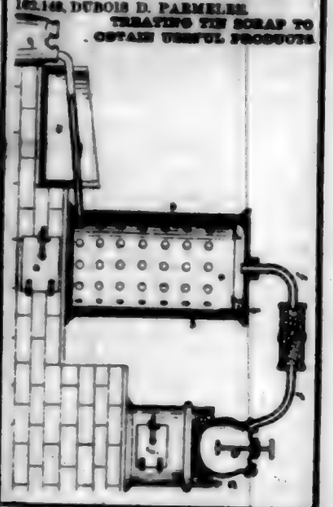
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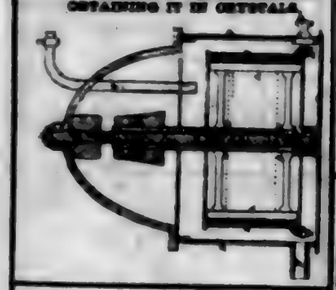
HENRY W. MATHER. ROTARY PUMPS. 102,140.



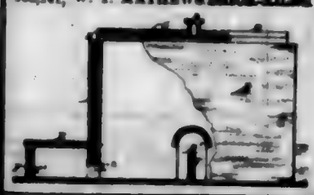
102,148, DUBOIS D. PARMELEE. TREATING TIN SCRAP TO OBTAIN USEFUL PRODUCTS.



102,135, FREDERICK LAMBE. TREATING PARAFFINE AND OBTAINING IT IN CRYSTALS.



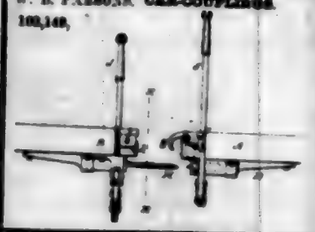
102,141, W. T. MATHEWS. BRICK-KILNS.



102,142, FERDINAND C. D. McKAY. SELF-WINDING AND BALANCING CURTAIN-FIXTURE.



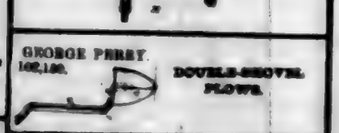
W. B. PARSONS. CAR-COUPLINGS. 102,149.



102,143, HENRY MINER. STOVE-GRATES.



GEORGE PERRY. 102,150. DOUBLE-SHOVEL PLOWS.



102,138, ERWIN LAVERE, JAMES C. LAMB. ROTARY PUMPS.



DAVID MOFFAT, JOHN THOMSON. 102,144. PAVING-BRICKS.



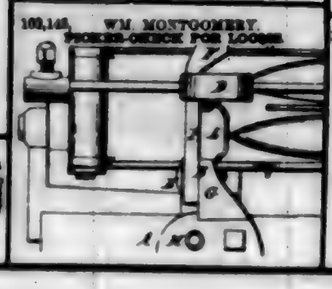
102,151, IVA POPPENBERGER. JOINT FOR PITMAN-HEADS, SICKLES OF HARVESTERS.



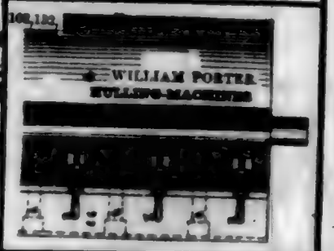
102,137, HARVEY T. LEE. PISTON-ROD PACKING.



102,145, WM. MONTGOMERY. POKER-CHECK FOR LOOMS.



102,152, WILLIAM PORTER. ROLLING-MACHINES.



102,132, JOSIAH LETCHWORTH. HAMES FOR HARNESS.



102,168. JOHN P. QUARLES. PAPER-FILER.

102,169. NATHANIEL WILEY RICE. APPARATUS FOR SETTING SAWS.

102,170. THOMAS SHAFER DODGE. WINDOW FOR SEWING-MACHINES.

102,171. GEO. REED. WILLIAM G. BOAGLAND. JOHN J. HEWSON. SCREEN-ATTACHMENT FOR WINDOWS.

102,172. DAVID SMITH. WATCHMEN'S TIME-DETECTOR.

102,173. T. E. REED. MACHINE FOR UNITING BOOT AND SHOE-SOLES TO THE UPPERS.

102,174. EVERETT P. RICHARDSON. MACHINE FOR TURNING THE HEELS OF BOOTS AND SHOES.

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102,186. JOHN WARREN. STILLS FOR PETROLEUM.

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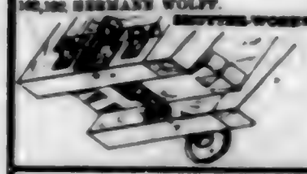
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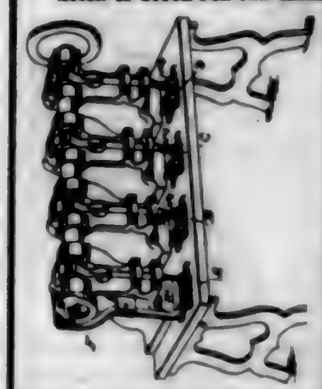


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3,980, WILLIAM MILLER. MORTISING-MACHINE.



3,982, J. B. BROWN. MILLS.



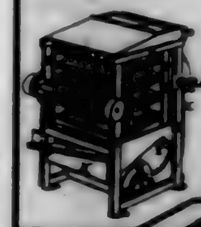
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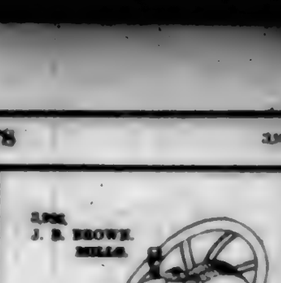
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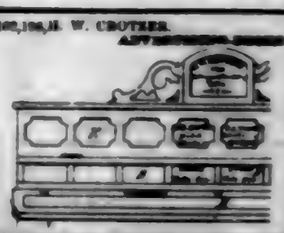
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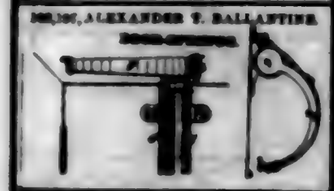
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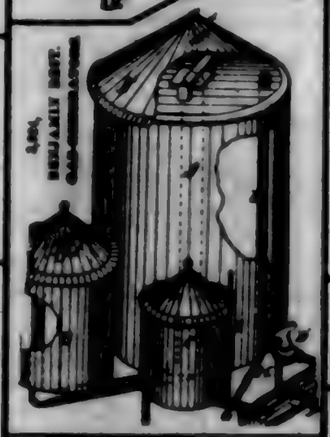
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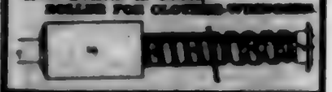
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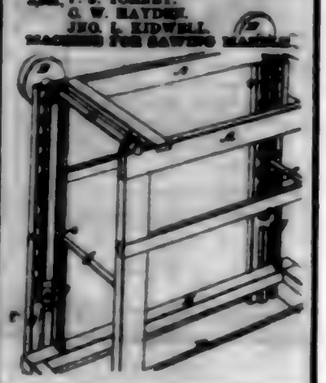


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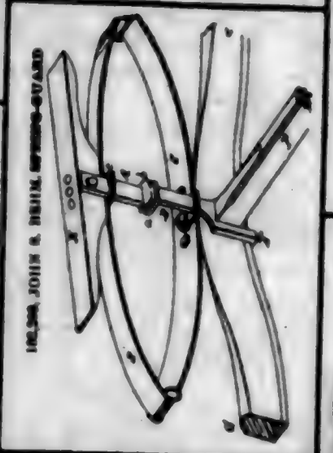
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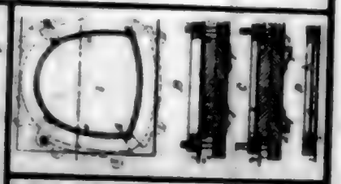


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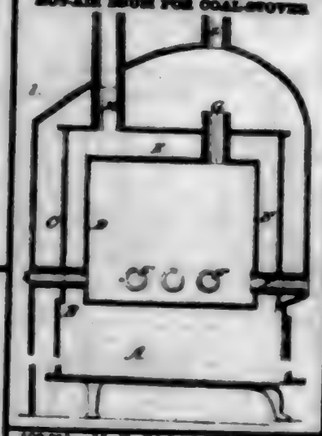


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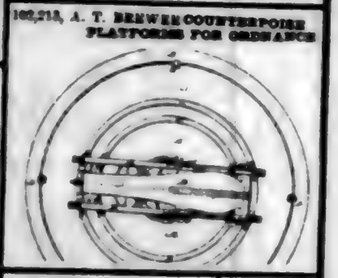
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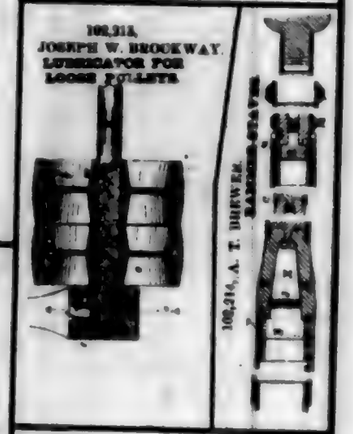
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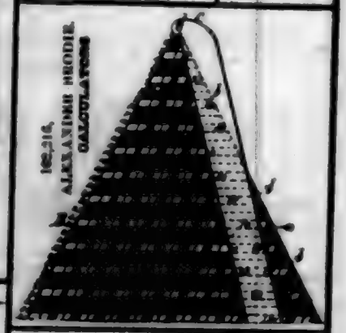


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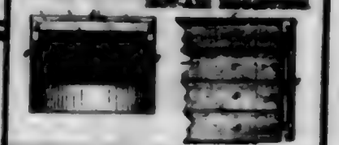


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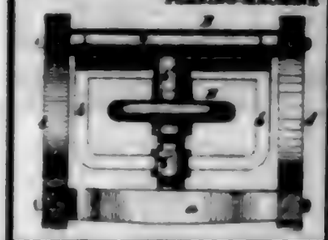
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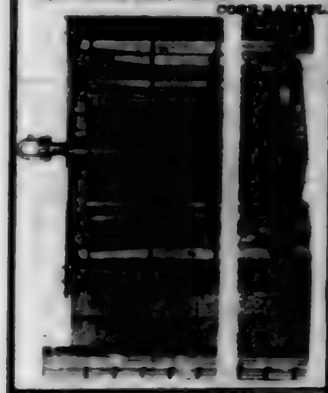
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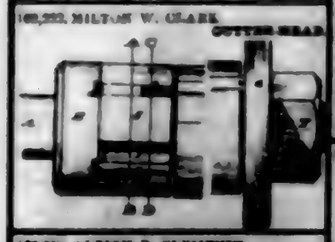
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102,222. MILTON W. CLARK.
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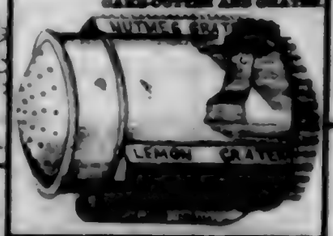


102,223. ALBION P. CLEMENTS, JOHN C. HEALEY.
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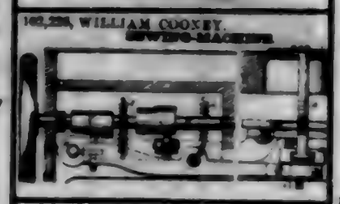


102,224, THOMAS COMBS, DECEASED.

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102,226. WILLIAM COOKEY.
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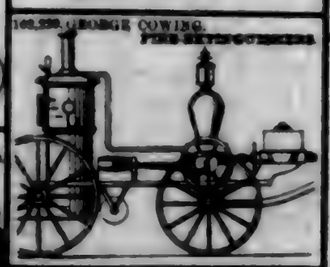
102,227.
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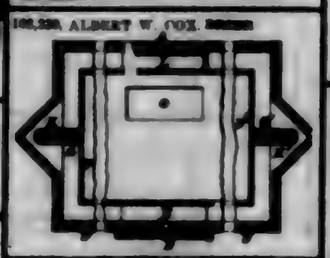
102,228. HENRY C. CUTTRELL.
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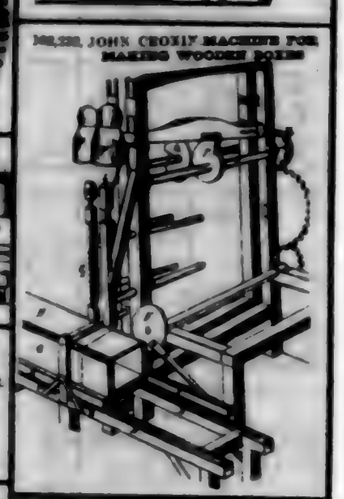


102,230. ALBERT W. COX.



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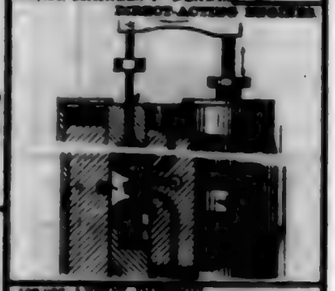
102,232. JOHN CROXLY.
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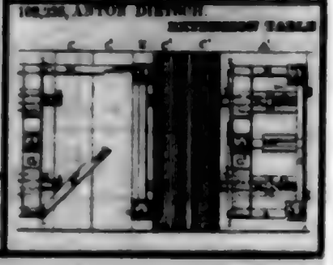
102,233. JOHN CUTHBERT.
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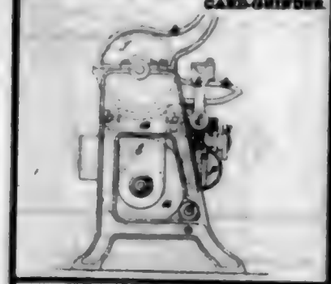
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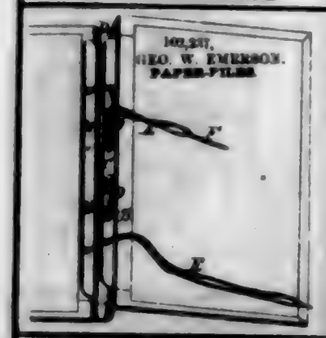
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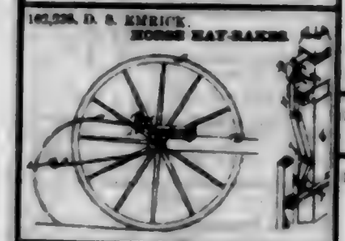
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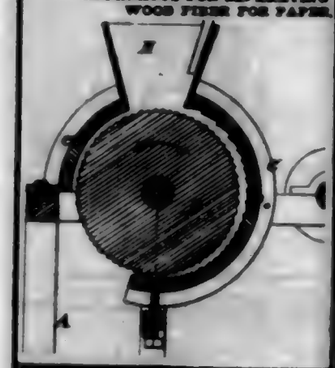
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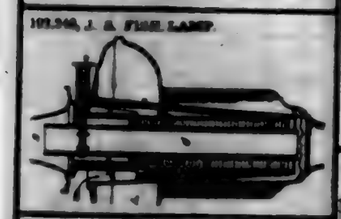
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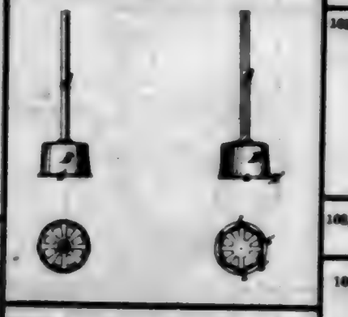


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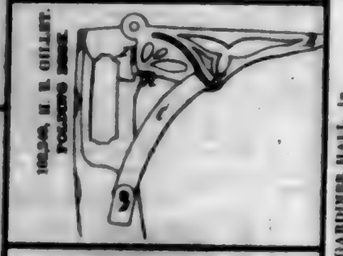
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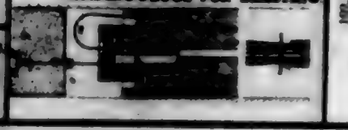
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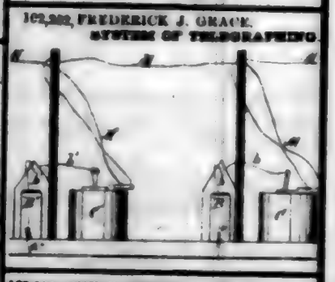
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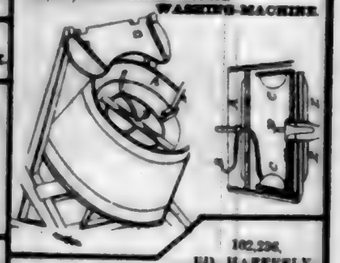


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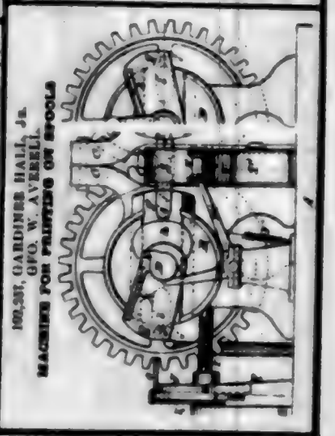
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WASHING-MACHINE.



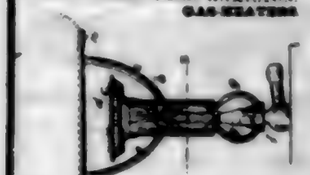
102,256.
ED. HAEFFELY.
YARN-WASHING MACHINE.



102,257. GARDINER HALL, JR.
OTTO W. AVERELL.
MACHINES FOR PRINTING CIRCULAR BOOKS OR SHEETS.



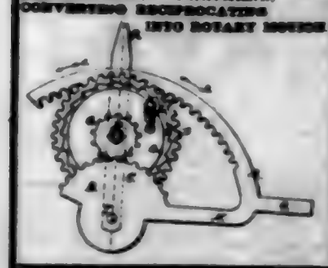
102,296. LAVINIA BUSH HAMILTON. GAS-HEATER.



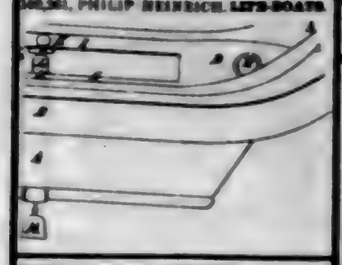
102,297. WM. HENRY HART, Jr. HOLDER FOR EXERCISE.



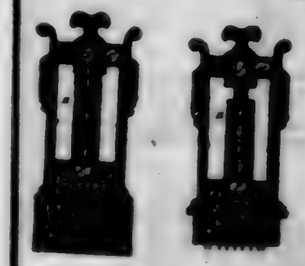
102,298. JOACHIM F. HARTMANN. CONVERTING RECIPROCATING INTO ROTARY MOTION.



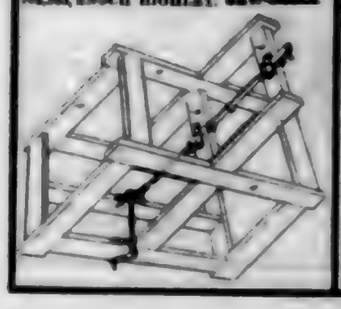
102,299. PHILIP HEINRICH, LIFE-BOATS.



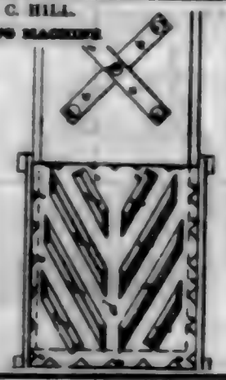
102,300. GARDNER HERRICK. ACOUSTOSCOPES [illegible]



102,301. ENOCH HIGHLEY. SAW-SETTER.



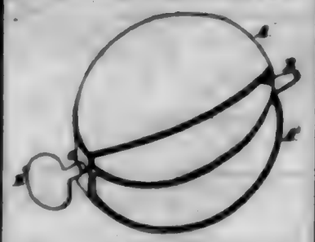
102,294. C. HILL. WASHING MACHINE.



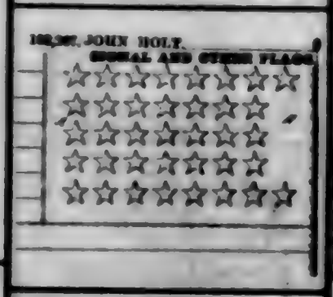
102,295. I. HOFFMAN. MANUFACTURE OF PAPER.



102,296. G. HOLLINGER AND [illegible] S. H. FRY.



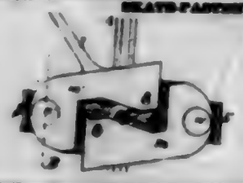
102,297. JOHN HOLT. SIGNAL AND OTHER FLAGS.



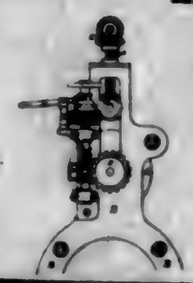
102,298. ALBERT H. HOOE. MANUFACTURE OF [illegible]



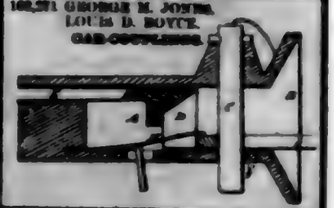
102,299. H. S. HOOKER. HEATH-FASTENING.



102,300. S. HUTCHINSON. MACHINERY FOR STRIKING OUT LEATHER.



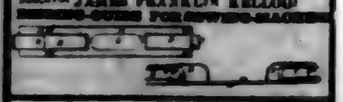
102,271. GEORGE M. JOYCE, LOUIS D. BOYCE. GAS-CONDENSER.



102,272. T. L. JONES. STEAM [illegible]



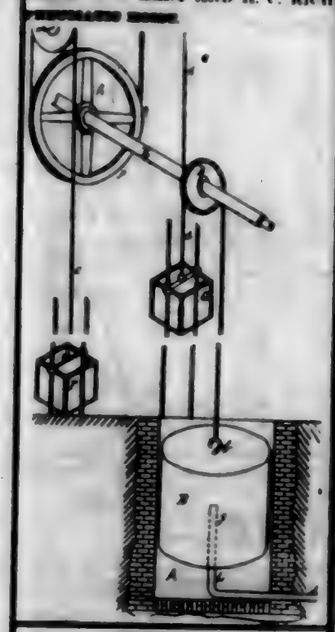
102,273. JAMES FRANKLIN KELLOG. [illegible] FOR SEWING-MACHINES.



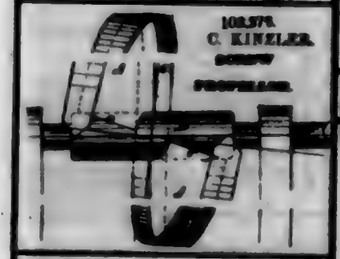
102,274. RICHARD A. KENDALL, WILLIAM KENDALL. SEWING-MACHINE.



102,275. J. C. KENT AND H. C. RICH. [illegible]



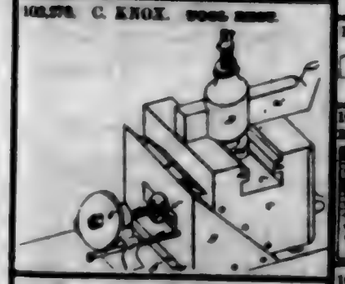
102,276. C. KINZLER. [illegible] PROPELLER.



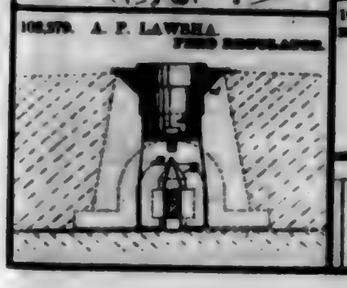
102,277. S. KNEASS. WOOD PAVEMENT.



102,278. C. KNOX. [illegible]



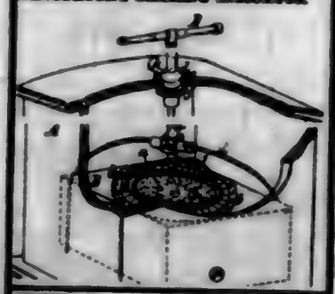
102,279. A. P. LAWSHA. [illegible] REGULATOR.



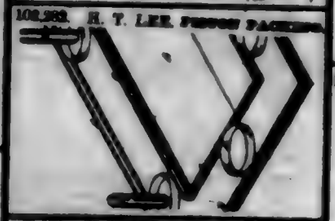
102,280. A. H. LEACH. CARRIAGE WHEEL.



102,281. J. D. LEACH. NAVIGATOR'S MARINE INDICATOR.



102,282. H. T. LEE. PISTON-PACKING.



102,283. H. LEE. MANUFACTURE OF RAILROAD RAILS.

102,284. R. LENOX. LIGHTNING DEVICE.



102,285. LICHTENSTADT & PENTLARGE. [illegible]



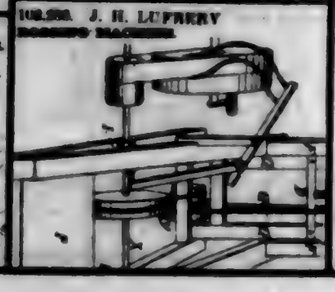
102,286. C. V.-LITTLEPAGE. SAW.



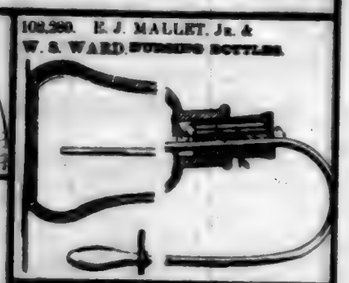
102,287. J. C. LUDWIG. [illegible] FURNACE.



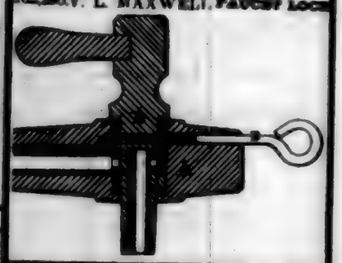
102,288. J. H. LUFBERY. [illegible]



102,289. E. J. MALLET, Jr. & W. S. WARD. NURSING BOTTLE.



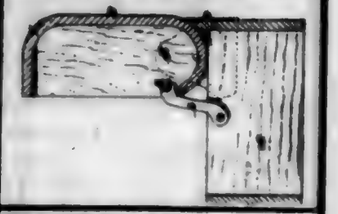
102,290. V. L. MAXWELL. FAUCET LOCK.



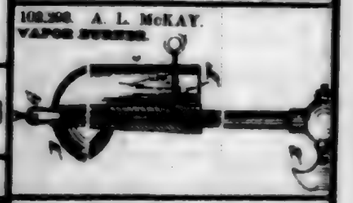
102,291. W. S. MAYO. TRUSS.



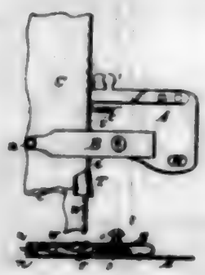
102,292. W. S. MAYO. TRUSS.



102,293. A. L. McKAY. VAPOR BURNER.



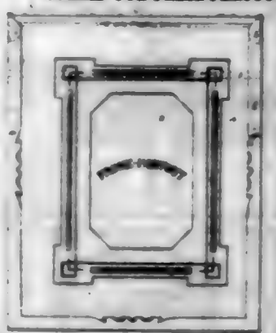
102,294. MELLEN, VAN SANDT & PALMER. SEWING-MACHINE BUFFLER.



102,295. CURT W. MEYER.
POCKET INDUCTION APPARATUS.



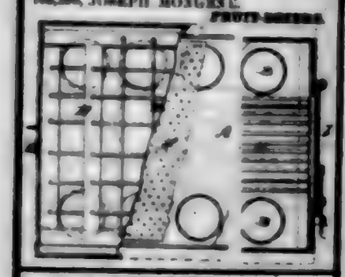
102,296. P. MIGNOT.
FRAME FOR PANES PANEPOUTE.



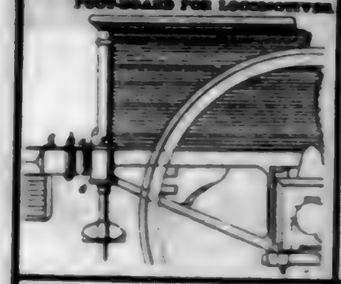
102,297. ROBERT A. MILLER.
BOOTS AND SHOES.



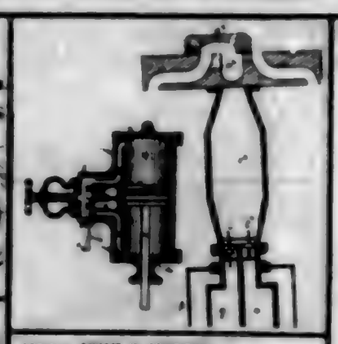
102,298. JOSEPH MOUGEOT.
FRUIT-DRYER.



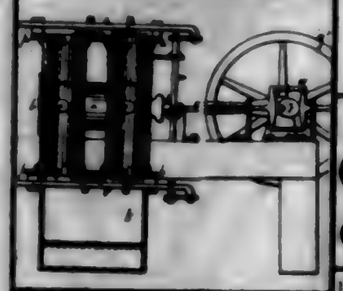
102,299. GEO. F. MORSE.
FOOT-BOARD FOR LOCOMOTIVES.



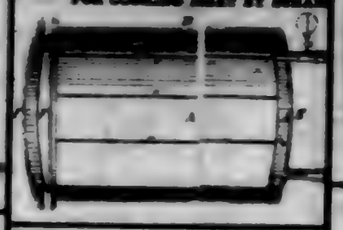
102,300. JOHN S. MORTON.
PNEUMATIC VACUUM-ENGINE.



102,301. JOHN S. MORTON.
JOS. H. LAMING.
PNEUMATIC VACUUM-ENGINE.



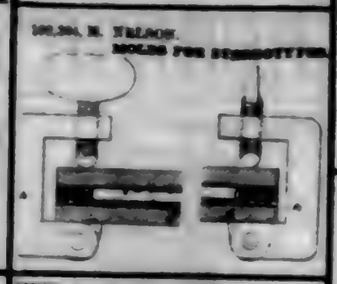
102,302. GEO. H. MUNROE, APPARATUS FOR COOKING MEAT BY STEAM.



102,303. GEO. H. MUNROE.
MOLDS FOR SUBMARINE TUBE.



102,304. N. NELSON.
MOLDS FOR SUBMARINE TUBE.



102,305. JOSEPH NEUMANN.
STREET-LANTERN.



102,306. JOSIAH H. NICHOLS, CUTLERY WILLIAM BOWER.

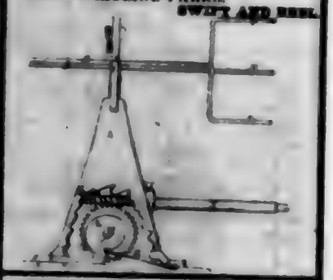


102,307. JOHAN F. NORDQUIST.
WRENCHES.



102,308. CHARLES H. OTIS.
PAINT-PAILS.

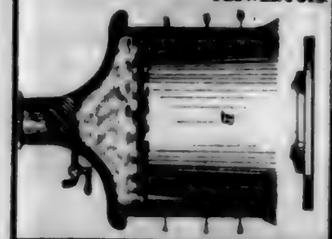
102,309. CAROLINE PARKS.
SWIFT AND REEL.



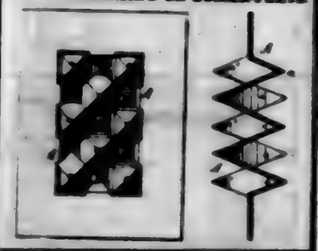
102,310. JOHN H. PARSONS, BROOM.



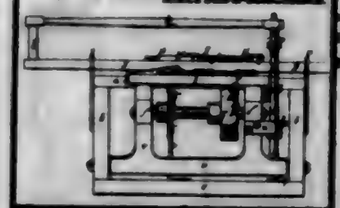
102,311. CHAS B. PENFIELD.
FLOWER-POTS.



102,312. ABRAHAM LIDDON PENNOCK.
RADIATING OR BOILER-PLATE.



102,313. JOHN PEPPER.
KNITTING-MACHINES.



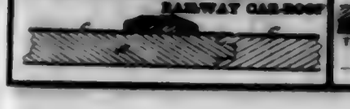
102,314. R. W. PERKINS.
VENTILATED SCREEN DOOR.



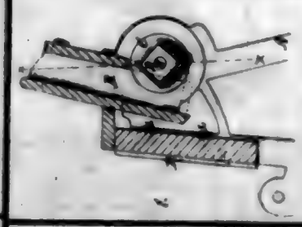
102,315. GEORGE W. PETERS.
ADJUSTABLE METALLIC FASTENER FOR VEHICLES.



102,316. BENJAMIN F. PICKETT.
RAILWAY CAR-ROOF.



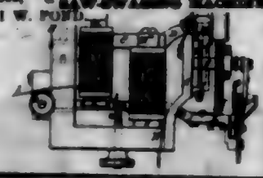
102,317. JOHN & P. PIEHL.
SCHOOL-DESK.



102,318. LEVI W. POND. SAW-SWAGE.



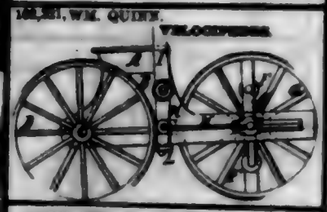
102,319. SAW-SWAGING MACHINE.
LEVI W. POND.



102,320. L. POPE AND T. A. EDISON.
PRINTING TELEGRAPH APPARATUS.



102,321. WM. QUINN.
VELOCIPEDE.



102,322. JOEL H. RHODES, M. D.
WM. REED.
VELOCIPEDE.

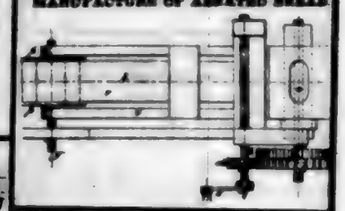


102,323. MARTIN A. ROWE.
CRANK-MOTION.

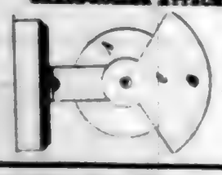


102,324. ELLIOT SAVAGE.
MANUFACTURE OF ALLOYS OF MANGANESE.

102,325. ALFRED SCATCHARD.
APPARATUS FOR THE MANUFACTURE OF AERATED BREAD.



102,326. PETER J. SHIETS.
SHADE-ROLLER ATTACHMENT.



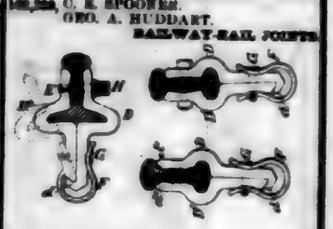
102,327. HUGH SMITH, SLEIGHS.



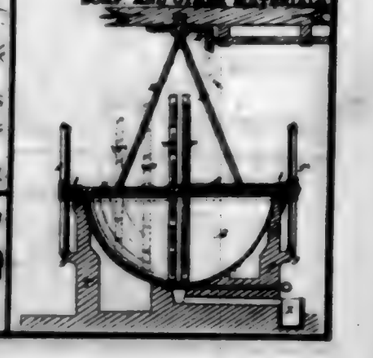
102,328. J. SPEAR.
COAL STOVE.



102,329. C. B. SPOONER.
GEO. A. HUDDART.
RAILWAY-RAIL JOINTS.

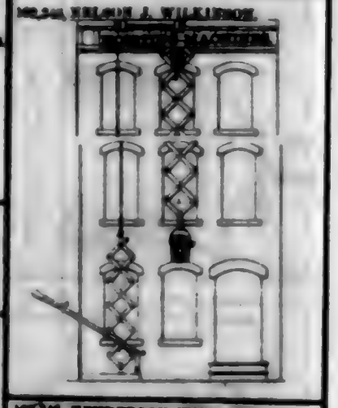


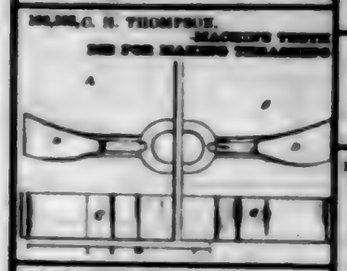
102,330. JOHN STAINTHORP.
ISAAC COLE.
MACHINE FOR MIXING PAINT, SOAP, AND OTHER MATERIALS.

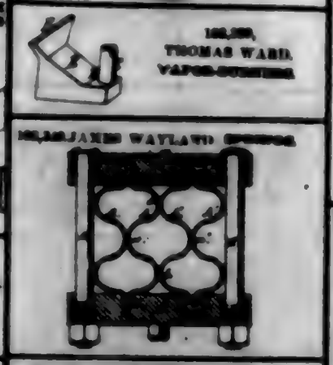




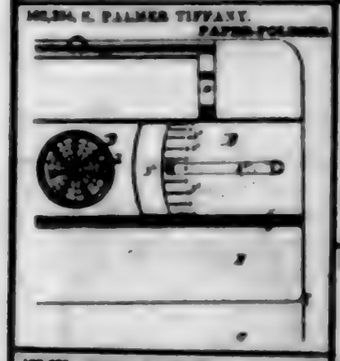




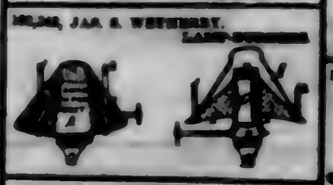


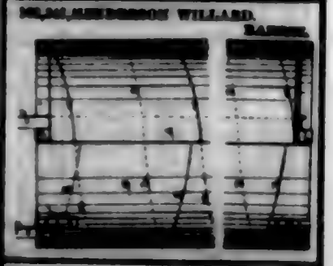




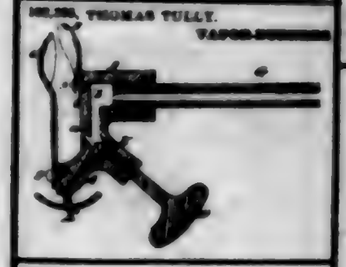


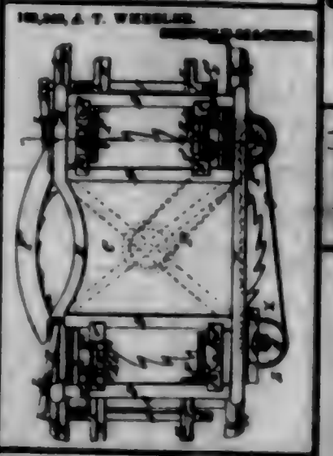




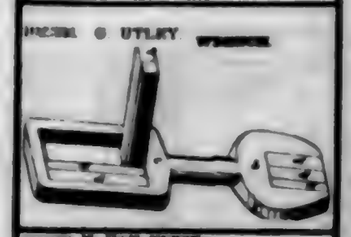


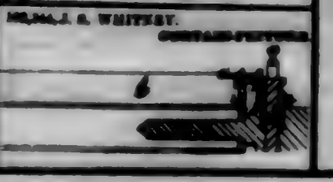




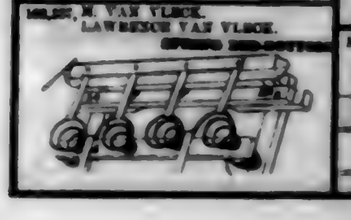


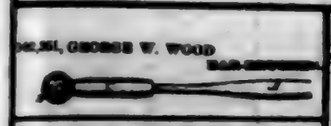


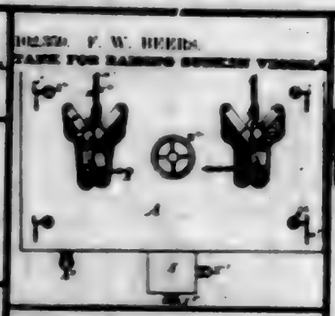


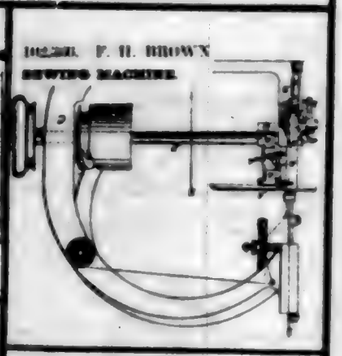


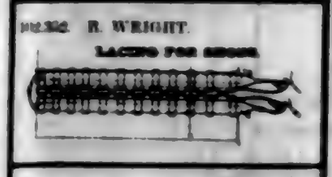




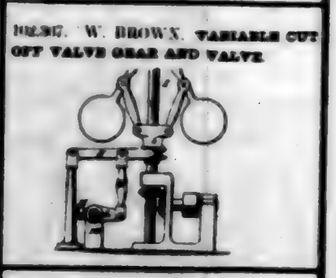


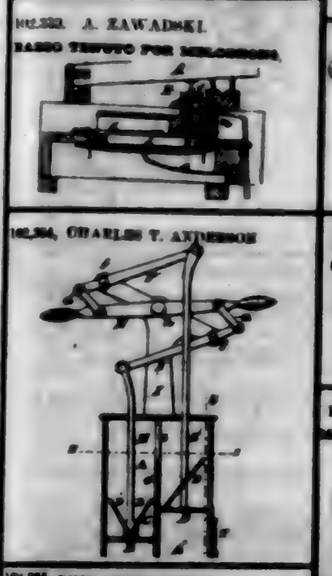


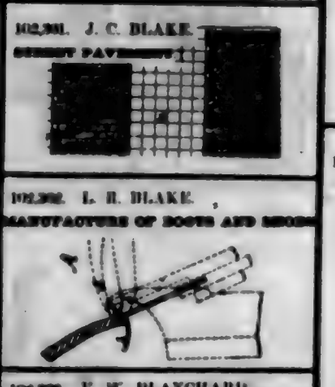








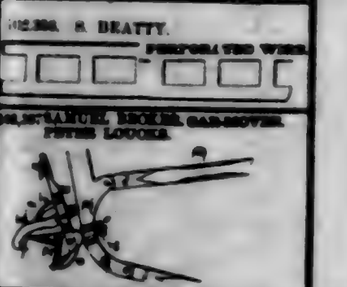


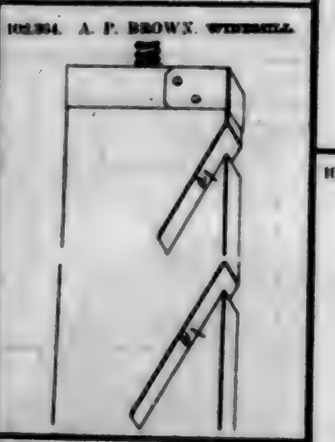


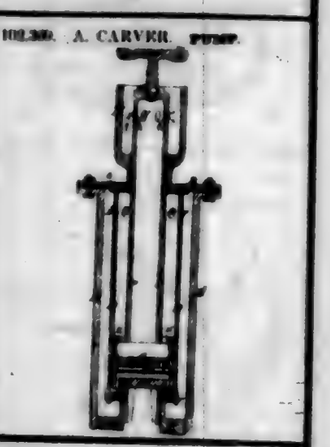


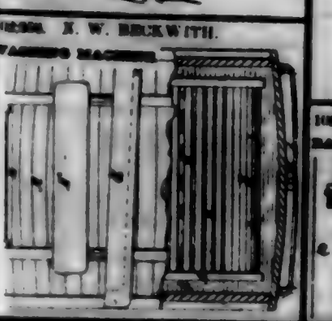


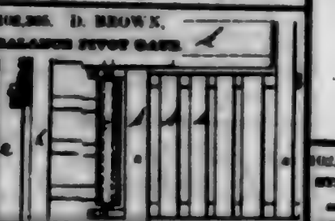


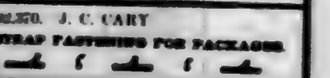








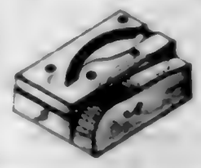




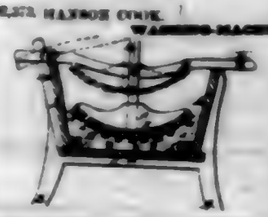
102,371, AUBY GATES COBB. PIPE-TONGS



102,372, HORACE CHUBBUCK. BOX FOR FORMING CHEESES



102,373 HARMON COOK. WASHING-MACHINE



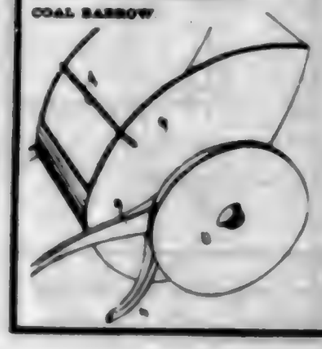
102,374 PATRICK H. COYLE. BOILER-TUBE CLEANER.



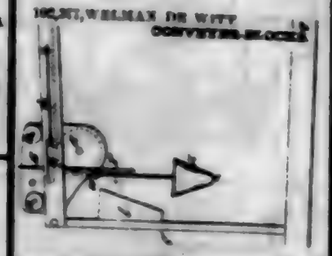
102,375 S. A. DAY. CARTRIDGE CASE.



102,376 P. A. DEDERICK. COAL BARROW

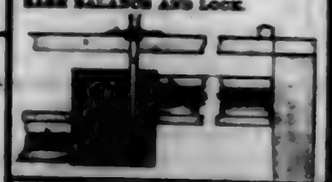


102,377, WELMAN DE WITT CONVEYING-BLOCKS

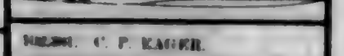


102,378 LANNING DOCKSTADER. COASTING AND BRONCHING SHOE

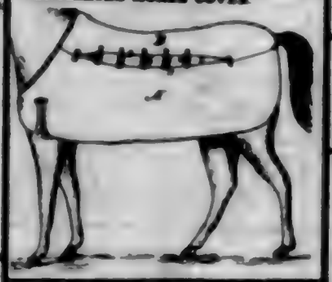
102,379 W. H. IDE. SASH BALANCE AND LOCK.



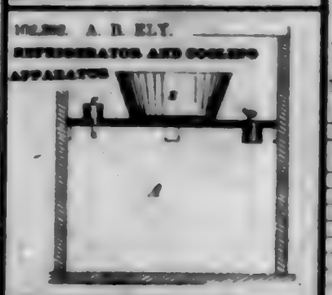
102,380 JAMES W. DONALDSON, DANIEL SHEETS. SPINDLES.



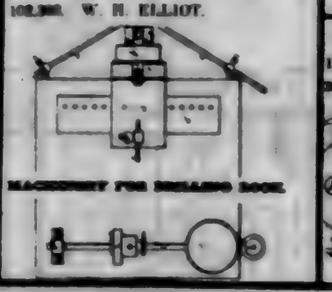
102,381 C. P. KAGER. VENTILATED HORSE COVER.



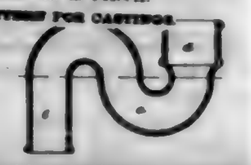
102,382 A. B. ELY. REFRIGERATOR AND COOLING APPARATUS



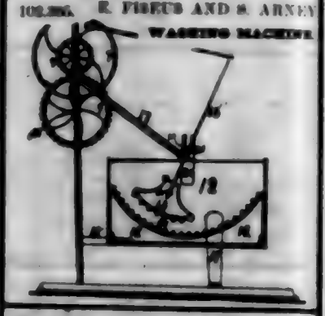
102,383 W. H. ELLIOT. MACHINERY FOR ROLLING BOOK.



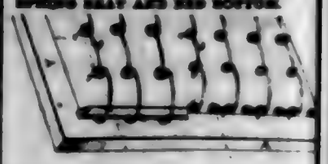
102,384 A. L. FITCH. PATTERN FOR CASTINGS.



102,385 E. FISHER AND S. ARNEY WASHING MACHINE.

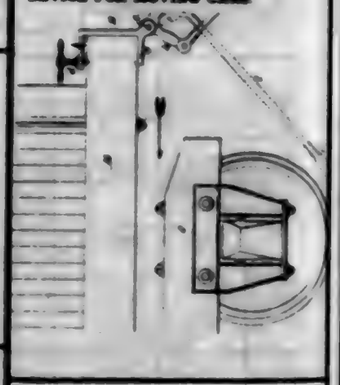


102,386 M. FLANIGAN. SPRING SEAT AND BED BOTTOM.

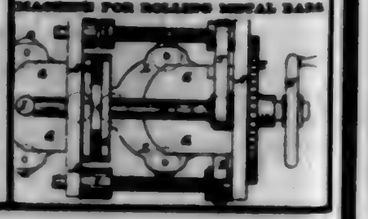


102,387 H. FLEISCHMANN. MANUFACTURE OF YEAST.

102,388 J. FOREMAN. DEVICE FOR MOVING CARS.



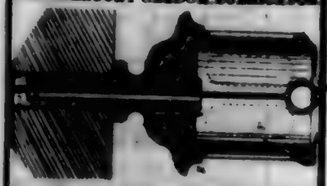
102,389 T. FOWLER. MACHINE FOR ROLLING METAL BARS



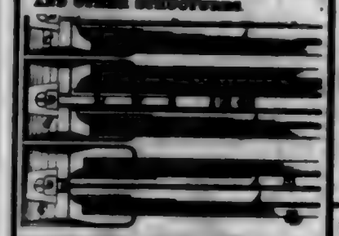
102,390, LOUIS FREY. GEORGE MACARDLE. PIPE AND BOLT-WRENCHES



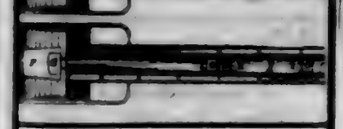
102,391 GREGORY GREDOM. LUBRICATOR



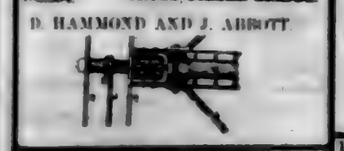
102,392 DAVID HAMMOND. JOB ABBOTT. TUBULAR ARCH GIRDER FOR BRIDGES AND OTHER STRUCTURES.



D. HAMMOND AND J. ABBOTT. 102,393 TUBULAR ARCH GIRDER.



102,394 TRUSS GIRDER BRIDGE. D. HAMMOND AND J. ABBOTT.



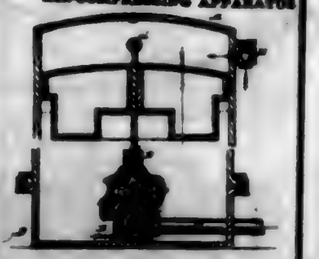
102,395 B. R. HAND. WASHING MACHINE.



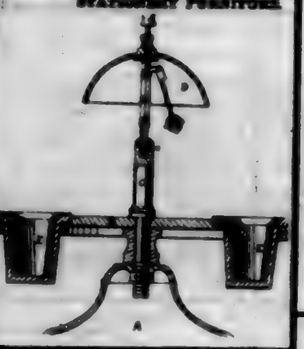
102,396 M. HART. MACHINE FOR SAWING SEGMENTS [illegible]



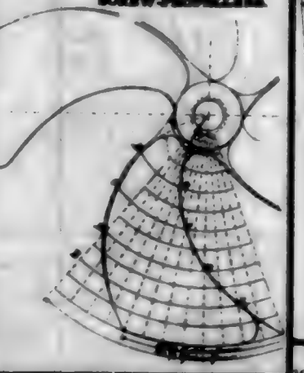
102,397, MICHAEL HEY. HYDRAULIC AIR-COMPRESSING APPARATUS



102,398, ADALINE D. HIRES. STATIONERY FURNITURE.



102,399, HERMANN HIRSCH. SCREW-PROPELLER.



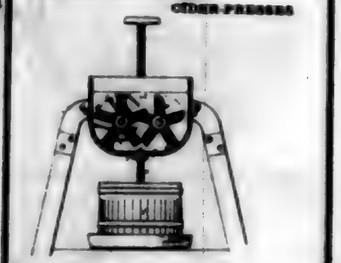
102,400, PATRICK J. HOGAN. DETACHABLE SAW-TEETH.



102,401, GEO. HOUGHTON, ASSIGNOR TO STEPHEN MOORE, DEFIANCE, AND HOMER ROGERS.



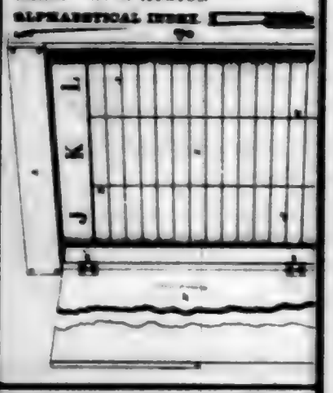
102,402, FRANCIS HOVEY. CIDER-PRESSES



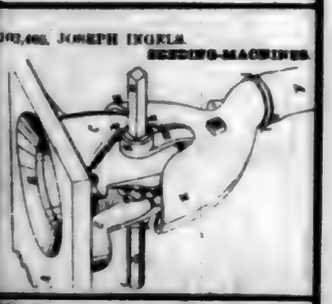
102,403, JAMES S. HUSTON. HORSE-COLLAR PAD



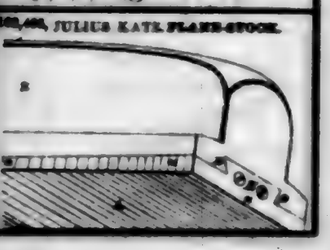
102,404, W. C. HUSTON. ALPHABETICAL INDEX.



102,405, JOSEPH INGELS. SEEDING-MACHINES.



102,406, JULIUS KATZ. PLANE-STOCK.



102,407. WILLIAM J. KEEP.
STOVE-PIPE DAMPER.



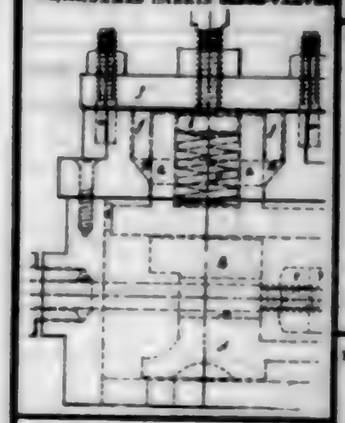
102,408. JOHN KILLEFER.
CARRIAGE-GEARING.
LITHOGRAPH.



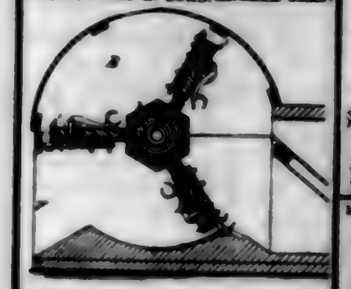
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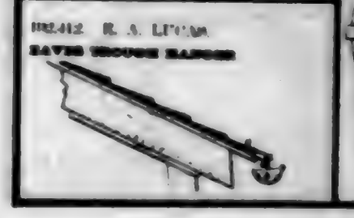
102,410. JAMES LARKIN. SLIDE-VALVE.



102,411. JAMES B. LORD. ANIMAL TRAP.



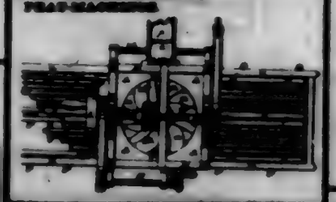
102,412. R. A. LITTLE.
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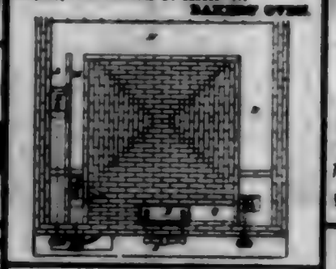
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102,414. JAMES B. LYON.
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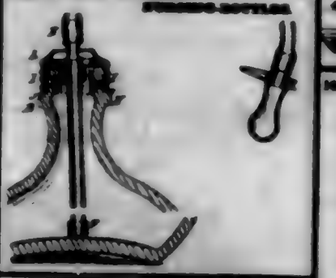
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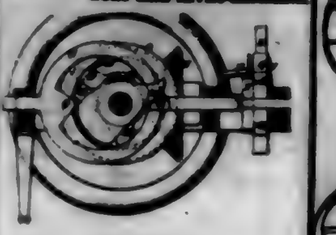
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102,417. JOHN L. MASON.
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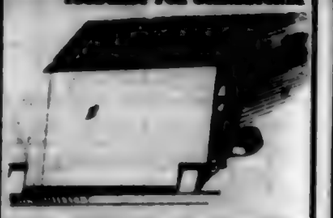
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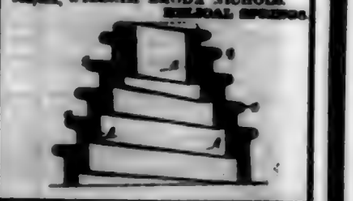
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102,420. WILLIAM HORSTELLER.
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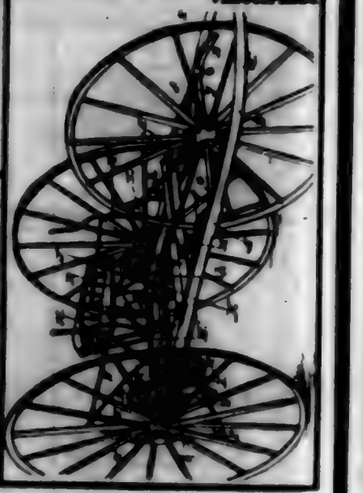
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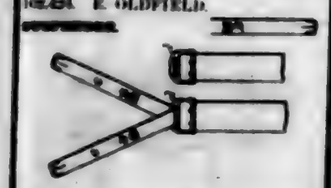
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102,423. STAS ZBILOSKUTY.
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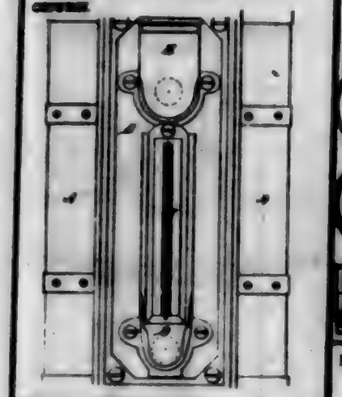


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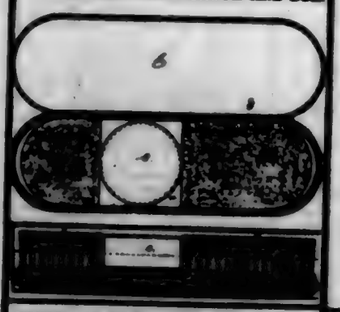




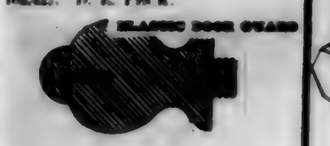
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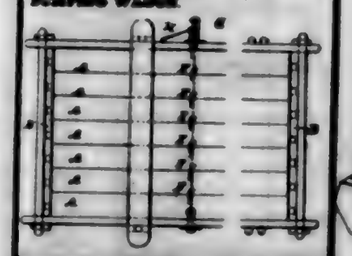
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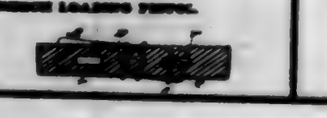
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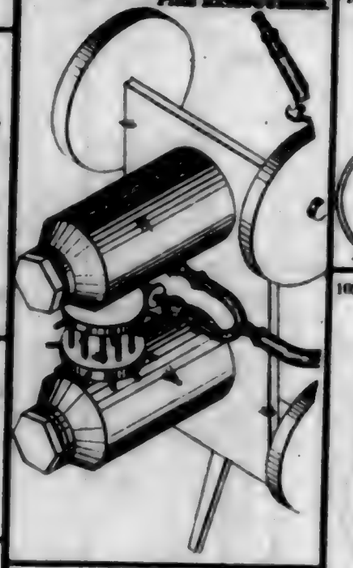
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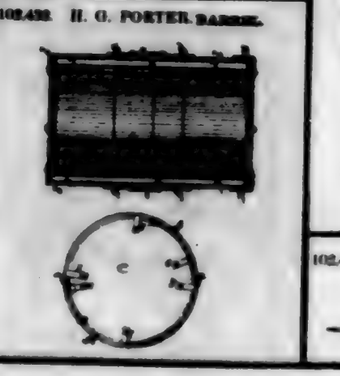
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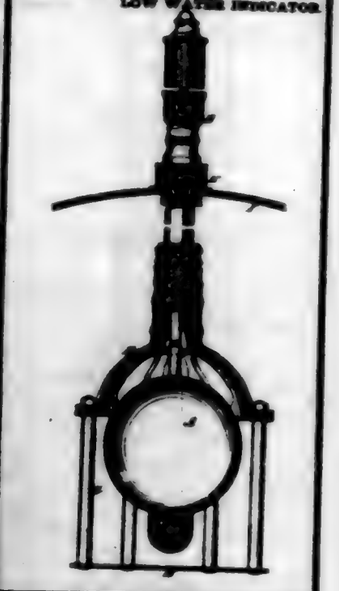
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102,432. H. G. PORTER. BARREL.



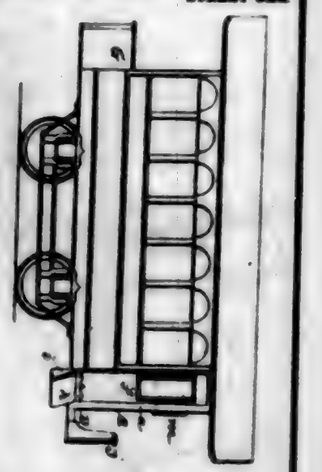
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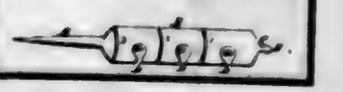
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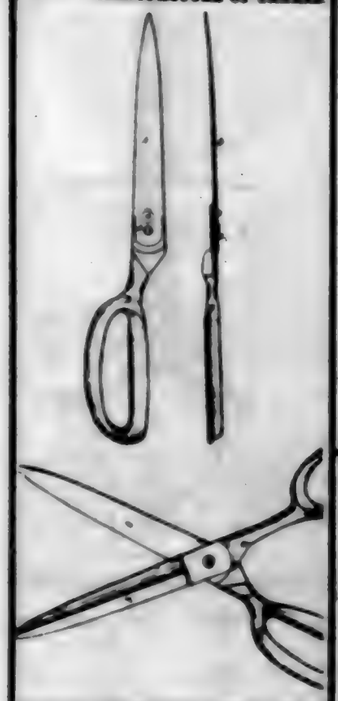
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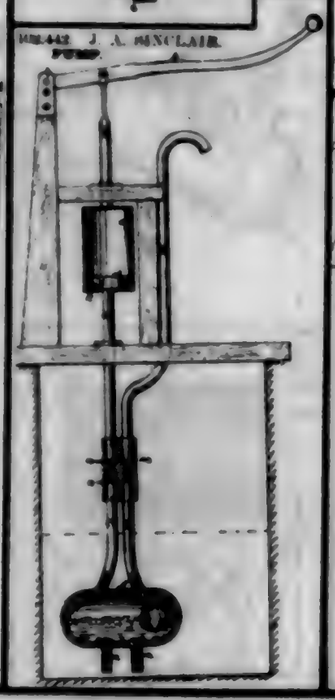
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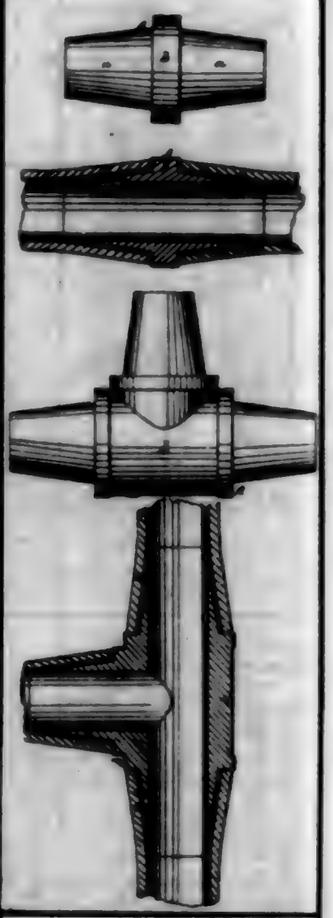
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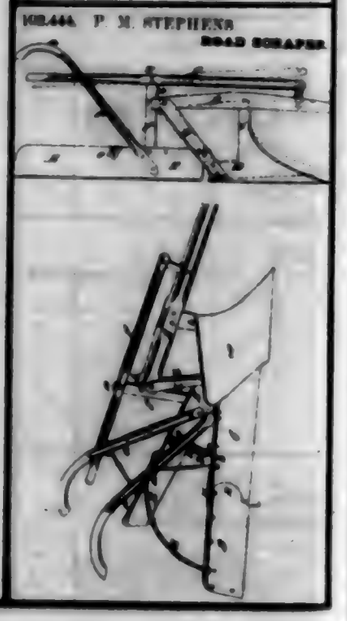
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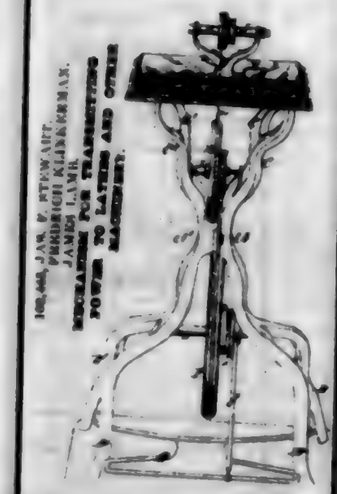
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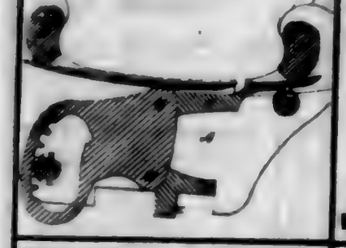
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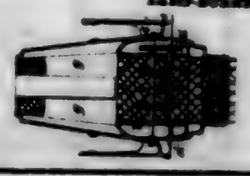
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102,448. THOMAS SULLIVAN.
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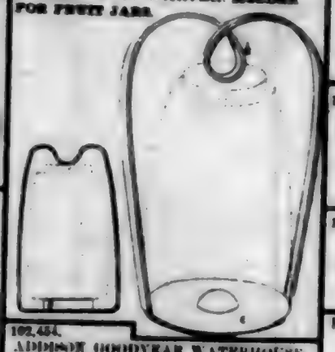


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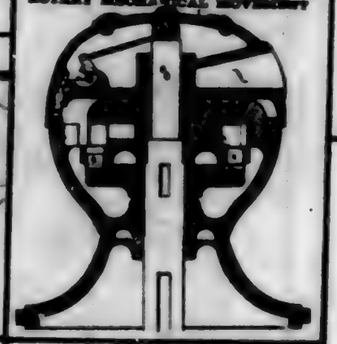


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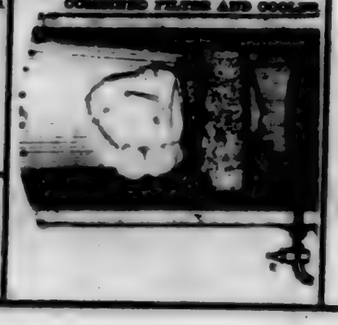
102,451. W. P. WALTER. HOLDER
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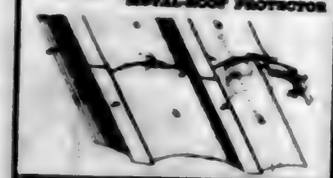
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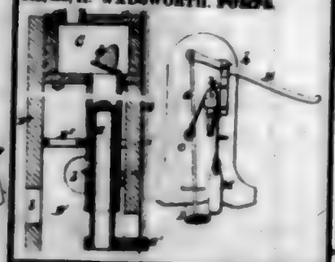
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102,434. J. D. WILLOUGHBY.
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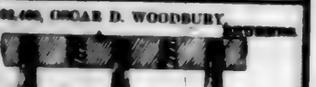
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O. L. ELIASON.
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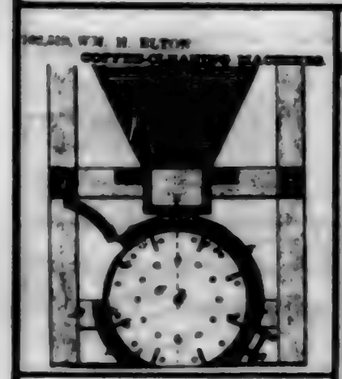
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A. W. ELLIOTT.

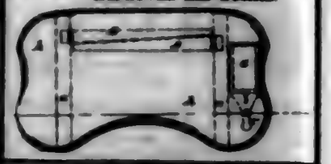
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WM. H. ELTON
COFFEE-CLEANING MACHINE



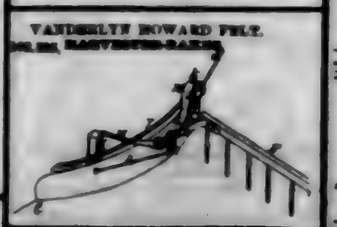
JOHN FASIG.
CORDING HAT AND FRONTING-KNIFE



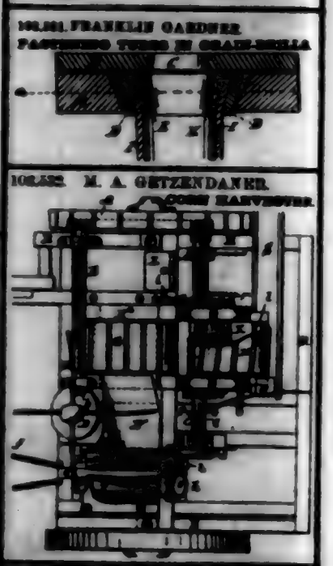
WILLIAM P. GAMMEL.
IMPROVED LAP-BOARD



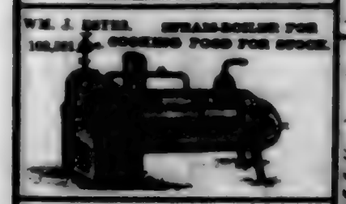
JAMES B. EMERSON.
SAWS



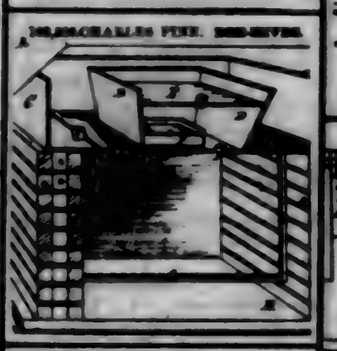
VANDERLYN HOWARD FELT.



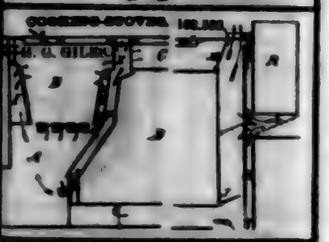
M. A. GETZENDANER.
CORN HARVESTER.



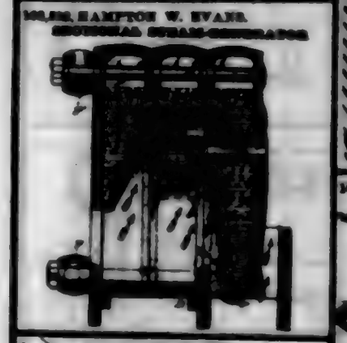
WM. J. ESTES.
STEAM-BOILER FOR COOKING FOOD FOR STOCK.



CHARLES FUNK.



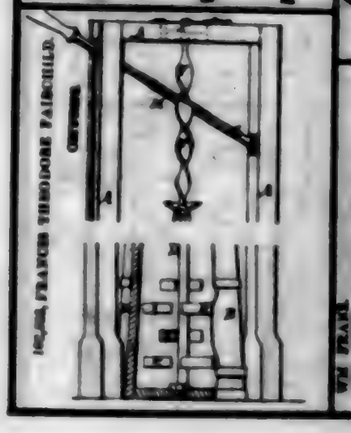
COOKING-STOVES.



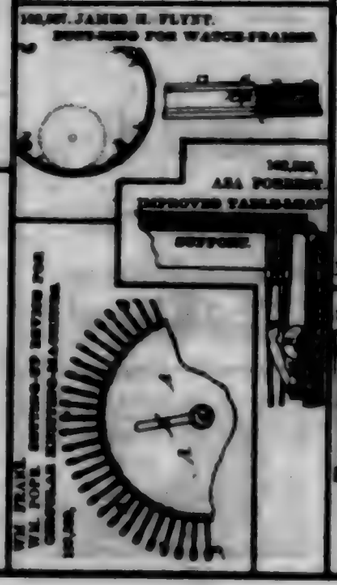
HAMPTON W. EVANS.
HORIZONTAL STEAM-GENERATOR.



FRANKLIN GARDNER.
FASTENING TUBES IN GRAIN-DRILLS

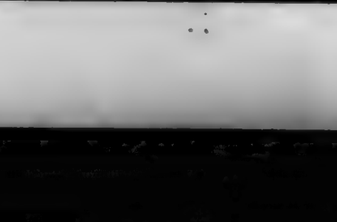


FRANCIS THEODORE FAIRCHILD.

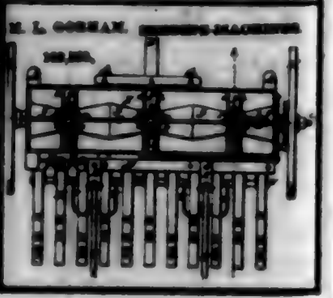


JAMES H. FLYNT.
RIVET-HEAD FOR WATCH-FRAMES.

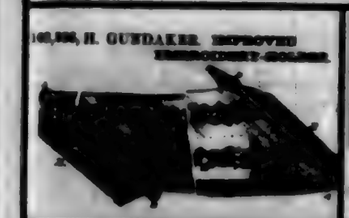
JANE S. GILMAN.
WOOL-HOLDERS.



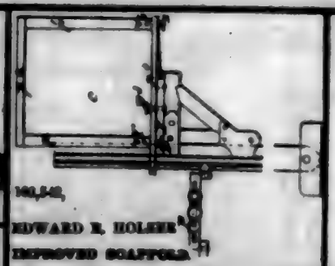
ARA FORBUSH.
IMPROVED TABLE-REST FOR SAWING.



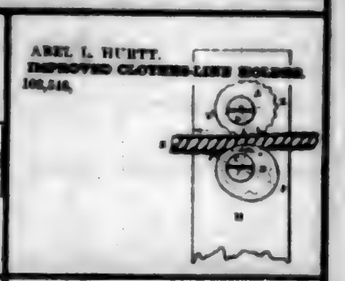
M. L. GORHAM.
SPINNING-MACHINES.



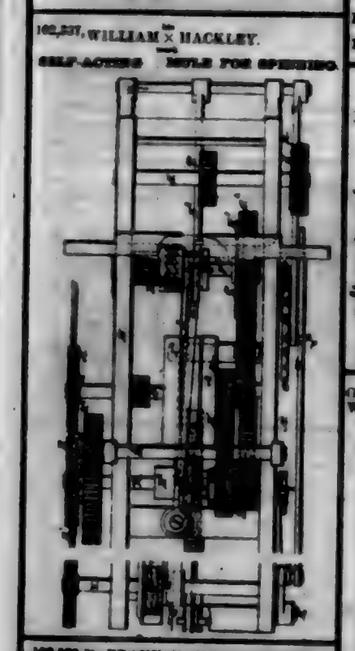
H. GUNDAKER.
IMPROVED SHOULDER-BRACE.



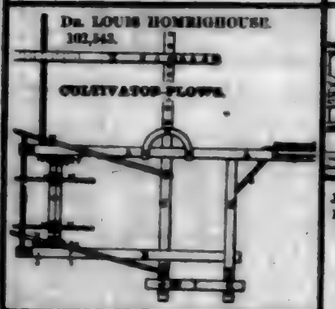
EDWARD B. HOLDEN.
IMPROVED SCAFFOLD.



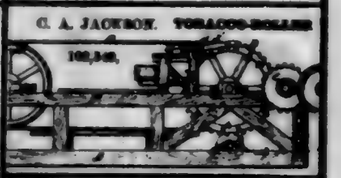
ABEL L. HUFFT.
IMPROVED CLOTHES-LINE HOLDER.



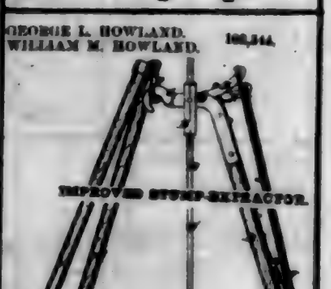
WILLIAM X HACKLEY.
SELF-ACTING MULE FOR SPINNING.



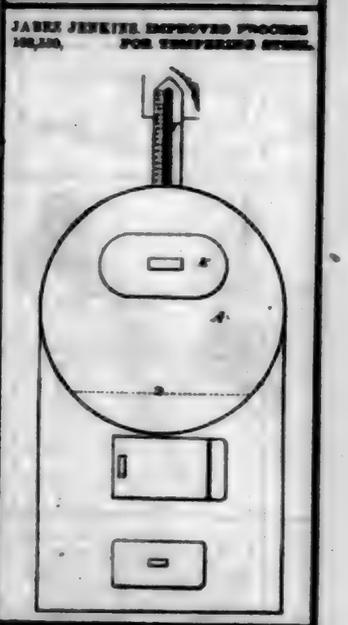
DR. LOUIS HOMRIGHOUSE.
CULTIVATOR-PLOWS.



C. A. JACKSON.
TOBACCO-ROLLER.



GEORGE L. HOWLAND.
WILLIAM M. HOWLAND.
IMPROVED STUMP-EXTRACTOR.



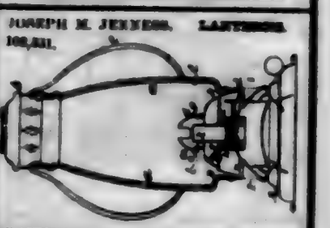
JAMES JENKINS.
IMPROVED PROCESS FOR TEMPERING STEEL.



D. FRANK HALE.



A. HUBBELL, Jr.
WASH-BOARD.



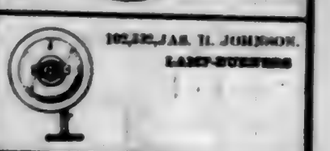
JOSEPH M. JENNER.
LANTERNS.



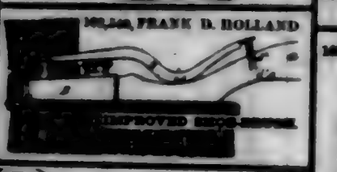
R. M. HERMANCE.
STOVE-SIDE DAMPER.



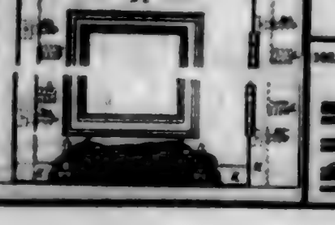
OMAR WAGER HULL.
MANUFACTURE OF SOAP.



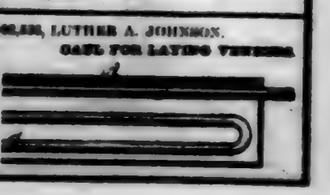
JAS. H. JOHNSON.
LAMP-BURNERS.



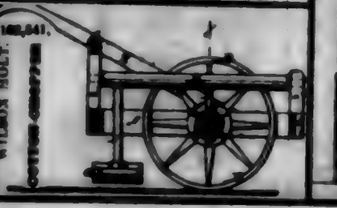
FRANK D. HOLLAND.
IMPROVED STOVE-DAMPER.



JAMES H. HULL.
IMPROVED WEATHER-STRIP.



LUTHER A. JOHNSON.
CASE FOR LAYING VENEERS.

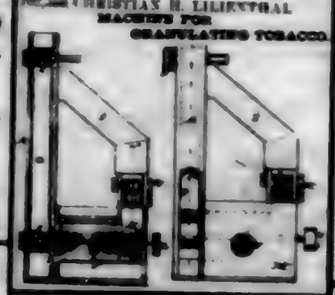


WILSON HOLT.
CUTTER-GRINDER.

102,556, WILLIAM JONES. DRY-DOCKS.



102,557, CHRISTIAN H. LILIENTHAL. MACHINE FOR GRANULATING TOBACCO.



102,558, PATRICK MAGUIRE. IMPROVED COMPOSITION FOR FINISHING WAX-LEATHER.

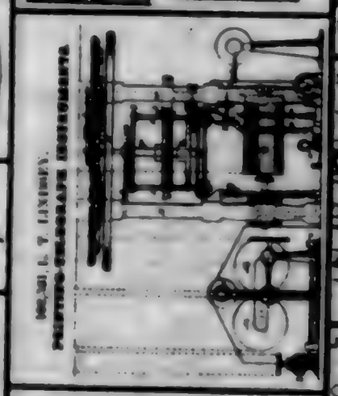
102,559, ALEXANDRE MAILER. MANUFACTURE OF SOAP.



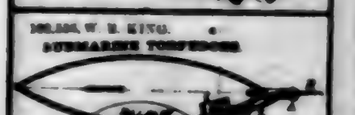
102,560, E. W. KIMBALL. SOLDERING FIRE-POT.



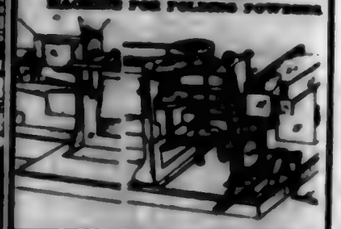
102,561, L. Y. LINDSEY. PRINTING-TELEGRAPH INSTRUMENTS.



102,562, W. H. KITO. SUBMARINE TORPEDOES.



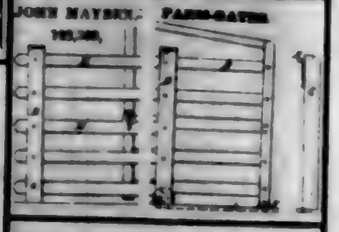
102,563, JOSEPH W. MAXWELL. MACHINE FOR FOLDING POWDERS.



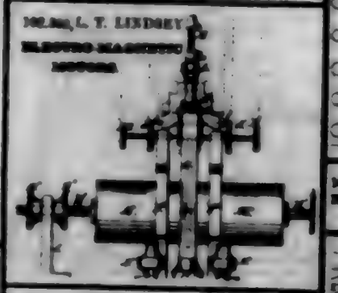
102,564, A. E. BARRIE. PATENT.



102,565, JOHN MAYBEE. PARK-GATE.

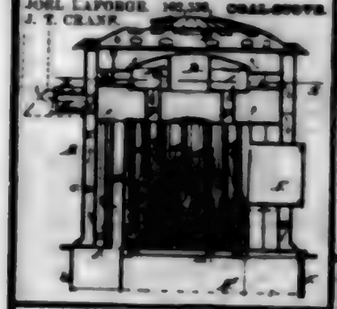


102,566, L. T. LINDSEY. PRINTING-TELEGRAPH INSTRUMENTS.

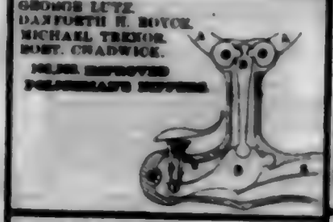


102,567, JOHN McGILL. IMPROVED COMPOUND FOR DRESSING TEXTILE FABRICS.

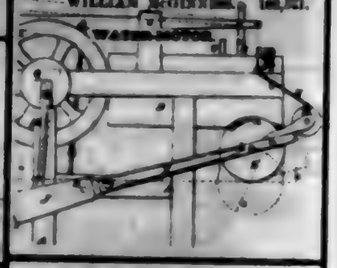
102,568, JOEL LAPORTE. COAL-STOVE. J. T. CRANE.



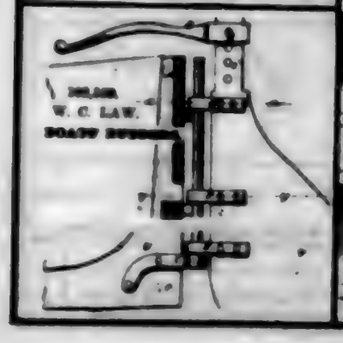
102,569, GEORGE LUTZ. DANFORTH H. BOYCE. MICHAEL TREMOR. ROBT. CRADWICK. IMPROVED PEARMAKE MOVING.



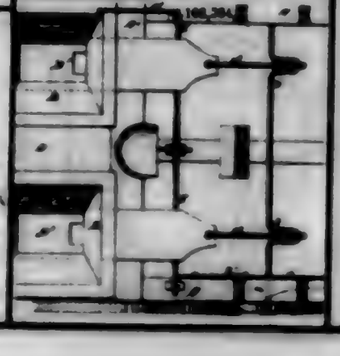
102,570, WILLIAM McGINNIS. WATER-MOTOR.



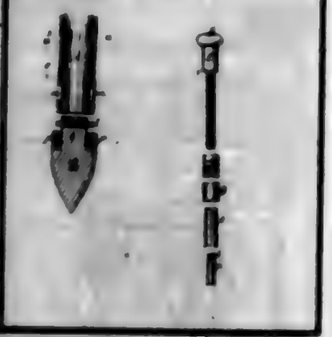
102,571, W. C. LAW. BOATS DAVIT.



102,572, JAMES W. MAGUIRE. CROSS-PLAPTER.



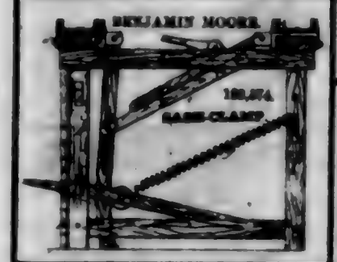
102,573, JAMES McMILLAN. FURD-WELLS.



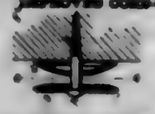
102,572, HENRY MILLER. KIDS-HOOKS.



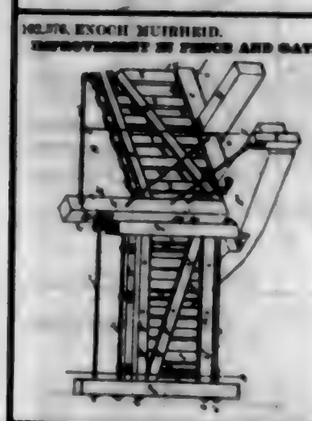
102,573, BENJAMIN MOORE. 102,574. SASH-CLAMP.



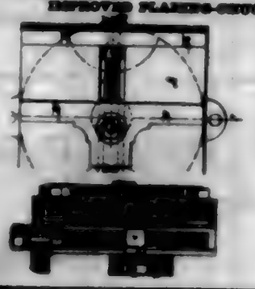
102,573, CHARLES C. MOORE. IMPROVED CORD-CATCH.



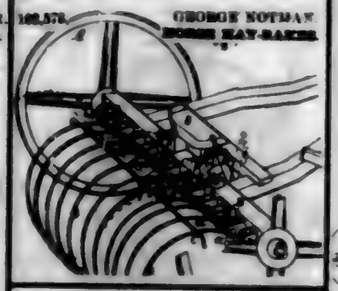
102,576, ENOCH MUIRHEID. IMPROVEMENT IN FENCE AND GATE.



102,577, AUGUSTUS NEWELL. WILLIAM PIM. IMPROVED PLANING-STOCK.



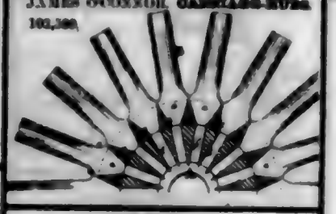
102,578, GEORGE NOTMAN. HORSE HAY-RAKE.



102,579, JAMES O. BRIEN. BRACKETS FOR RIGGING.



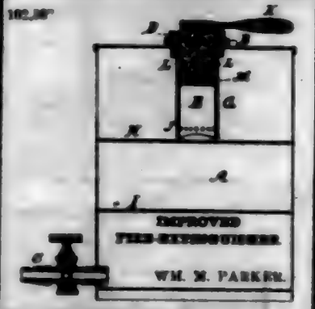
JAMES GODDOR. CARRIAGE-SUSPENSION. 102,580.



102,581, J. A. T. OVEREND. BOILER-FURNACES.



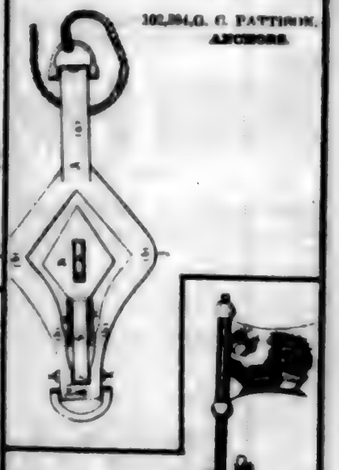
102,582, O. PEARL. IMPROVED FIRE-EXTINGUISHER. WM. M. PARKER.



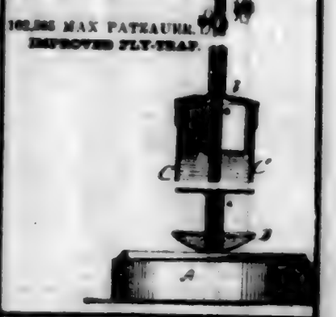
102,583, G. G. PATTISON. ANCHORS.



102,584, G. G. PATTISON. ANCHORS.



102,585, MAX PATEAUME. IMPROVED FLY-TRAP.



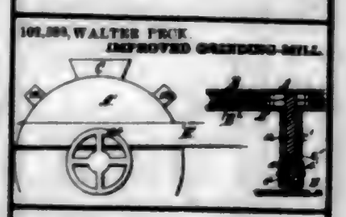
102,586, RUFUS H. PEABODY. SEWING-MACHINE.



102,587, O. PEARL. BOBBIN FOR SPINNING &c.



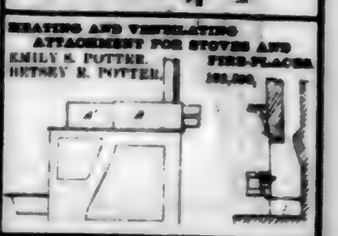
102,588, WALTER PECK. IMPROVED GRINDING-MILL.



FRANK M. PICKERILL. IMPROVED 102,589, AUTOMATIC WAGON-BRAKE.



HEATING AND VENTILATING ATTACHMENT FOR STOVES AND FIRE-PLACES. EMILY S. POTTER. HETSEY R. POTTER. 102,590.



102,598, T. RANDALL. APPARATUS FOR [illegible]

102,599, JOHN BUTLER. IMPROVED WATER-CLOSET.

102,600, ISAAC S. SHERTS. IMPROVED PLOUGH.

102,601, EDWIN S. SHEPARD. IMPROVED RAILWAY RAIL.

102,602, HENRY HITCHLER. OPEN-BURNER FOR KEROSENE.

102,603, GIDEON HYMEL. CORN-PLANTER.

102,604, EDWIN S. SHEPARD. IMPROVED COMPOUND RAILWAY-RAIL.

102,605, JOHN W. RICKER. CORN-SHELLER.

102,606, SILVANDER C. SHEPARD. IMPROVED RAIL-CHAIR.

102,607, JUDITH P. SHARP. BARLEY OR OAT-PUNNER.

102,608, S. L. SIDNEY, M. D. IMPROVED RAIL-HOLDER.

102,609, JACOB W. SLAIGHT, JACOB W. ANDROVATT. GRAND FOR [illegible]

102,610, CHARLES ROBINSON. RAIL FIST GUN.

102,611, WILLIAM D. STROUD. HAND CORN-PLANTER.

102,612, JOSEPH SURRUS, NAT-BLOCKING W. M. REMBERS. MACHINE.

102,613, ELI SWEET. MOLD FOR ARTIFICIAL TEETH.

102,614, CHARLES SWAIN. OVEN.

102,615, THOS. ST. JOHN. ROCK-[illegible] APPARATUS.

102,616, GEORGE D. SWEIGERT. BAG-HOLDER.

102,617, OWEN W. TAFT. CARVING-KNIVES.

102,618, LEVI R. TARBOX. CORN-PLANTER.

102,619, HOMER TAYLOR. APPARATUS FOR THE COMBUSTION OF PETROLEUM AND OTHER HYDROCARBON LIQUIDS.

102,620, GEO. THOMPSON. COMBINATION PARLOCHES.

102,621, H. F. THOMSON. WASHING-MACHINE.

102,622, ADDISON SMITH. SAWING-MACHINE.

102,623, J. P. SMITH. CORRUGATED CORN-SHELLER AND VEGETABLE-SLICER.

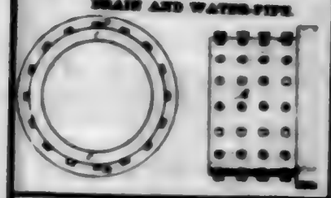
102,624, JOHN CORBETT SMITH. CULINARY VESSEL.

102,625, GEORGE A. SPRINGER. IMPROVED ROLL FOR MAKING RAILS FOR STREET RAILWAYS.

102,622. THEODORE B. TIMBY
RAKE-FASTENING



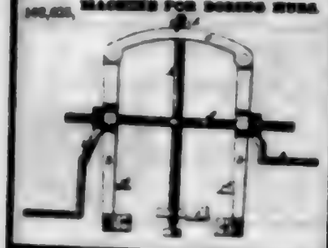
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JNO. P. CULVER.
DRAIN AND WATER-PIPE.



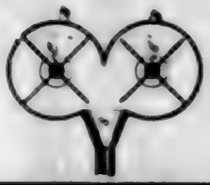
102,624. WILLIAM H. TRIMBLE.
FAUCETS.



ABRAHAM TROUP.
MACHINES FOR BOXING HUBS.



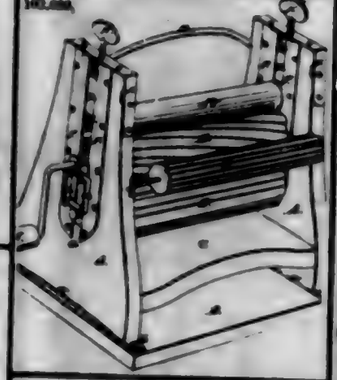
102,626. JOHN GEORGE PATRULIX.
BLOWERS FOR BLACKSMITHS' FORGES.



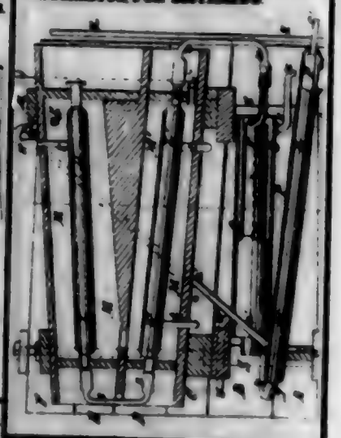
102,627. SILAS VAN PATTEN.
BRASSING TIP FOR LEGS OF CHAIRS, &c.



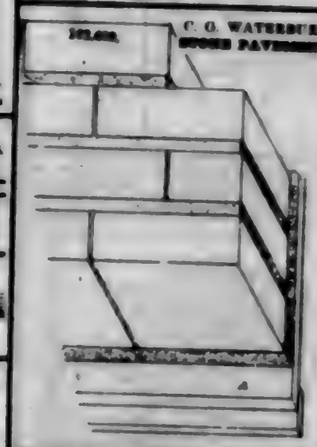
JOSEPH B. WAKEMAN.
ALFONZO R. FIELD.
WASHING AND WRINGING-MACHINE.
102,628.



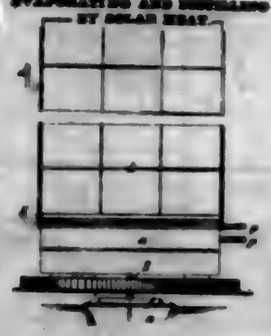
102,632. JOHN M. WEYAND.
APPARATUS FOR DISTILLING.



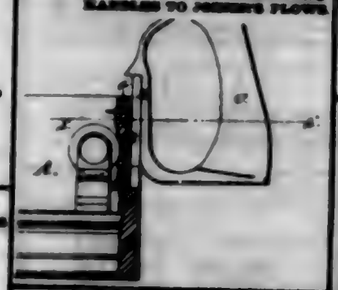
102,633. C. G. WATERBURY.
STONE PAVEMENT.



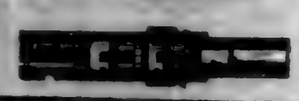
102,634. NORMAN W. WHEELER.
W. W. EVANS.
EVAPORATING AND DISTILLING BY SOLAR HEAT.



102,635. C. H. WRIGHT. ATTACHING HARNESS TO JOINTED PLOWS.



102,636. J. T. WHIPPLE. PUMP.



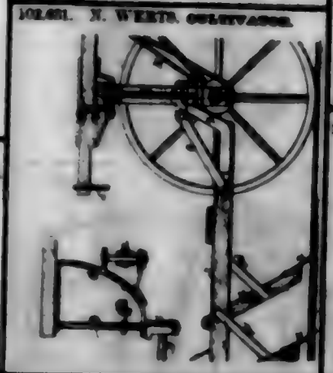
102,637. JOHN W. WHITEMAN.
SAFETY-SOCKET FOR WHIPS.
THE STELLAR BILLIARD-CUES &c.



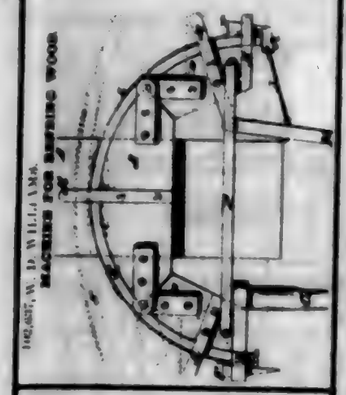
102,638. HANUM C. WILDER.
WATER-COCK FILTER.



102,651. N. WERTS. CULTIVATOR.



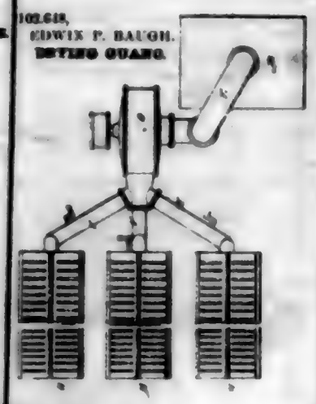
102,641. W. D. WILLIAMS.
MACHINE FOR BENDING WOOD.



102,642. LOUIS YENNE.
ADJUSTABLE AWNING-FRAME.



102,643. EDWIN P. BAUGH.
DRYING GUANO.



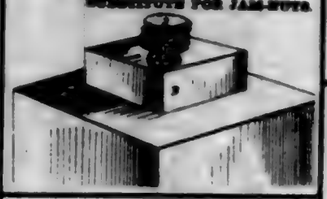
102,639. C. C. WILSON.
FORGING FOR HOOP-SKIRTS.



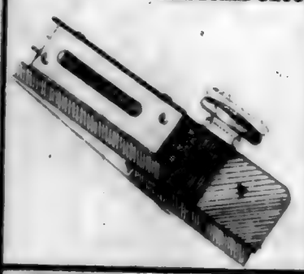
102,640. ALANSON YOUNG.
EVAPORATING APPARATUS.



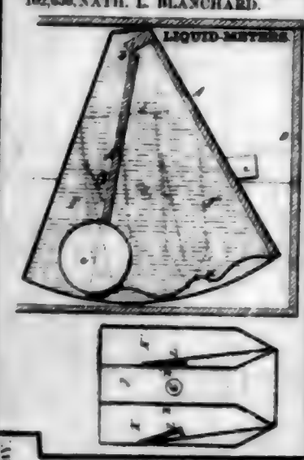
102,644. THEODORE B. YOUNG.
SUBSTITUTE FOR JAM-NUTS.



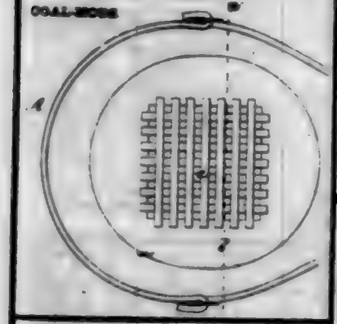
102,649. J. S. BIDDLEMAN.
CLAPBOARD-GAUGE.



102,650. NATH. L. BLANCHARD.
LIQUID-METERS.



102,639. WILLIAM WILSON.
COAL-HODS.



CHS. ARLEX.
CHS. GAUTSCHI. SCREW-PROPELLERS.
102,645.



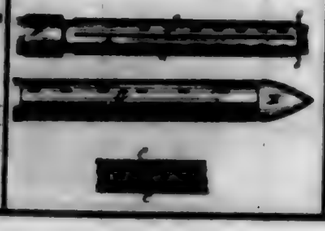
102,646. WILLIAM W. ARMISTOS.
SHOVE-BLACKING BOX.



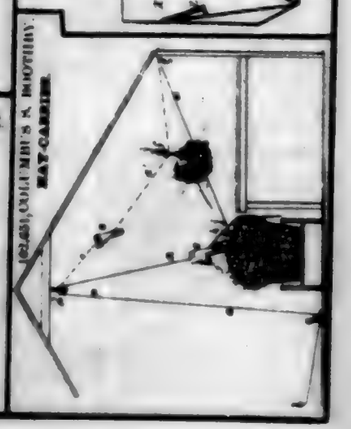
102,640. WM. R. WIXO.
SCRAP-FASTENER.



102,647. I. AYRES AND D. C. PAYNE.
WELL TUBE.



102,651. JOHN H. BOOTHBY.
HAY-CARRIER.



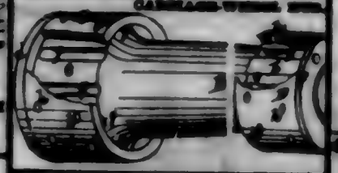
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SEWING-MACHINE.



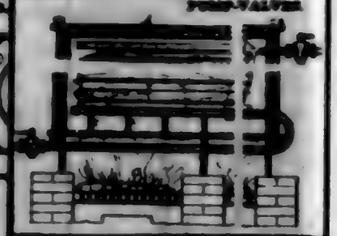
102,663, ALBERT E. C. BEELY. FLOW-GLOBE.



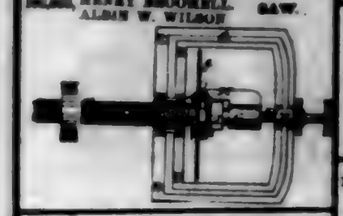
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102,665, JOS. W. DOUGLAS. PUMP-VALVE.



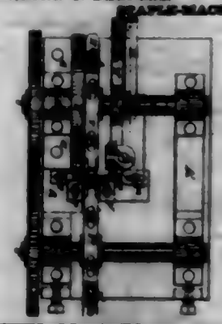
102,666, HENRY BROOKELL, ALBIN W. WILSON. SAW.



102,667, WM. DARNELL. SASH-BALANCE.



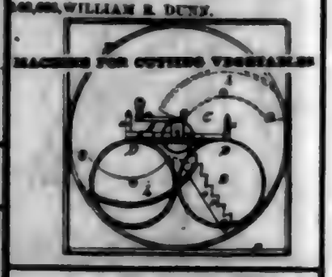
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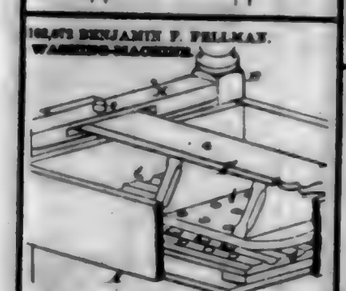
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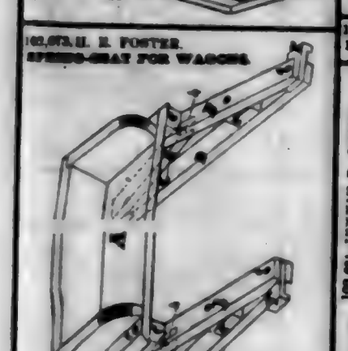
102,670, WILLIAM S. DUNN. MACHINE FOR CUTTING VEGETABLES.



102,671, FRANCIS FARQUHAR. AGRICULTURAL BOILER.



102,672, BENJAMIN F. FELLMAN. WASHING-MACHINE.



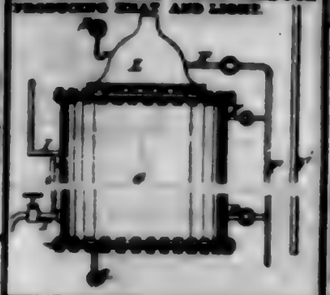
102,673, H. B. FOSTER. SPRING-SEAT FOR WAGONS.



102,674, GEO. C. CAKFIELD. WATER-ELEVATORS.



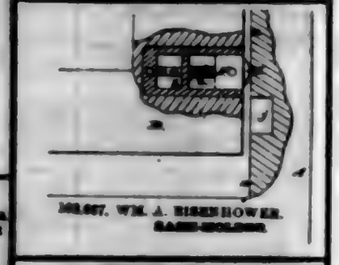
102,675, T. S. DICKERSON AND E. M. WHIPPLE. PROCESS AND APPARATUS FOR USING LIQUID FUEL FOR PRODUCING HEAT AND LIGHT.



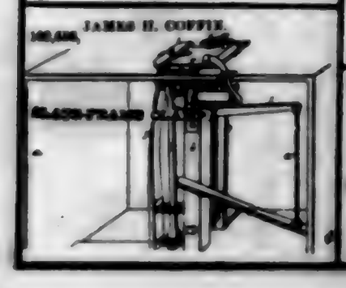
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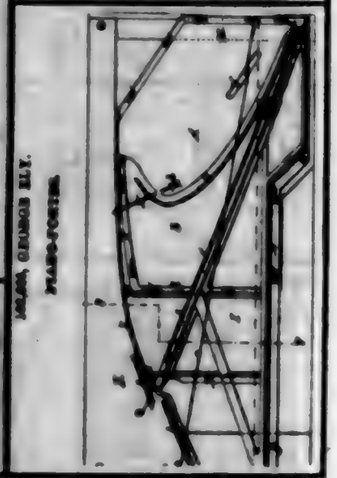
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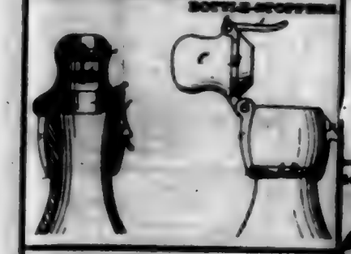
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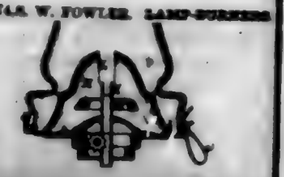
102,679, JOHN GRIFFITHS, JOHN EARLY, GEORGE ELY. PLOW-POINTS.



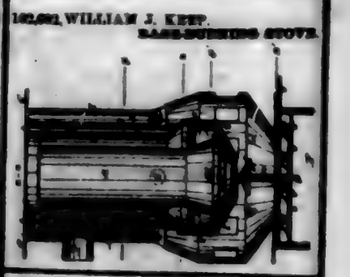
102,680, WILLIAM ELY. BOTTLE-STOPPERS.



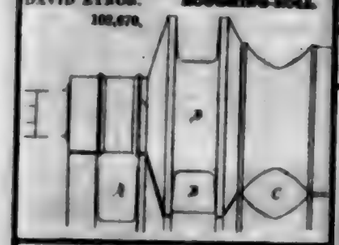
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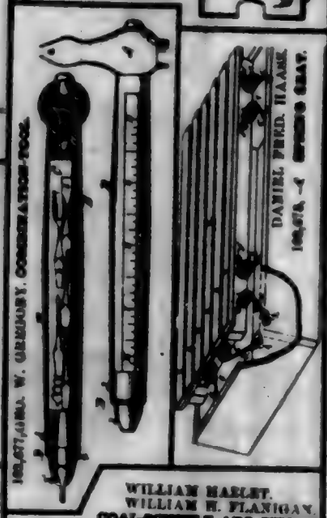
102,682, WILLIAM J. KEEP. BASE-BURNING STOVE.



102,683, DAVID ETNOR. ROOFING-BOAR.



102,684, GEORGE GEE, Jr. MASON-GAGE.

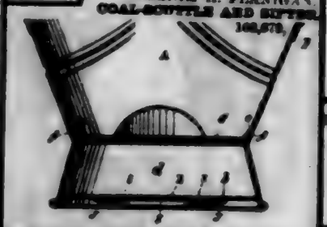


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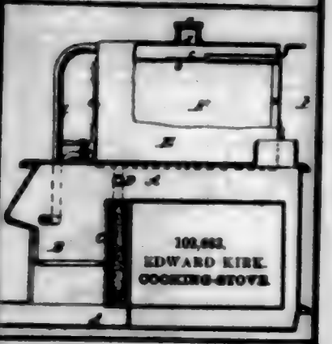
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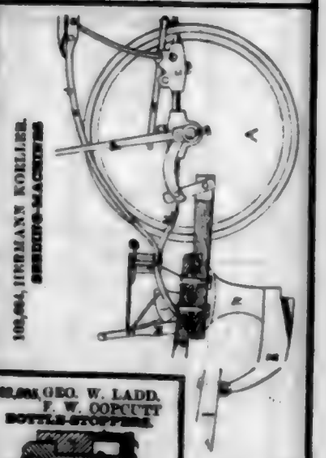
102,687, WILLIAM HASLET, WILLIAM W. FLANIGAN. COAL-SCUTTLE AND SIFTER.



102,688, EDWARD KIRK. COOKING-STOVE.



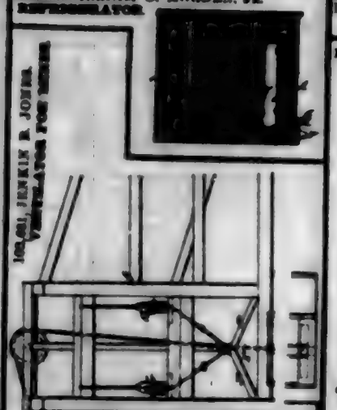
102,689, HERMANN KOELLER. BRICK-MACHINE.



102,690, GEO. W. LADD, F. W. COPCUTT. BOTTLE-STOPPERS.



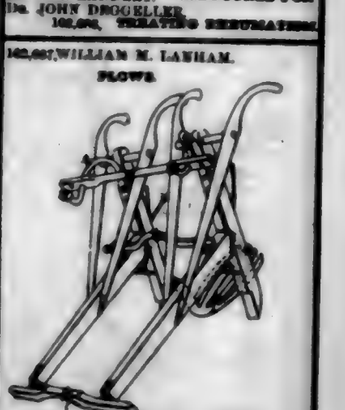
102,691, JENKIN R. JONES. VENTILATOR FOR TOMBS.



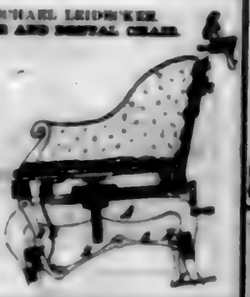
102,692, WILLIAM G. HOLDEN, Jr. REFRIGERATOR.

Dr. WM. LANDERT. COMPOUNDS FOR
Dr. JOHN DROGELLER. TREATING RHEUMATISM.
102,693,

102,694, WILLIAM M. LAWHAM. PLOWS.

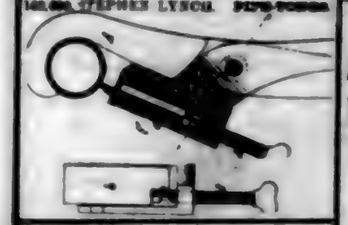


102,698. MICHAEL LEIDWEKER. BARBER AND DENTAL CHAIR.



102,699. MARIO LUGO. MANUFACTURE OF FERTILIZERS AND OIL FROM FISH.

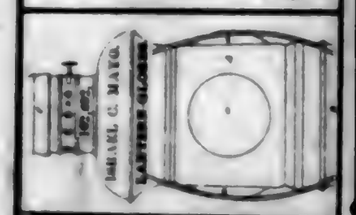
102,700. STEPHEN LYNCH. PUMP-WORKS.



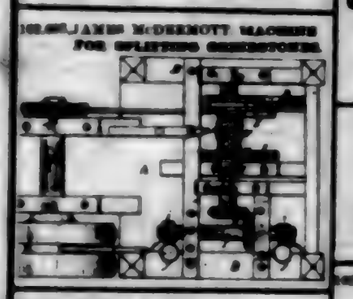
102,701. JAMES W. LYON. GRAIN-HOLDERS FOR LAMPS.



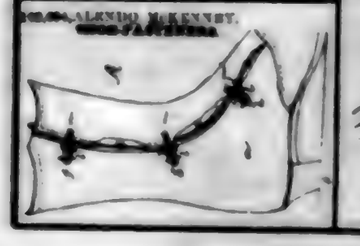
102,702. MICHAEL C. MAYO. WATER-WHEEL.



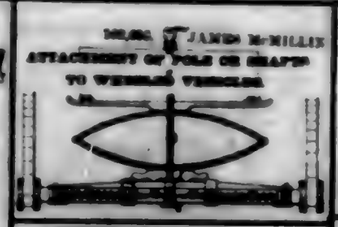
102,703. JAMES McDERMOTT. MACHINE FOR SPLITTING SHINGLE-BOLTS.



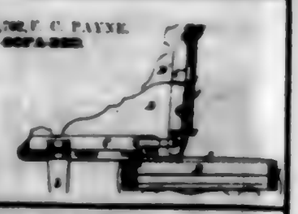
102,704. ALEXIS McKENNEY. SHOE-PLASTERER.



102,705. JAMES McMILLIN. ATTACHMENT OF POLE OR SHAFTS TO WHEELED VEHICLES.



102,706. F. C. PAYNE. COUPLING.



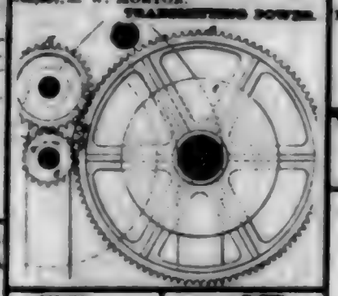
102,707. DAVID A. McCAIN. SEAL-LOCKS.



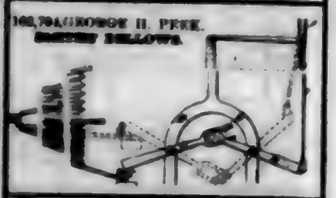
102,708. HART F. PEASE. PISTON CONNECTIONS.



102,709. A. W. MORTON. TRANSMITTING POWER.



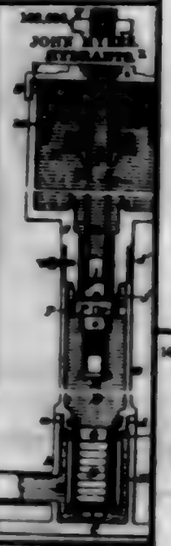
102,710. GEORGE H. PEEK. BOILER BELLOWS.



102,711. SIMON REFF. WELL-TUBES.



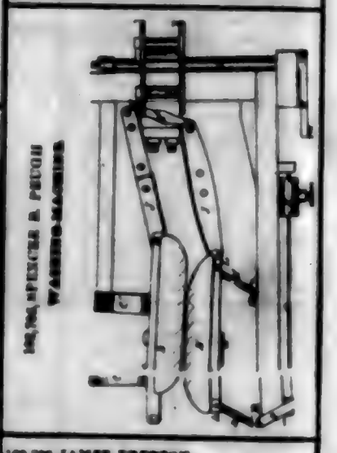
102,712. JOHN KYLE. STEAM-TRAP.



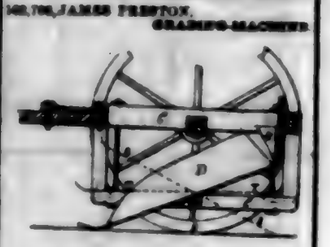
102,713. O. M. RICKARDS. CANE-MARKER.



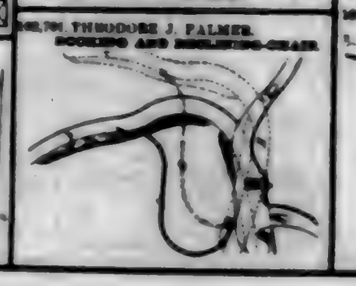
102,714. SPECTACLE & PENCIL WASHER-MACHINE.



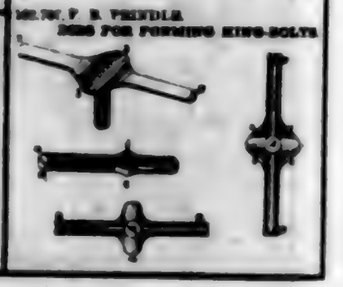
102,715. JAMES PRESTON. GRADING-MACHINE.



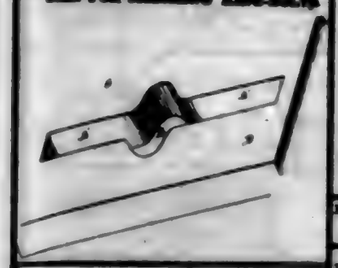
102,716. THEODORE J. PALMER. SCORING AND SPLITTING-CHAIR.



102,717. F. B. PRENDLE. DIES FOR FORMING KING-BOLTS.



102,700. FRANKLIN B. PRENDLE. DIES FOR FORMING KING-BOLTS.



102,713. W. T. C. BUFFALO. WASHING-MACHINE.

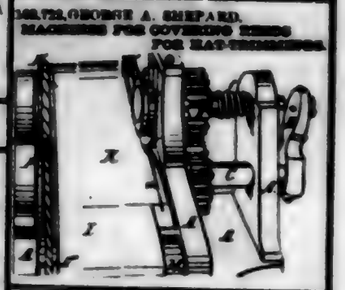


102,721. GEORGE V. SHEFFIELD. SHAPE-PIECE FOR BOOTS AND SHOES.

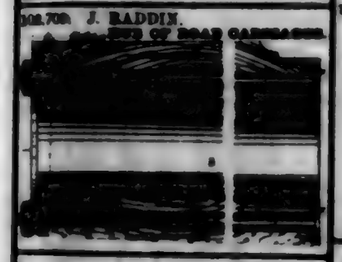


102,714. OLIVER SCHAFFER. COMPOUND FOR REFINING OILS, WAX, &c.

102,722. GEORGE A. SHEPARD. MACHINES FOR COVERING RIMS FOR HAT-FOUNDATIONS.



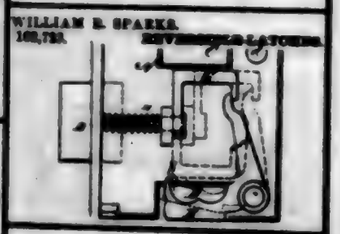
102,709. J. RADDIN. [illegible] OF ROAD CARRIAGES.



102,715. JOHN J. SCHILLINGER. GAUGE FOR LAGER BEER.



102,723. WILLIAM B. SPARKS. [illegible]

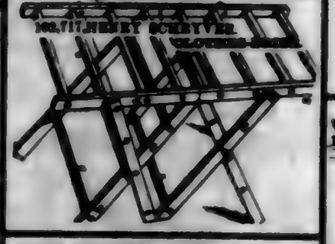


102,710. GEORGE BENFORD. SEWING-MACHINE.

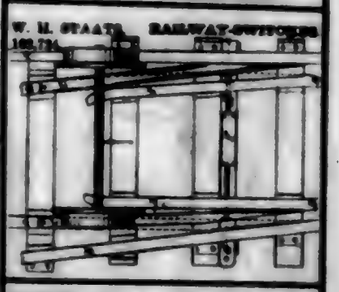


102,711. HENRY SEYFOLDS. MACHINE FOR MAKING SHANK-LASTS.

102,717. HENRY SCHUYLER. [illegible]



102,724. W. H. STAATS. RAILWAY-SWITCHING.



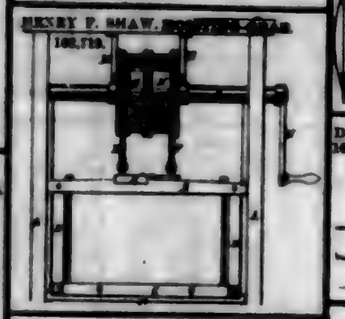
102,718. ANDREW B. SEARLES. SIEVE AND CUTTER-GRADER.



102,725. FRANCIS A. STEVENS. APPARATUS FOR PRESERVING FOOD.



102,719. HENRY P. SHAW. [illegible]



102,726. DAVID L. STILES. HEATING-STOVE.



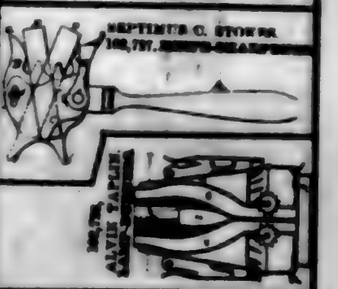
102,715. JACOB RIEGLE. WASH-BOILER APPARATUS.



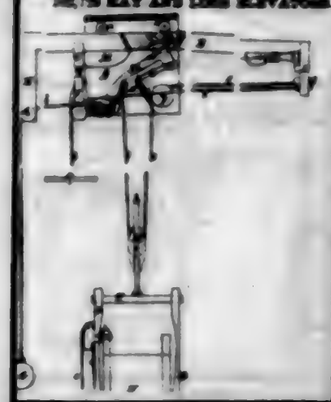
102,720. GEORGE V. SHEFFIELD. SHAPE-PIECE FOR BOOTS AND SHOES.



102,727. SEPTIMUS C. STOWE. [illegible]



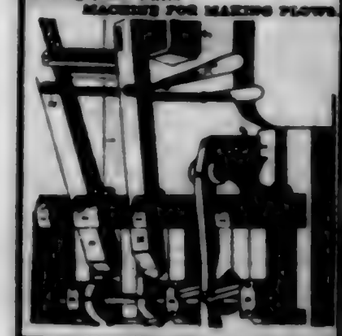
ABRAHAM THOMAS.
GEORGE D. THOMAS.
102,739 HAY AND LIME ELEVATORS.



THEODORE R. TIMBY. CONCRETE
THREAD AND SPINDLE-GAGES.



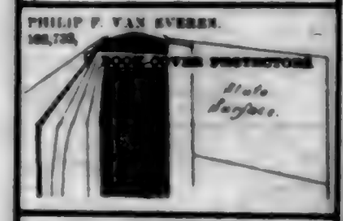
102,731. JAMES UNIK.
MACHINE FOR MAKING PLOWS.



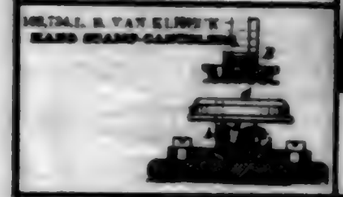
102,735. PHILIP P. VAN EVEREN.
COPY-BOOKS.

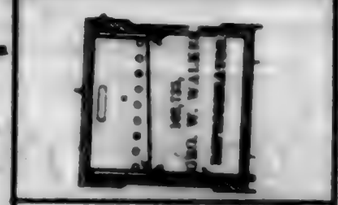


PHILIP P. VAN EVEREN.
102,733. COPY-BOOK COVER PROTECTORS.



102,734. I. B. VAN ELSWYK.
HAND STAMP-CANCELLING.





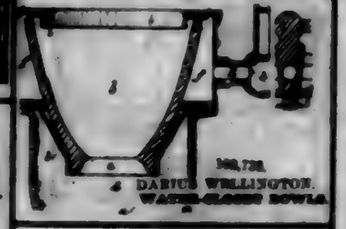
ISAAC P. WENDELL.
102,736. WINDOW-FASTENER.



102,737.
DARIUS WELLINGTON.
LAVATORY APPARATUS.



102,738.
DARIUS WELLINGTON.
WATER-CLOSET BOWLS.

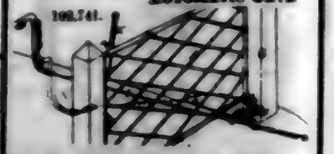


ISAAC P. WENDELL.
STEPHEN P. M. TARKER. 102,739.
LUBRICATOR FOR LOOSE PULLEYS.



102,740. JAMES D. WHELPLEY.
JACOB J. STORER.
MANUFACTURE OF WROUGHT IRON
FROM ORE, CINDER, OR SLAG.

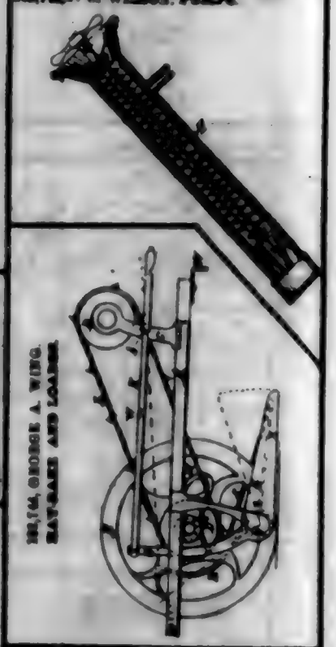
102,741. SAMUEL WHITAKER.
AUTOMATIC GATE.



102,742. O. W. WHITE AND
L. R. WENTWORTH. SEWER.



102,743. F. O. WILSON. PUMPS.



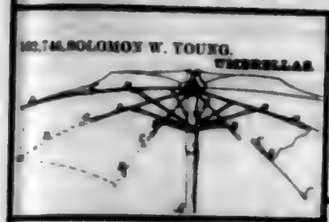
102,744. GEORGE A. WING.
RAILROAD AND LOADER.



102,745. P. M. YOUNG. APPARATUS FOR
REFINING SPIRITS.



102,746. SOLOMON W. YOUNG.
UMBRELLAS.



A. C. LOUD. PROPELLING-WHEELS.
102,747.



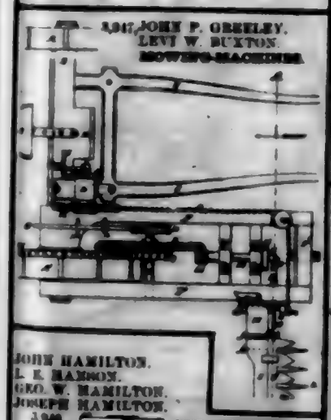
A. R. BLOOD. 3,943.
ALEX. HATHAWAY.
C. R. BEACH.
CULTIVATORS.



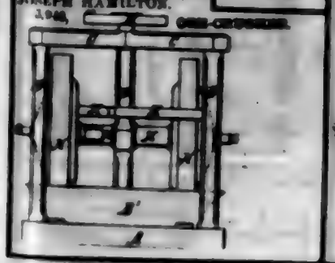
3,946. WILLIAM H. ELY.
BREECH-LOADING FIRE-ARMS.



3,947. JOHN P. GREELEY.
LEVI W. BUXTON.
MOWING-MACHINES.



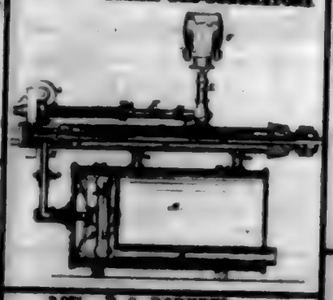
JOHN HAMILTON.
I. E. HANSON.
GEO. W. HAMILTON.
JOSEPH HAMILTON.
3,948. GRAIN-CRADLES.



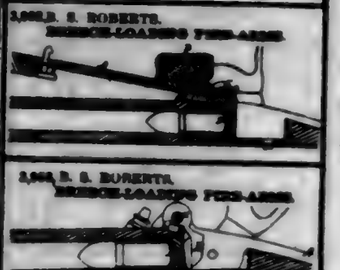
3,949. CHARLES PHILIPP LENZ.
EXTENSION-TABLE.



3,950. HIRAM S. MAXIM.
STEAM GAS-GENERATORS.



3,951. E. S. ROBERTS.
BREECH-LOADING FIRE-ARMS.



3,952. E. S. ROBERTS.
BREECH-LOADING FIRE-ARMS.



3,953. E. S. ROBERTS.
BREECH-LOADING FIRE-ARMS.



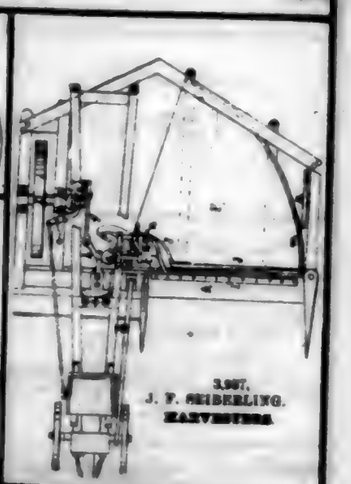
3,954. JOHN K. SAX.
GEORGE W. KEAR.
RAILWAY CAR-WHEELS.

3,955. JOHN P. GREELEY.
LEVI W. BUXTON.
MOWING-MACHINES.

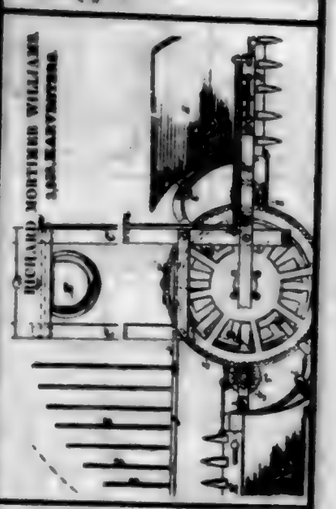


3,956. JOHN P. GREELEY.
HARVESTERS.

3,957.
J. F. SEIBERLING.
HARVESTERS.

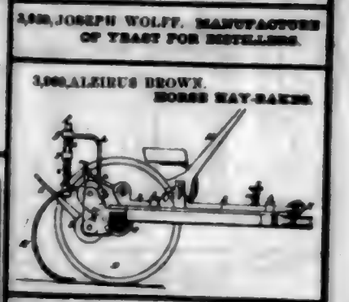


RICHARD MORTIMER WILLIAMS.
3,958. HARVESTERS.

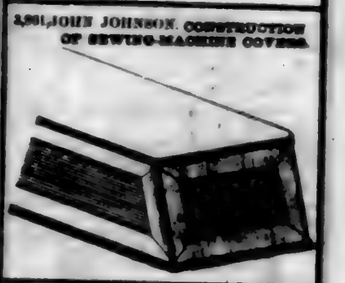


3,959. JOSEPH WOLFF. MANUFACTURE
OF YEAST FOR DISTILLERS.

3,960. ALZIRUS BROWN.
HORSE HAY-RAKES.



3,961. JOHN JOHNSON. CONSTRUCTION
OF SEWING-MACHINE COVERS.



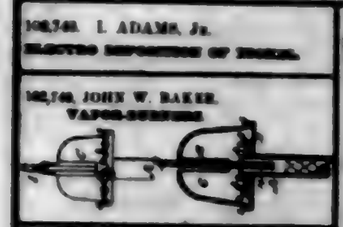
3,962. JOHN L. DUFFEE.
BROWSERS AND GUARDS.

ILLUSTRATIONS OF PATENTS

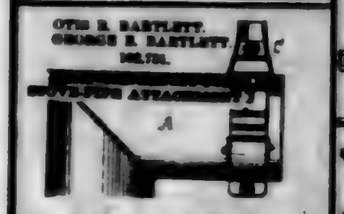
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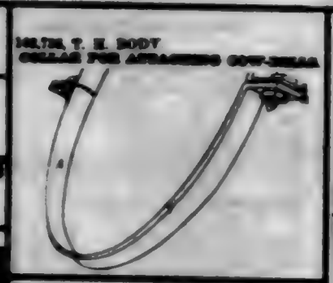
THE UNITED STATES PATENT OFFICE

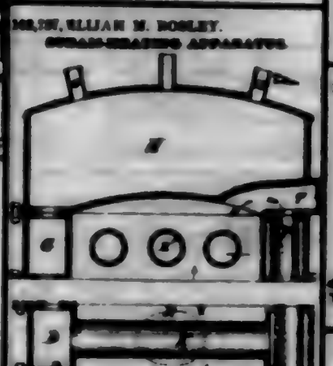
MAY 10, 1870.

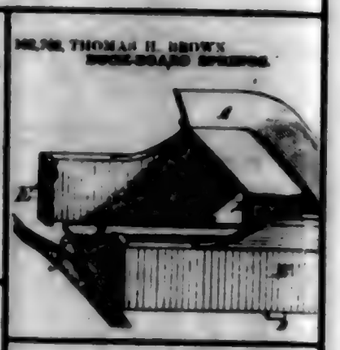


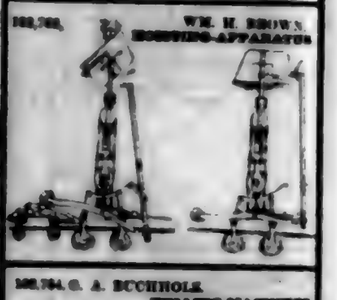


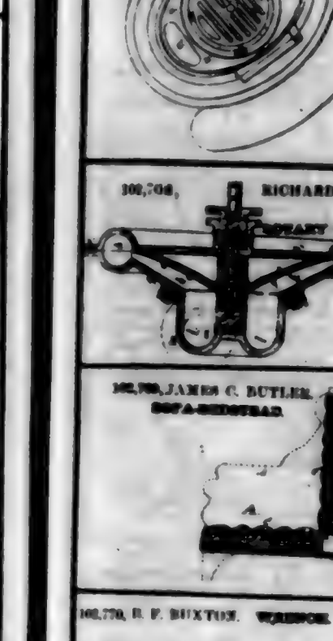


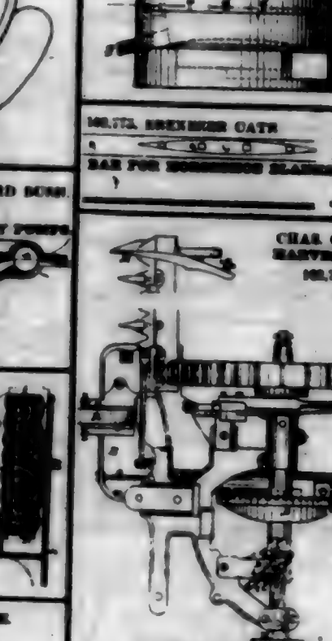










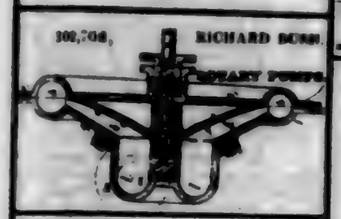




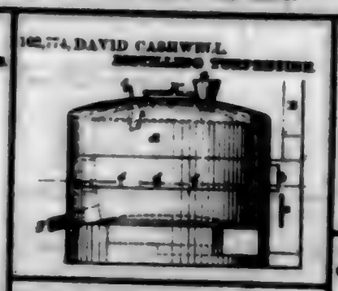


ISSUED MAY 10, 1870.









102,790.
WILLM. DUCHEMIN, Sr. METHOD OF MAKING TUFTED SEWED RUGS.



102,797, GEORGE L. DU LANEY.
THREAD-DEVICE FOR THREAD IN SEWING-MACHINES.



102,798, CHARLES J. RAWIE.
MINERAL COMPOUND.

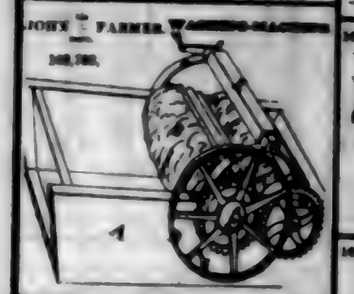
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102,800, WILLIAM D. EVANS.
RAZOR-STROPS.

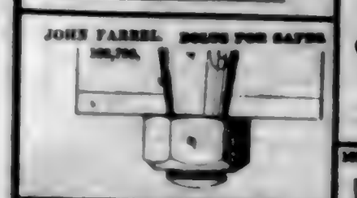


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WEIGHING-SCALES.



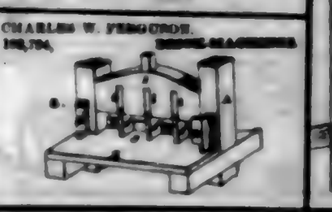
JOHN T. FARMER, Washing-Machines.

102,803.



JOHN FARREL, Dough for Gaffs.

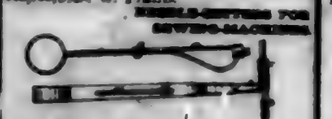
102,804.



CHARLES W. FERGUSON.
102,794. Sewing-Machines.



102,795, JAS. W. FIELD.
NEEDLE-GUTTERS FOR SEWING-MACHINES.



102,796, WILLIAM FIELDS.
MANUFACTURE OF GUMS.

102,797, WILLIAM FIELDS.
MANUFACTURE OF GUMS.

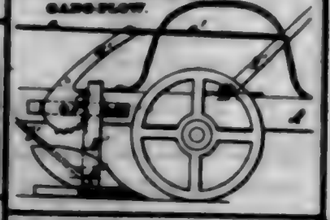
102,798, O. FILLION.
OF ARTIFICIAL FLOWERS MANUFACTURE.

102,799, HAM FISHER.
BOOK-CASE.

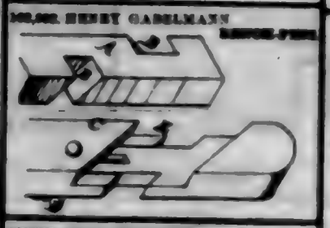


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RAG-ENGINE.

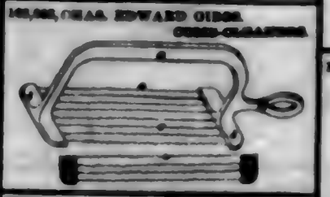
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SAND-PLOW.



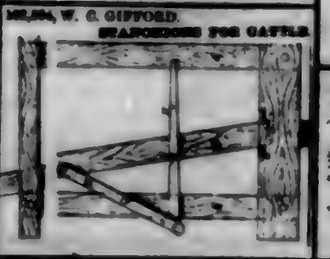
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SEWER-PIPE.



102,803, CHAS. EDWARD GIBBS.
CURD-CLEANSER.



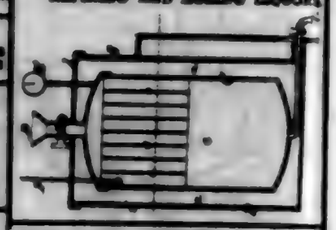
102,804, W. C. GIFFORD.
STANCHIONS FOR CATTLE.



102,805, JOHN T. GILLISPIE.
DEVICE FOR HANGING PICTURE-FRAMES, &c.



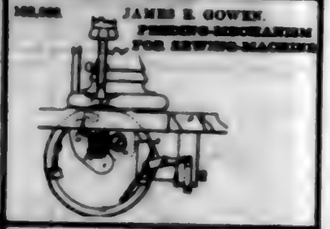
102,806, SAMUEL H. GILMAN.
REFINING AND AGEING LIQUORS.



102,807, JOHN H. GOODFELLOW, MARTIN RUSSELL, Jr.
MATCH-BOX.



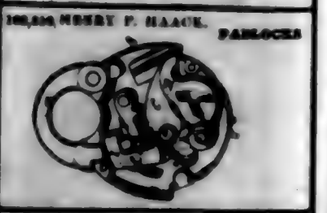
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FEEDING-MECHANISM FOR SEWING-MACHINES.



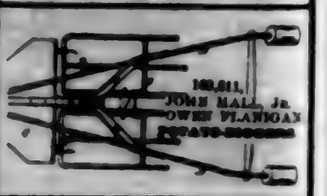
102,809, GEORGE S. GRAY. BUREAU.



102,810, HENRY F. HAACK. PADLOCKS.



102,811,
JOHN HALL, Jr.
POWER PLANTOAR
POTATO-DIGGERS.



102,812, JOHN HALL, Jr.
POTATO-DIGGER.



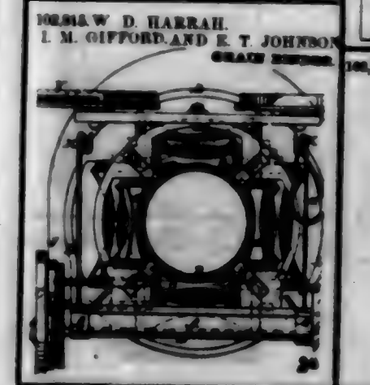
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AGITATOR-WHEEL FOR POTATO-DIGGERS.



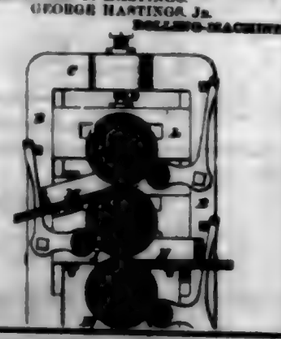
102,814.
JOHN HALL, Jr.
POTATO-DIGGERS.



102,815, W. D. HARRAH.
I. M. GIFFORD, AND E. T. JOHNSON
GRAIN-DRYERS.



102,816, JOHN D. HASTINGS.
GEORGE HASTINGS, Jr.
ROLLING-MACHINE.



102,817, CYRUS K. HEER.
ADJUSTABLE SHUTTER-BOLTS.



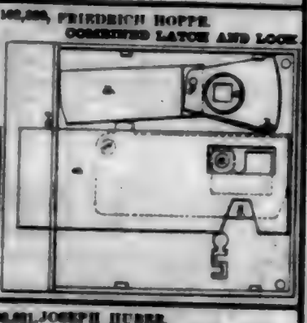
102,818, HENRY HICKMAN.
HAND CORN-PLANTERS.



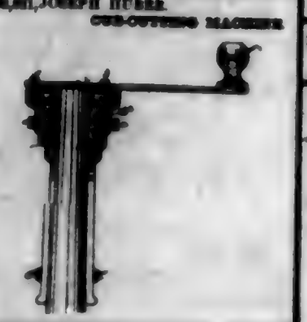
102,819, S. A. HILL,
CHAS. F. THUMM.
APPARATUS FOR DISTILLING HYDROCARBON OILS.



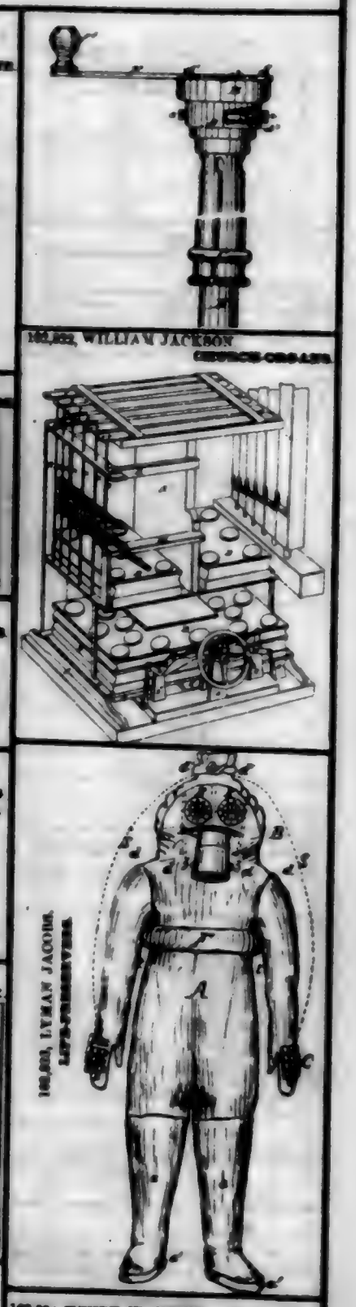
102,820, FRIEDRICH HOPPE.
COMBINED LATCH AND LOCK.



102,821, JOSEPH HUBER.
CUD-CUTTING MACHINE.



102,822, WILLIAM JACKSON.
CHURCH-ORGANS.



102,823, LYMAN JACOBS.
LIFE-PRESERVER.

102,824, HENRY W. JOHNS.
ACID AND WATER-PROOF COMPOSITION FOR COATING CLOTH.



102,825,
HUGH JOHNSTON,
Jr.,
ATTACHMENT FOR PLOWS.

102,838, GEO. F. JOYCE.
HEATERS FOR FURNITURE.



102,839, GEO. F. JOYCE.
GAS-SUPPORTERS.



102,840,
ALBERT D. JUDD.
MATCH-SAFE.



102,841, DANIEL KELLY, Dobbs Ferry, N.Y.



102,842,
SIMON KEMPER.
MEASURING-GAS.



102,843, H. H. KENDRICK.

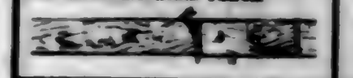


102,844, C. H. KENNEDY.
APPARATUS FOR SEPARATING TANNING EXTRACT.



102,845, HERMANN H. KESSLER.
MANUFACTURE OF MEDICATED HAIR LIGHTS.

102,846, EDWARD KIRK, Fisher.

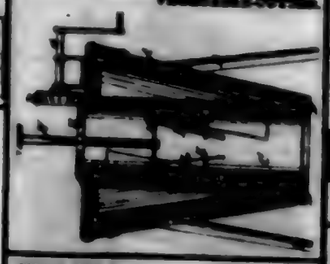


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102,848, WILLIAM KRAMER.
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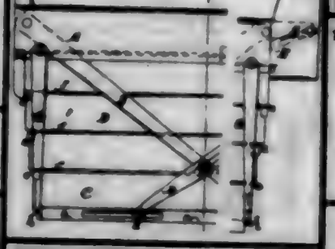
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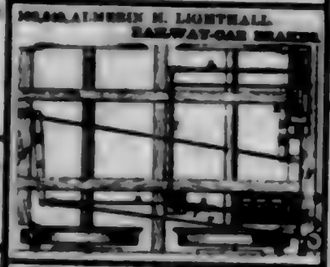
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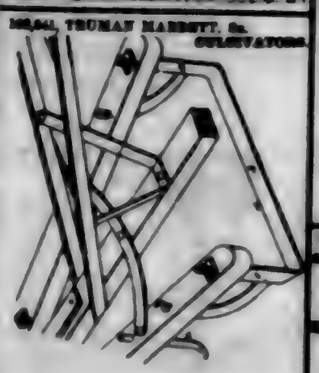
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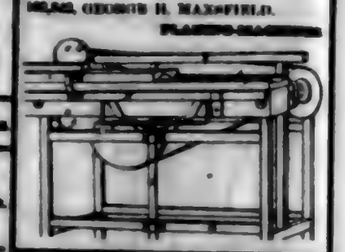
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RAILWAY-GAS MAKER.



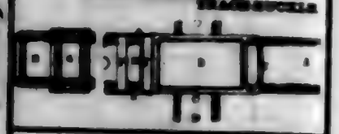
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CULTIVATORS.



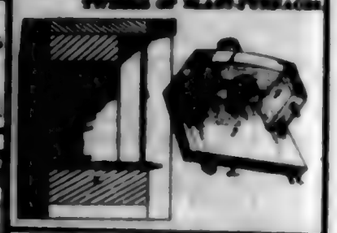
102,854, GEORGE H. MANSFIELD.
PLASTING-MACHINES.



102,855, THOMAS C. MARTIN,
JAMES OTTINGER.
BRACE-BUCKLE.



102,856, THOMAS W. McCUNE.
TWYERS OF BLAST-FURNACES.



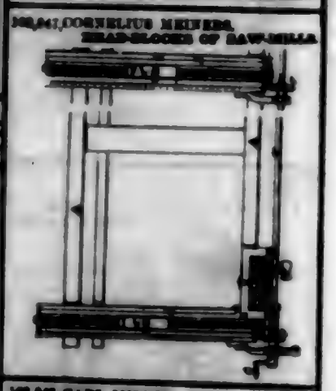
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102,858, A. B. McKEON, Pavements.



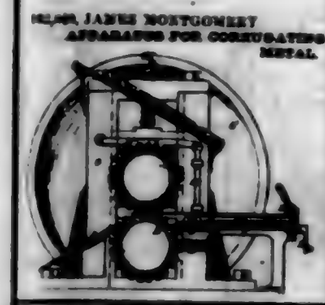
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HEAD-BLOCKS OF SAW-MILLS.



102,860, CARL MILLER.



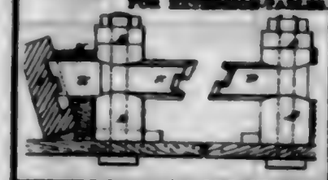
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APPARATUS FOR CORRUGATING METAL.



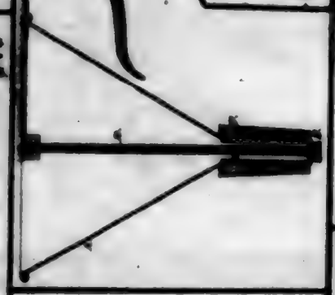
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APPARATUS FOR CREASING AND PERFORATING BAGS FOR SALT.



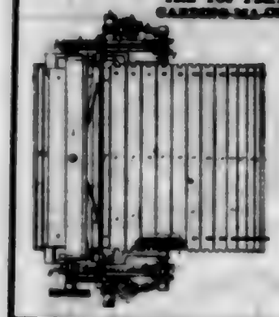
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G. A. BUCKMAN.
TOOLS FOR MAKING BLANKS FOR EXTENSION-TABLES.



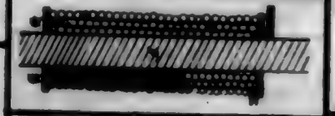
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P. H. NILES.
PUMP-BOX.



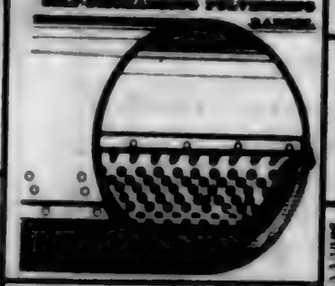
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MECHANISM FOR STRETCHING THE TOP PLATE OF CARDING-MACHINES.



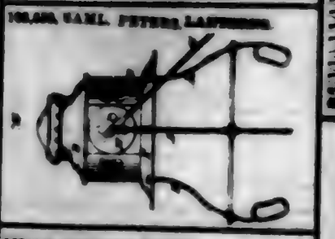
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102,867, ALMARIN B. PAUL.
SELF-SUSTAINING PULVERIZING SAMPAN.

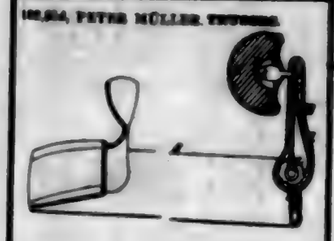


102,868, SAML. PETERS, Lanesboro.

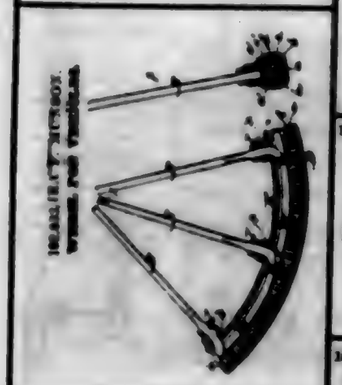


102,869, HOWARD PIPER.
FARM-GATES.

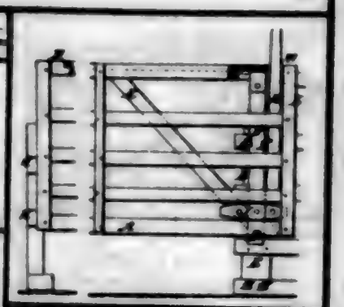
102,870, PETER MÜLLER, Trumbull.



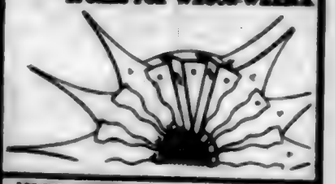
102,871,
JAMES RATCLIFF.
WHEEL FOR VELOCIPEDES.



102,872, S. W. POPE.
PLOWS.



102,873, ROBERT POTTS,
NATHANIEL ODDEN.
SPOKES FOR WAGON-WHEELS.



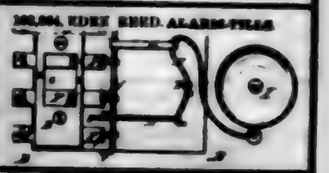
102,874, ALBERT T. PUTNAM.
BEDS, SIDING AND BOTTOM-BOARDS.



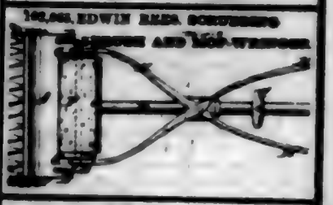
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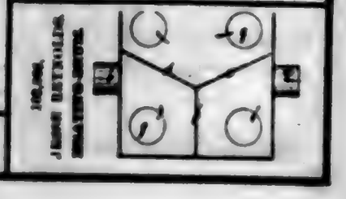
102,876, EDES REED, Alarm-Tills.



102,877, EDWIN REED, Somerville,
ASSIGNOR TO HIMSELF AND LEVI WHITCOMB.



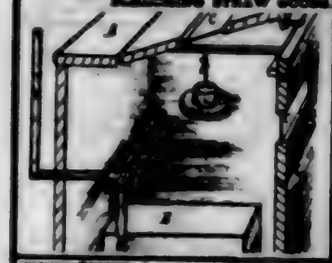
102,878,
JESSE RITTENHOUSE.
HEATING-STOVE.



102,857, CHARLES ECK. CONSTRUCTION OF SPRINGS FOR BED-BOTTOMS, CHAIR &c.

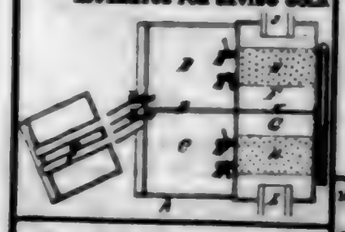


102,858, AMANDA M. BURBRUGH. BRACKING STRAW GOODS



102,859, ELMOR J. SALISBURY. PRESERVING AND HARDENING STONE, BRICK, &c.

102,860, CHARLES SCHOFIELD. APPARATUS FOR SAVING GOLD



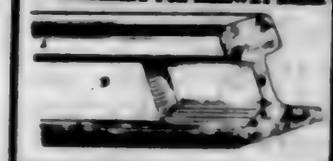
102,861, HENRY A. SEYMOUR, WILLFORD H. NETTLETON. REVERSING-HARNESS



102,862, GEORGE SHATSWELL. WINDOW-SCREEN



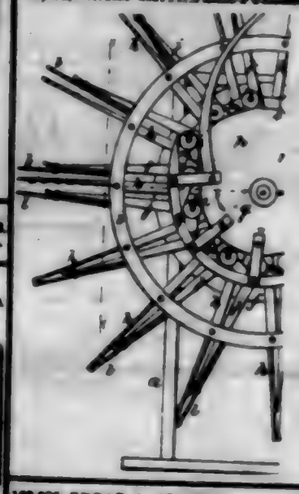
102,863, GEORGE SHATSWELL. FASTENING FOR RAILWAY BARS



102,864, E. H. SHAW. STALLS FOR FEEDING ANIMALS



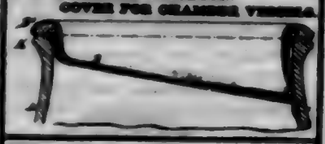
102,865, JAMES SMITH. FLAX-PULLING



102,866, EDGAR A. STANLEY. AXLE-NUT



102,867, WILLIAM STOCKTON. COVER FOR CHAMBER VESSELS

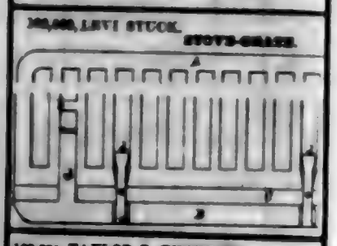


102,868, WM. TELL STREET. BAILING APPARATUS



102,869, BRYANT F. STROUD. BALING-PRESSES

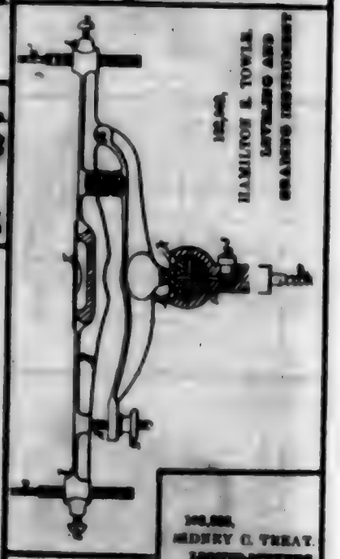
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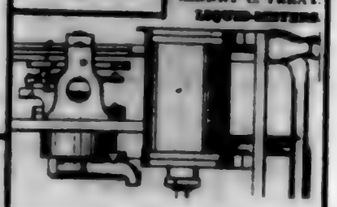
102,871, TAYLOR P. THOMPSON. FURNACE



102,872, HAMILTON E. TOWLE, LEVI C. LATHAM, and CHARLES HEINEMANN. CHAMBER

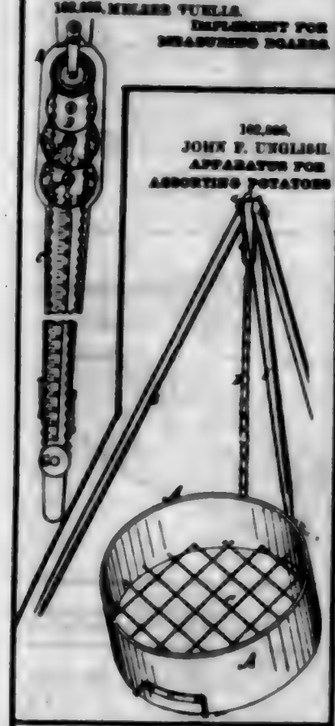


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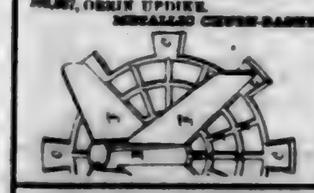
102,874, A. TRESAUNAY. WOODEN-BLOCK PAVEMENTS

102,875, MILES TUELL. REPLEMENT FOR MEASURING BOARDS

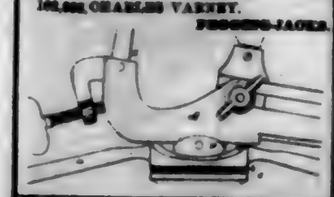


102,876, JOHN F. ENGLISH. APPARATUS FOR ASSORTING POTATOES

102,877, ORRIN UPDIKE. METALLIC CHIMNEY-BANDS



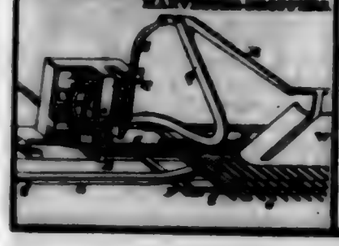
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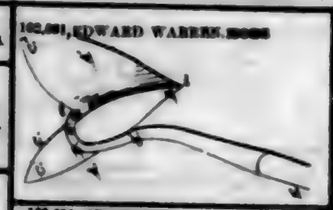
102,879, DAVID VOST. HARROWING-ATTACHMENT



102,880, AARON WARD. HARVESTING-MACHINES



102,881, EDWARD WARREN. HOOKS



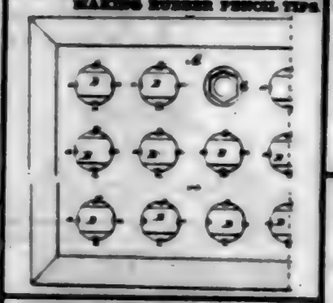
102,882, SILVESTER W. WARREN. LAMP-CHIMNEYS



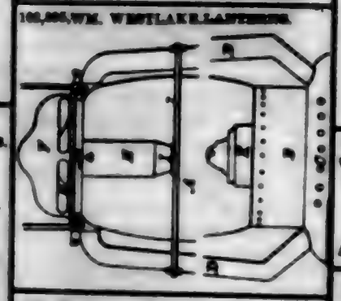
102,883, ALBIN WARTH, PH. HUPELAND, GEORG BRAUN. VARNISHING PENCILS &c.



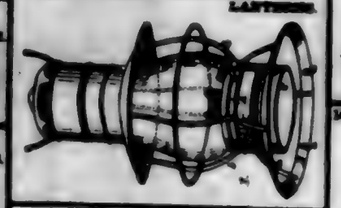
102,884, WILLIAM WEICKER. MOLDS FOR MAKING RUBBER PENCIL-TIPS



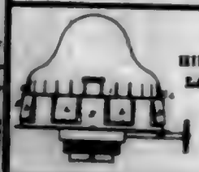
102,885, WM. WESTLAKE. LANTERNS



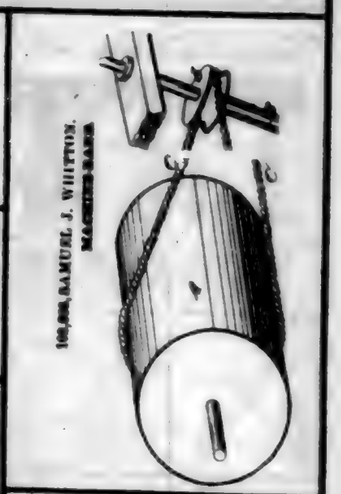
102,886, WILLIAM WESTLAKE. LANTERNS



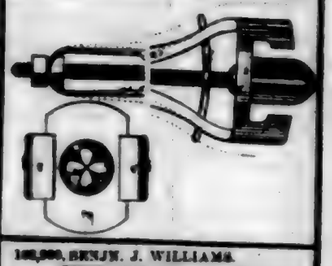
102,887, HIRAM J. WHITE. LAMP-BURNERS



102,888, SAMUEL J. WHITTON. MACHINES



102,889, THOS. WIGHTMAN. SPRING CLAMP FOR GLASS-BLOWERS



102,890, BENJN. J. WILLIAMS. BLIND, SCREEN, AND SHUTTER



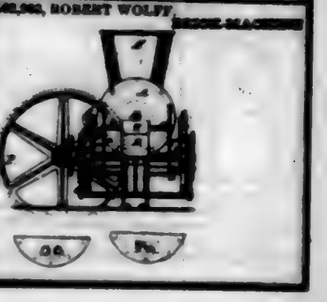
102,891, PETER B. WIMER. GRIPPERS



102,892, HENRY C. WIRE. WIRE AND STONE FENCE COMBINED



102,893, ROBERT WOLFF. BRIDGE-MACHINE



102,904, ELIJAH S. ALVORD.
STAMP-HEADING FOR SHOEING CASTILE.

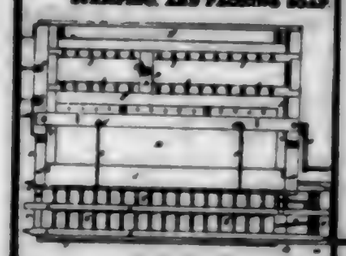


102,911, J. B. AUGUR.
FOOST-GRADING



102,912, HAYDN M. BAKER.
MANUFACTURE OF SOAP.

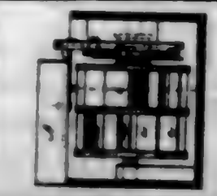
102,907, LURANDUS BEACH.
LURANDUS L. BEACH, Jr.
MACHINES FOR CUTTING, STAMPING, AND PACKING SOAP.



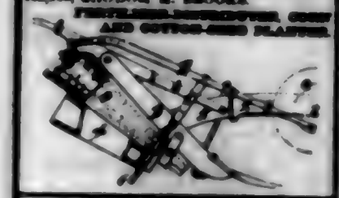
102,908, CHAS. E. BRADFORD.
RAILWAY-CAR WHEEL.



102,909, THOMAS BRISTOL.
WATER-WHEEL.



102,910, RHODOM H. BROOKS.
PORTABLE SUBSOILING, CHIP AND CUTTER-BED PLANTER.



102,911, H.T. BROWNING.
COMPOSITION FOR VARNISHES, &c.

102,912, J. PALMER BUDD.
MANUFACTURE OF IRON AND STEEL.

102,913 J. L. MASON. PUMP-BAR.

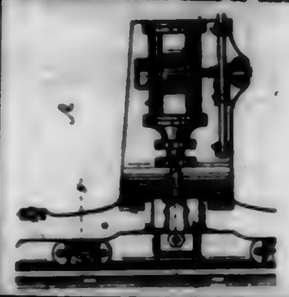


102,914, E. P. CADY. ROOFING PLATFORM FOR HAYMAKING.



102,915 JAMES MARSHALL CALDWELL, GEORGE W. CALDWELL.
SPRING-BED WITHOUT SLATS OR SACKS.

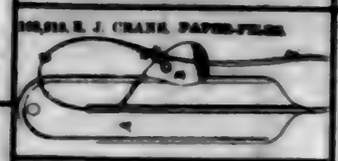
102,916, ETHAN B. CHENEY. MACHINE FOR STRAIGHTENING BARS OF METAL.



WILLIAM COURTNEY. BED-RIVER.



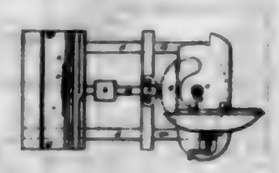
102,918, E. J. CRANE. PAPER-PULPS.



102,919, EDGAR CRAWLEY, THOMAS T. BAYLISS
TUBE.



102,920,CHARLES HENRY DANA
MACHINE FOR THE MANUFACTURE OF WOODEN TRAYS.



102,921, MARCUS E. DEAN
SAWING-MACHINE.

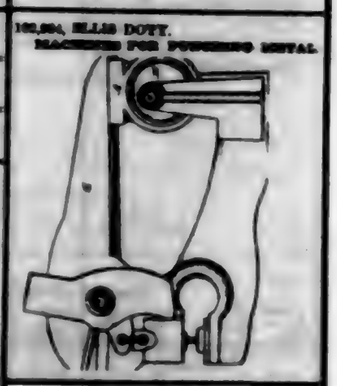


102,922, P. S. DEVLAN. COMPOSITION FOR COATING WOOD, METAL &c.

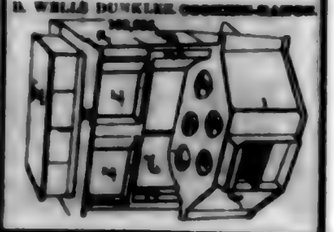
102,923 ERNEY DISTON.
PACKING-CASE FOR SAWS.



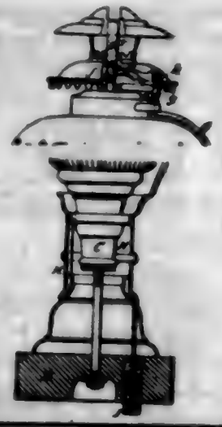
102,924, ELIAS DOTY.
MACHINES FOR PUDDLING METAL.



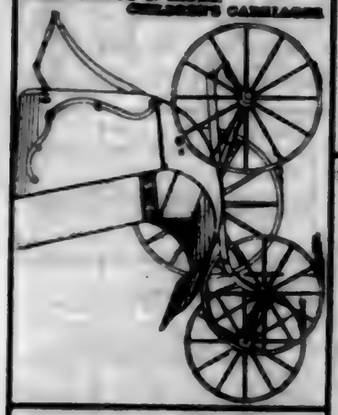
B. WELLS DUNKLEE. CHECKING-RAPPER.



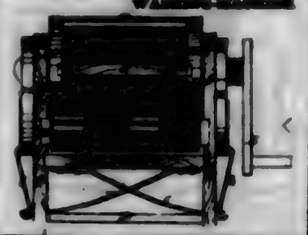
102,925, WILLIAM C. EBERT.
LAWN-SPRINKLING-MACHINE.



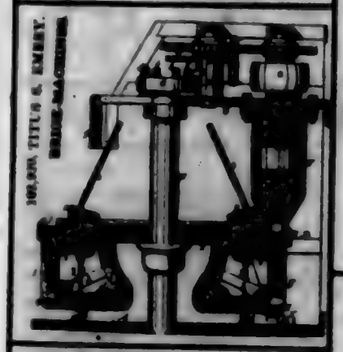
102,926, BOSCOE G. ELDER.
CHILDREN'S CARRIAGE.



102,927, DANIEL ELICKER.
WASHING-MACHINE.



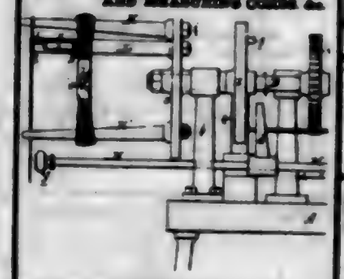
102,928, TITUS G. EMERY.
BRICK-MACHINE.



WILLIAM EVANS.
102,929.
MOULD-LOOM.



102,931, GEORGE PENDICE FARMER.
MACHINE FOR FOLDING OR WINDING AND MEASURING CORDS &c.



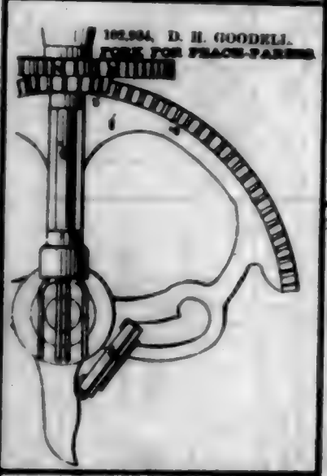
102,932, PHILIP FELKER. SPOKE-WHEEL.



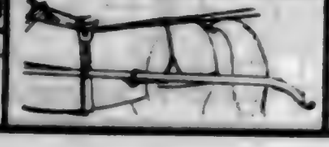
102,933, JAMES M. FIFE.
CASTING LUGS IN STOVE-PLATES.



102,934, D. H. GOODELL.
FORK FOR PEACH-PARERS.



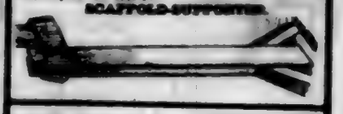
102,935, W. H. GROESBECK.
SEED-RACK FOR VEHICLES.



102,936, WILLIAM S. HANCOCK. BROOM.



102,937, D. B. HAY.
SCAFFOLD-SUPPORTER.



ALLEN HEMINWAY. BAKING-PAN.
WILLIAM A. PAGGETT.
102,938.



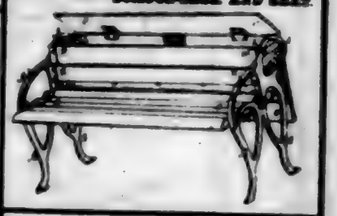
102,939. WM. H. HUBBARD.
WATER-WHEELS.



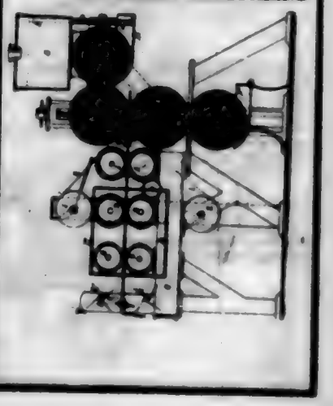
102,940, JOSEPH INGELS.
DOUBLE AND SINGLE-TREE FASTENINGS FOR CARRIAGES.



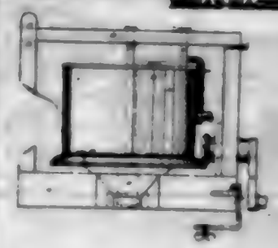
102,941, JOSEPH INGELS.
SCHOOL-DESK AND SEAT.



102,942, GUSTAV L. JAEGER.
MACHINE FOR LINING AND DRYING PASTEBOARD.



102,943, LEMUEL P. JEFFS. BREAD-MACHINE.



102,944, CHARLES C. JOHNSON. SHEARS AND SCISSORS.



MORTON JUDD. H. L. JUDD. 102,945. COAT AND HAT-RACK.





P. KILBURNER. 102,946. HORSE.

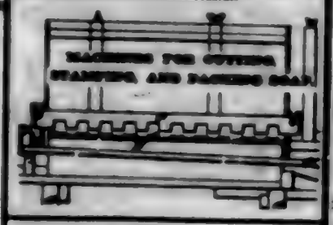
102,947, DANIEL H. KRAUSER. COOPERS' ADZ.



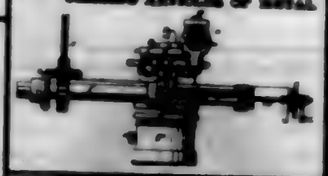
102,948, A. B. LAWS. HYDRAULIC ENGINE.



102,949, CHARLES LEHMANN. MACHINE FOR CUTTING, STAMPING, AND PACKING SOAP.



102,950, THOS. LIPPIATT. MACHINE FOR ENGRAVING AND CHASING ARTICLES OF METAL.



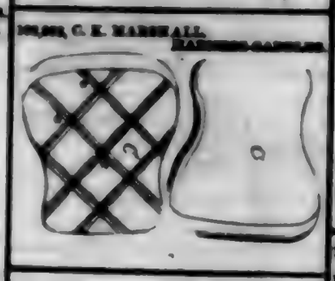
102,951, WILLIAM W. LYMAN. APPARATUS FOR PRESERVING FRUIT.



102,952, STIMMEL LUTZ. FRUIT-CAGE.



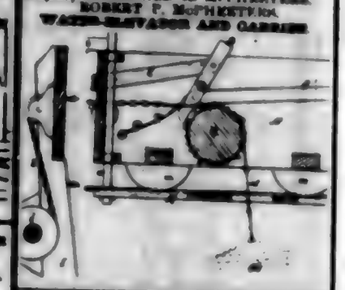
102,953, C. E. MARSHALL. BASTING-SADDLE.



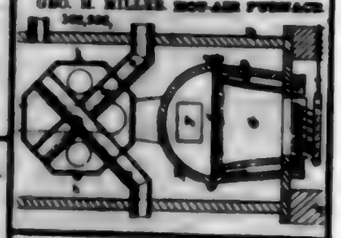


102,954, ALEXANDER E. MARSHALL. MODE OF CONSTRUCTING METTINGS FOR MACHINERY.

102,955, ARCHIBALD A. McPHERTERS, ROBERT P. McPHERTERS. WATER-ELEVATOR AND GARDEN.



GEO. H. MILLER. HOT-AIR FURNACE. 102,956.



102,957, DAVID M. MOORE. UNIVERSAL SQUARE.



102,958, ELIZA D. MURPHY. MACHINE FOR PACKING JOURNALS AND BEARINGS.

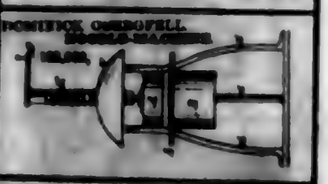
102,959, S. F. NEELY. CLOD-PULVERIZER AND CULTIVATOR COMBINED.



102,960, GORDON H. NEWCOMB. BOOT AND SHOE-HEEL.



POMEROY, OSBORNE. BOOKS-BACKING. 102,961.



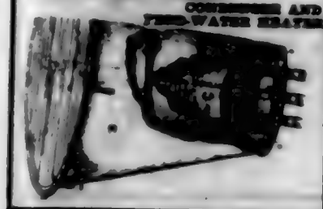
102,962, WILLIAM PENDLETON, HENRY H. BOARDMAN. COTTON-CONDENSER.



102,964, JOSEPH PERRAULT. PNEUMATIC BLOWING.



102,963, WILLIAM PHELAN. CONDENSER AND FEED-WATER HEATER.



102,966, STEPHANIAH PHILLIPS. CARPENTERS' PLANE.



102,967, HUGH M. PHINNEY. VENTILATOR-REGISTER.



102,968, WILLIAM PICKENS, PETER DALRYMPLE. MACHINES FOR REDUCING HELLEBORE.



102,969, JUAN POSEY. MANUFACTURE OF SUGAR.

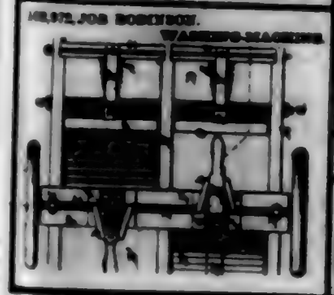
102,970, JOHN H. RHODES. ATMOSPHERIC VALVE FOR HOUSE BOILERS.

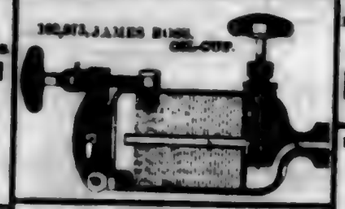


102,971 MIRAM ROBBINS. ROLLER-SEATING.



102,972, JOB ROBINSON. WASHING-MACHINE.





102,973, JAMES BUSH. OIL-CUP.

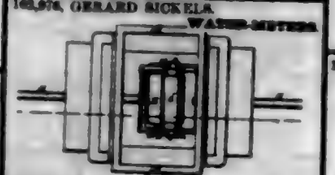
102,974, CARL BUF. FURNACE.



102,975, J. J. H. SERCOMBE. BRIDGING-MACHINE.



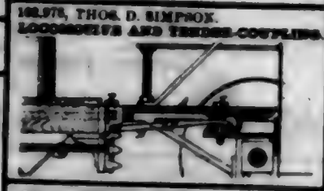
102,976, GERARD SICKELS. WATER-METER.



102,977, SIGMUND SIMONSON. TABLETS AND COUNTERS.



102,978, THOS. D. SIMPSON. LOCOMOTIVE AND TENDER-COUPLING.



102,979, LUTHER SIMSON. GARDEN-RAKES.



102,980 GEO. H. SMITH. MEDICAL COMPOUND.

102,981, JOHN C. SMITH. WASHING-SOAP.



102,982, JOHN E. SMITH. HAY-CRIBBLE.

102,983, THOS. FRANKLIN SMITH. MEDICATED SOAP.

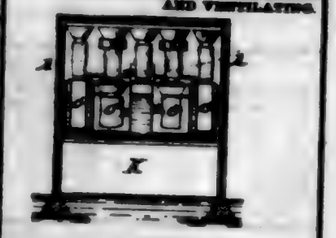
102,984, CHARLES EDWARD SNEIDER. HOOP-CARTRIDGE.



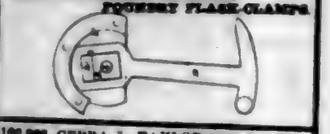
102,985, WILLIAM B. SNYDER. VAGINAL SYRINGE.



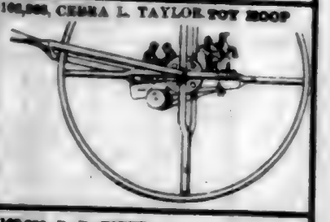
102,986, D. E. SONNE. APPARATUS AND PROCESS FOR REFRIGERATING, PRESERVING, AND VENTILATING.



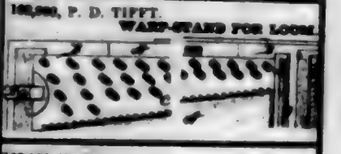
102,987, CHARLES C. STEWART. PYCNEMY FLASK-CLAMPS.



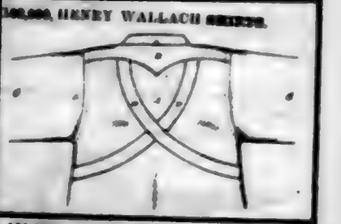
102,988, CERRA L. TAYLOR. TOY ROOF.



102,989, P. D. TIFFT. WARP-GUARD FOR LOOMS.



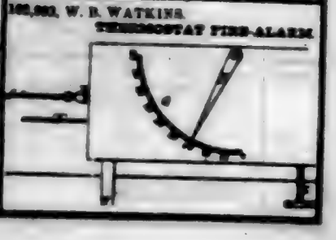
102,990, HENRY WALLACH SEIZER.



102,991, C. G. WATERBURY. WOODEN STREET PAVEMENTS.



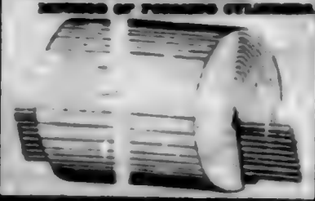
102,992, W. B. WATKINS. THERMOSTAT FIRE-ALARM.



102,999. NATHAN G. WEBBER. CULTIVATORS.



102,[illegible], HENDERSON WILLARD. METHOD OF FORMING CYLINDERS.



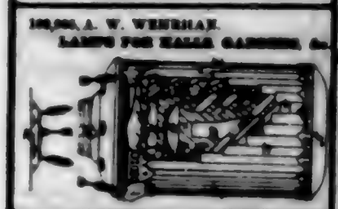
103,000. A. L. WILLIAMS. PLANTS DRAWING MACHINE.



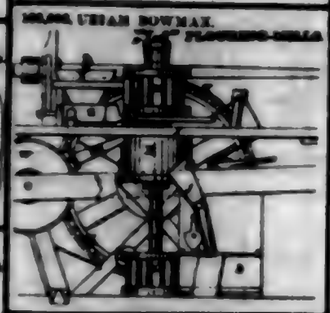
103,001. E. E. WEBSTER. [illegible]



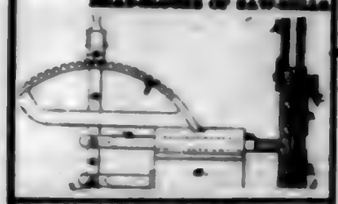
103,002. A. W. WEBSTER. LAMPS FOR HALLS GARDENS, &c.



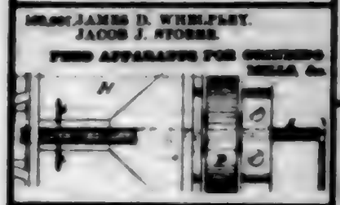
103,003. URIAH BOWMAN. PLANTING-MILLS.



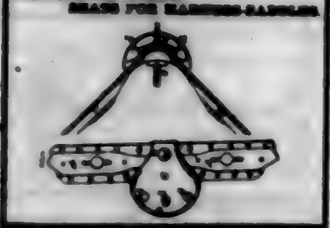
103,004. WINSLOW WELLINGTON. HEAD-BLOCKS OF SAW-MILLS.



103,005. JAMES D. WHELPLEY. JACOB J. STOBER. FEED APPARATUS FOR GRINDING BONES, &c.



103,006. PETER BURNS. BRAKE FOR HARVESTING-MACHINES.



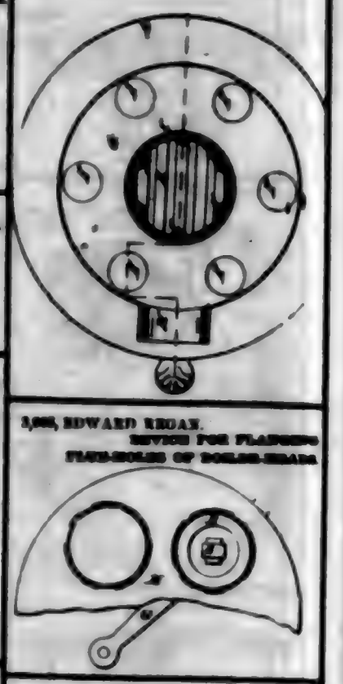
3,003. JOHN B. FLETCHER. RAILWAY AXLE-BOX.



3,004. THOMAS SMITH HUDSON. MANUFACTURE OF HELIOGRAPHS.



3,005. EDWARD REDAN. DEVICE FOR PLANKING PLANK-ROADS OF DOUBLE-HEADS.



3,006. S. S. SEXWICK. GRATES FOR FURNACES.



3,007. GEO. C. HUTT. BARK-GRINDING STUMPS.



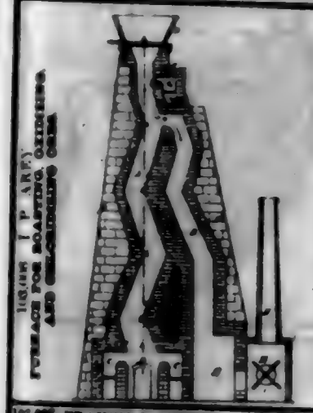
3,008. HENDERSON WILLARD. STOVE FOR BURNING STUMPS.



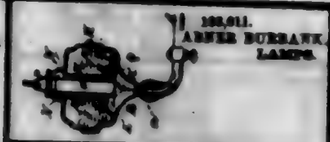
103,008. G. W. AINSLEY. PUNCHING TOOL.



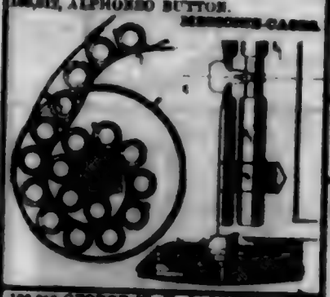
103,009. IGNATZ P. AREY. APPARATUS FOR ROASTING COFFEES AND SEPARATING CHAFF.



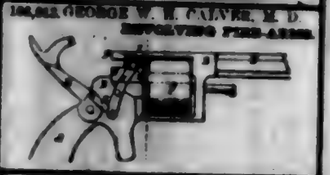
103,011. ABNER BURBANK. LAMPS.



103,012. ALPHONSO BUTTON. MEMORIES-CASES.



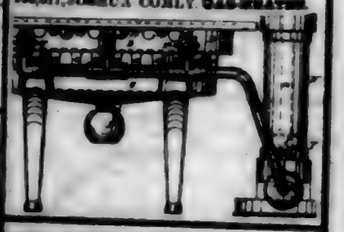
103,013. GEORGE W. H. CLAVEL, M. D. REVOLVING FIRE-ARMS.



103,014. CHAS. CARROLL. SEWING AND TAMPING-PICK.

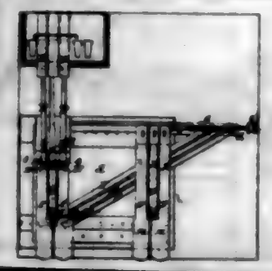


103,015. JOSHUA COMLY. GAS-HEATER.

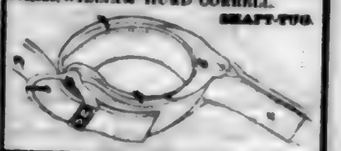


103,016. JOSEPH J. COMSTOCK. JAMES ABORN. MANUFACTURE OF EMBOSSED HAIR-CLOTH.

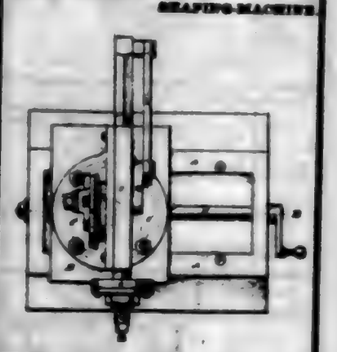
103,018. GEORGE COOK. SUB-BASS REED-ORGAN COUPLERS.



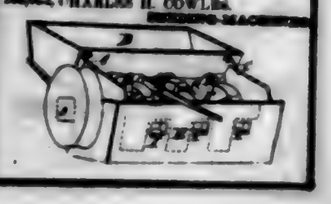
103,020. WILLIAM HUGH CORBELL. DRAFT-TUG.



103,021. ALFRED B. COUCH. SHAPING-MACHINE.



103,022. CHARLES H. COWLES. [illegible]



103,007. FRANCIS F. BIBBER. HANDLES FOR BOAT-HOOKS, &c.



103,009. GRIFFILL BLAKE. BEER-MUGS.



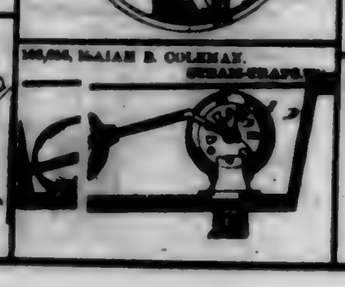
103,010. E. BLISS. BORING.



103,016. J. C. BROWN. WINDOW-GUARD.



103,017. ISAIAH B. COLEMAN. STEAM-TRAPS.



103,019. ALONZO COBB. AUTOMATIC FRICTION HUB LATHE-CHUCK.



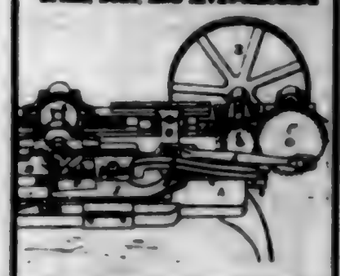
103,032. GEORGE W. BALSEY. SIDE-ARMED SEATS ATTACHMENT.



103,034. J. W. DANN. SEAT FRAME FOR VEHICLES.



103,035. MAXIME DECELLE. SPOKE, HUB, AND RIVET-MACHINE.



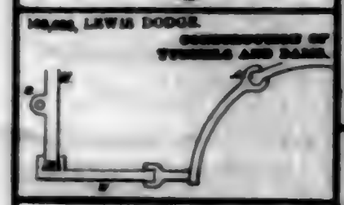
103,036. LEVI DEDRICK. HARNESS-SADDLE.



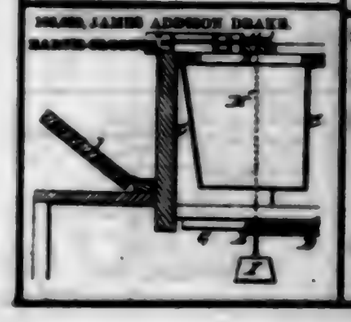
103,037. G. DIEULAFOY. PIPE-CUTTING ATTACHMENT.



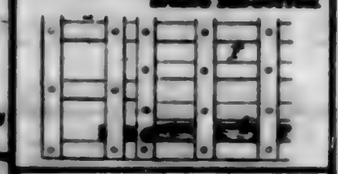
103,038. LEWIS DODGE. MANUFACTURE OF TUBULAR AXLE BARS.



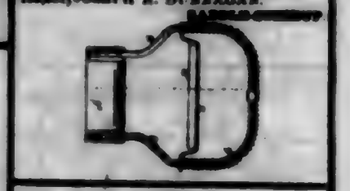
103,039. JAMES ADDISON DRAKE. BARREL-MACHINE.



103,040. JAMES P. DUFFY, WILLIAM P. FRAILEY. SPEED REGULATOR.



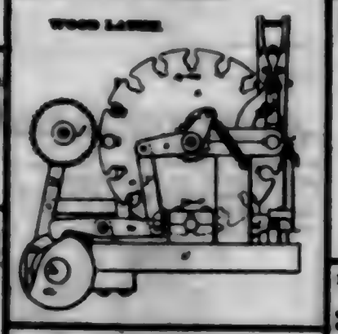
103,041. JOSEPH A. DUNNAGAN. BARREL-CROZE.



103,042. JOSEPH DUVALL, JOHN WINTERSTEEN. MACHINE FOR SAWING STAVES.

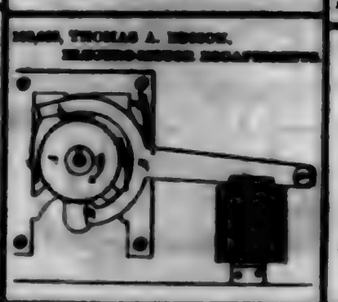


103,043. L. H. DWELLEY. WOOD LATHE.

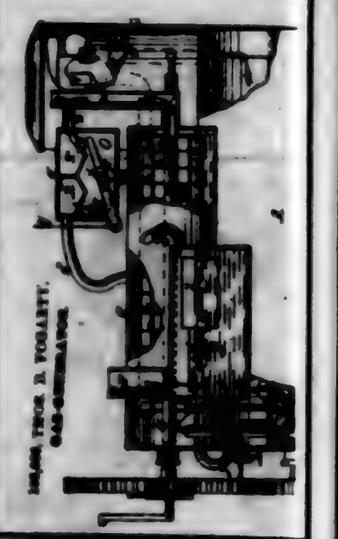


103,044. THOMAS F. EATON. CONSTRUCTION TO PREVENT THE CLOGGING OF MACHINES.

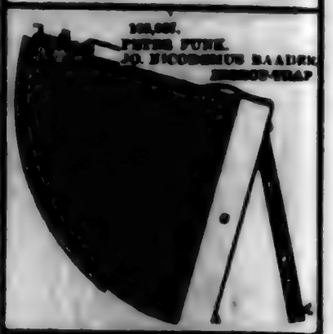
103,045. THOMAS A. EDISON. MACHINE FOR SHARPENING.



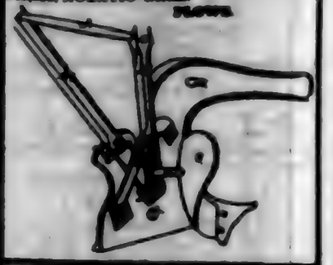
103,046. TYCE B. FOGARTY. GAS-GENERATOR.



103,047. PETER FUNK, JO. NICODEMUS BAADER. MINNOW-TRAP.



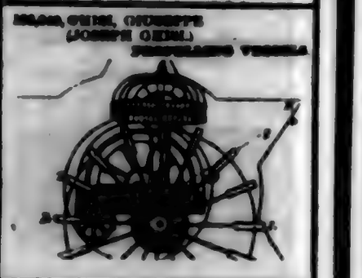
103,048. HORATIO GALE. PLOW.



103,049. HENRY GEBHARD. PLOWING-GUIDE.



103,050. GHISI, GIUSEPPE (JOSEPH GHISI). PROPELLING VESSELS.



103,051. JOHN GOLLER. RESONANCE-SPRING SPRING.



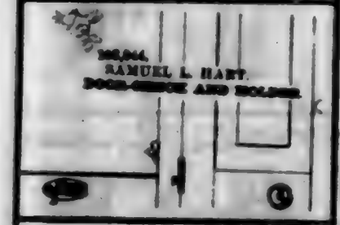
103,052. CHARLES WILLIAM GROSWITH. BOOT-GUARD.



103,053. E. P. HALL. PADLOCKS.



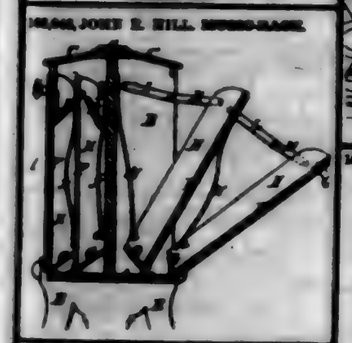
103,054. SAMUEL L. HART. DOOR-HINGE AND BOLSTER.



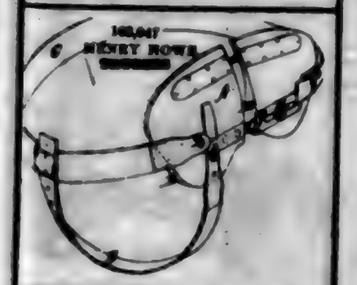
103,055. GEORGE I. HILES. SAW-SWAGE.



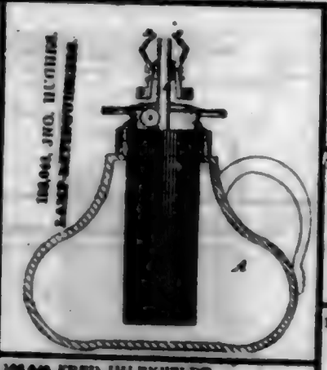
103,056. JOHN E. HILL. SPOKE-SAW.



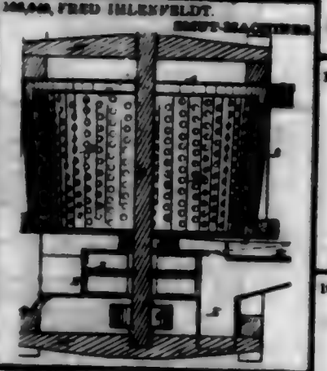
103,057. HENRY HOWE. HARNESS.



103,058. JOHN HUTCHINS. BARREL-TRUSSING MACHINE.



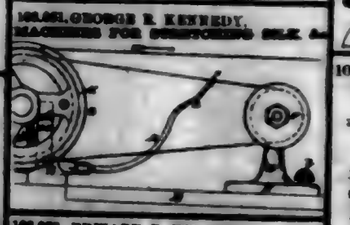
103,059. FRED IHLENFELDT. SHUTTLE-MACHINE.



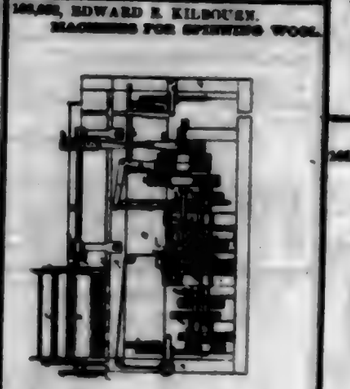
103,060. MICHAEL ADM KRABLIN. LOOPING-HOOK FOR SEWING-MACHINES.



103,061. GEORGE R. KENNEDY. MACHINES FOR SHEARING SELF-A...



103,062. EDWARD S. KILBOURN. MACHINES FOR SPINNING WOOL.



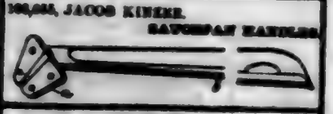
103,063. JACOB KIKER. REVERSIBLE LATCHES.



103,064. JACOB KIKER. REVERSIBLE LATCHES.



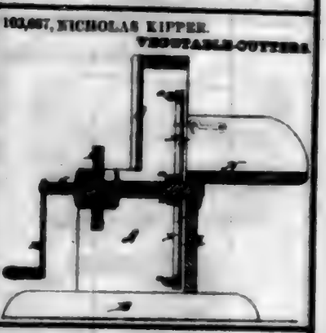
103,065. JACOB KIKER. SATCHEL HANDLES.



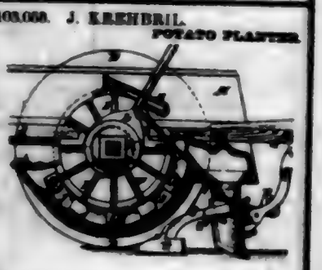
103,066. JACOB KIKER. STAMPS FOR FRUIT-CANS.



103,067. NICHOLAS KIPPER. VEGETABLE-CUTTERS.



103,068. J. KREHBIEL. POTATO PLANTER.



103,069. W. E. LAW. STEAM-GENERATOR.



103,080. HENRY LEE.

103,081, C. V. LITTLEPAGE.

103,082, JOHN D. LYNDE.

103,083, E. J. MANVILLE.

103,084, JAMES B. MASON.

103,085, JOSEPH A. MOORE.

103,086, WILLIAM McGREGOR.

103,087, WILLIS M. McLENDON.

103,088, BRYANT H. MELENDY.

103,089, CHARLES H. MILLER.

103,090, ADAM MOLTZ.

103,091, NATHANIEL MONROE.

103,092, JAMES MONTGOMERY.

103,093, F. A. MORLEY.

103,094, JOSEPH PAETTEL.

103,095, GEORGE H. PORTER.

103,096, J. H. PATTEE AND G. H. NYE.

103,097, FRANK L. POPE.

103,098, ABIATHER PALMS POTTER.

103,099, TIMOTHY J. POWERS.

103,100, JOHN RICHARDS.

103,081. PETER RILEY.

103,082, EDWIN R. ROBERTS, WILLIAM GRAHAM.

103,083, FRANCIS H. ROOT.

103,084, FRANKLIN ROOT.

103,085, DANIEL RUGGLES.

103,086, CLEMENT RUSSELL, STRAW W. K. MILLER.

103,087, GEO. G. SAMPSON.

103,088, JOHN SATTAHAM, Jr.

103,089, WILLIAM SCHEER.

103,090, C. ROSEWOG.

103,091, CHARLES A. SEELY.

103,092, JOHN A. SHRAWDER.

103,093, WM. R. SIMONDS.

103,094, FRED. J. SLADE.

103,095, GEORGE HAND SMITH.

103,096, HAMILTON B. SMITH.

103,097, W. S. SNOW.

103,098, REUBEN SOLLIDAY.

103,099, SATTEE CUNNIDO STEELE.

103,100, SCOTT STEWART.

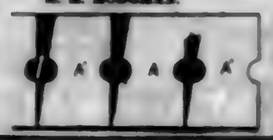
103,101, JACOB STRAUB.

103,102, STEPHEN S. STUNTZ.

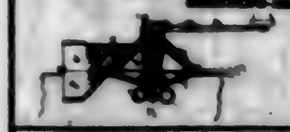
103,103, JOHN A. SWAN.

103,104, HIRAM THAYER.

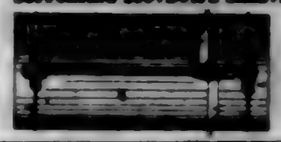
108,108. A. VAN CAMP. PATENTEE.
W. H. BODGMAN.



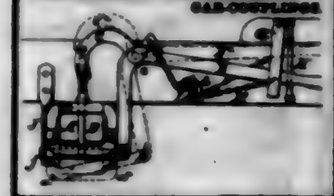
108,109. A. J. VANDERBILT.
GEO. W. M. VANDERBILT.



108,110. HORACE VARRANDS.



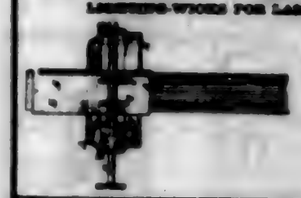
108,111. JOSEPH VAN STEENBERG.



108,112. JAMES WEBSTER.



108,113. WM. H. WEBER.



108,114. GEO. A. WELLS.



108,115. PHILANDER WILSON.



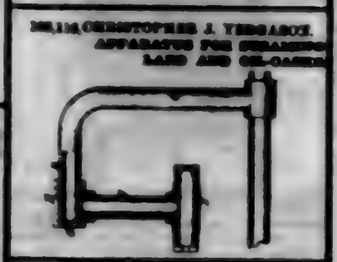
108,116. PETERAS M. WITHINGTON.



108,117. MILDRET WOODS.



108,118. JAMES WOODRUFF.
FREDK. BOYD.



108,119. CHRISTOPHER J. YERGASON.



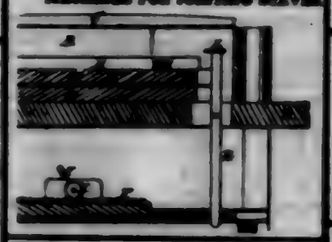
108,120. JOB ABBOTT.



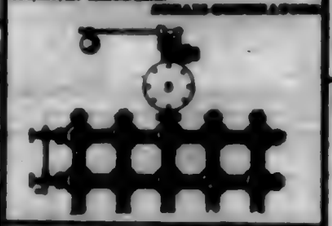
108,121. JOHN J. ADAIR.



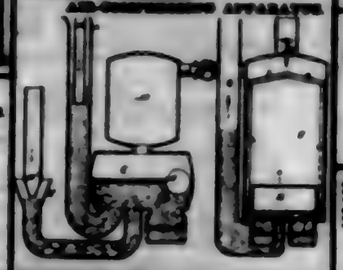
108,122. JNO. WESTLEY ALDWORTH.



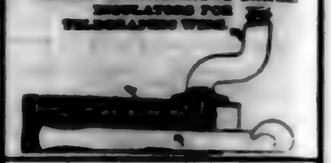
108,123. D. ARNDELL.



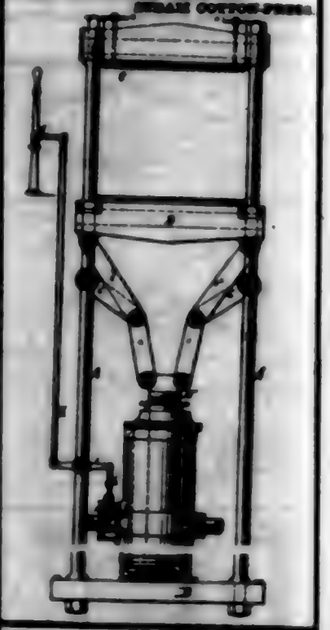
108,124. S. T. BABBITT.



108,125. ROBERT BRICKENRIDGE BAKER.



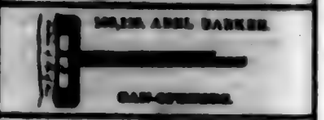
108,126. AUGUSTINE BALDWIN.



108,127. JOHN F. BALDWIN.



108,128. ABEL BARKER.



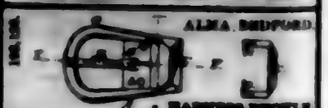
108,129. C. BARKER.



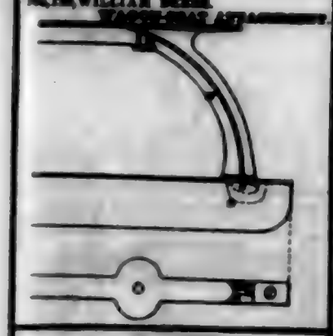
108,130. APPARATUS FOR LIGHTING GAS BY ELECTRICITY.
W. W. BATCHELDER.



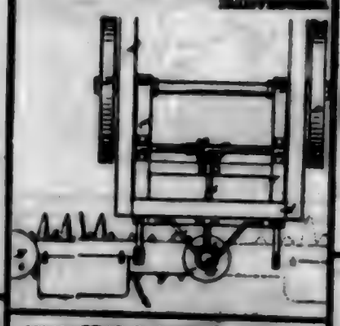
108,131. ALMA BEDFORD.



108,132. WILLIAM BERRY.



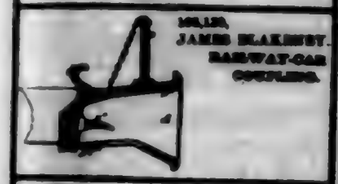
108,133. CLARK H. CHARLESWORTH.
JOSEPH H. SHORT.



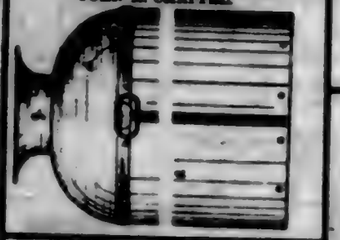
108,134. HENRY CLYNO.



108,135. JAMES BLAKEMAN.



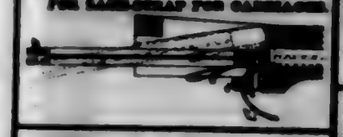
108,136. CHAS. L. CAMP.
JOHN H. CHAPPEL.



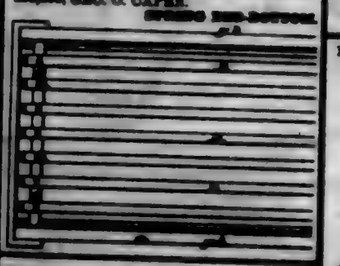
108,137. FREDERICK COELLEN.



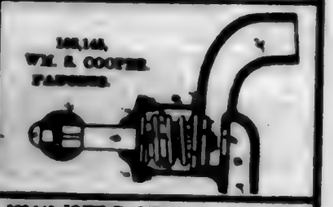
108,138. JOHN H. BLOODGOOD.



108,139. GEO. C. CAPEN.



108,140. WM. S. COOPER.



108,141. VALENTIN BOSSE.



108,142. JOHN F. COBY.
JACOB H. BROWN.



108,143. HARVEY BOSWORTH.



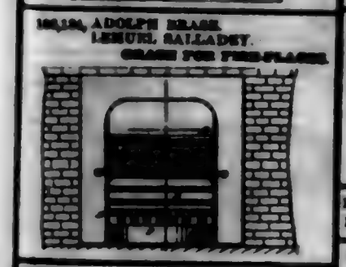
108,144. JACOB CAPROL.



108,145. JOHN CROWLEY.



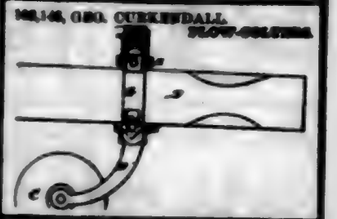
108,146. ADOLPH BRASE.
LEMUEL BALLADEY.



108,147. JOHN CLARK.

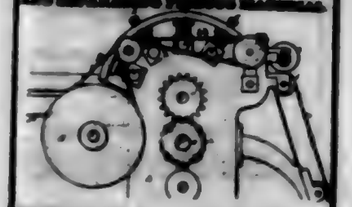


108,148. GEO. CURKENDALL.

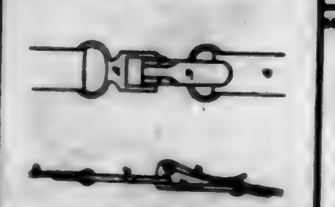


108,149. RICHARD T. CLARKE.

108,150. E. BRAHER.

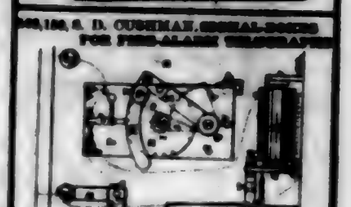


108,151. ROBERT CLINGEN.



108,152. H. T. CUSHMAN.

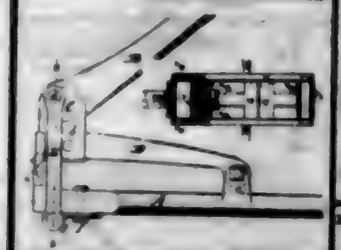
108,153. S. D. CUSHMAN.



103,151, AMOS CUTTER.
SHAVE-HOLDING MACHINE.



103,152, LEVI DANIELS.
BELT-CUTTING DEVICE.



103,153, A. C. L. DAVIS.
HAND CORN-PLANTER.



103,154, JARVIS DAVIS.
BREECH-LOADING FIRE-ARMS.



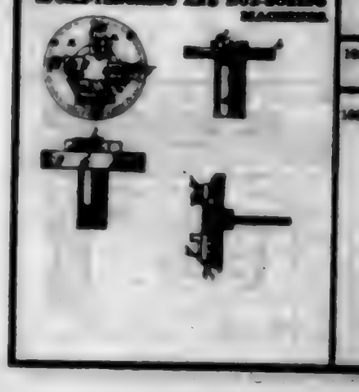
103,155, JOSEPH DAVIS.
CLOTHES-LINE REELS.



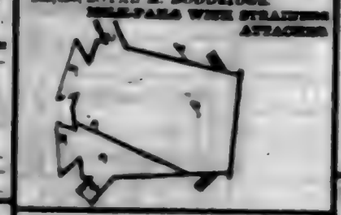
103,156, THOMAS J. DELANY.
RAILWAY CAR-COUPLING.



103,157, JOHN DEMING.
SPOKE-TENONING AND HUB-BORING MACHINES.



103,158, LOYAL M. DODDRIDGE.
BELT-PASS WEEK STRAINER ATTACHED.



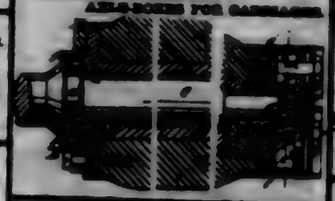
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GUIDE FOR SEWING-MACHINES.



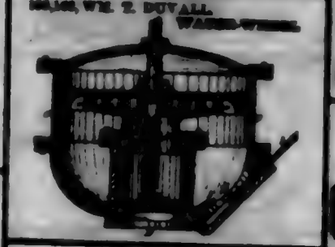
103,160, WALTER DUNKELY.
FORGE-BLOWER.



103,161, GEO. B. DURKEE.
AXLE-BOXES FOR CARRIAGES.



103,162, WM. T. DUVALL.
WASHING-MACHINE.



103,163, GEORGE W. ELDRIDGE.
FIRE-KINDLER.

103,164, THOMAS RICHARD EVANS.
SHIELD.



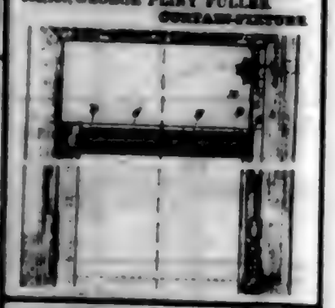
103,165, FREDERIC G. FORD.
FURNITURE-CASTERS.



103,166, THOMAS A. FRAKER, 2nd-REVD.



103,167, GEORGE PLINY FULLER.
CURTAIN-FIXTURE.



103,168, JEFFERSON L. FULTON.
JULIUS BEACH.
REVERSIBLE ROOF PAVEMENT.

103,169, JEFFERSON L. FULTON.
JULIUS BEACH.
MATERIAL FOR ROOFING AND PAVING.

103,170, GREGORY GERDON.
IRRIGATOR.



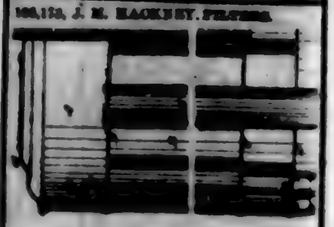
103,171, CHAS. GERSEN.
JOHN H. GRUENHAGEN.
STEAM-REGULATOR.



103,172, WM. F. GRASSLIN.
RAILWAY CAR-COUPLING.

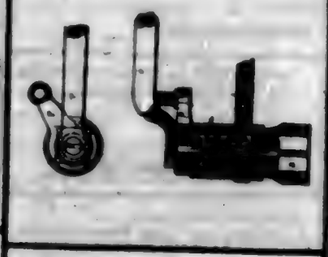


103,173, J. M. HACKNEY. FEATHER.



103,174. T. S. HALL.
ELECTRO MAGNETIC RAILROAD ALARM.





103,175, EDWARD B. HAMEL.
JAMES B. HOLDEN.
MECHANICAL MOVEMENT.



103,176, CHARLES HARKINSON.
RADIATOR FOR HEATING-FURNACES.

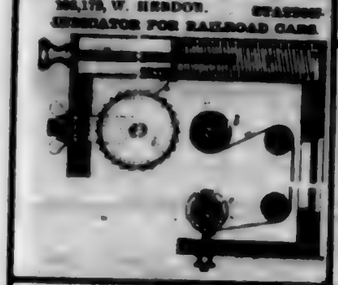


103,177. SUSPENDED.

103,178, BAYLIES HATHAWAY. STUFFING BALANCE STOP FOR SAFETY-VALVES.



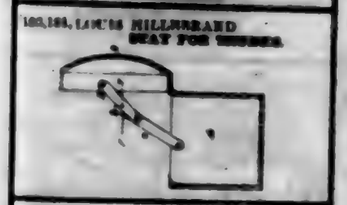
103,179, W. HERDON. STARTING INDICATOR FOR RAILROAD CARS.



103,180, CHARLES W. HERMANCE.
ORNAMENT FOR VESSELS.

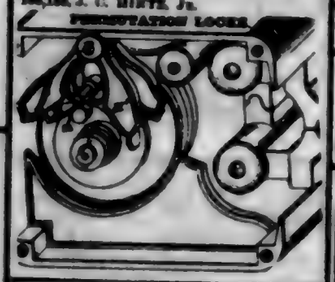


103,181, LOUIS HILLENBRAND.
SEAT FOR VESSELS.

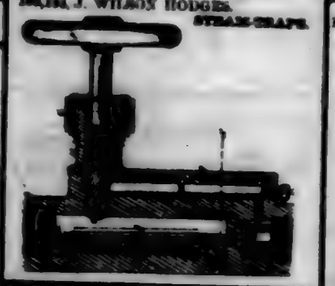


103,182, DIXILONE H. HILLIAR.
ICE-CREAM FREEZER.

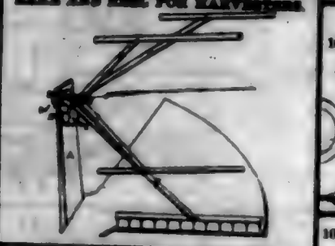
103,183, J. C. HINTZ, Jr.
PERCUSSION LOCKS.



103,184, J. WILSON HODGES.
STEAM-TRAPS.



103,185, PLINY F. HODGES. COMBINED RAKE AND RISE. FOR HARVESTERS.



103,186, P. F. HODGES.
COMBINED RAKE AND RISE. FOR HARVESTERS.



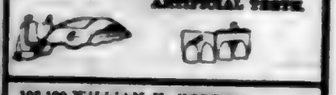
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JAMES A. HOWE.
JOEL NOURSE.
SWIVEL PLOWS.



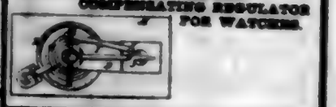
103,188, JOHN W. HOLLINGSWORTH.
RECAL-INJECTORS.



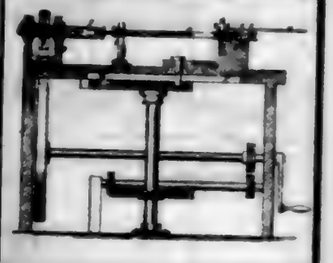
103,189, JOHN W. HOLLINGSWORTH.
ARTIFICIAL TEETH.



103,190, WILLIAM H. HORTON.
COMPENSATING REGULATOR FOR WATCHES.



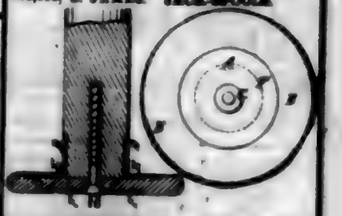
103,191, PH. HUFELAND.
SAND-PAPERING MACHINES.



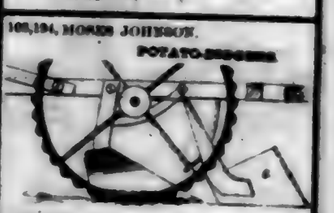
103,192, JOHN W. HULL.
HORSE HAY-FORKS.



103,193, B. JAMES. JACK-SPOOLS.



103,194, MOSES JOHNSON.
POTATO-DIGGERS.



103,195. JAS. A. JOHNS
SCRAPING SHEET AND CELLAR

103,201. W. J. KUHNS.
SPRING PLANTER.

AUTOMATIC RAILWAY-SWITCHING
LEWIS E. KURTZ.
103,202.

103,205. EDWARD LANNAY.
CLOD-PENDERS AND PULVERIZING
ATTACHMENT FOR GRAVEL-PLOWS.

103,208. JEO. LEWTHWAITE.
COATING FABRICS WITH PARCHMENT

THOMAS KRALY.
103,206. PUMPING

103,204. S. H. LA RUE
COOKING-STOVE.

103,197. CLEMENT A. KELLOGG.
PRUNING-SHEARS.

103,200. ALBERT H. LAW.
APPARATUS.

103,214. CHAS. H. LITHGOW.
HEATS-FURNACES

103,211. JAMES M. LOGAN.
BELT-STRETCH DRIVERS.

103,196. JOHN L. KENDALL.
R. H. TRENTED.
FABRIC FOR CARPET-LINING, &c.

103,203. Dr. H. EDWD LEAMAN.
PLATING FOR GRATINGS.

103,212. M. S. LORD. STEAM-ENGINE.

103,209. SAMUEL KIXOAN
MANUFACTURE OF BOOTING-TUBE.

103,210. JOHN KUHNLE.CUTTING-HEAD
FOR PLANING-MACHINES.

103,206. Dr. H. EDWD LEAMAN.
GAS-COUPLING.

103,202. GEORG LEUTGEB.
TABLE-FURNACE FOR MAKING GLASS.

103,213. WM. D. LUDLOW.
LAND-CUTTING

103,214. ALFRED MARR.
FABRIC FOR SURFACING RAILWAY
GRADE, DRAWING AND SPINNING-
FRAMES.

103,215. R. G. MATTHEWS.
CUTTER-STOCK FOR
SWIVEL-PLOWS.

103,216. YVE A. MAURIN, GALBRDARE
G. TOURAY

103,217. EDWIN R. McCALL.
HARVESTER RAKES.

103,218. E. P. McCARTHY.
MANUFACTURE OF ILLUMINATING
GAS.

103,219. THOS. R. McCONAUGHEY.
JAMES ADAMS.

103,220. JACOB W. McCLURE.
PUT-LOCKS.

103,221. WM. H. McNARY.
COUPLING-SHACKLES.

103,222. GEO. F. MEIGS.
GAS-HEATER.

103,223. M. J. MEIGS.
GAS-REGULATOR.

103,224. SARAH E. MESSERLEAU.
PLOWING-TOOTH.

103,225. P. ANDREW MYERS.
SAWING-MACHINES.

103,226. J. H. NEWELL.
TIE-BOTTOM.

103,227. GEO. J. PACK.PREPARING
GOLD FOR REFINING THE.

103,228. HENRY M. PAINE.
WORKING MODELS.

103,229. HENRY MONROE PAINE.
ELECTRO-MAGNETS.

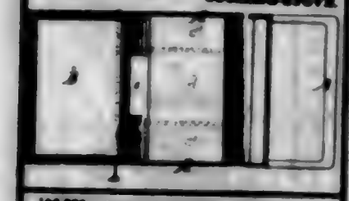
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COMPOSITION OF ELECTRO-MAGNETS.

103,232. MORRIS PALMER, Jr.
SHIRT-BOSOMS.

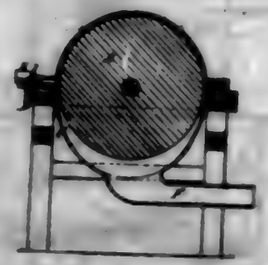
103,233. CHAS. H. PARKER. BRIDGES.

103,234. JAS. WILLARD PATTERSON.
REVERSING LAND.

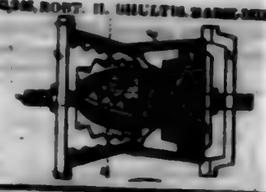
103,260, ALEXANDER G. PATTON.
COOKING-STOVE.



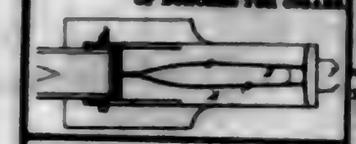
103,262, PHILIP SCHRAG, MACHINIST
PH. HUFFLAND.
FOR CUTTING OFF LEAD-PENCILS



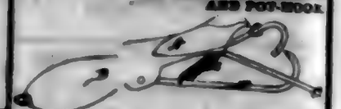
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103,264, ADOLPH PEARL.
MANUFACTURE
OF BONNETS FOR CHAIRS.



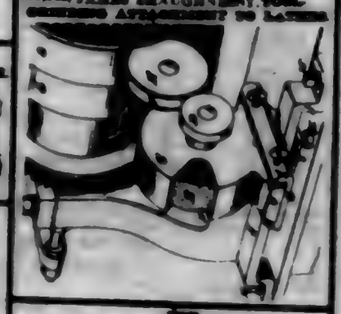
103,267, THOMAS SIMPSON.
LID AND FLASK-LIFTER
AND POT-HOOK.



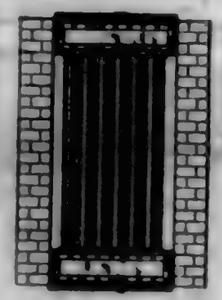
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RAILWAY-SHADOW SIGNAL-POST.



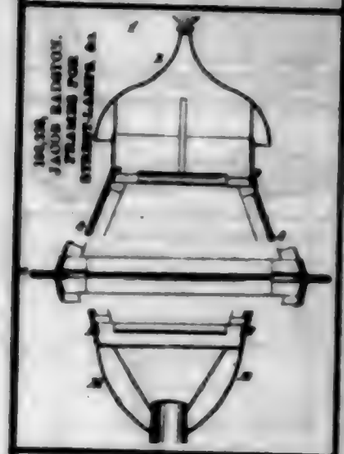
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SHOVELING ATTACHMENT TO LASTING



103,269, WILLIAM P. SKIFFINGTON.
STEAM-GENERATORS



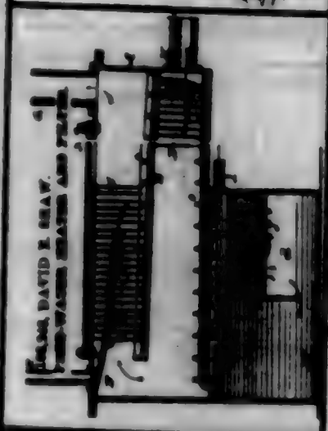
103,238,
JACOB BARTON.
FRAME FOR
STEEL-YARDS, &c.



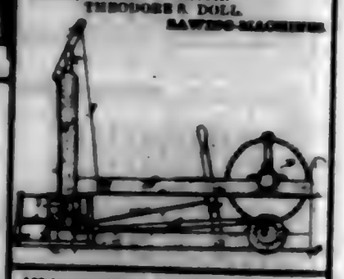
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CHARLES I. SHOW.
SPRING-SEAT BOTTOM.



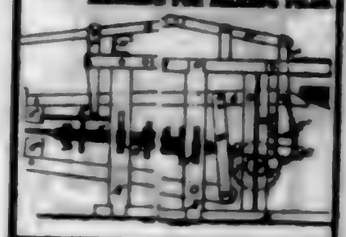
103,239, DAVID I. SHAW.



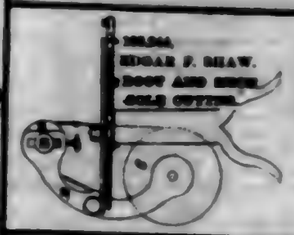
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THEODORE S. DOLL.
SAWING-MACHINES.



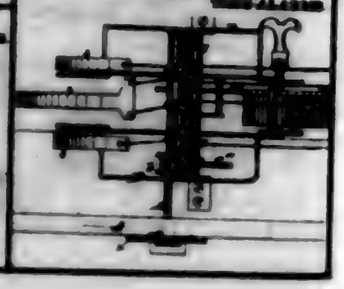
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MACHINE FOR MAKING PILES.



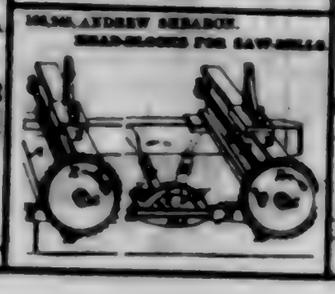
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ROOT AND BRIER
GOAD CUTTER.



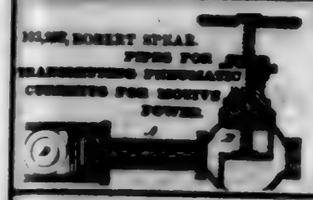
103,272, THOMAS H. SMITH.
HEAD-BLOCKS.



103,242, ANDREW SEBASTIAN.
HEAD-BLOCKS FOR SAW-MILLS.



103,337, ROBERT SPEAR.
PIPES FOR
HARMONIZING PERMANENT
CURRENTS FOR MOTIVE
POWER.



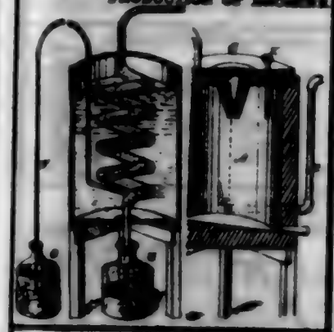
103,338, CORNELIUS VAN DERZEE.
BENJAMIN REAMER.
POTATO-DIGGERS.



103,364, LEWIS WHITEHEAD.
HARROW.



103,339, HERMANN STIERER, M. D.
WILLIAM A. WISNET.
APPARATUS FOR THE
PRODUCTION OF BROMINE.

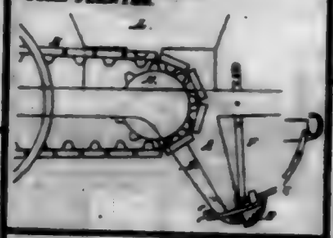


103,365, EDWIN F. WHITNEY.
REUBEN JONES.
BORING-TOOL.

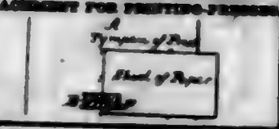


103,366, CHARLES D. WILLIAMS.
ARTIFICIAL FUEL.

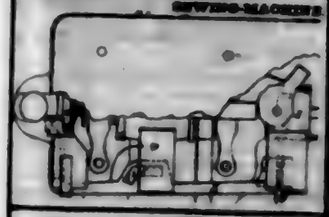
103,340, W. E. VERNON.
CORN PLANTER.



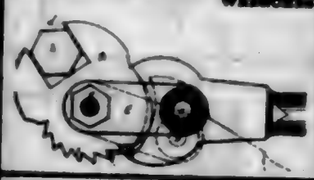
103,367, HENRY WILLSON, DECEASED
ATTACHMENT FOR PRINTING-PRESSES.



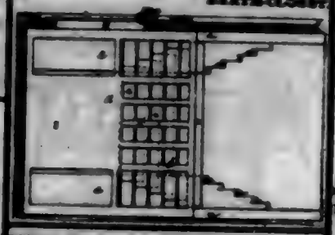
103,341, LEVI W. STOCKWELL.
SEWING-MACHINES.



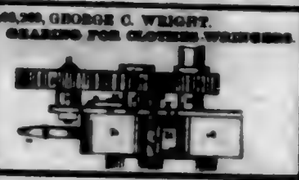
103,368, WALTER P. WOLFKIEL.
WRENCHES.



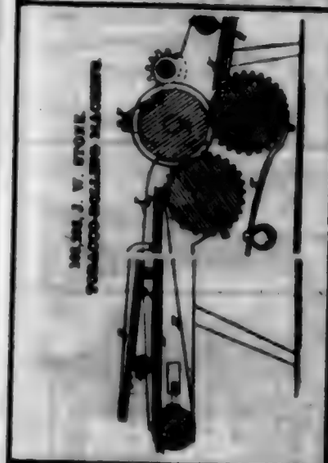
103,342, CHAS. A. WAKEFIELD.
BARTH-CLOSET.



103,369, GEORGE C. WRIGHT.
GEARING FOR CLOTHES-WRINGERS.



103,343, J. W. STOUT.
PUDDLING-FURNACE MACHINE.



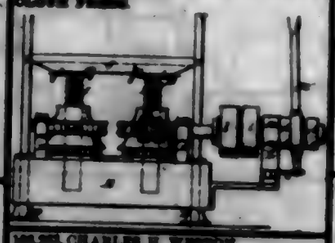
103,370, WILLIAM P. WRIGHT, PERCHE.



103,344, CHARLES WARREN, SAW-MILLS.



103,345, C. EWESTON AND J. DENNIS.
CLOTHES-PRESS.



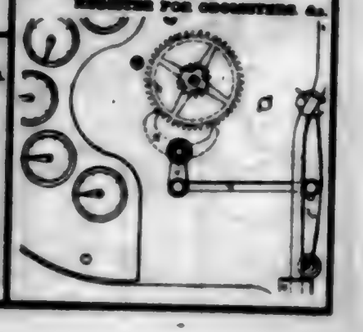
103,271, HOMER T. YARYAN.
APPARATUS FOR REFRIGERATING
AND MAKING ICE.



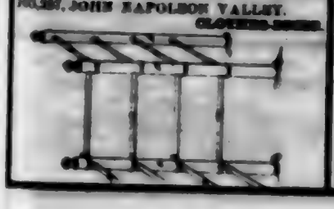
103,346, HENRY R. TOWNE.
KEY-HOLE GUARD-LOCKS.



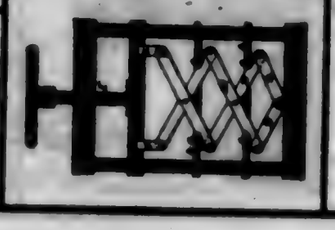
103,372, WILLIAM YORKE.
MACHINERY FOR CROSSCUTTING &c.

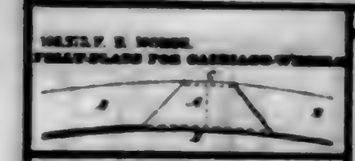


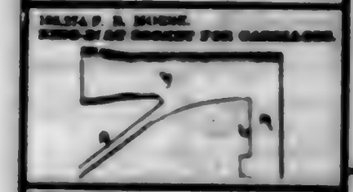
103,347, JOHN NAPOLEON VALLEY.
CLOTHES-DRIER.

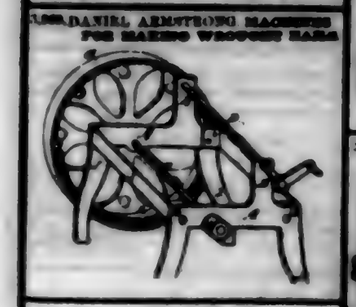


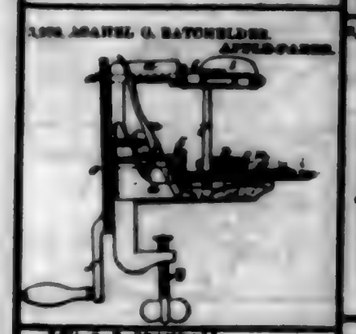
103,348, CHARLES H. WESTON.
JOHN DENNIS.
CLOTHES-PRESS.

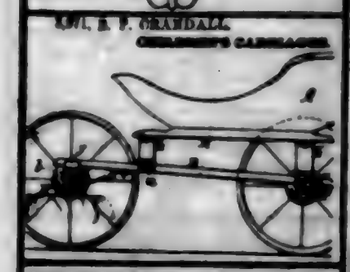








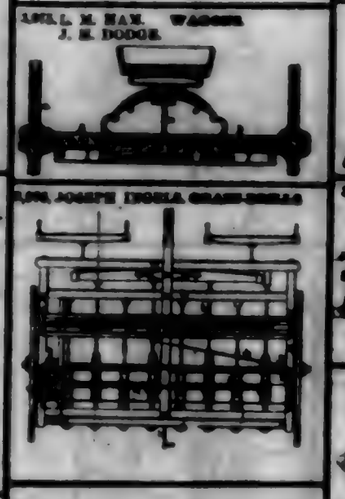


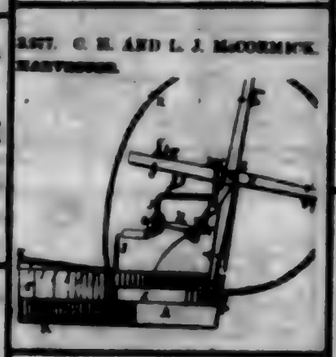


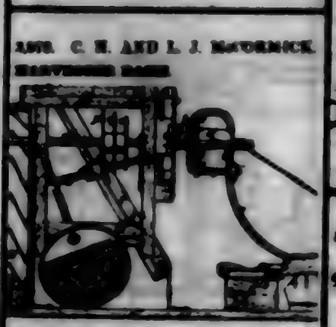




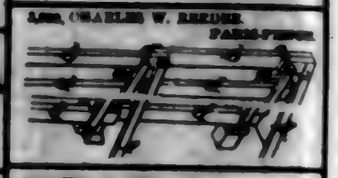


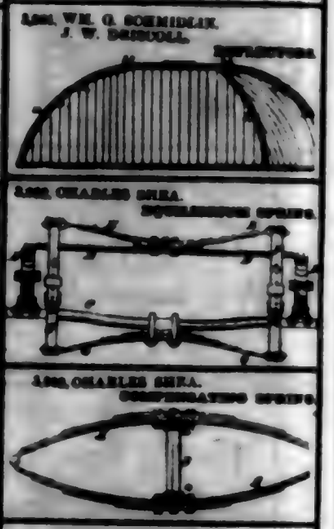




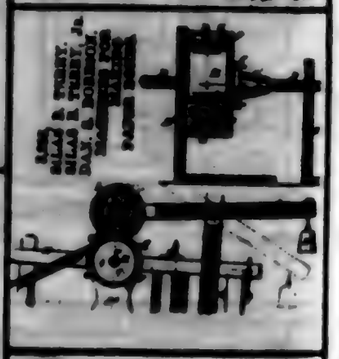


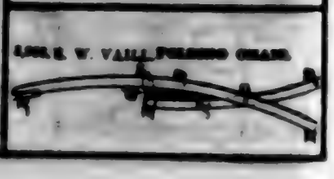








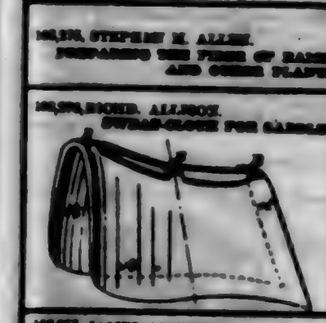


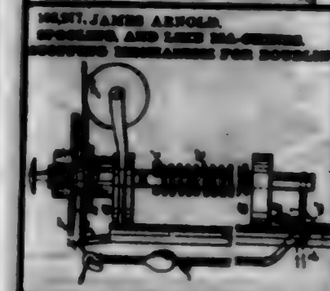


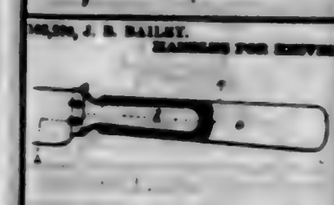
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THE UNITED STATES PATENT OFFICE

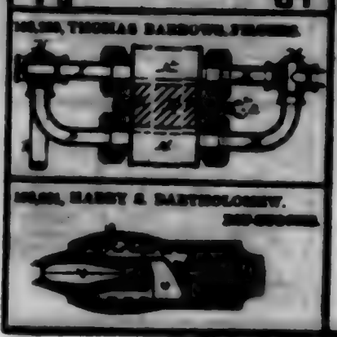
MAY 24, 1870.

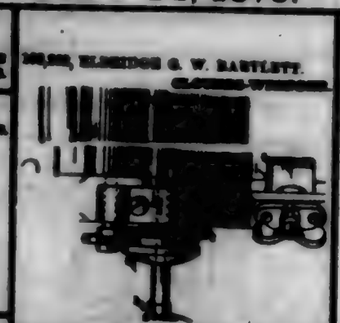




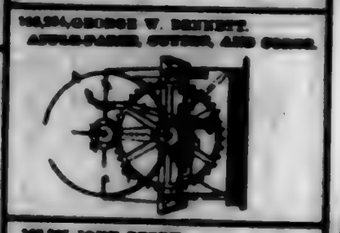


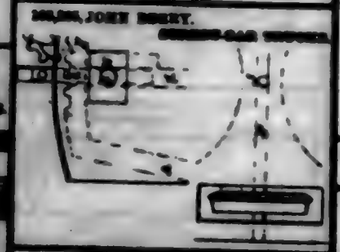


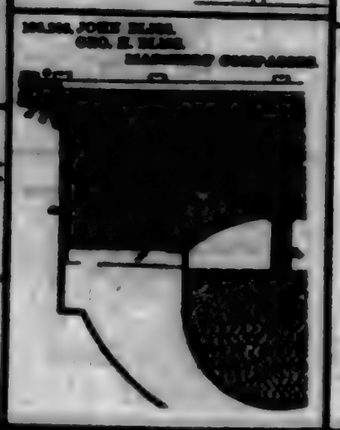






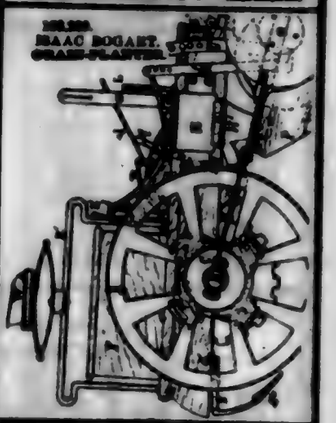


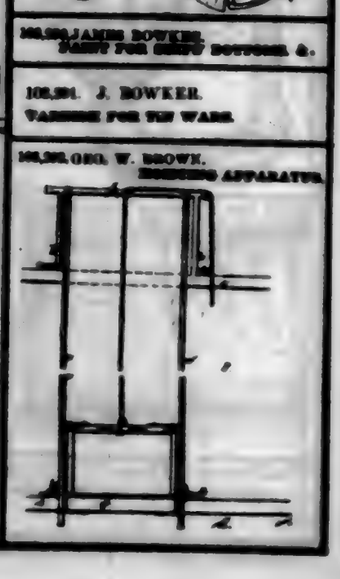




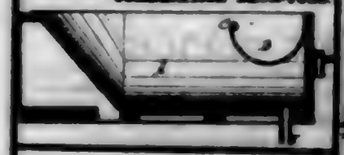






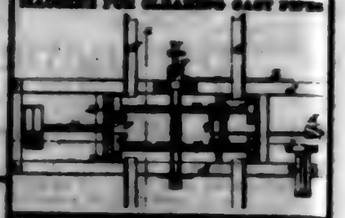


103,308 A. G. BROWELL.
COMBINATION BATH-TUB.

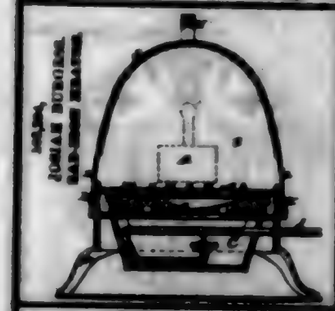




103,309, HENRY DAVIES.
MACHINES FOR CLEANING CAST PIPES.



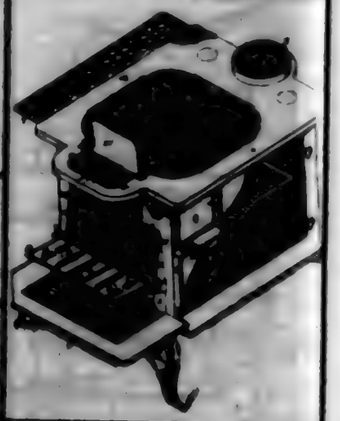
103,310, JOSIAH BURDICK, Jr.
LAUNDRY-STOVE.



103,311, EUGENE CHAPIN.
BOOKING-CHAIR FOR INVALIDS.



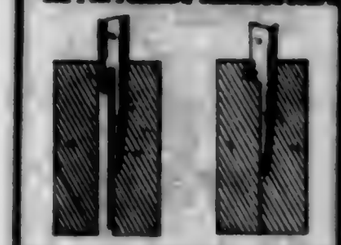
103,312, W. C. DAVIS.
J. W. GARRISON.
COOKING-STOVE.



103,313, FREDERICK BURGHARDT.
APPARATUS COUPLING FOR FIREARMS AXLES.



103,314, LEANDER BURR.
SEED FOR PLANTING BROOM-CORN.



103,315, ERASTUS G. COVEY.
ADDISON BECK.
WEATHER-STRIPS FOR DOORS.



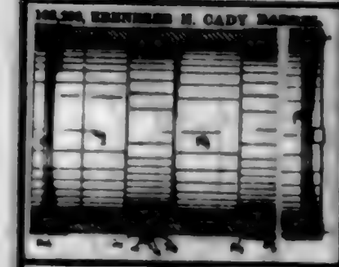
103,316, PRIOR DEMPSEY, Jr. GROVE-GRATE.



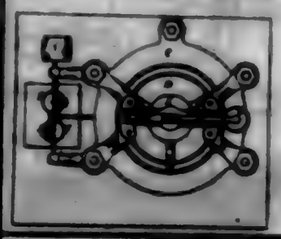
103,317, CALVIN C. HUFF.
GAS-REGULATOR.



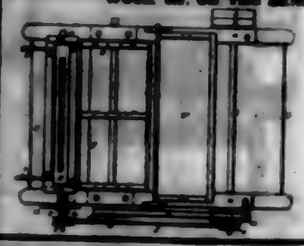
103,318, HENRIETTA H. CADY, Admx.
BOOKING-CHAIR FOR INVALIDS.



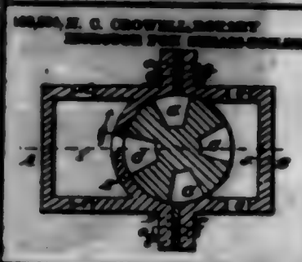
103,319, HARRY A. CROSBY.
MACHINES FOR BEVELING AND GROOVING LASTS.



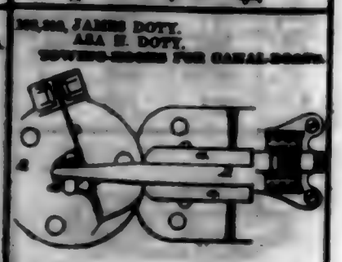
103,320, GEO. F. DOOKHAM.
MACHINE FOR REMOVING WOOL, &c. OFF THE SKIN.



103,321, H. G. CROWELL, Assignor
MACHINES FOR GRAIN-CRADLES.

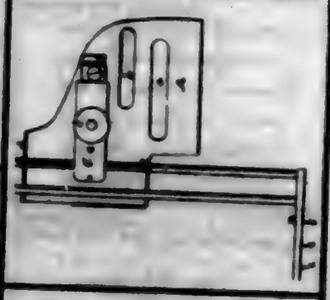


103,322, JAMES DOTY.
ASA H. DOTY.
MOVING-BOOMS FOR CANAL-BOATS.



103,311, GEORGE L. DU LANEY, Assignor of one-half to
JAMES S. HUSTON.
LOOP FOR HARNESS.





103,312, A. E. EATON.
TOOLS AND WHEELS FOR CUTTING AND POLISHING IRON, STEEL, AND OTHER MATERIALS.

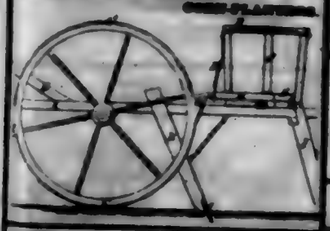
103,313, WILLIAM H. ELLIOTT.
MOVING-WAGONS.



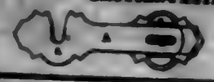
103,314, M. PROCTOR FAVOR, Executor of
LAUNDRY.



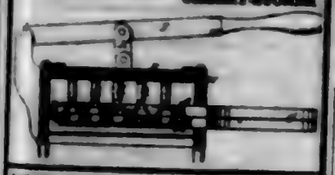
103,315 JOHN G. FETZER.
GRAIN-PLANTERS.



103,316, J. BENTLEY FIELD.
MOVING-FASTENINGS.



103,317, CHAS. A. FISHER.
CHIMNEY-STOCKS.

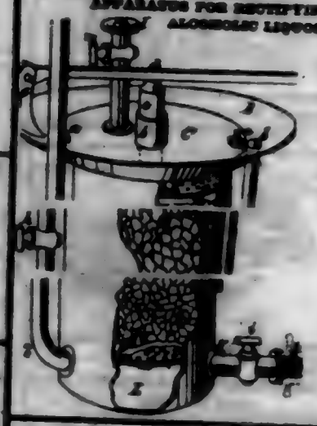


103,318, HART A. FISHER.
SATCHING ATTACHMENT FOR MOVING-MACHINES.

103,319, M. FITZGIBBONS.
MACHINES FOR ATTACHING TRIM PAPER TO STRAW BOARDS.



103,320, CHR. L. FLEISCHMANN.
APPARATUS FOR RECTIFYING ALCOHOLIC LIQUORS.



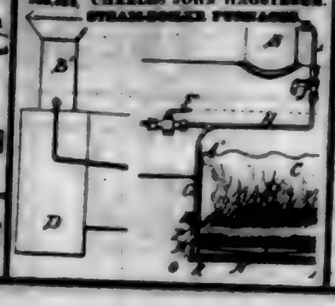
103,321, CONRAD GANZ.
PAD-PLATE FOR HARNESS.



103,322. CANCELED.

103,323, JOHN D. GREY.
MANUFACTURE OF SHEET-IRON.

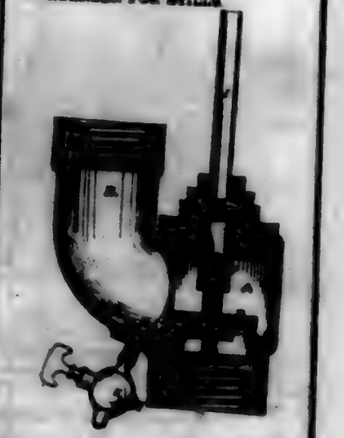
103,324, CHARLES JOHN HAGSTROEM.
STEAM-BOILER FURNACES.



103,325, JOHN G. HANNING.
ANTI-FREEZING DEVICES FOR PUMPS.



103,326, JOHN HARRISON.
CALEB LOW.
CONDENSER FOR STILLS.



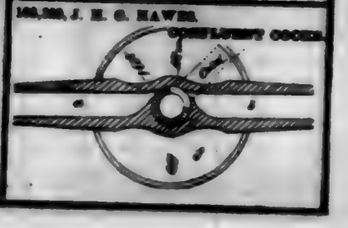
103,327, AARON L. HATFIELD.
FEEDING-GRIPS.



103,328, HERMAN HAUPT.
WOOD-PAVEMENT.



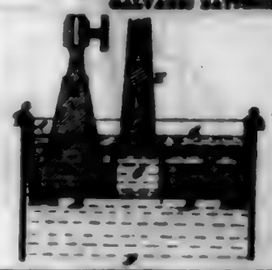
103,329, J. H. G. HAWES.
OVERFLOW-COCKS.



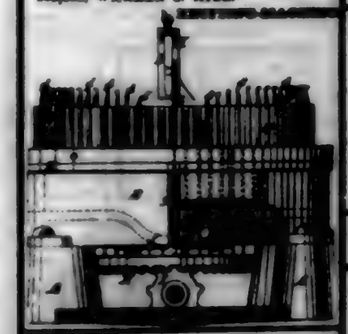
No. 330, ALBERT REUBER.
DOOR-OPENER.



No. 331, JOSEPH HILL.
GALVANIC BATTERIES.

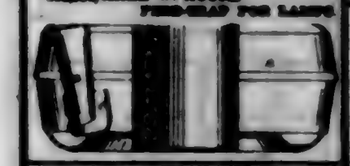


No. 332, WARREN S. HILL.
KNITTING-MACHINE.

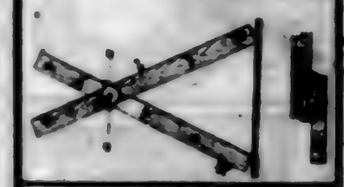


No. 333, CHARLES HOLLMANN.
LAYING MASTIC FLOORS.

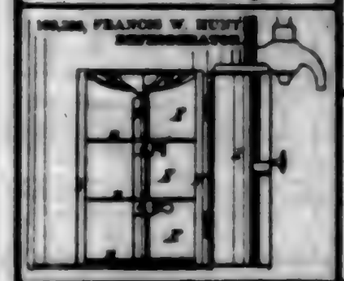
No. 334, MARK W. HOOKE.
FEED-GRAB FOR LADDER.



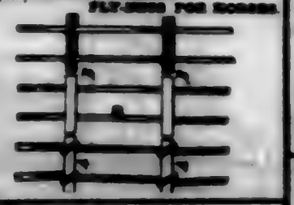
No. 335, LEONARD B. HOWARD.
SAW-SWAGE.



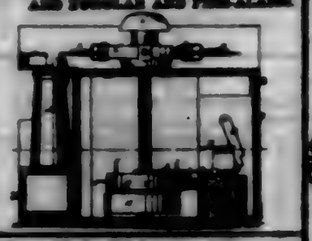
No. 336, FRANCIS W. HUFF.
REFRIGERATOR.



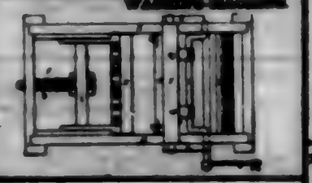
No. 337, JAMES S. HUSTON.
FLY-SPEED FOR ROCKERS.



No. 338, J. B. HEWITT AND H. GUTTER.
AND TUBULAR AND FIRE-ALARM.

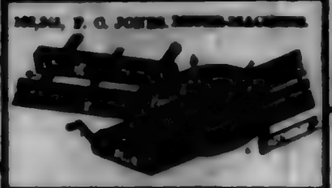


No. 339, JOSEPH JOHNSON.
WASHING-MACHINE.

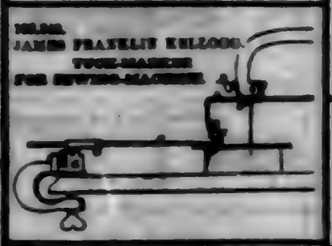


No. 340, W. B. JOHNSTON.
MANUFACTURE OF SUGAR AND

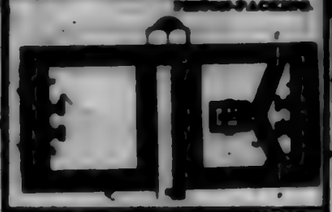
No. 341, F. C. JOHNSON.
SEWING-MACHINE.



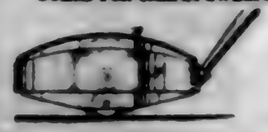
No. 342,
JAMES FRANKLIN KELLOGG.
TOOL-HANDLE
FOR SEWING-MACHINES.



No. 343, DAVID KELSEY.
THRESH-PACKING.



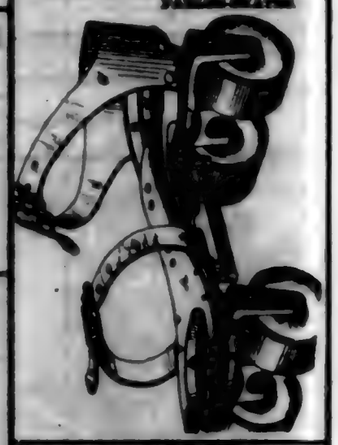
No. 344, A. J. KNIGHT.
STAND FOR CARPET-SWEEPERS.



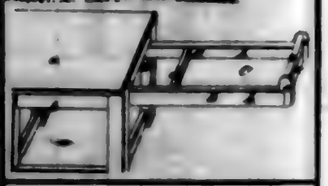
No. 345, CHRISTIAN KURTZMANN.
PIANOS.



No. 346, JOHN LEWRAW.
PARLOR-GRATES.



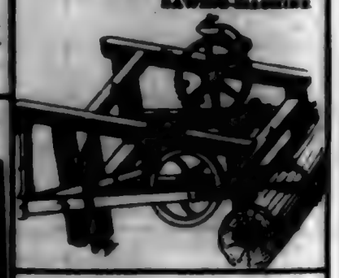
No. 347, M. LEFF SAW-GAMLER.



No. 348, EDWIN T. LAMB. LOCK-NUT.



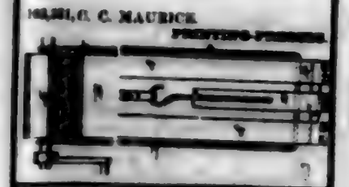
No. 349, BENJAMIN LITTLE.
JOHN B. LUNDBERG.
SAWING-MACHINE.



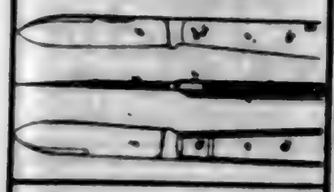
No. 350, W. GRAYSON MANN.
TUBULAR SUBMARINE VIADUCTS.



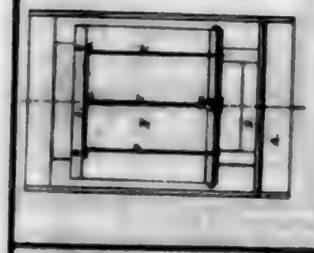
No. 351, C. C. MAURICK.
PRINTING-PRESSES.



No. 352, WM. H. MILLER.
GEO. W. MILLER.
POCKET CUTLERY.



No. 353, JAMES MONTGOMERY.
CURTAIN-FIXTURE.



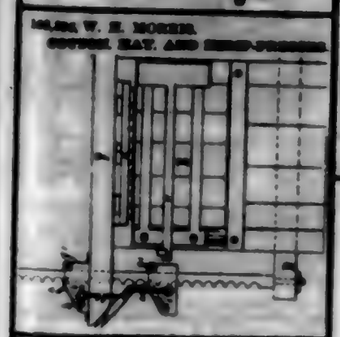
No. 354, FRANK MOOK.
STOVE-LEG FASTENER.



No. 355,
ALFRED L. B. MOORE
OIL-CANS.



No. 356, W. H. MOSER.
CUTTING HAY AND FEED-PRESSES.



No. 357, RUSSELL S. MORSE.
WASHING-MACHINE.

No. 358, WILLIAM MORTATT.
FOLDING CHAIR.



No. 359, JAMES MORTON. SAW-SET.



No. 360, AUGUST NITTINGER, Jr.
MEAT-CUTTER.



No. 361, W. J. OXER.
CUTTER-BAR FOR HARVESTERS.



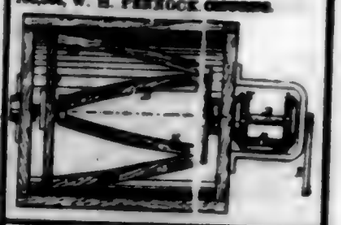
No. 362, SAMUEL PATTON, ASSIGNEE
OF SAMUEL HARVESTER AND BINDER.



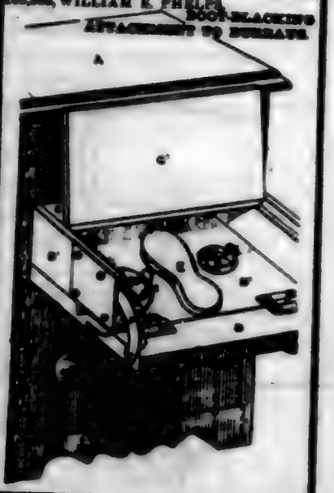
No. 363, ABRAHAM L. PENNOCK.
STEAM-GENERATOR.



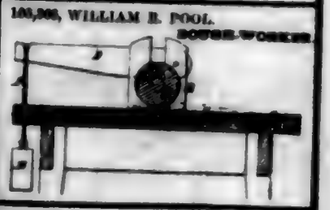
No. 364, W. H. PENNOCK, ASSIGNOR.



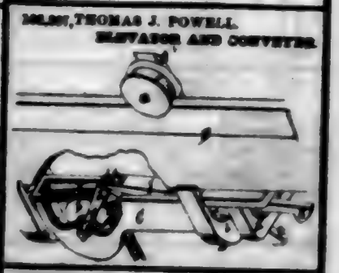
No. 365, WILLIAM E. PHELPS.
BOOT-BLACKING
ATTACHMENT TO PINTRAPS.



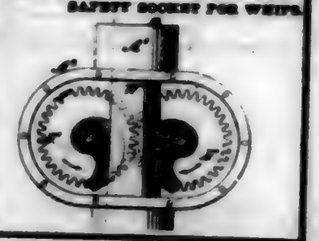
No. 366, WILLIAM B. POOL.
SOUTH-WORKER.



No. 367, THOMAS J. POWELL.
ELEVATOR AND CONVEYER.

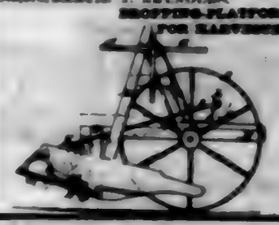


No. 368, WINTHROP DAVIS PUTNAM.
SAFETY SOCKET FOR WHIPS.

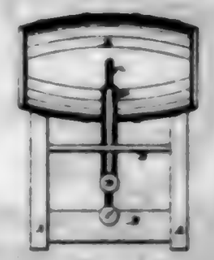


No. 369, THOMAS L. REED.
FLEXIBLE TUBING OR HOSE.

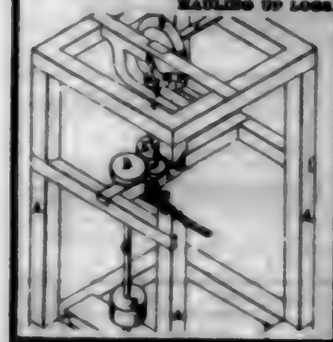
103,370, BARNIS T. REYNOLDS.
ROOFING-PLATFORM FOR RAILWAY-CARS.



103,371, THOMAS & REYNOLDS.
MACHINES FOR WASHING BARRELS.



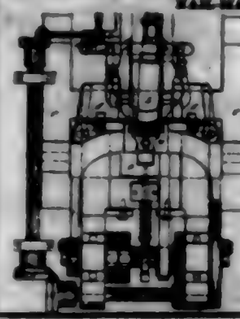
103,372, SIMON H. RICHARDSON.
HAULING UP LOGS.



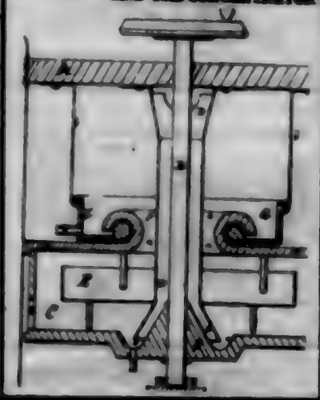
103,373, CHARLES B. SAWYER.
BALANCE ELEVATOR.



103,374, HENRY SCHEUERLE.
HAY-MACHINE.



103,377, JOSEPH SCOTT, AMALGAMATOR AND ORE-CONCENTRATOR.



103,378, JOHN P. SHEPARD, GRATING, SPINNING, AND SEWING-MACHINE.



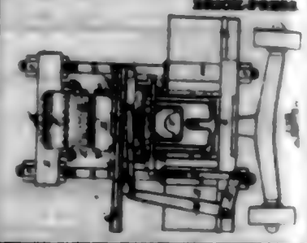
103,379, GERARD SIOUSA.
WATER-METER.



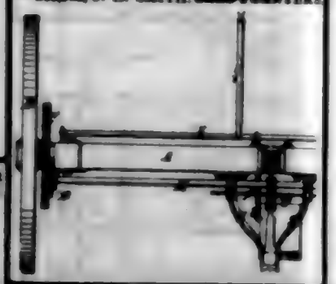
103,380, FREDERICK H. SMITH.
ROLLED IRON OR STEEL COLUMN.



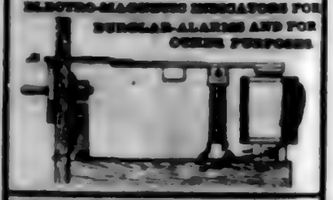
103,381, J. NOTTINGHAM SMITH.
BRICK-PRESS.



103,382, T. H. SMITH, SEED-PLANTER.

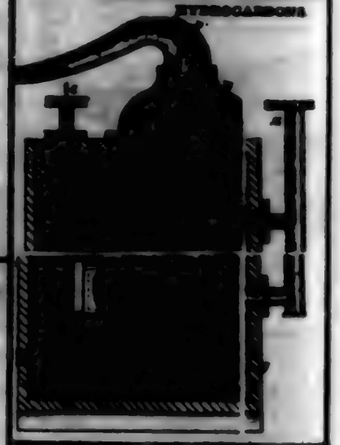


103,383, JAMES P. SNYDER.
ELECTRO-MAGNETIC INDICATORS FOR BURGLAR-ALARMS AND FOR OTHER PURPOSES.

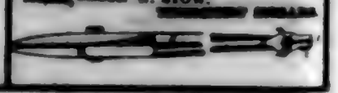


103,384, J. W. SPEYER.
SEWED GOUSSET AND OTHER FABRICS.

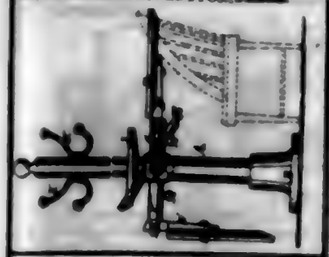
103,385, HENRY A. STRAENS.
APPARATUS FOR REFINING HYDROCARBONS.



103,386, OSCAR W. STOW.
SEWING-MACHINE.



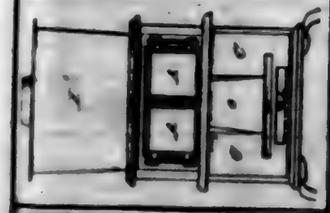
103,387, CHARLES T. SUTTON, SABLE.



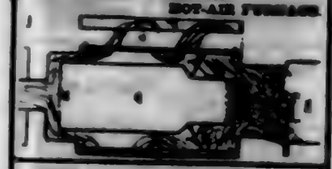
103,388, FREEMAN AUGUSTUS TABER.
MANUFACTURE OF TUBULAR CANDLES.



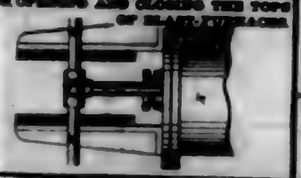
103,389, C. TEMME.
COOKING-STOVE.



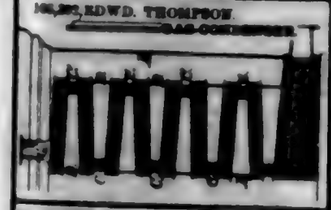
103,390, MOSES A. THAYER.
HOT-AIR FURNACE.



103,391, JAMES THOMAS, APPARATUS FOR OPENING AND CLOSING THE TOPS OF BLAST-FURNACES.



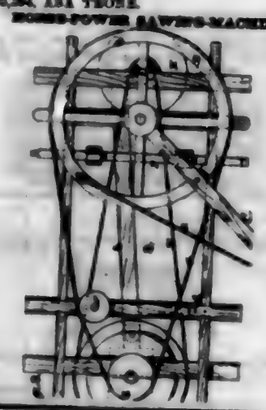
103,392, EDWD. THOMPSON.
GAS-GOVERNOR.



103,393, WM. F. TRAUTMAN.
PAPER-HANGING APPARATUS.



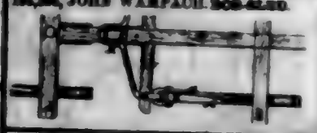
103,394, ASA TROTT.
HORSE-POWER SAWING-MACHINE.



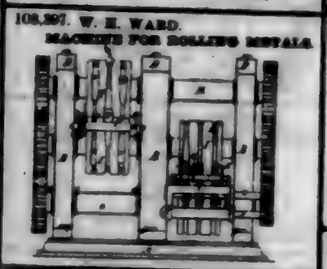
103,395, CHARLES H. TROTT.
ATTACHMENT FOR BUCKLES.



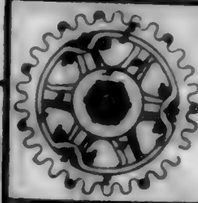
103,396, JOHN WAMPACH, BOB-SLED.



103,397, W. H. WARD.
MACHINE FOR ROLLING METALS.



103,398, W. H. WARD.
GEAR-WHEEL.



103,399, W. H. WARD.
ROUGHING FOR METAL-ROLLING MILLS.

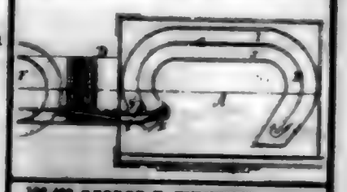


103,400, HORACE WELLS.
SHUTTLES FOR LOOMS.



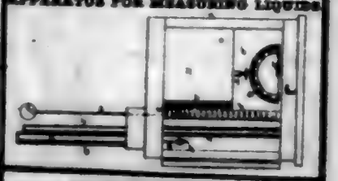
103,401, JAMES WESTERMAN.
FURNACES FOR BOILING AND PUDDLING IRON.

103,402, GEORGE P. WHITNEY.
COMPOUND FOR OILING, POLISHING, AND BLACKING LEATHER.



103,403, L. A. WILDER.
ROOFING-COMPOUND.

103,404, MOSES H. WILEY, THOMAS MILLER.
APPARATUS FOR MEASURING LIQUIDS.



103,405, CHARLES P. WINSLOW.
WASHING-MACHINE.



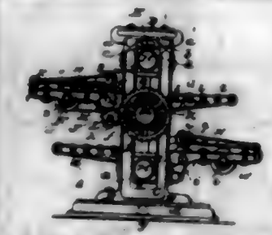
103,406, THOMAS J. WOOLCOCKS.
SPEAKING-TUBE WHISTLE.



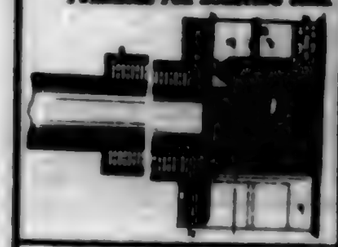
103,407, JAMES D. AKLEY, RICHARD ENGLISH.
DEVICE FOR ADJUSTING CROSS-HEADS OF LOCOMOTIVES.



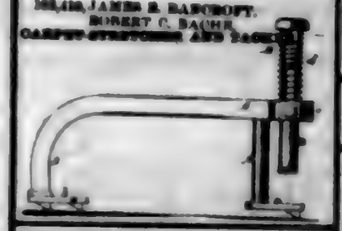
103,408, JONATHAN AMORY.
STEAM-GENERATORS AND FURNACES.



102,409, CHAS. M. ATKINS, ALEXANDER GOVAN, FURNACES FOR ROASTING ORES.

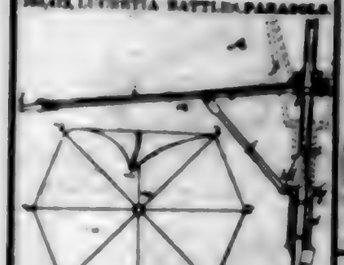


102,410, JAMES S. BANCROFT, ROBERT C. BAUM, CARPET-STRETCHERS AND TACKERS.



102,411, WM. H. BAER, LIFE-BOAT.

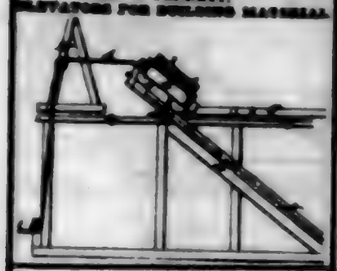
102,412, LUCRETIA BATTLES, PARASOLS.



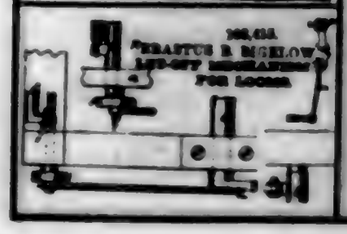
102,413, WILLIAM HEWITT BEATTY, HOOP-SKIRT.



102,414, DAVID F. GREEN, JOHN C. BENNETT, ELEVATORS FOR BUILDING MATERIAL.



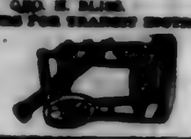
102,415, SEARTUS B. BIGELOW, LIFE-SAVING APPARATUS FOR LOCOMOTIVES.



102,416, JAMES S. BIRD, GEO. C. SMITH, VULCANIZED INDIA-RUBBER ROLLS FOR WRINGING GRAIN-BAGS &c.



102,417, JOHN BLAIR, GEO. S. BLAIR, STAKING FOR TRANSIT INSTRUMENTS.

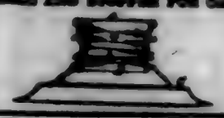


102,418, SAMUEL BOTHWELL, WELDING POWDER FOR IRON AND STEEL.

102,419, E. T. BRADLEY, E. W. WARBROUGH, BOILER-SEATING.



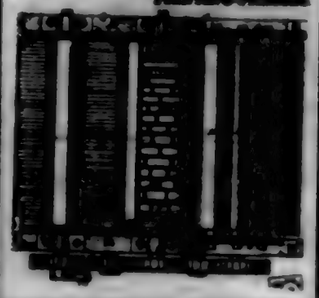
102,420, WHILLEY BRAY, BUSHES AND BOXINGS FOR CARS &c.



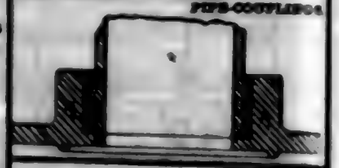
102,421, CHARLES BROWN, RAILROAD-STRAP FOR WAGONS.



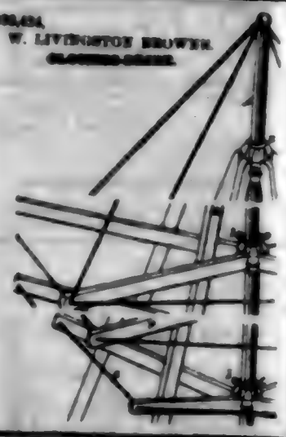
102,422, J. BAILEY BROWN, PRINTING-PYROMETER.



102,423, JOSEPH S. BROWN, PIPE-COUPLINGS.



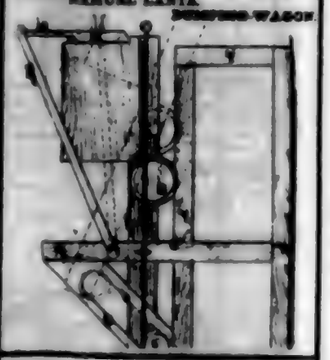
102,424, W. LIVINGSTON BROWN, CLOTHES-DRIER.



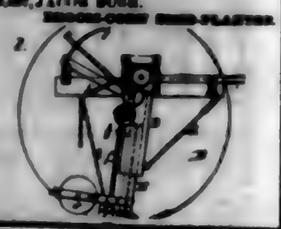
102,425, D. C. BRUSSON, SPRING SIDE-BOTTOM.



102,426, GEORGE BURRIT, SAMUEL LANTZ, DUMPING-WAGON.



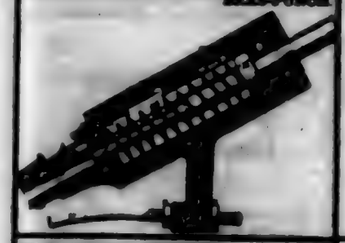
102,427, JACOB BUSH, BROOM-CORN SEED-PLANTER.



102,428, JOHN R. COMPTON, OIL-CANS, CROWELL M. TOMS



102,429, ROSWELL F. COOK, BRAD-PUNCH.



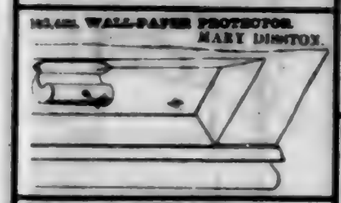
102,430, NELSON CROSKITE, WEEDER-HARROW.



102,431, JOHN MAYNE CURRY, STEAM-ENGINE.



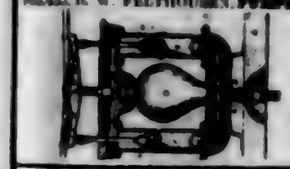
102,432, WALL-PAPER PROTECTOR, MARY DINSTON.



102,433, C. M. TESSIE DU MOTAY, PROCESS OF EXTRACTING SILVER AND GOLD FROM ARSENIO-SULPHURETS OF LEAD, COPPER, &c.

102,434, C. M. TESSIE DU MOTAY, PROCESS FOR THE TREATMENT OF ORES.

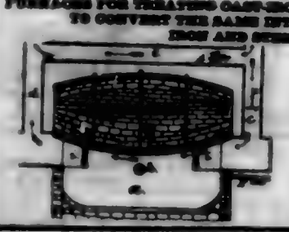
102,435, B. W. FELTHOUSEN, PUMPS.



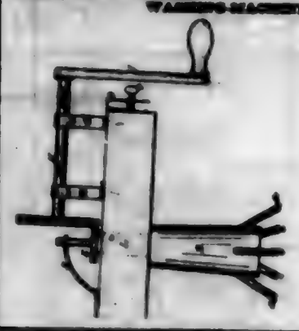
102,436, E. L. FETHEROLF, TATTING-SHUTTLES.



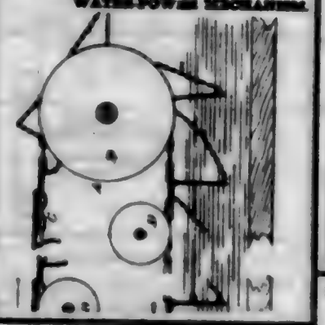
102,437, W. FIELDS, FURNACES FOR TREATING CAST-IRON TO CONVERT THE SAME INTO IRON AND STEEL.



102,438, WM. L. FRAKER, WASHING-MACHINE.



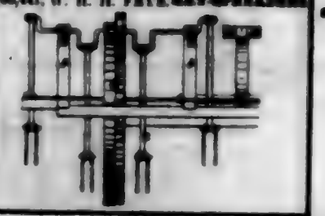
102,439, ABEL FRENCH, WATER-POWER MECHANISM.



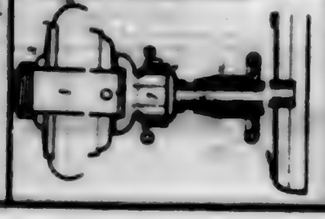
102,440, M. S. FROST, ELECTRO-MAGNETIC.



102,441, W. H. H. FRYE, HAY-SPREADERS.



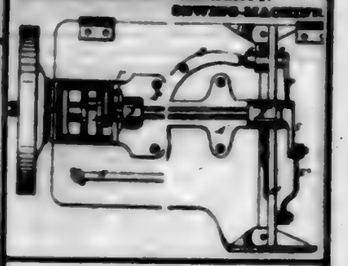
102,442, JIM H. FULLER, LAMPS.



102,443, J. C. GASTON, BUTTON-FASTENINGS.



102,444, MICHAEL F. GREAGHTY, SEWING-MACHINE.



102,445, JOHN JEFFERSON GLOVER, PROTECTED-FORE.



102,446, E. H. GOLDMAN, HOOP-SKIRT, DAVID W. HISEY.



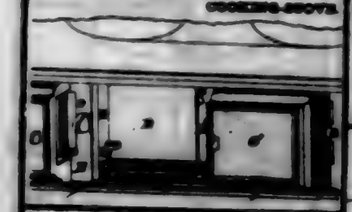
102,447, ADAM GOOD, Jr., ADJUSTABLE CONNECTIONS OF SUCKER-RODS TO WALKING-BEAMS.



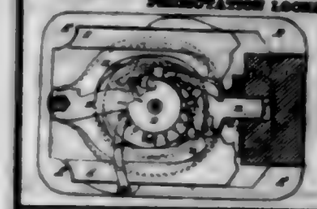
102,448, HORATIO N. GOODMAN, ORGANS.



103,440, JAMES GREER.
RUFUS J. KING.
COOKING-STOVE.



103,441. H. GROSS.
PRESERVATIVE LOCKS



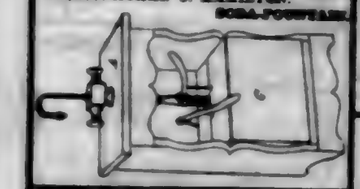
103,442, E. H. GUILFORD. BUTTONS.



103,443, JOHN B. HALSTED.
ODLOPE C. HALSTED.
CORDING BRIDES AND HARROWS.



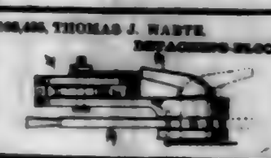
103,444, NATHAN T. HAMILTON.
SODA-FOUNTAIN.



103,445, J. P. HANSON.
JNO. R. CALLAWAY.
SEED-SOWERS.



103,446, THOMAS J. HASTE.
RETAINING-BLOCKS.



103,447, CHARLES HATTERSLEY.
PIANOS.



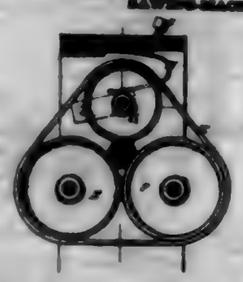
103,448, JOSEPH M. HEARD. SAFE.



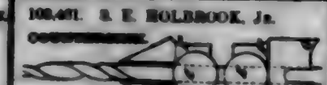
103,449, HORATIO F. HICKS.
STEAM COOKING APPARATUS.



103,450, GILBERT P. HILL.
EDWARD C. DOW.
SAWING-MACHINES.



103,451, J. H. HORN. LAMPS.

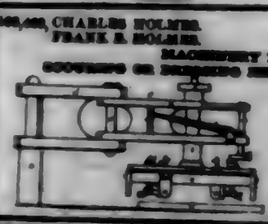


103,452. S. E. HOLBROOK, Jr.
CULTIVATORS.

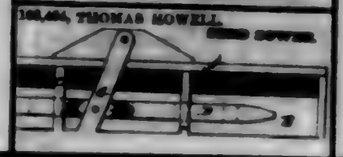
103,453,
ISAAC HOLLIDAY.
RE-SPOOLER.



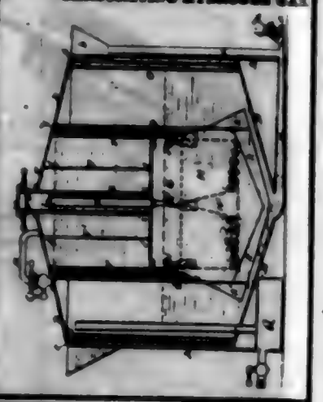
103,454, CHARLES HOLMES.
FRANK E. HOLMES.
MACHINERY FOR COVERING OR RECEIVING PINS.



103,455, THOMAS HOWELL.
SEED SOWER.



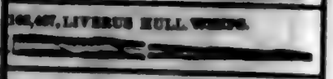
103,456. HENRY L. HOTT.
MACHINES FOR GENERATING AND CARBURETING HYDROGEN GAS.



103,457, PHILIP HUFFLAND.
PRESS-SCREW.



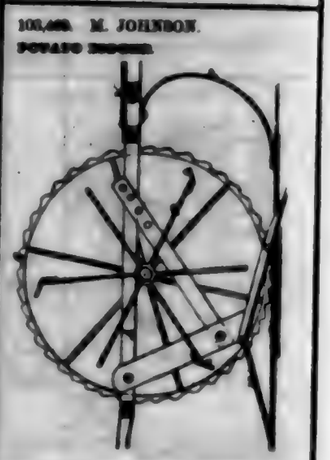
103,458, LIVERUS HULL. WRENCH.



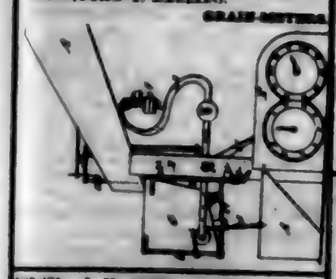
103,459,
MARTIN VAN B. JOHNSON.
COOKING VESSEL.



103,460. M. JOHNSON.
POTATO DIGGER.



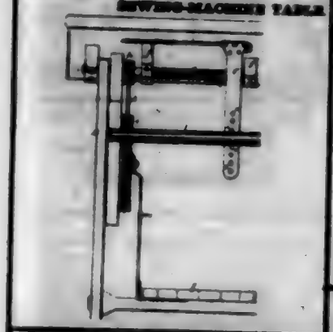
103,470, JOHN T. KEELING.
GRAIN-SEPTERS.



103,471. J. N. KENDALL.
TRANSFERRING AND LOOP RETAINING CAMS FOR KNITTING MACHINES.



103,472, MICHEAL J. KERIGAN.
SEWING-MACHINE TABLE.



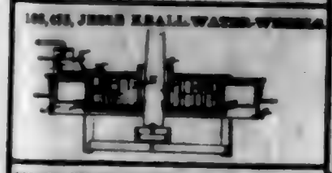
103,473, LEOPOLD KLEE.
ANDREW PATTERSON.
REFRIGERATING VESSEL.



103,474, VICTOR KNIGHT.
PULLEY-SHEAVE.



103,475, JESSE KRALL. WATER-WHEELS.



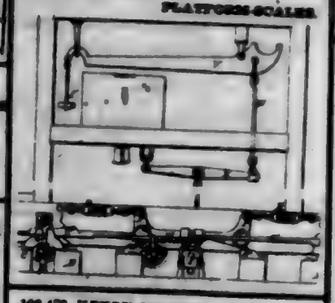
103,476, HUGH LAIRD. CULTIVATOR.



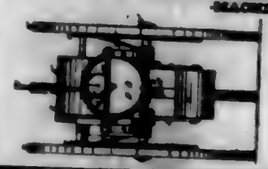
103,477, JOSEPH LINK. PROPELLER.



103,478, CHESTER G. LYMAN.
PLATFORM-SCALES.



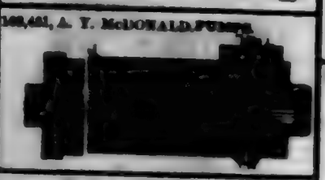
103,479, HENRY MAHOER.
SELF-REGISTERING SURVEYING MACHINE.



103,480, THOS. B. McCONAUGHEY.
JAMES ADAMS.
RAILWAY RAIL-JOINT FASTENING.



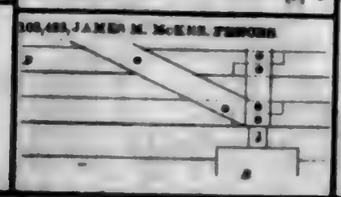
103,481, A. Y. McDONALD. PUMPS.



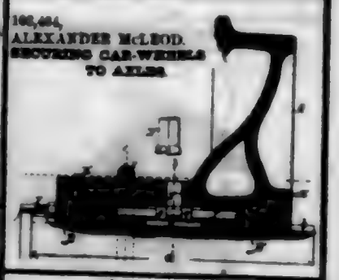
103,482, HENRY C. McILWAIN.
ALONZO BRUMFIEL.
ROTARY BLOWERS.



103,483, JAMES M. McKEE. PURSES.



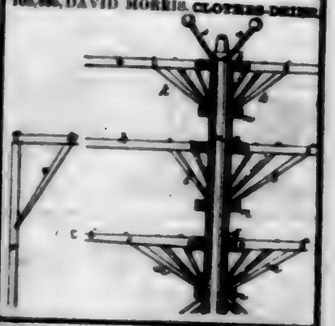
103,484,
ALEXANDER McLEOD.
SECURING CAR-WHEELS TO AXLES.



103,485,
SAMUEL P. MECAY.
HORSE HAY-FORKS.



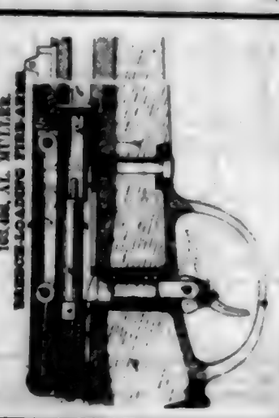
103,486, DAVID MORRIS. CLOTHES-DRIER.



103,487, I. MOSES. TAILORS' MEASURES.

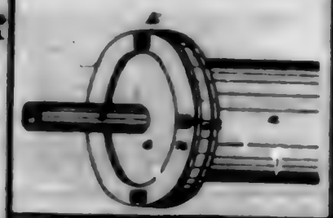


103,488, AL. MULLER.
REMOVABLE FIRE-BACK.



103,490. CASTILE TOCK.
FURNACES FOR PRODUCING "SPONGE" FROM IRON-ORE.

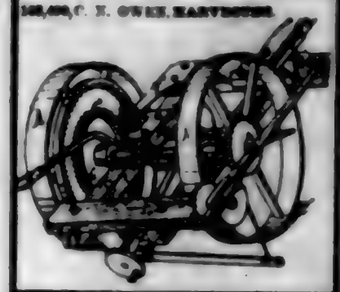




103,499. BENJAMIN FOSTER.
COAL-PLANTING.



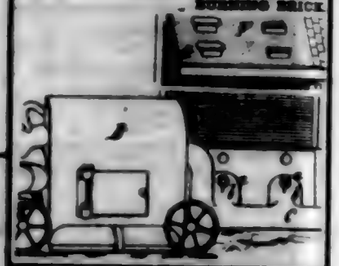
103,495. C. E. OWEN. HARVESTER.



103,496. GEO. PENROYER.
HARVESTER RAKING-WHEEL.



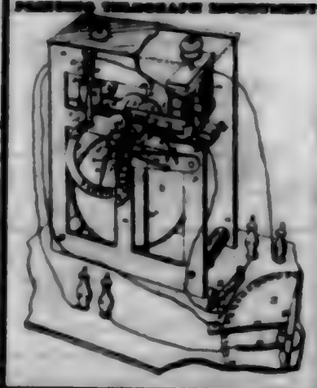
103,498. NATHANIEL F. POTTER.
KILN FOR MELTING AND BURNING BRICK.



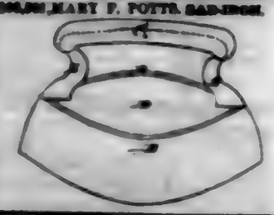
103,491. JOHN B. PADON.
WASHING-MACHINE.



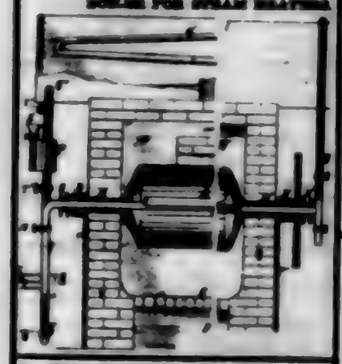
103,492. W. F. PHELPS AND W. J. PHILIPS.
PRINTING TELEGRAPH INSTRUMENTS.



103,500. MARY F. POTTS. SAD-IRON.



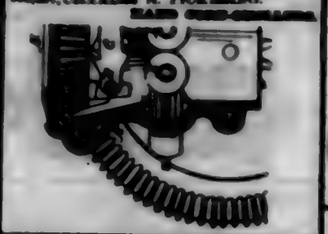
103,493. JAS. W. PAIGE.
DEXTER REYNOLDS.
BOILER FOR STEAM HEATING.



103,494. A. S. PARKS. TOOLS FOR FITTING SOFTENS TO FIRE-BARRELS.



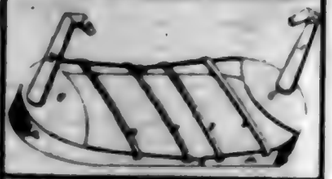
103,497. CHARLES H. PICKERING.
RAKE FOR HARVESTERS.



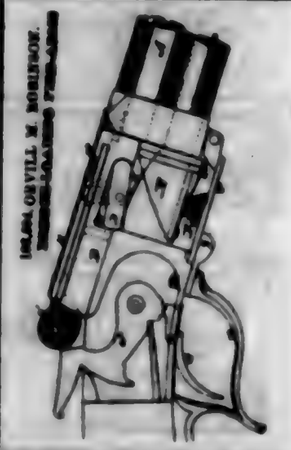
103,502. J. A. PRESTON. COAL-BARROW.



103,503. ADONIJAH H. PROCTOR.
WAGE-BOILER ATTACHMENT.



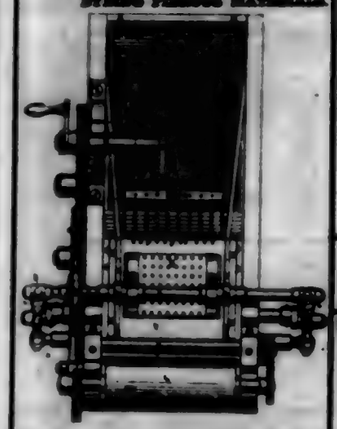
103,504. ORVILLE M. ROBINSON.
HARVESTING MACHINE.



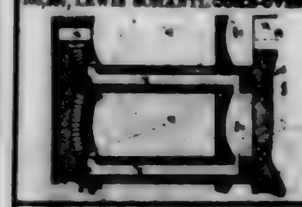
103,505. FREDERIC ROTIG.
STOP-WATCHES.



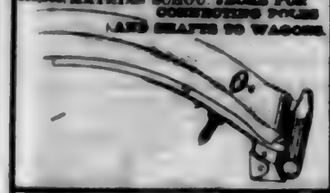
103,506. CHARLES G. SARGENT.
MACHINERY FOR WASHING AND DYEING FIBROUS MATERIALS.



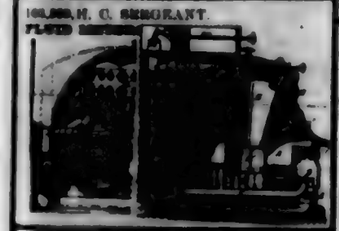
103,507. LEWIS SCHANTZ. COKE-OVENS.



103,508. MATHIAS SORGU. JACKS FOR CONNECTING POLES AND SHAFTS TO WAGONS.



103,509. H. C. SERGEANT.
FLUID METERS.



103,510. E. A. SEXTON.
BASE-BURNING FIRE-PLACE STOVE.

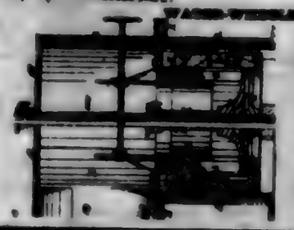


103,511. ALFRED B. SHEAFFER.
SPRING-FASTENER.



103,513. HARDY I. SHEFFER.
MEDICAL COMPOUND FOR THE CURE OF DYSPEPSIA.

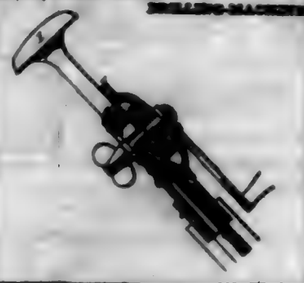
103,514. H. W. SHIPLEY.
WAGON-WHEELS.



103,514. WM. H. SHOOK.
PROPELLERS.



103,516. JAMES SMITH.
SPINNING-MACHINES.

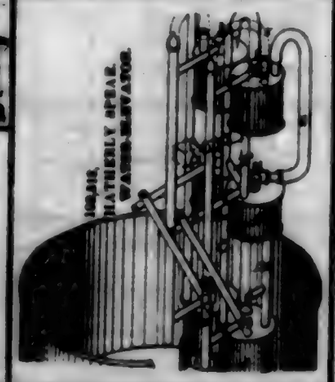


103,516. WILLIAM J. SMITH.
TRUSSES.

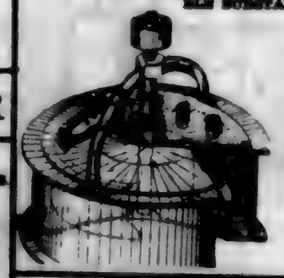


103,517. A. SORENSON.
PREPARATION OF ARTIFICIAL LEATHER FROM SCRAP-LEATHER, &c.

103,518. HATHERLY SPEAR.
WATER-ELEVATOR.

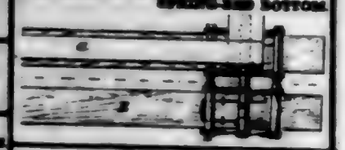


103,519. HENRY A. STEARNS.
APPARATUS FOR EXTRACTING OIL FROM ANIMAL AND VEGETABLE SUBSTANCES.



103,520. CHARLES STEPHENS.
MANUFACTURE OF ARTIFICIAL STONE.

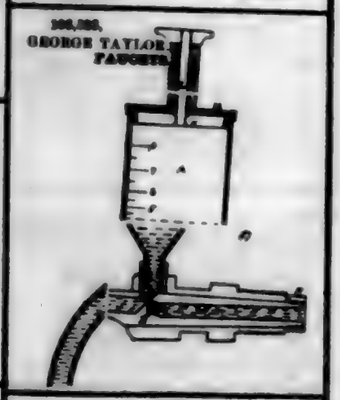
103,521. CYRUS S. STEVENS.
SPRING-SEAT BOTTOM.



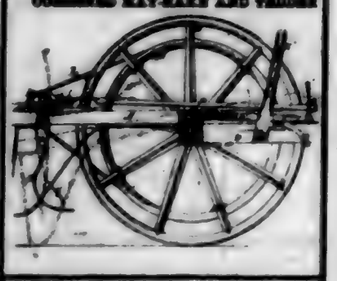
103,522. WM. W. SWANN.
OVERSHOE.



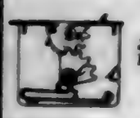
103,523. GEORGE TAYLOR.
FAUCETS.



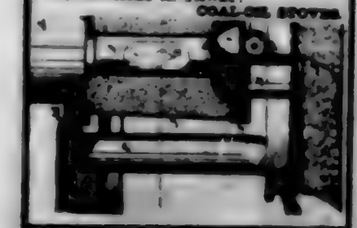
103,524. S. J. TAYLOR.
COMBINED HAY-RAKE AND TEDDER.



103,525. JOHN THIELMANN. PHILIPP MEYER.
PIANO-LOCKS.

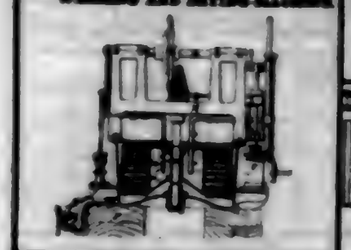


102,326, JAMES H. TROUP.
COAL-OIL STOVES.

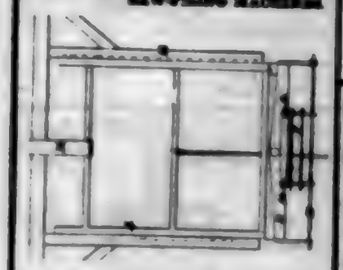


102,327, HIRAM TUCKER.
SHEEP-RACKING CARD-HOOK.

102,328, W. P. UHLINGER.
WASHING AND DRYING-MACHINE.



102,329, GEORGE E. VANDEMILIER.
RE. E. CHURCHILL.
SAW-FILING MACHINES.



102,330, EUGENE WARD, MANUFACTURER OF WHEELS FOR RAILROAD-ROLLING.



102,331, W. P. WATERS.
MACHINERY FOR FITTING TOGETHER AND TIRING WHEELS.



102,332, BAXTER D. WHITNEY.
MACHINERY FOR DOVETAILING FRUIT-BASKETS.



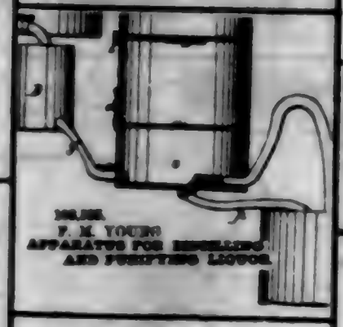
102,333, BAXTER D. WHITNEY.
CUTTERS FOR CUTTING THE BOXING OF FRUIT-BASKETS.



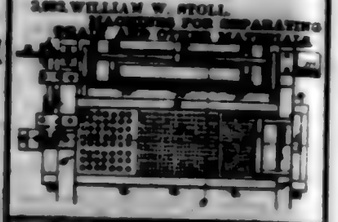
102,334, THOMAS SCOTT WILLIAMS, FREEMAN AUGUSTUS TABER, AND HENRY GAINES.
HEATING CAR-WHEELS AND LAMP-WICK.



102,335.
F. M. YOUNG.
APPARATUS FOR DISTILLING AND PURIFYING LIQUOR.



2,992, WILLIAM W. STOLL.
MACHINERY FOR SEPARATING GRAIN OR OTHER MATERIALS.



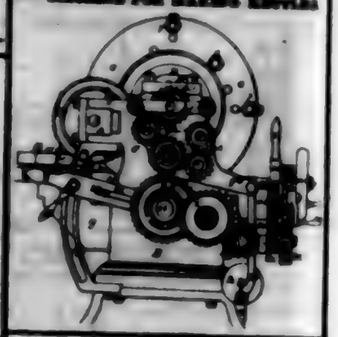
2,993, CASE FOR PAINT, PRINT, &c.
THE DEVOE MANUFACTURING COMPANY.



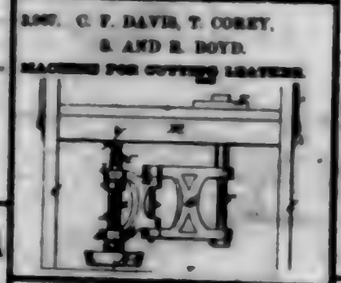
2,994,
THE GLOBE SEWING-MACHINE CO.
SEWING-MACHINES.



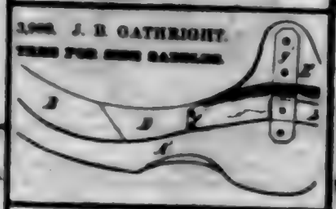
2,995, WATERBURY BRASS CO.
MACHINERY FOR MAKING KETTLES.



2,996, C. F. DAVIS, T. COREY, S. AND R. BOYD.
MACHINE FOR CUTTING LEATHER.

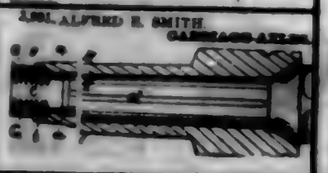


2,997, J. B. OATHRIGHT.
TIRES FOR SIDE SADDLES.



2,998, S. B. HEWETT, Jr., AND L. P. JONES.
COASTING SLED AND STEER.

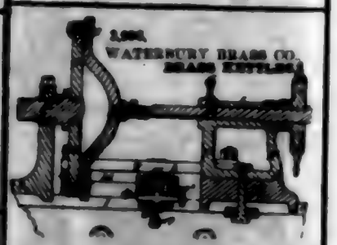
2,999, RUSSELL & HEWIS MFG CO.
REVERSIBLE EYED-LATCHES.



3,000, ALFRED E. SMITH.
CARRIAGE-AXLES.



3,001, WATERBURY BRASS CO.
BRASS KETTLES.

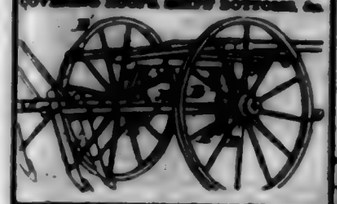


3,002, W. P. VAN DEUSEN AND W. G. DAVIS.
FIRE-KINDLERS FOR THE USE OF RAILROADS.

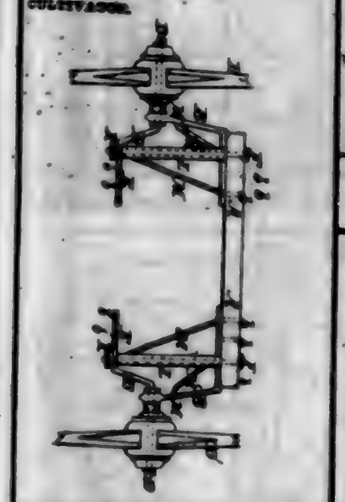


ILLUSTRATIONS OF PATENTS
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THE UNITED STATES PATENT OFFICE
MAY 31, 1870.

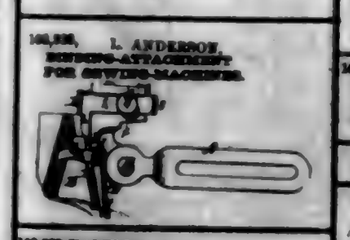
102,336, THOMAS R. ABBOTT.
COMPOSITION FILLING FOR COVERING ROOFS, SHEET BOTTOMS, &c.



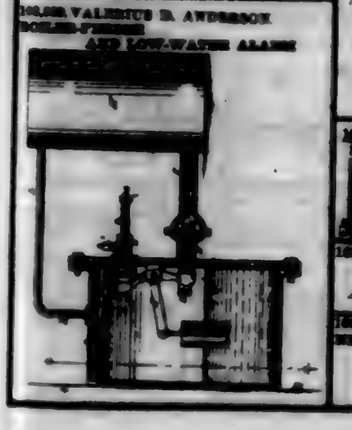
102,337. H. A. ADAMS.
CULTIVATORS.



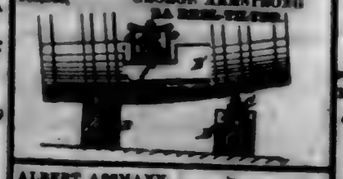
102,338, L. ANDERSON.
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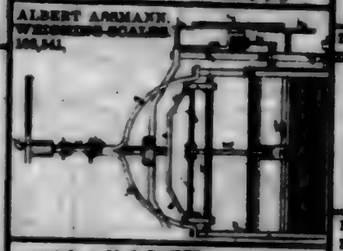
102,339, VALERIUS B. ANDERSON.
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102,340. GEORGE ARMSTRONG.
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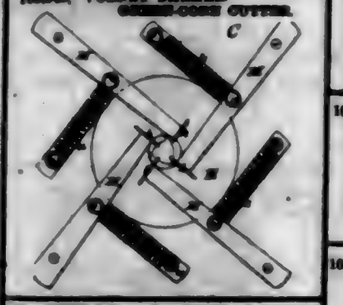
102,341, ALBERT ASSMANN.
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102,342, M. C. BAKER. LOCKS.



102,343, VOLNEY BARKER.
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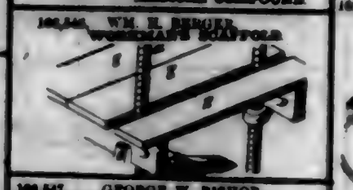


102,344, HENRY BEAGLE, Jr. NUT-LOCK.



102,345, PHILIP BECKER.
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102,346, WM. H. BERGER.
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102,347, GEORGE W. BISHOP.
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102,348, CHRIS BLAKE.
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102,349, JOSEPH BOND BLANCHARD.
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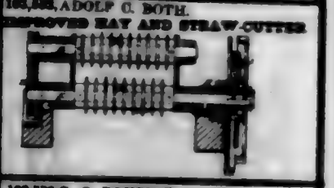
102,350, SIMEON B. BOLTON.
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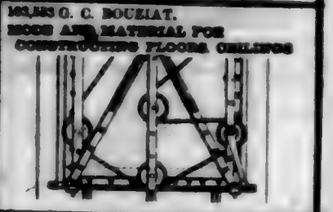
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102,352, ADOLF C. BOTH.
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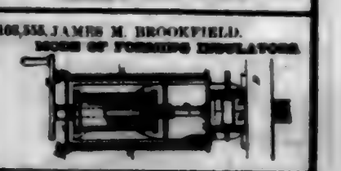
102,353 C. C. BOUZIAT.
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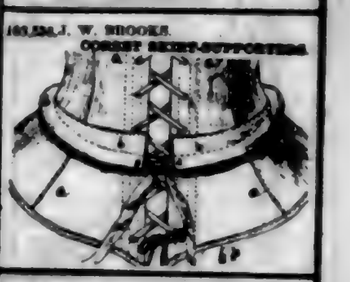
102,354, OTIS E. BOWEN.
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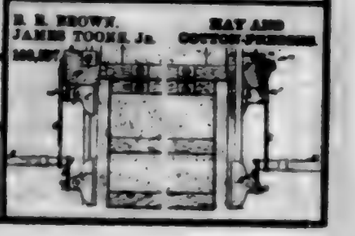
102,355, JAMES M. BROOKFIELD.
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102,356, J. W. BROOKS.
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HENRY J. CASE. [illustration]

103,573 EDWIN A. CASTELLAW. [illustration]

103,574 SETH C. CATLIN. [illustration]

103,575 M. B. CHARLES. [illustration]

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103,582 JOSEPH E. CONNELLY. JOHN McLURE. [illustration]

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103,587 ISAAC E. CRAIG. [illustration]

103,588 EDWIN J. CURLEY. [illustration]

103,589 THOMAS CURLEY. [illustration]

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103,591 E. J. DE SMEDT. [illustration]

103,592 E. J. DE SMEDT. [illustration]

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103,595 GEORGE DORT. [illustration]

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103,599 JAS. EVANS. [illustration]

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103,602 BROOK S. FARROW. [illustration]

103,603 AND. C. FLINT. [illustration]

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103,613 JACOB GULDIN. [illustration]

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103,609, JOHN C. HAM. POST CARRIAGE-SPRINGS.

103,611, CHAS. HODGETTS, COAL-CUTTER.

103,612, MOSES KINSEY. SEATS-FASTENING.

103,610, WM. H. HART, BOOK-HOLDER.

103,613, W. H. HOWARD. THIMBLE FOR LOOMS.

103,614, C. L. KNECHT. CORK-SAVING BOTTLE-FASTENING.

103,607, ROGER HARELEY. COAL-BARROW.

103,615, W. B. HOWE. SELF-ADJUSTING LUBRICATOR.

103,608, JOHN H. HARVEY, LOG-LOADER.

103,616, JAMES L. KNIGHT.

103,609, M. C. HAWKINS. TENSION DEVICE FOR BOBBIN-THREAD IN SEWING-MACHINES.

103,603, JACOB BOSSE C. HUGG. RAILWAY-CAR COUPLING.

103,616, M. C. HAWKINS. SHUTTLE FOR SEWING-MACHINES.

103,617, PHILIP KRAUS.

103,611, M. C. HAWKINS. GUIDE FOR SEWING-MACHINES.

103,618, F. P. HUNT. CHAIN-STRAP BUCKLE.

103,612, NATHAN S. HASEY.

103,620, JOSIEL JACKSON, SEAT-SUPPORT.

103,613, MORRISON HEADY. WATER-ELEVATOR.

103,621, H. P. JOHNSON. COOKING-STOVE.

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103,628, SAMUEL W. LEARY, RAPPERER.

103,614, FRANCIS H. HILLSTEKAM. COMPOSITION MADE FROM COAL-TAR.

103,623, JOHN LIETNER. FASTENING FOR GATES.

103,630, E. LISTON, HAWSE-HOLE COVER.

103,631, CALEB V. LITTLEPAGE. HEAD-RIGHT.

103,632, HENRY H. LOCKE. PUMP-ROD ATTACHMENTS.

103,633, THOS. LORING. HARVESTER-KNIFE GRINDER.

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103,638, ROBERT McKENNA. COTTON-GINS.

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103,644, SAMUEL MOTLE, Jr. OIL-CAN SPOUTS.

103,645, CHAS. S. MUSGROFT. SPIRAL FASTENING.

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103,647, A. OWLOW, Jr. REVERSING VALVE-GEAR FOR LOCOMOTIVES.

103,648, BENJ. S. PARTRIDGE, WHEELS FOR TURNING SHARPS-MACHINES.

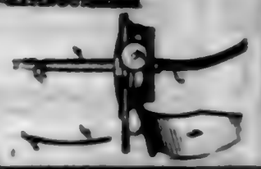
103,649, LEONARD PELOUZE. STEAM-BOILER CONNECTIONS.

103,650, A. A. PLAYER AND H. McALLISTER, Jr. FURNACES FOR PRODUCING A USEFUL SUBSTANCE FROM IRON AND GLASS MATERIAL.

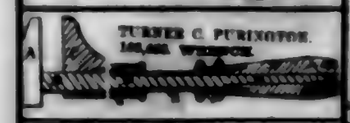
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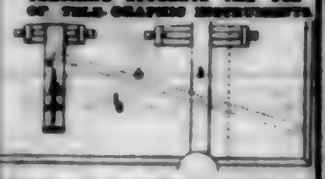
103,682, DAVID J. POWERS.
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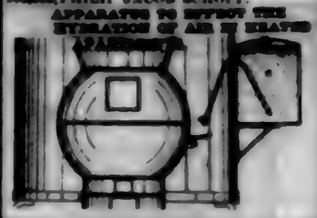
103,684, D. W. PUTT.
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103,685, JOSIAH M. READ.
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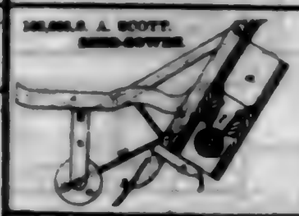
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APPARATUS TO EFFECT THE HYDRATION OF AIR BY HEATED STEAM.

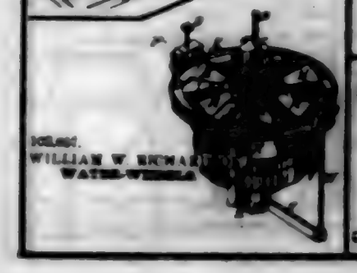


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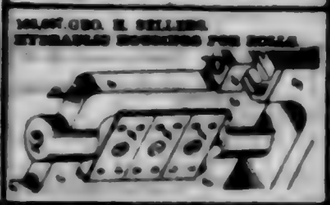


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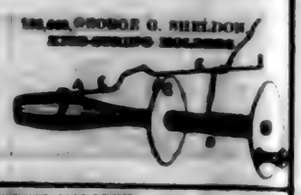


103,689, GEO. H. SELLERS.
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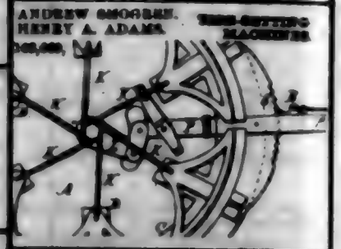




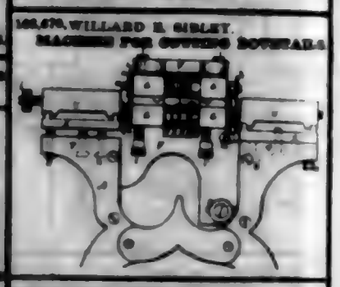
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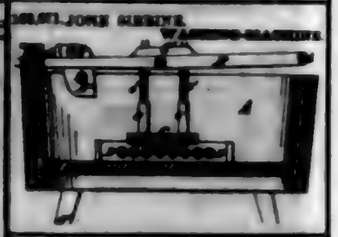
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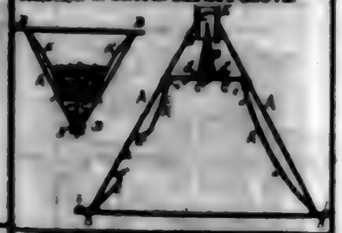
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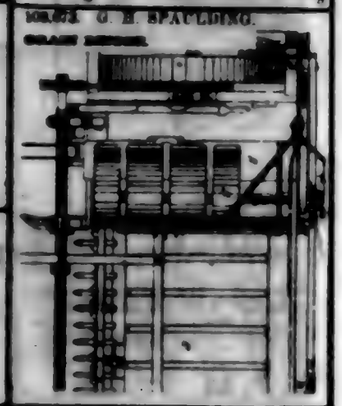
103,693, JOHN SERVIS.
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103,694, C. J. SMITH, SAFETY-GUYS.



103,695, C. H. SPAULDING.
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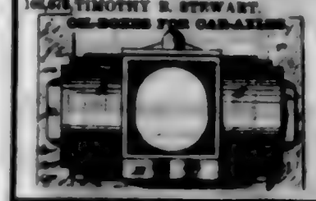


103,696, GAYLORD SHARP STANARD.
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103,697, JAMES T. STEWART.
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103,698, TIMOTHY R. STEWART.
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103,699, NICHOLAS STILWELL.
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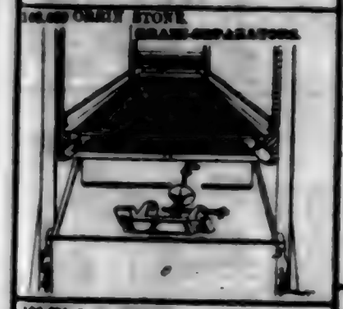
103,700, GEORGE W. STOCKWELL.
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103,701, MELVIN STONE.
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103,702, OLIN STONE.
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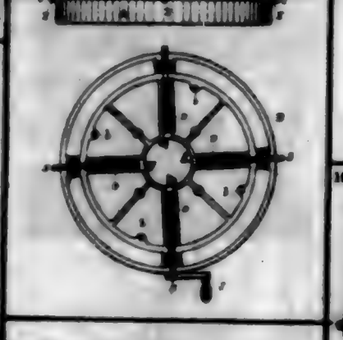
103,703, J. G. STOWE.
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103,704, CORNELIUS SULLIVAN.
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103,705, T. J. SULLIVAN.
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103,706, THOMAS SWAN, ROTARY PUMPS.

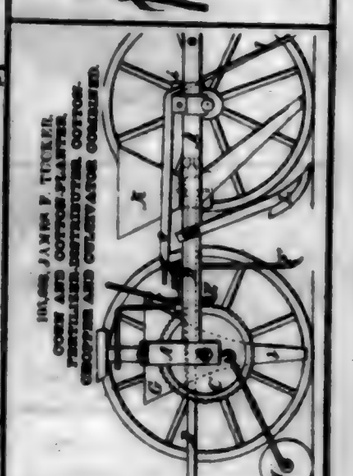
103,707, STEPHEN P. M. TASKER, DEVICE FOR JOINING GUY METALLIC TUBES.

103,708, WILLIAM TAYLOR.
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103,709, HENRY THOMPSON.
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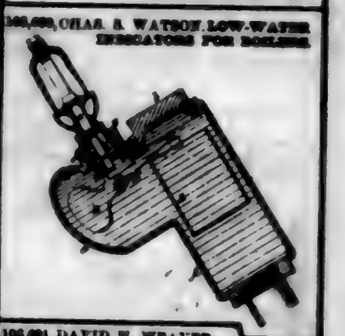
103,710, JAMES F. TUCKER.
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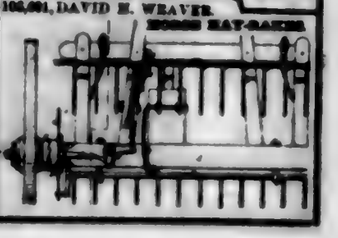
103,711, HAYNES A. VIDAL, LOCK-NUT.



103,712, CHAS. S. WATSON, LOW-WATER INDICATORS FOR BOILERS.



103,713, DAVID H. WEAVER.
HORSE HAY-RAKES.



103,692, JOHN R. WEIMER. RAILWAY-RAIL CHAIR.



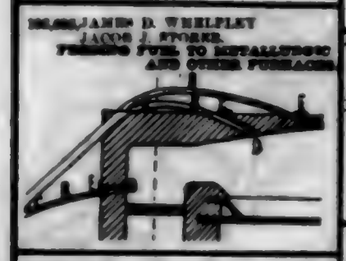
103,693, HERMANN WENDT. PROCESS OF WELDING AND TEMPERING SPRING-STEEL.



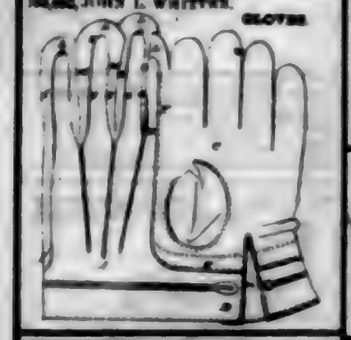
103,694, F. WESSON. BREECH-LOADING FIRE-ARMS.



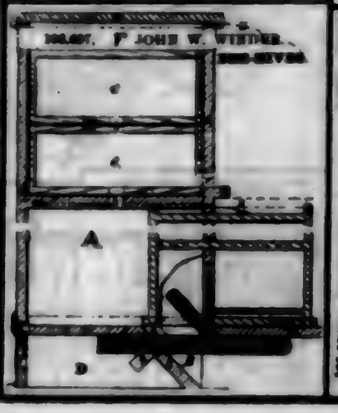
103,695, JAMES D. WHELPLEY, JACOB J. STOKES. FURNACE FOR METALLURGIC AND OTHER PURPOSES.



103,696, JOHN L. WHITTEN. GLOVE.



103,697, JOHN W. WITTER. [illegible]



103,698, D. A. WOODBURY. REVERSING AND CUT-OFF APPARATUS FOR STEAM-ENGINES.



103,699, ROBERT ALLSTATTER. HARVESTER CUTTER-BARS.



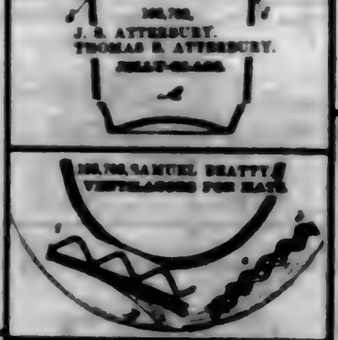
103,700, EMANUEL ANDREWS. SAW-FRAME.



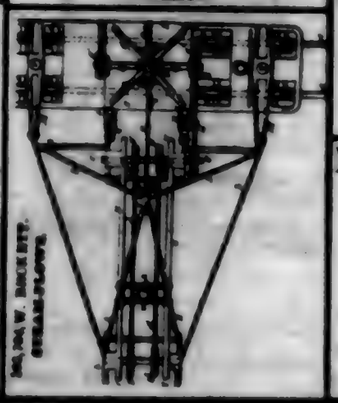
103,701, ARNOX. COMPENSATING FOR DEVIATION OF THE MARINER'S COMPASS.



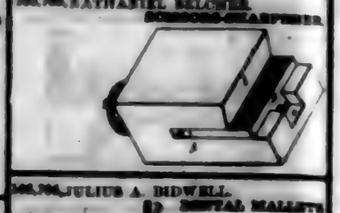
103,702, J. S. ATTERBURY, THOMAS S. ATTERBURY. SEAT-FRAME.



103,703, SAMUEL BEATTY. VENTILATORS FOR HATS.



103,704, NATHANIEL BELCHER. SCISSORS-SHARPENER.



103,705, JULIUS A. BIDWELL. METAL MALLETS.



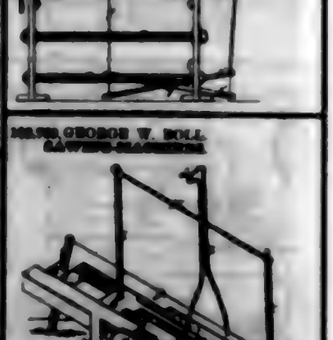
103,706, JULIUS A. BIDWELL. ARCHITECTURAL TRUSS.



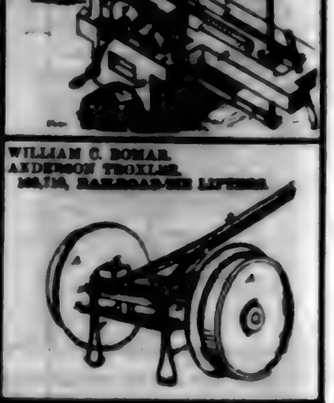
103,707, ROBERT BLEAKIE. HARNESS-OPERATING MECHANISM FOR LOOMS.



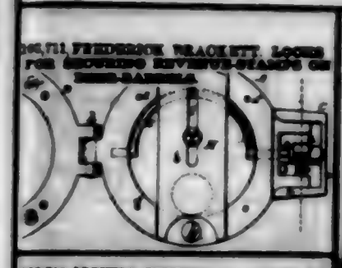
103,708, GEORGE W. BOLL. SAWING-MACHINE.



103,709, WILLIAM C. BOMAR, ANDERSON TROXLER. RAILROAD-TIE LIFTER.



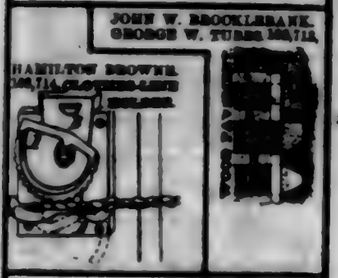
103,711, FREDERICK BRACKETT. LOCKS FOR SECURING REVERSE-GEARING ON SHIPS' RADDERS.



103,712, JOSHUA BRIGGS. CLOTHES-REEL.



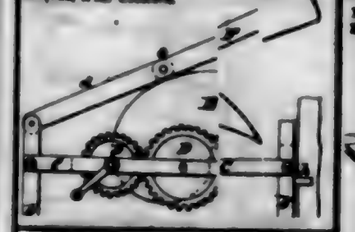
JOHN W. BROOKLEBANK, GEORGE W. TURBE, 103,713. HAMILTON BROWNE, 103,714, CLOTHES-LINE REELER.



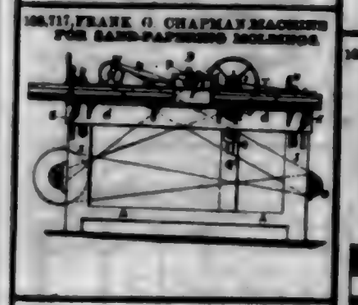
103,715, EDUARD BUHL. [illegible] GROVE.



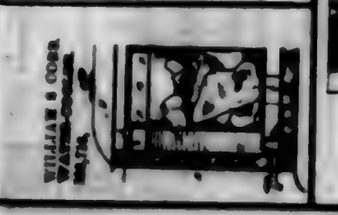
103,716, WM. CARNE. PNEUMATIC PISTON-POST DRIVER.



103,717, FRANK G. CHAPMAN. MACHINE FOR SAND-PAPERING MOULDINGS.



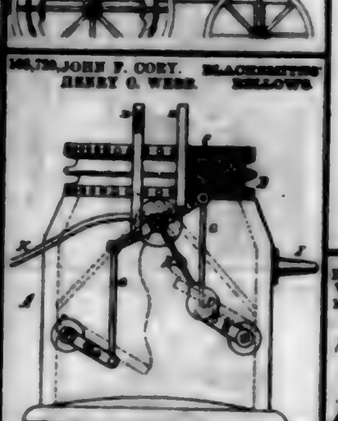
WILLIAM S. COOK. WATER-WHEEL. 103,718.



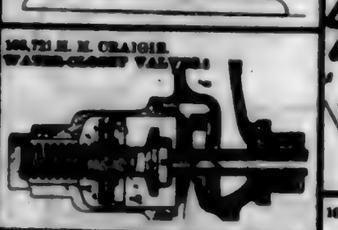
103,719, J. H. COLE. WHEEL-CARRIAGE FOR SEED-SOWERS.



103,720, JOHN F. COREY, HENRY G. WEBB. BLACKSMITHS' BELLOWS.



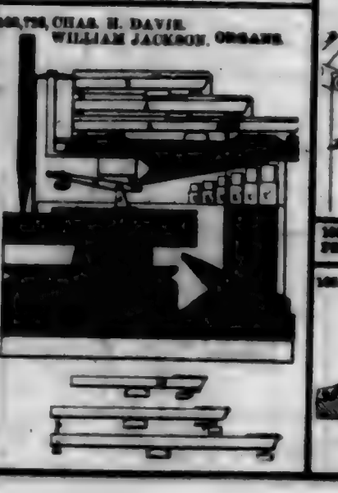
103,721, H. H. CRAIGIE. WATER-CLOSET VALVE.



103,722, H. A. CURTIS. RAILROAD CAR-VENTILATOR.



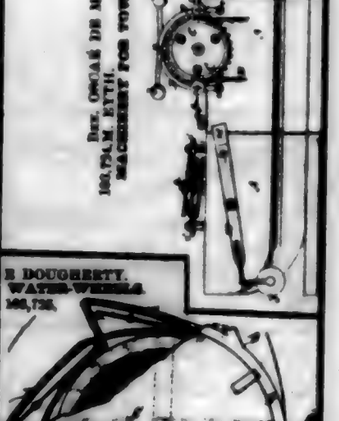
103,723, CHAS. H. DAVIS, WILLIAM JACKSON. ORGANS.



DEC. ORCAS DE MENIL. 103,724. LETTER. MACHINERY FOR TOWING CANAL-BOATS.



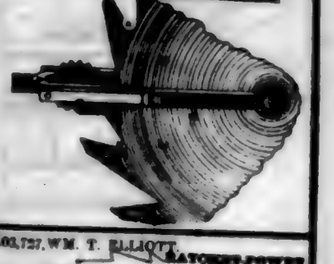
E. DOUGHERTY. WATER-WHEELS. 103,725.



103,726, ARNOX B. DOUGLAS. SAW-GUMMER.



103,727, WM. T. ELLIOTT. RATCHET-POWER.



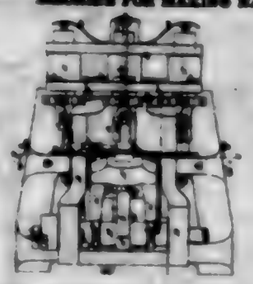
103,728, H. EHRMANN, M. D. PREPARING AND PRESERVING MEAT.



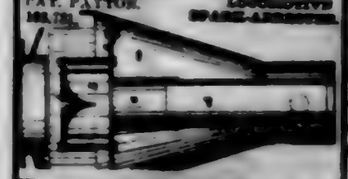
103,729, WM. H. FARRNEY. BOOT-STOCK.



103,739. DAVID J. FARMER.
MACHINE FOR MAKING HAMS.

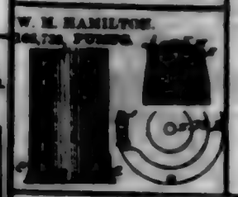


BENJAMIN F. FREEMAN, of PAT. PATTON.
103,731. LOCOMOTIVE SPARK-ARRESTER.

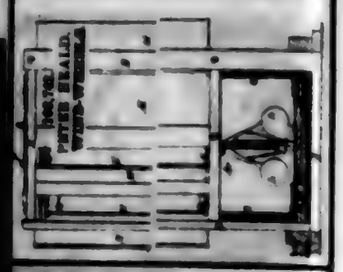


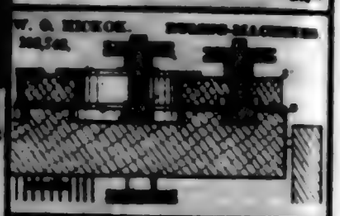


W. H. HAMILTON.
103,732. FURNACE.

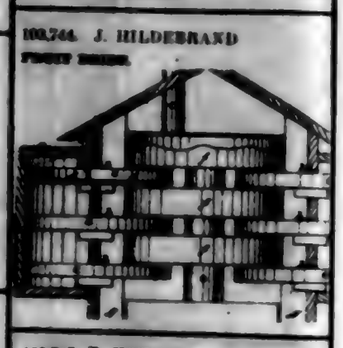






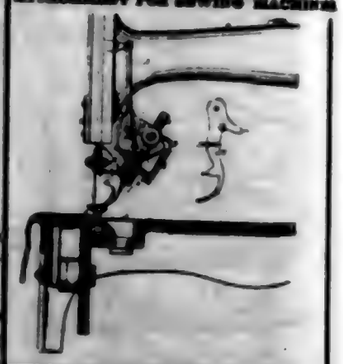


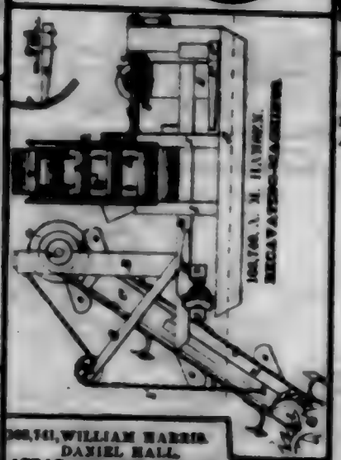
W. G. ERVOK. 103,743. FURNACE-MACHINE.



103,744. J. HILDEBRAND
FRUIT DRIER.

103,745. R. HOWARD AND W. H. JACKSON.
BUTTON HOLING AND OVERSEAMING ATTACHMENT FOR SEWING MACHINES.



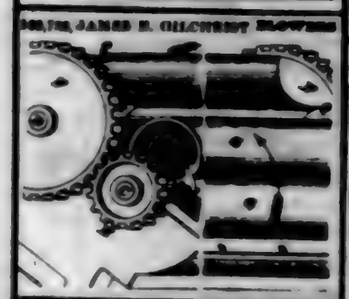


103,746. A. M. HAYNES.
EXCAVATING-MACHINE.

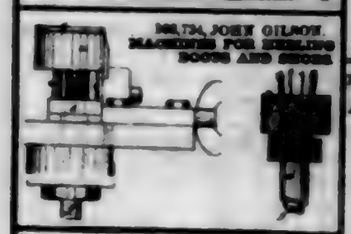
103,748. GEO. HAMEL. TOOL-HOLDER.



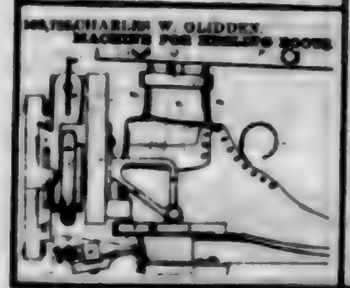
103,749. JAMES B. GILCHRIST. MOWING-MACHINE.



103,750. JOHN GILROY.
MACHINERY FOR RULING BOOKS AND PAPER.



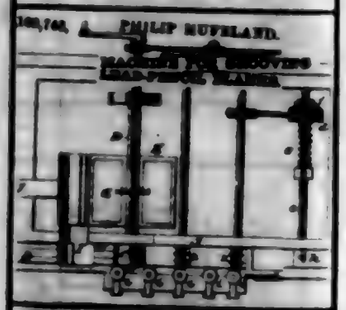
103,751. CHARLES W. GLIDDEN.
MACHINE FOR RULING BOOKS.



103,741. WILLIAM HARRIS, DANIEL HALL.
APPARATUS FOR SEASONING LUMBER.

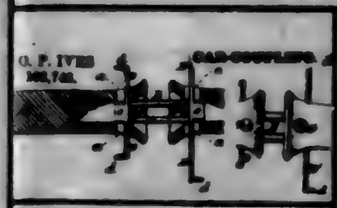


103,742. PHILIP HUFFLAND.
MACHINE FOR GROOVING HEAD-PIECES OF BARRELS.



103,747. FRANKLIN TRUMAN HUNTOON.
COMPOUND FOR CLEANING CLOTH AND OTHER FABRICS.

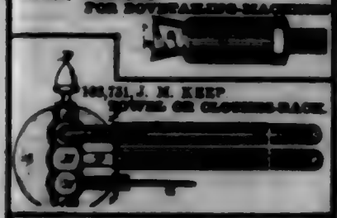
O. P. IVES. 103,748. CAR-COUPLING.



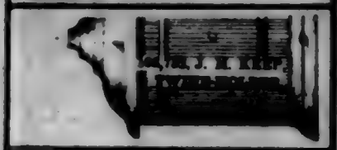
103,749. GEORGE JONES. DOOR-SPRING.

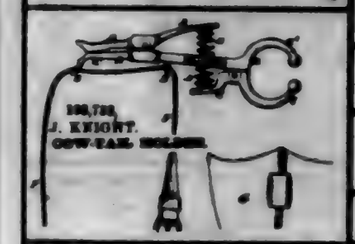


FREDRICK JORDAN.
103,750. CUTTERS FOR BOOT-HEELING-MACHINES.

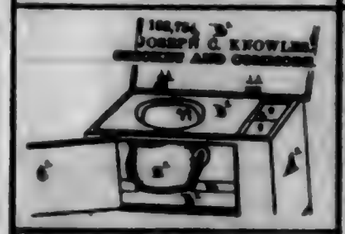


103,751. J. M. KEEP.
POWER OR CLOTHES-RACK.





103,752. J. KNIGHT.
CORN-PLANTER.



103,753. JOSEPH C. KNOWLES.
SHUTTERS AND CORNICES.



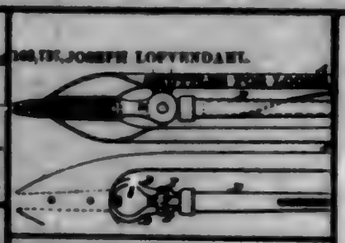
103,754. ARTHUR M. LESLIE. RUFFLING ATTACHMENT FOR SEWING-MACHINES.



WILLIAM LIVINGSTONE. STRAW-CUTTER.
103,755.



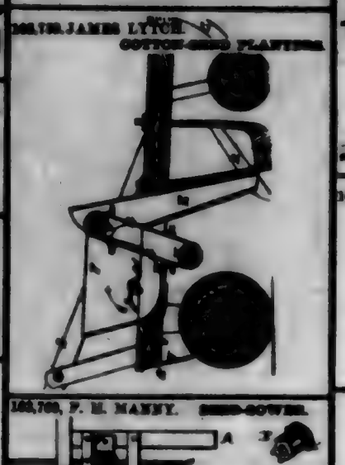
103,755. JOSEPH LOFVENDAHL.



103,756. DAVID W. LONG.
SHUTTER.



103,757. JAMES LYTLE.
COTTON-SEED PLANTER.

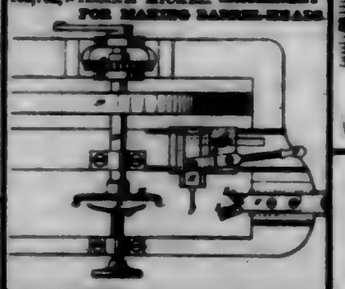


103,758. P. H. MANEY. SHOE-GOUGE.

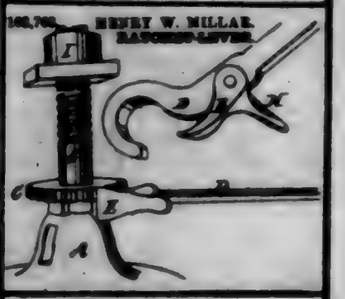


103,759. WM. MARSDEN.
COMPOUND FOR CATTLE-FOOD.

103,760. WILLIAM MICKEL. MACHINERY FOR MAKING BARREL-HEADS.

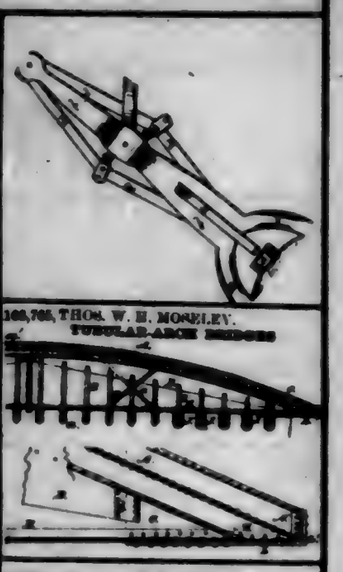


103,761. HENRY W. MILLAR.
RATCHET-LEVER.

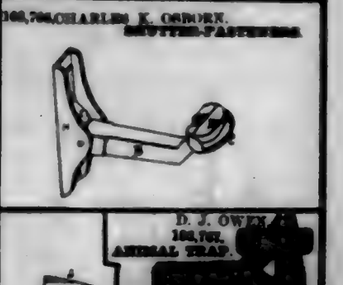


103,762. GARDNER C. MILLER.
HAND PUNCHING-MACHINE.

103,763. THOS. W. H. MOSELEY.
TUBULAR ARCH BRIDGE.



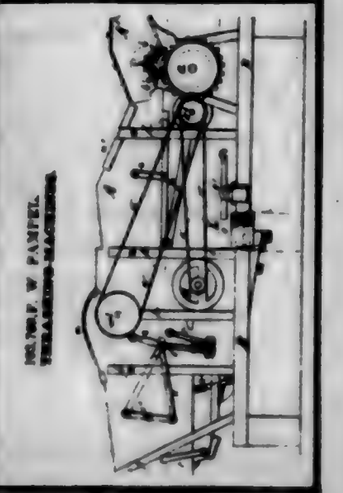
103,764. CHARLES K. OSBORN.
SHUTTER-FASTENER.



D. J. OWEN.
103,767. ANIMAL TRAP.



103,768. HENRY N. PAINE.
SHUTTER HINGING-MACHINE.

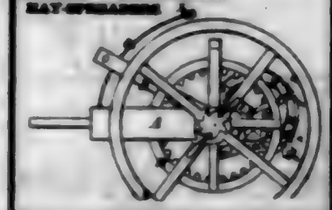


103,769. W. PAINTER.
TRACE-BUCKLE.

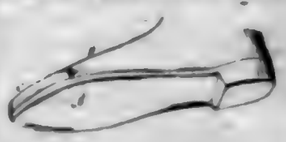
103,770. EDWARD W. PARISH.
STOVE GRID FOR ROOTS AND GRAIN.



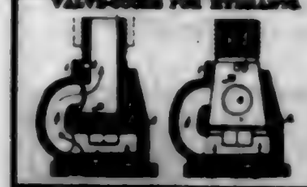
103,771. HENRY L. PERKINS.
HAY-SPREADERS.



103,772. MANASSEH PETTENGILL.
METAL TIPS FOR ROOTS AND GRAIN.



103,773. SOLOMON PFLEGER.
VALVE-GEAR FOR HYDRANTS.



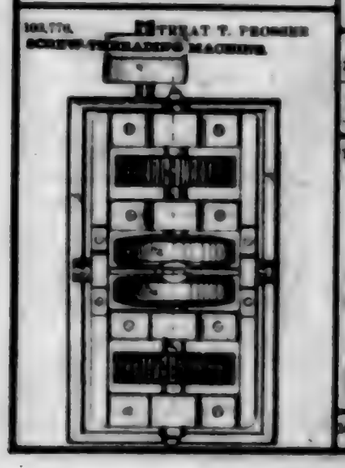
103,774. HIRAM PLUMB.
APPARATUS FOR PLANTING SEEDS.



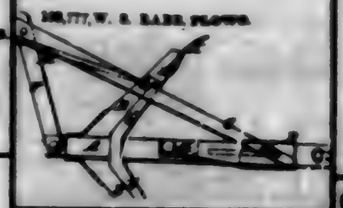
103,775. ISRAEL T. PROSSER.
SUPPLY-HOSE.



103,776. ISRAEL T. PROSSER.
SCREW-THREADING MACHINE.



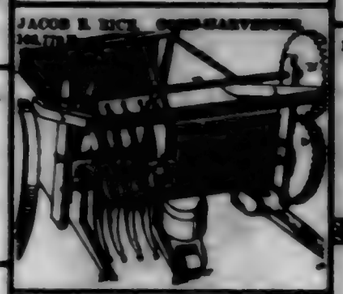
103,777. W. S. RABE. PLOWS.



103,778. FREDERIC W. REINLANDER.
GAS-STOVES.



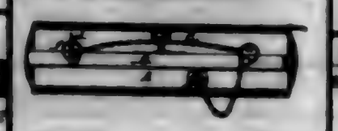
103,779. JACOB R. RICE. GRAIN-HARVESTER.



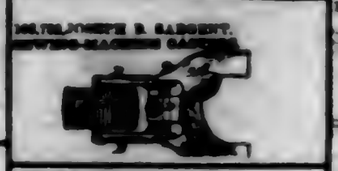
103,780. ROBINSON RUTTER.
NUT-LOCKING WASHER.



103,781. J. B. SARGENT.
LOOM FOR WEAVING BAGS.



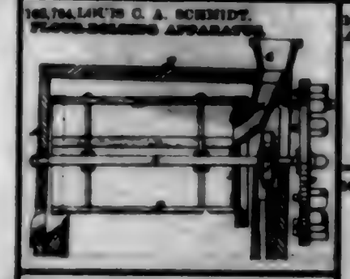
103,782. JOSEPH B. SARGENT.
SEWING-MACHINE GAUGE.



103,783. E. B. SAWYELLE.
PULLEYS FOR WINDOW-SASH.

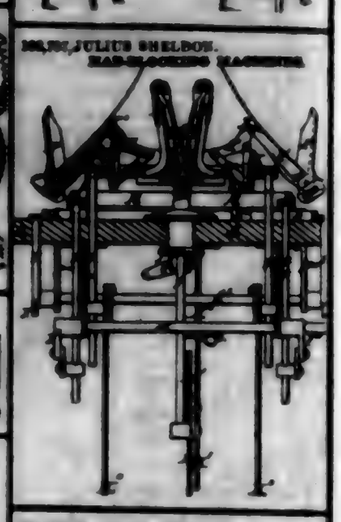


103,784. LOUIS C. A. SCHMIDT.
FLUID-HEATING APPARATUS.



103,785. GEO. SEWELL. HEAD-COVERING.

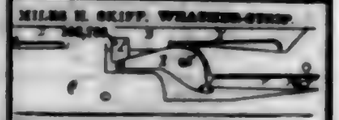
103,786. JULIUS SHELDON.
HAT-BLOCKING MACHINE.



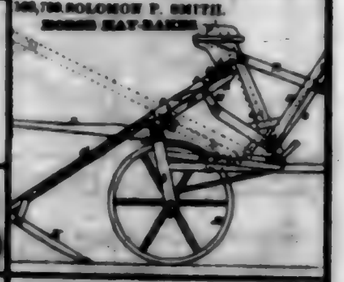
103,787. HENRY L. SEYMOUR.
CONSTRUCTION OF CHAIRS.



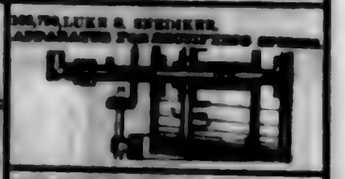
103,788. MILES H. SKIFF. WEARER-STRIP.



103,789. SOLOMON P. SMITH.
BOBBIN HAT-BLOCK.



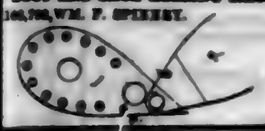
103,790. LUKE S. SPENCER.
APPARATUS FOR SHOOTING BIRDS.



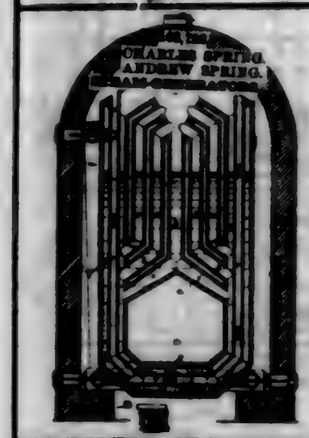
103,791. W. C. STILLMAN. HOOP-HEAD.



103,792. BOOT AND SHOE RIVETING MACHINE.
WM. F. SPINNEY.



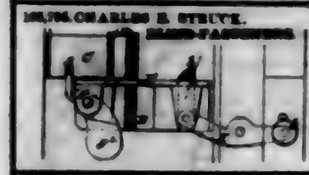
103,793. CHARLES SPRING.
ANDREW SPRING.
SEAMS-OVERLOCKING.



103,794. BRADFORD STETSON.
TURBINE WATER-WHEEL.



103,795. CHARLES B. STRUTT.
SEAMS-FASTENING.



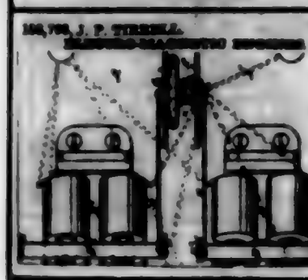
103,796. J. OSCAR TABER.
HARVESTER-DROPPING.



103,797. WM. H. THAYER.
SHUTTLES FOR SEWING-MACHINES.



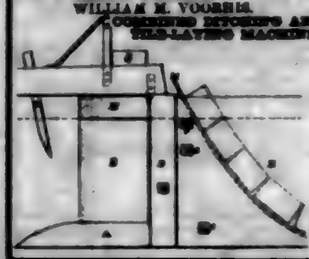
103,798. J. P. TISDELL.
SEAMING-MACHINE SPOOLER.



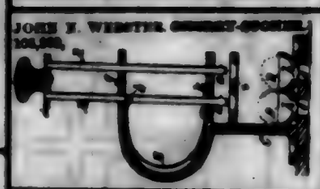
103,799. C. TOPPAN.
TREATING FABRICS TO RENDER THEM WATER PROOF.

103,800. WM. P. VAN DEUSEN.
CONSTRUCTION FOR EXTINGUISHING FIRES.

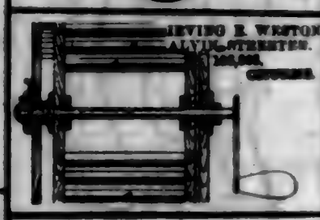
103,801. OLIVER W. VOORHIS.
SMITH H. HAPER.
WILLIAM M. VOORHIS.
CORDAGE-DITCHING AND TILE-LAYING MACHINE.



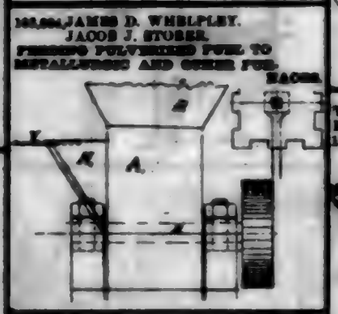
103,802. JOHN F. WEBSTER. CORSET-STOCKING.



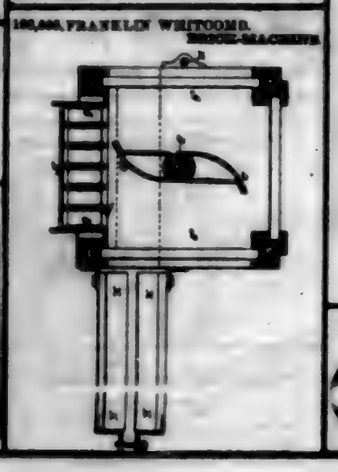
103,803. IRVING R. WESTON.
ALVIN STEBBINS.
CORSET.



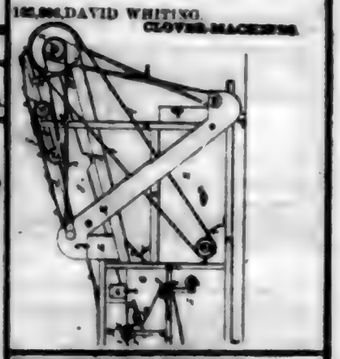
103,804. JAMES D. WHELPLEY.
JACOB J. STOBER.
FEEDING PULVERIZED FUEL TO BLAST-FURNACE AND OTHER FUR-NACES.



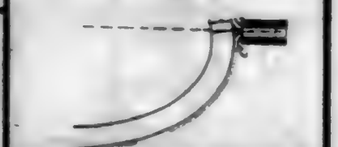
103,805. FRANKLIN WHITCOMB.
HOOP-MACHINE.



103,806. DAVID WHITING.
CLOVER-MACHINE.



103,807. EDWARD P. WILLIAMS.
GEO. H. CHINNOCK.
HAND TOOLED-MIRROR FRAME.



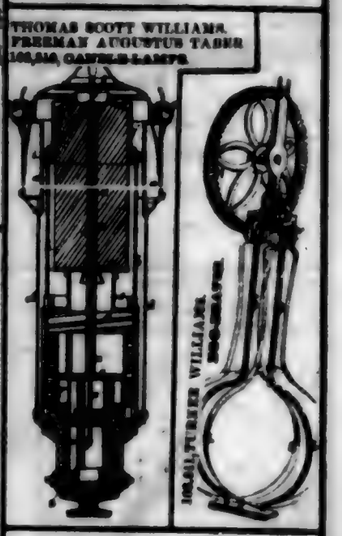
103,808. EDWARD P. WILLIAMS.
GEO. H. CHINNOCK.
HAND TOOLED-MIRROR FRAME.



EDWARD P. WILLIAMS.
GEO. H. CHINNOCK.
TOOLED-MIRROR AND [illegible] FRAMES.



THOMAS SCOTT WILLIAMS.
FREEMAN AUGUSTUS TABER.
103,810. GASELIER-LAMPS.

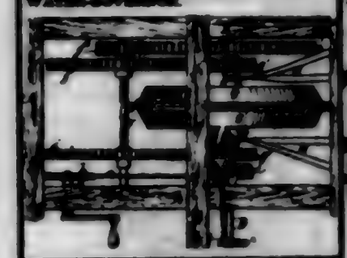


103,811. TURNER WILLIAMS.
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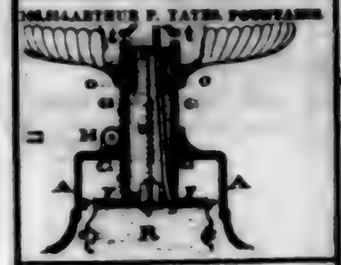
103,812. RICHARD A. WOODBERRY.
HANDLE FOR [illegible]



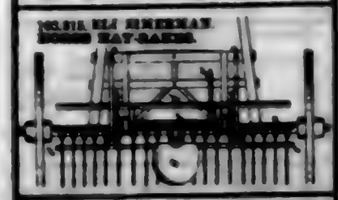
102,512. AMOS W. WOODWARD. WATER-CLOSET.



102,513. ARTHUR P. TATEM. FOUNTAIN.



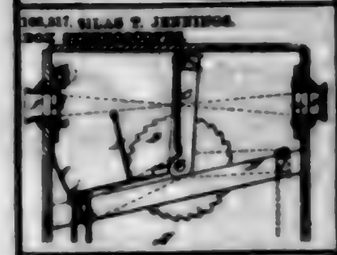
102,514. ELI SHERMAN. HORSE HAY-RAKE.



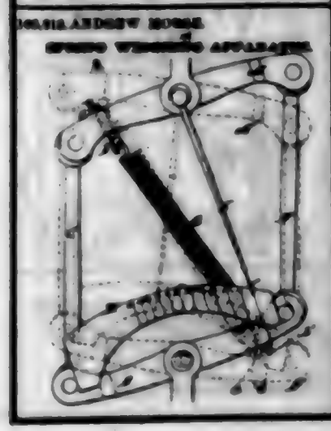
102,515. HENRY P. SPENCER. DEVICE FOR CLOSING THE ENDS OF COAL-CHUTES.



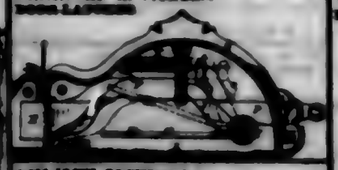
102,516. SILAS P. JENNINGS. POST-HOLE DIGGER.



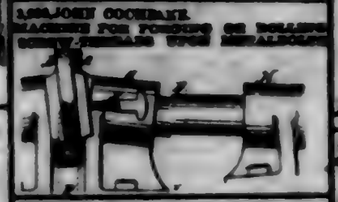
102,517. ANDREW HOUSE. SPOKE-TURNING APPARATUS.



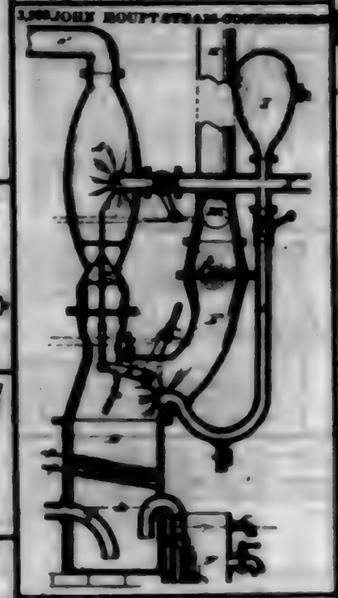
102,518. JOHN H. VICKERS. HORSE-RAKE.



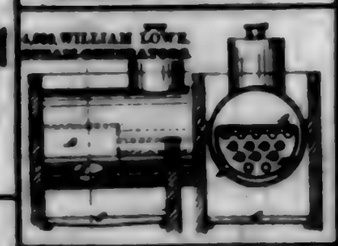
3,999. JOHN COCHRANE. MACHINE FOR FORMING OR ROLLING METAL FLANGES UPON SHEET-METAL CASKS.



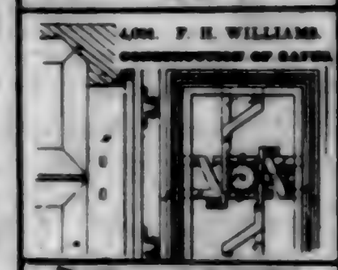
3,999. JOHN HOUPT. STEAM-CONDENSER.



4,000. WILLIAM LOWE. STEAM-GENERATOR.



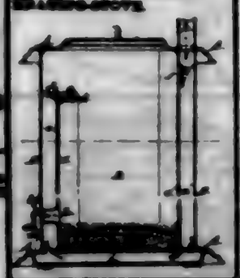
4,001. P. H. WILLIAMS. CONSTRUCTION OF GATES.



4,002. MARY P. CARPENTER. RULER FOR SEWING-MACHINES.



4,003. JOHN H. PEEVOR. HEATING-STOVE.



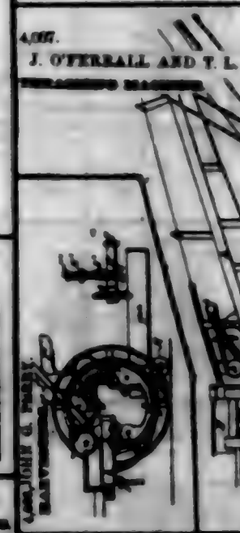
4,004. M. T. HITCHCOCK. CAR-VENTILATOR.



4,005. D. G. LITTLEFIELD. COVER FOR STOVES.

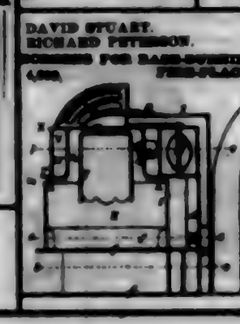


4,006. J. O'FERRALL AND T. L. DANIELS. THRASHING-MACHINE.



DAVID STUART, RICHARD PETERSON. CHIMNEY FOR BARK-BURNING FIRE-PLACE HEATERS.

4,008.



4,007. THOMAS GREENWOOD. CAR-COUPLING.



ILLUSTRATIONS OF PATENTS

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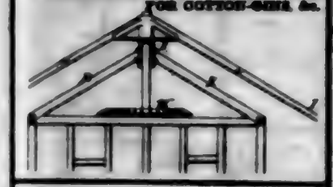
THE UNITED STATES PATENT OFFICE

JUNE 7, 1870.

102,520. JOHN H. ACHENBACH. HORSE-HOLDING.



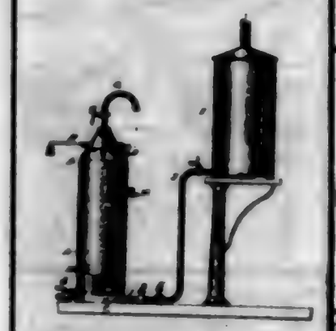
102,521. JAS. M. ALBERTSON. CONSTRUCTION OF HORSE-POWER FOR COTTON-GINS &c.



102,522. THOMAS ALMOND. SEATS FASTENING.



102,523. JOHN H. ASCHER. DRAWING OFF TALLOW, LARD, &c. FROM RENDERING-TANKS.



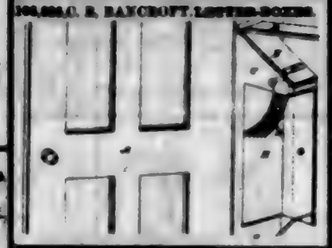
102,524. AVERY BARRETT, WILLIAM W. BINEY. CONDENSERS FOR THE MANUFACTURE OF COAL-GAS.



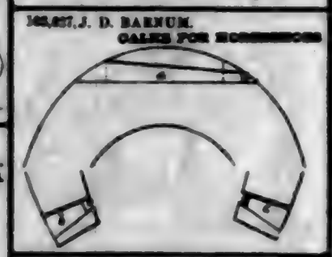
102,525. HOSEA BALL. GRIS-SEPARATORS.



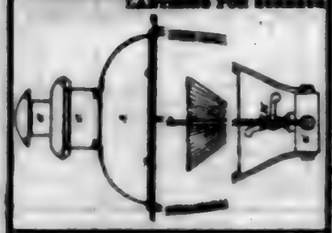
102,526. C. B. BANCROFT. LIFTER-BOXES.



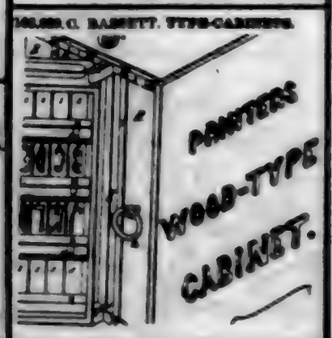
102,527. J. D. BARNUM. CASES FOR HORSE-HOES.



102,528. JOSEPH W. BARTLETT. LANTERNS FOR HORSES.



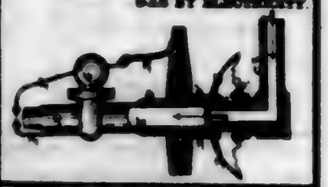
102,529. C. BASSETT. TYPE-CABINETS.



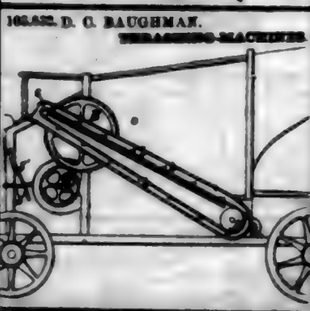
102,530. ARAHEL G. BATCHELDER. MACHINE FOR PARING FRUIT AND VEGETABLES.



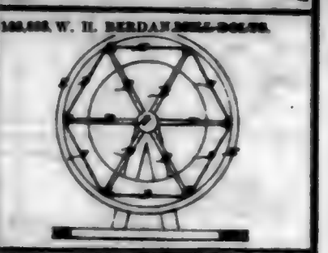
102,531. W. W. BATCHELDER. APPARATUS FOR LIGHTING GAS BY ELECTRICITY.



102,532. D. C. BAUGHMAN. THRASHING-MACHINES.



102,533. W. H. BERDAN. BELL-BOLTS.



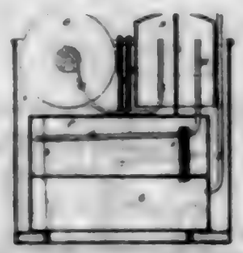
102,534. HANNIBAL S. BLOOD. BRIDGE OR ROOFING-CRANE.



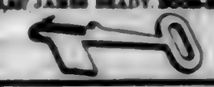
103,870, DANIEL BOWKER.
POST FOR FENCING-JACKS.



103,871, DAVID BOYLE.
PNEUMATIC GAS-MACHINE.



103,872, JAMES BRADY. DOOR-KEYS.



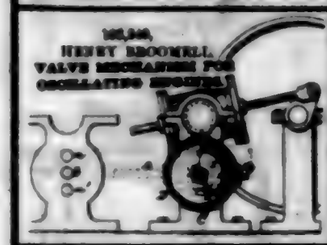
103,873, JAMES BRADY. LOCKS.



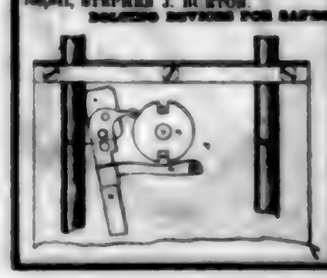
103,874, ADOLPH BRASS,
LEMUEL SALLADEY.
RAILROAD-CAR STOVE.



103,875,
HENRY BROOMELL.
VALVE MECHANISM FOR OSCILLATING ENGINES.



103,876, STEPHEN J. BURTON.
BOLTING SHUTTER FOR SAFES.



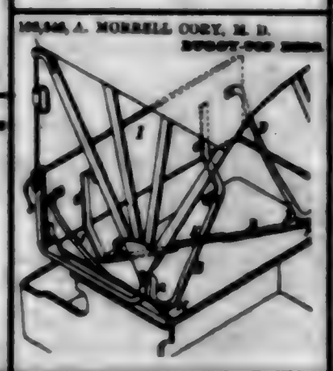
103,877, JAMES BIRNHAM CLARK.
HAT-BLOCKING DEVICE.



103,878, DAVID COPE. CASE-FILLING.



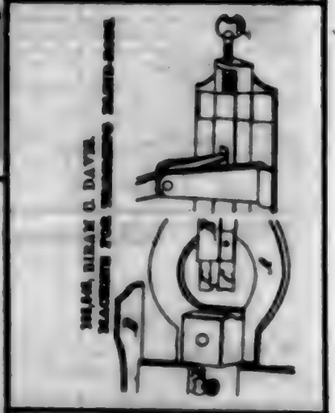
103,879, A. MORRELL COZY, M. D.
SUPPORT FOR BEDS.



103,880, E. COWLES. RECIPROCAL
MOVEMENT FOR SEWING MACHINES.



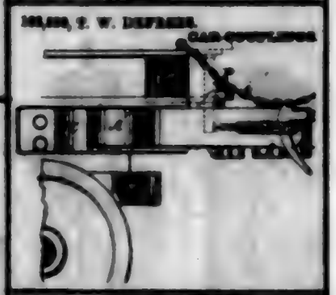
103,881, ISAAC BRAY O. DAVIS.
MACHINE FOR TURNING SHOE-SOLES.



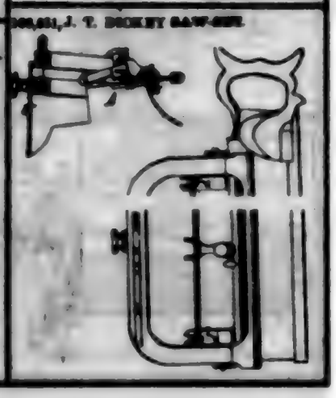
103,882,
JOHN W. DAYTON
DRAWING.



103,883, T. W. DEFREES.
CASE-CONVEYANCE.



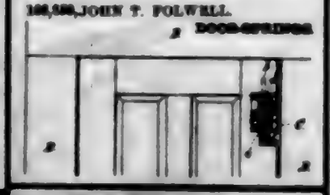
103,884, J. T. DICKEY SAW-SET.



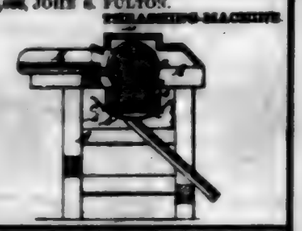
103,885, ANDREW DITTE.
MANUFACTURE OF SALTS.



103,886, JOHN T. FOLWELL.
DOOR-SPRINGS.



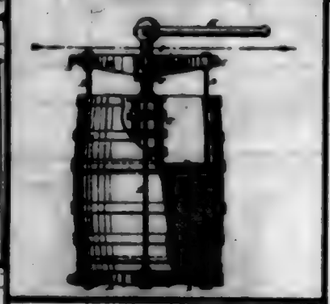
103,887, JOHN S. FULTON.
THRASHING-MACHINE.



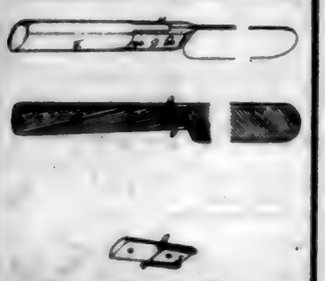
103,888, ROBERT L. DODGE.
DOOR-SUPPORTER.



103,889, WM. S. FORD.
PORTABLE TOBACCO-PRESS.



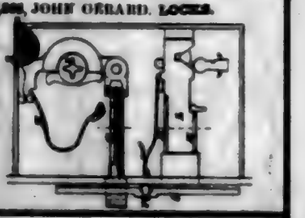
103,890, J. W. GARDNER.
ATTACHING HANDLES TO CUTLERY.



103,891, T. FOWLER.
MACHINE FOR RIDDLING GRAIN.



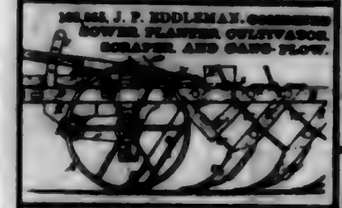
103,892, JOHN GERARD. LOCKS.



103,893, THOMAS DONATO.
WINDOW-BLINDS.



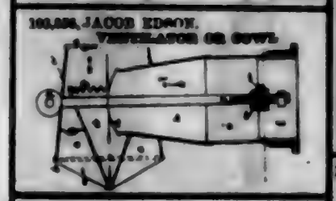
103,894, J. P. EDDLEMAN.
ROTARY PLANTER CULTIVATOR, SCRAPER, AND GANG-PLOW.



103,895, T. FOWLER.
RIDDLING OF RIDDLING GRAIN.



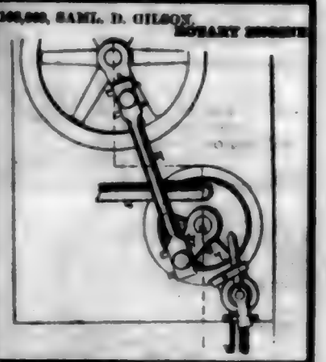
103,896, JACOB EDSON.
VENTILATOR OR SCUTTLE.



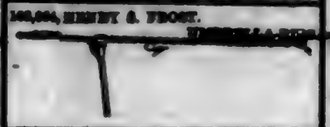
103,897, R. P. FERNON.
COVER FOR SEWING-MACHINES.



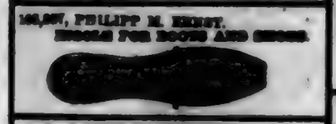
103,898, SAML. D. GILSON.
ROTARY ENGINE.



103,899, HENRY S. FROST.



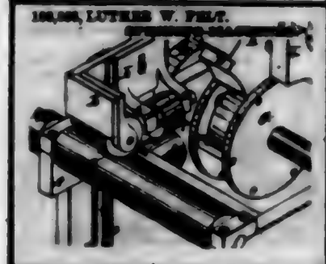
103,900, PHILIPP M. HENRY.
HOOKS FOR BOOTS AND SHOES.



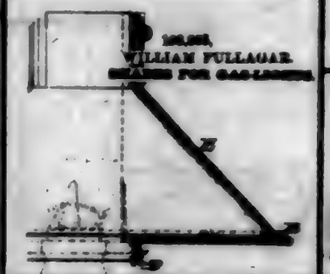
103,901, MYRON GORE BOILERS.



103,902, LUTHER W. FELT.



103,903,
WILLIAM FULLAGAR.
FRAME FOR GAS-LIGHTS.



103,904, CYRUS B. GRANDY.
HEAD-BLOCKS FOR SAW-MILLS.



103,972, D. A. GREENE, STEAM-VALVE

103,973, MATANIAH GROVER, PUNCHING-KNIFE

103,974, JOS. J. GUTIERREZ, STREET-RAILWAY CARS

103,975, THOMAS S. HALL, BRAKING-MACHINE APPLICABLE TO RAILROADS

103,976, H. J. HAMILTON, CORDUROY

103,977, THOMAS J. HARRIS, CUTTER-SCRAPER OR CULTIVATOR

103,978, BENJAMIN W. HEALEY, IRON TUYERE-FRAME

103,979, NICHOLAS HEISTERMAN, PEDDLE FOR HARDED HEADS FOR CASTINGS OF AXES-HEADS

103,980, JOHN JACOB HERBERT, LOOMS

103,981, LEWIS E. HERMANCE, BARRE-MILL

103,982, JAMES HIGGINS, BABY CARRIAGE

103,983, THOMAS HILL, STEAM-HAMMER

103,984, ROBERT HILLSON, STEAM-STOVE

103,985, EDWARD W. HOLT, LAND-SHARE SUPPORTER

103,986, THOMAS HOPPER, MATFIELD HOPPER, CHANDLER C. COATS, RAILWAY CAR-BRAKES

103,987, SEYMOUR HUGHES, METAL ROOFING

103,988, JAMES L. JACKSON, PATTERNS FOR CASTINGS

103,989, GILBERT JAQUITH, CARDING-MACHINE

103,990, DERRICK JORDAN, CUTTERS FOR WOOD-SHAVING MACHINES

103,991, JOHN W. JORDAN, MOTIVE MECHANISM FOR SEWING-MACHINES

103,992, JACOB KAUFFMAN, SAWING-MACHINE

103,993, ARTEMAS A. KENT, STEERING-GAUGE AND SAFETY-VALVE

103,994, WILLIAM ANDERSON KERR, PRINTING-PRESSES

103,995, GEORGE KLAUER, FRANCIS H. SIMMONS, SHUTTER-FASTENER FOR CARRIAGES

103,996, STEPHEN B. KIRBY, ADJUSTABLE CURVE FOR USE OF DRAUGHTSMEN

103,997, BENJAMIN LEFFER, STREET-CAR STARTERS

103,998, J. S. LEWIS, CHURNS

103,999, SAMUEL LEWIS, SUBMARINE DRILLING APPARATUS

104,000, LOMAX LITTLEJOHN, CARRIAGE-AXLES

104,001, JOHN LOADER, PACKING FOR ROTARY ENGINES

104,002, JOHN LOADER, WILLIAM HENRY CHILD, STEAM-GENERATORS

104,003, L. B. LOCKLIND, FENCE, E. K. WHITAKER

104,004, G. B. LONG, VARIABLE CUT-OFF VALVE-GEAR

104,005, ROGER W. LOVE, LOCOMOTIVE HEAD-LIGHTS

104,006, WM. H. MAIN, HAND-SPINNING MACHINE

104,007, E. J. MARSTERS, RAILWAY-SPRINGS

104,008, HAMILTON B. McFALL, CHURNS

PETER McNAUGH.
GEO. W. LATIMER.

WILLIAM MICHAEL.

MARLON MILLER.

J. S. MITCHELL.

ALPHEUS P. MOYER.

RUFUS NUTTING.

HENRY W. OSTROM.

AMOS D. OWEN.

CHRISTOPHER T. PROVOST.

CHAUNCEY PERRY.

JAMES RIGBY.
PHILIP A. PALMER.

JONAS J. PIERCE.

F. L. POPE AND T. A. EDISON.

HENRY E. POSTER.

JOHN BENJAMIN.

GEO. H. BRIGGS.

SANTE CAVAFAGGE.

GEO. T. CHATTAWAY.

C. BROWNELL.

D. M. CHUBUC.

HENRY W. BULKLEY.

EMMA CLARK.

HUGH ARCHIBALD CLARKE.

WILCOMB J. BURDICK.

THOMAS COLDWELL.
GEORGE L. CHADBORN.

JAMES E. DAVIS.

JOSEPH DAWSON.

J. J. DE FREITAS.

WARREN A. DIMSDORE.

JAMES DODGE.

No. 105,787, GEORGE W. DUNCHOCK, Sash-Locks

No. 105,788, HENRY FAKE, Regulating Whisky, &c.

No. 105,789, JAMES H. FELLOWS, Head-Fastening for Barrel-Hoops

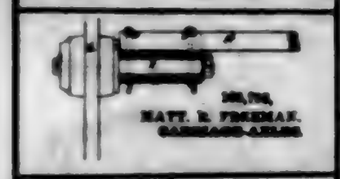
No. 105,790, S. F. FIELD, Manufacture of Straw and other Paper Boards



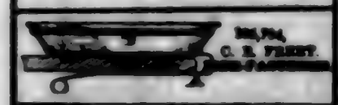
No. 105,791, WILLIAM H. FITTERER, Railway-Car Coupling



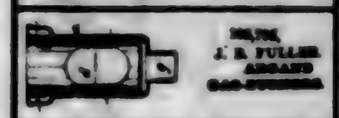
No. 105,792, LUDWIG OTTMAR FRAPER, Steering-Gear Windlass



No. 105,793, MATT. H. FREEMAN, Carriage-Axles

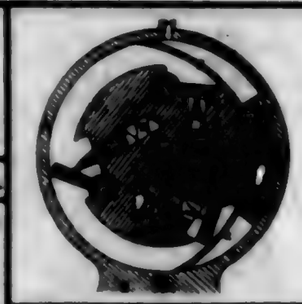


No. 105,794, C. B. FRENT, Sash-Fastener

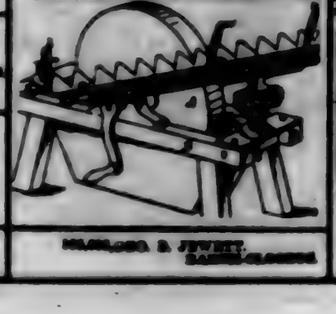


No. 105,795, J. B. FULLER, Airgate

No. 105,796, WILLARD M. FULLER, Airgate Spindle



No. 105,797, W. H. GIBBS, Bottle-Stopper



No. 105,798, ALEX. GRILLET, Breechload-Fastening



No. 105,799, J. HAILER, Gun-Lock

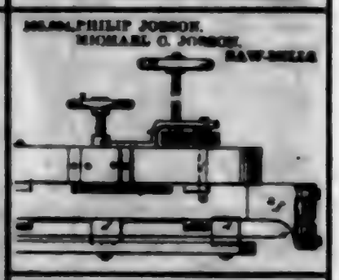
No. 105,800, JOSEPH L. HALL, Loom-Spindle

No. 105,801, WILLIAM H. HALL, Carriage-Axles

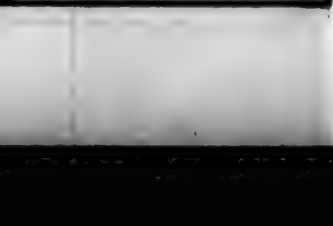
No. 105,802, CHAS. C. HARDY, Machine for Sharpening Shafts-Ends

No. 105,803, HARLOND B. JEWETT, Sash-Fastener

No. 105,804, PHILIP JOBSON, MICHAEL C. JOBSON, Saw-Mills



No. 105,805, SARA JOHNSON, Machine for Making Corrugated Metal Packing

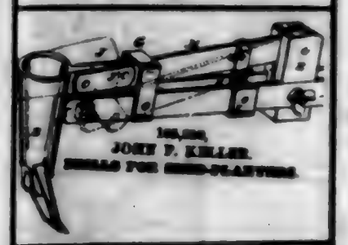


No. 105,806, ALBERT B. JOHNSON, Fire-Place

No. 105,807, ROBERT F. JOHNSON, Device for Reeling and Grain-Binding

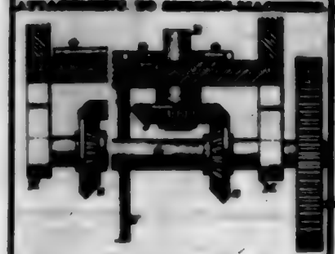
No. 105,808, JACOB O. JOYCE, Gauge for Turning Water-Wheels

No. 105,809, WILLIAM H. F. KREBWIEDER, Compressing Fuel for Producing Illuminating Gas

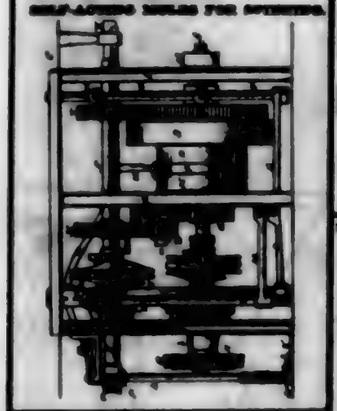


No. 105,810, JOHN P. KELLER, Bread for Head-Fastening

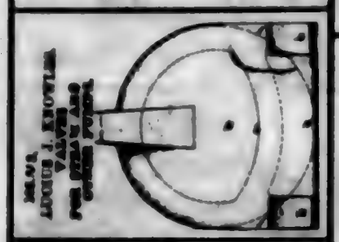
No. 105,811, JOHN P. KELLER, Fastening Attachment to Grinding-Machine



No. 105,812, PRESTON J. KENT, H. W. BANCROFT, Self-Acting Brake for Spinning



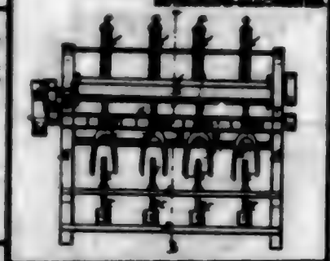
No. 105,813, ANGUS A. KETTLE, Machine for Cutting Files



No. 105,814, JOHN KRAUS, Brake for Preventing Carriages



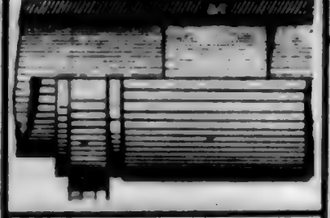
No. 105,814, WILLIAM LA RAFFITTE, LORENZO V. DAGGETT, Spinning-Machine



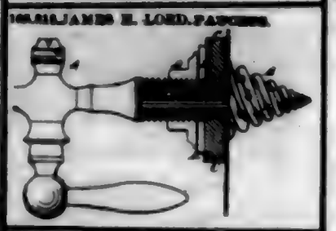
No. 105,815, SILAS HOFFMAN LA RUE, Reaping-Hook



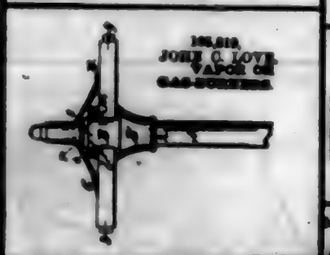
No. 105,817, WM. A. LIGHTHALL, Pipe-Coupling



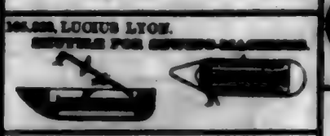
No. 105,818, JAMES H. LORD, Fastener



No. 105,819, JOHN C. LOVE, Vapor Oil Gas-Burner



No. 105,820, LUCIUS LYON, Device for Spinning-Machine



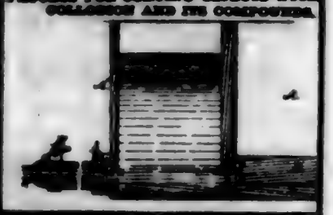
No. 105,821, C. E. MARSHALL, Horse-Collar



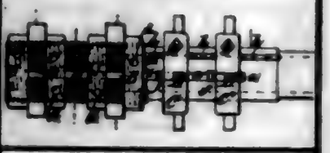
No. 105,822, ELISHA MATTOON, Corrected Hair-Curler and Crimper



No. 105,823, J. A. McCLELLAND, Process for Coating Grooves with Composition and Tin Compounds



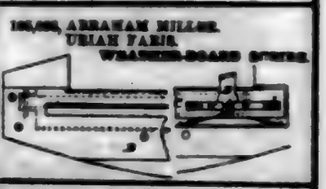
No. 105,824, WILLIAM H. McMILLAN, DAVID MORRIS, Turning Device



No. 105,825, WILLIAM A. MIDDLETON, Hand Corn-Planter



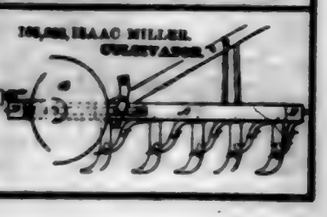
No. 105,826, ABRAHAM MILLER, URIAH FARR, Washing-Board Stretcher

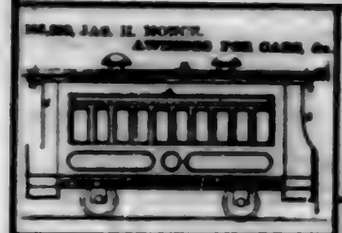


No. 105,827, CHARLES H. MILLER, Whistle

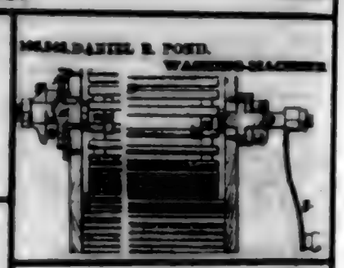


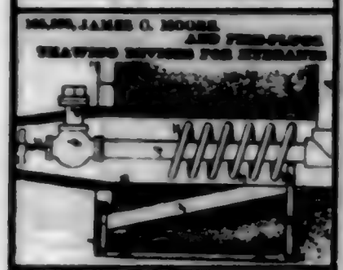
No. 105,828, ISAAC MILLER, Cultivator

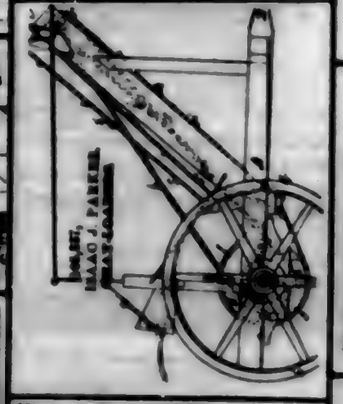


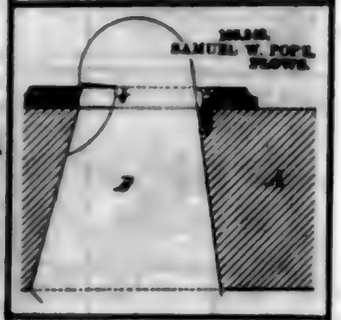


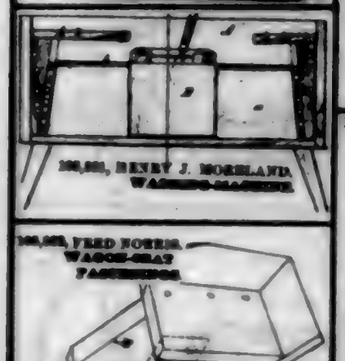


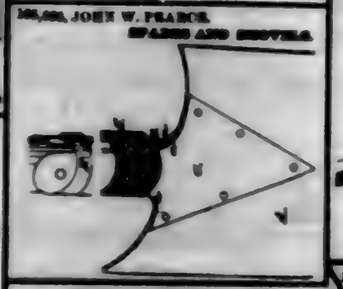








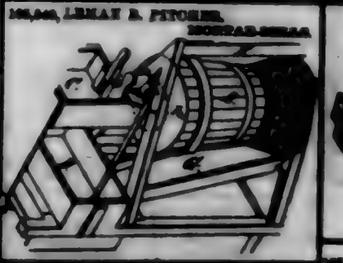




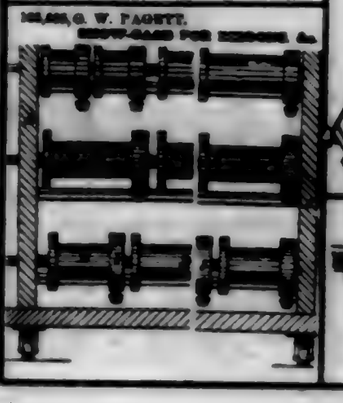


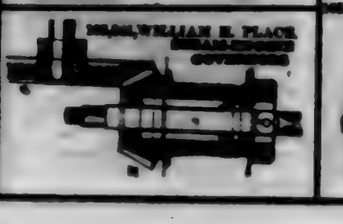




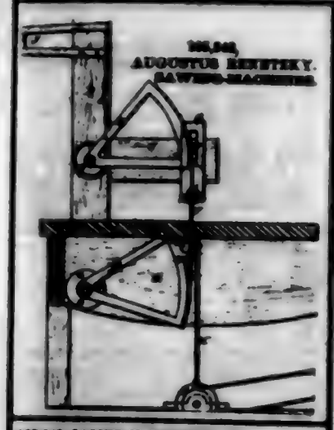


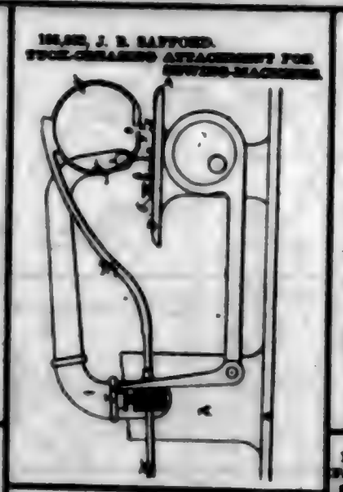


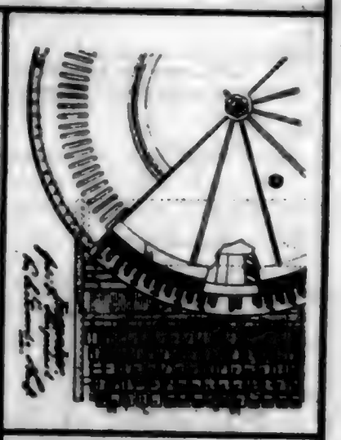






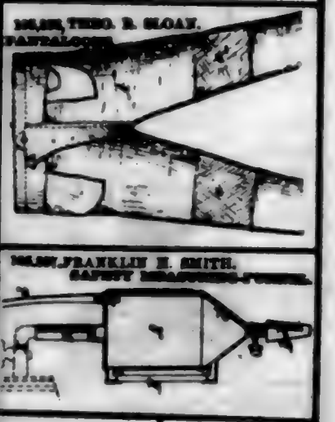


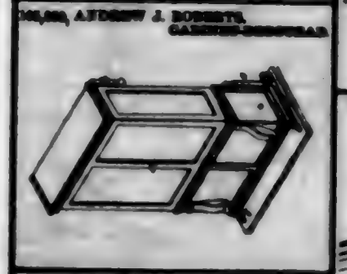


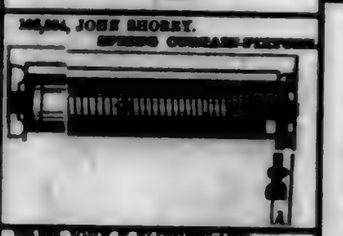


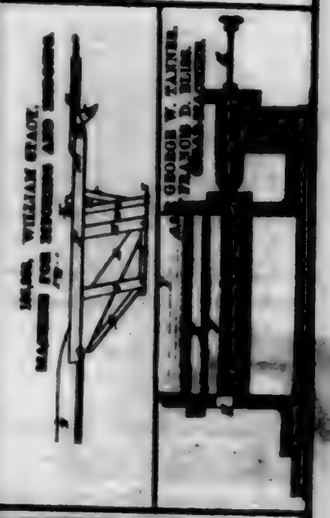


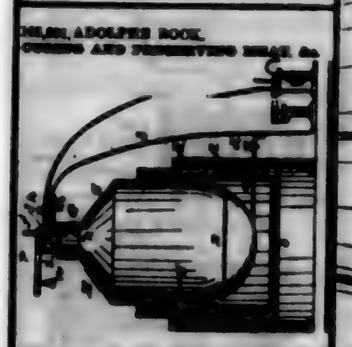


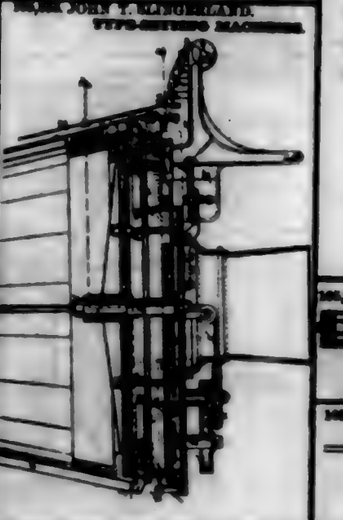


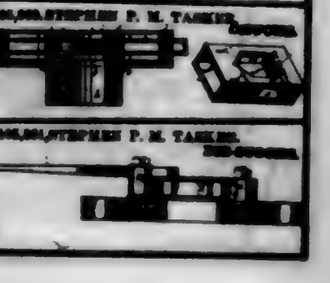




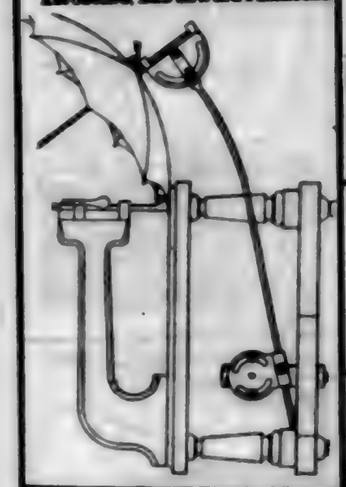








105,868, WILLIAM JOHN TATE.
IMPROVEMENT FOR REPAIRING, ADJUSTING, AND SPRING PARADDLE.



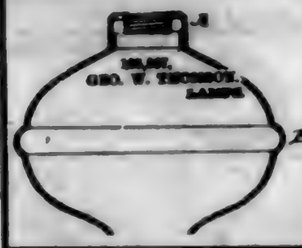
105,869, GEORGE OSCAR TAYLOR.
RAILROAD RAIL-SPLICE.



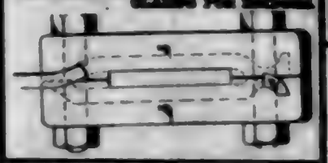
105,870, GEO. G. THOMAS.
HOT-AIR FURNACE.



105,871, GEO. W. THORNDYKE.
BANDS.



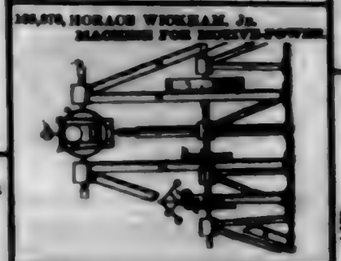
105,872, L. B. THURSDELL.
GLAZING FOR SKYLIGHTS.



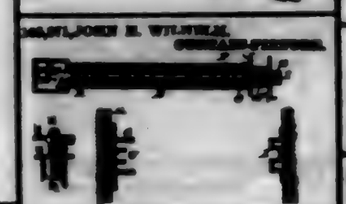
105,873, CHARLES B. TOWNE.
GALVANIC BATTERY.



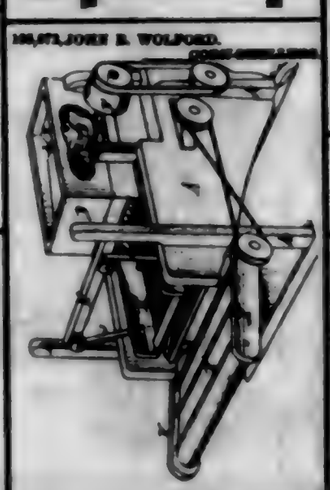
105,874, HORACE WICKHAM, Jr.
MACHINE FOR REMOVING POWDER.



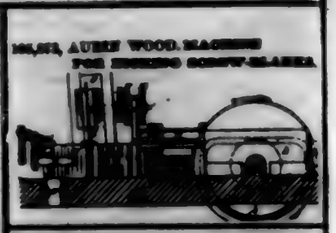
105,875, JOHN H. WILHELM.
STEAM-STOPPER.



105,876, JOHN B. WOLFORD.
CORN-SHELLER.



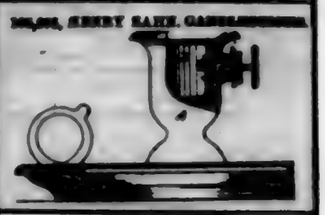
105,877, AUBEY WOOD, MACHINE FOR BENDING SCREW-BLANKS.



105,878, S. F. WOODSIDE.
PERCUSSION CAPS.



105,879, HENRY BAHR, CARRIAGE-SPRING.



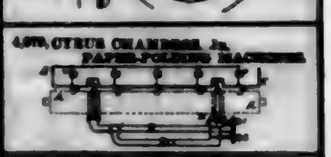
105,880, WILSON W. KNOWLES.
CARRIAGE-STEP.



4,058, HENRY J. OAKE, ELIJAH CHAPIN, OTIS EDWARDS, and EDWARD EDWARDS, Assignors to themselves and Jas. Edwards.
SEWING-MACHINE.



4,059, CYRUS CHAMBERS, Jr.
PAPER-POLISHING MACHINE.



4,060, JOHN G. HADFIELD, M. D.
MEDICAL VACUUM APPARATUS.



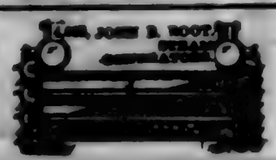
4,061, EDWARD HEATON.
GRAIN-SPOUTING.



4,062, JOHN B. ROOT.
STRAW-CONSUMATORS.



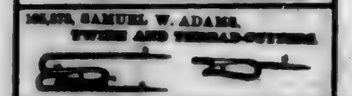
4,063, JOHN B. ROOT.
STRAW-CONSUMATORS.



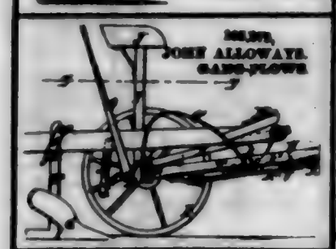
105,877, ALFRED ADAMS.
PAPER BAGS.



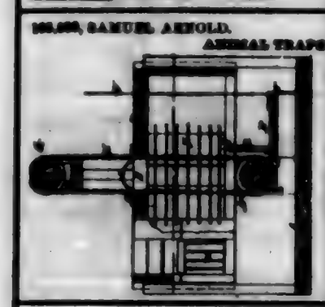
105,878, SAMUEL W. ADAMS.
TWINE AND THREAD-CUTTERS.



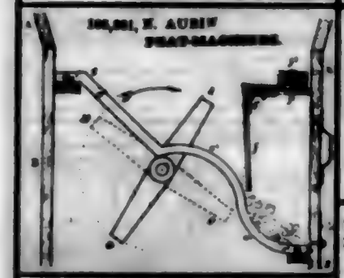
105,879, JOHN ALLOWAYS.
GANG-PLOWS.



105,880, SAMUEL ARNOLD.
ANIMAL TRAPS.



105,881, E. AUBIN
BEAT-MACHINES.



105,882, SAMUEL S. AYERS, Ford-Wheel.

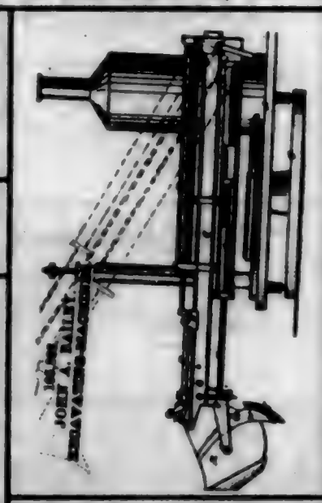


ILLUSTRATIONS OF PATENTS

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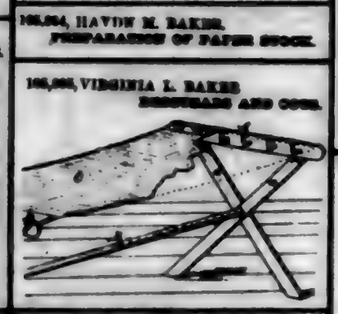
THE UNITED STATES PATENT OFFICE

AUGUST 2, 1870.

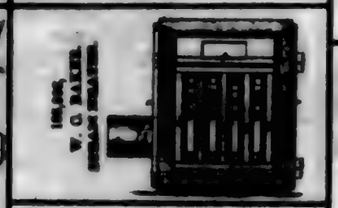


105,883, HAVEN M. BAKER.
PREPARATION OF PAPER STOCK.

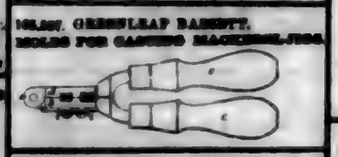
105,884, VIRGINIA L. BAKER
BEDSTEAD AND COUCH.



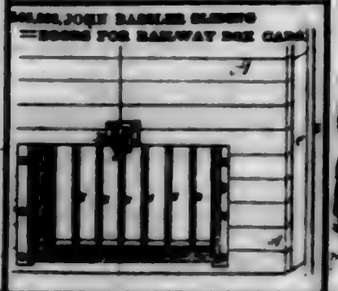
105,885, O. BAKER.
BAG-RACK.



105,886, GREENLEAF BARRETT.
MOLDS FOR CASTING MACHINE-TOOLS.



105,887, JOHN BASSLER, SLIDING DOORS FOR RAILWAY BOX CARS.



105,888. W. A. BATTERSBY.
MANUFACTURE OF ARTIFICIAL STONE.

105,889, JOSEPH B. BENNETT.
BALL-VALVES FOR EMBOSSING AIR.



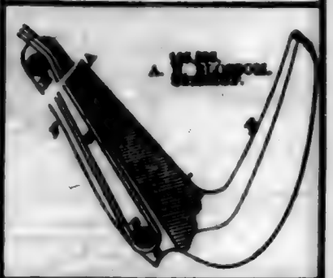
105,890, LINUS S. BLAKE, WOOL-SHEER.



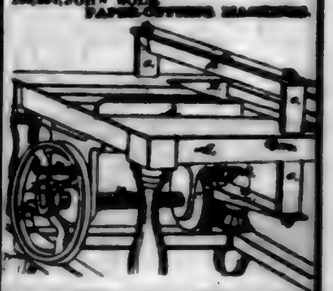
105,891, WM. S. BLANCHARD, CORN AND COTTON CULTIVATING-PLOW.

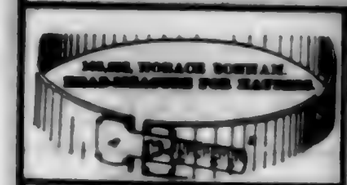


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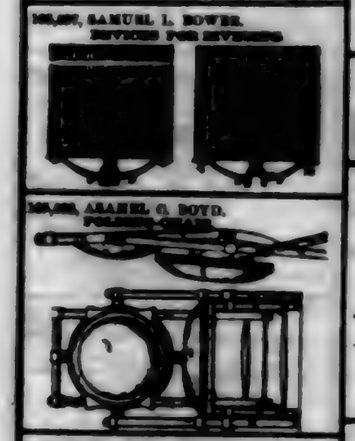


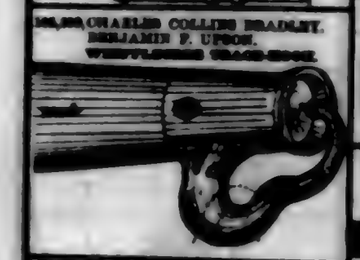
105,894, JOHN BOLE.
PAPER-CUTTING MACHINE.

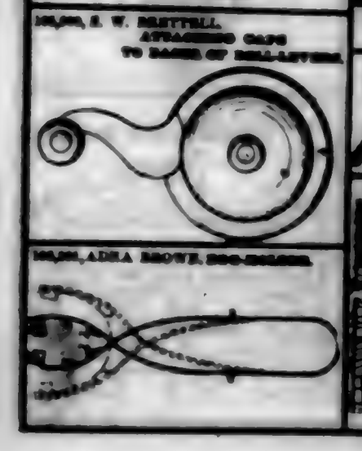


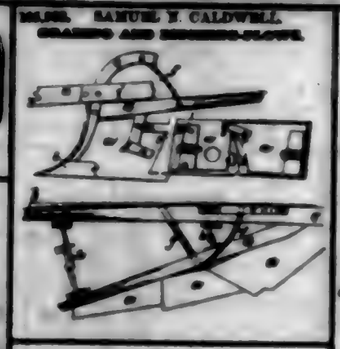




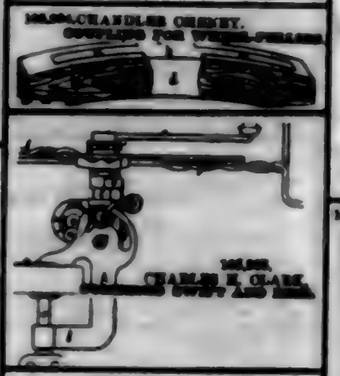




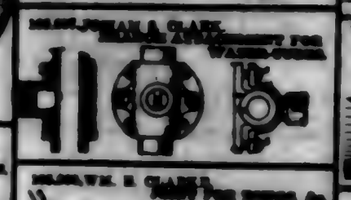


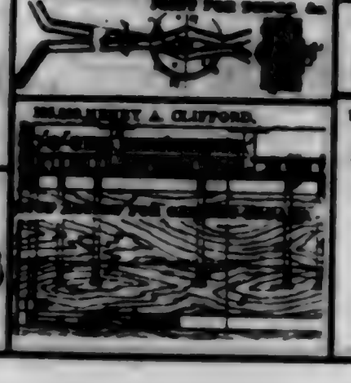


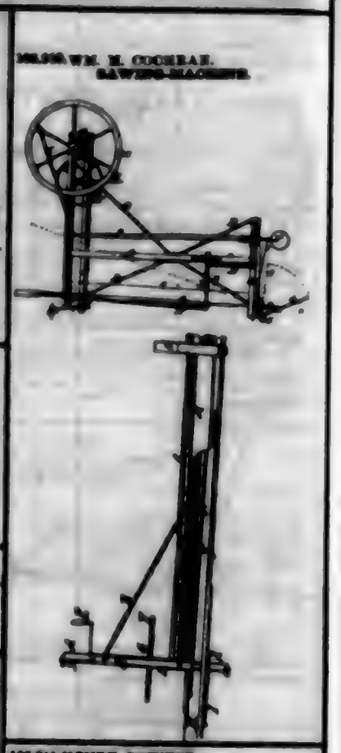




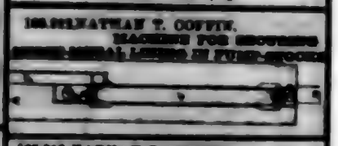






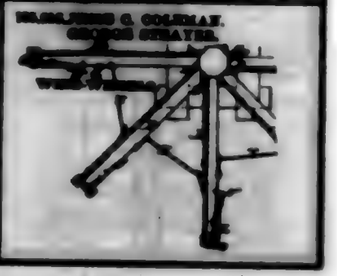




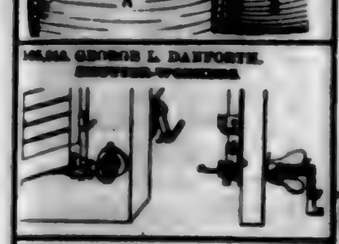






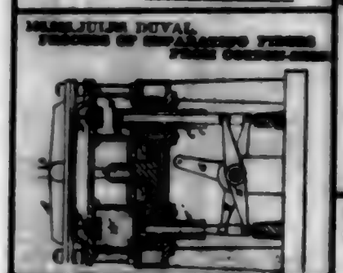


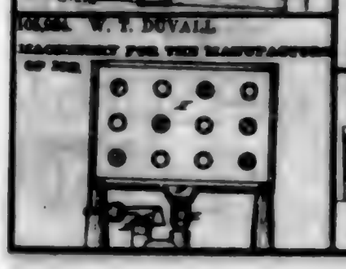




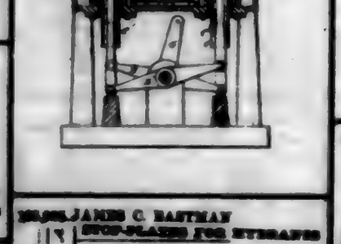


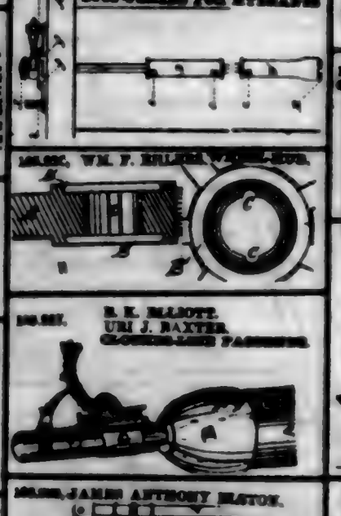


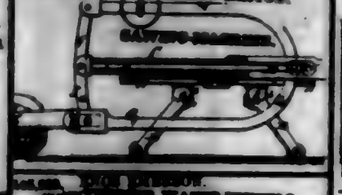










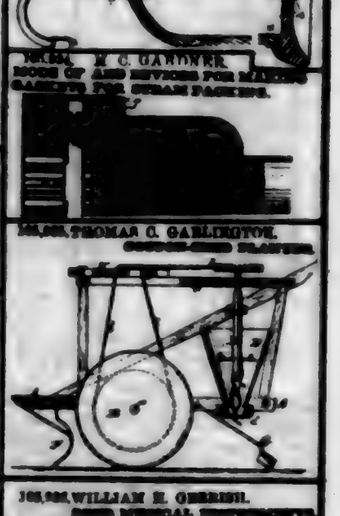


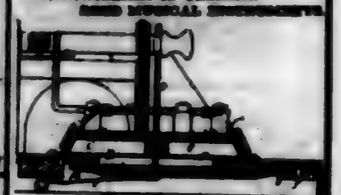






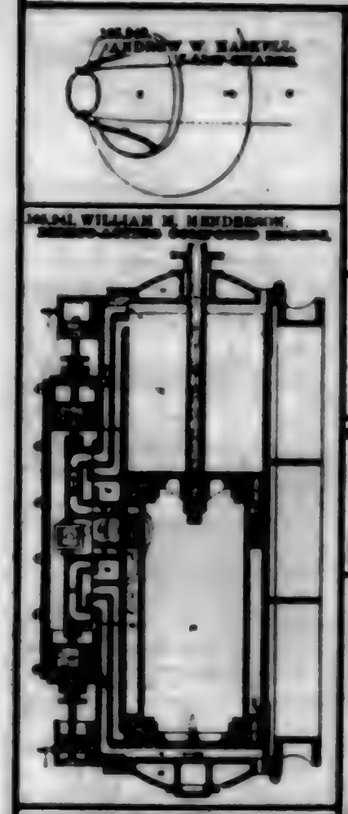


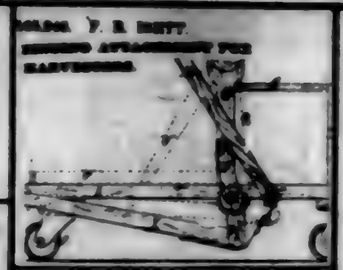






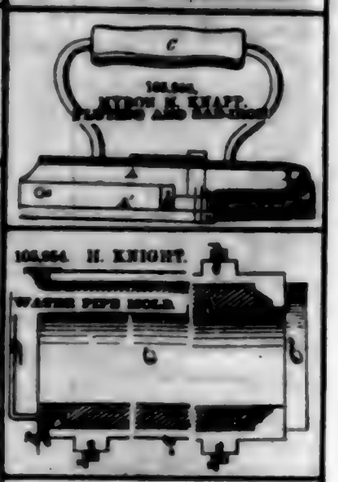


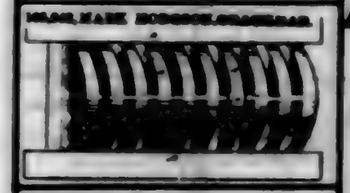


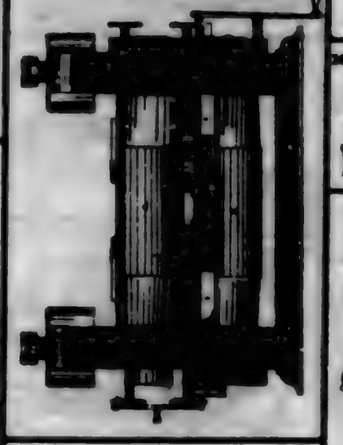


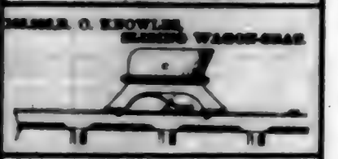


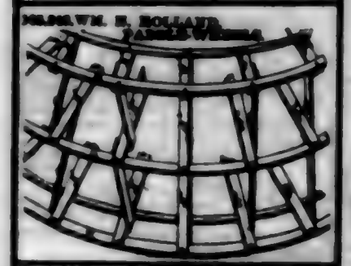


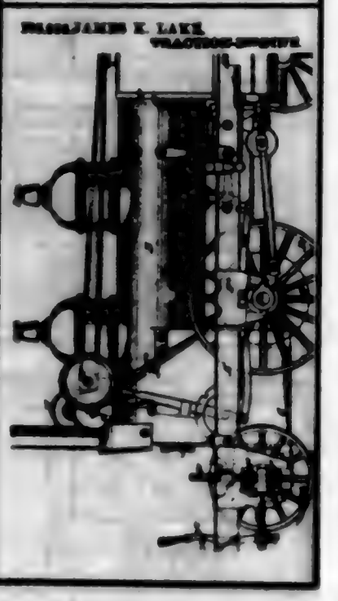








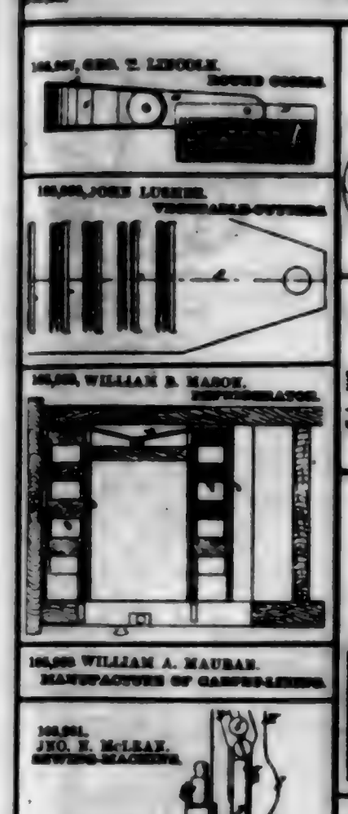


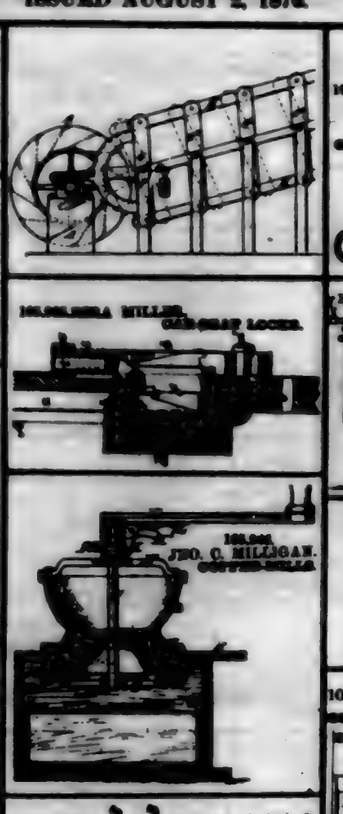


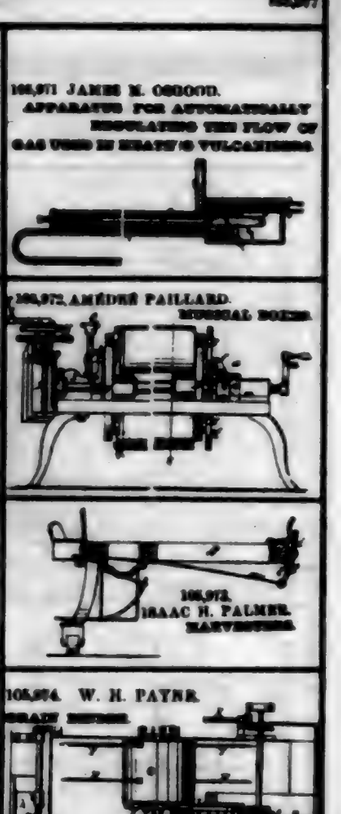


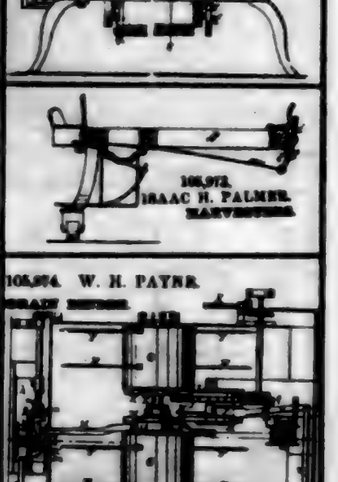




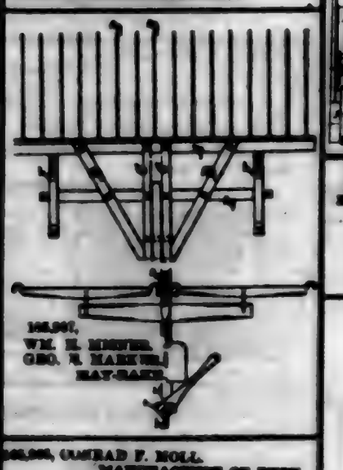








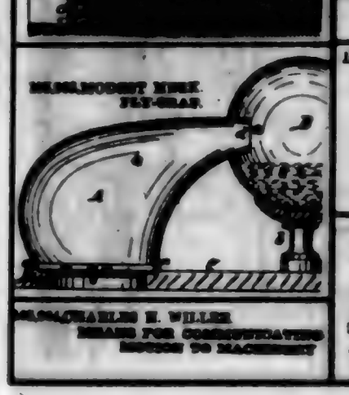




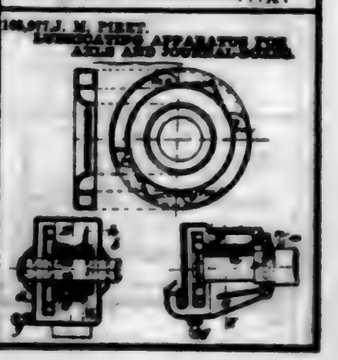




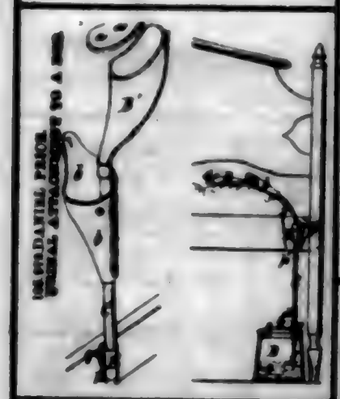




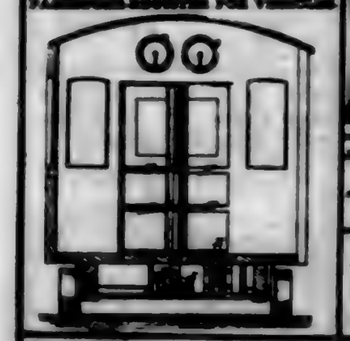




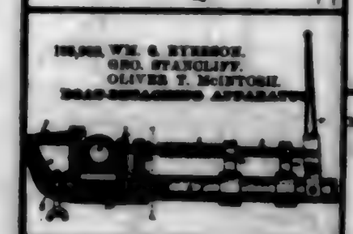
105,978, SAMUEL M. FOSTER.
STIRRUP FOR FASTENING BUTTONS.



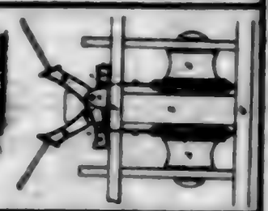
105,979, JOHN REOADS.
PASSENGER-REGISTER FOR VEHICLES.



105,980, WM. G. STEESON.
GEO. STANCLIFF.
OLIVER T. McINTOSH.
HEAD-REGULATING APPARATUS.



105,981, ALBERT SUMNER.
SLEIGH.



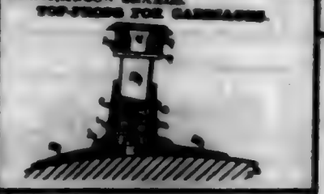
105,982, G. W. BUCKER.
G. C. SWAN.
T. W. BUCKER.
MACHINE FOR PRESSING AND SHAPING TOBACCO.



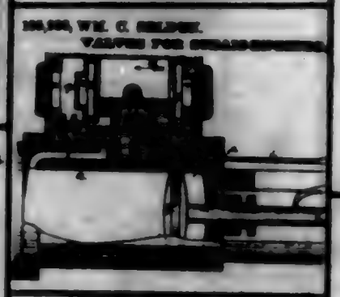
105,983, ADDISON V. SANFORD.
ADJUSTABLE RAILWAY TRUCK.



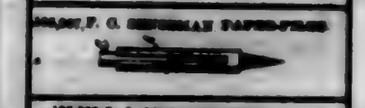
105,984, AARON SHARLE.
TOP-PRONG FOR CARRIAGES.



105,985, WM. G. HELDEY.
VALVES FOR STEAM-ENGINES.



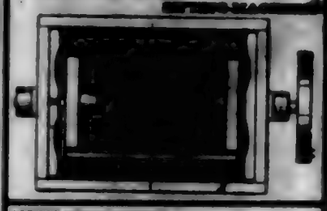
105,986, F. G. SHUSMAN.
PAPER-PUNCH.



105,987, C. J. SHUTTLEWORTH.
PRESS-PUNCH.



105,988, GEO. SIDEY.
REFRIGERATOR.



105,989, JOHN SMITH.
CAR-COUPLING FOR RAILROADS.



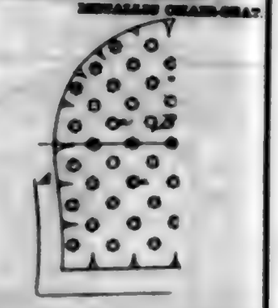
105,990, J. HARRY SMITH.
CARRIAGE.



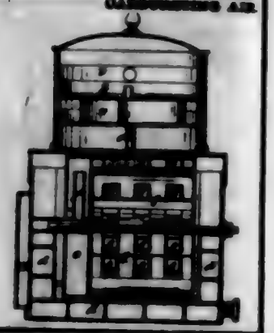
105,991, J. HARRY SMITH.
CARRIAGE.



105,992, SILAS ALLEN SNYDER.
REPAIRING GRAIN-SEAT.



105,993,
JAMES F. SPENCE.
APPARATUS FOR CARBURETING AIR.



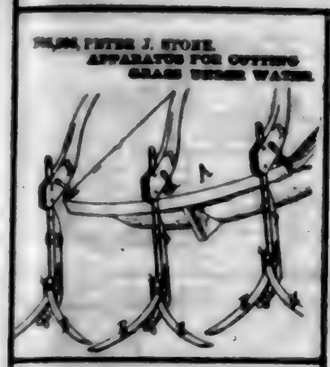
105,994, ANDREW J. STEVENS.
RUNNING-GEARING.



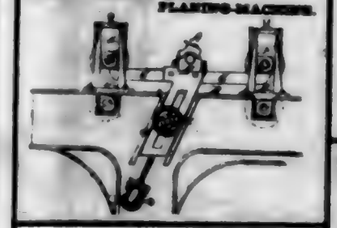
105,995, ISAAC SMITH.
CAR-COUPLING.



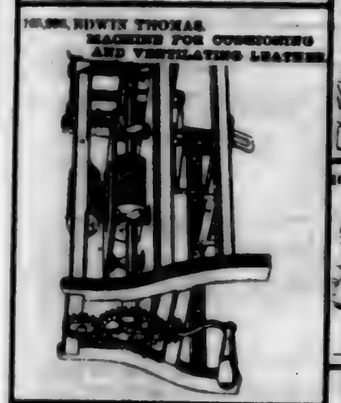
105,996, PETER J. STOBE.
APPARATUS FOR CUTTING GRASS UNDER WATER.



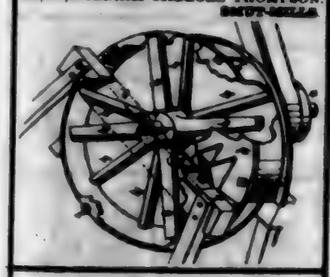
105,997, WILLIAM TEAL.
PLANING-MACHINE.



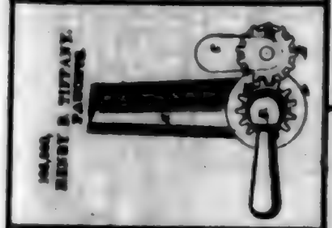
105,998, EDWIN THOMAS.
MACHINE FOR CONDITIONING AND VENTILATING LEATHER.



105,999, WILLIAM CARROLL THOMPSON.
BRUT-SHELLS.



106,000, HENRY S. TIFFANY.
PLANING.

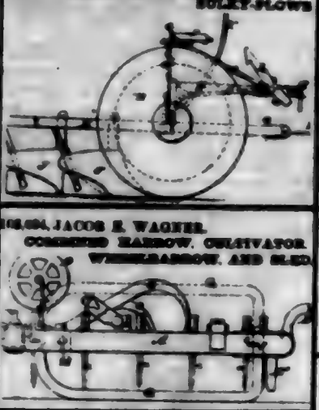


106,001, FREDERICK H. TREVITHICK, Jr.
RAILWAY CAR-WHEEL.

106,002, W. P. VAN DEURSEN.
WILLIAM C. DAVIS.
AUTOMATIC FISH-REGISTERING FOR RAILROAD CARS, &c.

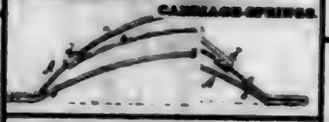


106,003, JAMES L. VAN GORDER.
SULKY-PLOWS.



106,004, JACOB E. WAGNER.
COMBINED HARROW, CULTIVATOR, WHEELBARROW, AND SLED.

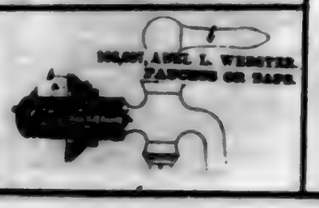
106,005, ROBERT E. WALKER.
CARRIAGE-SPRINGS.



106,006, A. A. WATKINS.
SAW-TABLE FOR SAWING IRREGULAR FORMS.



106,007, ABEL L. WEBSTER.
PACKING OR SEAL.



106,008,
ABEL L. WEBSTER.
DEVICES FOR DRAWING LIQUIDS BY COMPRESSED AIR.



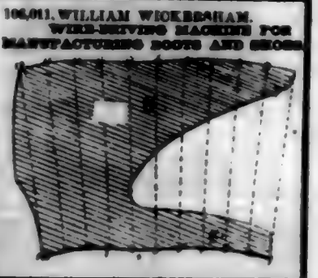
106,009, WILLIAM WICKERSHAM.
HAIR-PIN.



106,010, WILLIAM WICKERSHAM.
MEANS OF ATTACHING THE SOLES TO BOOTS AND SHOES.



106,011, WILLIAM WICKERSHAM.
WIRE-SEWING MACHINE FOR MANUFACTURING BOOTS AND SHOES.



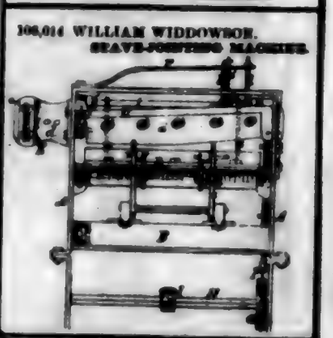
106,012 W. WICKERSHAM
MANUFACTURE OF BOOTS AND SHOES.



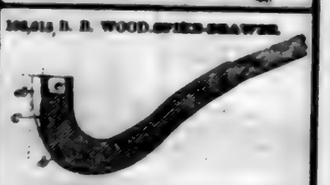
106,013,
WILLIAM WICKERSHAM.
BOOTS AND SHOES.



106,014 WILLIAM WIDDOWSON.
SHAVE-JOINTING MACHINE.



106,015, B. B. WOOD.
SPOKE-SHAVER.



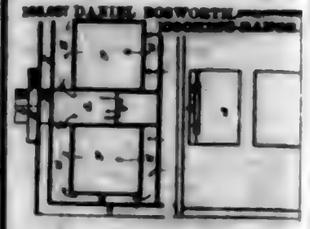
104,058. ROYAL L. WOODBURY.
LAP-BOARD FOR DRESS-MAKING.



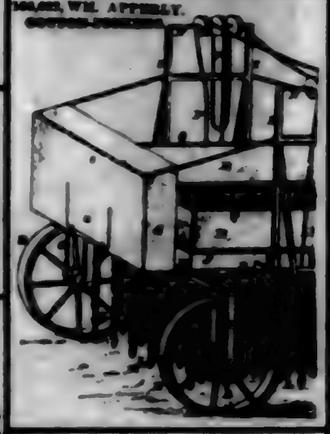
104,059, JAMES H. ATKINSON.



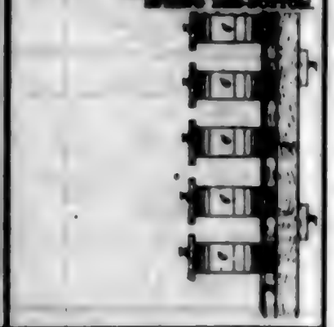
104,060, DANIEL BOSWORTH.
COOKING-RANGE.



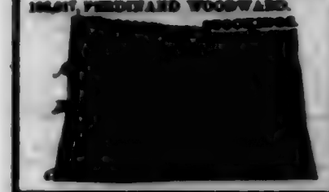
104,061, WM. APPERLY.



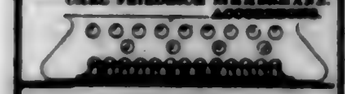
104,062, ELIAS H. BROOKS.
SPRING BED-BOTTOM.



104,063, FERDINAND WOODWARD.



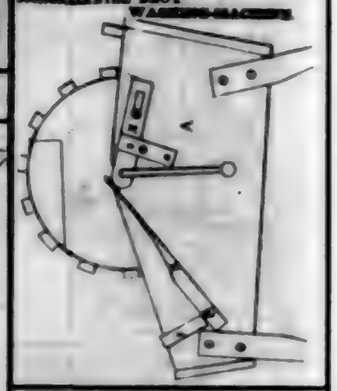
104,064,
CARL FRIEDRICH NEUENHAHN.



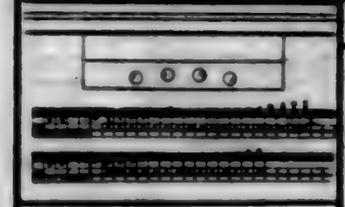
104,065, JOSEPH F. APPLEGATE.



104,066, DANIEL BROT.
WASHING-MACHINE.



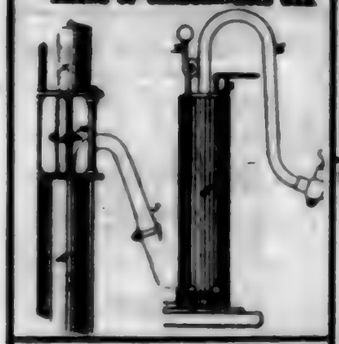
104,067, EUGENE ARNHEIM.
FABRIC FOR HEAD-COVERINGS.



104,068,
FABIUS C. ARNOLD.



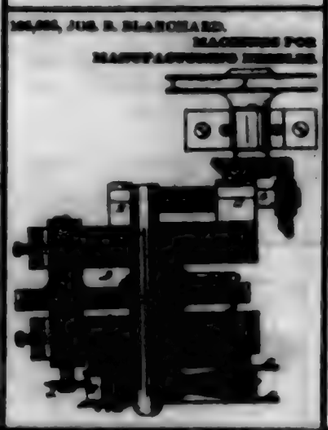
104,069, T. ARBUTH.
PRESERVING AND SOLIDIFYING MEDIA, AIR &c., BY MEANS OF CARBONIC-ACID GAS.



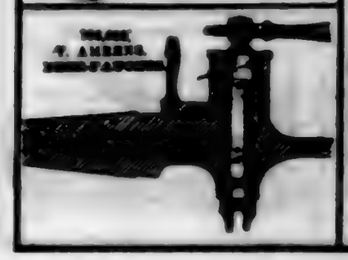
104,070, ANDREW BUNKE.
SHOE AND [illegible]



104,071, JOS. B. MARCHAND.
MACHINE FOR MANUFACTURING HOOPS.



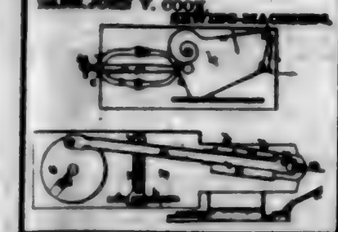
104,072,
WM. A. AMBERG.



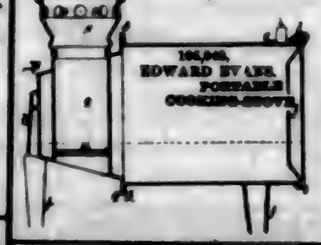
104,073,
ISAAC A. CHENEY,
JOHN L. KENT.



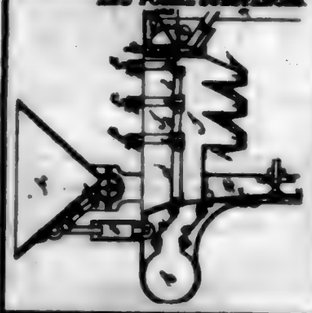
104,045, JOHN V. COOK.
SEWING-MACHINE.



104,046,
EDWARD EVANS.
PORTABLE COOKING-STOVE.



104,047, ROBERT GEORGE.
MACHINE FOR SEPARATING MINERAL AND FOSSIL SUBSTANCES.



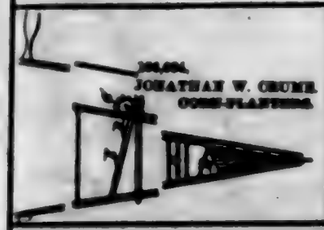
104,048, WM. B. OAKDALL.
HARNESS FOR CHILDREN'S CARRIAGES AND PERAMBULATORS.



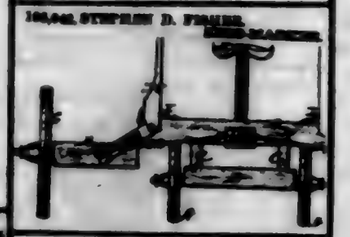
104,049, LOUIS ALEXANDRE FARJON.
PIPE-COUPLING.



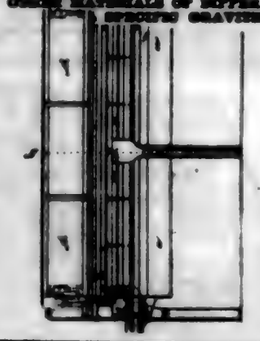
104,050,
JONATHAN W. CRUMB.
CORN-PLANTING.



104,051, STEPHEN D. FISHER.



104,052, ROBERT GEORGE.
MACHINE FOR SEPARATING AND CONCENTRATING ORES AND OTHER MATERIALS OF DIFFERENT SPECIFIC GRAVITIES.



104,053, S. A. DARRACH.
FENCE POST.



104,054,
JOSEPH A. FLETCHER.
SHAD-HOOKS.



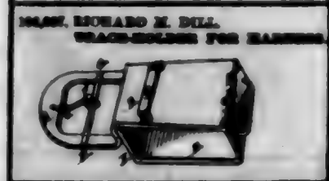
104,055, WALTER DICKSON.
CORN-CRIBS.



104,056, MARCELLUS FORBACH.
BRIDLE-BITS.



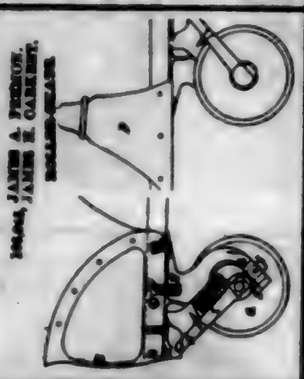
104,057, RICHARD M. HILL.
WAGON-BOLSTER FOR HARNESS.



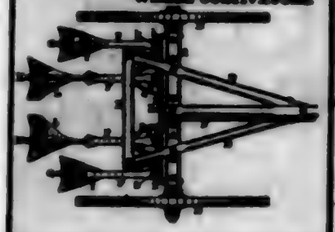
104,058, WARREN WHITNEY DUTCHER.
LOOM-GEARS.



104,059, JAMES A. FERGUS,
JAMES H. OAKEMAN.
HARVESTER.



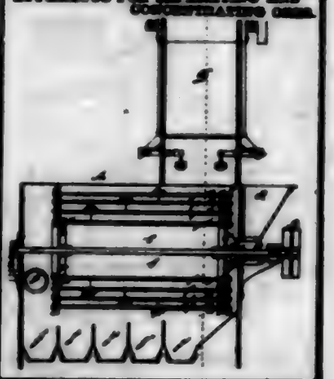
104,060, JEFFERSON BELLEMAN.
WHEEL CULTIVATORS.



104,061, AUGUST FRIEDEMANN.
HARROWS.



104,062, ROBERT GEORGE.
APPARATUS FOR SEPARATING AND CONCENTRATING ORES.



104,063, ABNER E. GILES.
CARRIAGE-JACKS.



104,064,
GEORGE GILL.
AXLE AND WAGON.



104,232. HENRY A. GOODMAN. CAR-BRAKING.

104,233. HENRY GROGAN. SUBSIDIATING COMPOUNDS.

104,234. GERRAULT-GUICHARD. LIME-KILNS.

104,235. HENRY HAINES. CONDENSED MILKS AND CREAM-APPARATUS.

104,236. JAMES M. HANNAH. ELEVATED RAILWAYS.

104,237. JOHN B. HARIS, WILLIAM MODESITT. RAIL-CONNECTING.

104,238. MORTIMER S. HARSHA, WM. M. VAN HOSTWICK. CONCAVE STOVE.

104,239. CHARLES HEPTINSTALL. STEAM FORGING FOR SHAPING AND FORMING CORNICES.

104,240. ROBERT A. HERRING. ROTARY PUMP.

104,241. DAVID J. JOHNS. ROLLING-MILLS.

104,242. WILLIAM B. KIDDER. CLOD-CRUSHING FOR PLOWS.

104,243. CHERRY KILBURN. MODE OF ATTACHING LOOKING-GLASS FRAMES TO BUREAUS.

104,244. THOMAS LEACH. CUP AND BELL.

104,245. AUGUST LIEBOMA. CONDENSED CHAIR AND SEED-LADDER.

104,246. HENRY LOEWENBERG. MANUFACTURE OF MEDICATED SKATES, CHEMICAL &c.

104,247. WILLIAM LORD. SPRING FOR SEWING-MACHINES &c.

104,229. W. E. THOMAS. WINDOW-GUARD.

104,230. JAMES TWAMLEY. TAGS FOR SHOE-BUTTONS.

104,231. PETER TYLER. SAW-SWAGE.

104,232. WENDELL P. VAN KLEECK. SHEET POLISHING-WHEELS &c.

104,233. WILLIAM WALLACE. CARPET FABRIC.

104,234. CHAS. WASTE. HAT-CASTINGS.

104,235. U. S. WESTCOTT. TYPE-DISTRIBUTING MACHINES.

104,236. ELLRIDGE WHEELER. CONDENSED MILK AND CREAM. [illegible]

104,237. ELLRIDGE WHEELER. THE MANUFACTURE OF RAILS FOR RAILROADS.

104,238. O. E. WHEELER. CARRIAGE-SPRING GUARD.

104,239. SETH WHEELER. HORSE-POWER.

104,240. ROBERT WINTER. COLORING PHOTOGRAPHS.

104,241. A. WINTERBURN. SNOW-GRATE.

104,242. BENJ. F. WRIGHT. [illegible] GEAR-GEAR.

104,243. JOSEPH F. APPLEGATE. SURGE.

104,244. U. W. ARMSTRONG, IRA KEENEY. METALLIC CONNECTION FOR MOSQUITO-NET FRAMES.

104,245. ALBERT G. BAKER. STEAM-RADIATOR.

104,246. WALTER E. BARTRAM. [illegible]

104,247. SYLVESTER W. BEACH. SHIFTING CARRIAGE ON BOBSLED-GRATE.

104,248. CHARLES S. BENNET. MACHINE FOR GRADUATING SQUARES.

104,249. SAMUEL J. BINTON. GEAR-PUNCH.

104,270, DANIEL BIBBY, WILLIAM HARRIS, Jr. [illustration]

104,267, HORACE C. BRADFORD. MACHINERY FOR SETTING BUTTON OR LACING-HOOKS [illustration]

104,268, LEWIS BRIDGE. STOVE-GRATE [illustration]

104,269, THOMAS BRISTOW. COLLARING-MATTRESS FROM MACHINE FOR STUFFING [illustration]

104,270, NATHAN T. CARE, Assignor to J. CARE. WASHING AND COOKING-BOILER [illustration]

104,271, WILLIAM BUTTERFIELD. ZINC AND LOW-WARE MACHINE [illustration]

104,272, JAMES BIDWELL. SPINNING MACHINE [illustration]

104,273, RUSSELL W. BROWN. SHEAR-GUTTER AND TRIMMER [illustration]

104,274, WILLIAM W. BINNY. GAS-MACHINE [illustration]

104,275, ABNER H. BRYANT. DOG-CARRIER [illustration]

104,276, T. BOOTHMAN. SEWING-GAUGE [illustration]

104,277, ANDREW J. BURKE. SEWING ATTACHMENT FOR GARTER-MACHINE [illustration]

104,278, WILLIAM BOTHE. PORTABLE WRITING-DESK [illustration]

104,279, W. H. BUTLER. SAFE-DEPOSIT BOXES [illustration]

104,280, WILLIAM BURNE. WASHING-BOARD [illustration]

104,281, E. E. BUTTERFIELD. COAL-BOX [illustration]

104,282, WITT G. CLARK, HENRY W. CADY. COAL-STOVE [illustration]

104,283, HENRY CARLOW. [illustration]

104,284, JOS. L. CHAPMAN. [illustration]

104,270, LEWIS G. CLOCK. BARN-CLOSURE [illustration]

104,271, THEODORE CLOUGH. GAS-REGULATOR [illustration]

104,272, CHAUNCY G. CROSBY. MACHINERY FOR MAKING WHEELS [illustration]

104,273, THOMAS DONNELLY, JAMES H. ANCHORS, ALLEN ANCHORS. CONVEYING LIQUIDS [illustration]

104,274, PETER DOYLE, FREDERICK P. COLTON. COMPOUND FOR POLISHING AND CLEANING MARBLE

104,275, CYRUS COLE. STOVE-COVER, FLUE, AND REGULATOR [illustration]

104,276, DANIEL CURRIE. [illustration]

104,277, WM. M. EAMES. VENTILATING ATTACHMENT FOR STOVES [illustration]

104,278, THOS. J. COULSTON. COMBINED STOVE-LID AND COVER [illustration]

104,279, NATHAN G. DAVIS. [illustration]

104,280, R. EDWD. EARLL, J. B. HUNTER. GATE-LATCHES [illustration]

104,281, LEVI DODGE. MANUFACTURE OF PAPER [illustration]

104,282, WILLIAM H. BARNETT. CRIBS AND CRADLES [illustration]

104,283, THOS. J. COULSTON. HEATING-STOVE [illustration]

104,284, LEVI DODGE. MANUFACTURE OF PAPER [illustration]

104,285, EDMUND EDWARDS. PUMPS [illustration]

104,286, E. T. COVELL. REVERSIBLE GAS AND SPOUT FOR OIL-CANS [illustration]

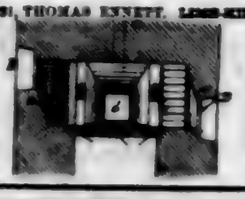
104,287, WILLIAM B. DOLAN. [illustration]

104,288, G. W. CRABTREE, J. G. STOAKES. SEED-DRILLS FOR SAWING [illustration]

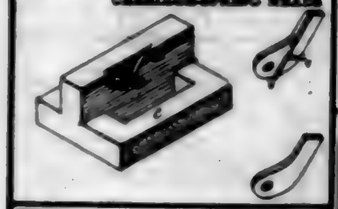
104,289, J. H. EDWARD. HARVESTER [illustration]

104,290, DEXT. P. CRANDALL, Jr. SPRINGS FOR VEHICLES [illustration]

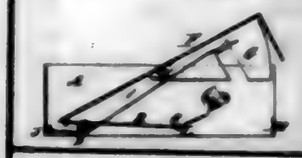
104,291, THOMAS ENNETT, LOOM-SHUTTLE.



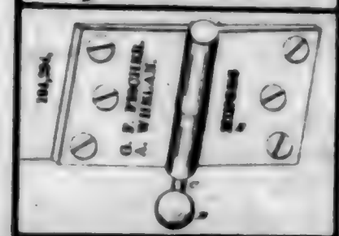
104,292, JOHN EVANS,
DIE FOR FORGING BARS FOR CARRIAGE-SPRING WRAPS.



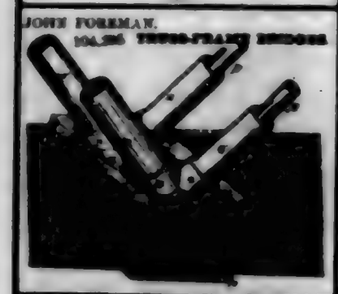
104,293, EDWIN BRONSON EVERITT,
ANIMAL-TRAP.



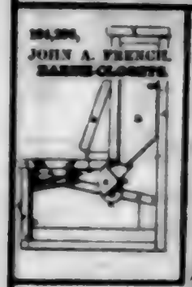
104,294,



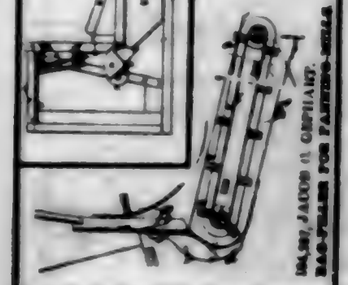
JOHN FOREMAN,
104,295 TWINE-PLANT HOLDER.



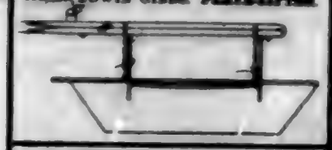
104,296,
JOHN A. FRENCH,
SASH-CLOSER.



104,297, JACOB G. GEPHART,
MACHINE FOR PARTING METAL.



104,298, EDWIN GIBBS, PLATE-LIFTER.



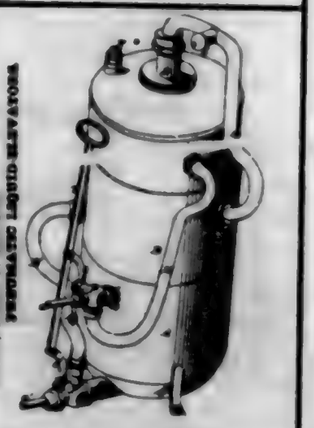
104,299, E. W. GIDDINGS, WINDOWS.



104,300, FRANKLIN T. GRIMES,
BEDSTEAD.



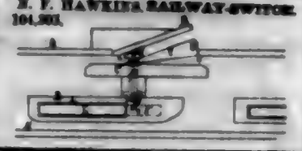
104,301, JOHN P. GRUBE,
HYDRAULIC LIQUID-ELEVATOR.



104,302,
W. D. GUERNSEY,
JAS. A. DAVIS,
H. D. MOSHER,
PLOW.



104,303, E. F. HAWKINS, RAILWAY-SWITCH.



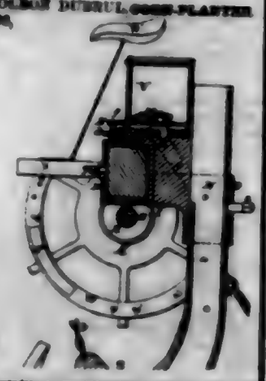
104,304, FRANCIS M. HARRIS, CHURN.



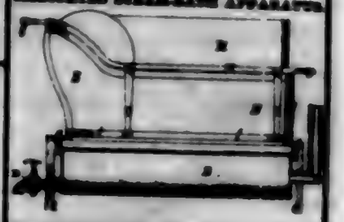
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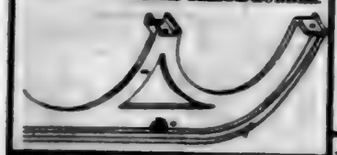
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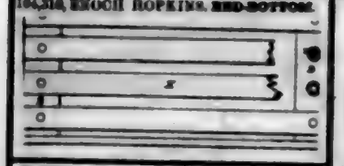
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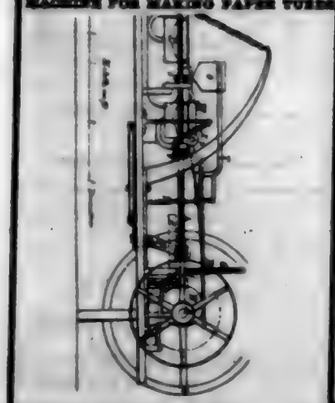


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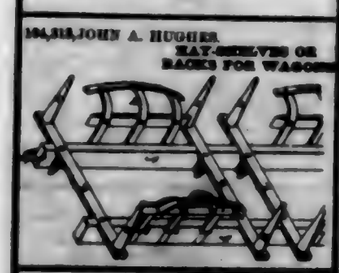


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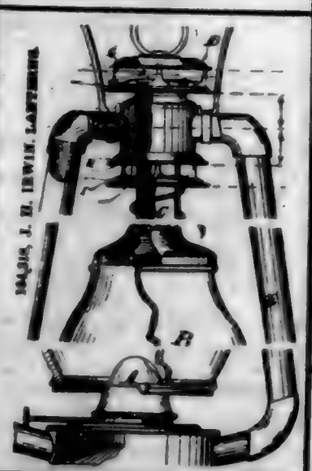
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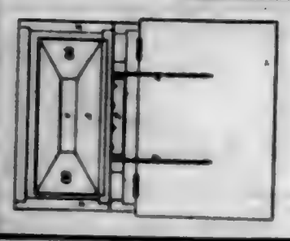
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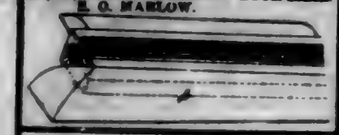
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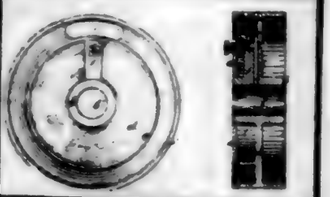


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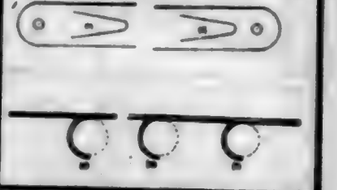


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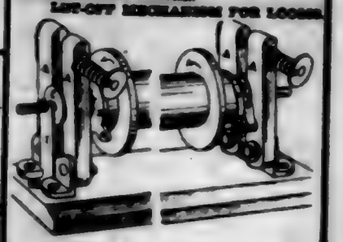
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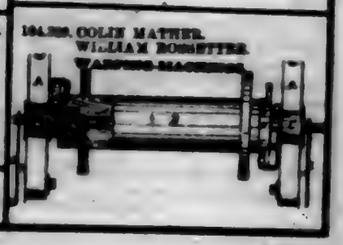


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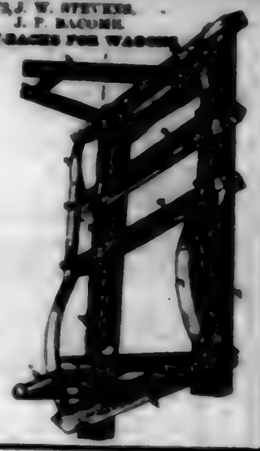
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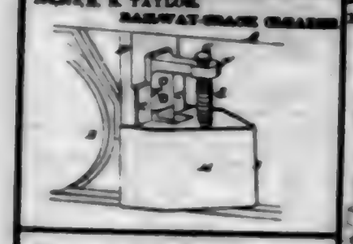
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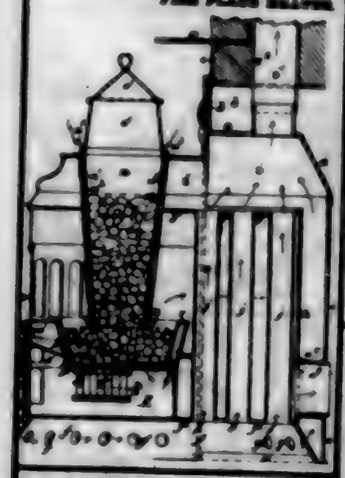
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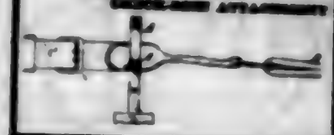
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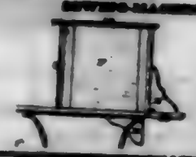
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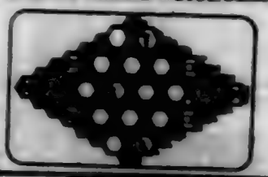
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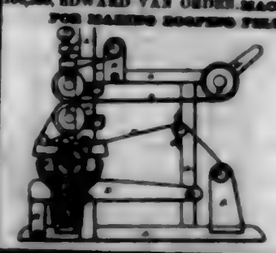
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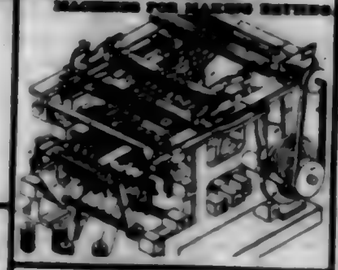
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104,381, ALOSA VIVARTTAS. MACHINE FOR MAKING BITTERS.

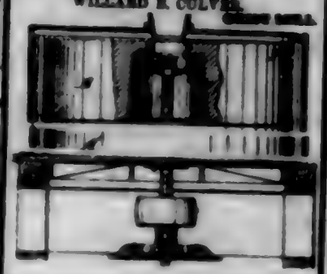


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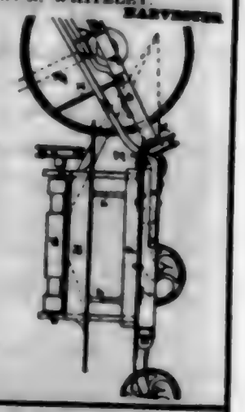
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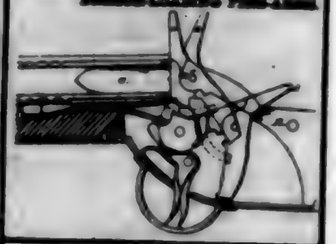
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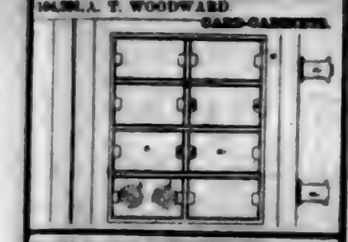
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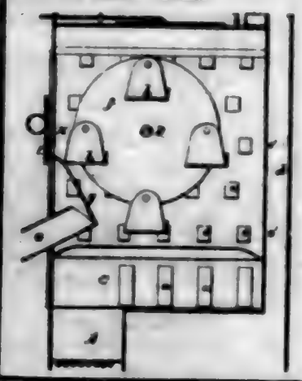
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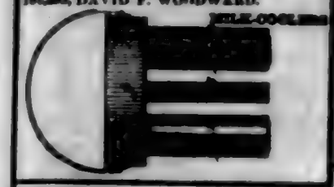
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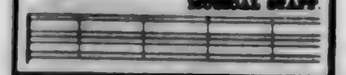
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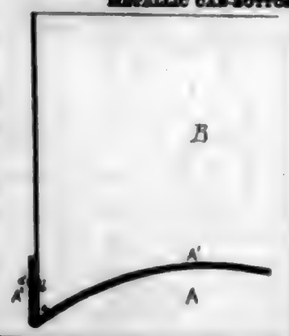
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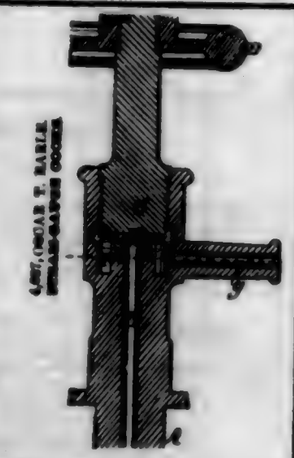
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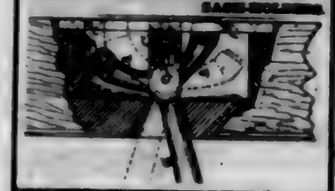
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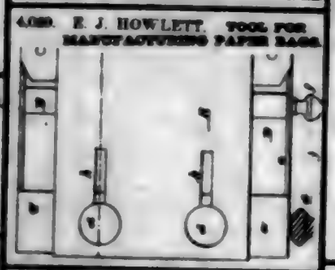


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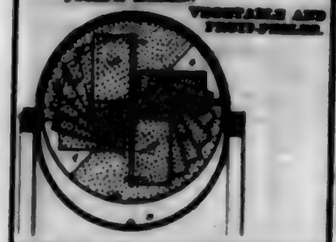
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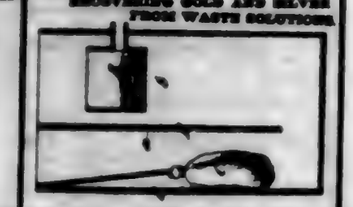
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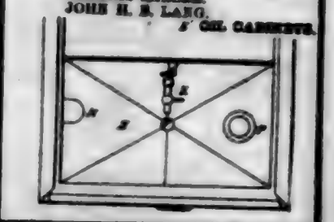
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104,417, JULIUS M. BRANIG. TUNING-PIN FOR PIANOS.

104,418, ATHERTON BRIGGS. TRUSS-SUPPORTER.

104,419, NATHANIEL B. BUFFINGTON. CLOTHES-LINE HOLDER AND STRETCHER.

104,420, GEO. W. CADY. BOOR-HINGE.

104,421, DAVID CAMMERER. APPARATUS FOR AGITATING AND COOLING BARRELS AND CASKS DURING THE PROCESS OF FERMENTING.

104,422, JOHN J. CARROLL. DEVICE FOR ROASTING AND BASTING.

104,423, JAMES A. CASEY. SUBSOIL-HARROW, &c.

104,424, ANGELO CATTANEO. MACHINERY FOR FELTING HATS.

104,425, ETHAN B. CHENEY, JOHN J. EMERY. CABLE-STOPPERS.

104,426, EDW. B. CLARK. PIPE-TONGS.

104,427, WILLIAM A. COBB. SOLDERED TAIL-RACES OF WATER-WHEELS.

104,428, ALPHEUS C. COBB. WATER-WHEEL.

104,429, JOHN S. COUTANT. HAND-BRAKE.

104,430, E. T. COVELL. BOBBIN AND CAP FOR OIL-CANS.

104,431, E. T. COVELL. SOLDERING-MACHINE.

104,432, DANIEL H. CROSS. VIAL FOR PRESERVING COLLODION.

104,433, VELETUS W. CROWSEN. METHOD OF COVERING WHELPS.

104,434, JAMES CUDDY, GEO. S. SELDEN. THE MANUFACTURE OF WHITE LEAD.

104,435, JOHN DICKASON. FARE-GATE.

104,436, CHARLES T. DURHAM, JAMES WOOD, THEODORE HAIR. GAUGE-KNIFE FOR CUTTING LEATHER.

104,437, JACOB EDSON. VISE.

104,429 JOHN H. ELLIS.
MACHINES FOR CASTING TYPES.



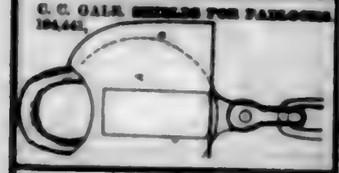
104,430 A. H. EMERY.
GABRIEL LEVERICH APPARATUS FOR TOWING CANAL-BOATS.



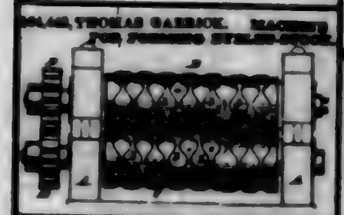
104,431 JOHN EVANS, SEN. FOR FORGING BARS FOR GARDNER-SPRING BEARS.



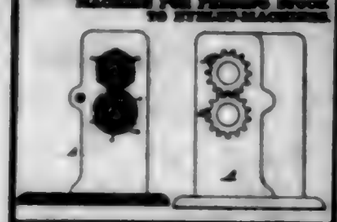
C. C. GALE. SHEARS FOR FASHIONING 104,432.



104,433 THOMAS GARRICK. MACHINE FOR FORMING STRIPS OF STEEL.



104,434 THOMAS GARRICK.
MACHINE FOR FORMING STOCK TO STRIKE MACHINES.



104,435 JEREMIAH C. GATTOW. CARD-CLOTHING.

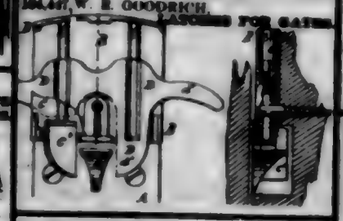


104,436 A. W. GATTS. CARD-CLOTHING.

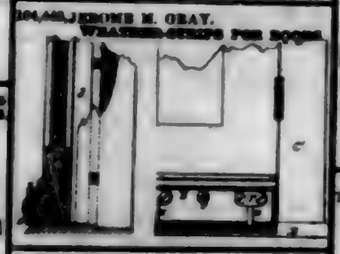


104,437 OTTO GAYBOE.
NEW PREPARATION OF MINERAL WATERS TO IMPART MINERAL WATERS.

104,437 W. E. GOODRICH.
MACHINES FOR CASTING.



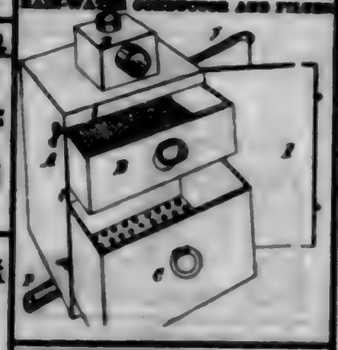
104,438 JEROME M. GRAY.
WEATHER-STRIPS FOR DOORS.



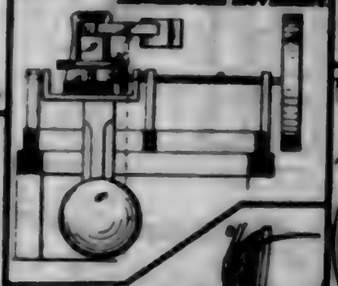
104,439 GEORGE B. GREEN.
HOLDS FOR DOORS AND SHUTTERS.



104,440 JAMES C. HALL.
RAIN-WATER GUTTERS AND PIPES.



104,441 WILLIAM HARRILL.
MACHINE FOR MOVING BUILDINGS.



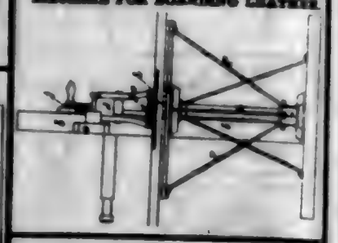
104,442 J. W. HAVILAND.
MILKING-STOOLS.



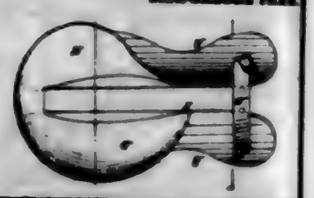
104,443 JOHN T. HAVILAND.
ARRANGEMENT FOR REMOVING TWINE AND WIRE FROM BOTTLES.



104,444 JOSEPH WARSON HILDRETH.
MACHINE FOR BOARDING LEATHER.



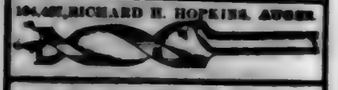
104,445 WILLIAM HILL.
RING-GAUGES TEES.



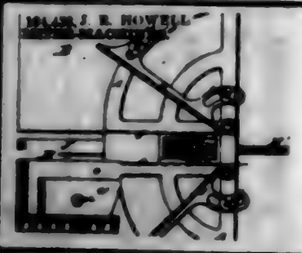
104,446 WILLIAM HILL. RING-GAUGES.



104,447 RICHARD H. HOPKINS. AUGER.



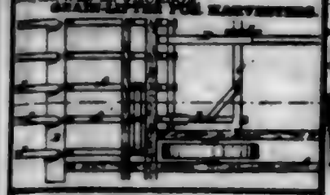
104,448 J. E. HOWELL.
SEWING-MACHINES.



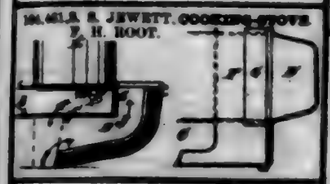
104,449 JOHN HUGHES.
PISTON PACKING.



104,450 WM. M. JACKSON.
GRAIN-LIFTER FOR HARVESTERS.



104,451 E. S. JEWETT, COOKING-STOVE. T. H. ROOT.



104,452 WILLIAM J. JOHNSON.
CAR-COUPLINGS.



104,453 ALBERT D. JUDD.
METALLIC BRACKET.



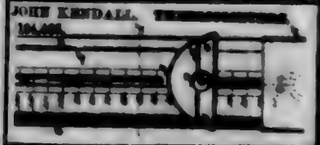
104,454 ALBERT D. JUDD.
T. M. JUDD.
METALLIC BRACKET.



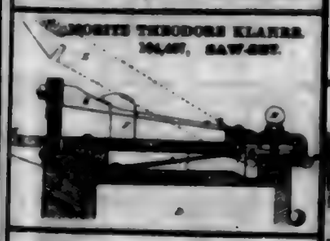
104,455 MORTON JUDD.
SPRING ROLLS FOR WINDOWS.



JOHN KENDALL.
104,456.

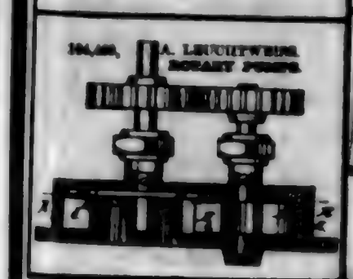


MORITZ THEODORE KLAREN.
104,457. SAW-SET.



104,458 SUSPENDED.

A. LEUCHTWEIS.
ROTARY PUMP.

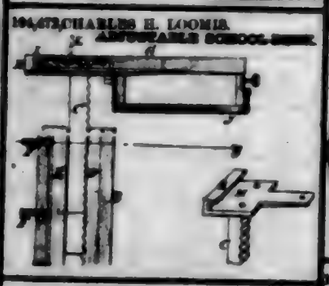


104,460 OSCAR LOEW.
RE-BACKING BANK BOOKS AND "FOOTS."

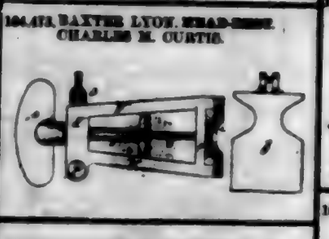
EMILE F. LOISEAU, 104,471,
CHARLES P. BROUIN.
ARTIFICIAL FUEL.



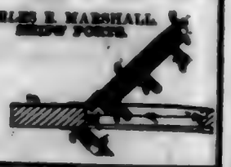
104,462 CHARLES H. LOOMIS.
ADJUSTABLE SCHOOL-DESK.



104,463 BAXTER LYON, HEAD-RENT.
CHARLES M. CURTIS.



104,464 CHARLES E. MARSHALL.
SNOW PLOUGH.



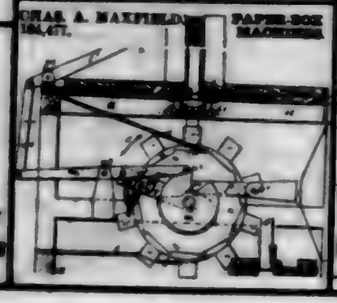
104,465 JOHN H. MARTIN.
BREAST-STRAP FASTENING FOR HARNESS.



MACHINE FOR BORING POSTS AND
104,476 FORMING BARS.
RUDOLPH MARTIN.
MATTHEW HARNER.



CHAS. A. MAXFIELD.
104,477. PAPER-BOX MACHINES.



104,478 WILLIAM McADAMS.
JOURNAL-BEARINGS FOR CALENDAR-ROLLS.



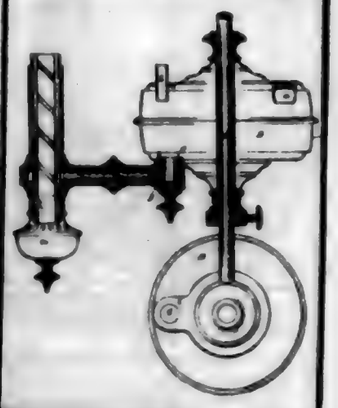
104,479 JOHN McCLELLAND. DEVICE FOR MOULDING AND CASTING PIPE.



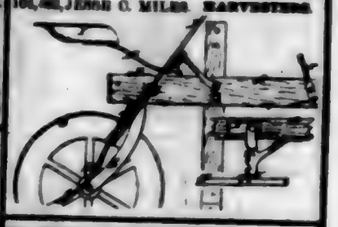
104,480 GALEN MEADER.
HAY-GATHERER AND CARRIER.



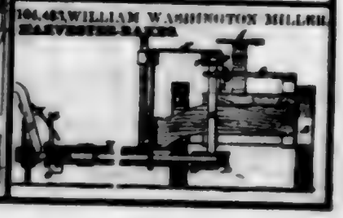
104,481 RUFUS S. MERRILL. LAMPS.



104,482 JESSE C. MILES. HARVESTERS.



104,483 WILLIAM WASHINGTON MILLER. HARVESTER-RAKES.



104,491 D. F. MITCHELL
ROTARY-LEVER MASTER-WHEEL

104,492 S. A. PUGH.
EVAPORATING CANE-JUICE

104,493 GEO. S. RICE.
POCKET OR "CHAIN" LETTER-SCALE

104,494 E. F. SAMPSON
TURBINE WATER-WHEEL

104,495 GEO. P. MORSE. SLEEPING-CARS

104,496 J. MORTON POOLE.
MACHINE FOR GRINDING SCYTHES

104,497 SIDNEY SANDERS.
STEAM-RADIATOR

104,498 c. JOHN A. PECK.
STOVE-DOOR AND FRAME

104,499 E. L. SARGENT.
BREECH-LOADING FIRE-ARMS

104,500 MICHAEL C. MURPHY.
VENTILATING WINDOW FOR RAILROAD CARS

104,501 CHRISTOPHER T. PROVOST.
CONCENTRATING THE JUICE OF TOMATOES

104,502 WILLIAM SOMERBY.
GRAIN-SEPARATOR

104,503 DAVID D. PUGH.
CLOTHES-LINE REEL

104,504 DAVID A. SCOTT.
SPRING SIDE-BOTTOM

104,505 W. H. HOLMES. GRAIN SEPARATOR

104,506 JAMES S. SMITH.
TWEED-ROLLER

104,507 JOEL A. OTIS.
FAN-BLAST

104,508 J. O. PERRY.
HARVESTER

104,509 JOHAN H. READ GRINDING FOR SHOVEL AND RAPIER

104,510 JOHN G. PERRY.
HARVESTER

104,511 CULTIVATOR AND ROLLER COMBINED
LUKAS G. REED.
SEBASTUS R. REED.

104,512 JOHN R. SMITH. HEAD-BLOCK

104,507 THOMAS S. SMITH.
MACHINE OF MAKING PILES

104,508 MAJOR JOSEPH W. STIVERS.
GRAIN-SEPARATOR.

104,509 MATHIAS THRUSH.
BOLT AND RIVET-TRIMMER.

104,510 SAML. D. TILLMAN.
STEAM-HEATER.

104,511 SAML. D. TILLMAN.
STEAM-GENERATOR.

104,512 SAML. D. TILLMAN.
PROPELLING VESSELS

104,513 SAML. D. TILLMAN.
METALLIC PAVEMENT

104,514 WM. H. TOWERS.
COMPOSITION ROLLS FOR CLOTHES-WRINGERS

104,515 JAMES T. TROWBRIDGE.
HARROW AND CULTIVATOR COMBINED

104,516 NATHIAN J. WATTLES.
METHOD FOR GAS-GENERATION

104,517 A. H. WERKER.
CHECK CHAIR.

104,518 D. B. WHITFALL. POTATO-DIGGER

104,519 SETH WETMORE. MORTAR-MIXER

104,520 NELSON S. WHIPPLE.
SLATE OR CEMENT

104,521 NATHANIEL F. WHITE. BOX-MAKING

104,522 S. LLOYD WIEGAND.
STEAM-GENERATOR

104,523 RICHD. S. WILLIAMS.
PREPARING GOLD FOR MEDICINAL USE.

104,524 THOMAS SCOTT WILLIAMS.
FREEMAN AUGUSTUS TABER.
LAMP FOR BURNING GASEOUS

104,525 CHAS. G. WILSON.
MECHANICAL EXPANSION BRIDGE.

104,526 JNO. T. WOODWARD.
APPARATUS FOR BENDING AND UPSETTING IRON

104,527 SAMUEL W. WRIGHT.
PADDLE-WHEELS

104,528 JOHN S. YEOMS.
HORSE HAY-FORKS

104,338 W. H. YOUNG.

104,339

104,340 RUFOLD MIDDLE.

ABRAHAM BEUCUS.
104,344 TUNIS BEUCUS.

104,345 BENJAMIN BAKER.

104,346 LEWIS S. DURTEE.

104,331
AMOS ADAMS.

104,347 JOHN GULICK BAKER.

104,348 THOS. B. BOYD.

104,347 JULIUS PONDRITH.

104,332 BATTERLEE ARNOLD MOORE.

104,349 CHAS. C. BARTON.

104,350 EMANUEL D. BEALER.

104,341 THOS. D. BEEK.

104,351 JAMES G. BRADY.

104,352 EDWIN C. BROOKS.

104,333 WM. S. ARCHIBOLDS.

104,334 R. ARNE.

104,335 WM. ARTHUR STRAWBRIDGE.

104,336 JOHN BOLLIER.

104,337 LEONARD BROCKETT GOAD.

104,352 WARREN BROWN.

104,353 WILLIAM H. BURR.

104,354 THOMAS CARTER.

104,355 GEO. W. CASELEAR.

104,356 JOHN DAVID CHAMBERS.

104,357 JOHN DAVID CHAMBERS.

104,358 WILLIAM H. CHAMBERLIN.

104,359 ERNST EUSTACH CONRAD.

104,360 NEWTON C. COOLEY.

104,361 JAMES CUTT.

104,362 JOHN CROWE.

104,363 AUSTIN G. DAY.

104,364 EDWARD L. DEAN.

104,365 THOS. DUNCAN.

104,366 R. L. FETHEROLF.

104,367 EUGENE L. FITCH.

104,368 OLIVER H. FLOCK.

104,369 JAMES FLOWER.

104,370 HORTON G. FLOYD.

104,370 FRANCIS FOX.

104,371
ABRAM GAAR.

104,372 R. L. GATLORD.

104,373 HENRY GERNER.

104,374
THOMAS P. GIBBONS.

104,375 WILLIAM GOLDEN.

104,576, ADAM GOOD, Jr.

104,577, EBENEZER A. GOODES

104,578, HENRY A. GORE. MACHINE FOR BOUNDING AND BEADING CIRCULAR AND BOX SHAPE TUBES.

104,579, WM. GREENWELL.

104,580, GEO. H. GRIGGS. CARD-STOCKER.

104,581, JOHN GROSHUE, HEATING-STOVE.

104,582, ALBERT P. GUE.

104,583, CHRISTIAN HAAS.

104,584, CHARLES HARDY.

104,585, DEXTER D. HARDY. AND H. WOOD.

104,586, AARON WORD HARLAN.

104,587, JOHN B. HATTEO.

104,588, CORNELIUS E. HAYNES.

104,589, GEORGE H. HAZELTON.

104,590, HARM PETER HENRIKSEN.

104,591, ANDREW L. HOLCOMB.

104,592, A. L. HOLLEY.

104,593, ADOLPHUS B. HOVEY.

104,594, E. HOWARD.

104,595, ABRAM JACKSON.

104,596, GEORGE KIRTLAND.

104,597, JOHN KNOCHE.

104,598, S. W. JAMISON.

104,599, WM. F. KNOWLTON.

104,600, ROBERT H. LAFFERTY.

104,601, CARL A. KALCK.

104,602, JAMES S. LATIMER.

104,603, W. M. KEEVER.

104,604, J. J. LIEBAU.

104,605, AREA B. KEETH.

104,606, JAMES C. KELLY.

104,607, EDWARD J. LETOURE.

104,608, E. G. LUTHER.

104,609, GEORGE W. MASON.

104,610, C. BENJAMIN MARSHALL.

104,611, CHAS. F. MARTIER.

104,612, WILLIAM W. E. MATTOX.

104,613, FREDERICK H. MATTICE.

104,616, JAMES B. MAXWELL. EDRA CUPP. GRAIN-SPRINGS.

104,617, WM. McCORMICK & [illegible]. REAPING AND [illegible] MACHINES.

104,618 L. J. McCORMICK. WM. B. BAKER. HARVESTERS.

104,619, JOHN McMURTRY. HARNESSING HARROWS AND CULTIVATORS.

104,620 EDMUND H. MEEK. BALING MACHINES.

104,621, WILLIAM MEYDAM. PAPER-FOLDING MACHINE.

104,622, JNO. MERLETT. MEANS OF FASTENING LEAVES.

104,623, RUFUS S. MERRILL. LAMP.

104,624 RUFUS S. MERRILL. LAMP-BURNERS.

104,625, AUGUST WM. OBERMANN.

104,626, RUFUS S. MERRILL. LAMP-BURNER.

104,627, THOMAS O'BRIEN. [illegible] FOR CARRIAGES.

EDWARD MILNER, of [illegible], MASSEY HARRIS, [illegible]. 104,628.

104,629, GEO. E. OSBORN. ARMED CHAIRS.

104,630, GEORGE T. MONTAGUE. CHURN-DOWSE.

104,631, WILLIAM I. PAGE. REVOLVING FIRE-ARMS.

104,632, SAMUEL M. PALMER. GEORGE H. PALMER. LASTING-MACHINES.

104,633, THOMAS MORGAN. BRAKES-BLOCKS.

104,634, W. MORRIS. PRINTING AND [illegible] FOR WAGES. PRINTED MEASURE, &c.

104,635, EUGENE PAVY. [illegible] AND [illegible] FABRICS FROM VEGETABLE AND ANIMAL FIBRES.

104,636 H. W. PHELPS. SAND-SCREENING AND SMOOTHING MACHINE.

104,637, I. D. POOLE. SEWING-MACHINE.

104,638 HORATIO J. POWER. SAMUEL C. TALCOTT. PORTABLE APPARATUS FOR EXTRACTING HEARS AND FOR OTHER PURPOSES.

104,639, SIMON PROVER. WAGON-BRAKE SHOE.

104,640, THOS. O. RICE. PAINT FOR ROOFS.

104,641, JOHN RIGG. J. B. HALL. G. F. FENTON. GAS-WELL REAMERS.

104,642, REUBEN H. PLASS. APPARATUS FOR CARBURETING AIR.

104,643, JAMES PUNDREFORD. METAL SOLE FOR BOOTS AND SHOES.

104,644, FRANKLIN REED. TROWELS.

104,645, FRANKLIN REED. LASTING FOR MAKING AWL-HANDLES.

104,646, MICHAEL REILLY. HARNESS-HOOK.

104,641, WILLIAM PITMAN. [illegible] PUMP AND HYDRANT.

104,647, GEORGE A. REYNOLDS. MACHINERY FOR ROLLING METALLIC ROOFING-PLATES.

104,648, C. WM. SIEMENS. KILNS FOR CALCINING ORES LIMESTONE, &c.

104,649, COLIN CHEE ST. CLAIR. SPECTACLES.

104,650, CHAS. ROGERS. [illegible] WASTE-WEAVING.

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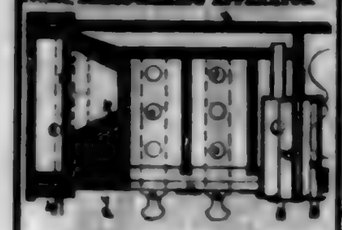
104,656, CAMILLE ST. GERMAIN. SHOEMAKING TOOL.

104,657, JOHN STORER. STOP MOTION FOR STEAM-ENGINES.

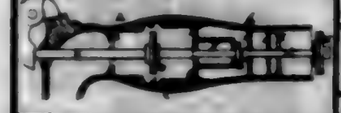
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104,659, GEORGE TANNER. COW-TAIL HOLDER.

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104,663. ROBERT TILLY. PADDING.

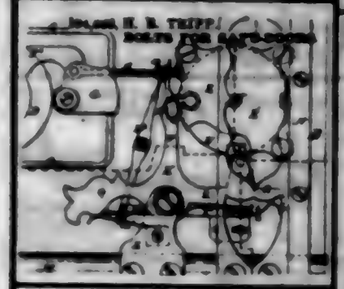


104,664. BENJAMIN F. TOMER. CORN-PLANTER.

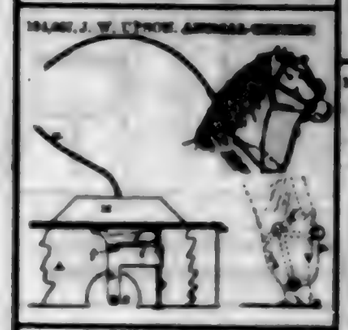


104,665. ARTHUR TOWER. COMPOSITION BORDER-PAVE.

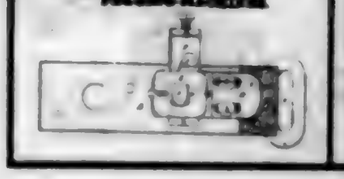
104,666. H. B. TRIPP. HOLD-TO FOR GATE-COUPLING.



104,667. J. W. UNDY. APPRAISE-CHECKER.



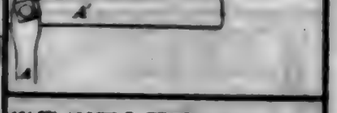
104,668. CHARLES VARNEY. PEG-MIND-MACHINE.



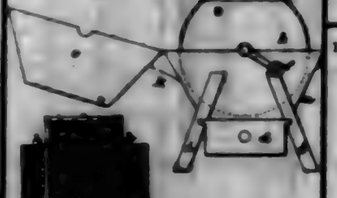
104,669. HORACE WARREN. HAY-MAKER.



104,670. PAUL WEATHERBEE. CAR-COUPLING.



104,671. ALLEN P. WEBB. WHEEL-SPOKER.



104,672. JONATHAN R. WEBBER. LADDER OR SCAFFOLDING FOR DOORS.



104,673. ELIJAH WELCH. WHEEL-CAR STANCHION.



104,674. E. F. WOLCOTT. CAR-COUPLING.



104,675. E. WHITEHEAD. SEWING-CHAIR.

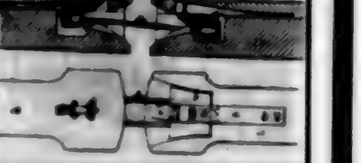


104,676. GEORGE R. WIGGIN. WATER-MOTOR.



104,677. ELIJAH A. WILDER. ARRANGEMENT FOR GUIDE OF BRIDGES IN GATES.

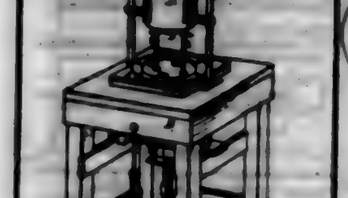
104,678. R. F. WOLCOTT. CAR-COUPLING.



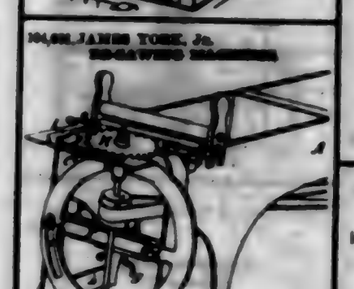
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104,681. JAMES TOBE, Jr. HEDGE-TRIMMING MACHINE.



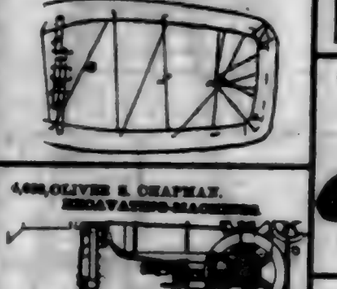
4,682. J. C. WEBSTER. CAR-COUPLING.



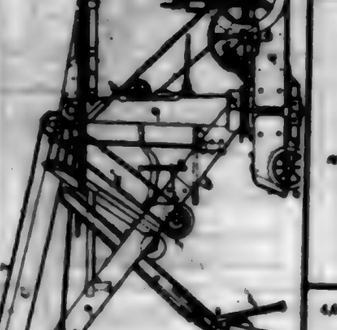
4,683. CHARLES BUFFUM. SPOKE.



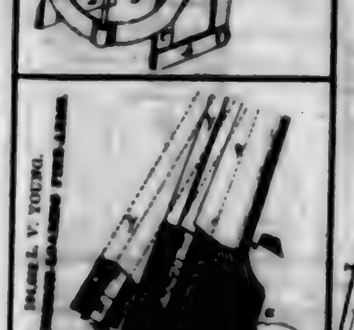
4,684. OLIVER S. CHAPMAN. EXCAVATING-MACHINE.



4,685. OLIVER S. CHAPMAN. EXCAVATING-MACHINE.



4,686. ISAAC V. YOUNG. PEG-CUTTING PEG-MACHINE.



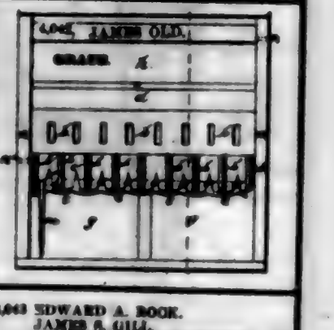
4,687. JOSE F. DE NAVARRO. LIQUID-METER.



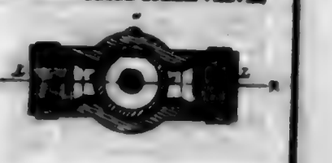
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4,690. EDWARD A. BOOK. JAMES S. GILL. GEO. BROWDER REDFIELD. GLOBE STEAM-VALVE.



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ISSUED FROM

THE UNITED STATES PATENT OFFICE

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104,694, I. ALEXANDER. [illegible]

104,695, RICHARD BALL. HAY AND COTTON-PRESS.

104,696, W. E. BARTON. [illegible]

104,697, WILLIAM JAMES BEACH. RAILROAD-CAR SPRINGS.

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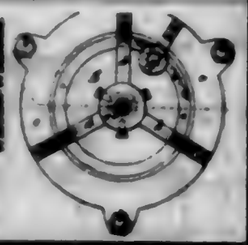
104,731, JOLIVILLE F. FOWLER. BOWS FOR CARRIAGE-TOPS.

104,732, G. W. COTTINGHAM. WASHING-MACHINE.

104,733, A. B. DUPAR, ARTHUR BARBARIN. APPARATUS FOR CARBURETTING AIR.

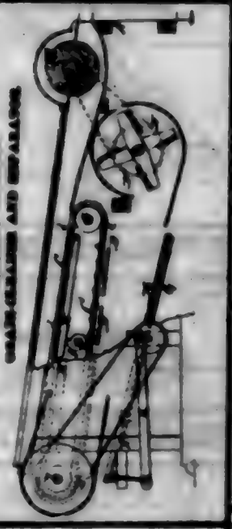
104,734, SAMUEL C. FRISK. WASHING-MACHINE.

104,726 OLIVER FULLER. WATER-WHEEL.



104,727, GEORGE C. FOBES. MEDICAL COMPOUND.

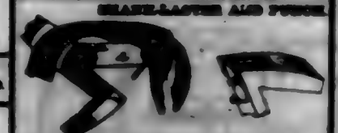
104,728 WILLIAM GARDNER. CHAIN-GRIPER AND SPREADER.



104,729, EDGAR E. HAYNE. [illegible]

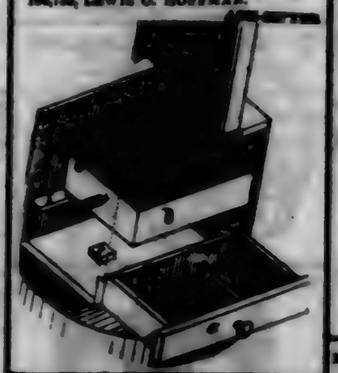


104,730, FREDERICK HENDERSON. SHAVE-LASTER AND PUNCH.

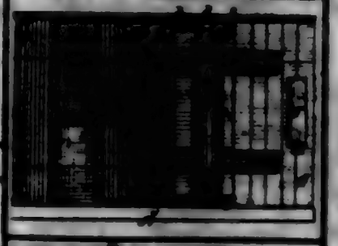


104,731, JOHN HENRY. SEPARATING AND TANNING SKINS AND HIDES.

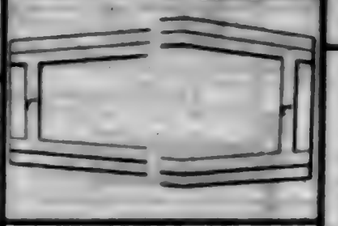
104,732, LEWIS G. HOFFNAN. [illegible]



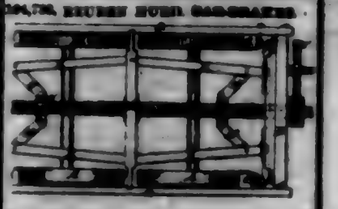
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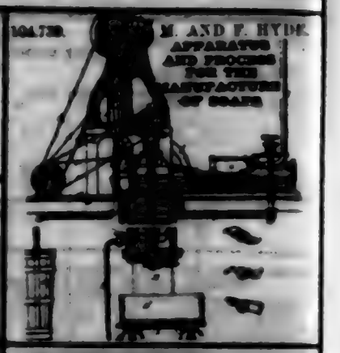
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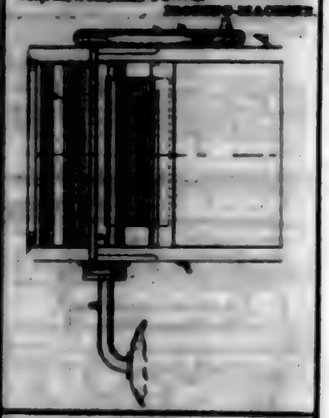
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104,736 M. AND F. HYDE. APPARATUS AND PROCESS FOR THE MANUFACTURE OF SOAPS.

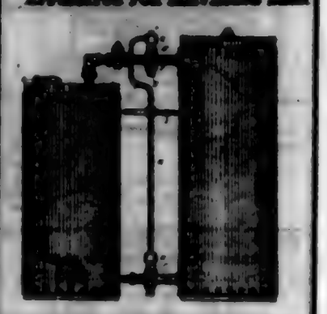


104,737, WILLIAM JONES. [illegible]



104,738, JAMES KIDDER. TANNING.

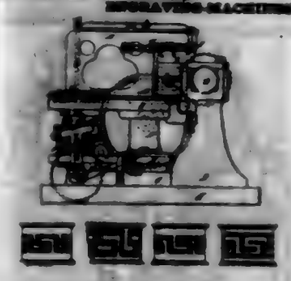
104,739, ALBERT H. LADUKE. THOMAS P. PERLIN. APPARATUS FOR ELEVATING BEES.



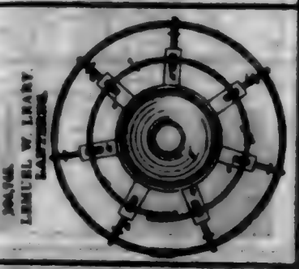
104,740, CYRUS B. LATHAM. [illegible]



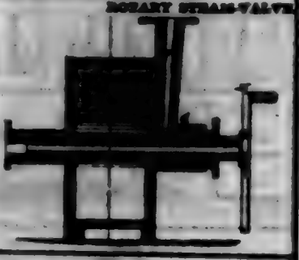
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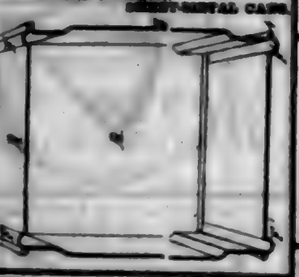
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104,746, GEORGE LOCKERBY. ROTARY STEAM-VALVE.



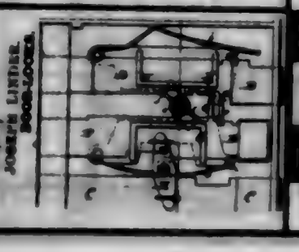
104,747 JOS. Le COMTE. GEO. H. PERKINS. [illegible]



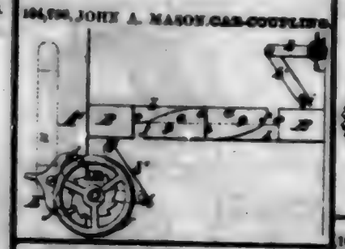
104,748, LUTHER LINCOLN. FLAT OR BAR-IRONS.



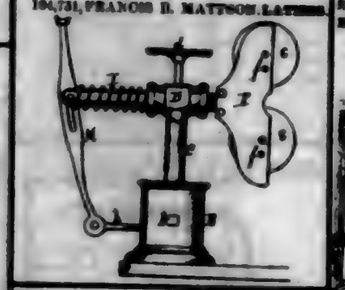
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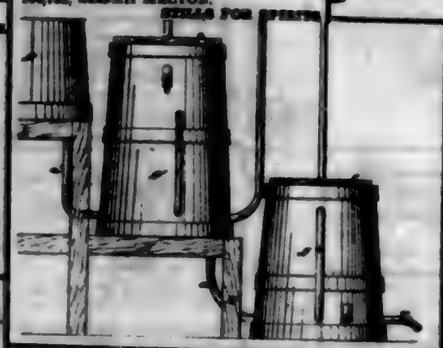
104,750, JOHN A. MASON. CAR-COUPLING.



104,751, FRANCIS B. MATTSON. LASTING.



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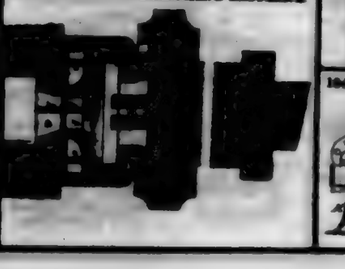
104,753, CHARLES G. MILLER. CARPENTERS' PLANES.



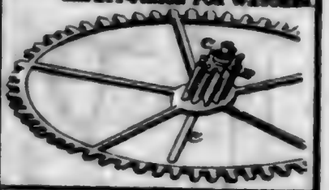
104,754, J. G. MINER. CULTIVATOR-FLOW.



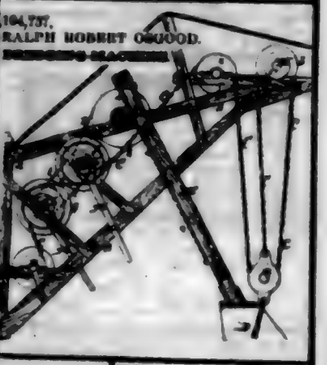
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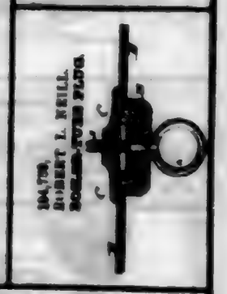
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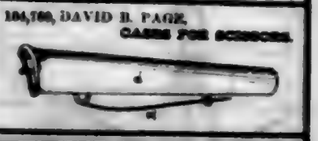


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104,759, ROBERT L. NEILL. [illegible]

104,760, DAVID B. PAGE. CASES FOR SCISSORS.



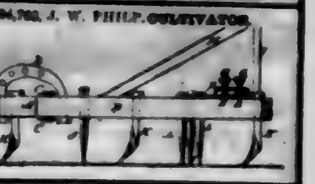
104,761, ARAHEL H. PATCH. CLOTHES-DRIER.



104,762, JOSEPH R. PERRY. DANIEL W. PERRY. JAMES PERRY. STREET-RAILWAY CAR-TRUCK.



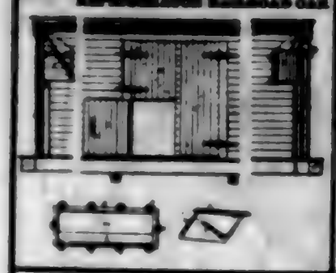
104,763, J. W. PHILP. CULTIVATOR.



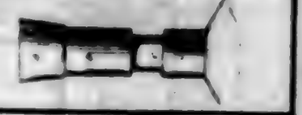
104,764, NATHAN PLIMPTON, Tea-Pot.



104,765, JOHN D. POTTS, R. P. LAWSON, Refrigerator Railroad Car.



104,766, HENRY C. PRATT, Bottle-Stopper.



104,767, JOSHUA PUSEY, Window-Shade Hook.



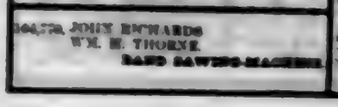
104,768, DAVID RAMLER, Automatic Fan.

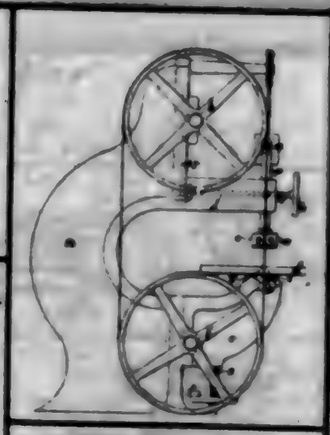


104,769, ISAAC P. RICHARDS, Pumping.



104,770, JOHN RICHARDS, WM. H. THORNE, Band Sawing-Machine.

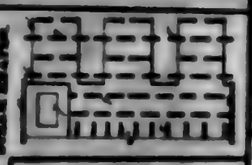




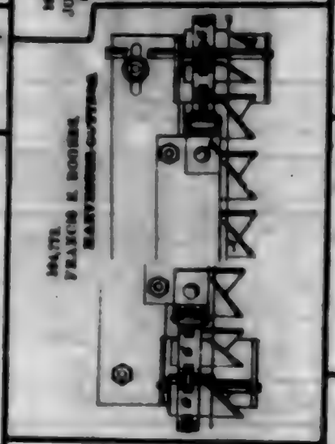
104,772, HENRY R. ROBBINS, Stove and Furniture-Leg.



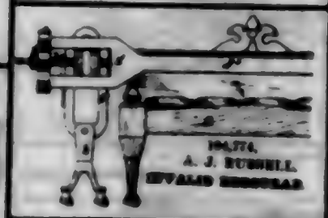
104,773, JOHN J. ROEPEL, Grain-Drill.



104,774, FRANCIS E. ROGERS, Harvesting-Machine Cutting-Apparatus.



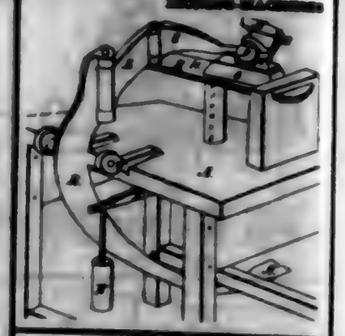
104,774, A. J. RUSSELL, Invalid Bedstead.



104,775, JAMES RYDBECK, Breech-Loading Fire-Arms.



104,776, A. C. SAWYER, Mowing-Machine.



104,777, JOHN K. SAX, Boxes for Car-Wheels.



104,778, JOSEPH J. SCHNUTER, Wood Pavement.



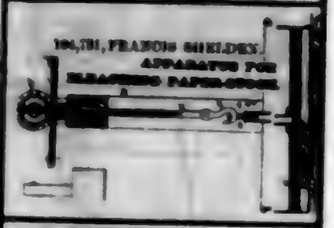
104,779, HENRY SEARS, EDMUND B. SEARS, Knife for Cutting Cheap Razors.



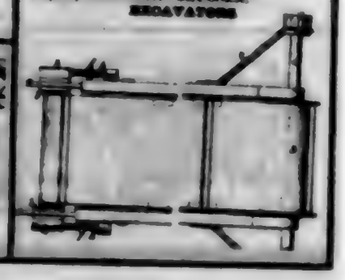
104,780, RAPHAEL M. SEIDA, Hoe.



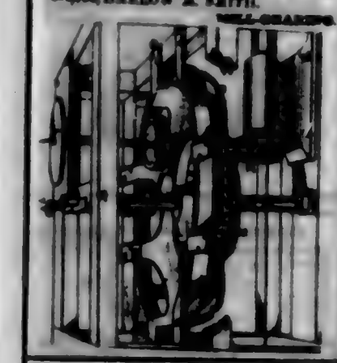
104,781, FRANCIS SHIELDS, Apparatus for Measuring Paper-Stock.



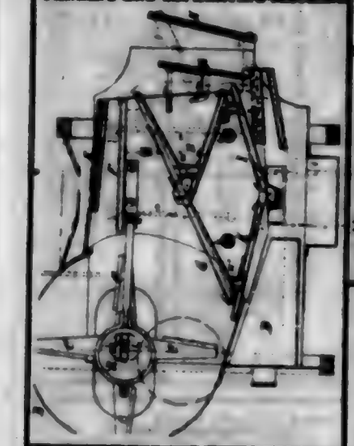
104,782, BENJAMIN SLAWSON, Excavator.



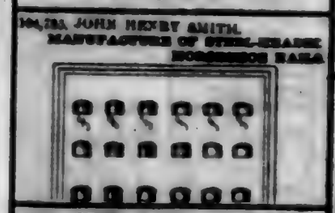
104,783, HARLOW M. SMITH, Self-Gearing.



104,784, JAS. J. SMITH, M. D. GRAM, WM. H. WOODBRIDGE, Fanning and Separating-Machine.



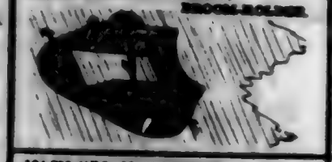
104,785, JOHN HENRY SMITH, Manufacture of Steel-Shank Horseshoe Nails.



104,786, PETER M. SNELL, Forge, OSCAR SNELL.



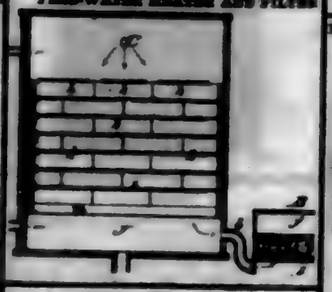
104,787, CHARLES P. SNOW, Broom-Holder.



104,788, GEO. M. STEINBERG, Fever-Spoon.



104,789, EDWIN R. STILWELL, Feed-Water Heater and Filter.

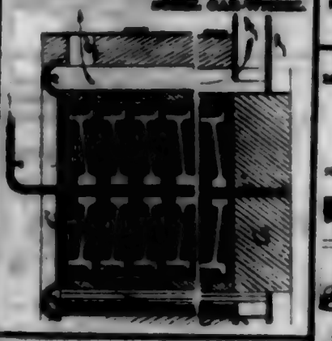


104,790, OLIVER TAFF, Floor-Clamp.



104,791, WILLIAM C. TAIT, Musical Composer.

104,792, JOHN BLAKE TARR, Steel Gas-Stopper.

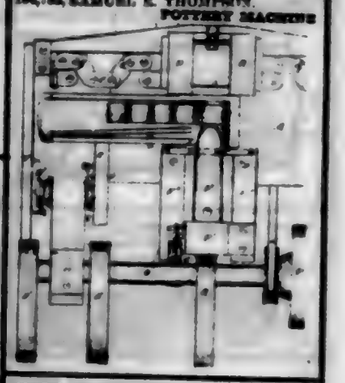


104,793, HENRY C. THOMPSON, Bottle-Stopper.

104,794, NATHAN THOMPSON, Bottle-Stopper.

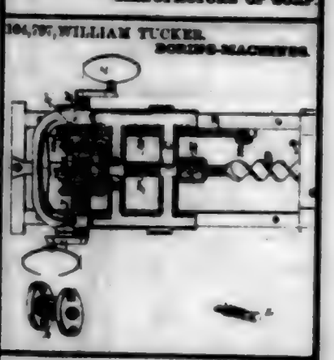


104,795, SAMUEL R. THOMPSON, Pottery Machine.

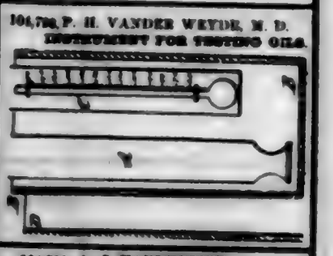


104,796, JOSEPH TREAT, Manufacture of Soap.

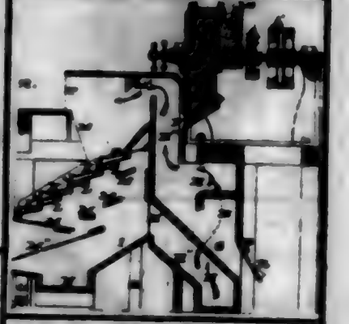
104,797, WILLIAM TUCKER, Boring-Machines.



104,798, P. H. VANDER WEYDE, M. D., Instrument for Testing Oils.



104,799, A. J. VANDERIFT, Machine for Breaking Cotton-Seed.



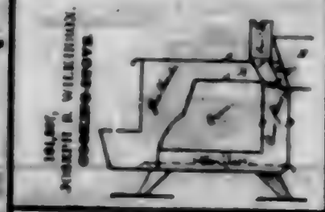
104,800, STROUD VAN METER, Cutter.



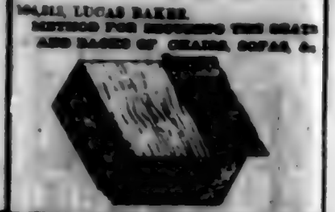
104,809, CHARLES S. WARRING. HEATING-STOVES.



104,810, JOSEPH S. WILKINSON. [illegible]



104,811, LUCAS BAKER. METHOD FOR HOLDING THE SEAT AND BACKS OF CHAIRS, SOFAS, &c.



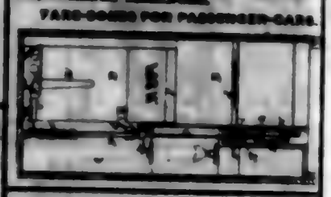
104,812, ALFRED WATSON. [illegible]



104,813, JOHN S. WILLIAMS. [illegible]

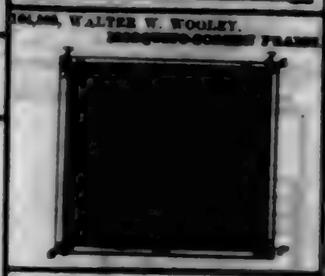


104,814, HENRY BARAFORD. FARE-BOXES FOR PASSENGER-CARS.



104,815 SUSPENDED

104,816, WALTER W. WOOLEY. [illegible]



104,817, PETER L. WEIMER. TWINE.



104,818, WILLIAM BATES. FREDERICK BATES. MACHINES FOR SCOURING AND WASHING FABRICS.



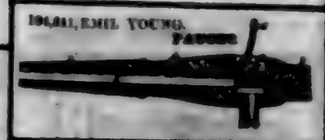
104,819, ISAAC P. WENDELL. [illegible]



104,820, HARRISON YOST. WASH-BOILER.

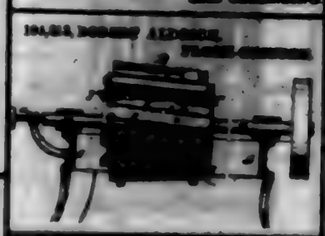


104,821, EMIL YOUNG. FABRIC.



104,822, DEXTER D. W. ABBOTT. [illegible]

104,823, ROBERT ATKINSON. [illegible]



104,824, L. WHITEHEAD. HARROW.



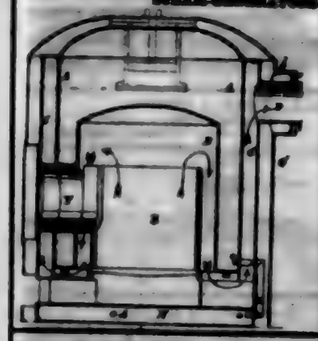
104,825, LAWRENCE ANSTER. [illegible]



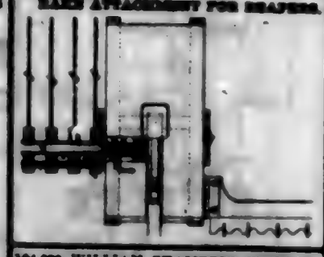
104,826, WILLIAM BATES, FREDERICK BATES. [illegible]



104,826, WILLIAM BAXTER. STEAM-GENERATORS.



104,827, M. C. CHAMBERLIN. RAKE ATTACHMENT FOR REAPERS.



104,828, S. M. CRANDAL. BROOMS.



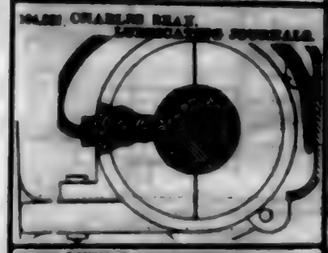
104,829, WILLIAM CHAMBERS. METHOD OF LASHING HOOPS AND HOOPS.



104,830, PETER CRANE, Jr. [illegible]



104,831, CHARLES HEAT. [illegible]



104,832, LUCAS C. CLARK. [illegible]



104,833, J. A. CRAWFORD. FIRE-PLACE GRATE.



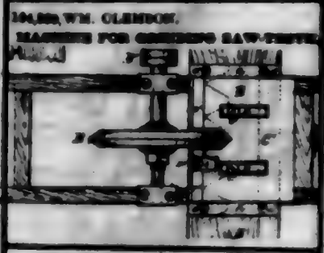
104,834, LUTHER BOARDMAN, NORMAN S. BOARDMAN. SPOKE-SHAVES.



104,835, C. H. CUSHMAN. HOSE-COUPLINGS.



104,836, WM. CLENDON. MACHINE FOR GRINDING SAW-TEETH.



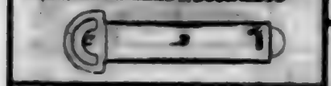
104,837, SIMEON W. DROWER. KEY-HOLE ESCUTCHEONS.



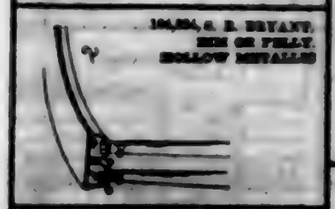
104,838, TIMOTHY EARLE. [illegible]



104,839, JAMES BRADY. DOOR-KEYS.



104,840, A. B. BRYANT. [illegible]



104,841, MACK DELORIMER CONVERSE, FRANK ATWILL BATES. [illegible]



104,842, THEODOR G. BISWALD. [illegible]



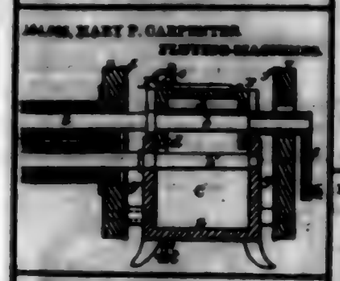
104,843, JAMES EWING. [illegible]



104,844, JEREMIAH COEY. [illegible]



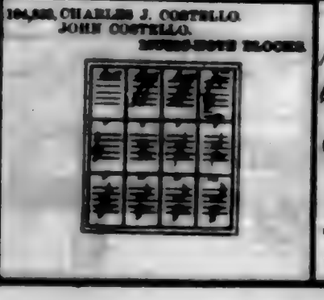
104,845, MARY P. CARPENTER. PLAITING-MACHINES.



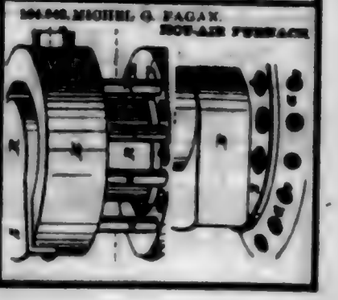
104,846, D. H. CHAMBERLAIN. [illegible]



104,847, CHARLES J. COSTELLO, JOHN COSTELLO. [illegible]



104,848, MICHEL G. FAGAN. HOT-AIR FURNACE.



104,842 GILBERT H. TERRIS, New-Haven

104,843 LYMAN GLEASON, Stoves

104,844 THOMAS P. HALL, Machine-Shuttle

104,845 O. B. HAMLIN, Car-Fastening

104,846 WILLIAM BAKER, Saw-Frame

104,847 WILLIAM S. HATCHER, Safety Double-Gate for Horses

104,848 WILLIAM S. HATCHER, WILLIAM L. LANCE, Hoe-Frame

104,849 JOHN E. HOLLEY, Grain-Cleaning Machine

104,850 HENRY E. KINYON, Wind-Vane Pump

104,851 CHAS. L. KIDDER, FLORENTINE A. JOHN, Stirrup-Welding and Lap-Setting Vault

104,852 P. M. HOLMES, Folding Chair

104,853 WM. T. JOHN, WILLIAM J. REAM, Harvesters

104,854 SALOMON KAUFMANN, Paper-Collar Box

104,855 JOHN F. KELLER, Machine for Distributing Fertilizers

104,856 JOSEPH KIETZ, Lantern-Guards

104,857 WM. H. KNIGHT, Mounting Vehicles to Wood

104,858 NATHAN LAWRENCE, Gate-Hinge and Slide-Bowl

104,859 G. W. LEE, JNO. A. LAFONTAINE, A. L. HARRIS, Railway Switch

104,860 PHILIPP FRIEDRICH LENNART, Water-Proof Sweat-Bands for Hats and Caps

104,861 HENRY LOEWENBERG, Compound for Printers' Use

104,862 O. B. MALLORY, Spring Carriage-Top

104,863 J. J. MARKI, Carpet-Fastening

104,864 EDWIN MAY, Combination of Piston Valve

104,865 WM. C. McCARTHY, Apparatus for Cleaning Cesspools, Vaults, Privies

104,866 DAVID McCURDY, Bridges

104,867 DAVID McCURDY, Bridge

104,868 DAVID McCURDY, Bridge

104,869 JOHN McINTYRE, Thread-Mills

104,870 THOMAS L. MELLEN, Machine for Cutting Veneers

104,871 THOMAS L. MELLEN, Machine for Cutting Veneers

104,872 EDGAR MURRAY, Wire-Cutter

104,873 CHARLES MOTIER NEU, Manufacture of Steel

104,874 FRANCIS M. OSBORN, Torque-Holder for Dentists

104,875 JOSIAH OOTHOUDT, Hitching-Post

104,876 ADDISON OVERBAUGH, Equalizing-Bars for Railway Car-Trucks

104,877 THOMAS B. PENICKS, JOSEPH REPPLY, Tunnelling

104,878 ADOLPH PFAFF, Machine for Cutting Fat, &c.

104,879 LUKE A. PLUMB, Composition Amalgam for Filling Teeth

104,880 ALVIN DAVIS PUFFER, Fastener

104,881 ALVIN DAVIS PUFFER, Soda-Fountains

104,882 DAVID A. REID, Scrogeum-Stripper

104,883 HIRAM A. REID, Harvester Attachment for Raking and Binding Grain

104,884 PETER W. REINSHAGEN, Shaft-Coupling

104,905. HENRY S. REYNOLDS. COAL-SCUTTLE.

104,906, WILLIAM C. BRODSHAEL. SCRUBBER AND CLEANER.

104,907, ISRAEL L. G. RICE. MACHINE FOR MAKING COMPOSITION BOX.

104,908, IRA A. SABIN. STEAM ROAD-VEHICLE.

104,909, DAVID SANDERS. STOVE-PIPE DAMPER.

104,910, WILLIAM EDMOND SCOTT. [illegible] FOR STOVES.

104,911, GEORGE W. SHADE. [illegible] HAT-FORMS.

104,912, NATHAN Y. SHAW. [illegible]

104,913, JOSEPH SHEARER. COTTON-SEED BOWING.

104,914, WILLIAM SKEILL. SCALE FOR LAYING OUT GIMP-PATTERNS.

104,915, D. P. SLANE. FEED-ATTACHMENT FOR THRASHING-MACHINES.

104,916, ELONZO SPRAGUE. [illegible] & BELT.

104,917, JOSEPH STEGER. CAR-BRAKE.

104,918, CORNELIUS ST. JOHN. LAMP-BRACKET.

104,919, THOS. M. TAYLOR. LIFTING-HANGERS FOR COTTON, &c.

104,920, ANDREW THALHOWER. DEVICE FOR OPERATING AWNINGS.

104,921, CHAUNCEY THOMAS. [illegible] AND AXLES.

104,922, L. E. TRUESDELL. IRON BRIDGES.

104,923, E. TURNER. [illegible]

104,924, SAMUEL VANSTONE. MEANS OF MANUFACTURING AXLE-BOXES.

104,925, SAMUEL VANSTONE. WROUGHT-IRON COUPLING-PIPE.

104,926, A. S. VOSSE. SCHOOL-DESK SEAT.

104,927, JAMES A. WILCOX. PIPE-WRENCH.

104,928, EMMED VOSS. RAILWAY CAR-[illegible]

104,929, JOHN G. WEAVER, Jr. MANUFACTURE OF CAST PIPE-BENDS.

104,930, GEORGE WEISMAN. PRESS-HEAD AND VALVE.

104,931, JAMES D. WHELPLEY. [illegible]-MACHINES.

104,932, ALEXANDER WHITE. [illegible] FOR GAS-STOVE.

104,933, NATHANIEL GILBERT WHITMORE. [illegible]

104,934, HENRY WILSON. [illegible] FOR STEAM-ENGINES.

104,935, ALFRED WOODWORTH, EDWIN W. WARREN. TOOL FOR SHAVING [illegible] POSTS.

104,936, A. B. TRIPLER. PRESERVING WOOD.

104,937, A. B. TRIPLER. PRESERVING WOOD FOR RAILROAD TIES AND FOR OTHER PURPOSES.

104,938, CHARLES H. C. CLAIR. [illegible]

4,945, JOSEPH C. DU BOIS. COTTON-GIN.

4,946, GODFREY AND R. LIGHTHALL. PREVENTING THE CORROSION OF IRON EXPOSED TO WATER OR DAMPNESS.

4,947, JOHN B. LYNDE. WATER-REGULATOR FOR BOILERS.

4,948, HENRY W. PUTNAM. APPARATUS FOR FILLING BOTTLES.

4,949, ASHER D. STRONG. VISIBLE APPARATUS.

4,950, DIRK ADRIAAN TER HORVEN. FERTILIZERS.

4,951, DIRK ADRIAAN TER HORVEN. MANUFACTURE OF FERTILIZERS.

4,952, WILLIAM H. TRIBBLE. PASSIVE.

4,953, J. VALE.

4,954, JOSEPH VALE.

4,955, JOHN AMICK. [illegible] FOR MOWING-MACHINES.

4,956, EDWARD H. ASHCROFT. NON-CONDUCTIVE VALVE-SEATS.

4,957, ELIAS BARTO. [illegible] PLASTER, AND COMPOSITION.

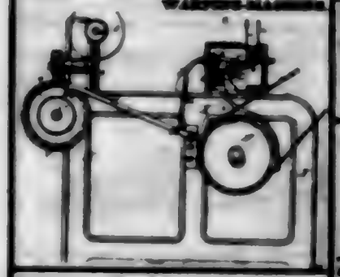
ILLUSTRATIONS OF PATENTS

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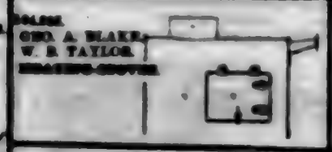
THE UNITED STATES PATENT OFFICE

JULY 5, 1870.

104,899, LEVI ABBOTT.
WARPING-MACHINE.



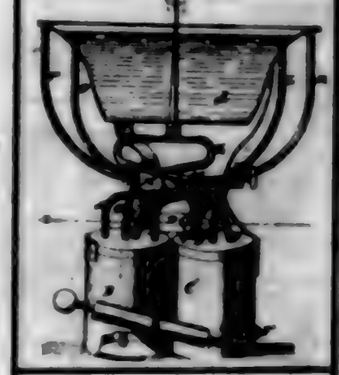
104,900,
OBED A. BLAKE,
W. S. TAYLOR,
HEADING-MACHINE.



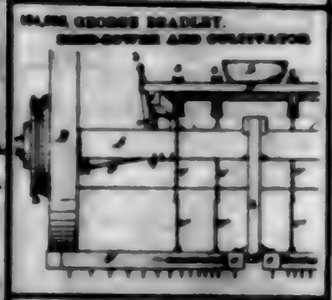
104,901, WILLIAM D. CHAPMAN.
MEDICAL PREPARATION.



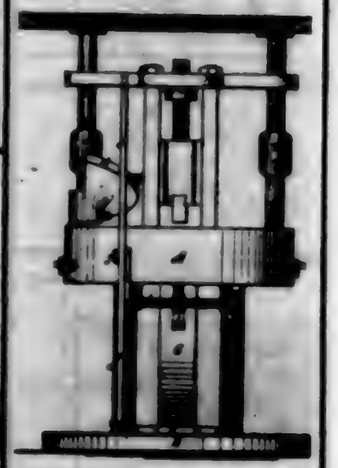
104,902, H. AMENDS.
SELF-FEEDING FOUNTAIN.



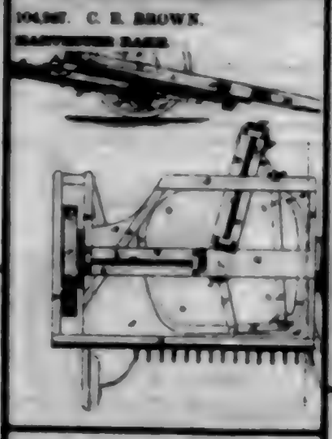
104,903, GEORGE BRADLEY.
SEED-SOWER AND CULTIVATOR.



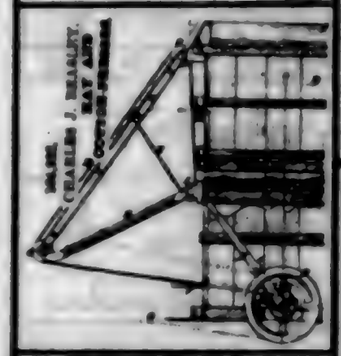
104,904, AUBY OATES COBB.
MACHINE FOR FORMING THE HEADS OF WINDSORS.



104,905, C. B. BROWN.
SAFETY-BRIDLE BARS.



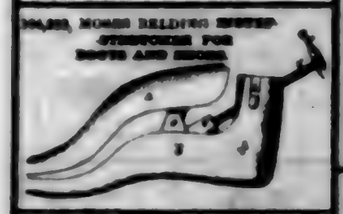
104,906, CHARLES J. BEAULT.
SAFE AND CUTTER-HOLDER.



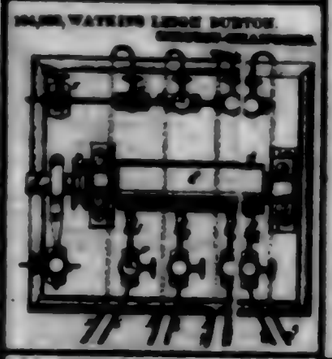
104,907, THOS. CUMMINGS.
CONFECTIONERY FOR PHOTOGRAPHIC PURPOSES.



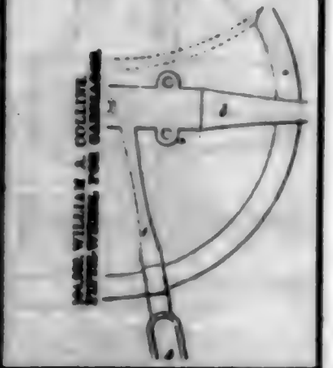
104,908, HOMER BELDING HUNTER.
STIRRUPS FOR BOOTS AND SHOES.



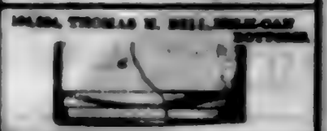
104,909, WATKINS LEDGE BURTON.
SEED-PLANTER.



104,910, WILLIAM A. COLLIER.
PIPE-WRENCH FOR GASFITTERS.



104,911, THOMAS H. HILL, HELD-OAT SCOTTISH.



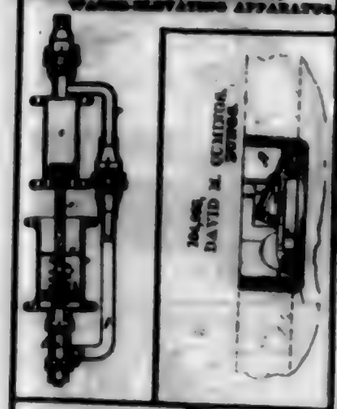
104,912, JOHN J. GALLOW.
MEANS OF SHARPENING



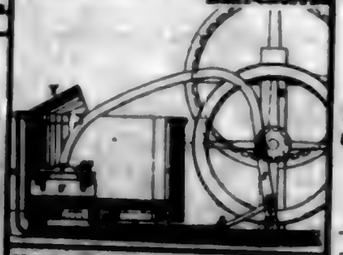
104,913, THEODORE P. OSWELIN.
CHUCK FOR DRILL.



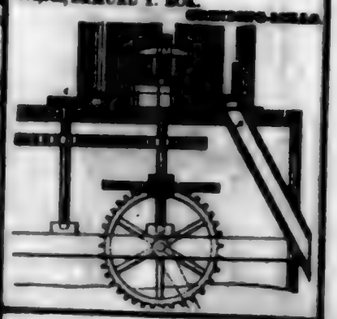
104,914, H. H. CRAGIN, ASSIGNOR TO
WASHING-ELEVATING APPARATUS.



104,915, JAMES H. DE FOE.
REAP-CRADLE.



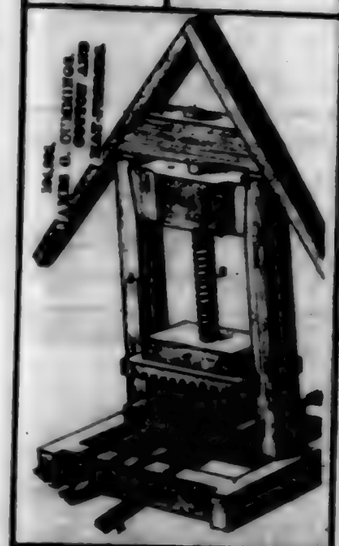
104,916, SAMUEL T. ROE.
CRUSHING-MILLS.



104,917, HENRY H. EMMERSON.
HAY-PRESS.



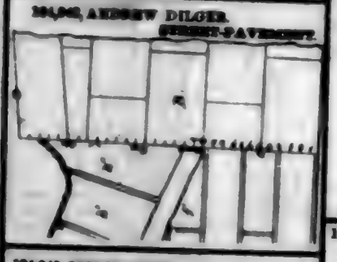
104,918, DANIEL C. GUTHRIE.
DOUBLE AXE.



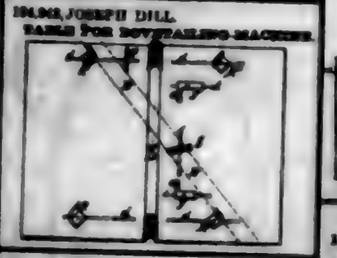
104,919, ANDREW DILGER.
PAVEMENT.



104,920, ANDREW DILGER.
PAVEMENT.



104,921, JOSEPH DILL.
RAKES FOR DUMPING-MACHINES.

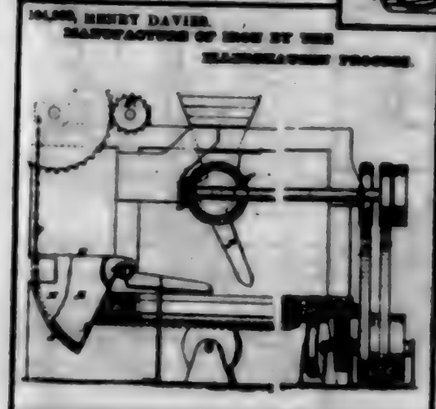


104,922, ORANDER H. DRISKO.
ALONZO S. DRISKO.
SEAT FOR SIDE-SADDLE.



104,923, LEWIS CUTLER.
SPRING END-BOTTOM.

104,924, HENRY DAVIS.
MANUFACTURE OF IRON BY THE ELECTRO-CHEMICAL PROCESS.



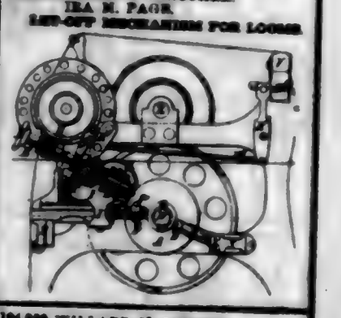
104,925,
WILLIAM W. BAFFAR,
FRANCIS E. BAKER,
AND PIN FOR WHIFFLETREES.



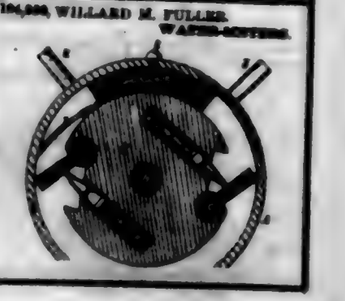
104,926, OSCAR C. FERRIS,
FREDK. B. MILES.
STEAM-HANDPUMP.

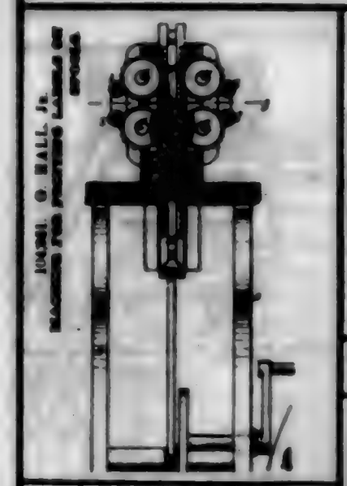


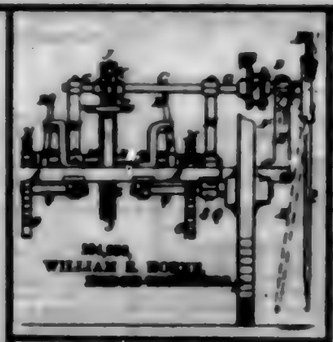
104,927, LEWIS N. FLETCHER,
IRA M. PAGE.
SHUT-OFF MECHANISM FOR LOOMS.

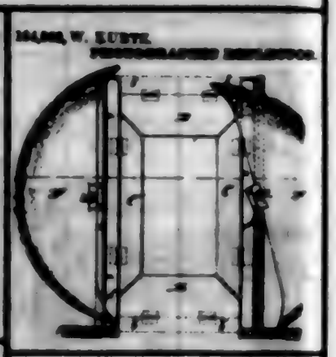


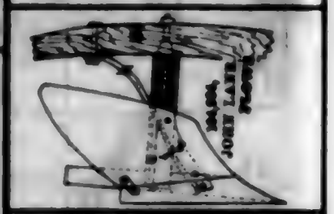
104,928, WILLARD M. FULLER.
WATER-CISTERN.



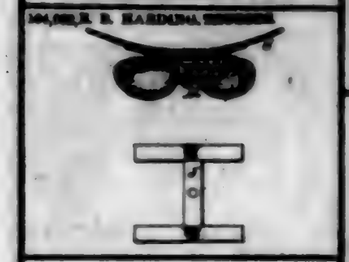


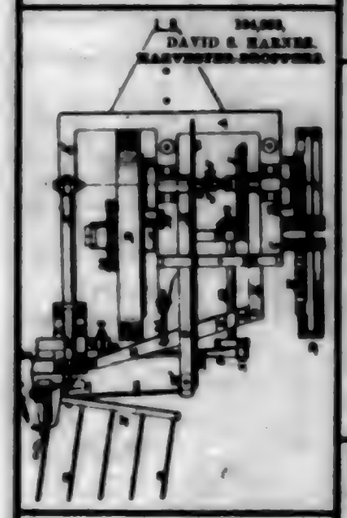




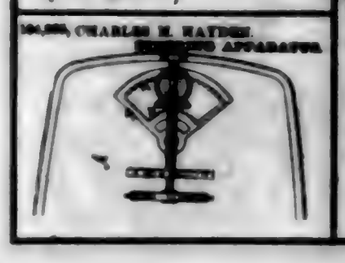


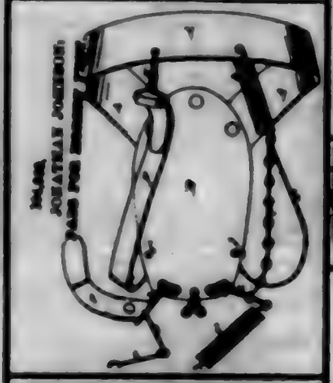




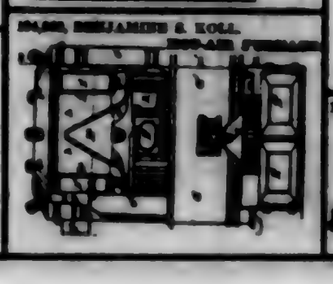


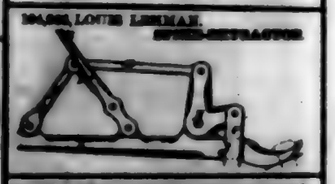




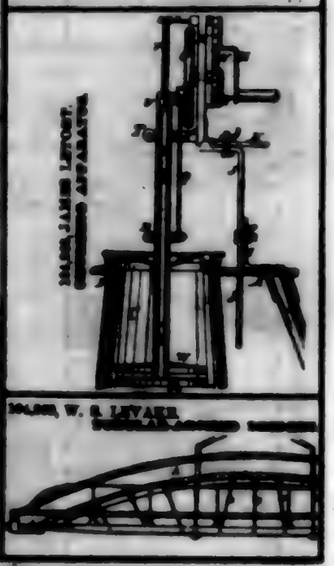




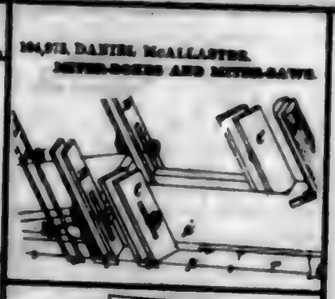




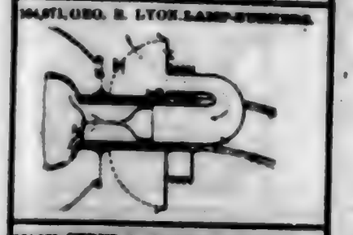




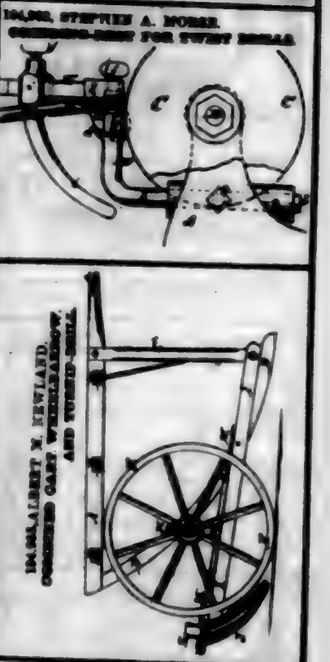




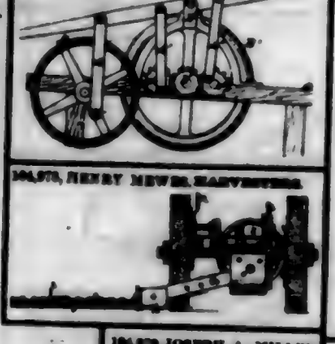


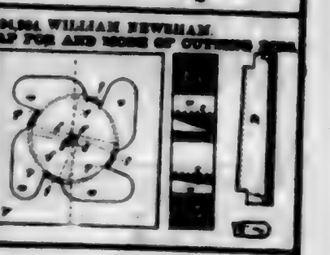


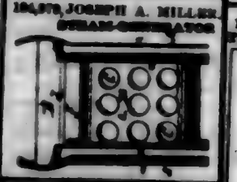


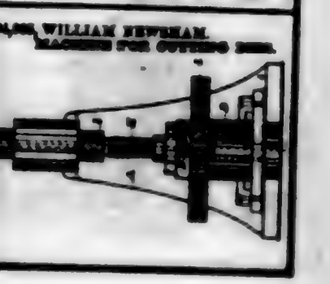


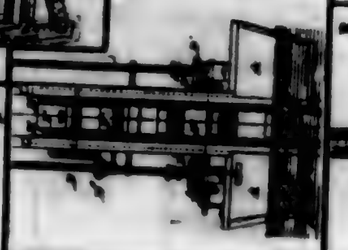




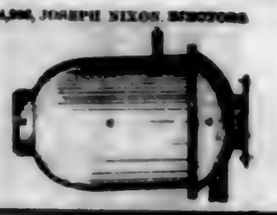




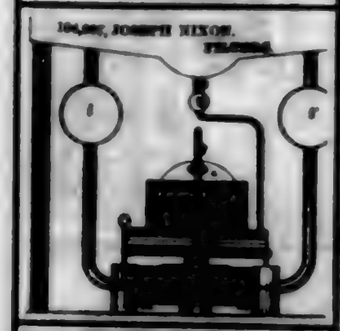




104,596, JOSEPH NIXON.



104,597, JOSEPH NIXON.



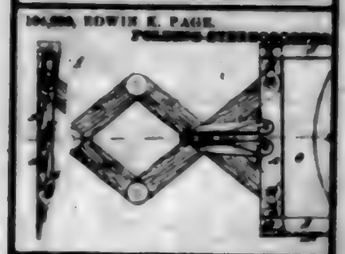
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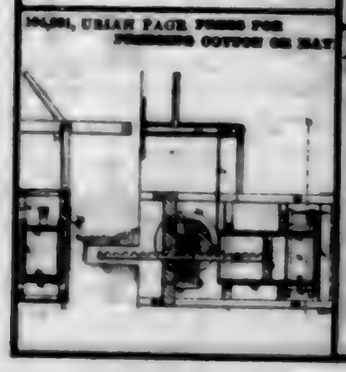
104,599, H. W. OLNEY.



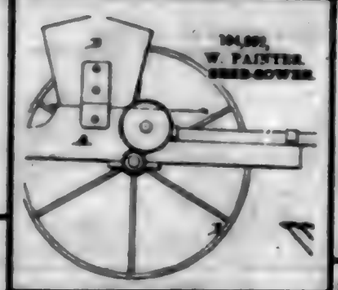
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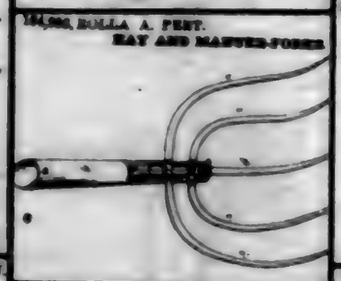
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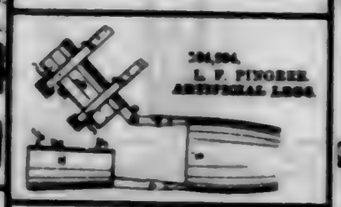
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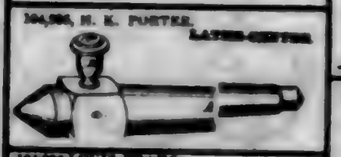
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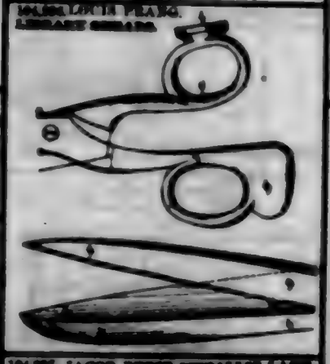
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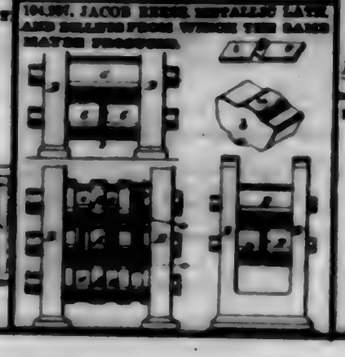
104,605, H. K. FOSTER.



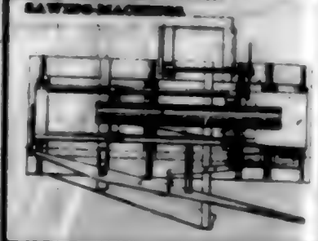
104,606, LOUIS PFAFF.



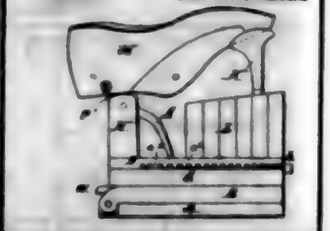
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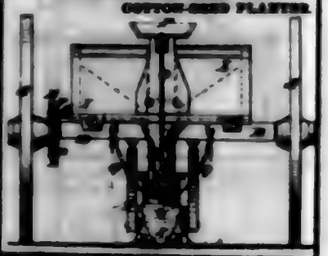
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104,609, HUBERT RICARD.



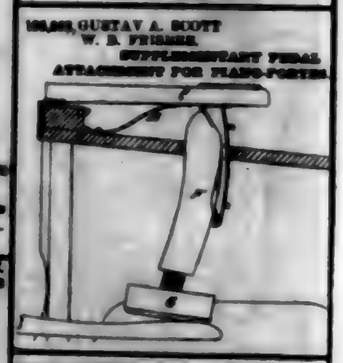
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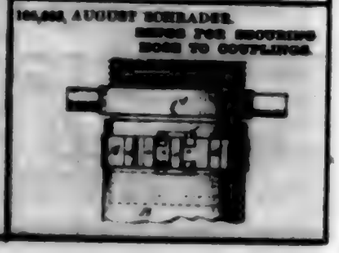
104,611, D. A. SANBORN.



104,612, GUSTAV A. SCOTT, W. B. FRISBIE.



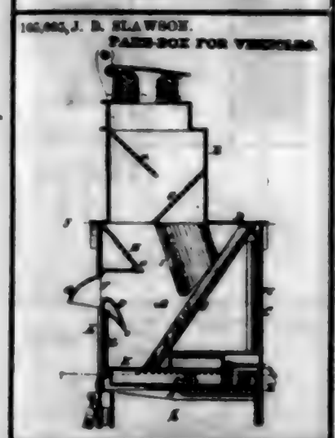
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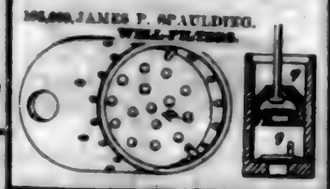
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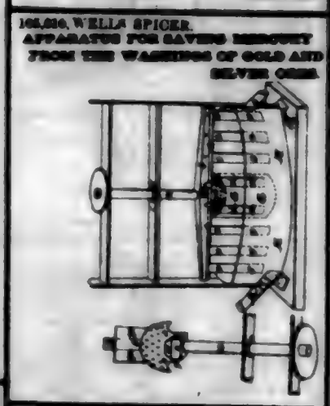
105,005, J. B. SLAWSON.



105,006, JAMES P. SPAULDING.

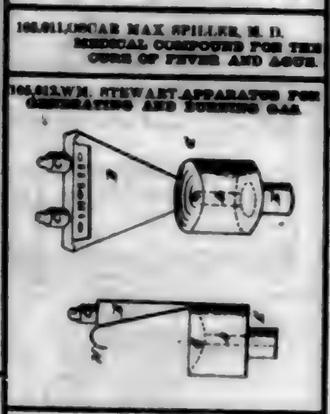


105,010, WELLS SPICER.

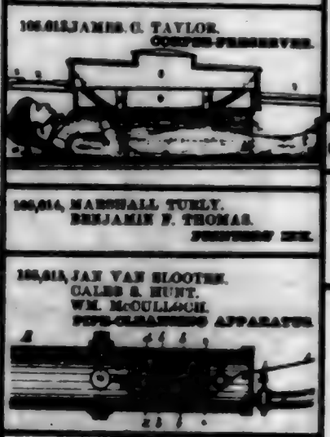


105,011, OSCAR MAX SPILLER, M. D.

105,012, WM. STEWART.



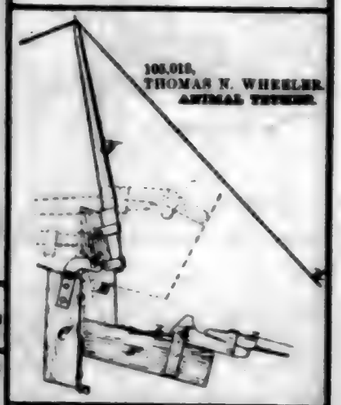
105,013, JAN VAN SLOOTEN, CALEB S. HUNT, WM. McCULLOCH.



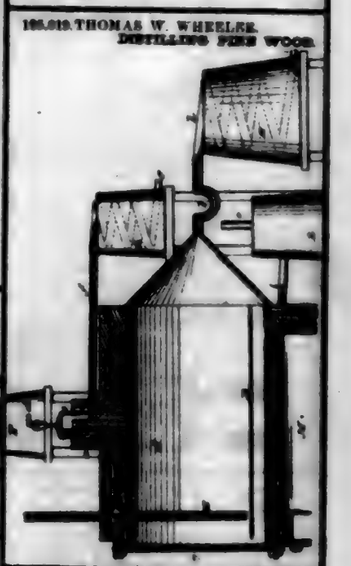
105,014, MARSHALL TURLY, BENJAMIN F. THOMAS.



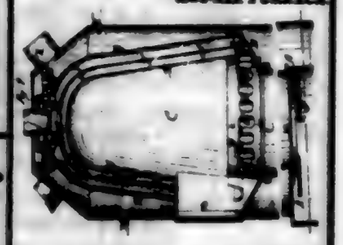
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105,016, THOMAS W. WHEELER.



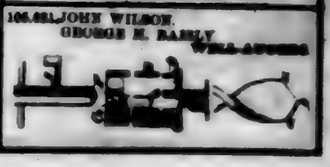
105,017, EDWARD WEBSTER.



105,018, THOMAS SCOTT WILLIAMS, FREEMAN AUGUSTUS TABER.



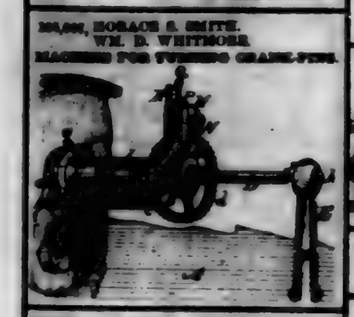
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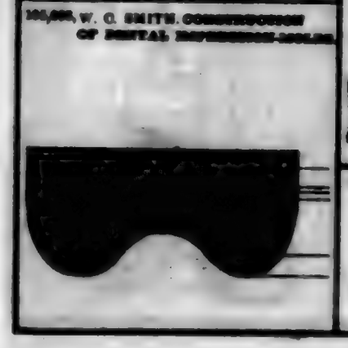
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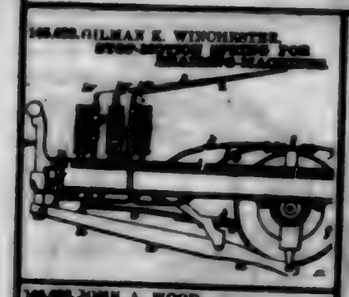


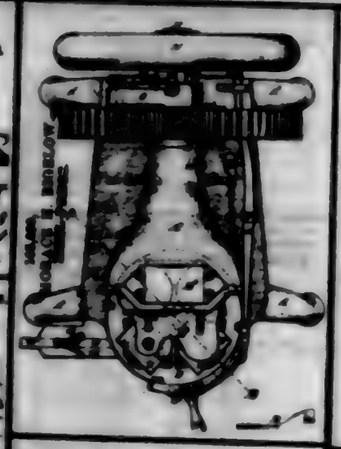
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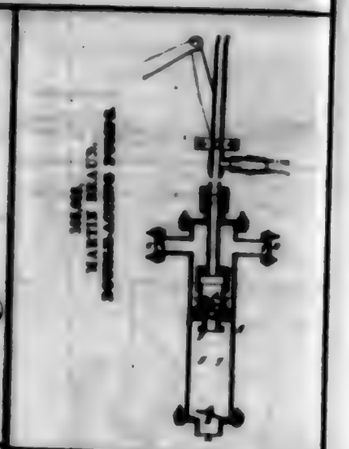


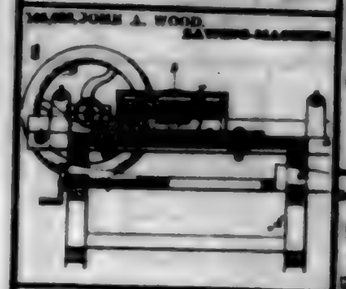
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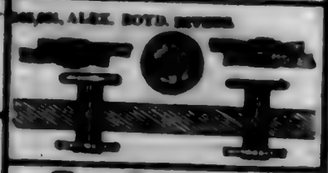


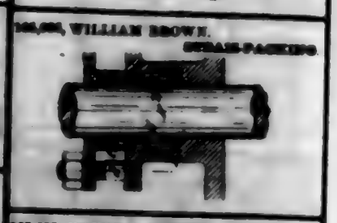




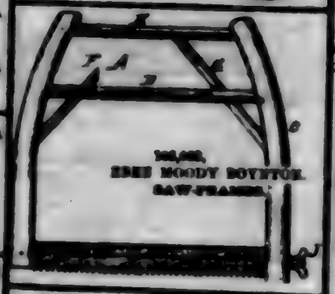


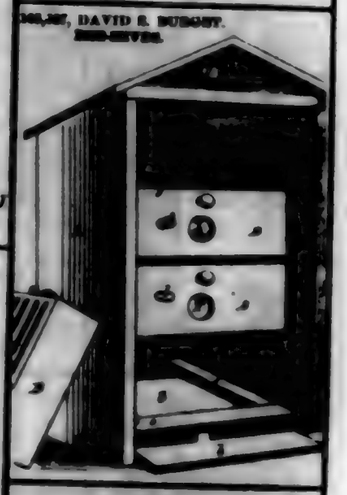


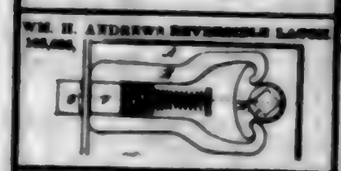


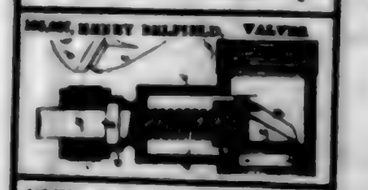


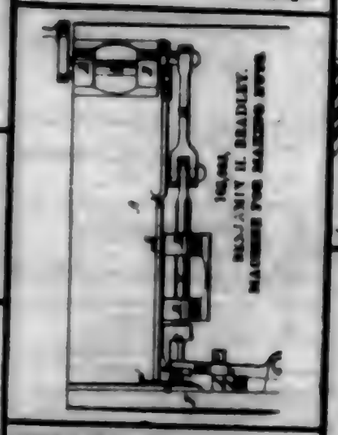


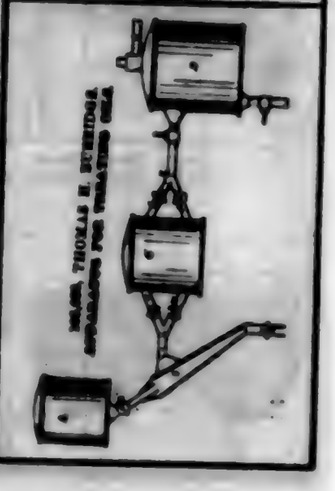


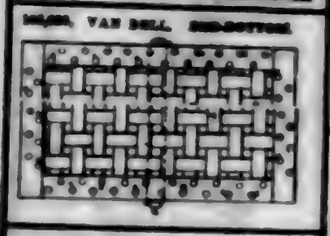


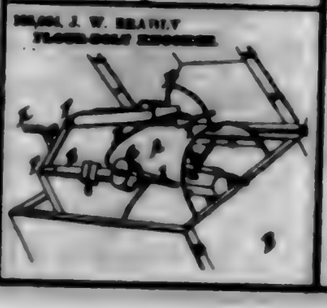




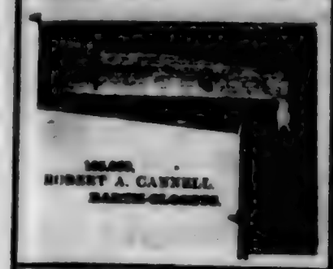


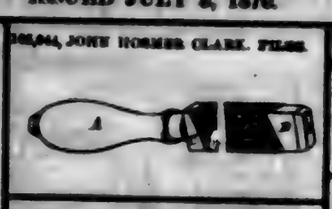


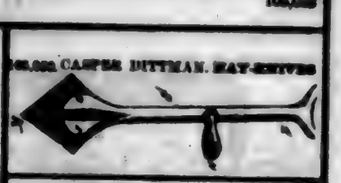


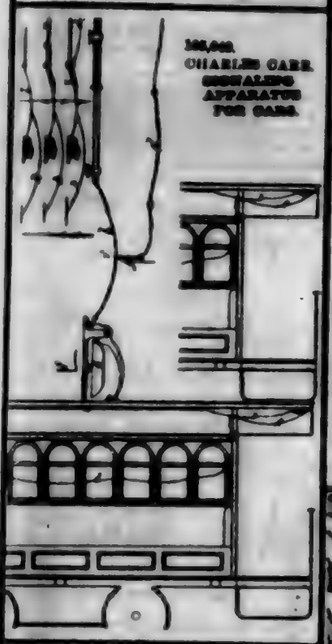




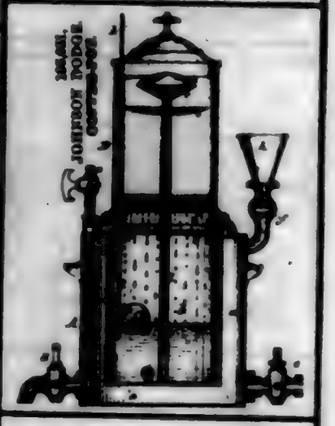


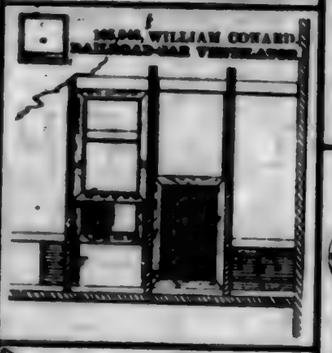


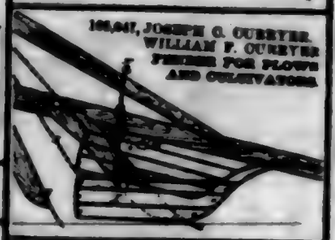


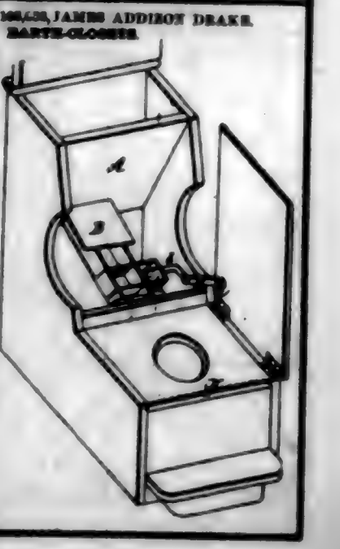


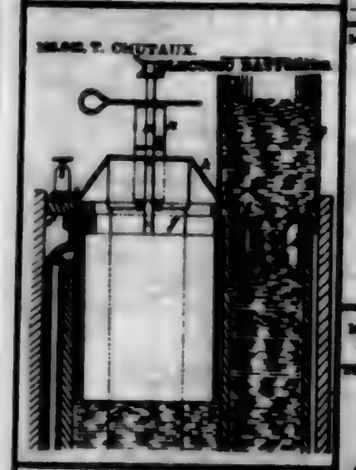


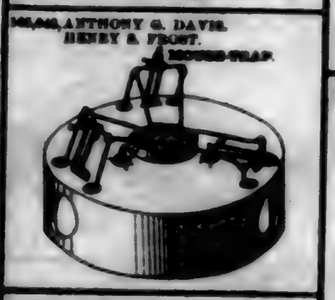


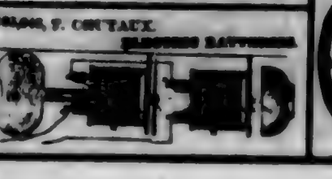


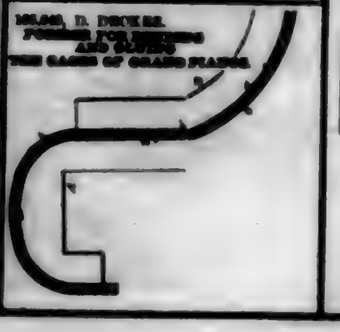












105,054, VIRGIL DRAPER.
MACHINE FOR ATTACHING FASTENERS TO CHAIN-LINKS.

105,055, JOSEPH H. DULL, Philadelphia, Pa.

105,056, JAS. H. HAIR, Peoria.

105,057, TIMOTHY HASLE, Rock Island.

105,058, ALFRED B. ELY.
EDW. C. CLAY.
Rock Island, Assignors to Themselves.

105,059, WILHELM C. FISTE, Cincinnati,
AND OTHER WIND INSTRUMENTS.

105,060, ALONZO FRENCH.
MODE OF SECURING GLASS VESSELS TO METAL BASES.

105,061, ISAAC H. GUSTIN, Gaza.

105,062, FRANKLIN FREY.
HAY-SPREADER.

105,063, GEORGE P. FULLER, Lansing.

105,064, ROBERT W. GEORGE.
PLOW.

105,065, ARTHUR GREENMAN.

105,066, NATHAN S. GREENWOOD.
GRADE AND SIDE-CUTTER.

105,067, HENRY G. HARDISON.
EDWARD H. HARDISON.
CORRUGATED BOOT AND SHOE FOR HORSES.

105,068, A. C. HALL.
A. C. RICHARDS.
PLOW-SHOVEL.

105,069, SAMUEL E. HALL.
COTTON-GIN.

105,070, GEORGE HILLS.

105,071, A. B. HARRIS.
APPARATUS FOR REGULATING THE DIRECTION OF MOTION OF MARINE-ENGINES.

105,072, J. G. HOADLEY, Strain-Engineer.

105,073, WILLIAM H. HART, Jr.
HIRAM H. THAYER.
KNOCK-DOWN BOLSTERS.

105,074, F. M. HOLMES.
FOLDING GRATE.

105,075, JOHN BRIGHTMAN HASKINS.
MEDICAL COMPOUND.

105,076, GEORGE HERTEL, Jr.
BRAM BURLEW.
CURB-BASKET.

105,077, C. P. HERRICK.
REVERSIBLE LASTS.

105,078, HENRY HILLIARD.
AWNING-FRAME.

105,079, GEORGE HORTER.
RIDING-SADDLE.

105,080, GEORGE HORTER.
SADDLE FOR HARNESS.

105,081, RODNEY HUFF.
MACHINE FOR FULLING CLOTH.

105,082, J. H. IRWIN, Lawrenceburg.

105,083, GUSTAV L. JABURG.
ADHESIVE COMPOUND FOR PREPARING PASTEBOARD.

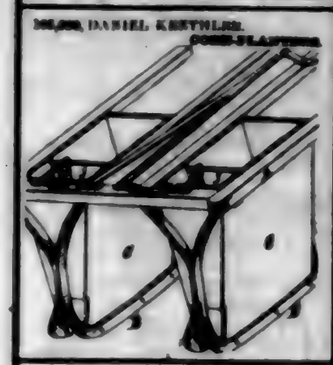
105,084, WM. S. JESSUP.
TRUSS-SADDLE GAP.

105,085, JOBES JOHNSON.
SLOTTER-BACK.

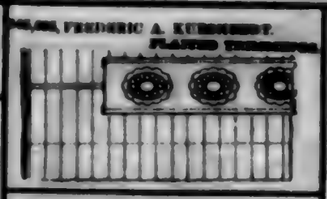
105,086, W. T. JOHNSTON.
ALLEN JOHNSTON.
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105,087, SOLOMON JONES.
E. TERFLOTH.
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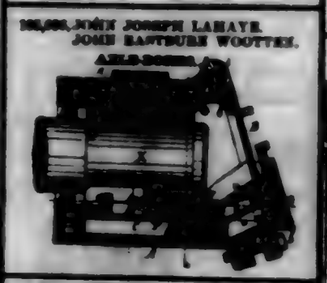
105,099, DANIEL KARSTEN.
CARL LIST.
GRINDING CHINA-CLAY TO
ESTATE HANDEL, BOSTON-OF PEARL.



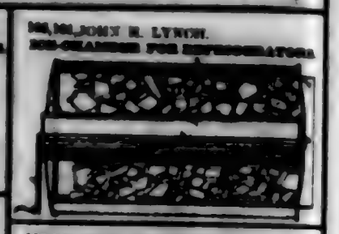
105,100, DANIEL KESTNER.
CORN-PLANTER.



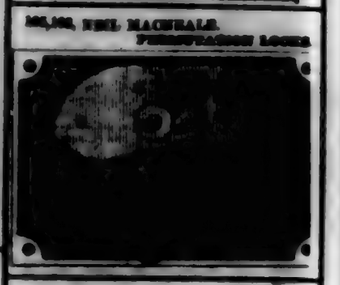
105,101, FREDERIC A. KUHNHEIT.
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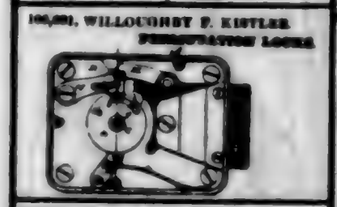
105,102, JOHN F. LAHAYE.
JOHN BAPTISTE WOOTTEN.
AXLE-BOXES.



105,103, JOHN H. LYNCH.
ASH-CHAMBER FOR REFRIGERATORS.



105,104, NEIL MACHEALE.
PERCUSSION LOCKS.



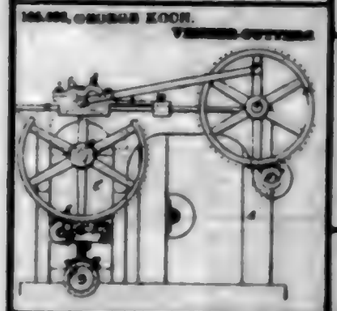
105,105, WILLOUGHBY P. KISTLER.
PERCUSSION LOCKS.



105,106, JAMES LEWIS.
TOP-CHEST FOR CARRIAGES.



105,107, J. T. LIGON.
PROPELLING APPARATUS.



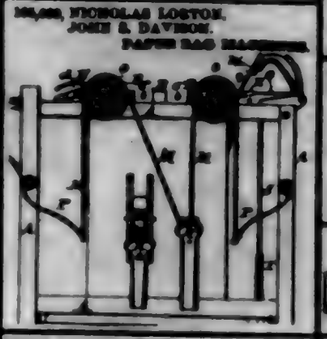
105,108, CHARLES KOOB.
VENEER-CUTTING.



105,109, NICHOLAS LOSTON.
JOHN S. DAVISON.
PAPER BAG MACHINE.



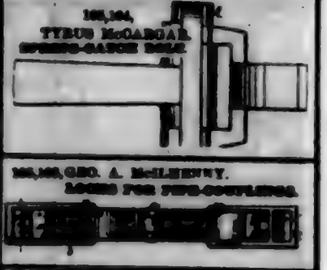
105,110, JULIUS KRAFFERT.
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105,111, JAMES B. LUCE.
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105,112, TYRUS McCARGAR.
SPRING-GAITER TOES.



105,113, GEO. A. McILHENNY.
LOCKS FOR FIRE-COUPLINGS.



105,114, ALEX. McKENNA. ETHRAIM.
JOHN McKENNA.
THOMAS McKENNA.



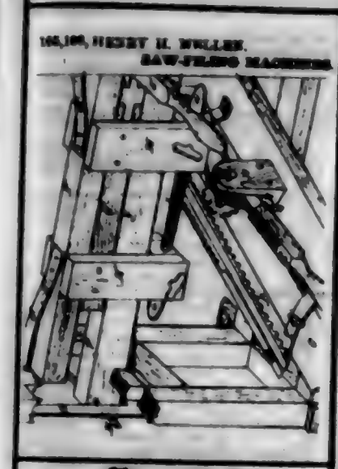
105,115, WILLIAM JAMES MEHARY.
LOCOMOTIVE
SMOKE-STACKS.



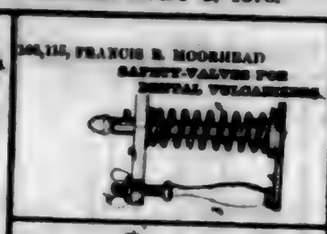
105,116, CHAS. P. KRAMER.
SPITTOON, RUG, AND FENCE.



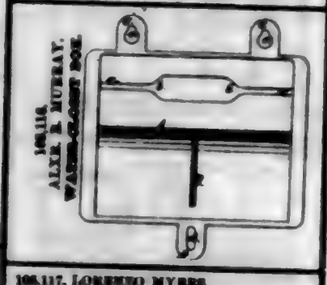
105,117, HENRY H. WELLES.
SAW-FILING MACHINES.



105,118, FRANCIS B. MOORHEAD.
SAFETY-VALVES FOR
STEAM VULCANIZERS.



105,119, ALEX. B. MURRAY.
WATER-CLOSET SOIL.



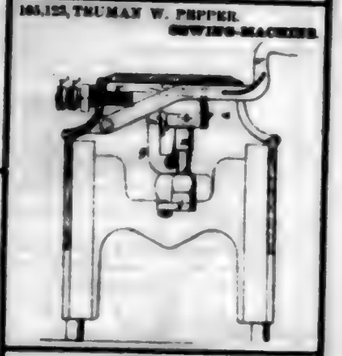
105,120, JOHN D. OTSTOT.
CORNERED BEVEL, SQUARE RULE, &c.



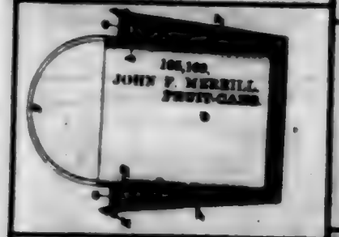
105,121, WM. A. PARMELE.
ADJUSTABLE LIFTER
FOR WATER-WHEEL GATES.



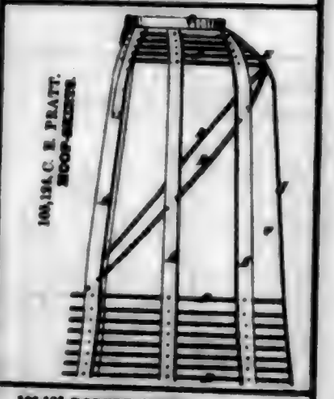
105,122, TRUMAN W. PEPPER.
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105,123, JOHN F. MERRILL.
FRUIT-CANS.



105,124, C. E. PRATT.
ROOF-SCREEN.



105,125, JOSHUA MERRILL.
SHAVE-HOOKS.



105,126, ROBERT PRICE.
PAPER FOR DOUBLE DRAFT CURVES.

105,127. CANCELED.

105,128, NATHANIEL PULLMAN.
EXTENSION LADDERS.



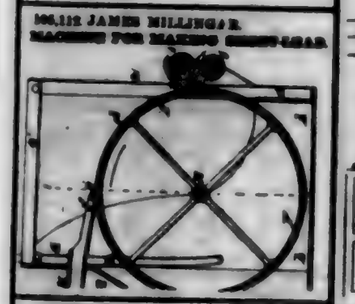
105,129, FRANKLIN ROBERTS.
VALVES FOR
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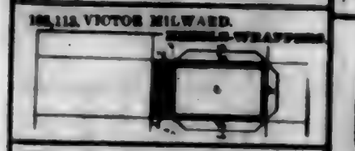
105,111, HENRY MEWIS, GUTTING
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105,112, JAMES MILLINGAR.
MACHINE FOR MAKING CHEESE-CAKE.



105,113, VICTOR MILWARD.
SPINNING-WRAPPERS.



105,114, THOMAS E. MOORE.
PAPER-FILES.

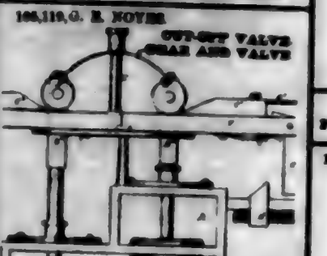


105,115, FRANCIS B. MOORHEAD.
SAFETY-VALVES FOR
STEAM VULCANIZERS.

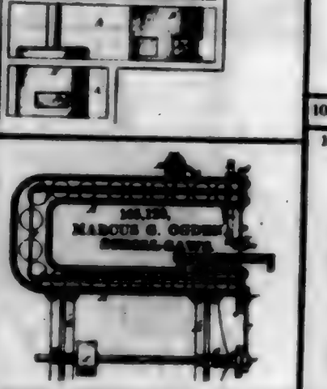


105,116, JOHN F. MERRILL.
FRUIT-CANS.

105,117, LORENZO MYERS.
DOUBLE HAT-BLOCKS.



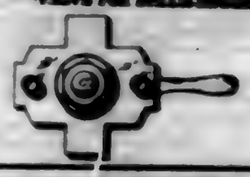
105,118, F. NICHOLSON.
TABLETING-MACHINE FOR PERFUMERY.



105,119, G. E. NOYES.
CUT-OFF VALVE
STEAM AND VALVE

105,120,
MARCUS G. OGDEN.
SHINGLE-SAWS.

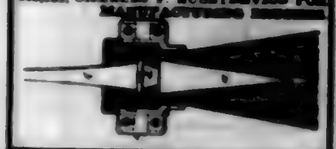
No. 139, THOMAS BODDA, Jr., REVERSING VALVE FOR STEAM-ENGINES.



No. 140, CHARLES F. BUSBY, Jr., ENGINE.



No. 141, CHARLES F. BUSBY and DAVID W. FARNHAM, Jr., MANUFACTURING BOILERS.

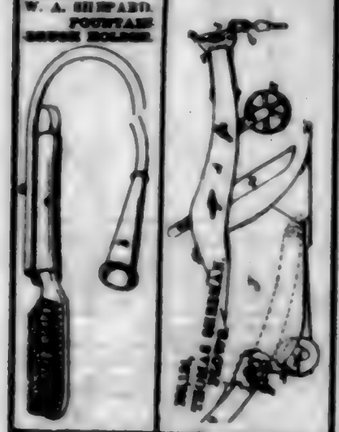


No. 142, CARL SCHAEFFER, MANUFACTURE OF ARTIFICIAL STONE.

No. 143, J. SHAY, VAPOR-STEAMER.



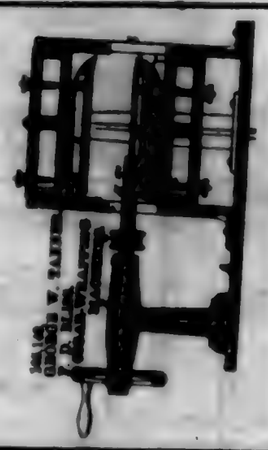
No. 144, W. A. SHEPARD, FOUNTAIN-HOSE HOLDER.



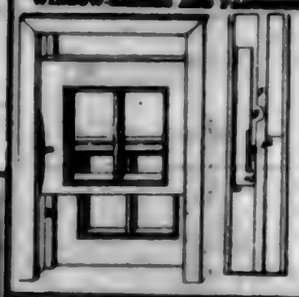
No. 145, EDGAR COLLINS, Jr., MACHINE FOR BENDING CURVES.



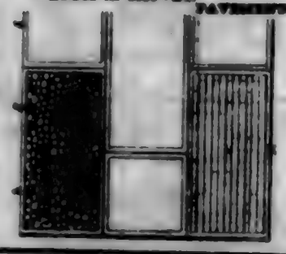
No. 146, ISAAC V. TATE, CHARLES A. BLAIR, and WILLIAM WALLACE, Jr., MACHINE FOR PLANING AND MATCHING BOARDS.



No. 147, ELIAS SMITH, WINDOW-SASHES AND FASTENINGS.



No. 148, ANDREW STEVENS and LOUIS A. GAUVET, PAVEMENTS.

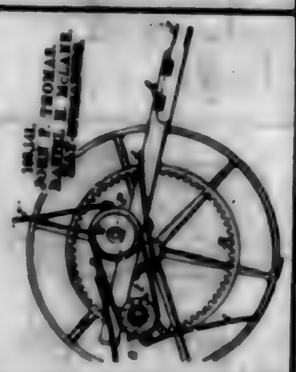


No. 149, OLE O. STORLE, EAVESTROUGH-GAUGE.

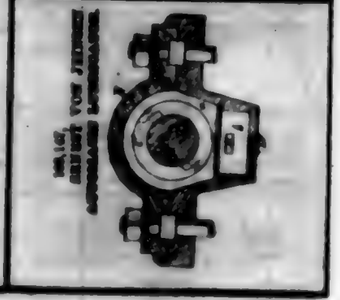


No. 150, DANIEL V. TATE, CHARLES A. BLAIR, and WILLIAM WALLACE, Jr., MACHINE FOR PLANING AND MATCHING BOARDS.

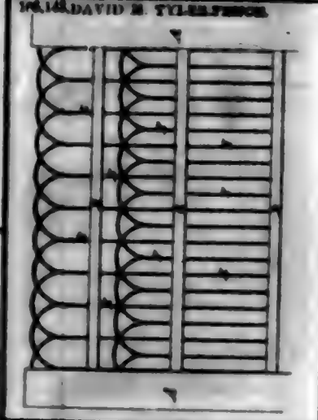
No. 151, ADOLF THOMAS and ADOLF E. SCHAAF, MACHINE FOR BENDING SHEET-METAL.



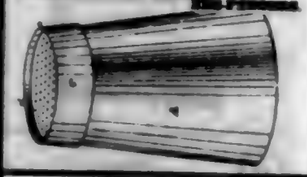
No. 152, CHARLES W. VAN HORNE, CONSTRUCTION OF CAR-ROOFS.



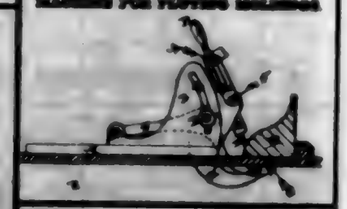
No. 153, DAVID M. TYLER, FENCE.



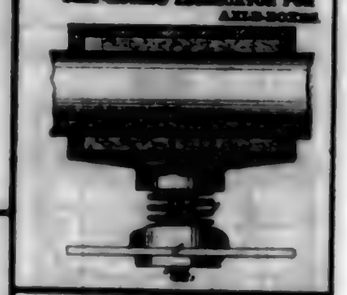
No. 154, C. G. VAN DEUSEN, BELL-FASTENING.



No. 155, RICHARD VAN RIPER, MACHINE FOR PLAITING BRAIDING.



No. 156, HENRY VON JEDLICKA, SELF-ADJUSTING LUBRICATOR FOR AXLE-BOXES.

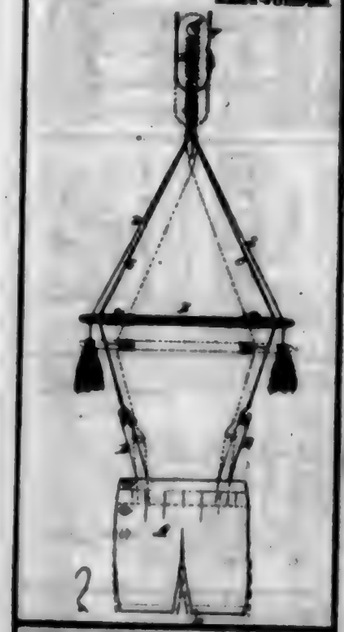


No. 157, HENRY VON JEDLICKA, ADJUSTABLE LUBRICATOR.

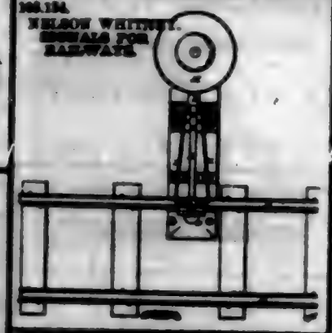
No. 158, EDWARD ROBERTS WARNER, JACOB WILLIAM WALTON, and ROBERT VINE, METAL-BACKED COMBS.



No. 159, ROBERT L. WARNER, HAIR-JUNIPER.



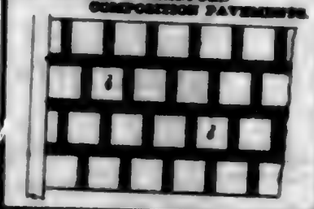
No. 160, NELSON WHITNEY, BRIDGE FOR RAILWAYS.



No. 161, DANIEL VIBBERT, STEAM-WATER REGULATOR.



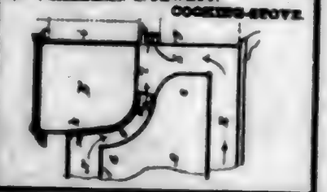
No. 162, HENRY L. CRAWFORD, COMPOSITION PAVEMENTS.



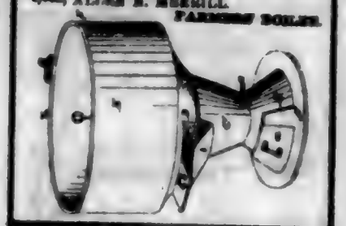
No. 163, FREDRICK FISCHBECK, TRAVELING-BASE.



No. 164, SHERMAN S. JEWETT, COOKING-STOVE.



No. 165, ALLEN H. MERRILL, FARMERS' BOILER.



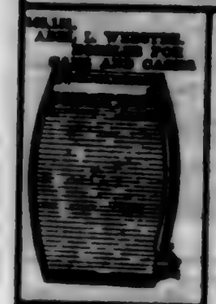
No. 166, GEO. H. PHILLIPS, COOKING-STOVE.



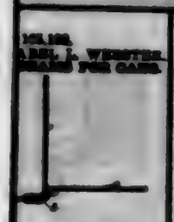
No. 167, ALBIN WARTH, TAPS FOR LIQUID PACKAGES.



No. 168, ABEL L. WEBSTER, MACHINE FOR SETTING AXLE AND GAUGE.



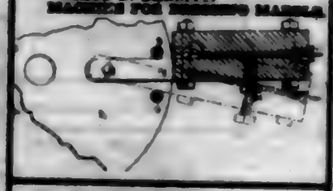
No. 169, ABEL L. WEBSTER, GAUGE FOR AXLE.



No. 170, A. T. WHITMORE, GAUGE.



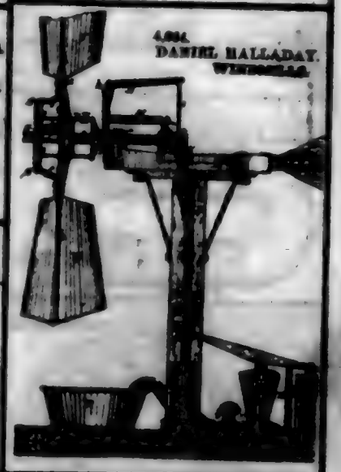
No. 171, RALPH P. BAILEY, PLATT D. BARRITT, MACHINE FOR [illegible] MARBLE.



No. 172, ABRAHAM BUSTER, WM. D. LUDLOW, and MARY A. VAN ALEN, [illegible].



No. 173, DANIEL HALLADAY, WINDMILL.



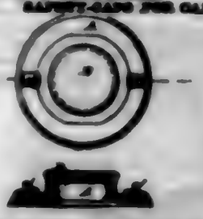
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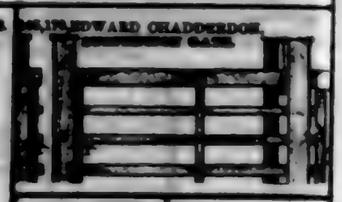
168,167 GEORGE C. ALEXANDER. SAFETY-GAGE FOR GLASS.



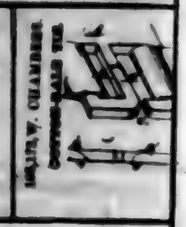
168,168 THOS. H. BRADLEY. WIRE-GAGE.



168,169 EDWARD CHADDERDON. [illegible] GAGE.



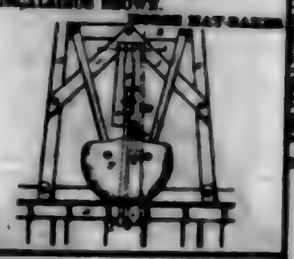
168,170 W. W. CHAMBERS. [illegible]



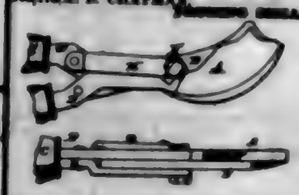
168,171 CHAS. L. ALLEN. CAP-GAGE FOR GRAIN AND SEED-SEPARATORS.



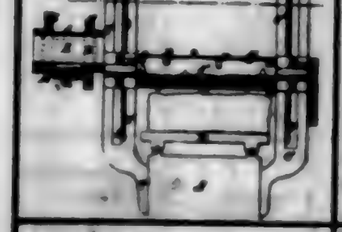
168,172 ALBERT BROWN. [illegible] HAT-BLOCK.



168,173 A. B. CHAPMAN. [illegible]



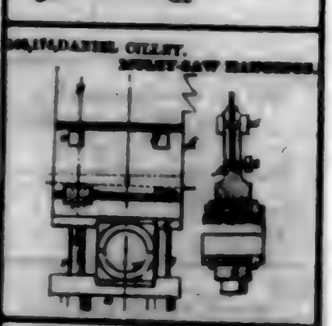
168,174 ALEX. G. ANDERSON. MACHINE FOR [illegible]



168,175 J. G. BROWN. LADDER FOR TURNING WOOD.



168,176 DANIEL CULLEY. [illegible] SAWMILL-SAW HAMMERS.



168,177 RAMON ANTIGUEDAD. MANUFACTURE OF TOBACCO-PAPER.

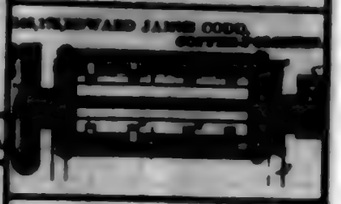
168,178 SAMUEL BARNETT-AVES.



168,179 MICAJAH C. BURLINGHAM. [illegible]



168,180 EDWARD JAMES COLE. CUTTING-[illegible]

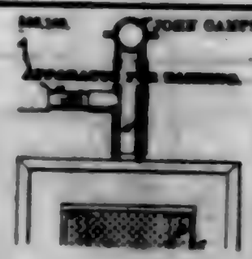


168,181 ALLEN BAGLEY. [illegible] FOR [illegible]

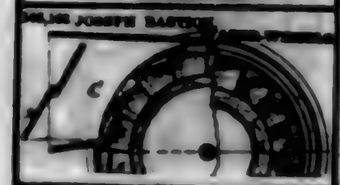


168,182 LUCY J. BUTTERS. [illegible]

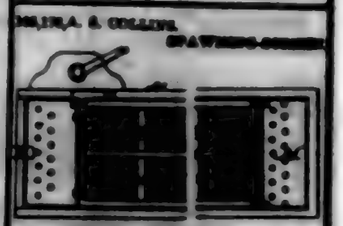
168,183 JOHN CAMPION. [illegible]



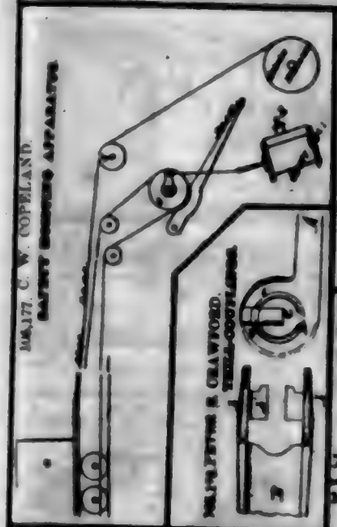
168,184 JOSEPH BARTON. [illegible]



168,185 WM. A. COLLINS. DRAWING-[illegible]

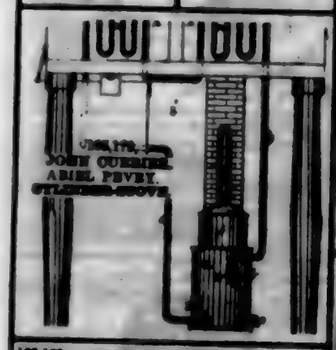


168,177 C. A. V. COPELAND. [illegible] APPARATUS.

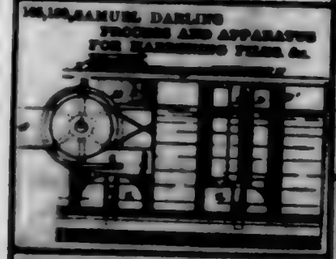


168,178 WILLIAM S. CRAWFORD. [illegible]

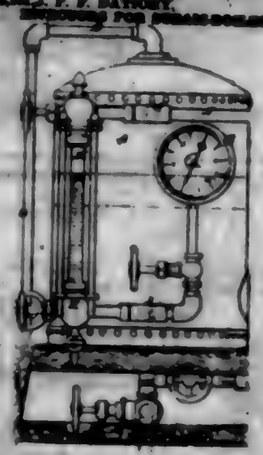
168,179 JOHN GUERRIER. ARIEL PEVEY. [illegible]



168,180 SAMUEL DARLING. PROCESS AND APPARATUS FOR [illegible]



168,181 J. P. F. DATHEY. [illegible] FOR [illegible]



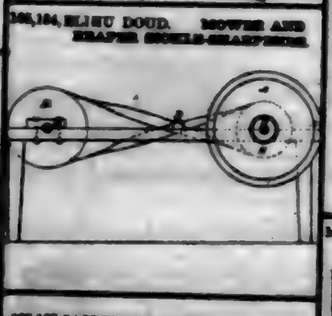
168,182 ISAAC A. DAVIS. APPARATUS FOR [illegible] CLOTH.



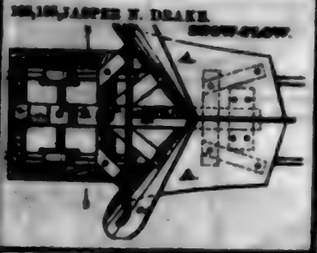
168,183 ABRAHAM DEUTSCHEL. [illegible] MACHINE.



168,184 ELIHU DOUD. MOWER AND REAPER [illegible]



168,185 JASPER N. DRAKE. [illegible]



168,186 WILLIAM G. DUNNIWAY. HARRISON OSBURN. [illegible]



168,187 W. FRANZ AND W. POPE. [illegible]

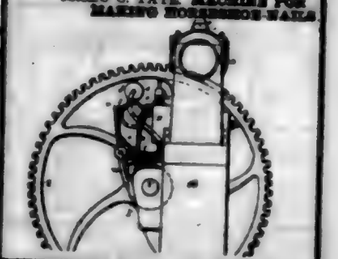


168,188 JOSHUA W. FRAZER. [illegible]

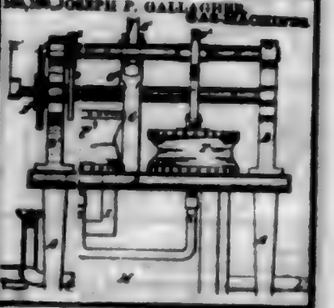
168,189 [illegible]



168,190 P. N. GALLAHE. ISAAC C. TATE. MACHINE FOR MAKING HORSESHOE-NAILS.



168,191 JOSEPH P. GALLAGHER. [illegible]



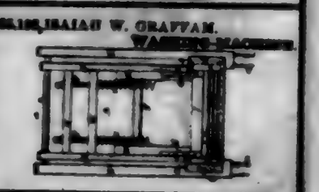
168,192 WILLIAM R. GARDNER. [illegible]

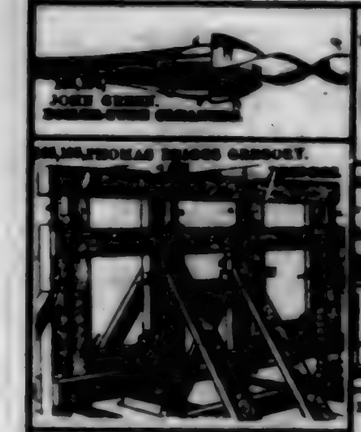


168,193 JOEL GLEASON. SAD-IRON HANDLE



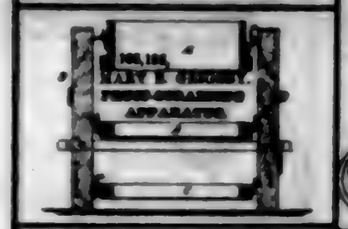
168,194 ISAIAH W. GRAFFAM. WASHING-MACHINE.



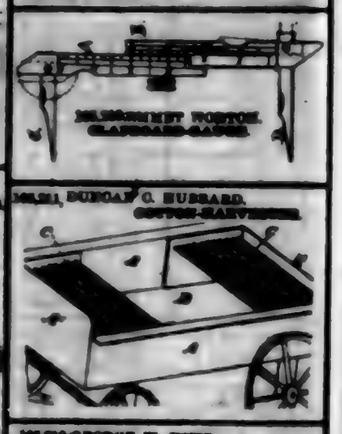


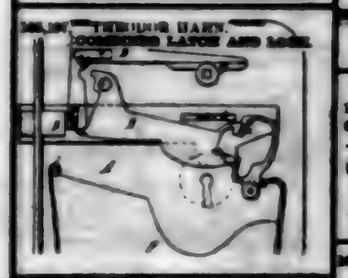








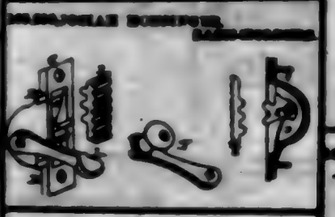


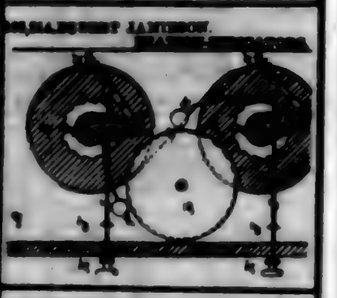




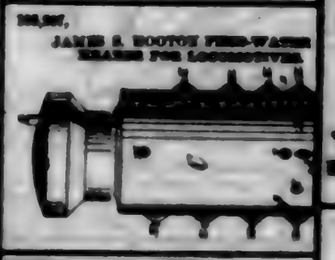


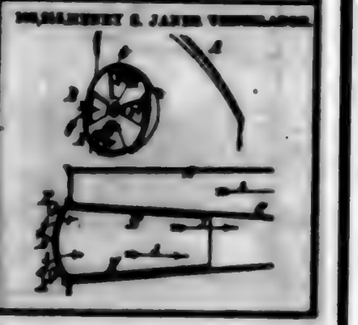




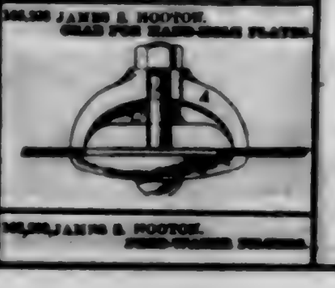


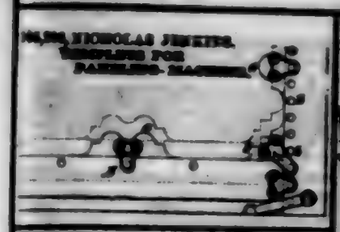


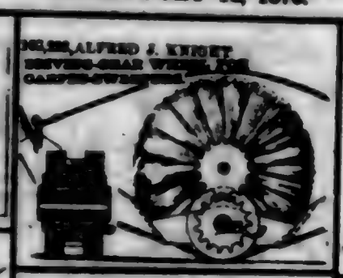


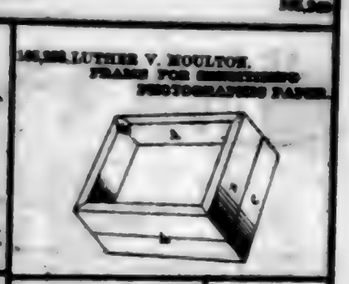


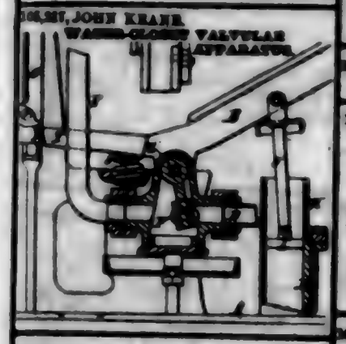




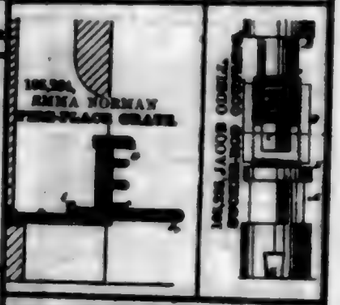














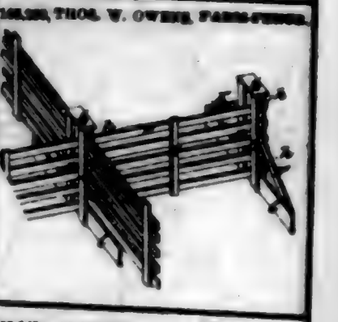


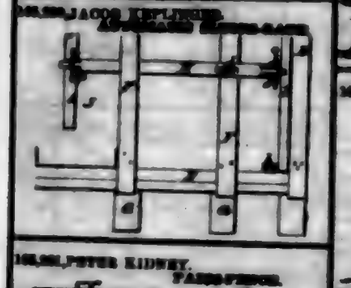


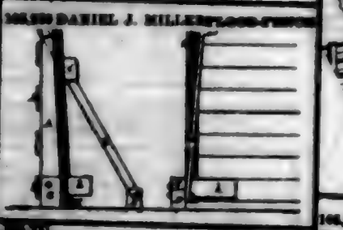


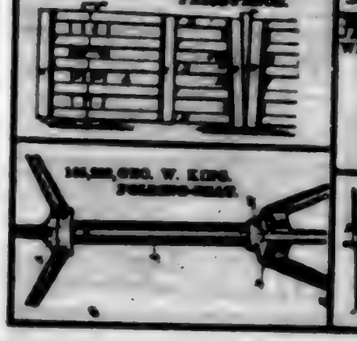


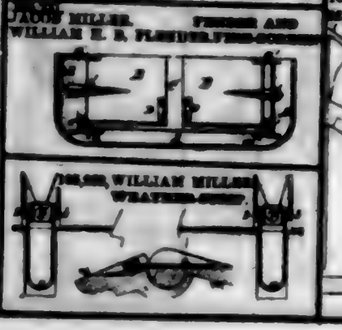


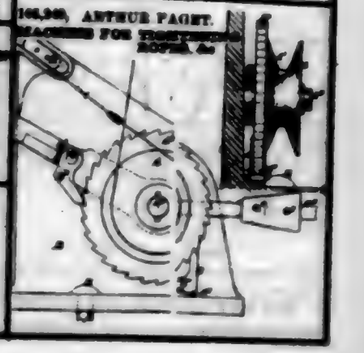












105,241, CALEB A. PARKER. BRICK-KILN.

105,242, F. M. PATTERSON, H. P. MILLER. HARNESS-MAKING SEWING-TOOL.

105,243, ROBERT PATTERSON. STEAM-GENERATOR.

105,244, HARFORD J. PERKINS. MACHINE FOR SHARPENING THE TEETH OF SAWS.

105,245, E. PHILLIPS, CAR-DOOR FASTENER.

105,246, J. POWERS, HOD-ELEVATOR.

105,247, WM. PYLE. THE MANUFACTURE OF LEATHER.

105,248, ALFRED RAY, BENJAMIN FRANKLIN MONSON. SNAP-FOLDER.

105,249, JOHN RICE. BAKING ATTACHMENT FOR FURNACES.

105,250, JOHN F. G. RIDER, EMERSON P. BROWNELL. SPOOL-MACHINE.

105,251, SAMUEL D. ROBERTS, MONTGOMERY DUNCH. FEED-REGULATOR.

105,252, OREN W. RIVERTON. FASTENER-REGULATOR.

105,253, AUGUSTA M. RODGERS. FOLDING CHAIR.

105,254, JOHN RODGERS, LAWRENCE REID. REFINING SUGAR.

105,255, JOHN G. RODGERS. FEEDING-APPARATUS.

105,256, JAMES RYAN. LAMP-CHIMNEY.

105,257, HENRY RYDER. CARBURETTER.

105,258, J. SCHAEFER, GUSTAV SCHOCK. PAPOOSE.

105,259, SILAS G. SCHOFIELD. COUPLING FOR TURNING-SHAFTS.

105,260, J. G. C. SEARLE. RAILROAD-CAR STOVE.

105,261, SIMON W. SHALLER. SAWS.

105,262, SCHUYLER G. SHANKS. SPOOL.

105,263, G. L. SHELDON. REELING-CHAIN HORSE-POWER ATTACHMENT.

105,264, T. R. SOUDER. CAR-COUPLING.

105,265, ALBERT R. SILVER. BOX-MAKING MACHINE.

105,266, ALFRED E. SMITH. CARRIAGE-AXLE.

105,267, GEORGE HAND SMITH. THE MANUFACTURE OF IRON AND STEEL.

105,268, HIRAM SMITH. PIPE-JOINT.

105,269, THOS. P. SPENCER. PACKING-CASE FOR PERFUMERY, &c.

105,270, ANDREW J. SPRAGUE. BRICK-DISTRIBUTING MACHINE.

105,271, T. R. STANLEY. BOBBIN-POST.

105,272, GEO. M. STEINBERG. ELECTRO-MAGNETIC APPARATUS FOR REGULATING VALVES AND DAMPERS.

105,273, GEO. M. STEINBERG. ELECTRICAL THERMOSCOPE.

105,274, WILLIAM STOKES. BOOK-BINDER'S PAPER-CLIP.

105,275, GEORGE A. STOUT. STEAM-GENERATOR.

105,276, SOLOMON STOVER. HORSE-POWER.

105,277, EDWARD D. THOMPSON. CAR-COUPLING.

105,278, JACOB SHILL VAN DYNE. FEED-REGULATOR.

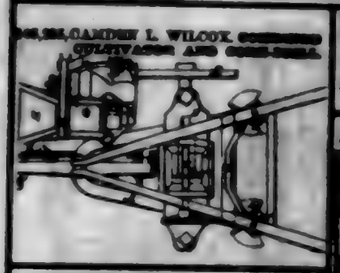
105,279, LORENZ WAHLER. FEED-REGULATOR.

105,280, LORENZO D. WEBSTER. SAWING-MACHINE.

105,281, BENJAMIN F. WHEELER. REIN-HOLDER.

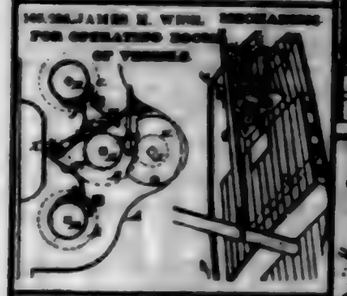
105,282, EXUM WHITLEY. THE MANUFACTURE OF FERTILIZERS.

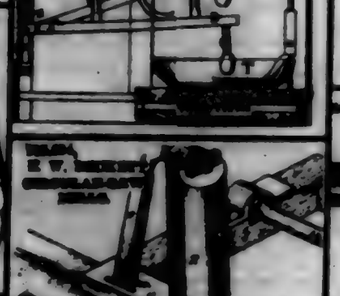
105,283, ORISON G. WHITNEY. REVERSE-LEVER FOR REGULATING OR GEARING-GUIDES.

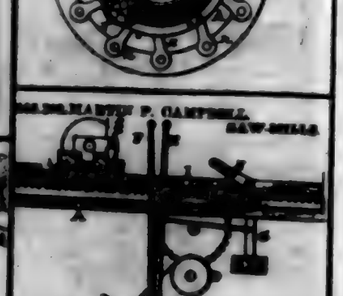


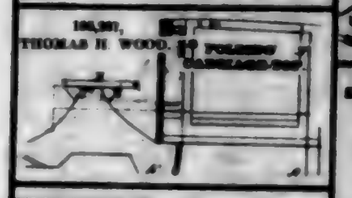


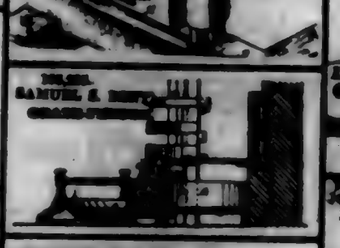


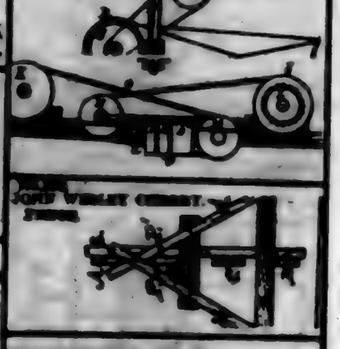




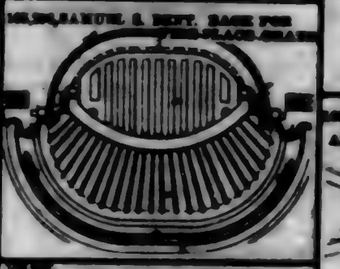


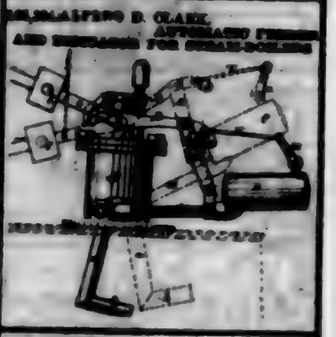










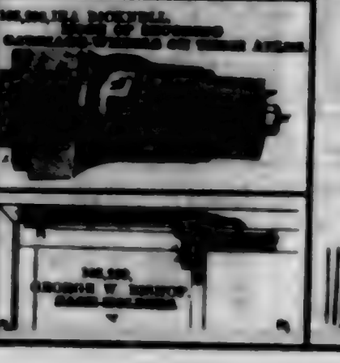




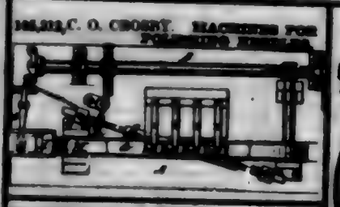


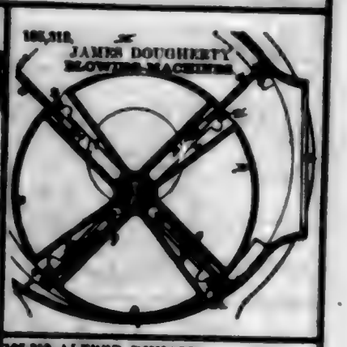


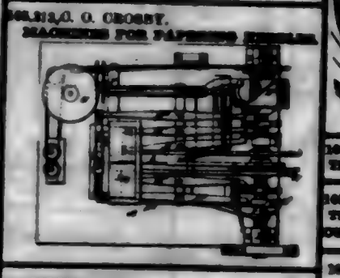




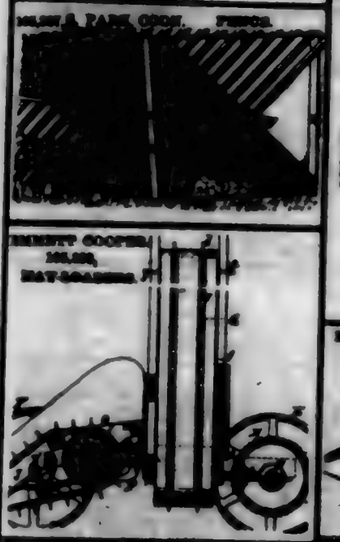






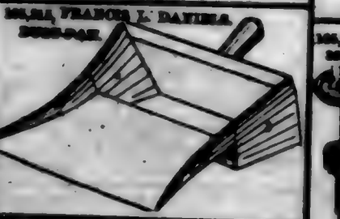




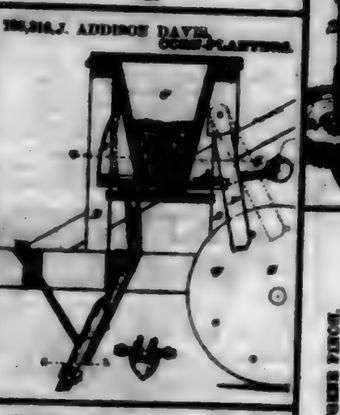


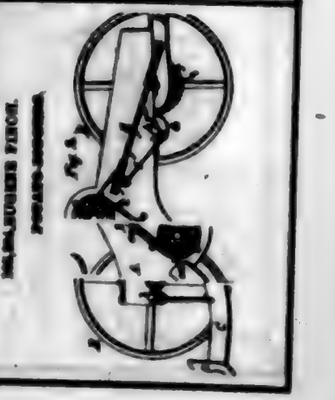




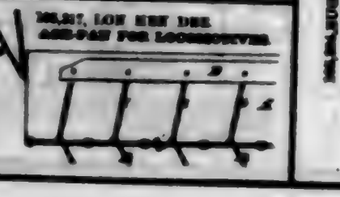


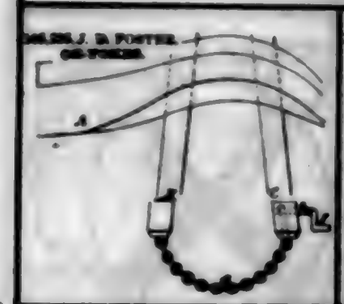


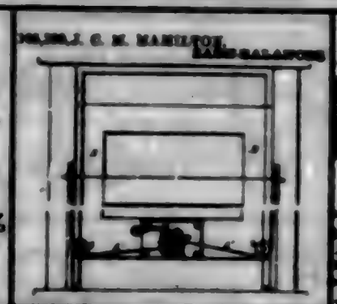




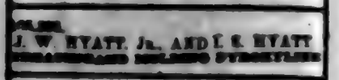


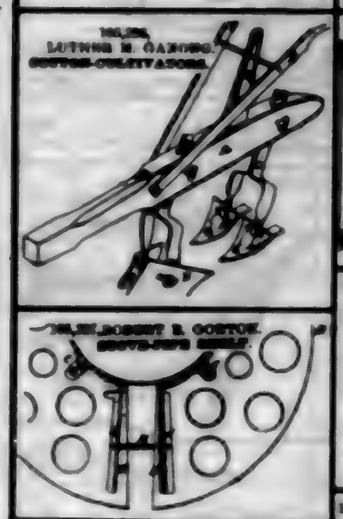


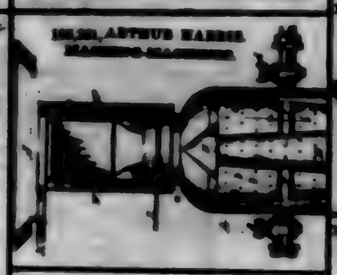


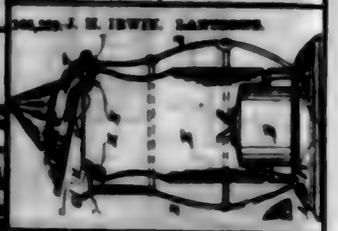




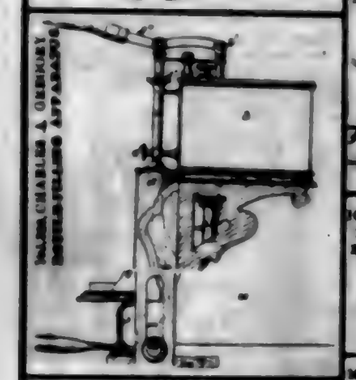


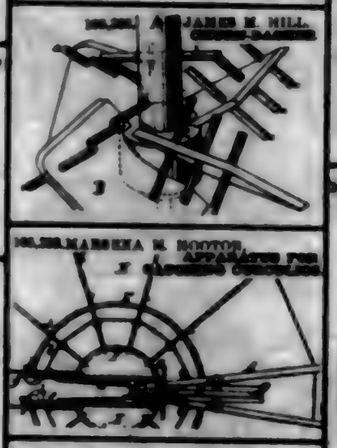




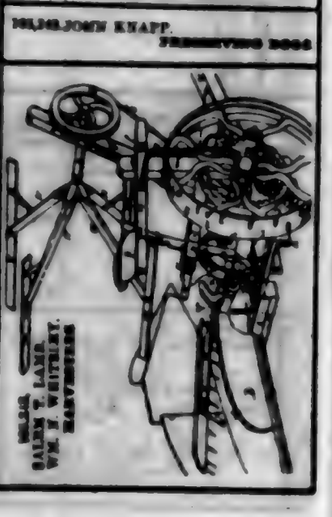


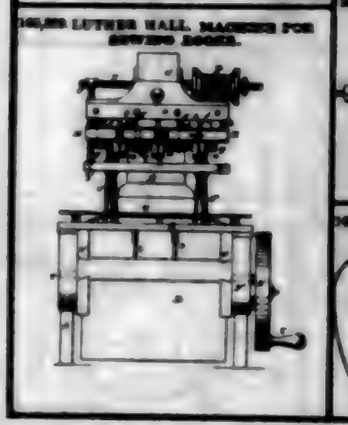


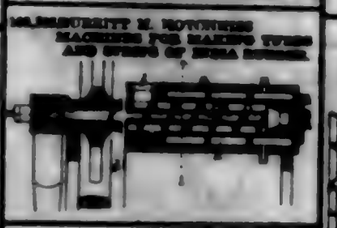


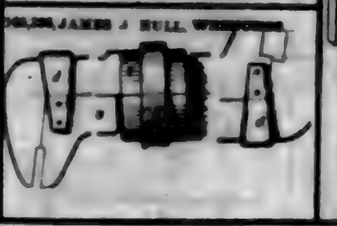


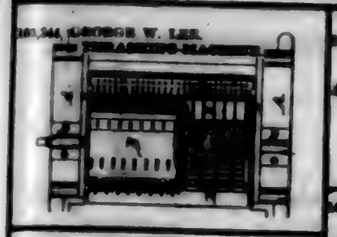


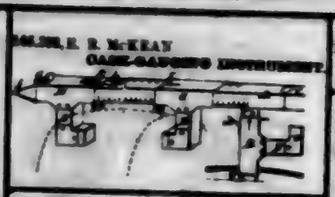


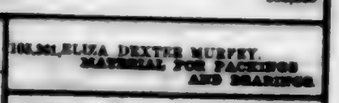






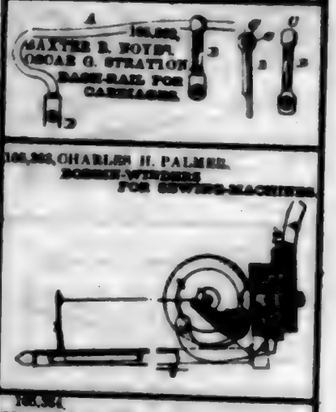




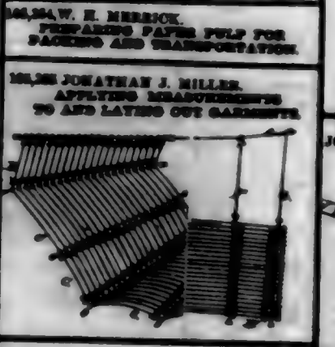




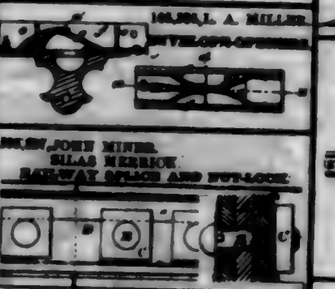


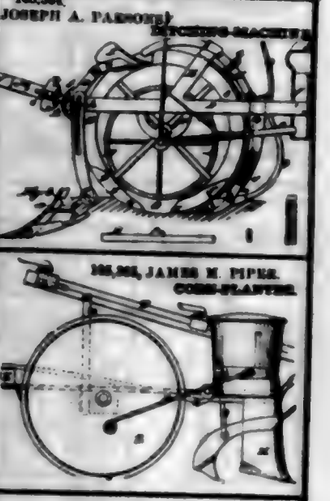




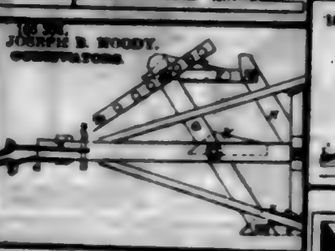


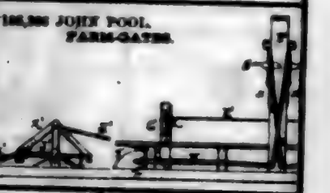






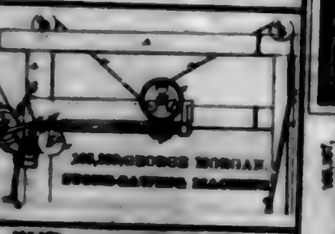


















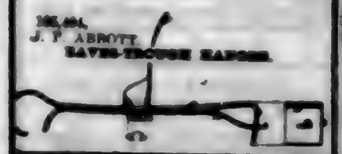
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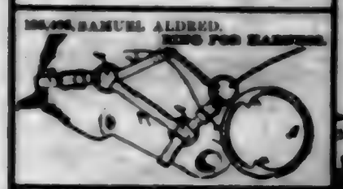
105,424. J. F. ABBOTT. SAVER-TROUSE SAFOSH.



105,425. LENA J. ADDERHOLD.



105,426. SAMUEL ALDRED. RING FOR HARNESS.



105,427. RICHARD E. ALLEN. CAR-COUPLING.



105,428. JOHN H. ANTHONY. TOBACCO-PIPES.



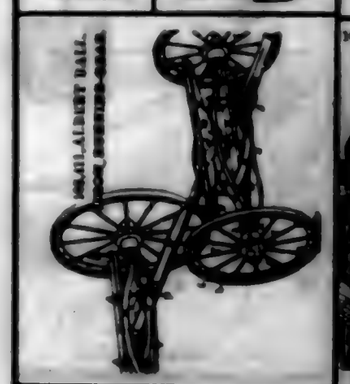
105,429. CHARLES H. BAKER. SCREW-BOX CORKSCREW.



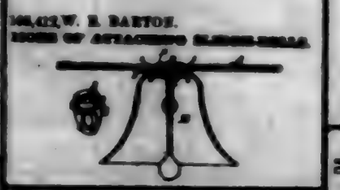
105,430. H. D. ARNOLD. SPINNING-FLYER.



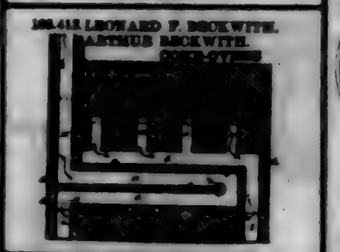
105,431. ALBERT BALL. GUN-CARRIAGE.



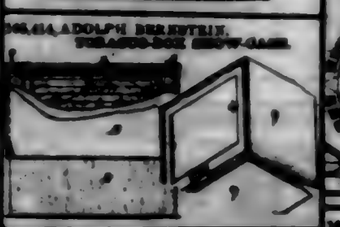
105,432. W. S. BARTON. MODE OF ATTACHING HARNESS-HOOKS.



105,433. LEONARD P. BECKWITH, ARETHUS BECKWITH. CHURN-DAY.



105,434. ADOLPH BERENTEIN. TOBACCO-BOX SHOW-CASE.



105,435. CHARLES W. BLAKESLEE. TRACE-FASTENING.



105,436. GUSTAVUS B. BROAD. SHAVE-HOOK.



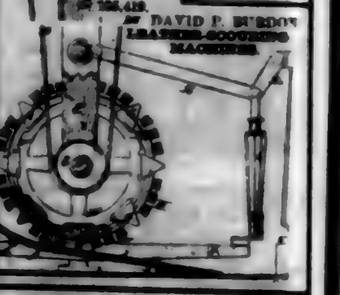
105,437. CALEB BROWN, GUTTERS FOR THRESHING AND WINNOWING.



105,438. ADDISON BUCK. HAT-COARSER.



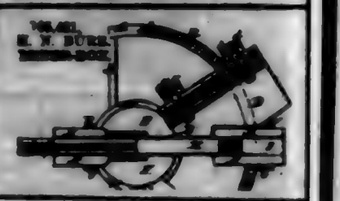
105,439. DAVID P. BURDON. LEATHER-SCOURING MACHINE.



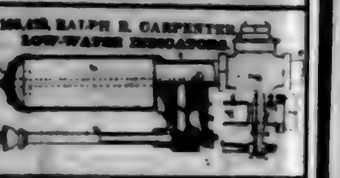
105,440. WILLIAM HENRY BURGHARDT. WEATHER-STRIP.



105,441. E. N. BURR. TRUSS-BOLT.



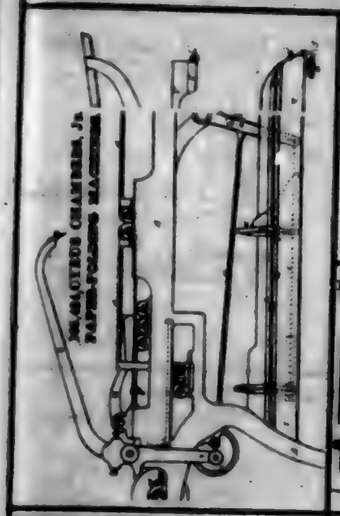
105,442. RALPH B. CARPENTER. LOOP-WAFER INDICATOR.



105,443. A. P. CASEY. METHOD OF FORMING SPOKE-JOINTS FOR CARRIAGE-BOWS.

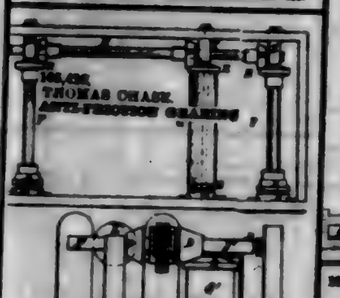


105,428. ALOYSIUS CHAMBERS, Jr. PAPER-FOLDING MACHINE.



105,429. H. A. CHASE. MEDICAL COMPOUND FOR TREATING RHEUMATISM, &c.

105,430. THOMAS CHASE. ANTI-FRICTION BEARING.



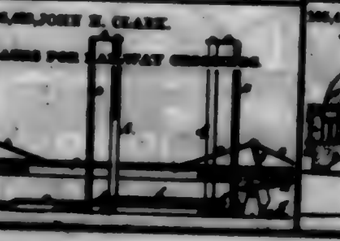
105,431. FRANCIS G. CHESMAN. SAW-SET.



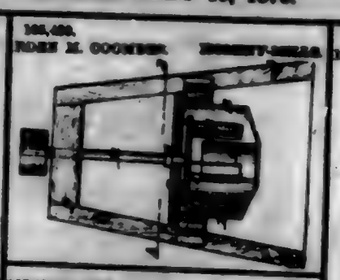
105,432. WILLIAM CILLS. PACKING TOBACCO-BOX.



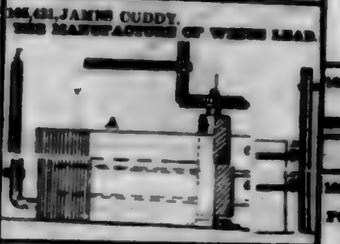
105,433. JOHN H. CLARK. CASING FOR RAILWAY CROSSINGS.



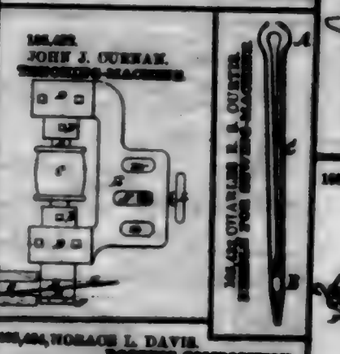
105,434. ROBT M. COOMBS. HORSE-HOES.



105,435. JAMES CUDDY. THE MANUFACTURE OF WHITE LEAD.



105,436. JOHN J. CURRAN. RIVETING-MACHINE.



105,437. CHARLES B. & J. CURTIS. HOOKS FOR HOISTING-MACHINES.

105,438. HORACE L. DAVIS. ROOFING-COMPOSITION.

105,439. CHARLES DEAVE. SHOP-CARPET SWEEPER.



105,440. DAVID DE HAVEN. SMOKING APPARATUS.



105,441. DAVID DE HAVEN. MEANS OF VENTILATING.



105,442. DAVID DE HAVEN. ARRANGEMENT OF UPPER WORKS OF RIVER STEAMERS.



105,443. JOSEPH ENGLANDER. HORSE-COLLARS.



105,444. MOSES W. DILLINGHAM. PURSE-SEAL FASTENING.

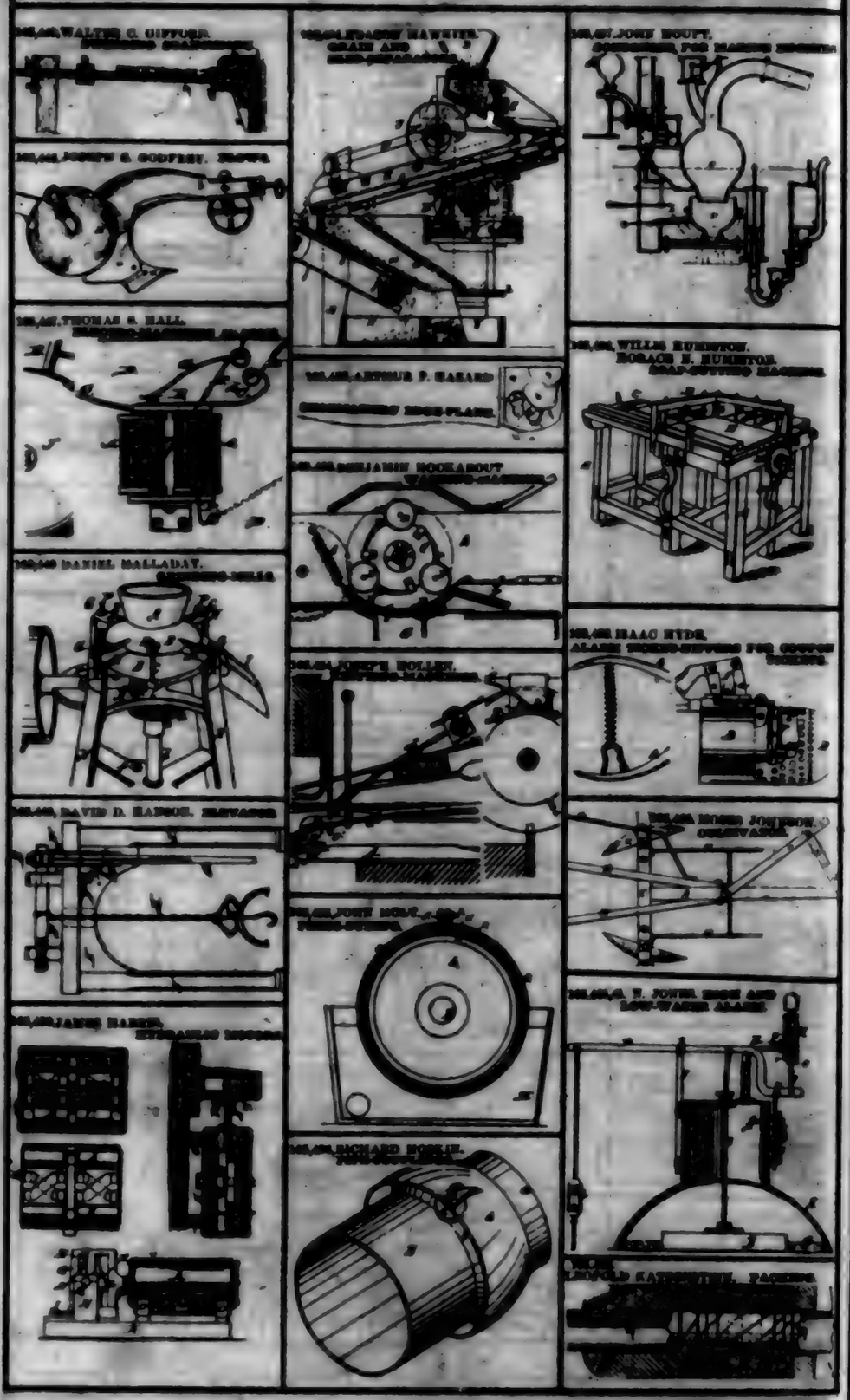
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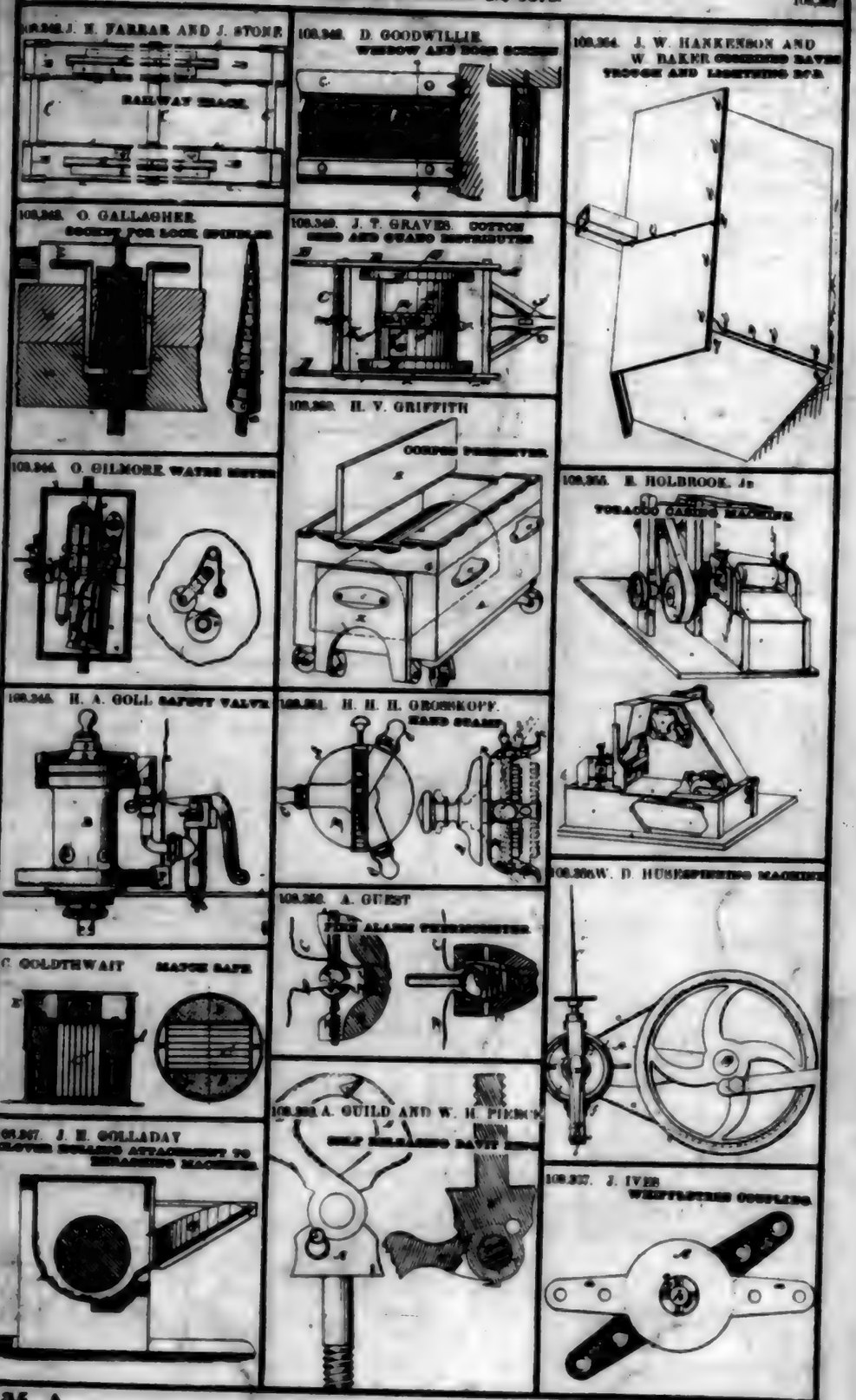
105,446. H. GODFREY EMERY, M. C. FULLER. COLLARS.

105,447. MARTIN P. FLANDERS. WASHING-MACHINE.

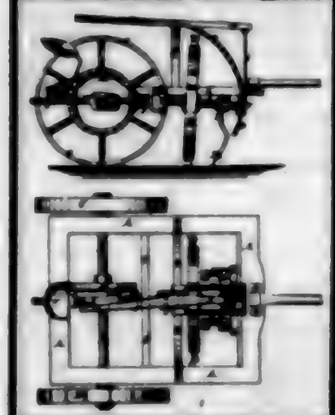


105,448. MARTIN P. FLANDERS. WASHING-MACHINE.

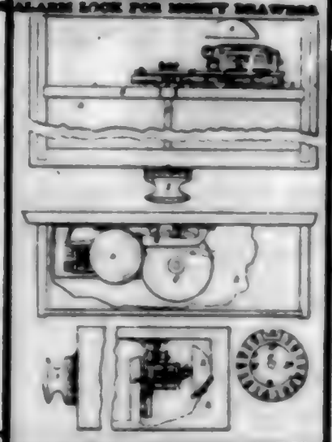

WALTER C. GIFFORD.
JOSEPH S. GODFREY.
THOMAS S. HALL.
DANIEL HALLADAY.
DAVID D. HARRIS.
BENJAMIN HOOKABOUT.
ISAAC HYDE.
JOHN HOUT.
RICHARD HOSKIN.
JOHN HOUT.
WILLIS HUMSTON.
HORACE H. HUMSTON.
ARTHUR P. HASARD.
ROBERT JOHNSON.
J. JONES.


J. H. FARRAR AND J. STONE.
RAILWAY TRACK.
D. GOODWILLIE.
WINDOW AND DOOR SCREEN.
J. W. HANKENSON AND W. BAKER.
O. GALLAGHER.
J. T. GRAVES.
O. GILMORE.
H. V. GRIFFITH.
H. A. GOLL.
H. H. H. GROSSKOPF.
A. GUEST.
C. GOLDTHWAIT.
A. GUILD AND W. H. PIERCE.
J. H. GOLLADAY.
R. HOLBROOK, Jr.
W. D. HUBBERSTEEN.
J. IVES.

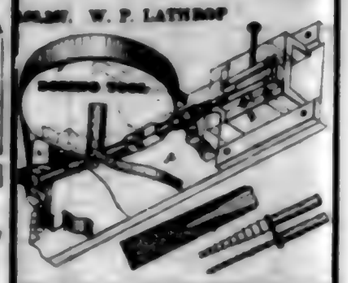
108,358. S. A. JEFFERSON. SELF-ADJUSTING ROTARY COTTON CHOPPER.



108,359. C. KIMBALL. ALARM LOCK FOR MONEY DRAWERS.



108,367. W. P. LATHROP.



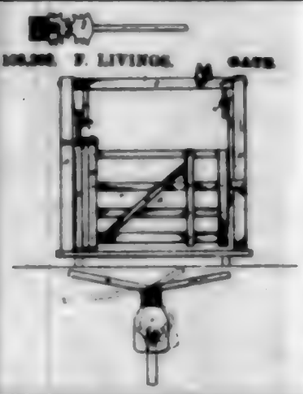
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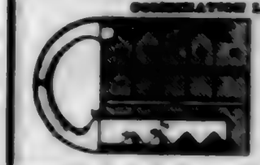
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108,368. F. LIVINGS. GATE.

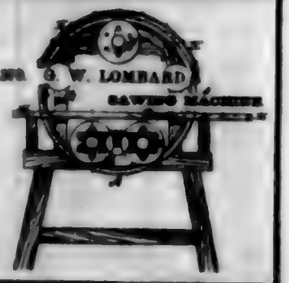


108,361. F. B. KALBFLEISCH. COMBINATION LOCK.



108,369. J. M. LOWENSTEIN. FERTILIZING COMPOUND.

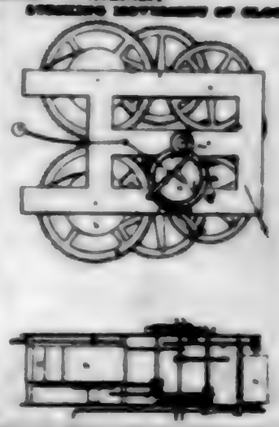
108,370. S. W. LOMBARD. SAWING MACHINE.



108,361. E. H. KENT. GUARD BOSS FOR LATCHES.



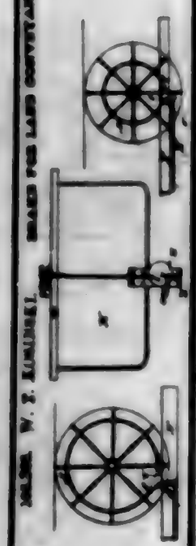
108,362. F. KIENAST. STRIKING MECHANISM OF CLOCKS.



108,363. A. KLEIST.

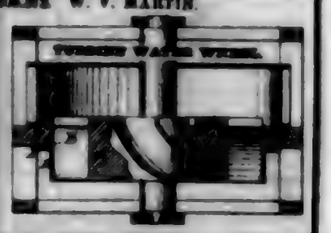


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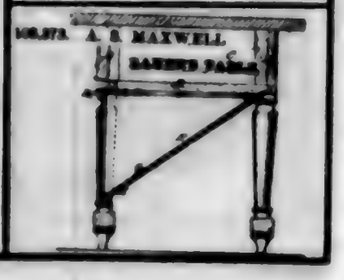


108,371. J. D. LOVE. MEDICAL COMPOUNDS OR LINIMENT.

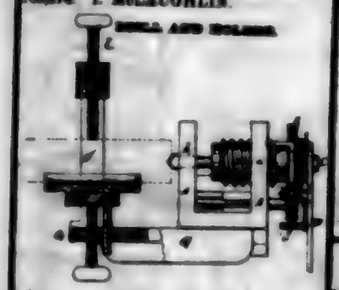
108,372. W. V. MARTIN. TURBINE WATER WHEEL.



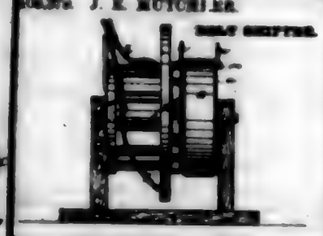
108,373. A. S. MAXWELL. BARBED FENCE.



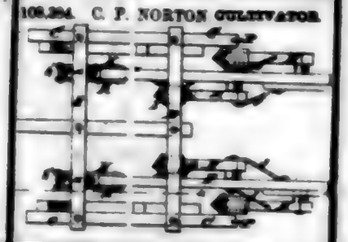
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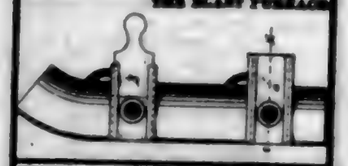
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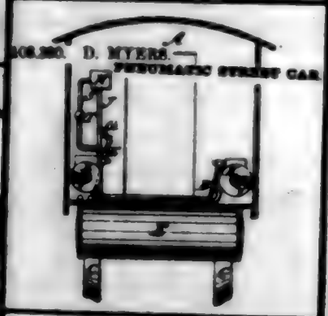
108,394. C. P. NORTON. CULTIVATOR.



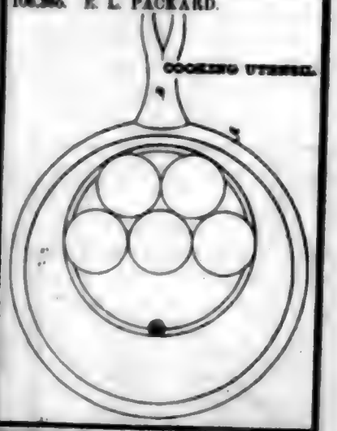
108,376. J. W. MIDDLETON. PREVENTING CASTINGS REJECT FROM THE BLAST FURNACE.



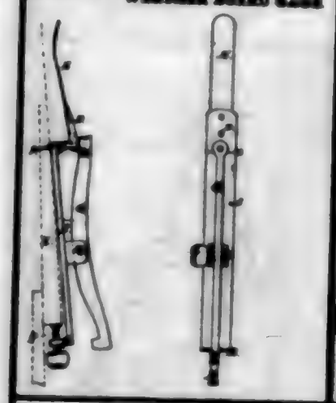
108,360. D. MYERS. PNEUMATIC STREET CAR.



108,395. E. L. PACKARD. COOKING UTENSIL.



108,377. J. M. MILHOLLIN. WEATHER BOARD GAGE.



108,361. F. MYERS. BUFF FASTENING.



108,361. F. MYERS. BUFF FASTENING.



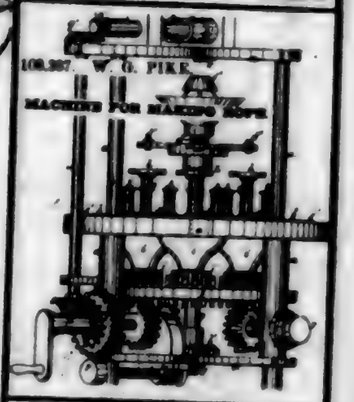
108,396.A. H. PHELPS. REFRIGERATOR.



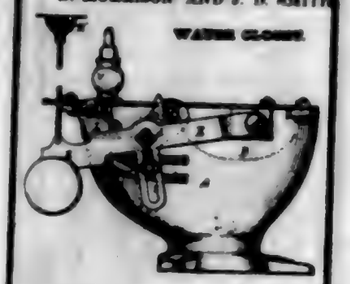
108,377.G. H. MILLER. CORRUGATING TOOL.



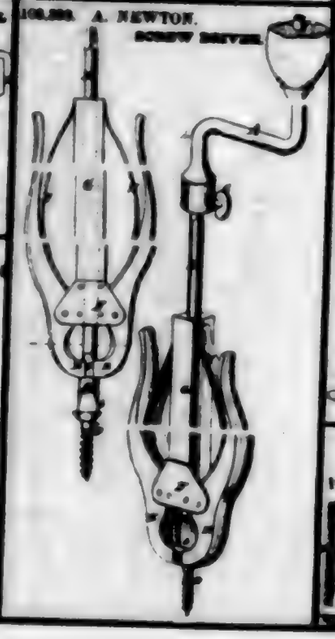
108,397. W. O. PIKE. MACHINE FOR MAKING HOOPS.



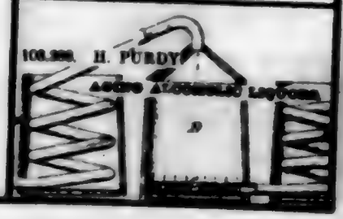
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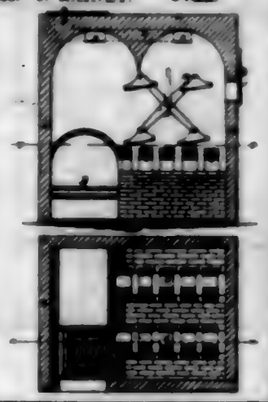
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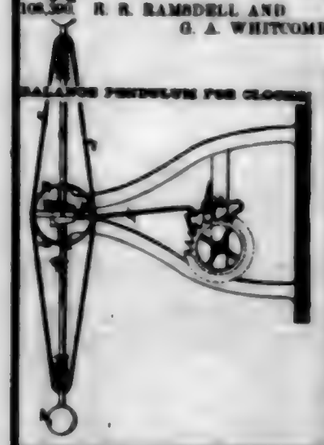
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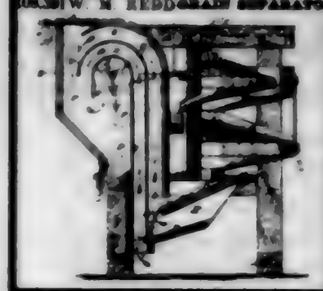
108,390 J. RAINEY. OVEN.



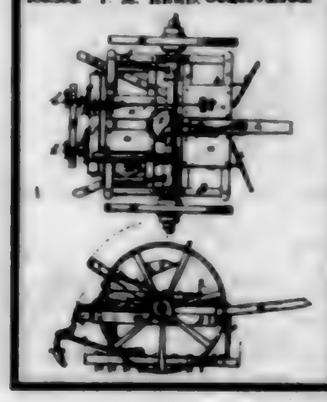
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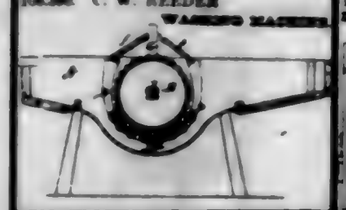
108,392 W. M. REDDGRAIN SEPARATOR.



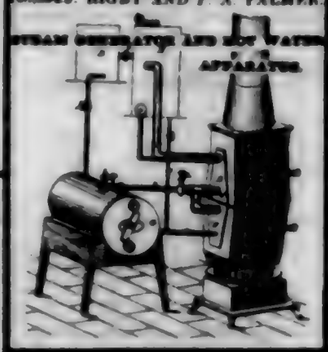
108,393 T. M. REED. CULTIVATOR.



108,394 C. W. REEDER. WASHING MACHINE.



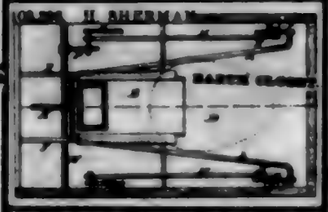
108,395 J. RIGBY AND P. A. PALMER. STEAM GENERATOR AND HOT WATER APPARATUS.



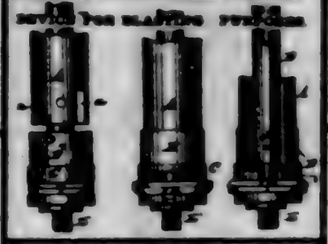
108,396 P. J. SCHOPF. APPARATUS FOR [illegible]



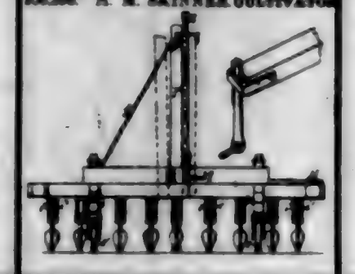
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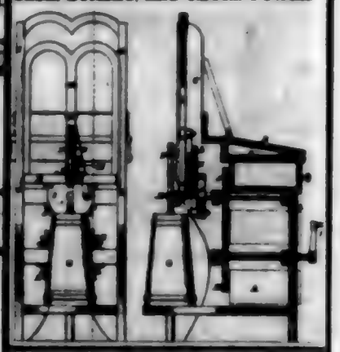
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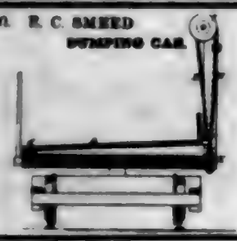
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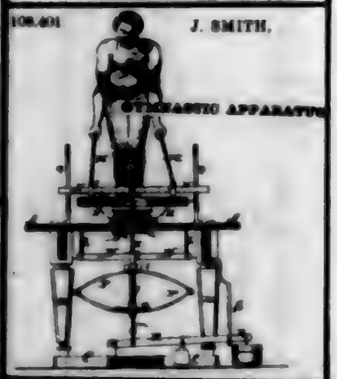
108,400 J. J. SLATER. DRAG, BURRAT, AND CRUSH POWER.



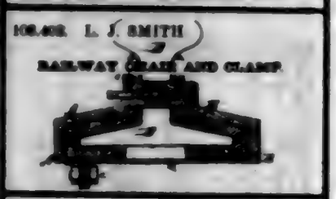
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108,401 J. SMITH. GYMNASTIC APPARATUS.



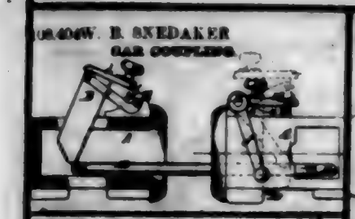
108,402 L. J. SMITH. RAILWAY CHAIR AND CLAMP.



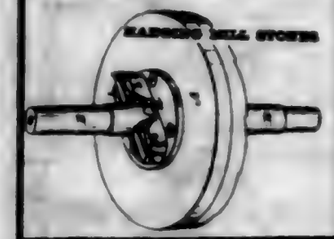
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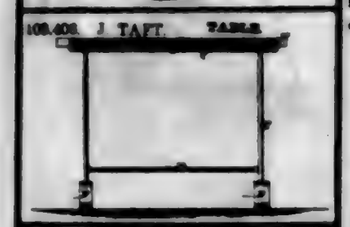
108,406 W. B. SNEDAKER. CAR COUPLING.



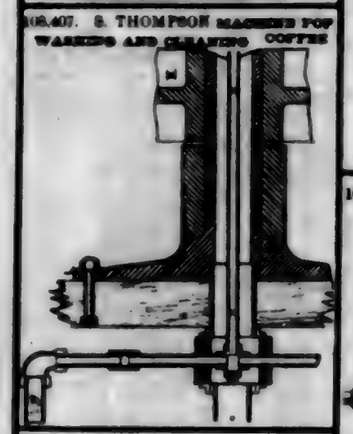
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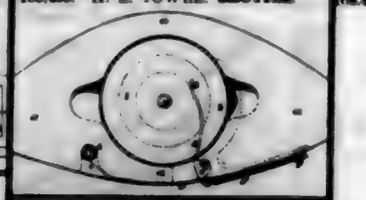
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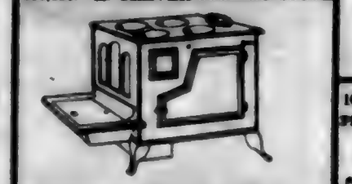
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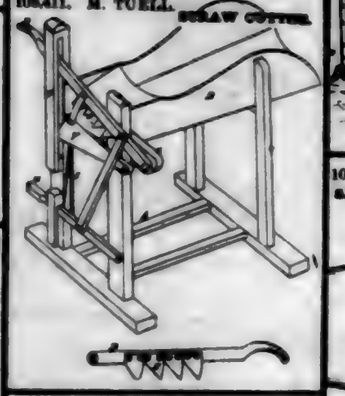
108,409 H. E. TOWLE. SHUTTLE.



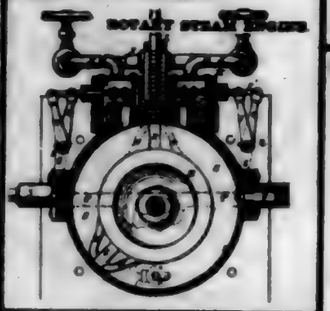
108,410 A. TRAVER. COOKING STOVE.



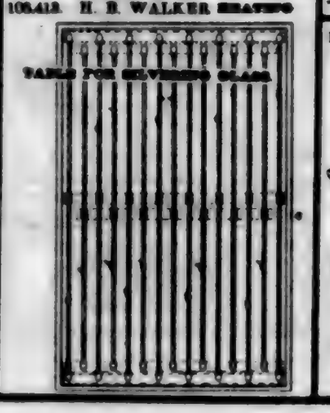
108,411 M. TUELL. STRAW CUTTER.



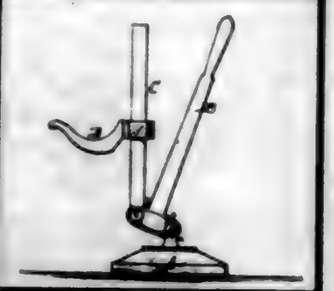
108,412 W. P. VICKERY. ROTARY STEAM ENGINE.



108,413 H. B. WALKER. HEATING [illegible]



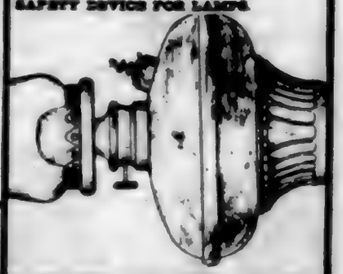
108,414 L. D. WARREN. LIFTING JACK.



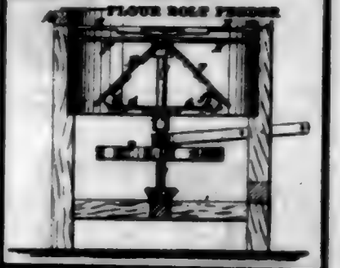
108,415 R. H. WASHINGTON. PLANTER AND FERTILIZER COTTON DISTRIBUTER.



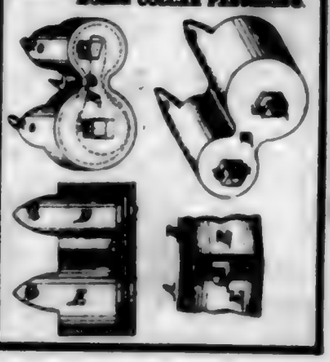
108,416 H. W. M. WASHINGTON. SAFETY DEVICE FOR LAMPS.



108,417 E. J. WEAVER. FLOUR BOLT FEEDER.



108,418 E. L. WELBOURN. SPOKE COLLAR FASTENING.



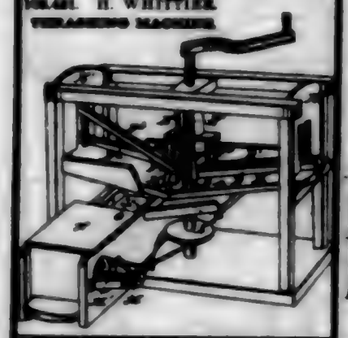
108,419. J. W. WEST. WAGON.



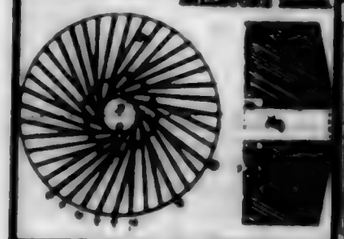
108,420. J. L. WHITING. [illegible]



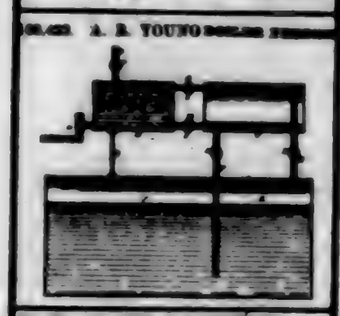
108,421. H. WHITTIER. THRASHING MACHINE.



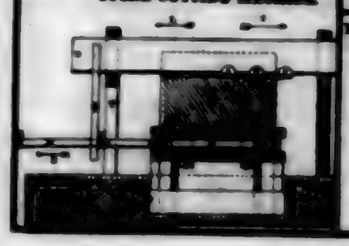
108,422. J. P. H. WOHLENBERG. [illegible]



108,423. A. B. YOUNG. [illegible]



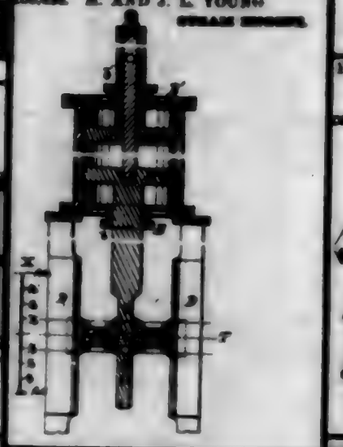
108,424. H. AND J. L. YOUNG. SPOKE CUTTING MACHINE.



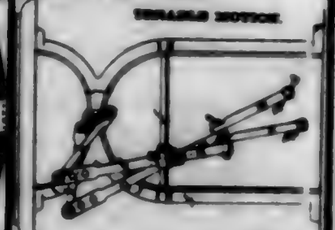
108,425. H. AND J. L. YOUNG. [illegible]



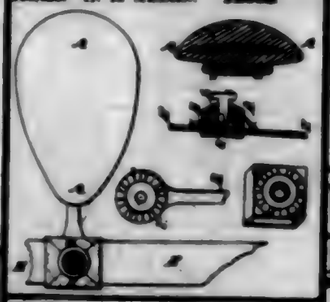
108,426. H. AND J. L. YOUNG. STEAM ENGINE.



108,427. A. M. ALLEN. TREADLE MOTION.



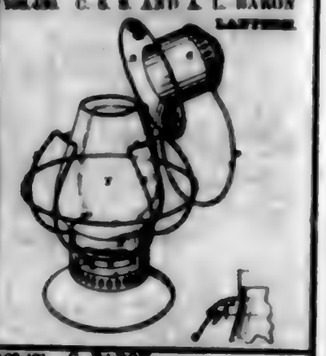
108,428. H. R. ALLEN. [illegible]



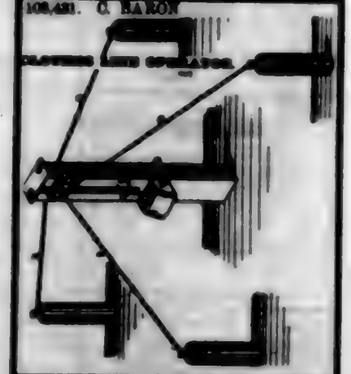
108,429. J. ARMSTRONG. METHOD OF [illegible] OF RAILWAY CROSSINGS.



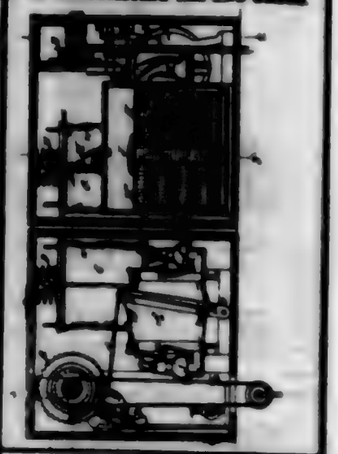
108,430. C. & S. AND A. L. BARON. LANTERN.



108,431. C. BARON. [illegible]

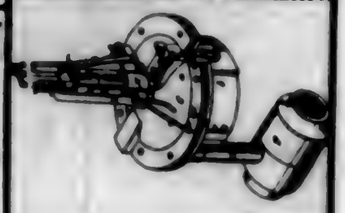


108,432. A. BARTHOLF. APPARATUS FOR CARBURETTING AIR AND GASES.

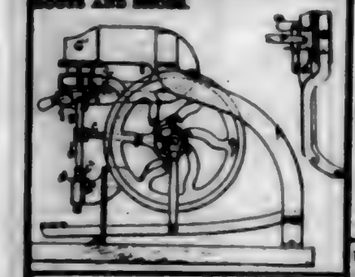


108,433. E. G. BARTLETT. TREATING THE ORES OF LEAD AND ZINC FOR THE MANUFACTURE OF PIGMENTS &c.

108,434. F. BEAN. APPARATUS FOR LIGHTING AND [illegible] GAS BY ELECTRICITY.



108,435. J. H. BEAN. MACHINE FOR CUTTING SOLES, &c. FOR BOOTS AND SHOES.



108,436. E. R. BEARDSLEY. TURBINE WATER WHEEL.

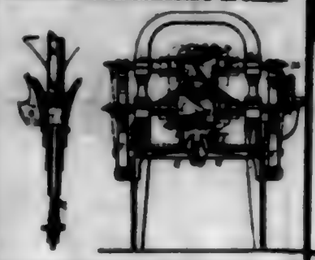


108,437. W. BERRI, Jr. MANUFACTURE OF OIL CLOTH.

108,438. G. W. BISHOP. SASH HOLDER.



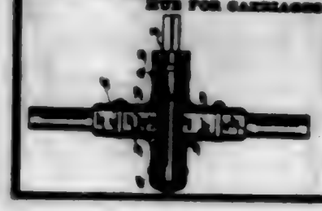
108,439. R. H. AND H. S. BOYNTON. MACHINE FOR BENDING SPOKES.



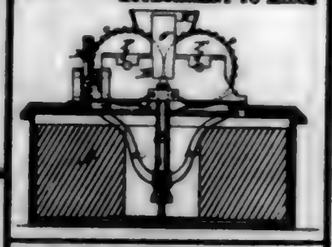
108,440. J. L. BROWN. BLIND FOR HARVING [illegible]



108,441. N. BRYAN. NUT FOR GARDNERS.



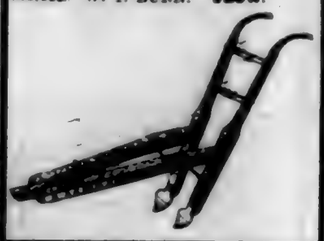
108,442. N. BRYAN. ATTACHMENT TO MILLS.



108,443. T. BULLIVANT. WINDOW.



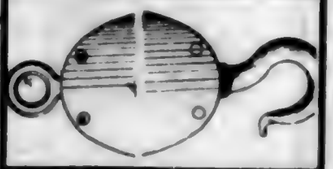
108,444. W. T. BUNN. PLOW.



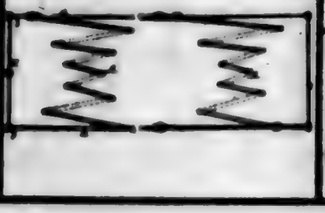
108,445. M. S. BURNS. COTTON SEED PLANTER.



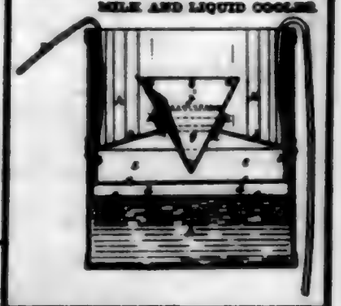
108,446. J. A. BURROUGHS. BLOCK.



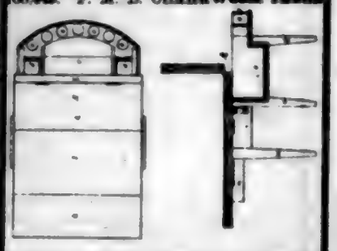
108,447. P. L. BUSHNELL. SEED BOTTOM.



108,448. A. P. BUSSEY. MILK AND LIQUID COOLER.



108,449. F. M. B. CLARK. WORK TABLE.



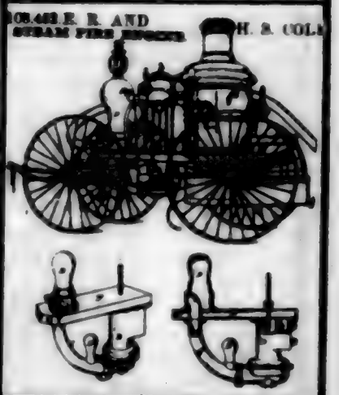
108,450. M. B. CLARK. COTTON BALE TIE.



108,451. A. P. CLOUDMAN AND G. W. COFFIN. COMPOUND STOVE.



108,452. E. B. AND H. S. COLE. STEAM FIRE ENGINE.

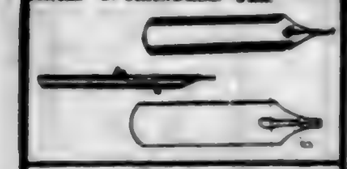


108,453. T. L. COTTEN. MEDICAL COMPOUND FOR HOG CHOLERA.

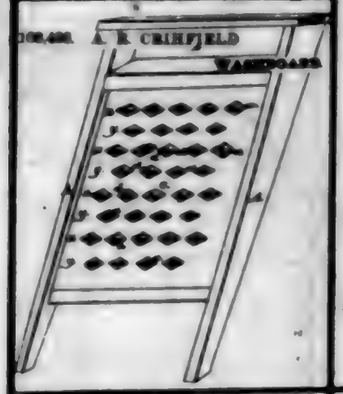
108,454. J. C. CUNNINGHAM. BOAT DETACHING APPARATUS.



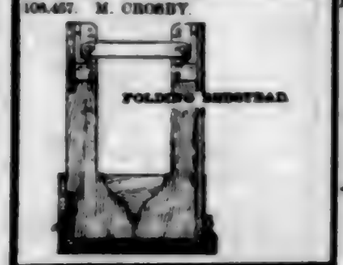
108,455. G. CRANDELL. PEN.



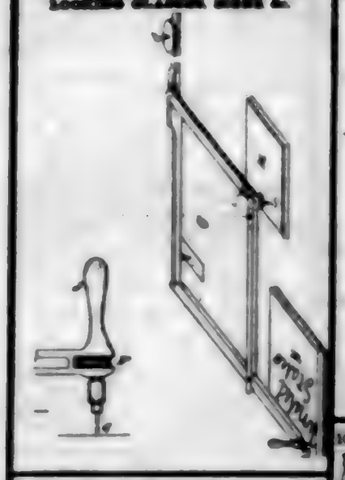
108,456. A. R. CRISFIELD. WASHBOARD.



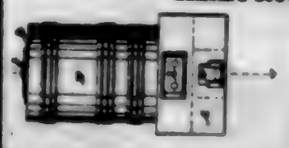
108,457. M. CROSBY.



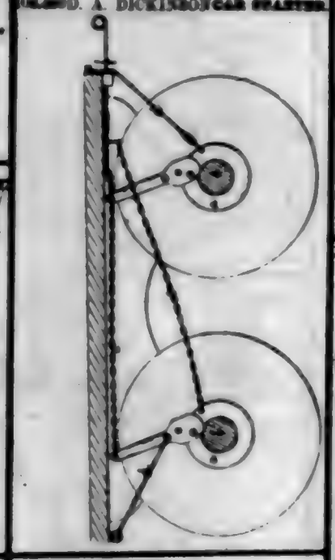
108,458. W. M. DAVIS. MACHINE FOR ORNAMENTING AND LETTERING LOCKING CLASSES, GUNS &c.



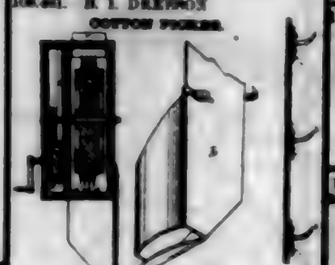
108,459. I. DE HAVEN. CHARMS SOCKS.



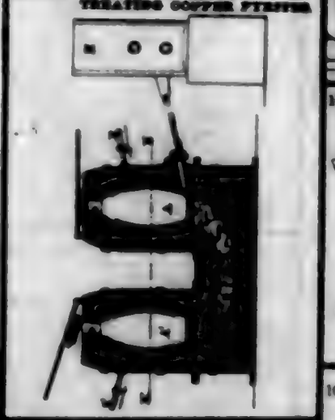
108,460. D. A. DICKINSON. CAR STARTER.



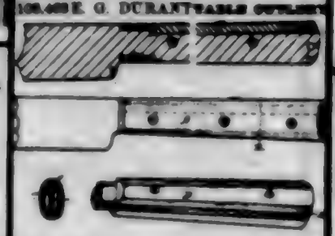
108,461. B. I. DREWSON. COTTON PICKER.



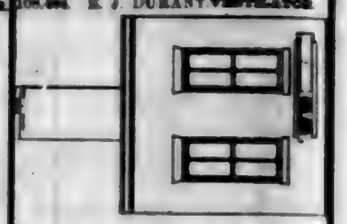
108,462. C. M. T. DU MOTAY. TREATING COPPER PYRITES.



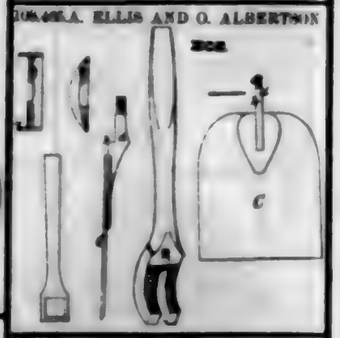
108,463. E. G. DURANT. TABLE OUTLINE.



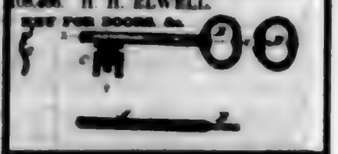
108,464. E. J. DURANT. VENTILATOR.



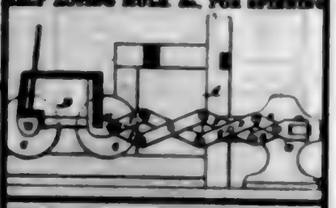
108,465. A. ELLIS AND O. ALBERTSON. HOE.



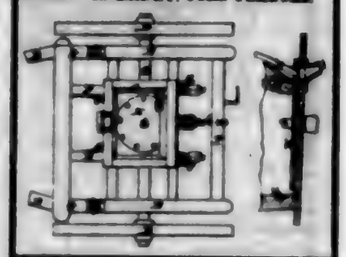
108,466. H. H. ELWELL. KEY FOR DOORS &c.



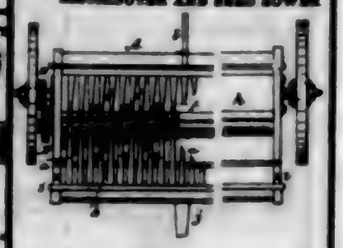
108,467. J. ENTWISTLE. SELF ACTING MULE &c. FOR SPINNING.



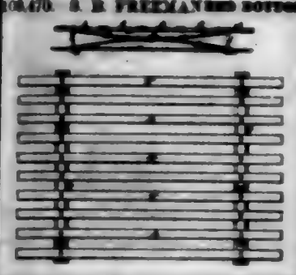
108,468. R. ERDLY. CORN PLANTER.



108,469. S. L. FRASER. MARKER, DISTRIBUTOR AND SEED SOWER.



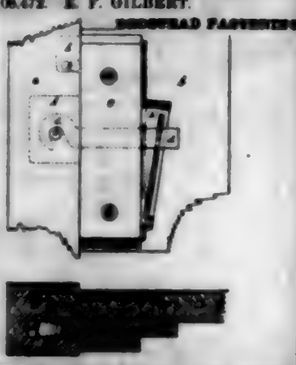
108,470. S. B. FREEMAN. HED BOTTOMS.



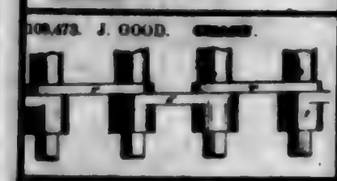
108,471. J. GERBER. CULTIVATOR.



108,472. E. F. GILBERT. BROOM HEAD FASTENING.



108,473. J. GOOD. [illegible].

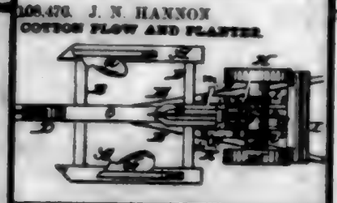


108,474. F. GRIFFIN AND R. TARR, Jr. COPPER PAINT FOR SHIPS BOTTOMS.

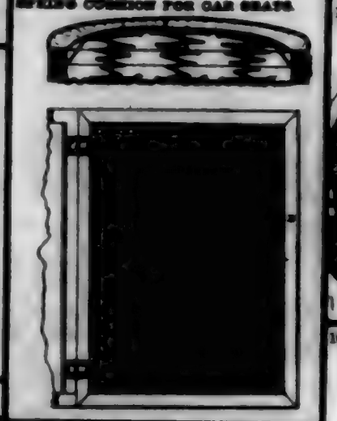
108,475. J. HAMILTON AND G. F. MORSE. CHANGEABLE GAGE CAR WHEEL.



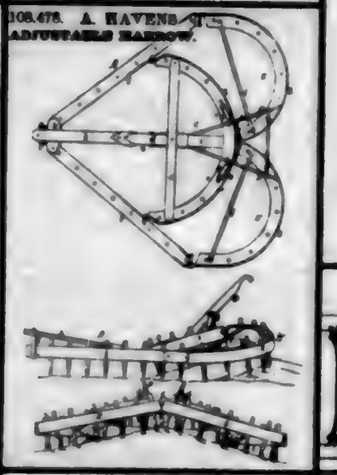
108,476. J. N. HANNON. COTTON FLOW AND PLANTER.



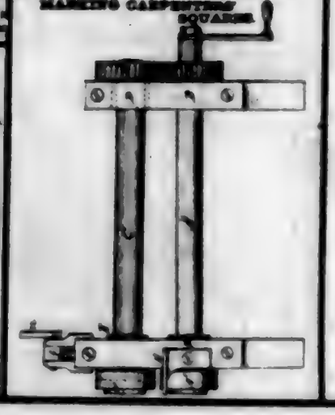
108,477. W. B. HATCH. SPRING CUSHION FOR CAR SEATS.



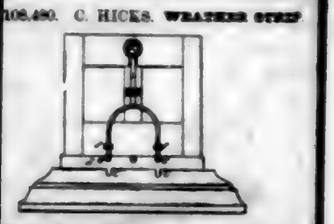
108,478. A. HAVENS. ADJUSTABLE HARROW.



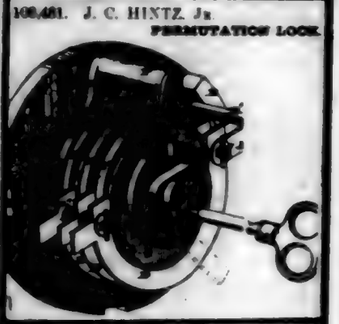
108,479. A. M. HEALY AND C. H. RAYMOND. MACHINE FOR MARKING CARPENTERS' SQUARES.



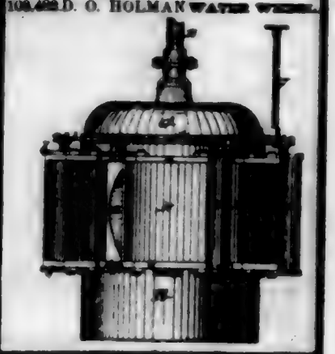
108,480. C. HICKS. WEATHER STRIP.



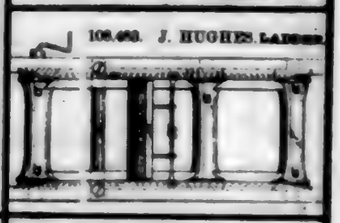
108,481. J. C. HINTZ, Jr. PERMUTATION LOCK.



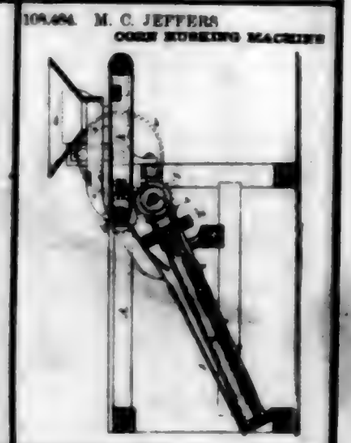
108,482. D. O. HOLMAN. WATER WHEEL.



108,483. J. HUGHES. LADDER.



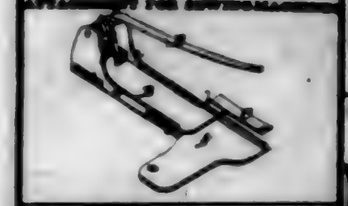
108,484. M. C. JEFFERS. CORN HUSKING MACHINE.



108,486 J. H. JOHNSON SUBSOIL PLOW

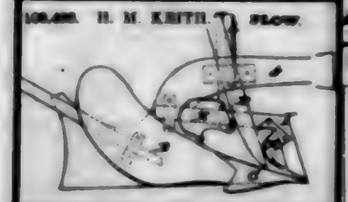


108,487 A. JOHNSTON RUFFLING ATTACHMENT FOR SEWING MACHINES

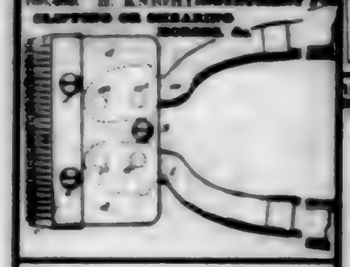


108,488 H. L. KERN. MANUFACTURE OF PAPER STOCK

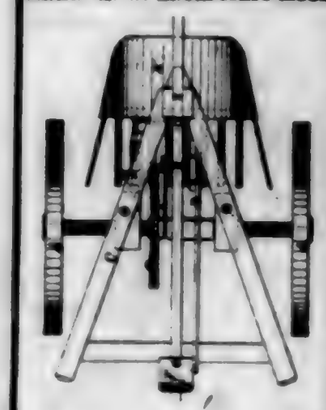
108,489 H. M. KEITH. PLOW.



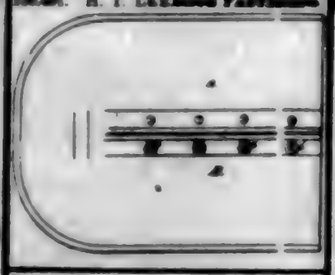
108,490 H. KNIGHTHORSE [illegible]



108,491 M. W. KNOEPPARD [illegible]



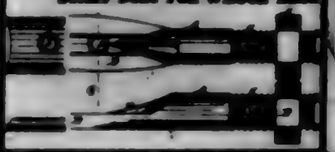
108,492 H. T. LEEMING FASTENING



108,493 A. M. LESLIE RUFFLER FOR SEWING MACHINES



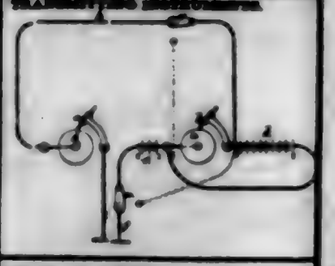
108,494 W. J. LEWIS AND H. W. OLIVER, Jr. SUBSOIL PLOW FOR WAGON BEDS



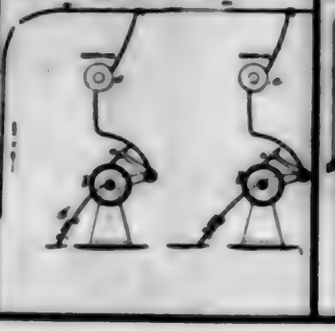
108,495 L. LILLIE IRON SAFE



108,496 G. LITTLE. ARRANGEMENT OF ELECTRICAL CIRCUIT FOR AUTOMATIC TRANSMITTING INSTRUMENTS



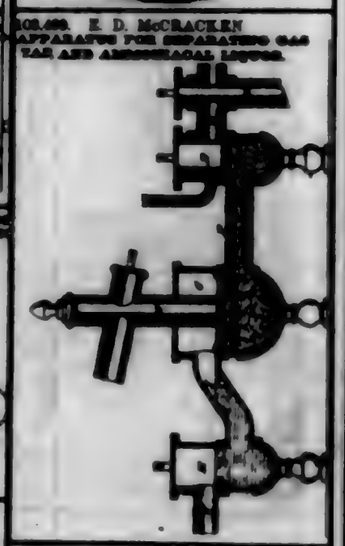
108,497 G. LITTLE. CHEMICAL TELEGRAPH



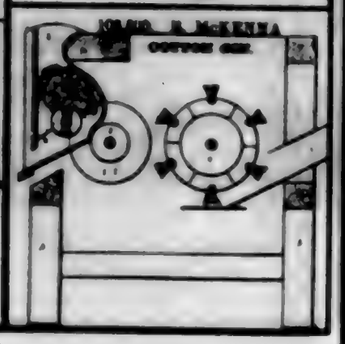
108,498 H. S. MALTBY. IRON AND SAFE SAFE



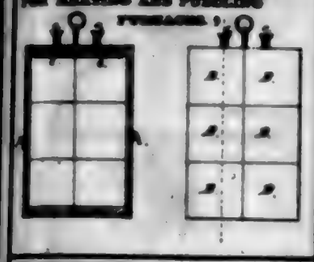
108,499 E. D. McCRACKEN. APPARATUS FOR SEPARATING GAS TAR AND AMMONIACAL LIQUOR



108,500 [illegible] CUTTING GEAR



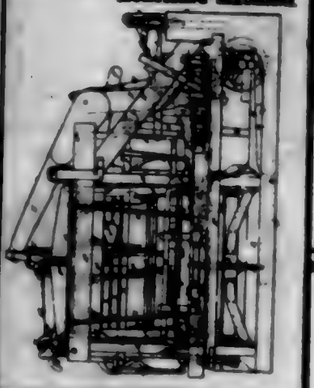
108,501 S. McLAUGHLIN SLIDE DOOR FOR HEATING AND PUDDLING FURNACES



108,502 T. MEIKLE DIE FOR SWAGING WHEELS

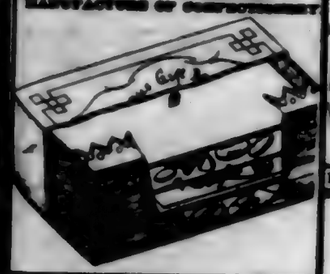


108,503 L. G. MERRILL. SCOURING MACHINE.

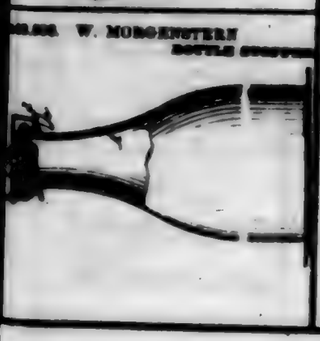


108,504 E. MILLER. STEERING

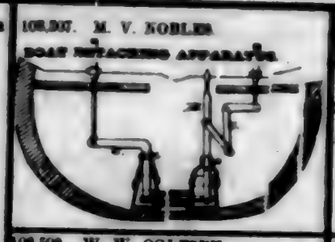
108,505 O. AND C. B. MILLER. MANUFACTURE OF CARTRIDGES



108,506 W. MORGENSTERN. BOTTLE STOPPER

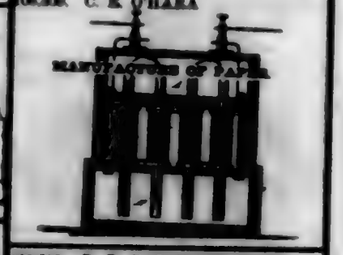


108,507 M. V. NOBLES. BOAT FEATHERING APPARATUS

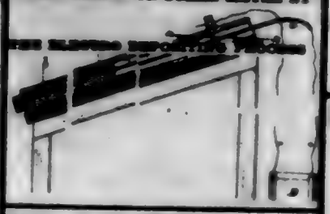


108,508 W. W. OGLESBY. MEDICAL COMPOUND

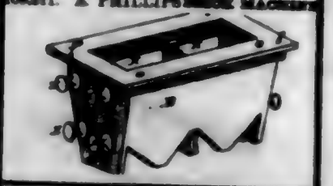
108,509 C. E. O'HARA. MANUFACTURE OF PAPER



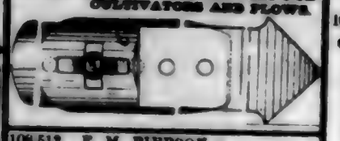
108,510 D. D. PARMELEE. COATING THE INTERIOR OF PIPES, TUBES &c. WITH SILVER OR OTHER METAL BY [illegible]



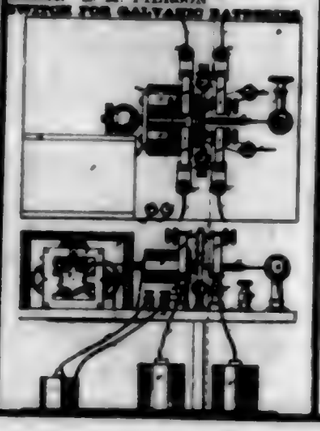
108,511 S. PHILLIPS. BRICK MACHINE



J. PIERPONT AND S. S. TUTTLE. 108,512 FASTENING FOR SHOVELS FOR CULTIVATORS AND PLOWS



108,513 E. M. PIERSON. [illegible] FOR GALVANIC BATTERIES

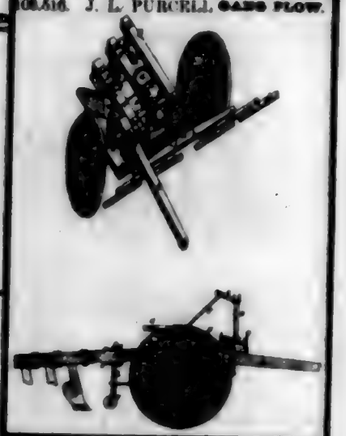


108,514 J. POEY. MANUFACTURE OF SUGAR

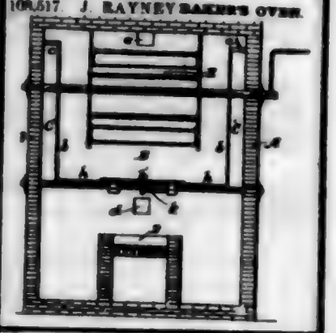
108,515 J. L. POST. BACK LASH FOR MILL GEARING



108,516 J. L. PURCELL. CANE FLOW.



108,517 J. RAYNEY. BAKER'S OVEN.



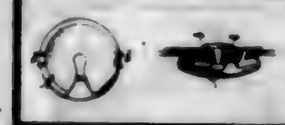
108,518 M. REED. COTTON AND CORN CULTIVATOR



108,519 P. H. AND F. M. ROOTS. CONSTRUCTION, JOINTLY OF PIPE BEDS AND TUYERES

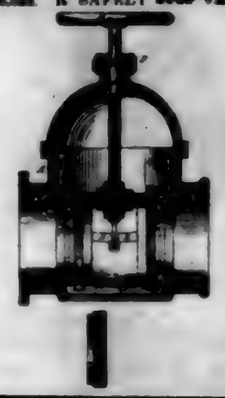


108,530. W. SACKERMANN. BROOCH FASTENING.



108,531. C. SACRE & S. PERKINS, AND W. SMELLIE. MANUFACTURE OF WROUGHT IRON.

108,532. R. SAFELY. STOP VALVE.

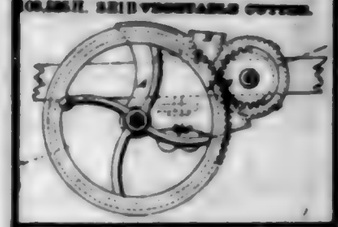


108,533. W. W. SANBORN. DYEING WOOLEN GOODS.

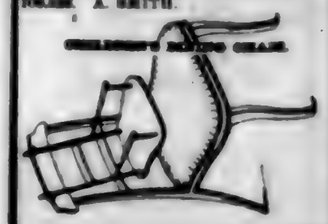
108,534. W. B. SCAIFE.



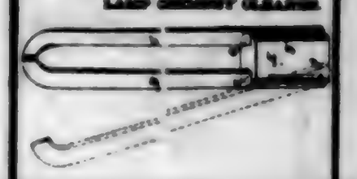
108,535. H. REID. VEGETABLE CUTTER.



108,536. A. SMITH.



108,537. A. D. SMITH. LAMP CHIMNEY CLEANER.



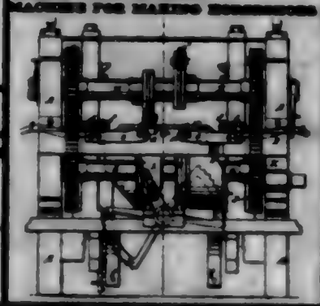
108,538. C. E. SMITH. VAPOR FORNER.



108,539. I. W. SNYDER. WATER WHEEL.



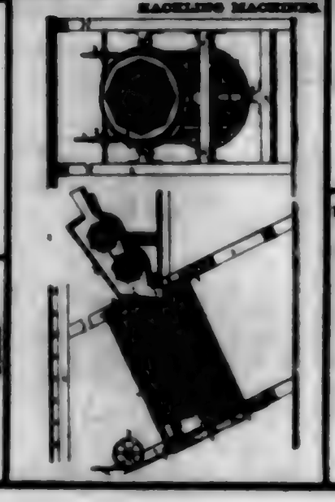
108,540. J. H. SNYDER. MACHINE FOR MAKING HORSESHOES.



108,541. D. E. AND F. C. SOMES.



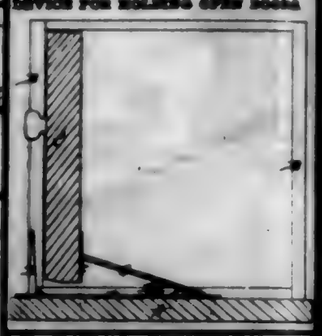
108,542. G. E. STACY. SEPARATING ATTACHMENT FOR HUSKING AND SHUCKING MACHINES.



108,543. J. STEGER. PENDULUM PULLEY.



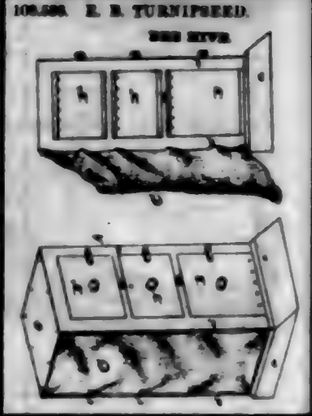
108,544. J. B. SWEETLAND. DEVICE FOR HOLDING OPEN DOORS.



108,545. J. F. THOMAS. CHUCK.



108,546. E. B. TURNIPSEED. BEE HIVE.



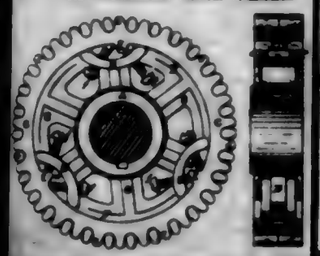
108,547. N. VANDENBURGH. POTATO DIGGER.



108,548. S. WALSH. SINK.

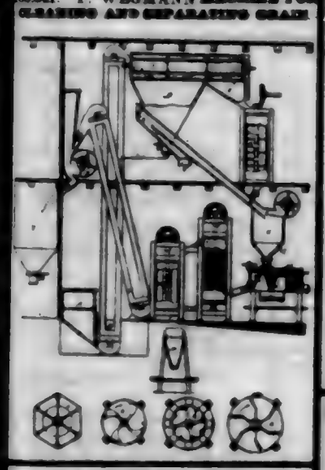


108,549. W. H. WARD. ADJUSTABLE GEAR WHEEL.



108,550. A. WARFIELD. MANUFACTURE OF SOAP.

108,551. F. WEDMANN. MACHINE FOR CLEANING AND SEPARATING GRAIN.

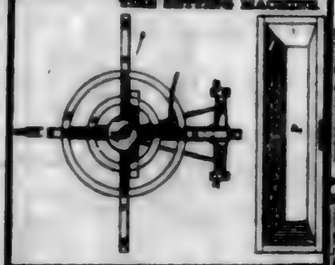


108,552. C. S. WELLS. MANUFACTURE OF DOUBLE CARTRIDGE CASES, &c.

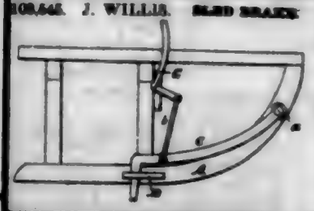
108,553. D. E. WILLIAMS. CARTRIDGE.



108,554. J. H. WILLIAMS. TIRE SETTING MACHINE.



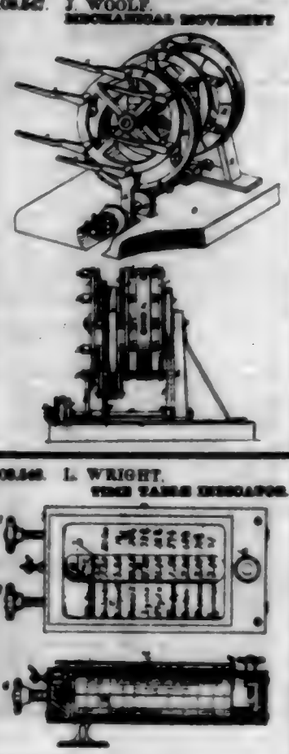
108,555. J. WILLIS. SLED BRAKE.



108,556. A. WISSLER. SEPARATOR OF THRASHING MACHINES.

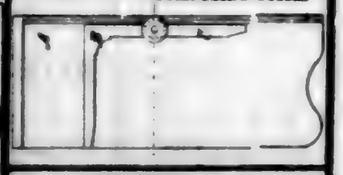


108,557. J. WOOLF. MECHANICAL MOVEMENT.

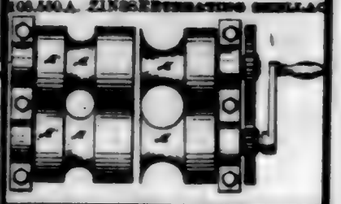


108,558. L. WRIGHT. TIME TABLE INDICATOR.

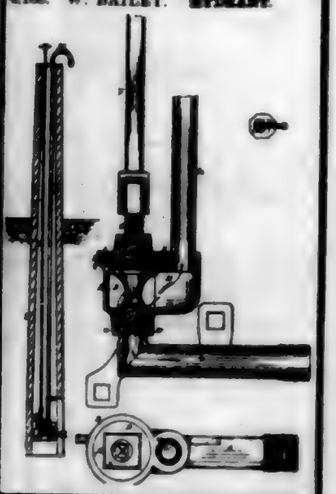
108,559. B. C. YOUNG. COMPOSING STICK.



108,560. A. ZINSSERR. RECTIFYING SHELLAC.



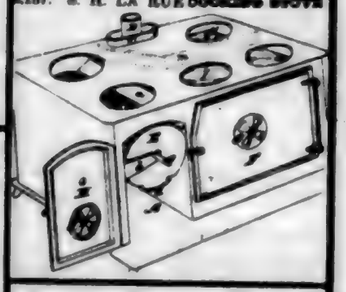
4,135. W. BAILEY. HYDRANT.



4,136. W. A. IVES. AUGER.



4,137. S. H. LA RUE. COOKING STOVE.



4,138. J. L. SAMUELS. PRESERVING AND HARDENING WOOD.

4,139. D. S. WOOD. COMB FOR PANTS.

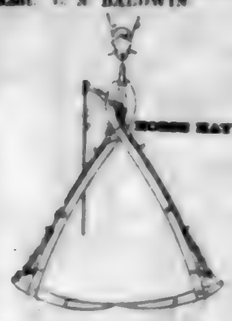
ILLUSTRATIONS OF PATENTS

ISSUED FROM

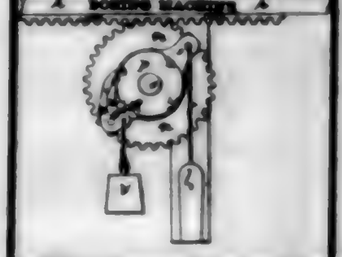
THE UNITED STATES PATENT OFFICE

OCTOBER 25, 1870.

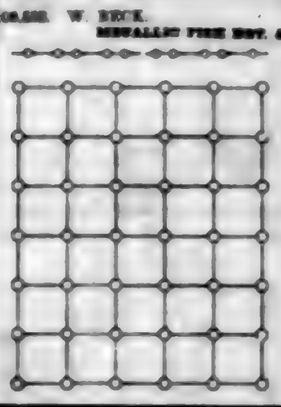
108,561. C. N. BALDWIN
HORSE HAY FORK.



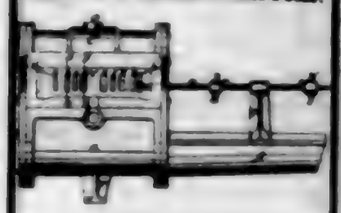
108,562. C. N. BALDWIN
BOXING MACHINE.



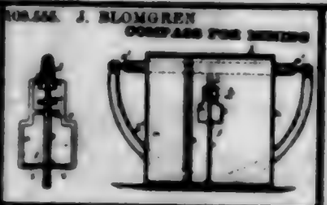
108,563. W. BECK.
METALLIC FIRE BOX, &c.



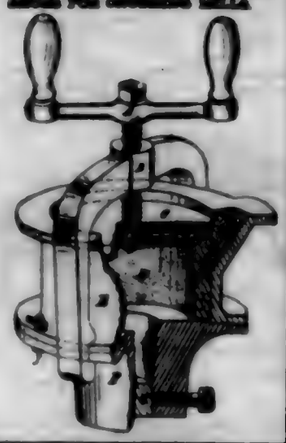
108,564. G. F. BLAKE. STEAM PUMP.



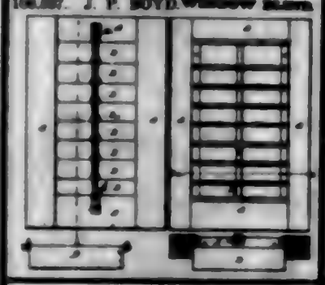
108,565. J. BLOMGREN
COMPASS FOR MINING



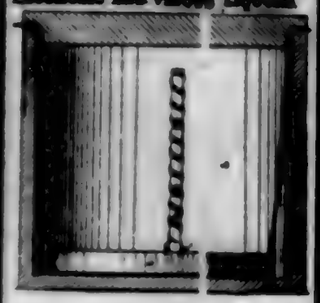
108,566. H. BOLTHOFF.
FLASK FOR CASTING STAMP HEADS FOR CRUSHING MILLS.



108,567. J. P. BOYD. WINDOW BLIND.



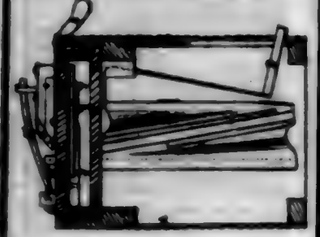
108,568. L. BRADLEY. APPARATUS FOR DISSOLVING AND DISTRIBUTING ALBUMOID AND VEGETO LIQUORS.



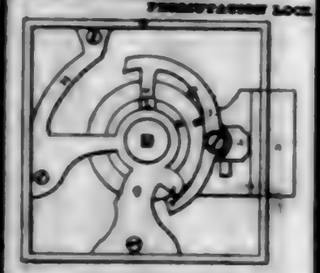
108,569. A. BRATNOBER.
HORSE COLLAR FASTENING.



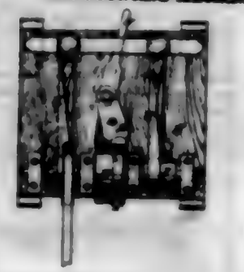
108,570. T. BRETT. SHLOSSOR.



108,571. R. W. BRETTELL.
PRESERVATIVE LOCK.



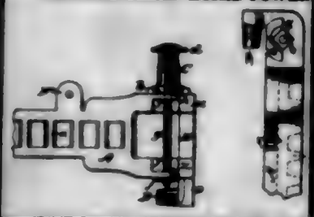
108,572. J. B. BROWN
HAY POSITIONING MACHINE.



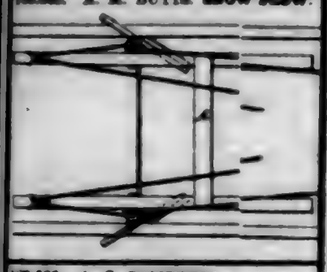
108,573. A. Y. BUCHANAN
CIR. GLOBE FRETTING MACHINERY.



108,574. G. E. BURT. LINK FOR REVERSE GRAIN HORSE POWER.



108,575. A. M. BUTTS. SNOW PLOW.



108,576. A. C. CAMPBELL.
ASPHALT PAVEMENT.

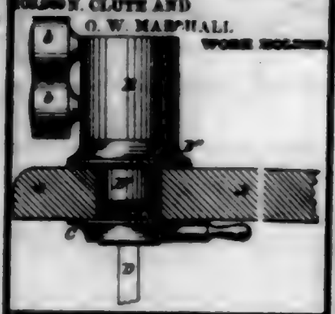
108,577. W. H. CARROLL.



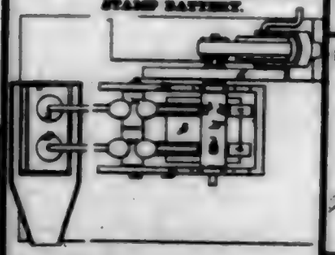
108,578. W. F. CLASS AND L. W. SAPP
PADDY.



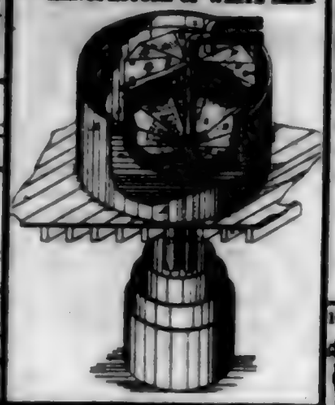
108,579. N. CLUTE AND O. W. MARSHALL.
WORM HOLDER.



108,580. O. D. CROCKER.
STAMP BATTERY.



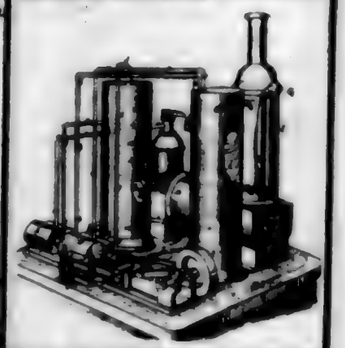
108,581. C. W. DWELLE.
MANUFACTURE OF WHITE LEAD.



108,582. W. DYATT.
DEVICE FOR OPERATING SETTLEMENTS.



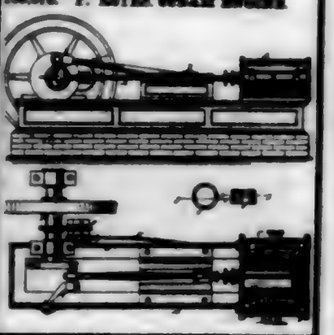
108,583. J. A. H. ELLIS.
CONDENSING STEAM AND GAS ENGINE.



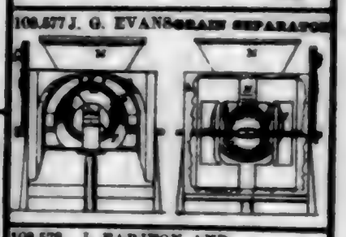
108,584. J. EMMERT. CLOTHES DRIER.



108,585. P. ESTEP. STEAM ENGINE.



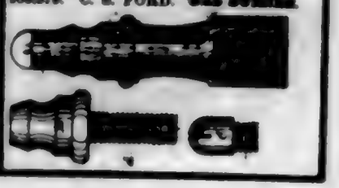
108,586. J. G. EVANS. GRAIN SEPARATOR.



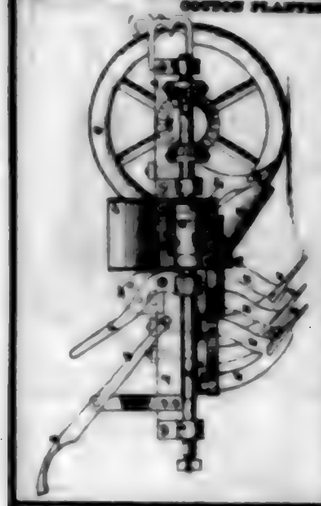
108,587. L. FARJEON AND W. H. HORTON. JEWELRY PIN.



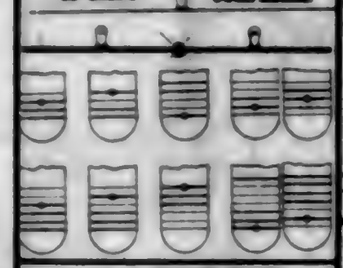
108,588. C. S. FORD. GAS BURNER.



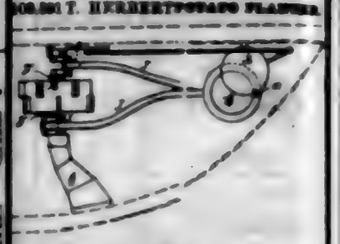
A. C. W. FOSTER
COTTON PLANTER.



J. W. GIRDLESTONE
PREVENTING THE DEVIATION OF SHIPS' COMPASSES.



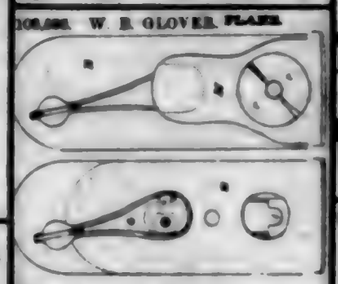
T. HERBERT-PEARS PLANTER.



B. GALLAGHER
SKATE FASTENING.



W. B. GLOVER PLANT.



J. M. HESS FLOWER GARDEN.



C. GATTENWOOD PAVEMENT.



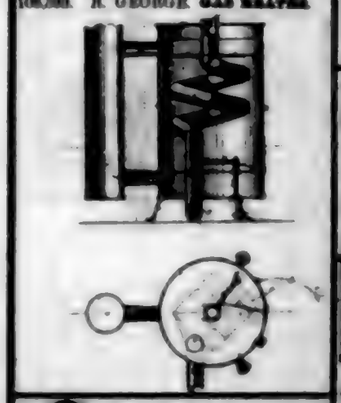
D. F. HALE GAME.



J. O. HEYWORTH AND E. R. PEBBEL WIND WHEEL.



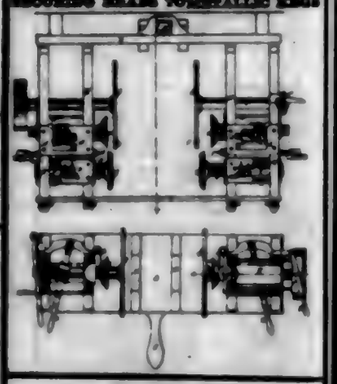
R. GEORGE GAS HEATER.



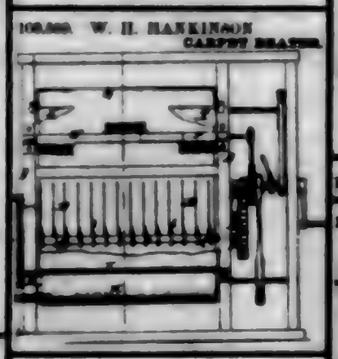
H. R. HALE
FASTENING ARTIFICIAL TEETH TO METALLIC PLATES.



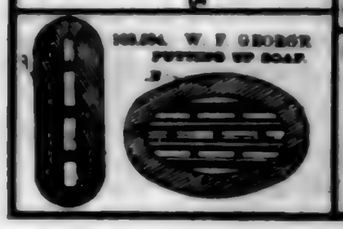
W. HILL. MACHINE FOR GROOVING BRASS TUBE METALLIC RINGS.



W. H. HANKINSON
CARPET BEATER.



W. F. GEORGE
PUTTING UP SOAP.

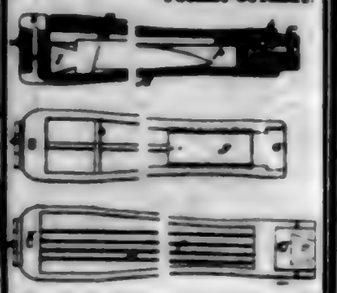


E. HAYDEN
REFRIGERATOR CAR RACK.



I. L. HOARD THREAD SPOOL.

D. R. HUNDLEY
POCKET OUTLINE.



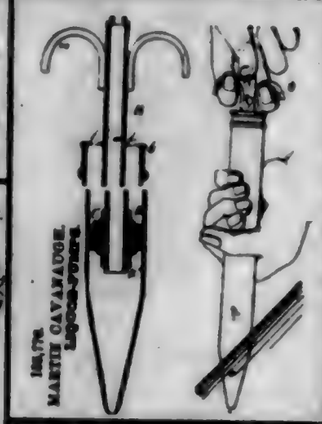
JOHN BENJAMIN
BUTTON-FASTENING.



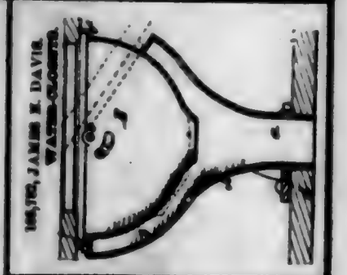
GEO. H. BRIGGS.
AUTOMATIC FAN.



MARTIN CAVANAUGH.
LOCK-JOINT.



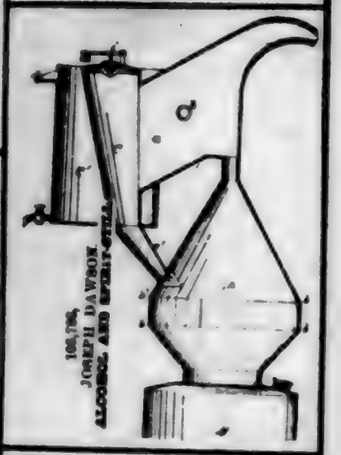
JAMES E. DAVIS.
WATER-CLOSET.



GEO. T. CHATTAWAY.
SCISSORS-SHARPENING ATTACHMENT FOR SEWING-MACHINES.



JOSEPH DAVROS.
ALLOYING AND SEPARATING METALS.



G. BROWNELL.
PLATFORM FOR STOVES.



D. M. CHUBUCK.
SPOOL OF THREAD FOR SEWING-MACHINE SHUTTLES.



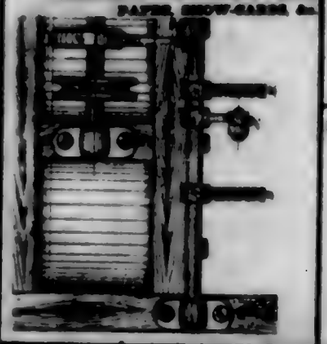
JOSEPH DE FREITAS.
CORN-HARVESTER CUTTERS.



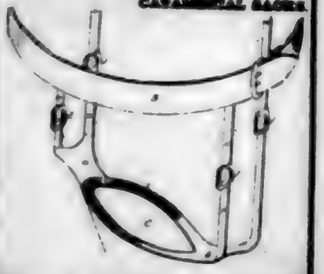
EMMA CLARK.
CULINARY VESSEL.



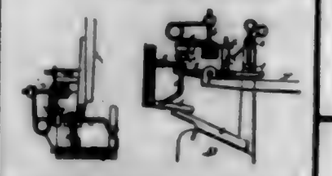
HENRY W. BULKLEY.
MACHINE FOR FLOCKING WALL-PAPER, SHOW-CARDS &c.



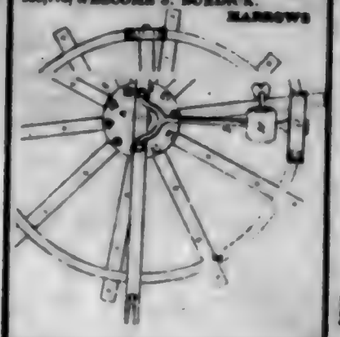
WARREN A. DINSMORE.
CATAMENIAL SACKS.



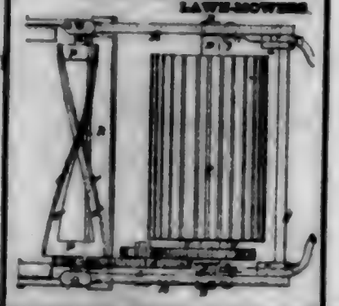
HUGH ARCHIBALD CLARKE.
ORGANIC MELODEONS &c.



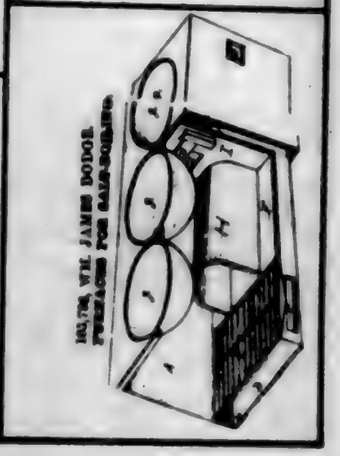
WELCOME J. BURDICK.
HARROWS.



THOMAS COLDWELL.
GEORGE L. CHADBORN.
LAWN-MOWERS.



JAMES DODGE.
PREPARING FOR SAFE-CORNERS.



No. 105,787. GEORGE W. DUBUISSON. RAKE-LOOPS.

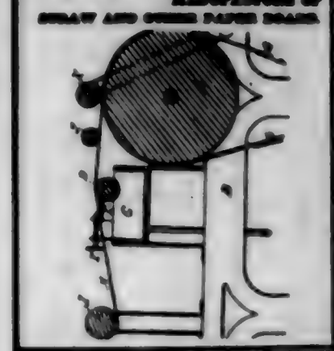


No. 105,788. HENRY FAHR. MOUSTRING WHISKY, &c.

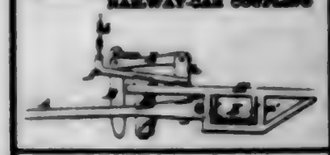
No. 105,789. JAMES H. FELLOWS. HEAD-CASTINGS FOR CARRIAGES.



No. 105,790. E. F. FIELD. MANUFACTURE OF STRAW AND OTHER PAPER BOARD.



No. 105,791. WILLIAM H. KITTREDGE. RAILWAY-CAR COUPLING.



No. 105,792. LUDWIG OTTMAR FRAHER. CHANNELING WHEELBOXES.



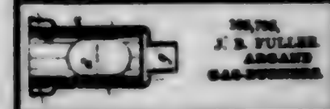
No. 105,793. MATT. B. FREEMAN. CARRIAGE-AXLES.



No. 105,794. C. B. FRENT. [illegible]



No. 105,795. J. B. FULLER. ADZ-EYE.



No. 105,796. WILLARD M. FULLER. REPAIRT [illegible]

No. 105,797. W. H. GIBBS. [illegible]



No. 105,798. ALEX. GRILLET. [illegible]



No. 105,799. L. HAILER. GUM-LOCKS.



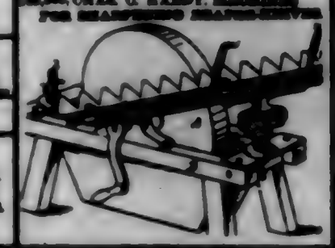
No. 105,800. JOSEPH L. HALL. LOCK-SPINDLE.



No. 105,801. WILLIAM H. HALL. CARRIAGE-AXLES.

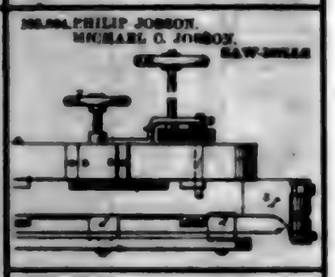


No. 105,802. CHAS. G. HARDY. MACHINES FOR SHAPING SHAFT-COVERS.

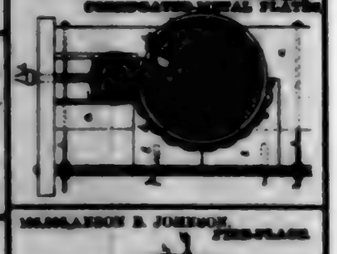


No. 105,803. GEO. B. JEWETT. [illegible]

No. 105,804. PHILIP JOSSON, MICHAEL C. JOSSON. SAW-MILLS.



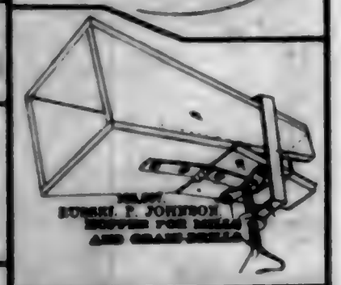
No. 105,805. ASA JOHNSON. MACHINES FOR [illegible]



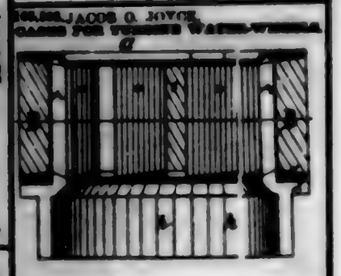
No. 105,806. AARON B. JOHNSON. FIRE-PLACE.



No. 105,807. RUSSEL P. JOHNSON. MACHINE FOR MILLS AND GRAIN-MILLS.

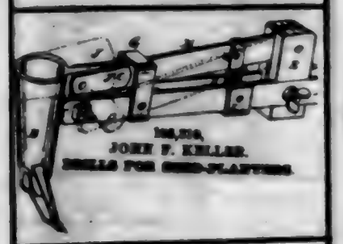


No. 105,808. JACOB O. JOYCE. CAGES FOR TURNIPS WATER-WHEELS.

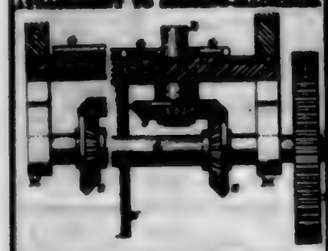


No. 105,809. WILLIAM H. F. KEHRWIEDER. COMPOSITION FOR "ENCAUSTIC PAINTING."

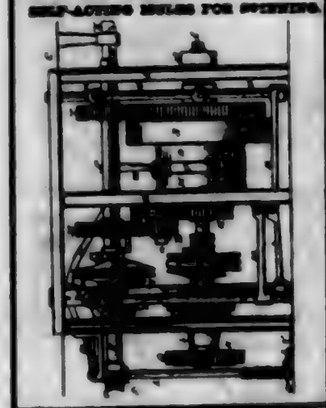
No. 105,810. JOHN F. KELLER. SHELLS FOR SEED-PLANTERS.



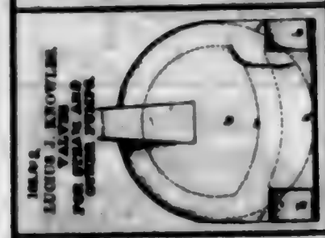
No. 105,811. JOHN F. KELLER. PIN-FEEDER ATTACHMENT TO SEWING-MACHINES.



No. 105,812. PRENTISS J. KENT, E. W. BANCROFT. SELF-ACTING SHEARS FOR SPINNING.



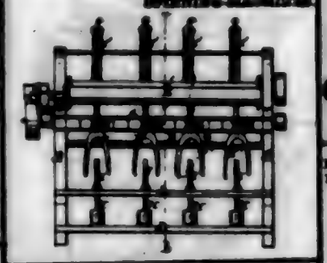
No. 105,813. [illegible]



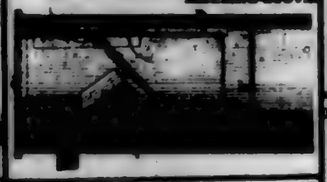
No. 105,814. KNOW KRAUS. SHEARS FOR PREVENTING CROSSING.



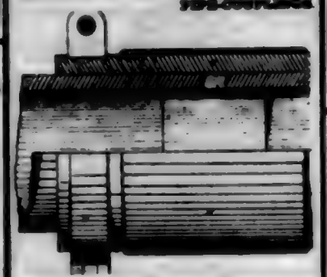
No. 105,815. WILLIAM LA BARNTER, LORENZO V. DAGGETT. SPINNING-MACHINES.



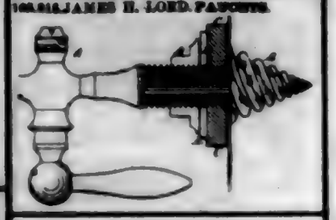
No. 105,816. SILAS HOFFMAN LA RUE. [illegible]



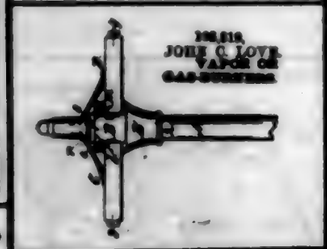
No. 105,817. WM. A. LIGHTHALL. PIPE-COUPLINGS.



No. 105,818. JAMES H. LORD. FASTENER.



No. 105,819. JOHN C. LOVE. VAPOR OIL GAS-BURNERS.



No. 105,820. LUCIUS LYON. [illegible]



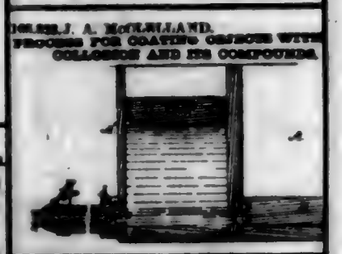
No. 105,821. C. K. MARSHALL. [illegible]



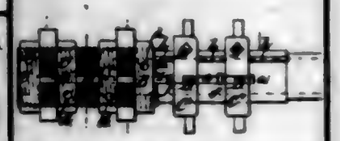
No. 105,822. ELISHA MATTESON. COMBINED HAIR-CURLER AND CRIMPER.



No. 105,823. J. A. MCCLELLAND. PROCESS FOR COATING GLOBES WITH COLLODION AND ITS COMPOUNDS.



No. 105,824. WILLIAM H. MCMILLAN, DAVID MORRIS. TURNING DEVICES.



No. 105,825. WILLIAM A. MIDDLETON. HAND CORN-PLANTER.



No. 105,826. ABRAHAM MILLER, URIAH FARIS. WEATHER-BOARD SPIKES.



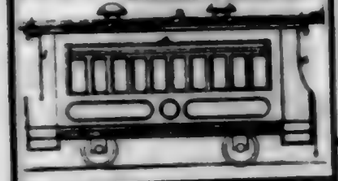
No. 105,827. CHARLES H. MILLER. WHISTLE.



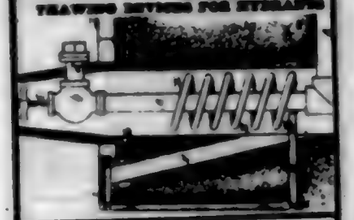
No. 105,828. ISAAC MILLER. CULTIVATOR.



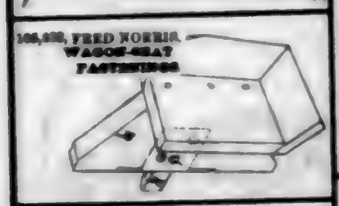
105,850, JAS. H. MONTE.
AWNINGS FOR CARS, &c.



105,851, JAMES C. MOORE,
AND FRED PAPOS.
TRAWING DEVICE FOR HYDRANTS.



105,851, HENRY J. MCFELAND.
WASHING-MACHINE.



105,853, FRED NORRIS.
WAGON-SEAT FASTENING.



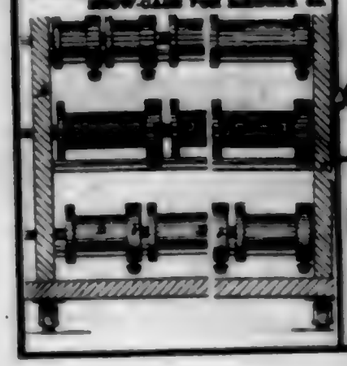
105,853, SHERMAN S. NYE.
BOBBIN HAT-BAND.



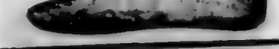
105,854, SAMUEL OAKMAN.
TELEGRAPH-INSULATORS.



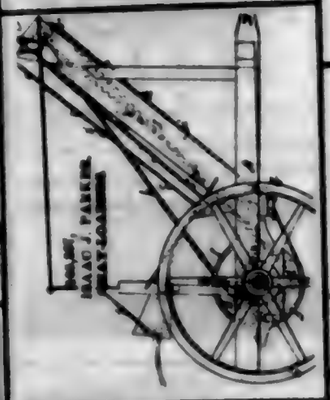
105,855, C. W. PAGETT.
SHOW-CASE FOR MERCHANDISE, &c.



105,856, CHAS. W. PALMER,
HENRY B. PALMER,
CHAS. HOUGHTON.
MANUFACTURE OF MOLDED FELTED ARTICLES.

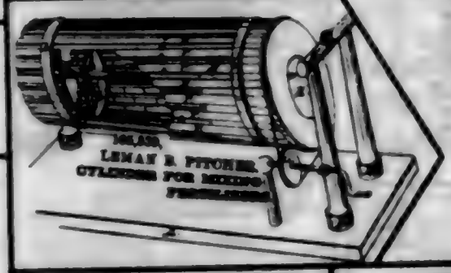


105,857, ISAAC J. PARKER,
HAY-LOADER.

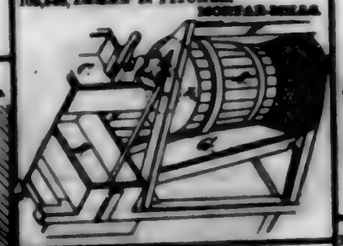


105,858, JOHN W. PEARCE.
SPADES AND SHOVELS.

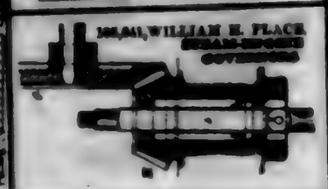
105,859,
LEMAN B. PITCHER,
CULTIVATOR FOR RAISING POTATOES.



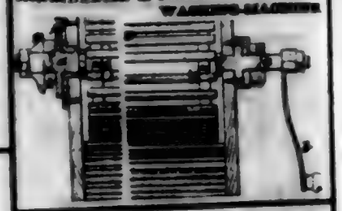
105,860, LEMAN B. PITCHER.
MORTAR-MILLS.



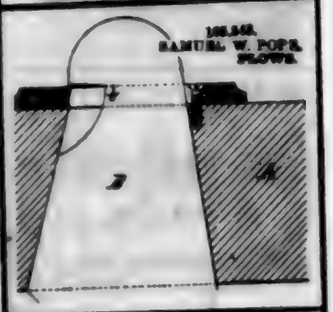
105,861, WILLIAM H. PLACE.
STEAM-ENGINE GOVERNOR.



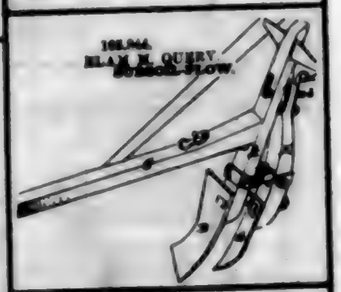
105,862, DANIEL B. POND.
WASHING-MACHINE.



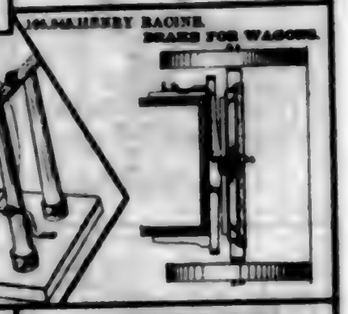
105,863, SAMUEL W. POPE.
PLOWS.



105,864, ELIAS E. QUERY.
SUBSOIL-PLOW.



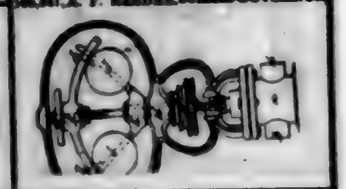
105,865, HENRY RACINE.
BRAKE FOR WAGONS.



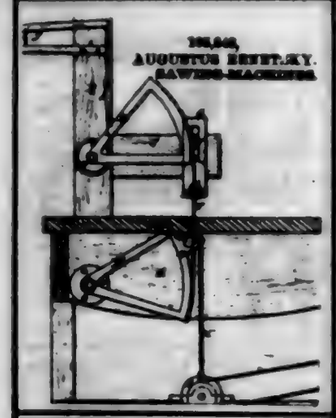
105,866, EDWIN REED.
MACHINE FOR PRESSING STALKS AND CUTTING WHEAT FOR BOOTS AND SHOES.



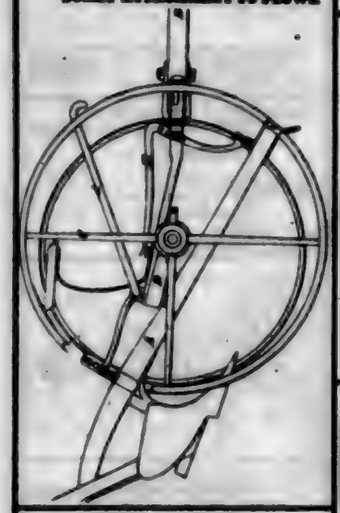
105,867, A. F. REEDER, STEAM-GOVERNOR.



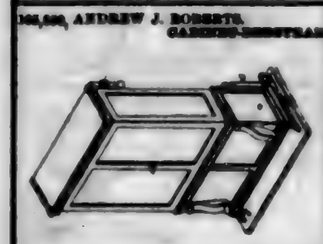
105,868,
AUGUSTUS REMELSKY.
SAWING-MACHINE.



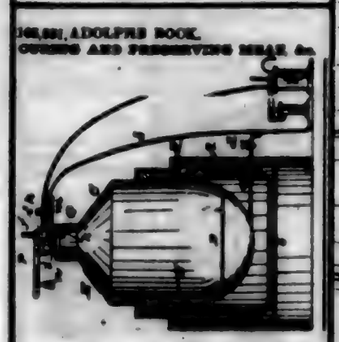
105,869, JAMES H. REYNERSON,
JOHN WORREL.
SULKY ATTACHMENT TO PLOWS.



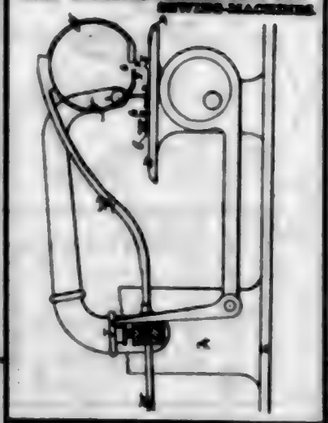
105,870, ANDREW J. ROBERTS.
CARRIER-SHUTTLE.



105,871, ADOLPHE ROOK.
CURING AND PRESERVING MEAT, &c.



105,872, J. B. SAFFORD.
TUCK CREASING ATTACHMENT FOR SEWING-MACHINES.



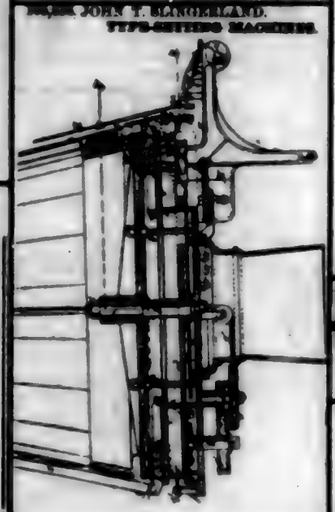
105,873, M. V. B. SHEPARD.
SPRING SEED-BOTTOM.



105,874, JOHN SHOREY.
SPRING CURTAIN-FIXTURE.



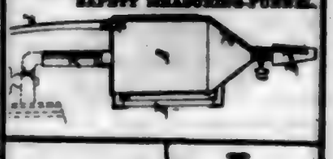
105,875, JOHN T. SLOUGHLAND.
TYPE-SETTING MACHINE.



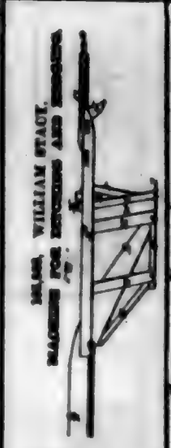
105,876, THEO. B. SLOAN.
PANTALOONS.



105,877, FRANKLIN H. SMITH.
SAFETY MEASURING-FUNNEL.



105,878, WILLIAM STACY.
MACHINE FOR DRESSING AND SHAPING HUBS.



105,879, GEORGE W. TAFFEE,
FRANCIS D. KISS.
CORN-PLANTER.

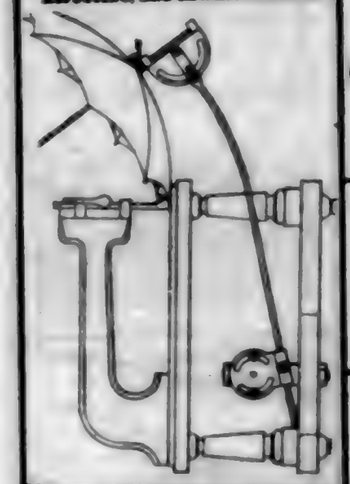


105,880, STEPHEN P. M. TARKER.
HUB.



105,881, STEPHEN P. M. TARKER.
SET-SCREW.

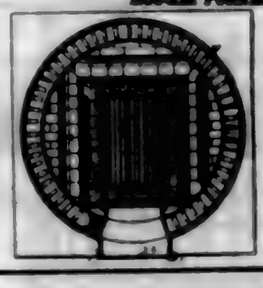
105,962. WILLIAM JOHN TATE.
IMPROVEMENTS FOR REPAIRING, ADJUSTING, AND SEWING PARASOLS



105,963. GEORGE OSCAR TAYLOR.
RAILROAD RAIL-SPLICE.



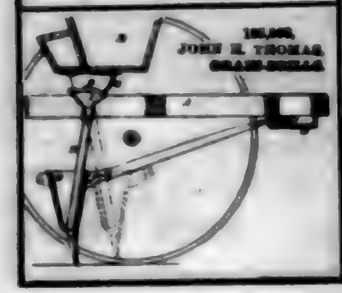
105,964. GEO. O. THOMAS.
ROSIN FURNACE.



105,965. J. B. THOMAS. CORN MARKER.



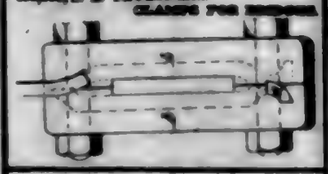
105,966. JOHN H. THOMAS. GRAIN-DRILL.





105,967. GEO. W. THOMSON. SAFES.

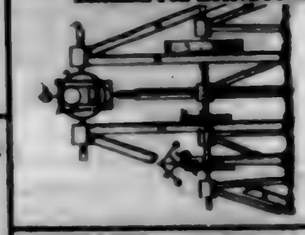
105,968. L. S. TRUESDELL. CLASPS FOR [illegible].



105,969. CHARLES E. TUCKER. CARTRIDGE PLATES.



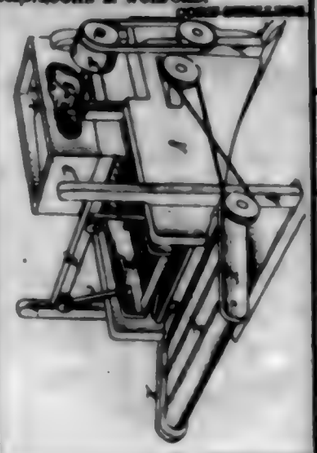
105,970. HORACE WICKHAM, Jr. MACHINE FOR MOULD-COVERS.



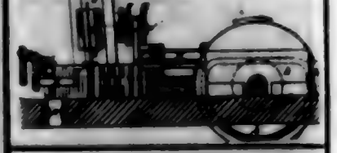
105,971. JOHN B. WILSON. CORN-PLANTER.



105,972. JOHN B. WOLFORD. CORN-SHELLER.



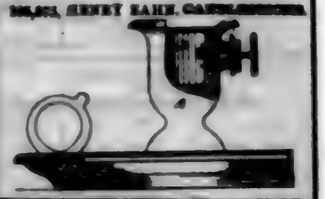
105,973. AUBEY WOOD. MACHINE FOR MAKING SCREW-BLANKS.



105,974. B. F. WOODSIDE. FIRE-PROOFING SAFE.



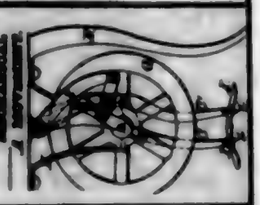
105,975. HENRY KAHN. CARPET-STRETCHER.



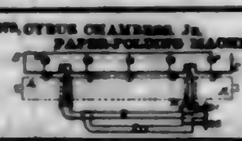
105,976. WILSON W. KNOWLES. GARNETTING-STOP.



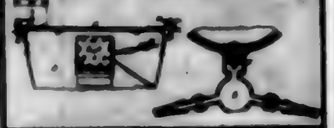
4,976. HENRY J. CASE, BRIGHTON CHAPIN, CHAS. BOMBARDIER. SEED-PLANTER.



4,977. CYRUS CHAMBERS, Jr. PAPER-FOLDING MACHINE.



4,978. JOHN G. HADFIELD, M. D. MEDICAL VACUUM APPARATUS.



4,981. EDWARD HEATON. SEAM-SPREADER.



4,982. JOHN B. ROOT. STEAM GENERATORS.



4,983. JOHN B. ROOT. STEAM GENERATORS.



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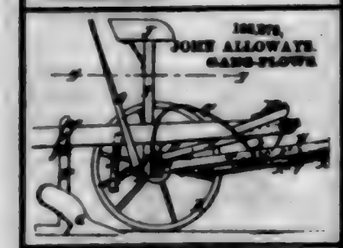
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105,977. ALFRED ADAMS. PAPER BAGS.

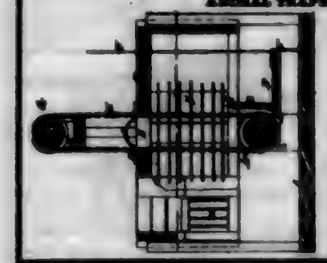


105,978. SAMUEL W. ADAMS. TWINE AND THREAD-CUTTER.

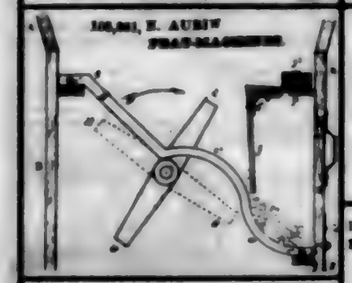
105,979. JOHN ALLOWAYS. GANG-PLOUGH.



105,980. SAMUEL ARNOLD. ANIMAL TRAPS.

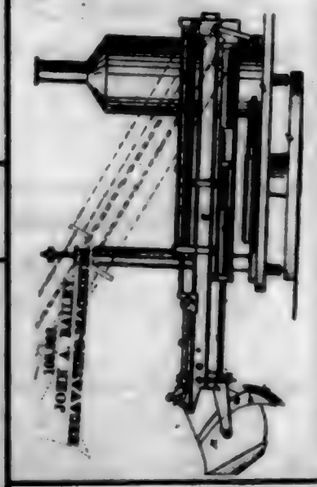


105,981. E. AUBY. TRAP-MACHINE.



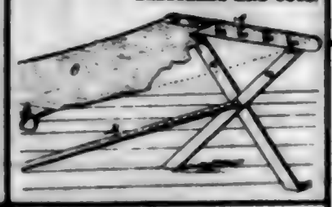
105,982. SAMUEL S. AYRES. TURF-WHEEL.



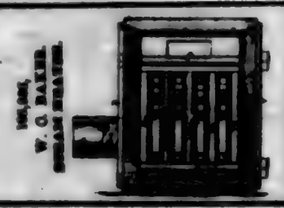


105,983. HAVEN M. BAKER. PREPARATION OF PAPER STOCK.

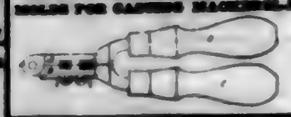
105,985. VIRGINIA L. BAKER. SEED-DRAG AND CUTTER.



105,986. W. C. BAKER. [illegible]



105,987. GREENLEAF BARRETT. [illegible] FOR GARMENT MACHINES.



105,988. JOHN BASELER. SLEIGH [illegible] FOR RAILWAY BOX CARS.



105,989. W. A. BATTERSBY. MANUFACTURE OF ARTIFICIAL STONE.

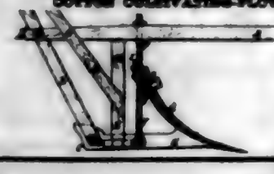
105,990. JOSEPH B. BENNETT. BALL-VALVES FOR REMOVING AIR.



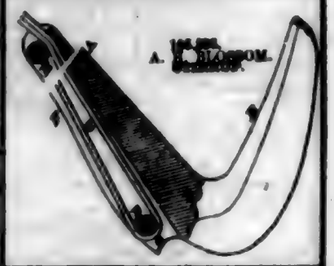
105,991. LUCIUS S. BLAKE. WOOL-SCOUR.



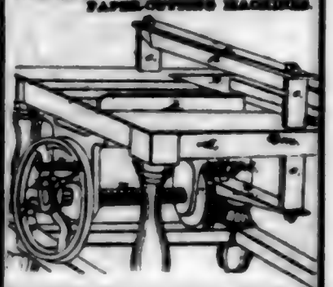
105,992. WM. R. BLANCHARD. CORN AND COTTON CULTIVATING-PLOW.



105,993. A. [illegible] WORTH. [illegible]



105,994. JOHN BOLE. PAPER-CUTTING MACHINE.



105,916. HORACE BOWHAM.
BOAT-REACHING FOR RATTENS.

105,917. CHARLES S. BOWEY.
HOLLOW AXLE.

105,918. SAMUEL L. BOWER.
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105,919. SAMUEL C. BOYD.
FOLDING CHAIR.

105,920. CHARLES COLLINS BRADLEY.
BENJAMIN F. UPSON.
WHIFFLETREE TRACE-HOOK.

105,921. E. W. BRETTELL.
ATTACHING GATE
TO RAISE OF SELF-LIFTING.

105,922. ADNA BROWN.

105,923. SAMUEL F. CALDWELL.
GRADING AND RIDGING-PLOW.

105,924. WALTER E. CAMERON.
FOLDING CHAIR.

105,925. CHANDLER CHENEY.
COUPLING FOR WHEEL-FELLOES.

105,926.
CHARLES H. CLARK.

105,927.
CHARLES H. CLARK.
NUT-GROOVER.

105,928. JOSIAH S. CLARK.
MEANS ATTACHMENT FOR
WATER-WHEEL.

105,929. WM. H. CLARKE.

105,930. HENRY A. CLIFFORD.

105,931. LEWIS M. COBURN.
REVERSIBLE GAS-FIXTURE.

105,932. WM. M. COCHRAN.
SAWING-MACHINE.

105,933. NATHAN T. COFFIN.
MACHINE FOR SECURING
SHEET-METAL LINING IN PUMP-STOCKS.

105,934. NATHAN T. COFFIN.
PUMP-VALVE.

105,935. JOSEPH H. COHEN.

105,936. JESSE G. COLEMAN.
GEORGE STRAYER.

105,937. JOHN CONNELMAN.
COUGH-SYRUP.

105,938. DEXTER CURTIS.
BOBBIN-CHEAP CAP.

105,939. GEORGE L. DAVENPORT.
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105,940. JOHN B. DAVIDS.
TOOL-HANDLE.

105,941. FREDERICK DECKER.
SEED-PLANTING.

105,942. A. J. DEXTER.
ADJUSTABLE LINK.

105,943. JAMES W. DOE.
FRAMES FOR POTATO-DIGGERS AND
SHOVEL-PLOWS.

105,944. JULES DUVAL.
PROCESS OF SEPARATING FIBERS
FROM COCOA-NUT.

105,945. W. T. DUVALL.
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OF ICE.

105,946. JAMES C. EASTMAN.
STOP-PLATES FOR HYDRANTS.

105,947. WM. F. ELLER.

105,948. R. K. ELLIOTT.
URI J. BAXTER.
GLOVERS-LINE FASTENER.

105,949. JAMES ANTHONY ELSTON.
SAWING-MACHINE.

105,950. MOSES EMERSON.
REVERSIBLE WATER-WHEEL.

105,951. V. FOLAND.
TRAVERSING MACHINE.

105,952. J. FOSTER, Jr.
BOAT REACHING APPARATUS.

105,953. S. COXANT FOSTER.
MODE OF OPERATING SEWING
AND OTHER MACHINES.

105,954. ELISHA M. FOWLER.
SODA-FOUNTAIN.

105,955. H. C. GARDNER.
MODE OF AND DEVICES FOR MAKING
GASKETS FOR STEAM PACKING.

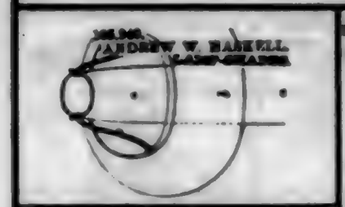
105,956. THOMAS C. GARLINGTON.
COTTON-SEED PLANTER.

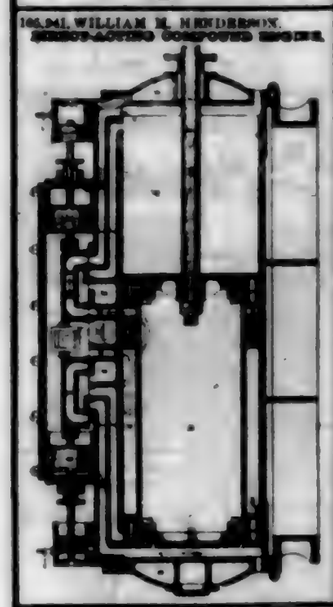
105,957. WILLIAM H. GERRISH.
REED MUSICAL INSTRUMENTS.

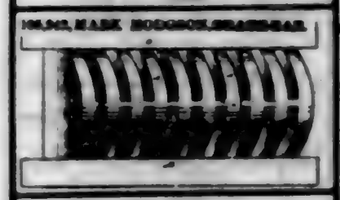
105,958. HENRY J. HANCOCK.
DEVICE FOR TRANSMITTING
ROTARY MOTION.

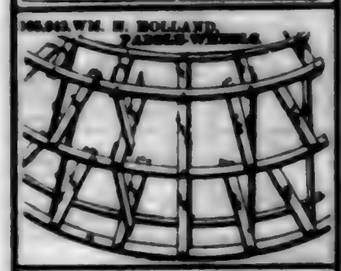
105,959. J. B. HARTMAN.
MARTAN KAIN.
HAT AND CAP-BLOCKS AND BRACKET.

105,960. GEORGE HARRIS.
WINDMILL-POWER-WHEELS.

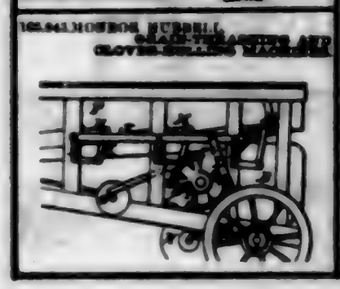


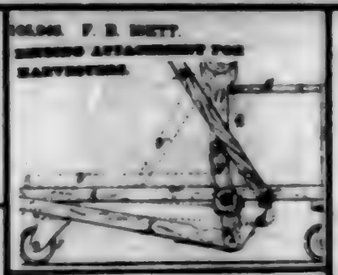


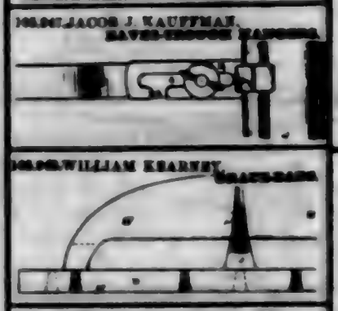


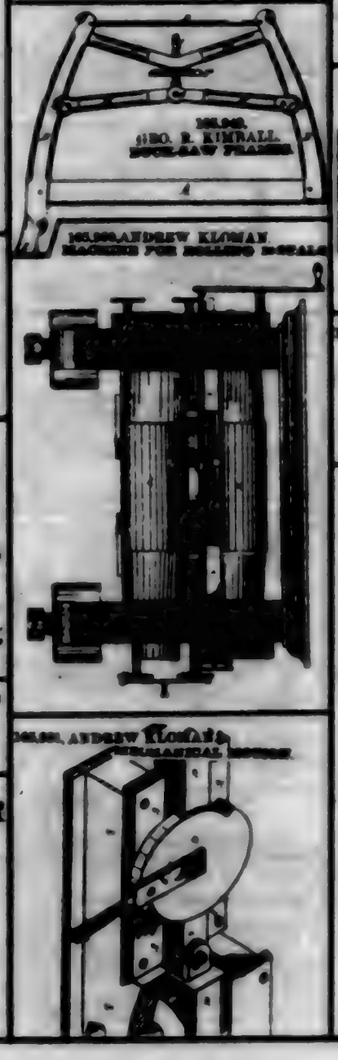






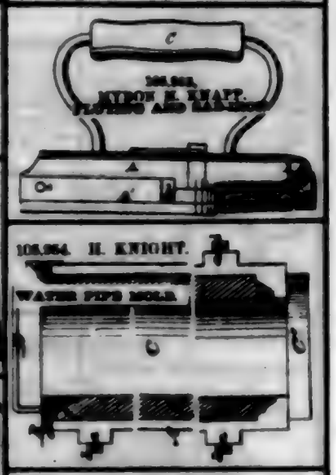


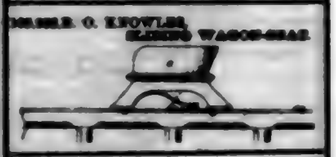


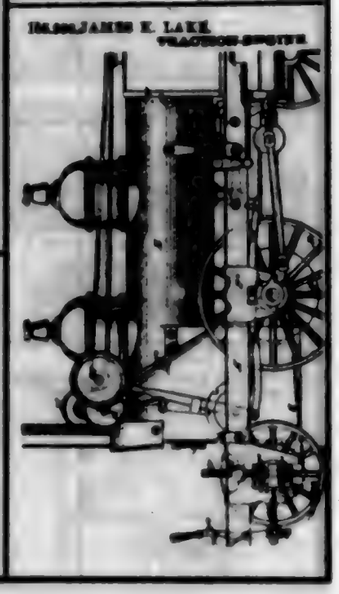




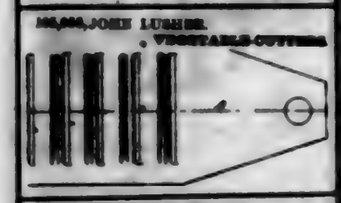


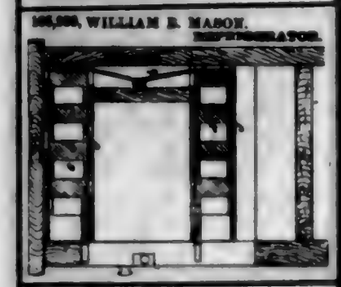


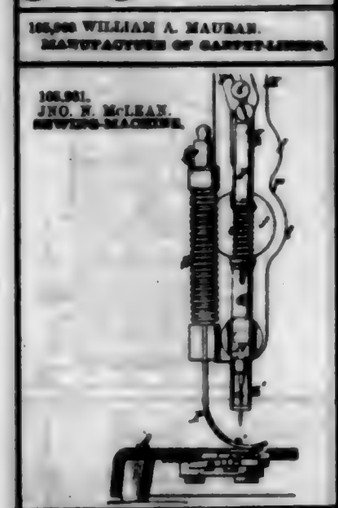


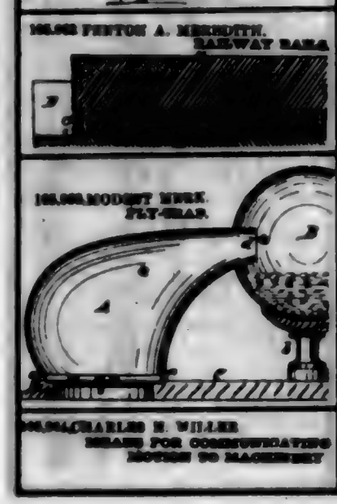


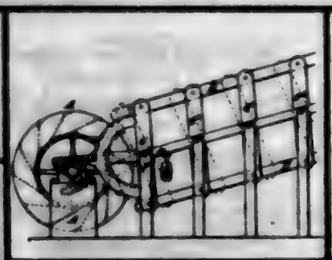


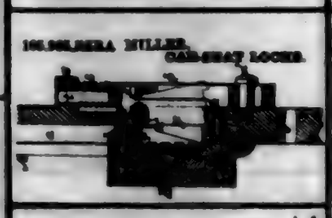




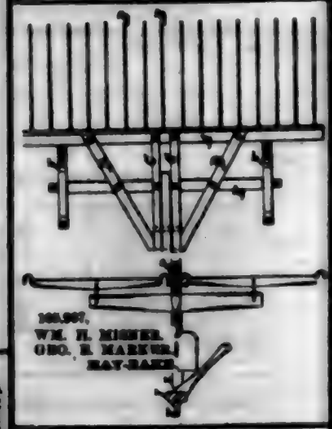


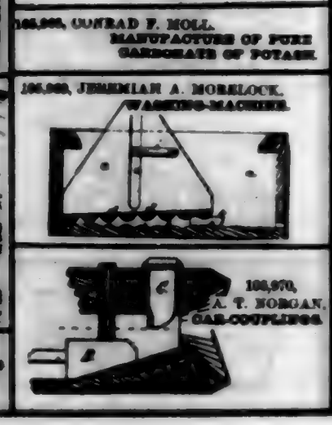


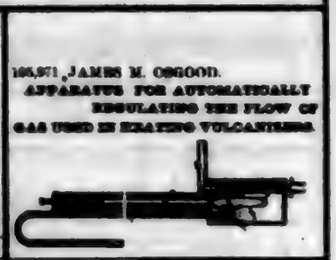


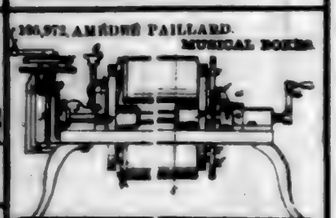


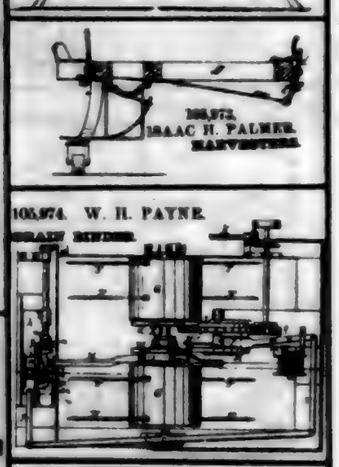




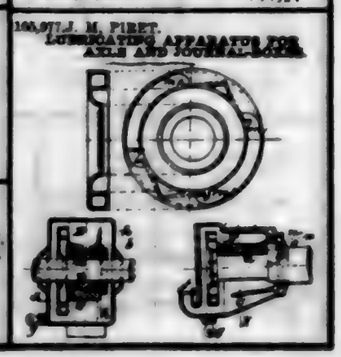




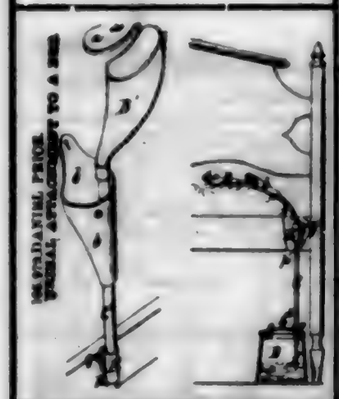






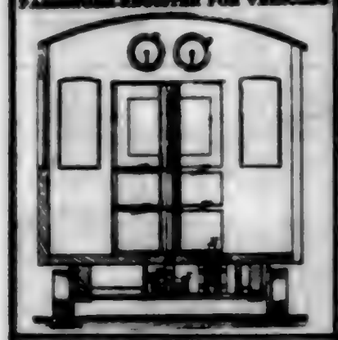


105,978. SAMUEL M. FOSTER.
STIRRUP FOR PASSENGER SUPPORT.

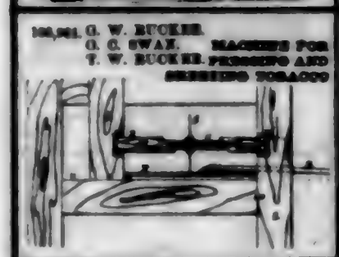


105,979. EDWARD H. PRICE.
PEDAL APPARATUS FOR A BELL.

105,980. JOHN RHOADS.
PASSENGER-REGISTER FOR VEHICLES.



105,981. G. W. BUCKER.
O. C. SWAN.
T. W. BUCKER.
MACHINE FOR PRESSING AND SEWING TOBACCO.



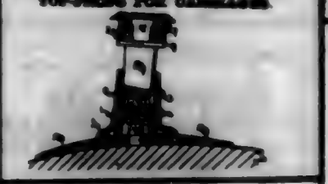
105,982. WM. A. BYERSON.
GEO. STANCLIFF.
OLIVER T. McINTOSH.
BOAT-REACHING APPARATUS.



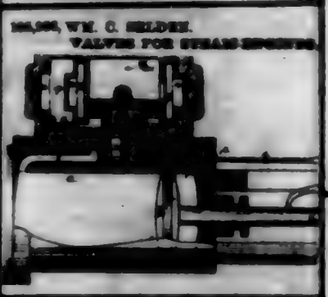
105,983. ADDISON V. SANFORD.
APPORTABLE RAILWAY TRUNKS.



105,984. ANSON SEARLS.
TOP-PROPS FOR CARRIAGES.



105,985. WM. C. SELDEN.
VALVES FOR STEAM-ENGINES.



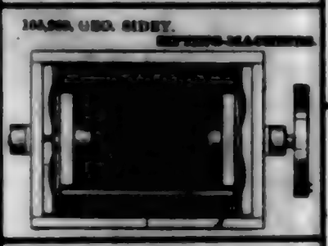
105,986. F. C. SHERMAN PAPER-FILES.



105,987. C. J. SHUTTLEWORTH.
FENCE-POSTS.



105,988. GEO. SIDEY.
REVIVING-MACHINE.



105,989. JOHN SMITH.
[illegible] FOR SHOEING.



105,990. J. HARRY SMITH.
OARS-PADS.



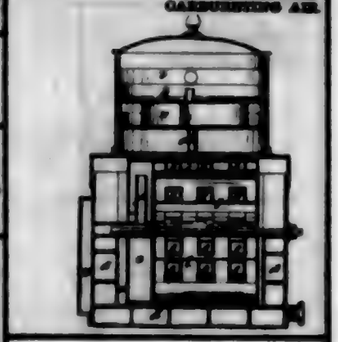
105,991. J. HARRY SMITH.
OARS-PADS.



105,992. SILAS ALLEN SNYDER.
METALLIC CHAIN-SEAT.



105,993. JAMES F. SPENCE.
APPARATUS FOR CARBURETING AIR.



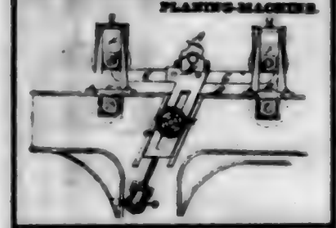
105,994. ANDREW J. STEPHENS.
[illegible]



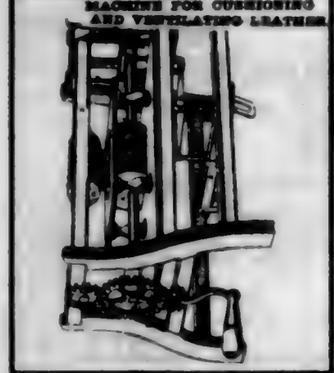
105,995. PETER J. STOBE.
APPARATUS FOR CUTTING GRAIN UNDER WATER.



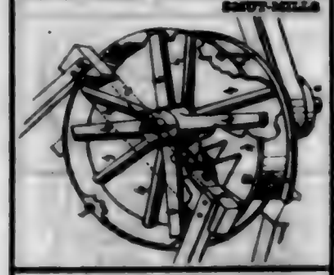
105,996. WILLIAM TEAL.
PLANING-MACHINE.



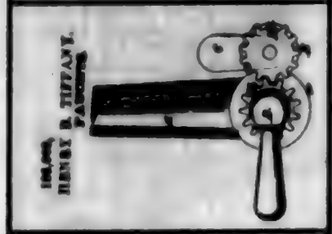
105,997. EDWIN THOMAS.
MACHINE FOR CUSHIONING AND VENTILATING LEATHER.



105,998. WILLIAM CARROLL THOMPSON.
SNUFF-MILLS.

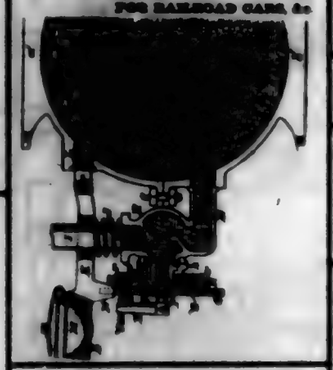


105,999. HENRY B. TIFFANY.
PASSENGER-[illegible]



106,000. FREDERICK H. TREVITHICK, Jr.
RAILWAY CAR-WHEEL.

106,001. W. P. VAN DEUSEN.
WILLIAM C. DAVIS.
AUTOMATIC FIRE-EXTINGUISHER FOR RAILROAD CARS, &c.



106,002. JAMES L. VAN GORDER.
SULKY-PLOWS.



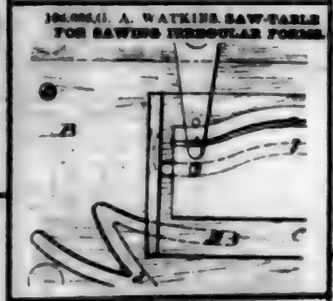
106,003. JACOB E. WAGNER.
COMBINED HARROW, CULTIVATOR, WHEELBARROW, AND SLED.



106,004. ROBERT H. WALKER.
CARRIAGE-SPRINGS.



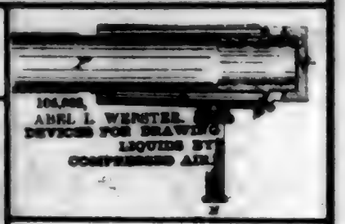
106,005. A. A. WATKINS.
SAW-TABLE FOR SAWING IRREGULAR FORMS.



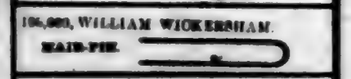
106,006. ABEL L. WEBSTER.
FASTENER OR TAPE.



106,007. ABEL L. WEBSTER.
DEVICES FOR DRAWING LIQUIDS BY COMPRESSED AIR.



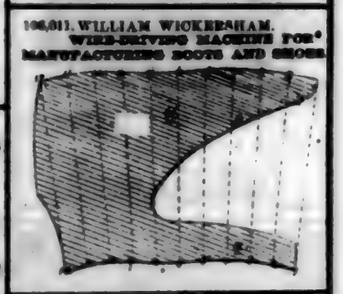
106,008. WILLIAM WICKERSHAM.
HAIR-PIN.



106,010. WILLIAM WICKERSHAM.
MEANS OF ATTACHING THE SOLES TO BOOTS AND SHOES.



106,011. WILLIAM WICKERSHAM.
WIRE-DRIVING MACHINE FOR MANUFACTURING BOOTS AND SHOES.



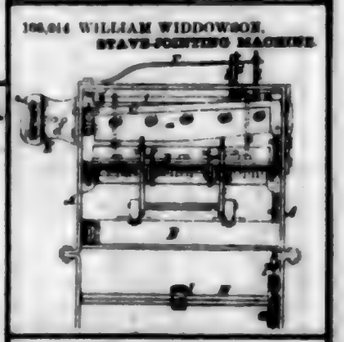
106,012. W. WICKERSHAM.
MANUFACTURE OF BOOTS AND SHOES.



106,013.
WILLIAM WICKERSHAM.
BOOTS AND SHOES.

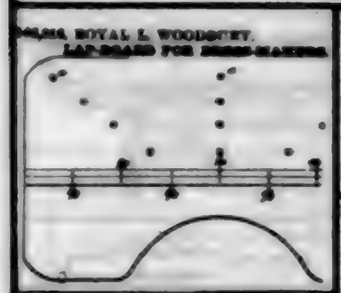


106,014. WILLIAM WIDDOWSON.
STAVE-JOINTING MACHINE.

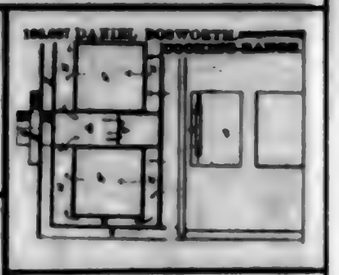


106,015. B. B. WOOD.
SPIKE-DRAWER.

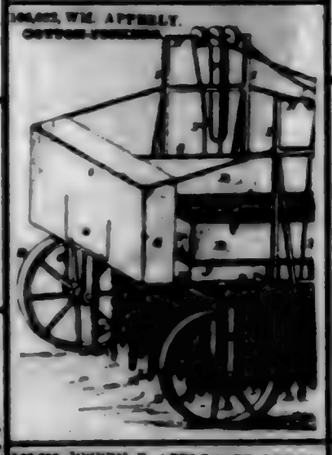


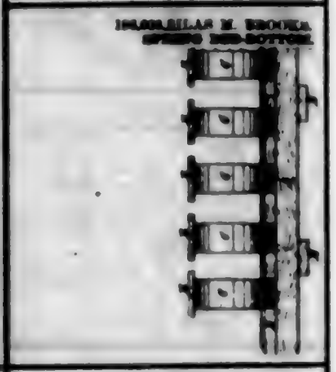


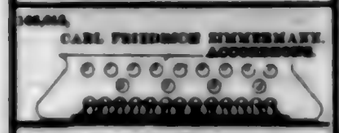




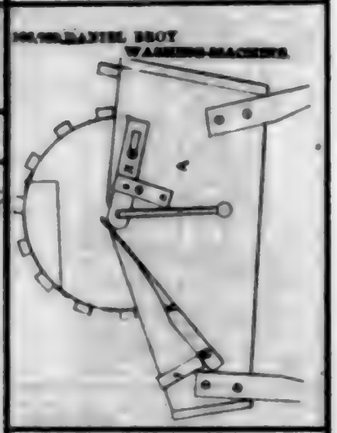


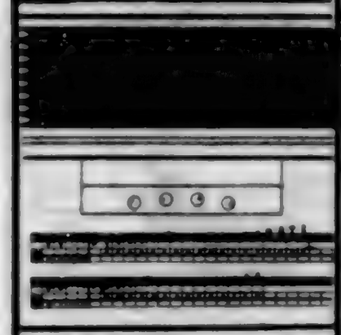






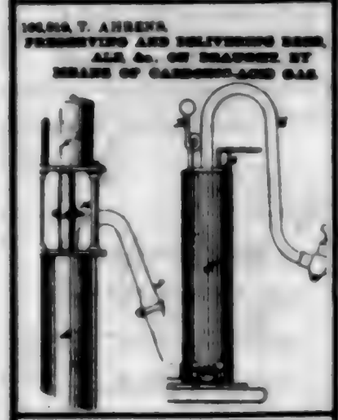


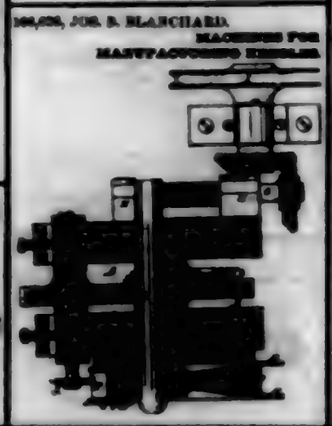


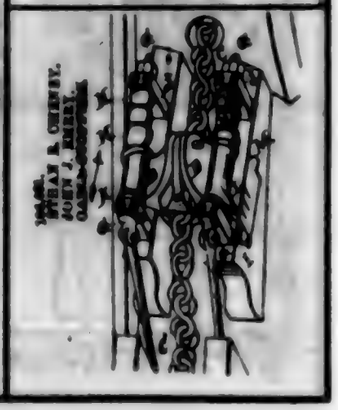


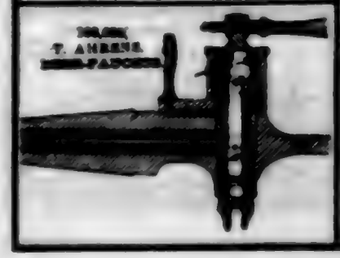


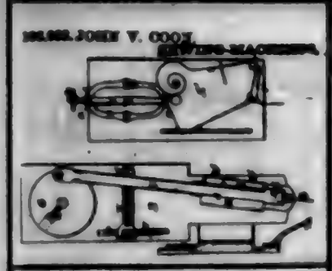


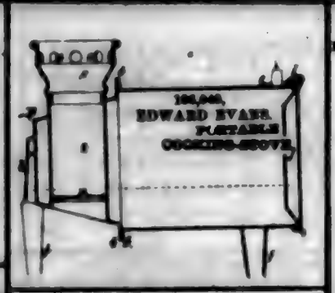


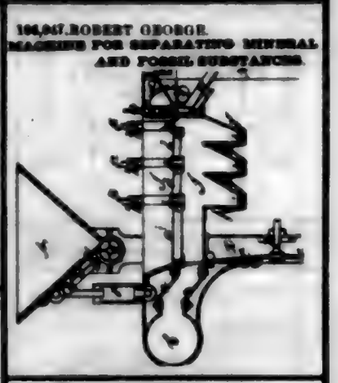






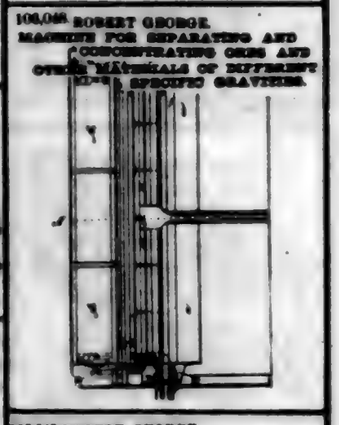




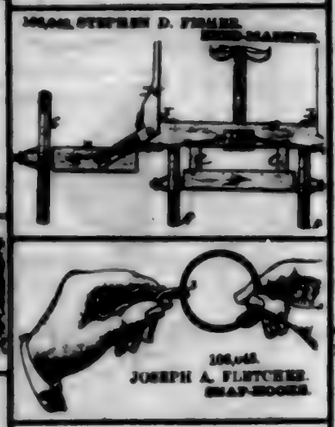








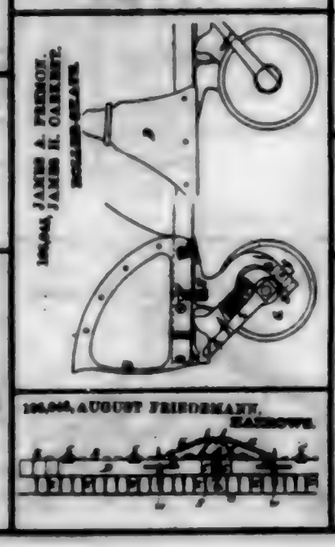


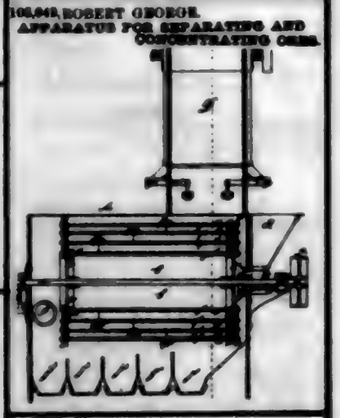




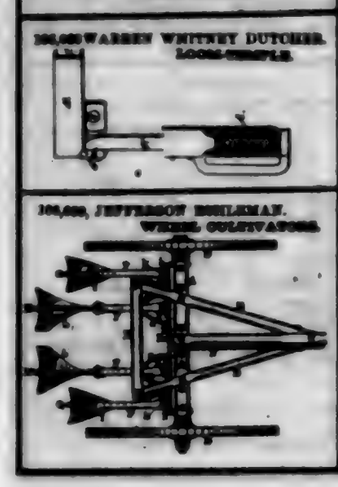


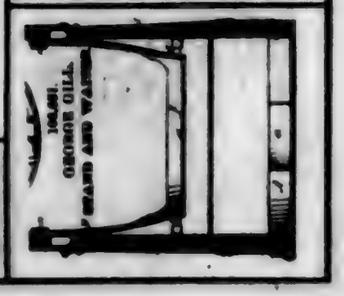


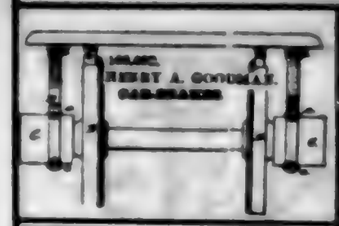




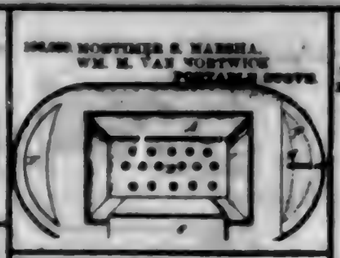




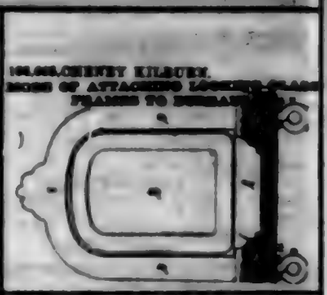




HENRY A. GOODALE.
CAR-SEATS.



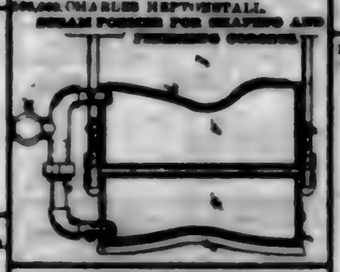
MORTIMER S. MARSHA.
WM. M. VAN VORTWICK.
DOUBLE STOVE.



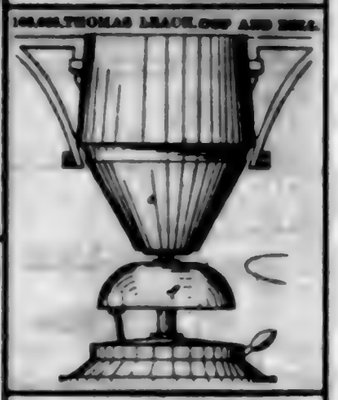
CHENEY KILBURY.
MODE OF ATTACHING LOOKING-GLASS FRAMES TO BEDSTEADS.



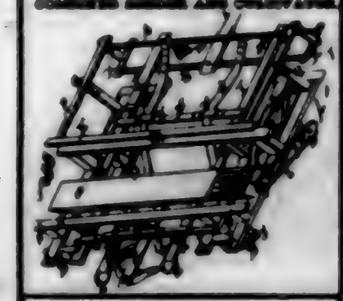
GERRAULT-GUICHARD.
LIME-KILNS.



CHARLES HEPPENSTALL.
STEAM POWERS FOR HEATING AND FORGING GOODS.



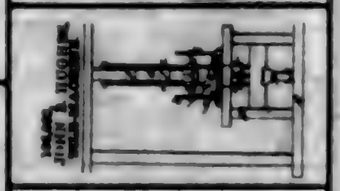
THOMAS LEACH.
CUP AND BELL.



HENRY HAINES.
CORDAGE-MACHINE AND CRAYON-APPARATUS.

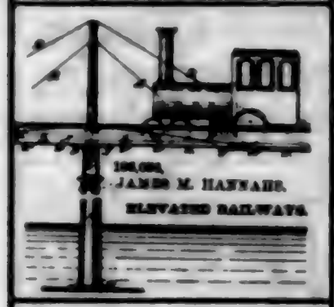


ROBERT A. ROSKING.
CHAIN-PUMPS.

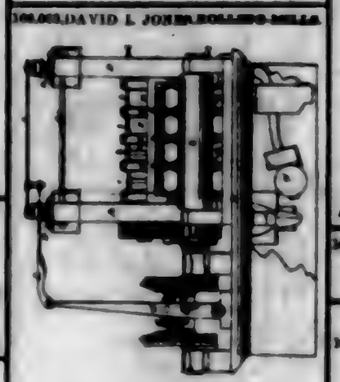




AUGUST LISCHE.
CORDAGE CHAIR AND STOP-LADDER.



JAMES M. HANNAH.
ELEVATED RAILWAYS.



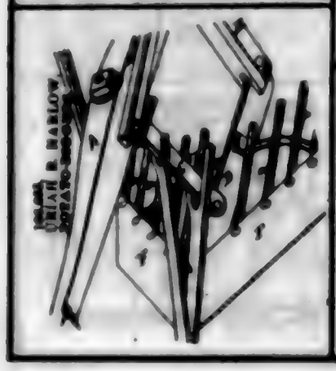
DAVID L. JOHNSON.
ROLLING-MILLS.



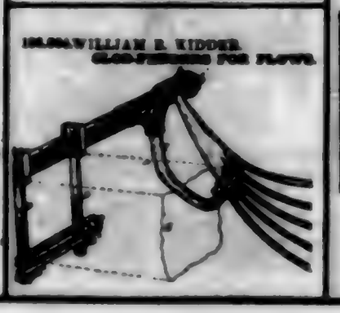
HENRY LOEWENBERG.
MANUFACTURE OF IMITATION BRAIDS, TRIMMINGS, &c.



JOHN B. HARDS.
WILLIAM HODNETT.
CAR-COUPLING.



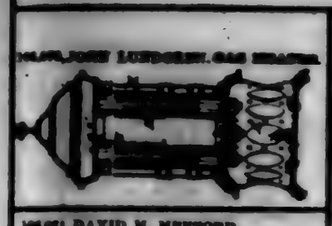
JOHN B. HARLOW.
SPRING-HOOK.



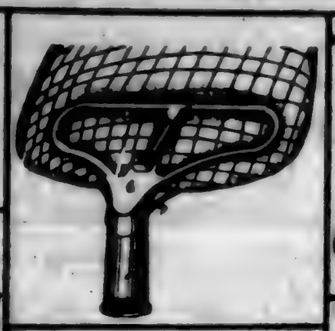
WILLIAM B. KIDDER.
CLOD-PULVERIZER FOR PLOWS.

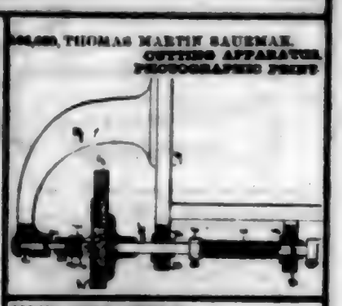


WILLIAM LORD.
SPRING FOR SEWING-MACHINES, &c.

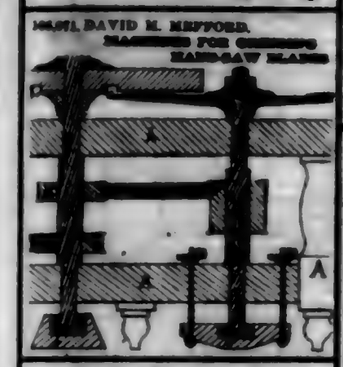


JOHN LUNDGREN.
GAS-REGULATOR.

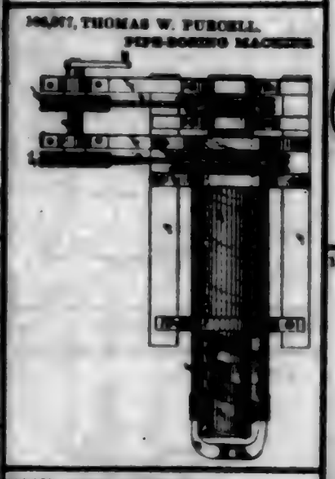




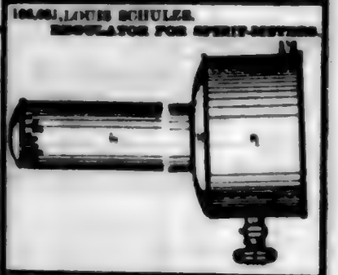
THOMAS MARTIN SAUERMAN.
CUTTING APPARATUS FOR PHOTOGRAPHIC PRINTS.



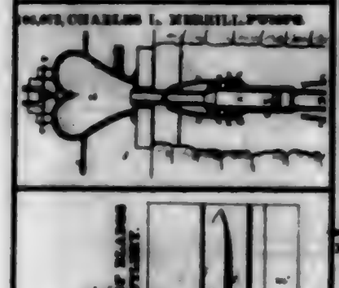
DAVID M. MEFFORD.
MACHINES FOR CUTTING HAND-SAW BLADES.



THOMAS W. PURCELL.
PIPE-BORING MACHINE.



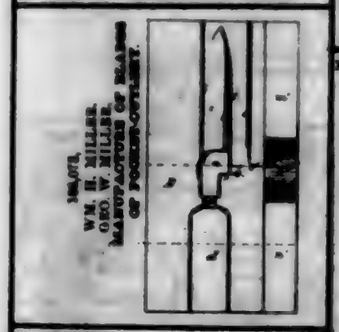
LOUIS SCHULZE.
REGULATOR FOR SPIRIT-METERS.



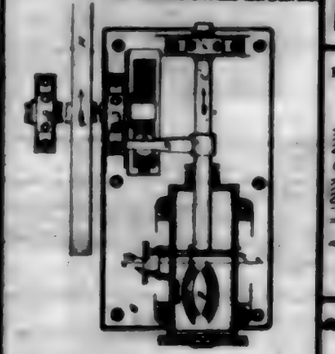
CHARLES L. MERRILL.
PUMPS.



NATHANIEL SHINER.
UMBRELLAS.



WM. H. MILLER.
GEO. W. MILLER.
MANUFACTURE OF SOCKETED CUTLERY.



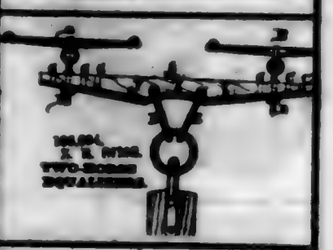
JAMES ROBERTSON.
MOTIVE-POWER ENGINES.

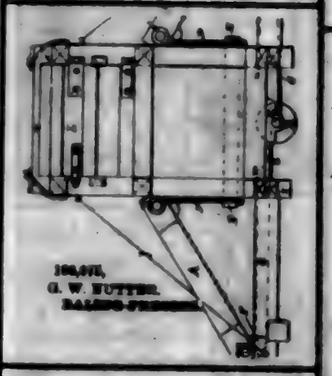


THOMAS D. SIMPSON.
G. B. GRAY.
J. H. ROMAIN.
BREECH-LOADING FIRE-ARMS.

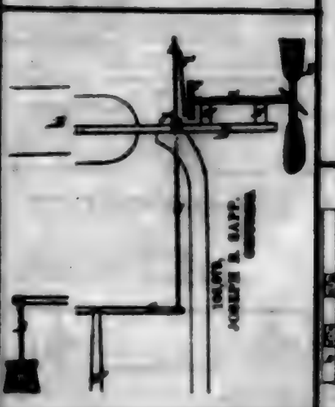


LAMB L. NEWMAN.
BED-BOTTOMS.

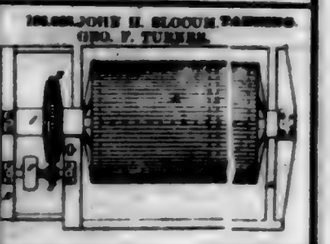




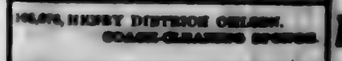
G. W. BUTTER.
BALING-PRESSES.



JOSEPH S. BAPP.

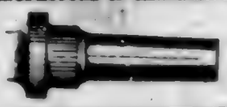


JOHN H. SLOCUM.
GEO. F. TURNER.



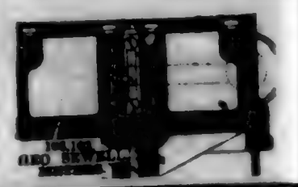
HENRY DIETRICH OELSEN.
COACH-CLEANING SPONGE.

105,094. ALFRED E. SMITH.
MANUFACTURE OF CARRIAGE-AXLES.

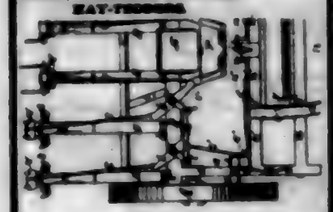


105,095, WM. H. TOPHAM.SPITTOON.

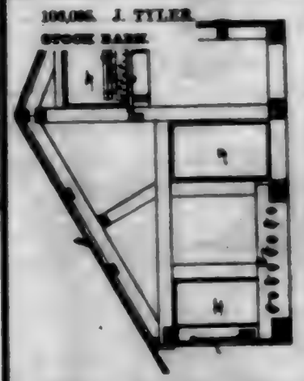


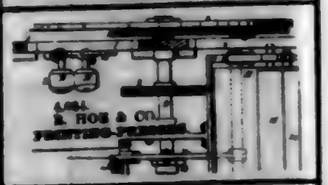


105,097, FRANKLIN E. SMITH.
HAY-TEDDER.



105,098, J. TYLER.
STOCK RACK.



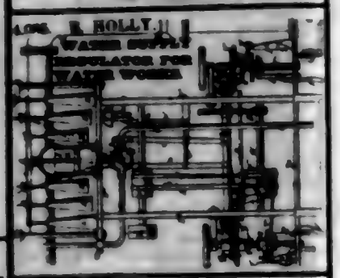


105,099, JOHN O. SMITH.
PORTABLE FENCE.

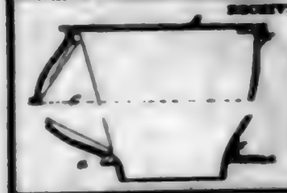


4,091. E. HOE & CO.
PRINTING-PRESSES.

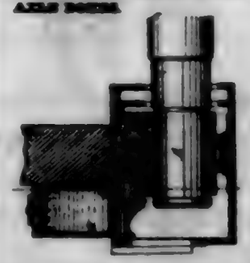
4,092. E. HOLLY.
WATER-SUPPLY REGULATOR FOR WATER-WORKS.



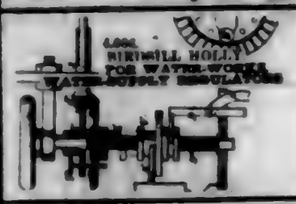
105,100. W. SMITH. WATER-CLOSET
APPARATUS.



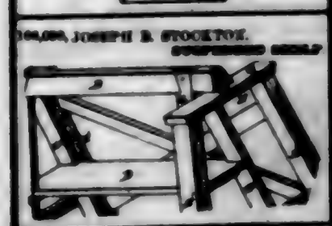
105,101. E. VON JEINSEN.
LUBRICATING-JOURNAL OF RAILWAY AXLE BOXES.



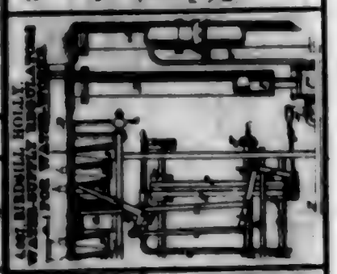
4,093. WIRTHILL HOLLY
FOR WATER-WORKS
WATER-SUPPLY REGULATOR.



105,102, JOSEPH B. STOCKTON.
SUSPENDED SHELF.



4,094. WIRTHILL HOLLY
FOR WATER-WORKS
WATER-SUPPLY REGULATOR.



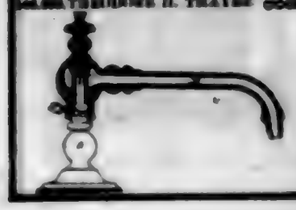
105,103, JOHN STOWE.
APPARATUS FOR THE TREATMENT OF FRACTURES OF THE LOWER JAW.



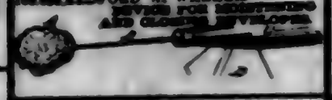
105,104, EDWIN STRAIN.
NEEDLE FOR SEWING-MACHINES.



105,105, THEODORE H. THAYER COOK.



105,106, REDFORD W. WALKER.
REVIVER FOR RESUSCITATING AND CLEANSING RIVULETS.



105,107. CANCELED.

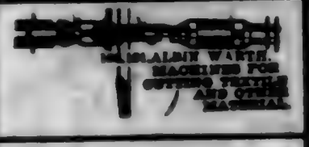
105,108, THO. S. WARREN.
ADJUSTABLE GAUGE.



105,109, ALBIN WARTH.
BRAKE.



105,110, ALBIN WARTH.
MACHINERY FOR SPINNING TEXTILE AND OTHER MATERIAL.



105,111, CHARLES H. WHANEY.
CORN-PLANTER.



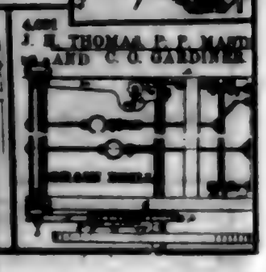
4,095. JOHN N. LADD
PAPER-CUTTING MACHINE.



4,096. WIRTHILL HOLLY
FOR WATER-WORKS
WATER-SUPPLY REGULATOR.



4,097. J. H. THOMAS, P. P. MAST
AND C. C. GARDINER.



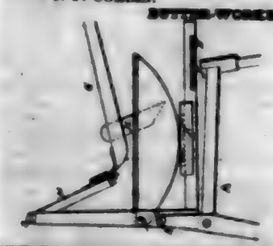
ILLUSTRATIONS OF PATENTS

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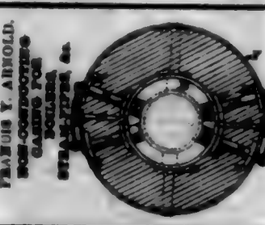
THE UNITED STATES PATENT OFFICE,

AUGUST 9, 1870.

105,104, J. P. ADAMS.
J. P. COBBIN.
BUTTER-WORKER.

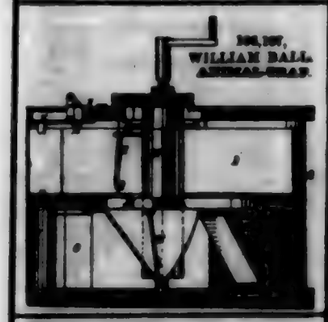


105,105, FRANCIS Y. ARNOLD.
ROPE-CONDUCTORS FOR GAGING FOR BOILERS.

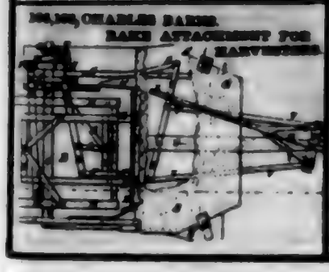


105,106, OLNEY ARNOLD.
ISAAC LINDSLEY.
MACHINE FOR TRIMMING AND SEWING HAT-CLOTH, &c.

105,107, WILLIAM BALL.
ANIMAL-TRAP.



105,108, CHARLES BAKER.
RAKE ATTACHMENT FOR HARVESTERS.



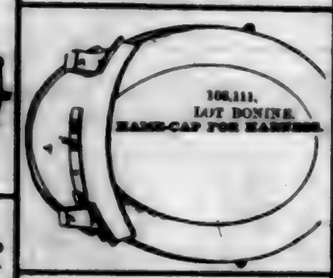
105,109, CHARLES BAKER.
RAKE ATTACHMENT FOR HARVESTERS.



105,110, JAMES BLAKE.
SUPPORT FOR TABLES.



105,111, LOT DOMINE.
HAME-CAP FOR HARNESS.

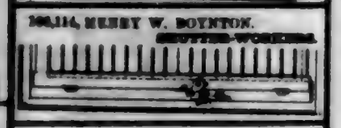


105,112, GUIS. BOUSCADE.
PREPARATION OF ALBUMEN.

105,113, GEORGE E. BOWMAN.
WATER-COOLER, &c.

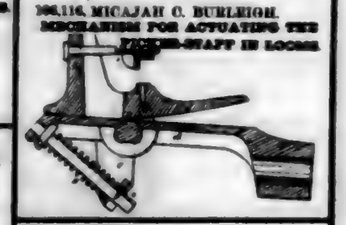


105,114, HENRY W. BOYNTON.
GROOVER-WORKING.



105,115, JAMES BRITTON.
KETTLE-RACK.

105,116, MICAJAH C. BURLEIGH.
MECHANISM FOR ACTUATING THE PICKER-STAFF IN LOOMS.



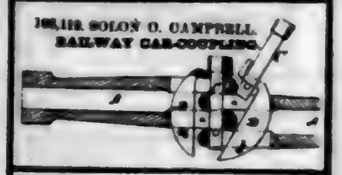
105,117, JAMES H. BUSH. MILK-SAFES.



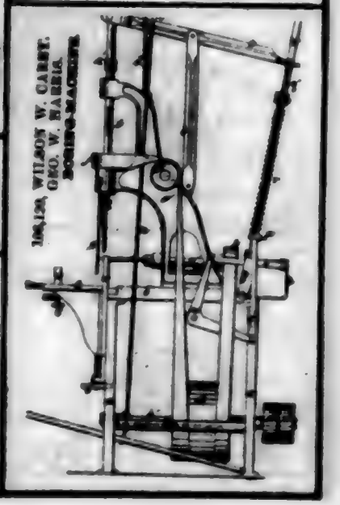
105,118, ERASTUS T. BUSSELL.
CULTIVATOR AND HARROW.



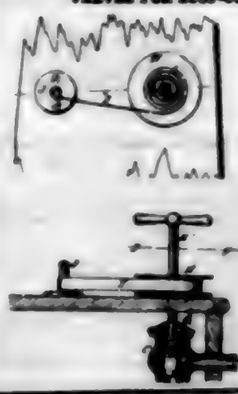
105,119, SOLON O. CAMPBELL.
RAILWAY CAR-COUPLING.



105,120, WILSON W. CASEY.
GEO. W. HARRIS.
SCREW-MACHINE.



106,131, JOSIAH W. CARNEY.
VALVES FOR STOP-COCKS.

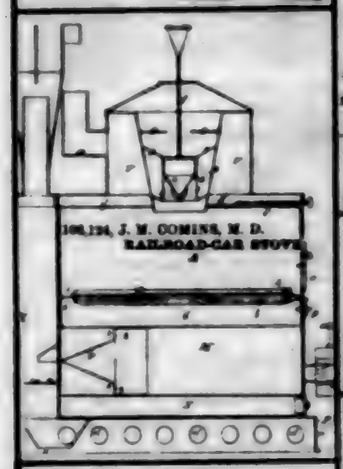


106,132, PATRICK CLARK. PIPE-JOINTS.



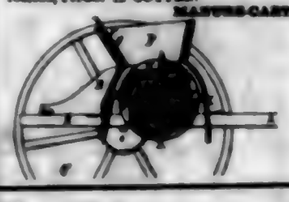
106,133, WM. CLEMSON. SAW-MANDREL.





106,134, J. M. COMINS, M. D.
RAIL-ROAD-CAR STOVE.

106,135, THOS. L. COTTLE.
MANURE-CARTS.

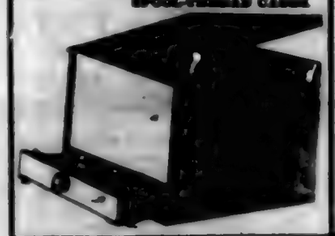


106,136,
BENJAMIN F. CRANDALL, Jr.
SLEIGHS AND CARRIAGES.

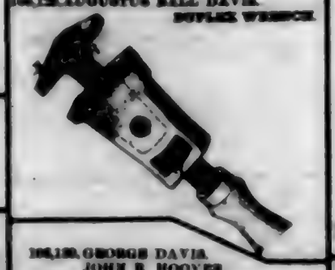


106,137, WALTER S. CROCKER.
MEDICAL COMPOUND AND LINIMENT.

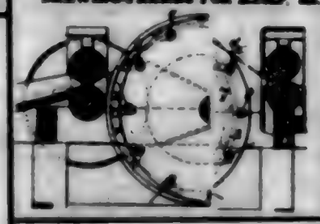
106,138, JOHN D. CUTTER.
SPOOL-THREAD CASES.



106,139, AUGUSTUS BALL DAVIS.
DUPLEX WRENCH.



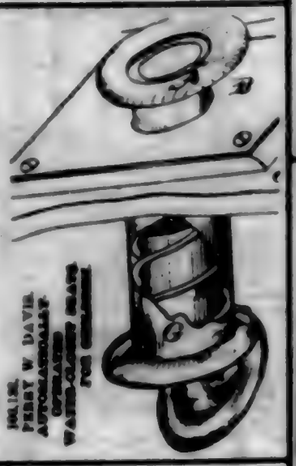
106,140, GEORGE DAVIS.
JOHN R. ROOVER.
DRAWING-FRAMES FOR ESPP, &c.



106,141, JAMES DAVIS.
RAILWAY SWITCHES.

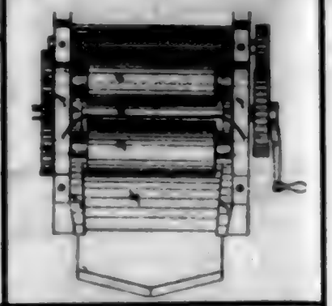


106,142,
FERET W. DAVIS.
APPARATUS FOR
OPERATING
WATER-CLOSET BASE
VALVES.

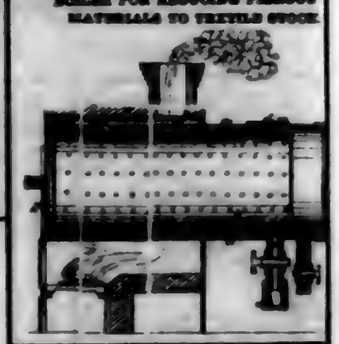


106,143, LORENZO DEAN.
APPARATUS FOR REDUCING FIBROUS
MATERIAL TO A TEXTILE STOCK.

106,144, LORENZO DEAN.
ATTACHMENT TO PAPER-MACHINES
TO PREVENT THE STRAINING
AND BREAKING OF THE PAPER
DURING MANUFACTURE.



106,145, LORENZO DEAN.
BOILER FOR REDUCING FIBROUS
MATERIALS TO TEXTILE STOCK.



106,146, C. H. DE KNIGHT.
CLOTHES-WRINGER.



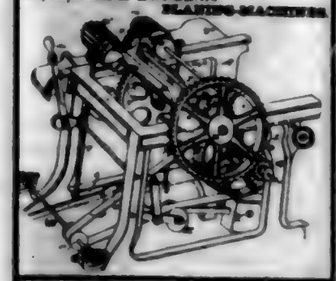
106,147, CHARLES H. DE KNIGHT.
WASHING-MACHINE.



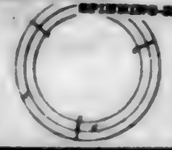
106,138, JAMES DENNIS. NUT-LOCK.



106,139, FRANK DOUGLAS.
PLAITING-MACHINES.



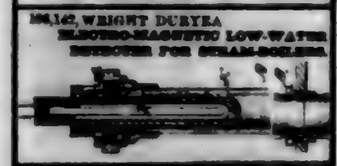
106,140, WM. F. DRAPER.
SPINNING-RING.



106,141, WRIGHT DURYEA.
ELECTRO-MAGNETIC LOW-WATER
ALARM FOR STEAM-BOILERS.

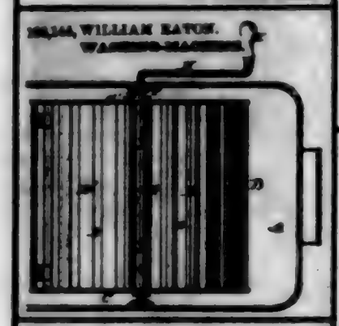


106,142, WRIGHT DURYEA.
ELECTRO-MAGNETIC LOW-WATER
DETECTOR FOR STEAM-BOILERS.



106,143, A. K. EATON. MANUFACTURE
OF PAPER PULP.

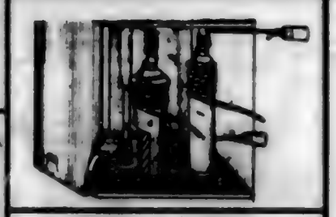
106,144, WILLIAM EATON.
WASHING-MACHINE.



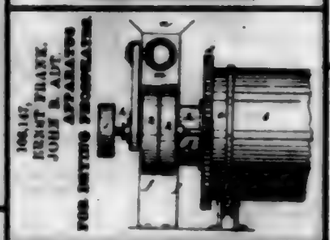
106,145, LORENZO FARNSWORTH.
PIANO-FORTES.



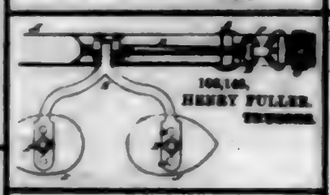
106,146, WILLIAM FARRAR. AUTOMATIC
MESH FOR CLOTHES-LINES.



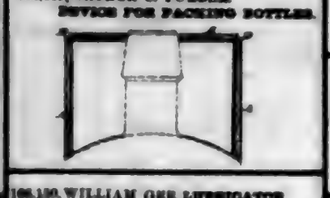
106,147,
HENRY FRANK,
JOHN R. AUT.
APPARATUS
FOR SETTING PRINTERS.



106,148,
HENRY FULLER.
TRUSSES.



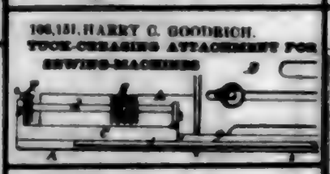
106,149, GEORGE C. FURBER.
DEVICE FOR PACKING BOTTLES.



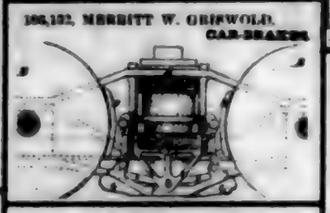
106,150, WILLIAM GEE. LUBRICATOR.



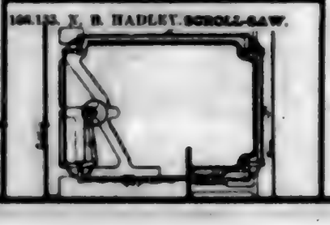
106,151, HARRY C. GOODRICH.
TUCK-CREASING ATTACHMENT FOR
SEWING-MACHINES.



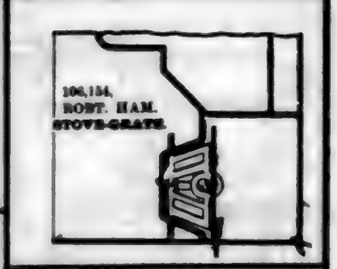
106,152, MERRITT W. GRISWOLD.
CAR-BRAKES.



106,153, E. B. HADLEY. SCROLL-SAW.



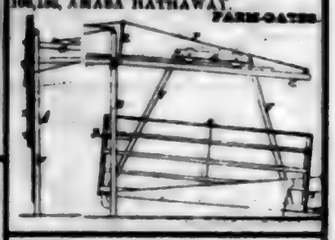
106,154,
ROBT. HAM.
STOVE-GRATE.



106,155, MILO HARRIS.
BOBBIN FOR SEWING-MACHINE.



106,156, AMASA HATHAWAY.
FARM-GATES.



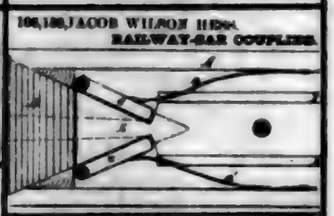
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SKY LIGHT.



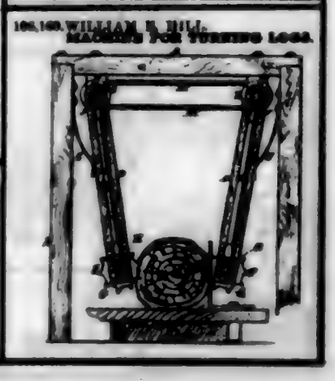
106,158,
JOSIAH D. HEEBNER.
MANURE-DRAG.



106,159, JACOB WILSON HESS.
RAILWAY-CAR COUPLING.



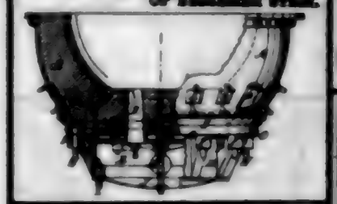
106,160, WILLIAM S. HILL.
MACHINE FOR TURNING LOGS.



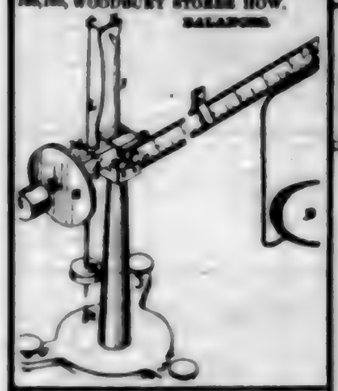
166,161. S. B. HOBBINGTON. CULTIVATORS.



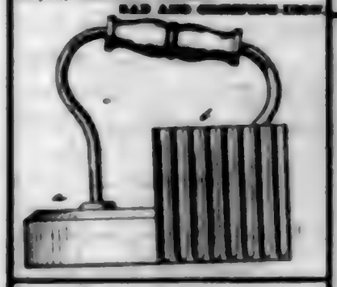
166,162. A. L. HOLLEY. APPARATUS FOR THE MANUFACTURE OF BESSEMER STEEL.



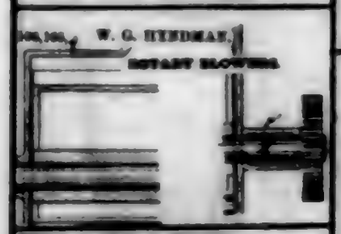
166,163. WOODBURY STORER HOW. BALANCES.



166,164. CHARLES HYATT. BAND AND CHECKING-STOP.



166,165. W. G. HEDDMAN. ROTARY HARROWS.



166,166. MARTIN V. INGERSOLL. [illegible]



166,167. WILLIAM S. INGRAHAM. MACHINE FOR SHARPENING HARVESTER-CUTTERS.



166,168. W. A. TYER. [illegible]



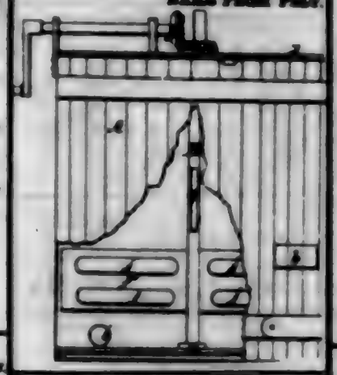
166,169. WM. JOHNSON. [illegible]



166,170. FRANK B. JONES. [illegible]



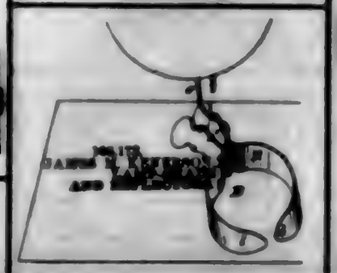
166,171. WILLIAM JONES. PROCESS OF SEPARATING HAIRS FROM FURS.



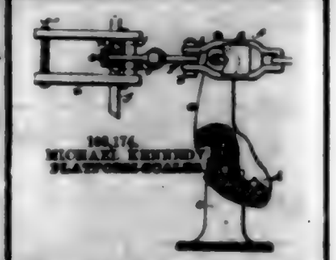
166,172. WILLIAM C. KAISER. MACHINES FOR BENDING CLEVIS AND [illegible]



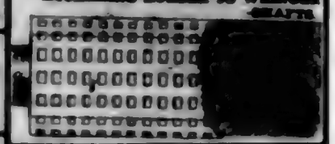
166,173. [illegible]



166,174. MICHAEL KENNEDY. PLATFORM-SCALES.



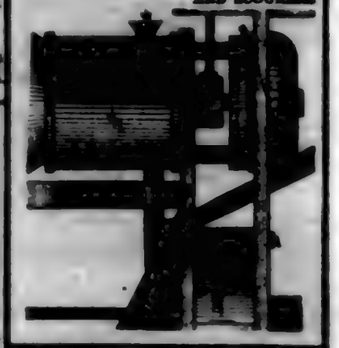
166,175. MILAN B. KENYON. ATTACHING RUBBER TO WOODEN SHAFTS.



166,176. JOHN W. KING. SHUTTER-FASTENING.



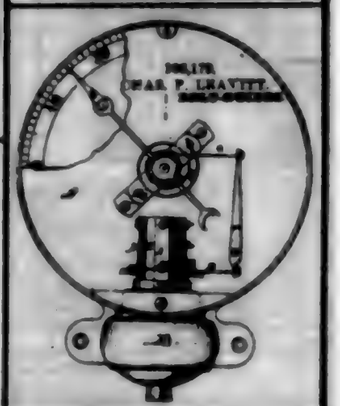
166,177. W. C. KNOX. GRAIN-SEPARATOR AND SCOURER.



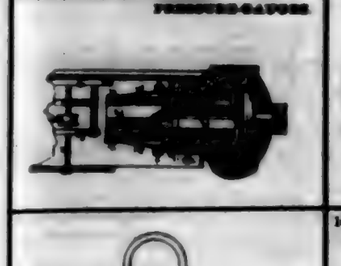
166,178. GEO. S. KOONTZ. J. B. HILL. [illegible]



166,179. CHAS. P. LEAVITT. [illegible]



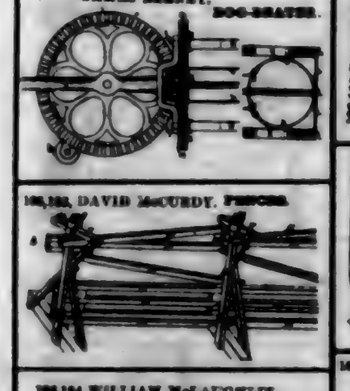
166,180. CHARLES LIEDER. PRESSURE-GAUGES.



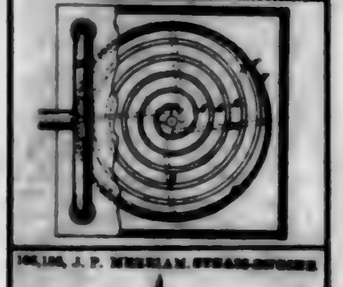
166,181. THOMAS F. LONGAKER. STABLE-CLEANER.



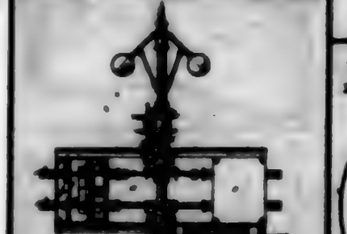
166,182. THOMAS MARSH. JAMES BERNEY. HOG-SCRAPER.



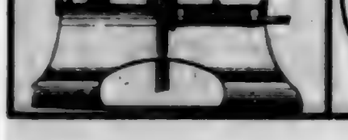
166,183. DAVID McCURDY. PRESS.



166,184. WILLIAM McLAUGHLIN. GRAIN-SCOURING MACHINE.



166,185. J. P. MERRIAM. STEAM-ENGINE.



166,186. EDGAR T. MILLER. METALLIC SOLES FOR BOOTS AND SHOES.



166,187. CHARLES MITSELFELD. SAWS.



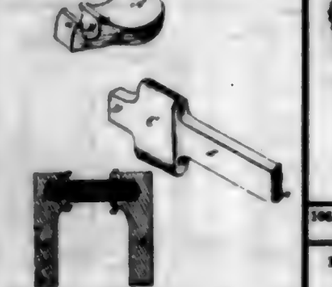
166,188. DAVID S. MORRIS. MACHINE FOR BENDING AXLES FOR PENDULUM CLOCK-BOBS.



166,189. THOMAS LAFEVDA MORRIS. WATER-ELEVATORS.



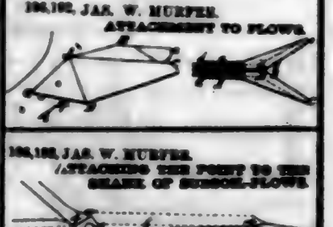
166,190. F. B. MORSE. PROCESS OF FORGING CARRIAGE-SHACKLES.



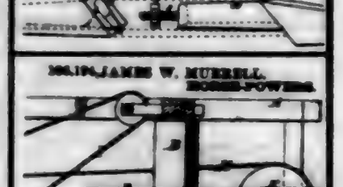
166,191. ANDREW MURDOCK. BASE-BURNING FIRE-PLACE HEATER.



166,192. JAS. W. MURPER. ATTACHMENT TO PLOWS.



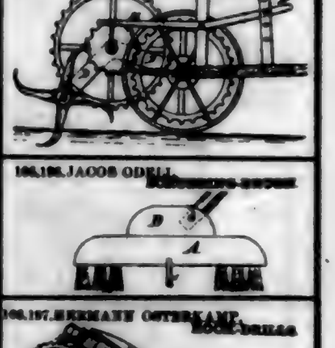
166,193. JAS. W. MURPER. ATTACHING THE POINT TO THE SHANK OF SUBSOIL-PLOWS.



166,194. JAMES W. MURRELL. HORSE-POWERS.



166,195. GODFREY S. NEWTON. SUBSOIL PULVERIZERS.



166,196. JACOB ODELL. [illegible]



166,197. HERMANN OTTERKAMP. ROCK-DRILLS.



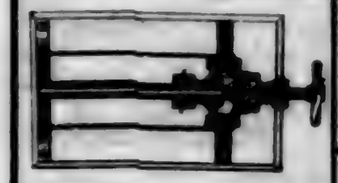
166,198. CHARLES F. PANKEN. SEW.

166,199. ROBERT W. PARK. VAPOR-BURNERS.



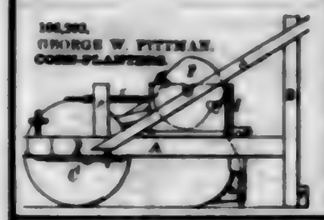
166,200. ROBERT W. PARK. VAPOR-BURNERS.

100,201, E. LAMSON PERKINS, J. H. MOULTON, CHAS. B. SAWYER. STEAM-TRAPS.

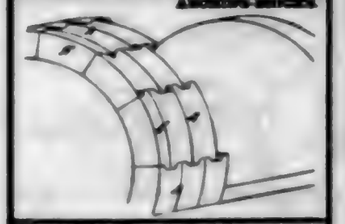




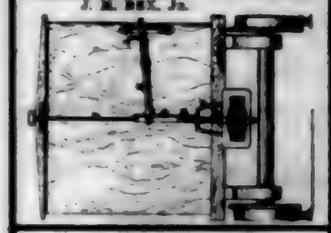
100,202, GEORGE W. PUTNAM. CORN-PLANTERS.

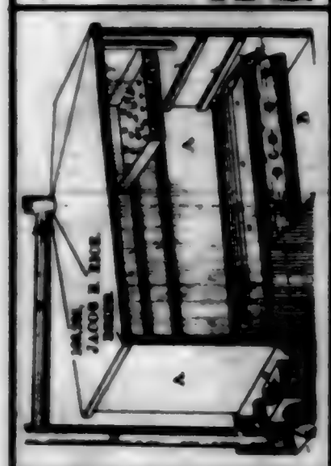


100,203, WATSON F. QUIBBY. ARCHING-BRICKS.



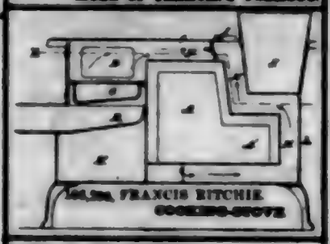
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100,206, SAMUEL G. RICE. MODE OF TREATING TOBACCO.



100,207, FRANCIS RITCHIE. COOKING-STOVE.

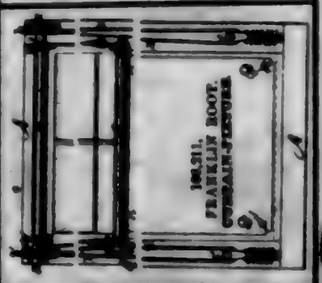
100,208, JOHN ROBINSON, SAMUEL F. ROBINSON, CHRISTOPHER C. PUTNAM. APPARATUS FOR TANNING.



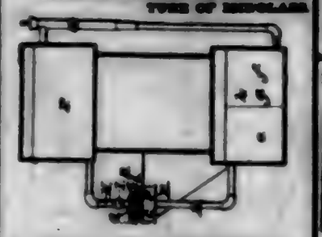
100,209, DAVID F. ROE. BRIDLE.



100,210, FRANKLIN ROOT. CURRAIN-JOINER.

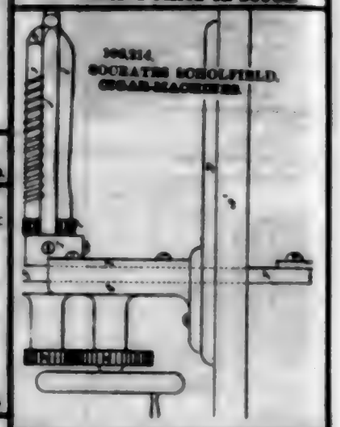


100,211, EBENEZER ROWE. APPARATUS FOR COOLING THE ROLLERS USED IN THE MANUFACTURE OF SHEET-GLASS.

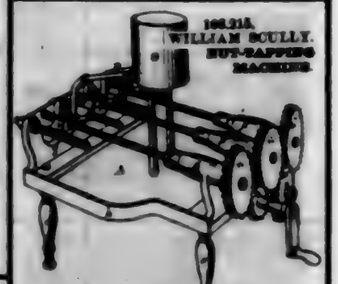


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100,214, SOCRATES SCHOLFIELD. CIGAR-MACHINES.



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100,216, OSCAR W. SMITH. APPARATUS FOR CARRYING GRAIN, PLASTER, &c., FOR SOWING.



100,217, GEORGE SEYMOUR. FURNACE APPARATUS.

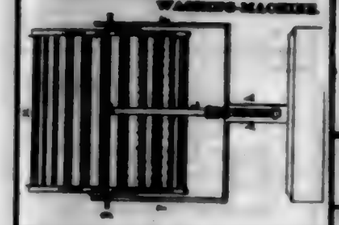


100,218, EPHRAIM SHAW. MITERING-MACHINE.

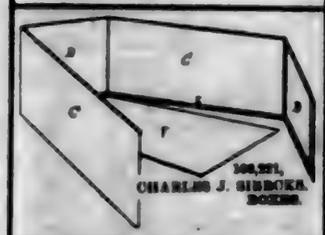


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100,220, MORRILL A. SHEPARD. WASHING-MACHINE.



100,221, CHARLES J. SIBBOLD. BOXES.



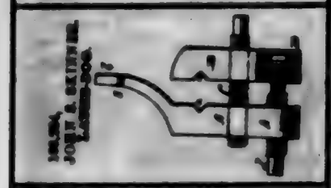
100,222, E. D. SIETTRNICH. STEAM-GENERATOR.



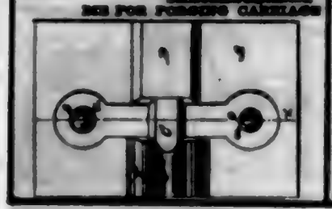
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100,225, WILLIS B. SMITH. SHACKLE-BLANK. DIE FOR FORGING GARNITARS.



100,226, PETER M. ATHILL. SUGAR-MILL.



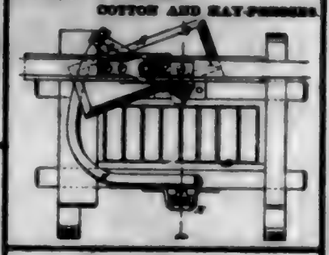
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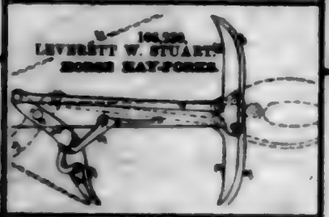
100,228, CHAS. H. STOCKER. FEEDING DEVICE AND FEEDER-FOOT FOR SEWING-MACHINES.



100,229, C. W. STOPPLE. COTTON AND HAY-PRESSES.



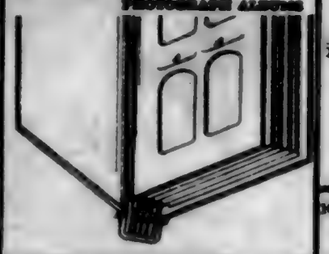
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100,231, WILLIAM GEORGE STUART. WATER-CLOSETS.



100,232, J. F. TAPLEY. PHOTOGRAPH ALBUMS.

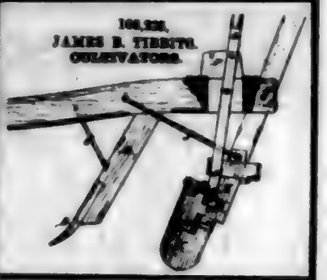


100,233, J. A. TATRO. REFINING PETROLEUM.

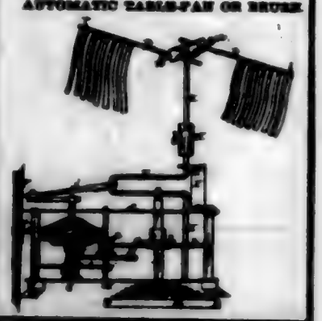
100,234, JAMES C. TERRY. BOOK-BINDING.



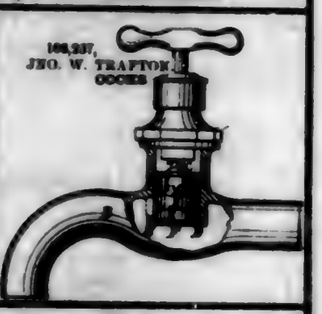
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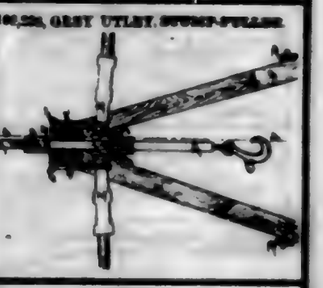
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100,237, JNO. W. TRAFTON. COCKS.



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106,343, WM. WILMINGTON. GARD-HOOK AND GARD-WIRE. [illustration]

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106,346, NATHAN H. ANGLER. MAGAZINE GUNS. [illustration]

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106,348, WILLIAM HENRY BRIGHTH. SKEIN-CORD REGAINER. [illustration]

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106,350, ABNER BISHOP. BAGGAGE-STOPPER AND LABEL-HOLDER. [illustration]

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106,359, CHARLES G. DODGE. SWITCHES-STANDS. [illustration]

106,360, JOHN B. DOUGHERTY. MACHINE FOR MANUFACTURING HOOPS. [illustration]

106,361, ISIDORE DREYFUS. LUBRICATORS. [illustration]

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106,363, G. A. FREAR. MANUFACTURE OF ARTIFICIAL MARBLE.

106,364, THOMAS GLOVER. MOLDING-MACHINE. [illustration]

106,365, WILLIAM H. HAWLEY. CORERS FOR CASTING AXLE-BOXES. [illustration]

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106,367, D. J. KNOWLES. BELT-SHIFTING MECHANISMS FOR LOOMS. [illustration]

106,368, JAMES S. LESTER. DEVICES FOR OPERATING WINDOWS. [illustration]

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106,370, NORMAN B. MARTIN. APPARATUS FOR EVAPORATING. [illustration]

106,371, COVE MITCHELL. GRINDING-MILLS. [illustration]

106,372, JOHN H. MEVINS. BLIND-FASTENING. [illustration]

106,373, WILLIAM NEWSHAM. MOLDING AND VENTING-MACHINE. [illustration]

106,374, JESSE HORLOCK. APPARATUS FOR GAS-GENERATORS. [illustration]

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106,376, PETER PHILIP. MACHINES FOR HUSKING CORN. [illustration]

106,377, PETER PHILIP. HUSKER-MACHINES. [illustration]

106,378, JOHN PLANT. HINGES. [illustration]

106,379, JAMES A. PRIEST. CAR-COUPLING. [illustration]

106,380, JAMES T. PAGE. BROILER. [illustration]

106,381, GEORGE T. PEABALL. PLANING-MACHINE. [illustration]

106,382, LEMAN B. PITCHER. PREPARATION OF LIME AND MORTAR. [illustration]

106,383, PETER PLAMONDON. MILL-STONE-DRAWING. [illustration]

106,384, THOS. POLLARD. HOISTING APPARATUS. [illustration]

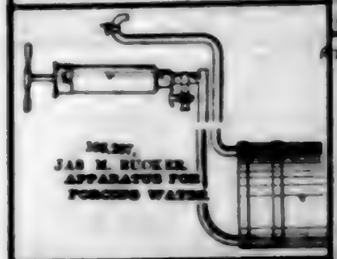
106,305. ELIAS PROPST, JAMES P. AVIS. BOOK-BINDING.



106,306. GOTTLIEB FRIEDRICH C. BOGEL-THAL. CHILDREN'S CARRIAGE.



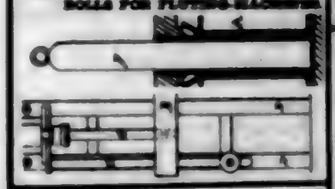
106,307. JAS M. BUCKER. APPARATUS FOR FORCING WATER.



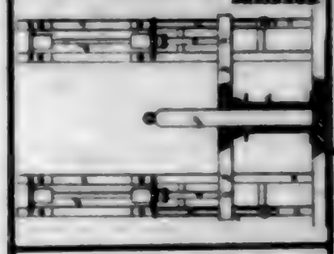
106,308. JOHN S. BUEVAN. COMBINED BOOKER AND FURNACE.



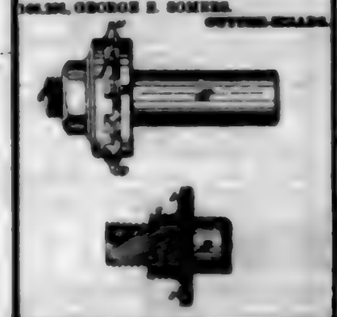
106,309. HENRY SAUERBIER. ROLLS FOR FLUTING-MACHINES.



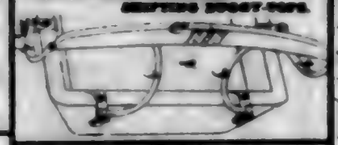
106,310. ROBERT SKINNER, RICHARD GAINES. MACHINES FOR THE MANUFACTURE OF COMPOSITION PIPES FOR DRAINAGE.



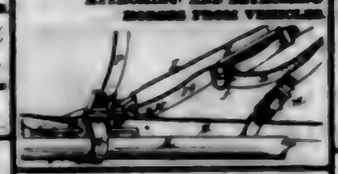
106,311. GEORGE E. SOMERS. CUTTING-BLADE.



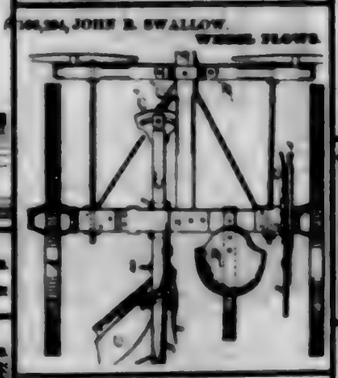
106,312. GEORGE STRICKER. SHIPPING BOOBY-TOPS.



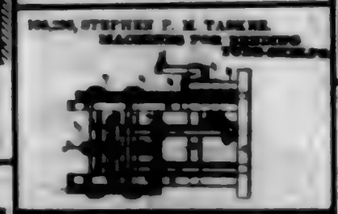
106,313. GEORGE SWITZER. ATTACHMENT AND DETACHING HORSES FROM VEHICLES.



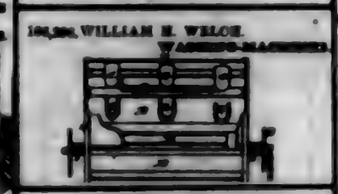
106,314. JOHN B. SWALLOW. WHEEL PLOWS.



106,315. STEPHEN P. M. TASKER. MACHINES FOR BENDING



106,316. WILLIAM H. WELCH. WASHING-MACHINES.



106,317. WILLIAM WELLS. GAS-BRACKET.



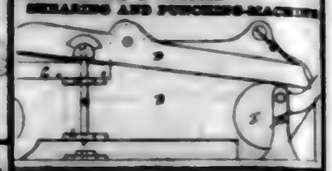
106,318. WILLIAM WELLS. BOOT OR GAITER PUSH-BOARD.



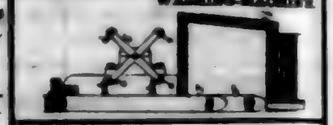
106,319. SAMUEL B. WESTCOTT. STOPPING ARRANGEMENT FOR



106,320. JOSIAH G. WILCOX. SHEARING AND PUNCHING-MACHINE.



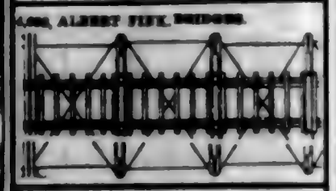
106,321. JOSEPH BEARFORD WILSON. WASHING-MACHINE.



4,005. SAMUEL LEWIS ALLEN. PLANING-MACHINE.



4,006. ALBERT FIFE. BRIDGE.

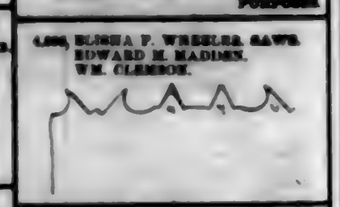


4,007. A. H. GILMAN. SPINDLES FOR SPINNING

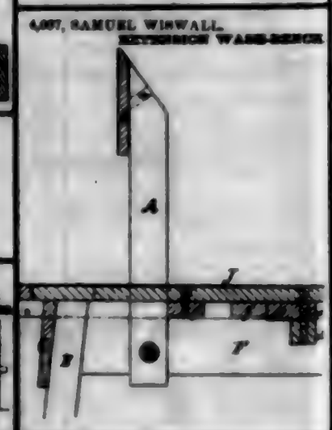


4,008. FERDINAND LEROY, ADMINISTRATOR, AND P. A. VICTOR LE LUBEZ, ASSIGNEE OF FERDINAND LEROY, DECEASED. COMPOSITION FOR COVERING STEAM-BOILERS AND FOR OTHER PURPOSES.

4,009. ELISHA P. WHEELER, SAWS. EDWARD M. MADDEN, WM. CLEMSON.



4,010. SAMUEL WINSALL. REVERSIBLE WARP-BEAM.



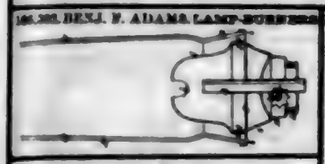
ILLUSTRATIONS OF PATENTS

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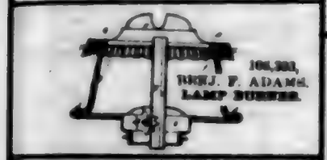
THE UNITED STATES PATENT OFFICE

AUGUST 16, 1870.

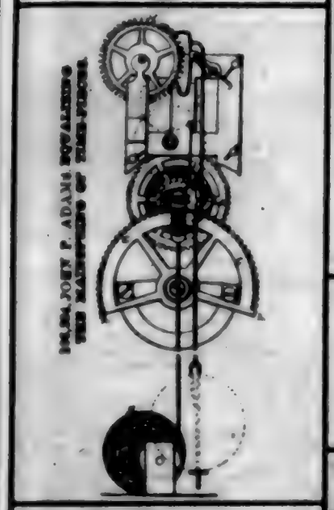
106,302. BENJ. F. ADAMS, LAMP-BURNER.



106,303. BENJ. F. ADAMS. LAMP BURNER.



106,304. BENJ. F. ADAMS, JOSEPH P. ADAMS, BOOKER AND FURNACE.



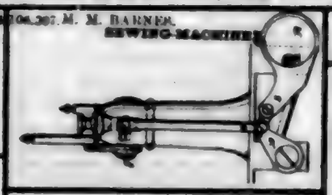
106,305. H. G. AYDELOTT. CUTTING APPARATUS FOR HARVESTERS.



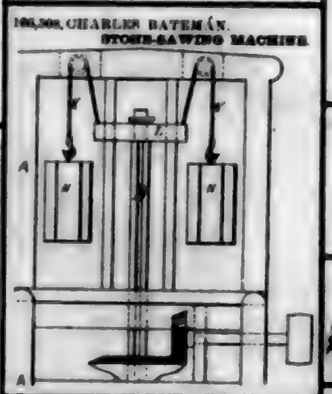
106,306. JOHN ASHWORTH, HARNESS. OPERATING MECHANISM FOR LOOMS.



106,307. M. M. BARNES. SEWING-MACHINES.



106,308. CHARLES BATEMAN. STONE-SAWING MACHINE.



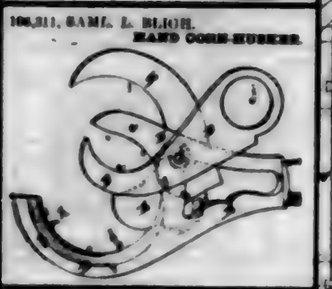
106,309. MILTON BENNET. TOP PLATE OF COOKING-STOVES.



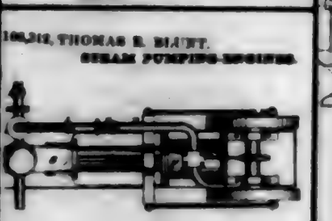
106,310. HIRAM BIGELOW. CHISEL FOR CUTTING GAINS.



106,311. SAML. L. BLIGH. HAND CORN-HUSKER.

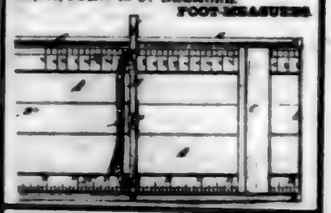


106,312. THOMAS B. BLUNT. STEAM PUMPING-ENGINE.

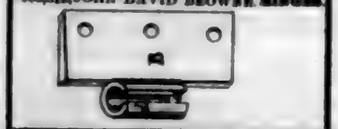


106,312. GUSTAVE BOURGADE. COMPOUND FOR FERTILIZER.

106,314. JOHN C. F. BREMER. FOOT-MEASURES.



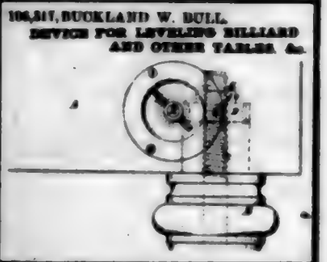
106,315. JOHN DAVID BROWER. HINGES.



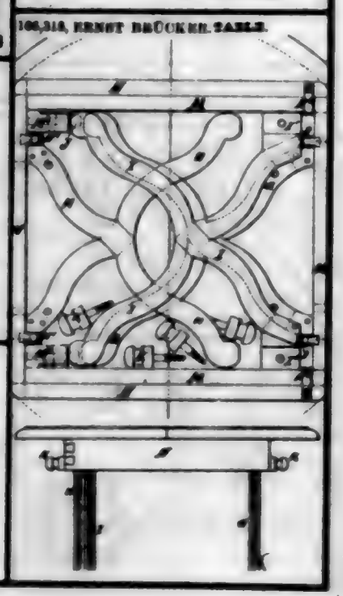
106,316. CHAS. T. BAADE. SPRING BED-BOTTOM.

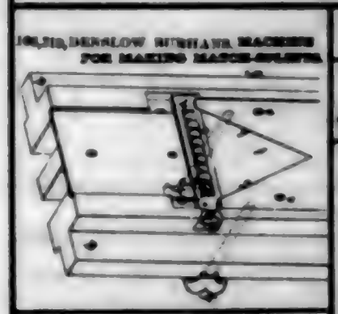


106,317. BUCKLAND W. BULL. DEVICE FOR LEVELING BILLIARD AND OTHER TABLES &c.



106,318. ERNST BRÜCKER. TABLE.





No. 340, DENSLOW SUTHAM, MACHINE FOR MAKING MATCH-SPLINTS.



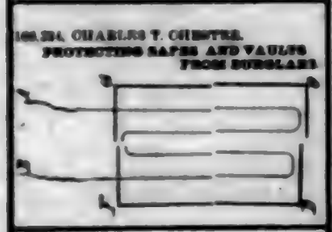
No. 339, J. B. BUXTON, CORRUGATED METAL AND BENDING-MACHINE.



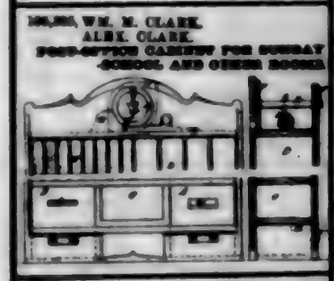
No. 338, JAMES CORMAC, ALEXANDER STOBIE, PACKING FOR HARVESTER.



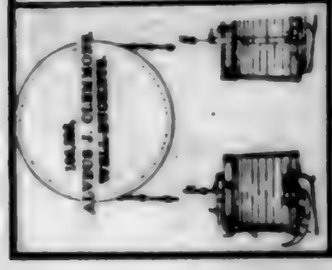
No. 337, DUDLEY B. CHAPMAN, MANUFACTURE OF BIRCH SOAP.



No. 336, MATTHEW CHAPMAN, PANEL-GRIPER.



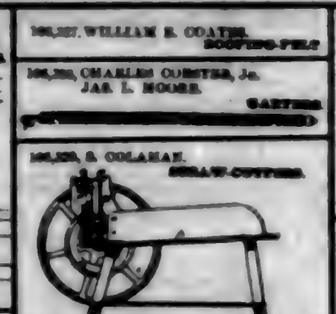
No. 335, CHARLES T. CORNTER, PROTECTING SAFES AND VAULTS FROM BURGLARS.



No. 334, WM. M. CLARK, ALEX. CLARK, POST-OFFICE CABINET FOR SUNDAY-SCHOOL AND OTHER BOOKS.



No. 333, ALVIRO J. CLEMONT, WASHING-MACHINE.



No. 332, STEPHEN H. COLE, APPROACH-GATE.



No. 331, RICHARD H. CONNELLY, PANEL-WHEELS.



No. 330, JOHN B. CROCKER, STRETCHER FOR PICTURE-FRAMES.



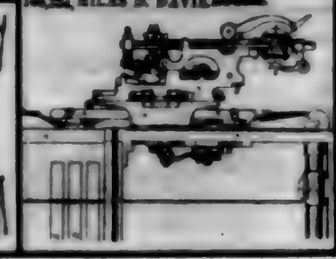
No. 329, JOHN CUMMINS, CORNFIELD FOR CURE OF CONCRETE, &c.



No. 328, SILAS D. DAVIS, SHAVER.



No. 327, JOSEPH DEUTSCHER-LOCHER.



No. 326, GEO. W. DILLER, SPRING-SEAT FOR VEHICLES.

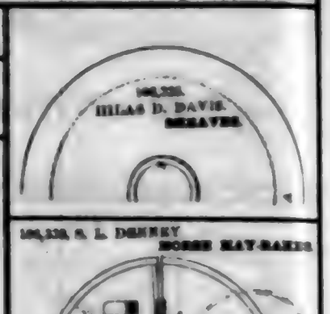


No. 325, JOSEPH DIXON, MATTHEW B. SAMPSON, PUTTAH CONNECTIONS FOR HARVESTERS.

No. 324, WILLIAM DONOGHUE, REVERSING-TABLE BLIND.

No. 323, WILLIAM DUNCAN, HARNESS FOR HARVESTERS.

No. 322, SILAS D. DAVIS, SHAVER.



No. 321, S. L. DEMEY, HORSE HAY-RAKE.



No. 320, JOSEPH DEUTSCHER-LOCHER.



No. 319, GEO. W. DILLER, SPRING-SEAT FOR VEHICLES.



No. 318, JOSEPH DIXON, MATTHEW B. SAMPSON, PUTTAH CONNECTIONS FOR HARVESTERS.



No. 317, WILLIAM DONOGHUE, REVERSING-TABLE BLIND.



No. 316, WILLIAM DUNCAN, HARNESS FOR HARVESTERS.

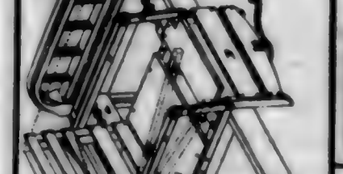




No. 342, WILLIAM T. EASTER, HARVESTER-RAKE.



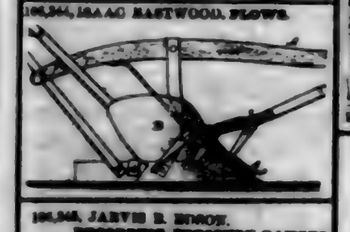
No. 343, WILLIAM T. EASTER, INVALID CHAIR AND LOUNGE.



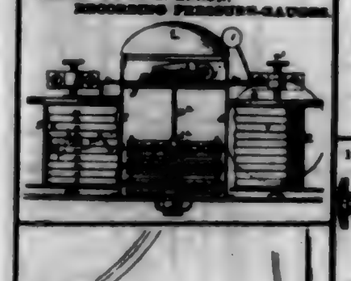
No. 344, ISAAC EASTWOOD, PLOWS.



No. 345, JARVIS B. ENGS, RECORDING PEDESTRE-GAUGES.



No. 346, LEWIS ELLIOTT, Jr., GEO. H. FOWLER, BRICK-MACHINE MOULD.



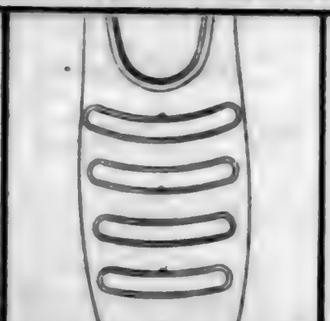
No. 347, WILLIAM ENNIS, MANUFACTURE OF WROUGHT AND PUDDLED IRON.



No. 348, J. ERICSSON, TAR-BLOWERS.



No. 349, GEORGE H. EVANS, STAR-WHEEL.



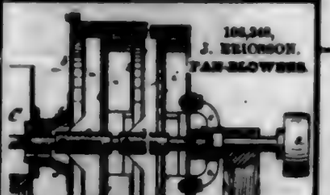
No. 350, DAVID J. GEORGE, OVERS.



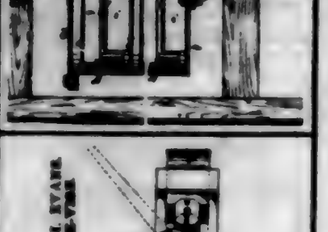
No. 351, GEO. L. GERARD, TABLE-LEAF SUPPORTER.



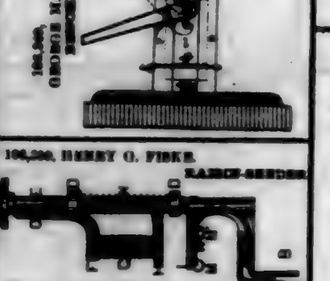
No. 352, JOHN L. GRAHAM, CULTIVATOR.



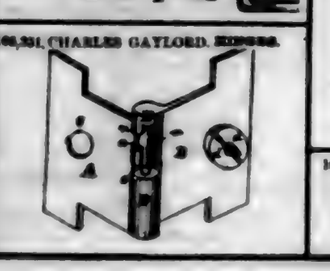
No. 353, WILLIAM H. GRAY, HAY-LOADER.



No. 354, A. J. GRELY, BUCKLES WITH BUTTON-HOLE ATTACHMENT.



No. 355, HENRY O. FISKE, SEED-SEEDER.



No. 356, CHARLES GAYLORD, HINGES.



106,367. THOMAS K. GRIFFITH.
APPARATUS FOR RAKING AND BINDING GRAIN.

106,368. DANIEL B. HART.
DOORS FOR [illegible]

106,369. MOSES A. KELLER.
SEPARATOR ATTACHMENTS TO THRASHING-MACHINES.

106,370. [illegible]
[illegible]

106,371. MICHAEL D. KELLY.
WATCH-MAKERS' TOOLS.

106,372. CHARLES GODFREY GUMPEL.
STEERING APPARATUS.

106,373. MICHAEL D. KELLY.
DEVICE FOR WINDING MAINSPRINGS OF WATCHES.

106,374. WILLIAM H. NEWPLEY.
MACHINE FOR TURNING AXLE-TREES.

106,375. JAMES HENDERSON.
THE MANUFACTURE OF IRON AND STEEL.

106,376. EUGENE IRON.
THE MANUFACTURE OF IRON AND IRON-COLS.

106,377. JOHN F. JOSEPH.
RAILWAY CAR-COUPLING.

106,378. JOHN L. KNOWLTON.
LATH-MACHINE.

106,379. GEORGE B. HAMLIN.
MACHINERY FOR PREPARING APPLES FOR THE MANUFACTURE OF CIDER.

106,380. GEORGE B. HAMLIN (assignor) AND SELF-ADJUSTING SHAFTS.

106,381. J. MILTON JONES.
[illegible]

106,382. EDWARD E. JOSEPH.
[illegible]

106,383. JOHN E. HARRIS.
WHEEL-HUBS.

106,384. [illegible]
[illegible]

106,377. V. LEONARD.
[illegible]

106,378. AARON B. LOCKE.
RAILWAY CARRIAGES.

106,379. DAVID MARSHALL.
CARRIAGE-JACK.

106,380. THOMAS MARSHALL.
PORTABLE GAS-PIPE VISE.

106,381. FRANK W. MARSTON.
[illegible]

106,382. PERR. MAULDING.
JNO. U. FRALEY.
SHOTGUN-FASTENING.

106,383. EDWIN D. McCRACKEN.
GALVANIC BATTERIES.

106,384. ALVIN McDONALD.
JAS. M. WHITE.
PAINT-[illegible]

106,385. O. M. L. McMILLEN.
HORSE HAY-RAKES.

106,386. CHARLES MESSENGER.
MOSQUITO BAT-HOLDER.

106,387. ALEXANDER MIDDLEBROOK.
SWING FOR CIRCULAR SAWS.

106,388. JOSEPH A. MILLER.
STEAM-GENERATORS.

106,389. JOSEPH MILLWARD.
CARBURETING AIR APPARATUS.

106,390. OSCAR F. MONFORT.
TILE-CUTTING MACHINE.

106,391. JOHN MOSS.
[illegible]

106,392. D. A. MOSIER.
STEAM-GENERATOR.

106,393. JOHN NELSON.
BOXES.

106,394. EDWARD NOBLE.
SELF-CLOSING COMPRESSION FAUCETS.

106,395. HARRISON OSBORN.
FANNING-MILLS.

106,396. CHARLES F. OLIVER. PIANO ACTIONS.

106,397. EZRA A. ULLEMAN. GROUND-PULVERIZERS.

106,398. W. E. OSBORN. HAND-STAMPS.

106,399. WILLIAM R. PATTON. CAR-COUPLER.

106,400. ANDREW J. PEAVEY. GOVERNORS FOR STEAM-ENGINES.

106,401. S. PERKINS. REFRIGERATOR.

106,402. ANDREW F. PICKENS. BOXES FOR SLIDING &c.

106,403. JOHN F. X. PIEHL. SCHOOL-DESK.

106,404. PHILIP H. PITTS. CATTLE-GUARD.

106,405. SAMUEL W. PORTER. RAISING-STUD.

106,406. ASAHEL QUIMBY. WAGON-BRAKE.

106,407. FRANCOIS CHARLES RICHER. COFFEE-MILLS.

106,408. SAMUEL RIDER. PORTABLE IRON BRIDGE.

106,409. JOHN ROSENKRANZ. FOUNDING-MACHINE.

106,410. WM. P. ROSMAN. STOVE-PIPE DAMPER.

106,411. CYRUS W. SALADEE. FARM-GATE.

106,412. E. W. SANDFORD. RAILWAY-CAR BRAKE.

106,413. JOSIAH H. SIMPSON. PARLOR ORNAMENTS.

106,414, JOHN SLATER. WASHING AND ROLLING.

106,415. CHAS. H. SMITH. TAPING-SHUTTLE.

106,416. ROBERT L. SMITH. CURTAIN-FIXTURE.

106,417, WM. M. SMITH. COTTON AND HAT-PRESSES.

106,418. W. W. SMITH. BLOWING-MACHINE.

106,419. J. H. SNYDER. MACHINES FOR MAKING CHAIN-LINKS.

106,420. CHARLES F. STACKPOLE. SLIDE-STOCK FOR LATHES.

106,421. DARIUS STEVENS. CUTTER-HEAD FOR PLANING-MACHINES.

106,422. ISAAC W. STEWART. SHAFTER-PIN.

106,423. J. H. STOCKTON. RAILWAY SWITCH.

106,424. JOHN W. STOCKWELL. WATER-PIPE MACHINE.

106,425. OTTO STOELKER. RACKING FURNITURE.

106,426. RICHARD STREET. CLAMP FOR LIGHTNING-RODS.

106,427. GEORGE W. SWINEBROAD. PRESSES FOR HAT, COTTON, &c.

106,428. ASHER S. TAYLOR. BEVERAGE, OR "CHAMPAGNE MEAD."

106,429. GILBERT FISK TAYLOR. GEAR FOR CARPET-SWEEPING MACHINES.

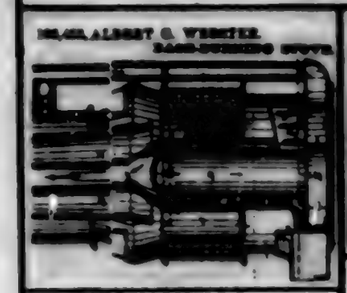
106,430. AUGUSTUS F. TRIPP. BRIDGE-BOX.

106,431. WILLIAM TUCKER. SAW-FILING MACHINE.

106,432. ALMON TWING. REVERSIBLE CENTER PINION FOR WATCHES.

106,433. HENRY VAN KEUREN. PUMPS.

106,434. HORACE S. WEAVER. RAILWAYS.



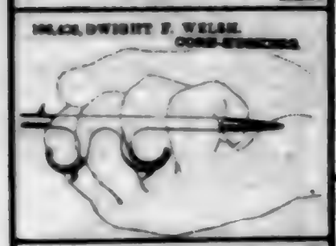
No. 433, ALBERT G. WEBSTER.
BARK-BURNING STOVE.



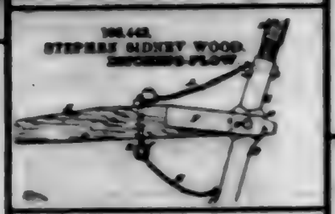
No. 432, GEORGE A. WEBB.



No. 434, JAMES C. ARIS.
MANUFACTURE OF POCKET-BOOKS.



No. 435, DWIGHT F. WELSH.



No. 436,
STEPHEN SIDNEY WOOD.
IMPROVED PLOW.



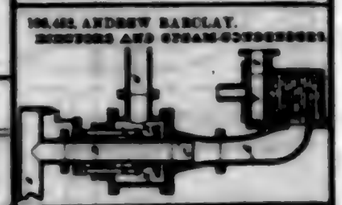
No. 437, JAMES HALL.
MANUFACTURING ENVELOPES.



No. 438, HARRISON W. WHITE.



No. 439,
GILBERT I. WOOSTER.
HAY-GRAPPLE.



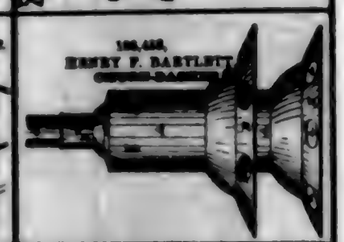
No. 440, ANDREW BARCLAY.



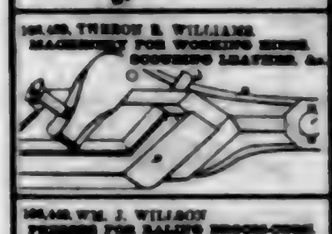
No. 441, ABEL WHITLOCK, SAWJACK.



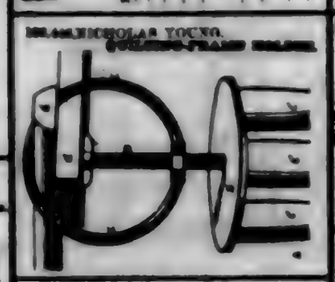
No. 442,
ALLEN P. YOUNG.
SOFFAMER BASE-BEAD.



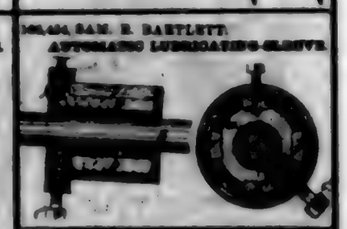
No. 443,
HENRY F. BARTLETT.



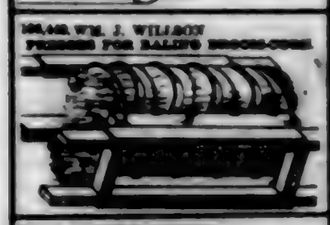
No. 444, THEROY B. WILLIAMS.
MACHINERY FOR WORKING SHOE-SOLEING LEATHER, &c.



No. 445, NICHOLAS YOUNG.



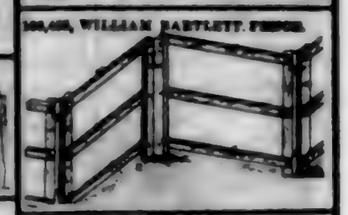
No. 446, SAM. B. BARTLETT.
AUTOMATIC LUBRICATING-SLEEVE.



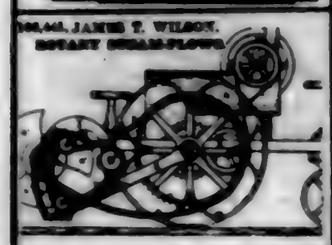
No. 447, WM. J. WILSON.
FEEDER FOR BALING HOOP-IRON.



No. 448, ANDY M. ADAMS.



No. 449, WILLIAM BARTLETT, PRINTER.



No. 450, JAMES T. WILSON.
ROTARY SUBSOIL-PLOWS.



No. 451, WM. ADAMSON.
THE MANUFACTURE OF GLUE.



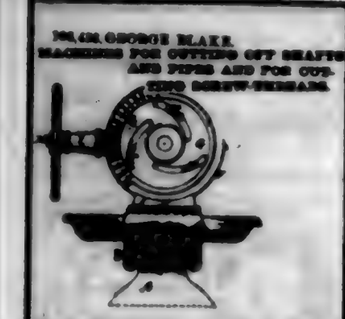
No. 452,
W. B. BARTON.
MODE OF ATTACHING SLEEVE-BELLS TO GRAPE.



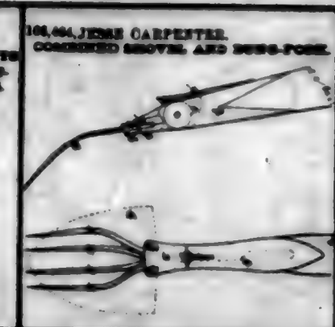
No. 453, EDWD. A. ARCHIBALD.
MANUFACTURE OF WEDGES.



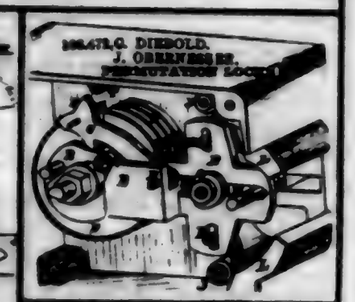
No. 454, H. C. BERRY.
QUARTING APPARATUS.



No. 455, GEORGE BLAKE.
MACHINERY FOR CUTTING OFF SHAFTS AND PIPES AND FOR CUTTING SCREW-THREADS.



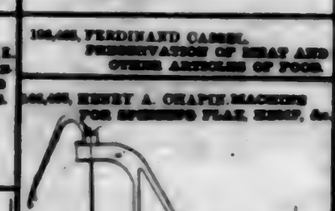
No. 456, JESSE CARPENTER.
COMBINED MOWER AND REPER.



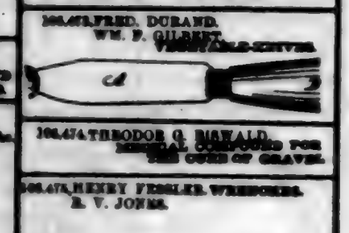
No. 457, C. DIEBOLD.
J. OBERNDORFER.
PERMUTATION LOCK.



No. 458,
LYMAN R. BLAKE.
LASTS FOR MACHINE-SEWED TURNED SHOES.



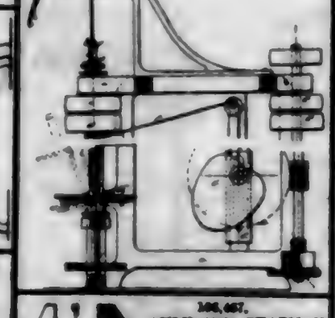
No. 459, FERDINAND CARRÉ.
PRESERVATION OF MEAT AND OTHER ARTICLES OF FOOD.



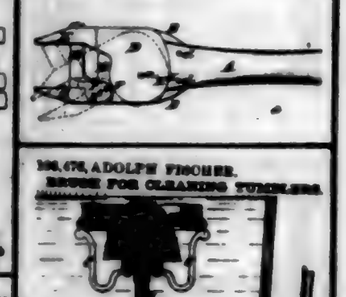
No. 460, FRED. DURAND.
WM. P. GILBERT.



No. 461,
MILTON P. BOYD.



No. 462, HENRY A. CHAPIN, MACHINE FOR SPOOLING THAD, SEWING, &c.



No. 463, GEO. E. BRINGMAN, TOY TOAD.



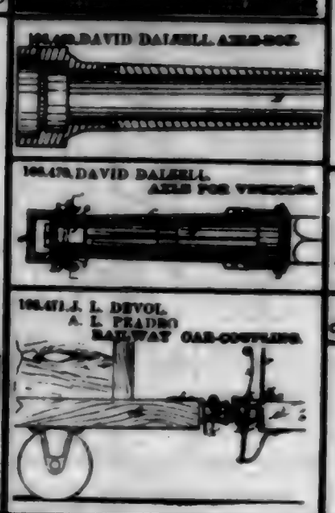
No. 464, HERMAN P. BROOKS.
HEMP-SCRAPER.



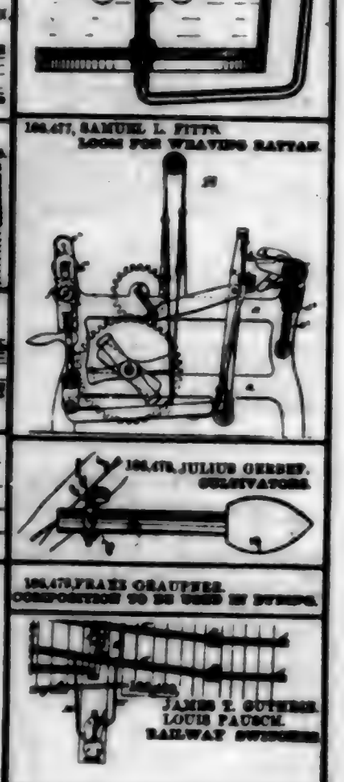
No. 465, THOMAS GROOMLEY.
BLOCKS FOR CARPET-STRETCHERS.



No. 466,
WILLIAM M. BUTLER.
SECTIONAL GEAR.



No. 467,
SYLVANUS CHAPMAN.
WRENCHES.



No. 468, JULIUS GERSEP.
CULTIVATORS.



No. 469, DAVID DALZELL.
AXLE-BOX.

No. 470, DAVID DALZELL.
AXLE FOR VEHICLES.

No. 471, J. L. DEVOL.
A. L. PRADEL.
RAILWAY CAR-COUPLING.

No. 472, FRAZE GRAUPNER.
CONSTRUCTION TO BE USED IN PUMPS.

JAMES T. GUTHRIE.
LOUIS PAUSCH.
RAILWAY SWITCHES.

106,491. HENRY H. HALL.
BRIDLING ATTACHMENT FOR SEWING-MACHINES.

106,492. GEORGE B. HAMLIN.
SHAKE AND RIVE-LOG-WASH CUTTER.

106,493. GEORGE B. HAMLIN.
ROBBER-POWERS.

106,494. HENRY HENLEY.
FRUIT-DRIER.

106,495. FRANK HOLLENBERRY.
SCUTTLE-JACK.

106,496. JNO. HUGHES. JOURNAL-BOX.

106,497. WM. CARLTON IRELAND.
COUPLING FOR WIRE RIGGING.

106,498. JOS. L. JOYCE.

106,499. JOEL L. LA ROE.
WASHING-MACHINE.

106,500. JOHN KELLER. BRICK-MACHINE.

106,501. ROBERT LAFFERTY.
HUGH W. LAFFERTY.
CENTRIFUGAL SUGAR-DRAINING MACHINE.

106,502. L. T. LINDSEY.
REFRIGERATING MACHINE.

106,503. HENRY MANBECK.
COMBINATION OF LABEL-HOLDER AND HANGER.

106,504. DAVID MAYDOLE.
SPRING FOR PISTON PACKING.

106,505. ALEXANDER McGUIRE.
HARNESS FOR CARRIAGES.

106,506. HERMANN MOHR.
STEAM-ENGINE.

106,507. J. B. MORRISON.
FLEXIBLE SHAFT.

106,508. EDWARD MORSE.
KNITTING-MACHINE.

106,509. WASHINGTON B. MYERS.
HORSES AND FERRULELESS CONSOLIDATED.

106,510. ANDREW PATTERSON, MARS.

106,511. MERRITT PECKHAM.
FIRE-GRATES.

106,512. MERRITT PECKHAM.
BASE-BURNING STOVE.

106,513. JOHN POTTER.
TOBACCO-BOX OR SAFE.

106,514. T. B. PYRON. HORSE-POWER.

106,515. CORNELIUS SCHILLING.
PROPELLING APPARATUS.

106,516. ADAM REID. SHIPPING-PAIL.

106,517. THOMAS H. RICH.
SHEAVE-BLOCKS.

106,518. F. S. RITTER.
MANUFACTURE OF TRUSS-PADS.

106,519. JAS. H. RUFF. IRONING TABLE.

106,520. J. B. SARGENT.
GREENSTON'S JOURNAL-BOX.

106,521. GEO. T. SAVARY.
MORTISING-MACHINE.

106,522. JACOBS W. SCHUCKERS.
HARVESTER-RAKES.

106,523. LEONARD B. SHIPMAN.
TOWING-HOOKS FOR CANAL-BOATS.

106,524. JAS. SMITH. SPARK-ARRESTER.

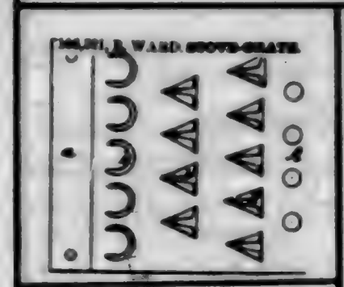
106,525. O. F. STEDMAN.
WASH-BOILER.

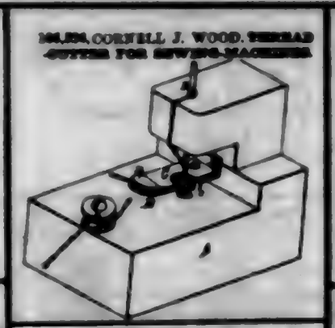
106,526. THOS. TRIPP.
FIRE-EXTINGUISHER.

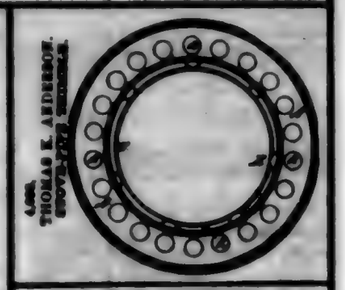
106,527. WM. P. VAN DEURSEN
COMPOUND
FOR EXTINGUISHING FIRES.

106,528. HENRY R. VAN EPS ASSIGNOR
LATCH AND LOCK FOR GATES.

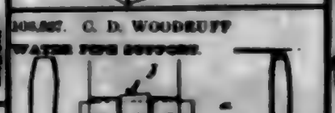
106,529. FRANZ WAGNER.
VEGETABLE-CUTTER.

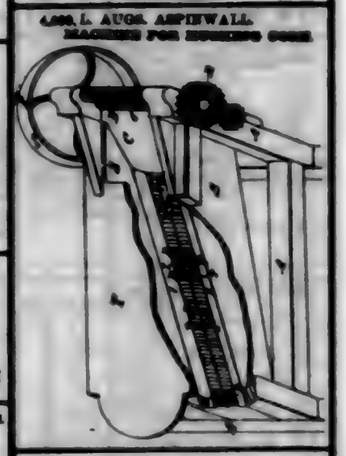


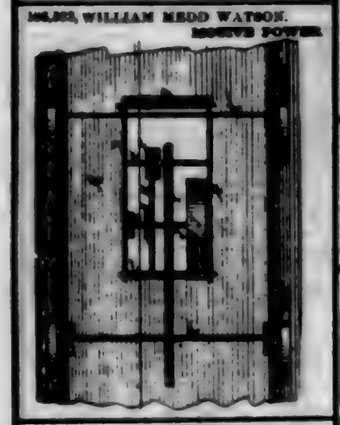


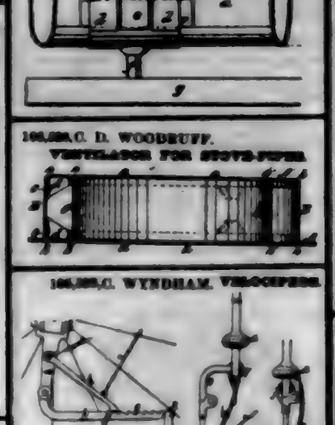


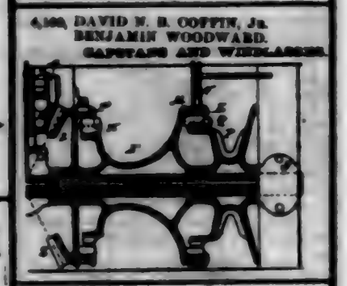


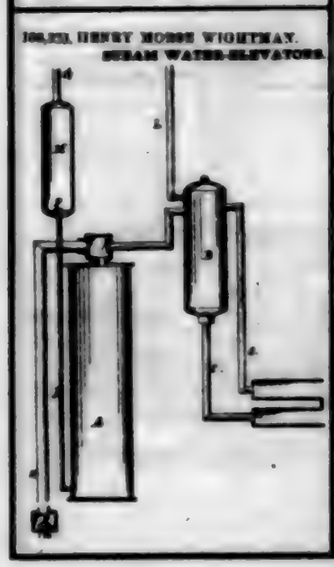


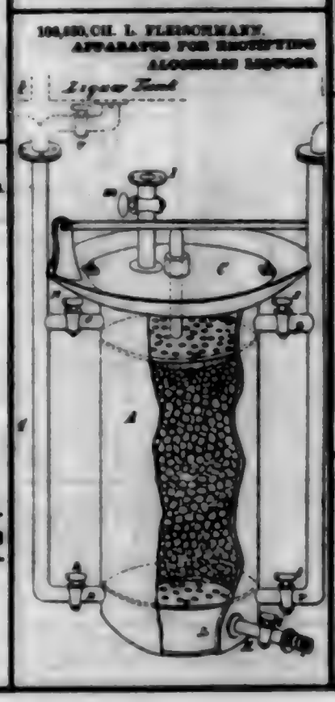






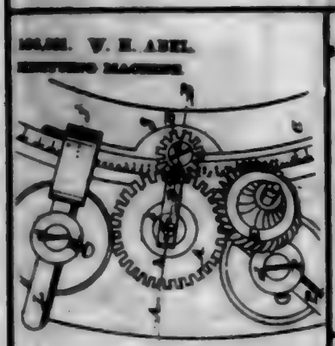


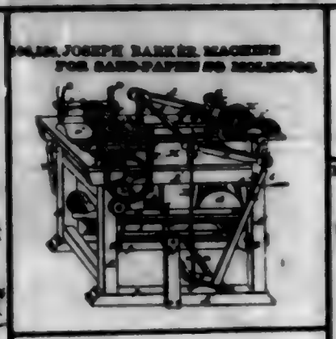


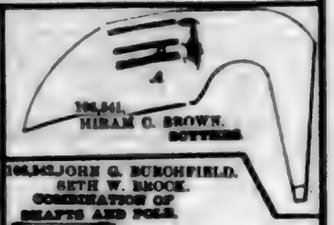


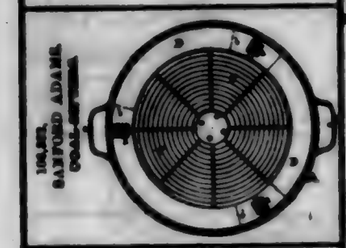


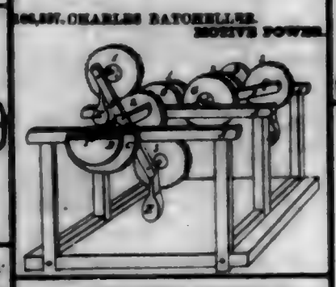


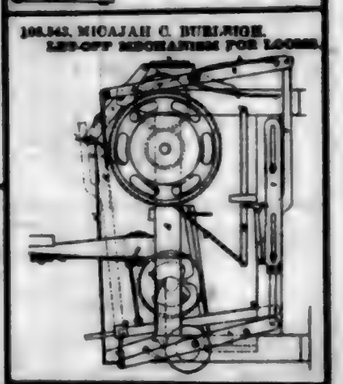


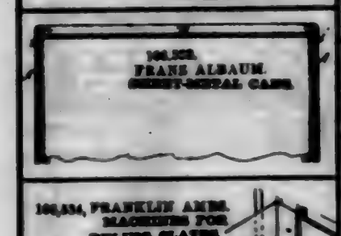


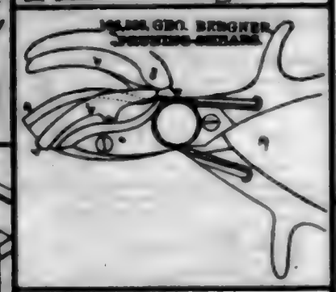






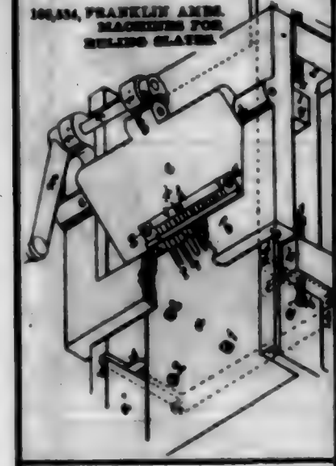


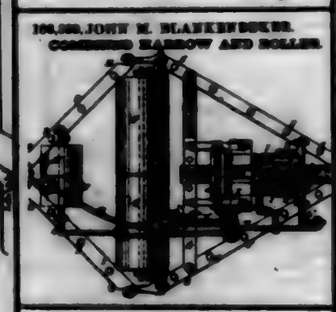


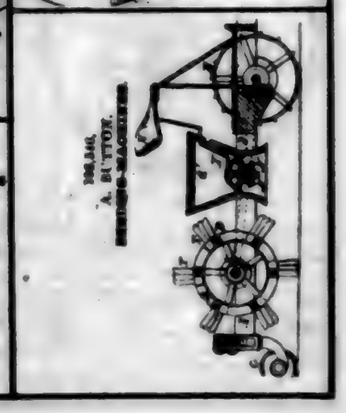


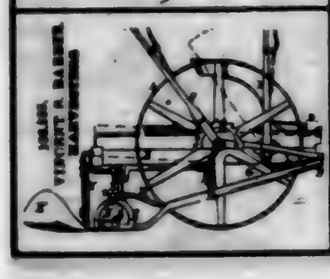


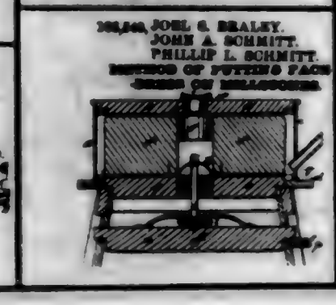






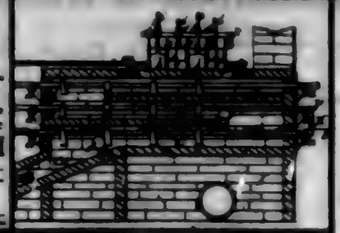


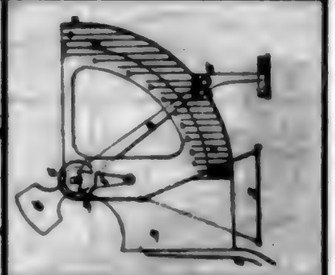




106,547, JOHN B. CALHAN, DEVICE FOR PROPELLING CANAL-BOATS.



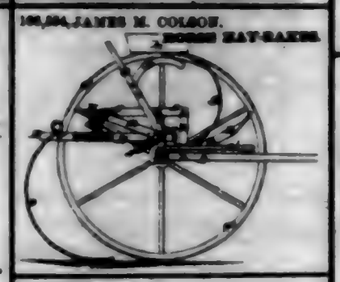




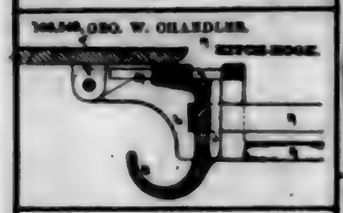
106,548, HENRY C. CARR, WHEEL PLOWS.



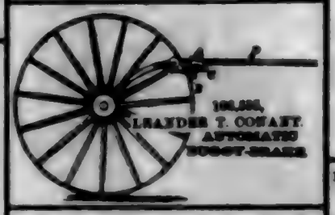
106,554, JAMES M. COLSON, HORSE HAY-RAKES.



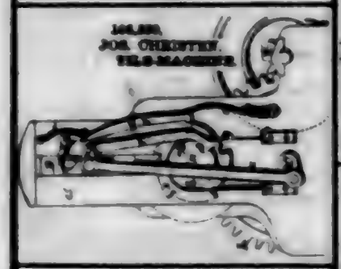
106,549, GEO. W. CHANDLER, HITCH-HOOK.



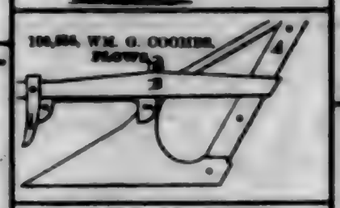
106,555, LEANDER T. COFFAN, AUTOMATIC BOBBIN-BRAKE.



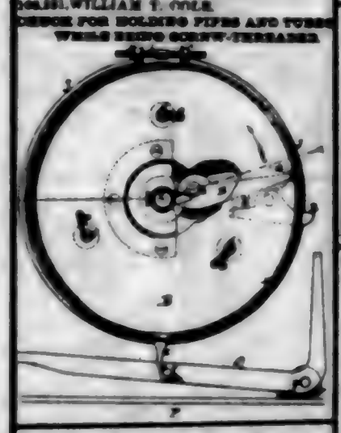
106,550, JOS. CHRISTEN, TILE-MACHINE.



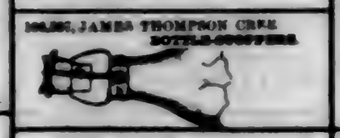
106,556, WM. G. COOMBS, PLOWS.



106,551, WILLIAM T. COLE, CHUCK FOR HOLDING PIPES AND TUBES WHILE BEING SCREW-THREADED.



106,557, JAMES THOMPSON CREE, BOTTLE-STOPPERS.



106,552, WM. F. COLLIER, BEER-STAND.



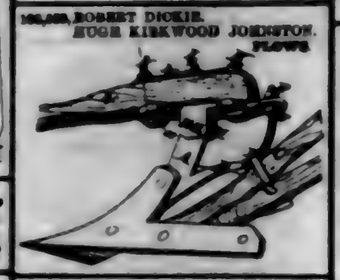
106,558, SAMUEL DARLING, REVERSIBLE WINDOW FOR RAILROAD-CARS.



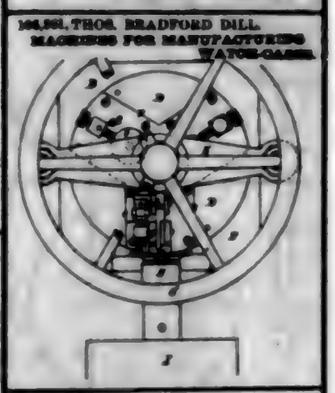
106,553, JOHN COLLOM, ROASTING-FURNACES FOR ORES.

106,559, GEO. W. DICKINSON, WEIGHING-SCALES.

106,560, ROBERT DICKIE, HUGH KIRKWOOD JOHNSTON, PLOWS.



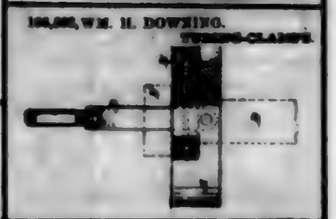
106,561, THOS. BRADFORD DILL, MACHINERY FOR MANUFACTURING WATCH-CASES.



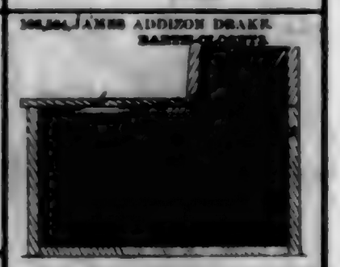
106,562, DAVID B. DIXON, GRAIN-SEED SEPARATORS FOR MADDERS.



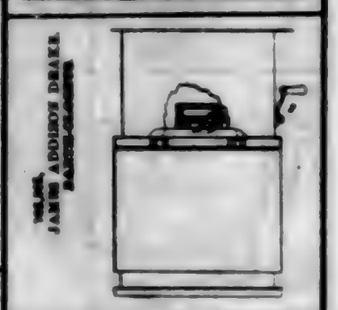
106,563, WM. H. DOWNING, TURNING-CLAMPS.



106,564, JAMES ADDISON DRAKE, BARTH-CLOSETS.



106,565, JAMES ADDISON DRAKE, BARTH-CLOSETS.



106,566, JAMES ADDISON DRAKE, BARTH-CLOSETS.



106,567, WM. F. DRAPER, SPINNER-BOLSTER.

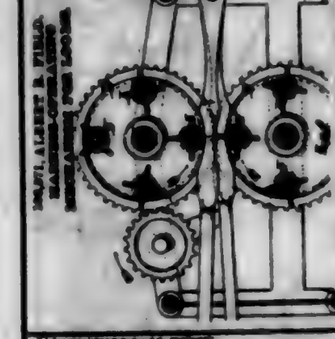


106,568, HUGH DYER, HAND CORN-PLANTER.



106,569, WILLIAM ELMER, MANUFACTURE OF INFLAMMABLE GASES FOR FUEL, &c.

106,570, THOMAS M. FELL, TRUNKS.



106,571, ALBERT S. FISK, RAILROAD-SIGNAL FOR CARS.

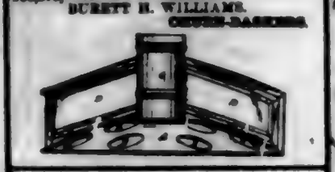


106,572, WILLIAM FUNK, GEORGE WALTER POST, CUTTER-BAR.

106,573, LEWIS L. GESHART, M. D., MEDICAL COMPOUND.

106,574, ERNST GILLERT, VAPOR-BURNERS.

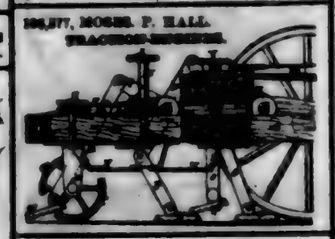
106,575, WM. H. H. GORHAM, BURETT B. WILLIAMS, CHURN-DASHERS.



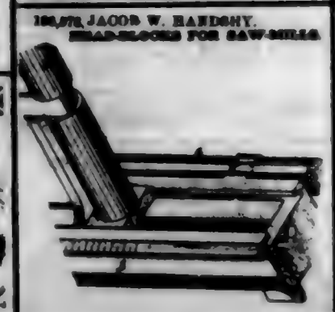
106,576, ALLEN GREGG, WASHING-MACHINES.



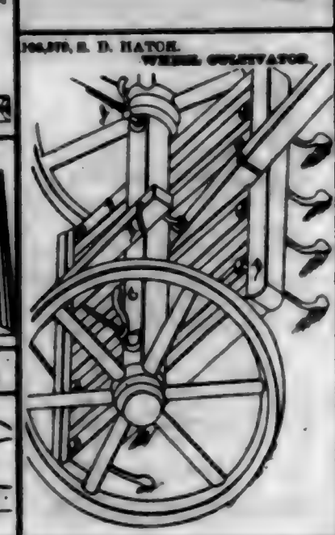
106,577, MOSES P. HALL, TRACTION-ENGINES.



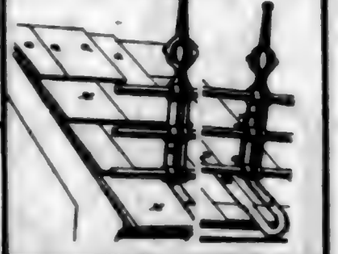
106,578, JACOB W. HANDSHY, HEAD-BLOCKS FOR SAW-MILLS.



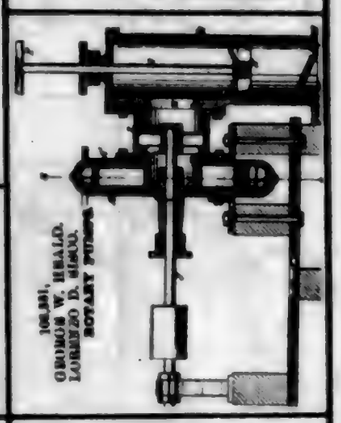
106,579, E. D. HATCH, WEEDS, CULTIVATOR.



106,580, SAMUEL R. HATHORN, GUARDS FOR BOOTS.

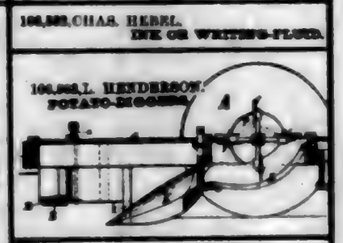


106,581, ORDRONE W. HEALD, LORENZO D. HIGGS, ROTARY PUMPS.



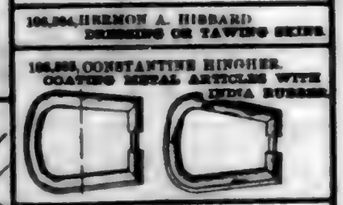
106,582, CHAS. HEBEL, INK OR WRITING-FLUID.

106,583, L. HENDERSON, POTATO-DIGGERS.

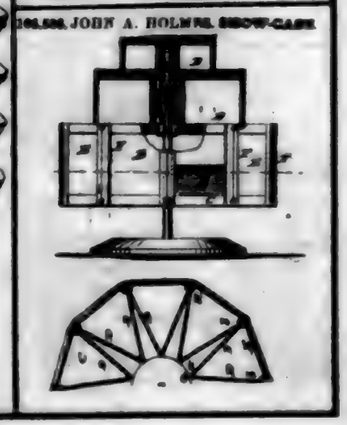


106,584, HERMON A. HIBBARD, DRESSING OR TAWING SKINS.

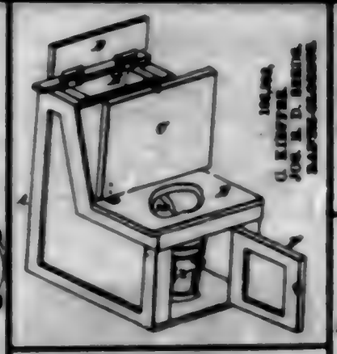
106,585, CONSTANTINE HINCHER, COATING METAL ARTICLES WITH INDIA RUBBER.

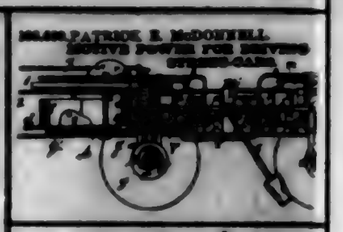


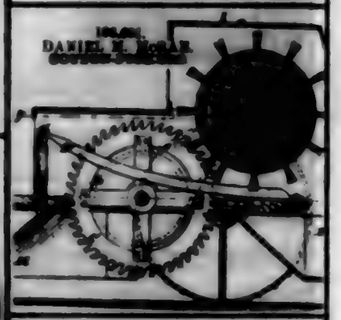
106,586, JOHN A. HOLMES, SHOW-CASE.

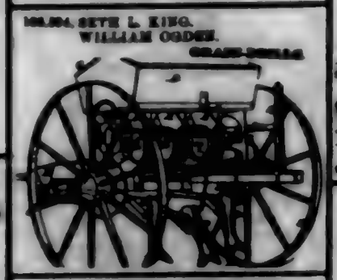


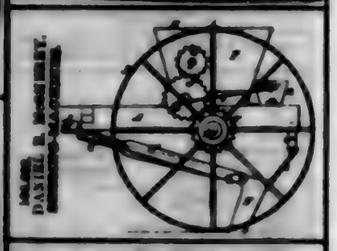




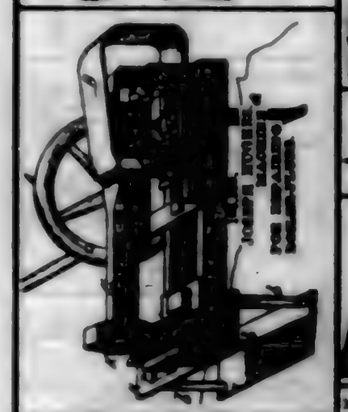


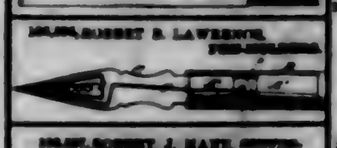


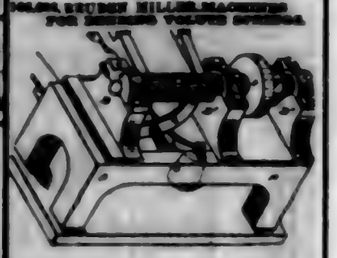




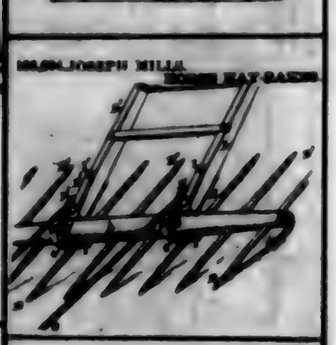




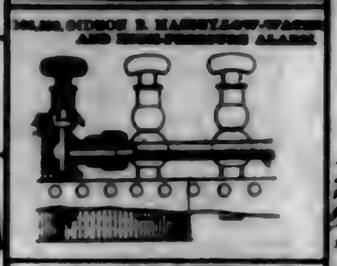


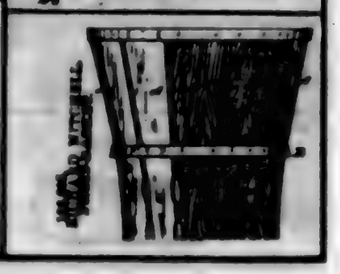




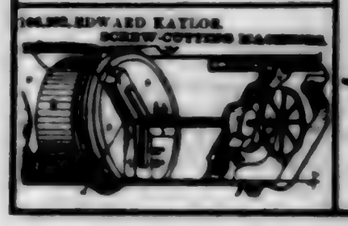


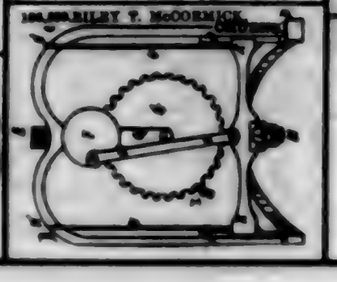


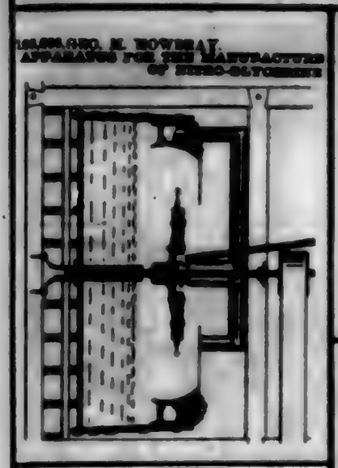






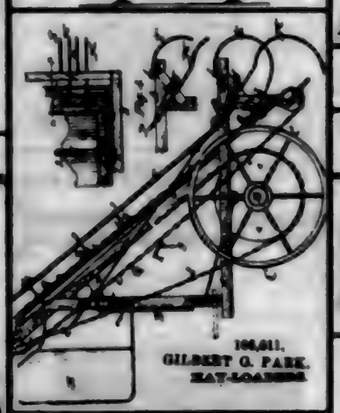


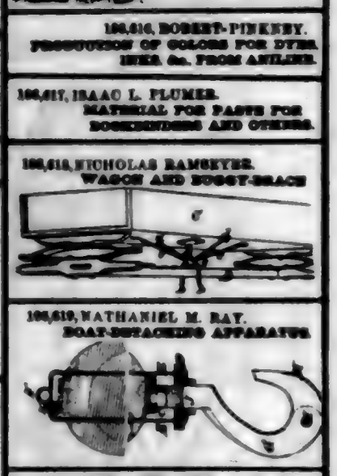


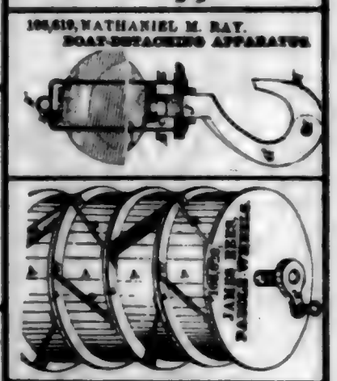


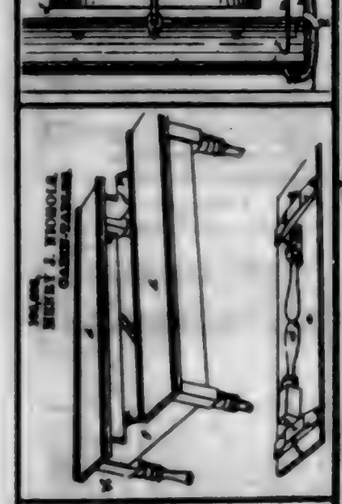


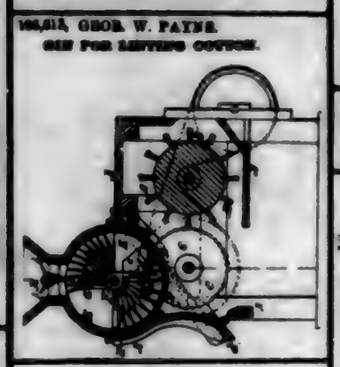




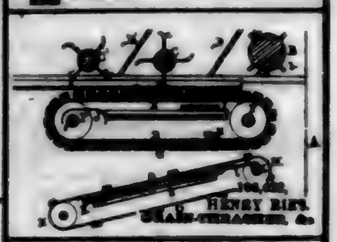


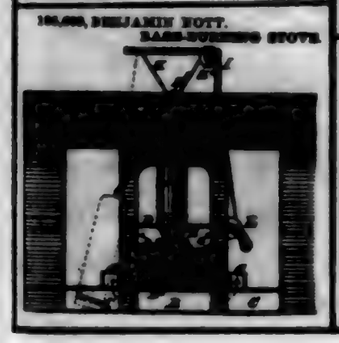


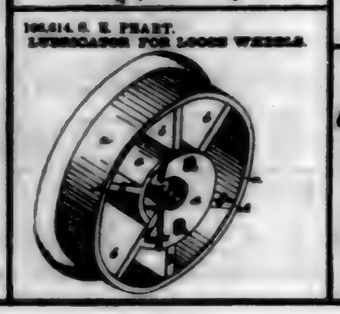


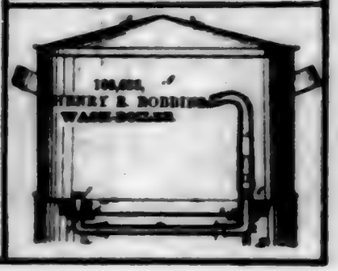


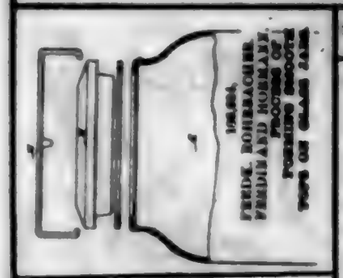








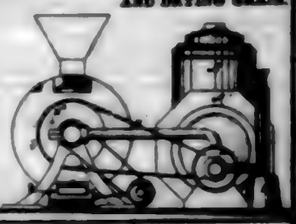




No. 104,634, ALEXANDER J. SHELDON. PRESERVING WOOD.

No. 104,635, THOS. SIM. MANUFACTURE OF FERTILIZERS.

No. 104,637, EVAN SKELLY. MACHINES FOR DECORTICATING AND DRYING GRAIN.

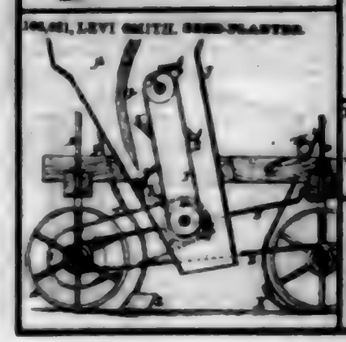




No. 104,636, CHAS. H. SMITH. HENRY J. RICE. VAPOR-BURNING STEREOPTICON-LAMPS.

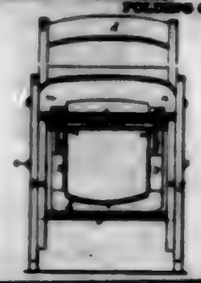


No. 104,638, LEVI SMITH. SEED-PLANTER.



No. 104,639, LEWIS H. SPEAR. PRESERVING MEAT.

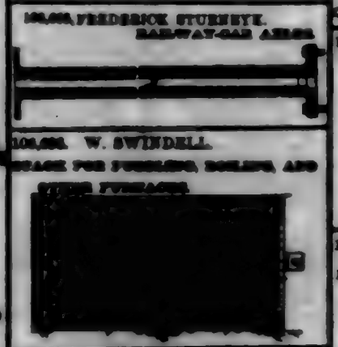
No. 104,640, ALEX. W. STEWART. FOLDING CHAIR.



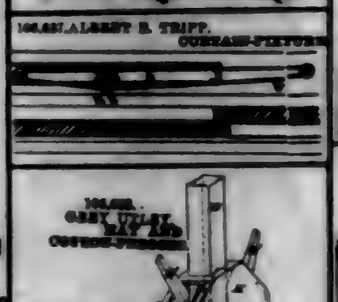
No. 104,641, ABRAHAM W. STINE. WINDOW-SPRINGS.



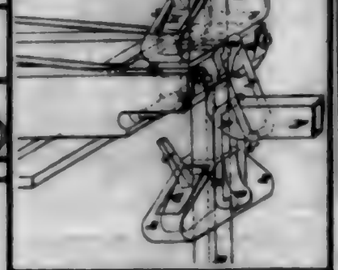
No. 104,642, FREDERICK STURNEYK. RAILWAY-GAS ARRESTER.



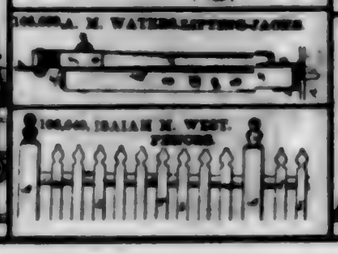
No. 104,643, W. SWINDELL. GRATE FOR PUDDLING, BOILING, AND OTHER FURNACES.



No. 104,644, ALBERT B. TRIPP. CURTAIN-FIXTURE.



No. 104,645, GREY OTLEY. CURTAIN-FIXTURE.



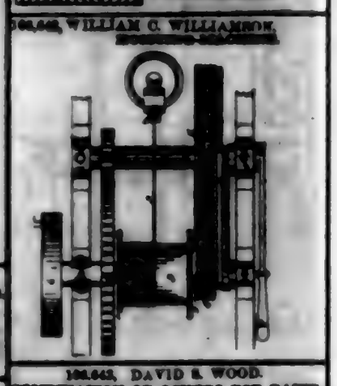
No. 104,646, A. M. WATERS. LIFTING-JACKS.



No. 104,647, ISAIAH M. WEST. FENCE.



No. 104,648, W. H. WILKINSON. LOCOMOTIVE.



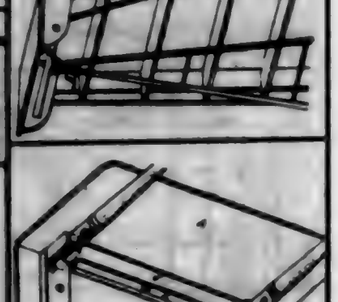
No. 104,649, WILLIAM C. WILLIAMSON. [illegible]

No. 104,650, DAVID S. WOOD. COMBINATION OF GOBBING FOR PAINT.

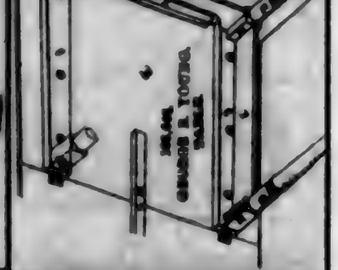
No. 104,651, EUGENE KINCAID WOOD. COMBINED SCRUBBING-BRUSH, &c.



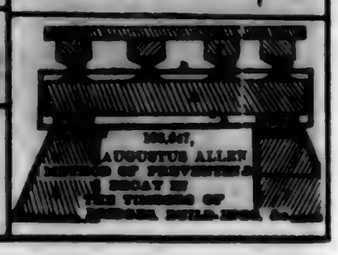
No. 104,652, SAMUEL WRIGHT. ADJUSTABLE PHOTO-LANTERN.



No. 104,653, CHARLES H. COLBY, HENRY CHARLES WARD. PHOTO-BOX.



No. 104,654, CHARLES CROZAT CONVERSE. MUCILAGE-HOLDERS.

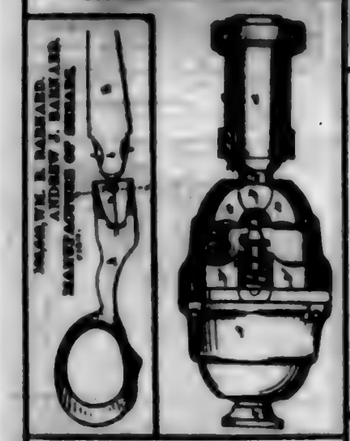


No. 104,655, WM. F. CORNE. HAND-STAMPS.

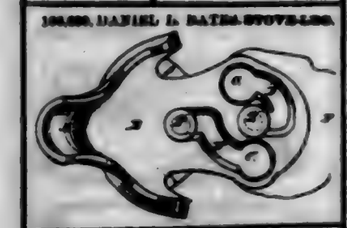


No. 104,656, J. W. CRAMER. SEED-SOWER.

No. 104,657, SAMUEL A. APPOLD, ETHAN APPOLD, AND ANTHONY J. BARNARD. COUPLING FOR RAILROAD CARS.



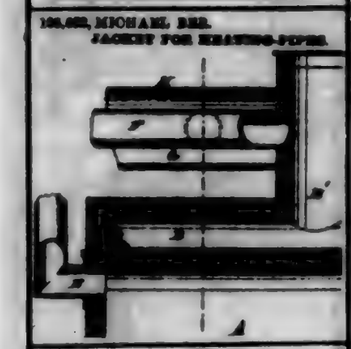
No. 104,658, DANIEL L. BATES. STOVE-LOCK.



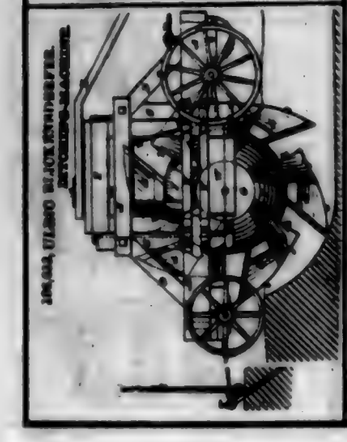
No. 104,659, G. A. BEIDLER. WOODEN PAVEMENT.



No. 104,660, MICHAEL BEE. JACKET FOR HEATING-PIPES.



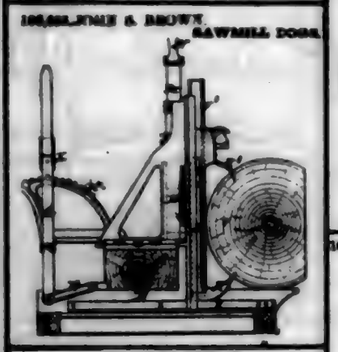
No. 104,661, ULRIC BLANCHARD. [illegible]



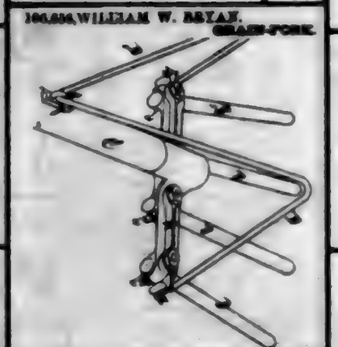
No. 104,662, ALANSON BROWN. SHEAR-CLAMPER.



No. 104,663, ENOS S. BROWN. SAWMILL DOGS.



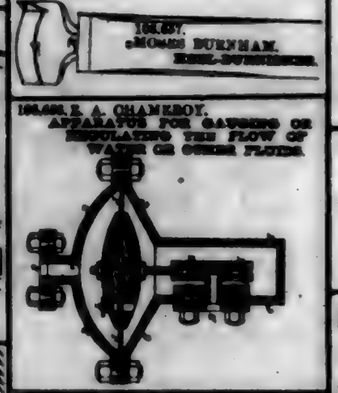
No. 104,664, WILLIAM W. BRYAN. GRAIN-FORK.



No. 104,665, MORRIS BURNHAM. [illegible]



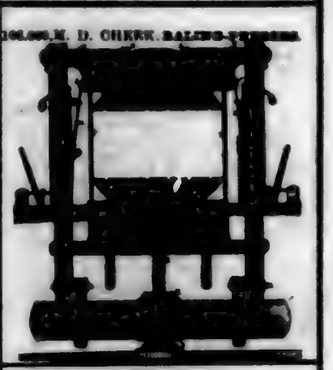
No. 104,666, E. A. CHAMBERLAIN. APPARATUS FOR SAVING OR REGULATING THE FLOW OF WATER OR OTHER FLUIDS.



No. 104,667, HIRAM P. CHASE. [illegible]



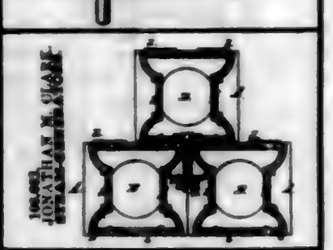
No. 104,668, M. D. CHEEK. BALING-PRESSES.



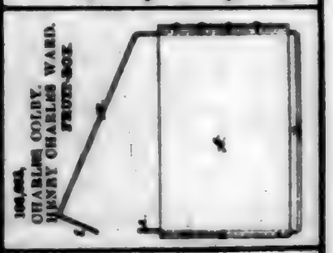
No. 104,669, C. F. CHEW. HARPOON.



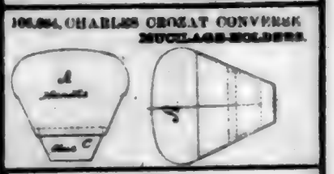
No. 104,670, JONATHAN M. CLARK. STEAM-ENGINE.



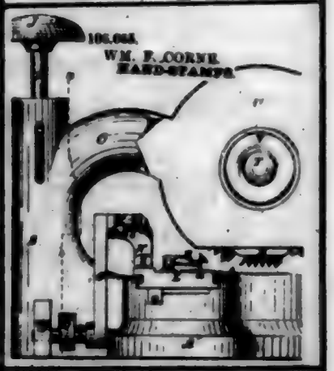
No. 104,671, CHARLES COLBY, HENRY CHARLES WARD. PHOTO-BOX.



No. 104,672, CHARLES CROZAT CONVERSE. MUCILAGE-HOLDERS.



No. 104,673, WM. F. CORNE. HAND-STAMPS.



No. 104,674, J. W. CRAMER. SEED-SOWER.



106,567, SAML. CRUMP.
LOOSENING-MACHINE.

106,568, DAVID CUMMING, Jr.
NUT-LOCK.

106,569, FRANCIS CURTIS.
SLIDE-VALVE FOR STEAM-ENGINES.

106,570, J. W. CURTIS.
PORTABLE GATE-POST.

106,571, WILLIAM H. DAVIS.
MACHINE FOR CUTTING GROOVE.

106,572, EDMOND W. DEAN.
STOP-MOTION FOR HEADING MACHINES.

106,573, HENRY DE LAVALA.
PUMP-ROD CONNECTIONS FOR DEEP WELLS.

106,574, EDWARD M. DOTT.
JOEL L. LITTLE.
PETER A. SCHNEDLER.
REVOLVING ROAD-SCRAPERS.

106,575, WILLIAM DUFFNER.
SPINNING-MACHINE.

106,576, EDWARD J. ELLIS.
MACHINE FOR VARNISHING AND BRONZING LOOSE-HARNESS.

106,577, JOHN M. EMMERICH.
SUPPORT FOR CARRIAGE-SPRINGS.

106,578, THOMAS FERRY.
CARPET-STRETCHER.

106,579, SAMUEL M. FIRST.
CAR-COUPLER.

106,580, SAML. FOX.
SPRING-BLADE.

106,581, C. A. FREDAULT.
BALLOT-BOX.

106,582, ALEX. FRIEDMANN.
STEAM-PUMP.

106,583, WILLIAM GAGE.
COMBINED MOP-HEAD AND WRINGER.

106,584, A. S. GEAR.
WOOD-SCREWS'S MACHINE.

106,585, WILLIAM GEE.
APPARATUS FOR COOLING [illegible].

106,587, WILLIS S. GEER.
RAIL-COUPLING.

106,588, HENRY HARRIER.
CORN-PLOWER.

106,589, JOHN T. HOOD.
CARD-CLOTHING.

106,590, JOHN W. HELDER.
MACHINE FOR CUTTING SLATE-SLATS.

106,591, L. A. HAINES.
TRACTION-ENGINE.

106,592, B. D. GREENE.
VAPOR-BURNER.

106,593, FRANKLIN MARION HIEDMAN.
NICHOLAS HIATT.
CHURN.

106,594, TOBIAS K. GRUBB.
CONSTRUCTION OF KITCHEN.

106,595, O. C. HINMAN.
CLOTHING-PANS.

106,596, JAMES H. JONES.
FLOUR-BOLTS.

106,597, SIMMONS HAMLIN.
PARLOR-ORGANS.

106,598, WM. A. JORDAN.
BALE-TIE.

106,599, JOSHUA KIDD MANUFACTURE OF GAS FOR ILLUMINATING &c.

106,600, E. LEFRANC.
J. MAGOUA.
MACHINE FOR TREATING HEMP AND OTHER TEXTILE PLANTS.

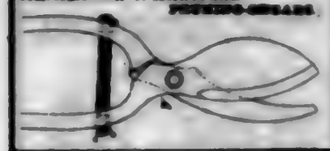
106,601, FRANK F. LELIEUR.
SPEED-REGULATOR.

106,602, AUG. LEONARD.
POTATO-PLOW.

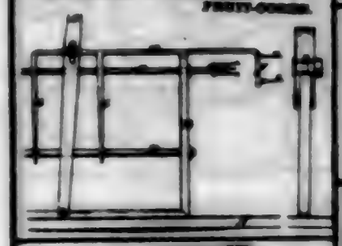
106,603, O. LOCHER.
BALING-PRESS.

106,604, PETER C. LOUDON.
MACHINE FOR PANNING GOLD.

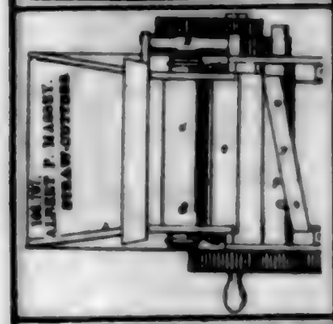
106,708. ENOCH J. KARSTENS. PUDDLING-FURNACE.



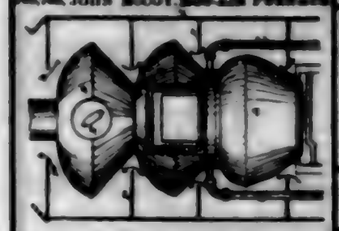
106,709. ENOCH J. KARSTENS. FRUIT-COOLER.



106,710. ALFRED P. MAGNY. STRAW-CUTTER.



106,711. JOHN McCOY. BOOT-AND FURNACE.



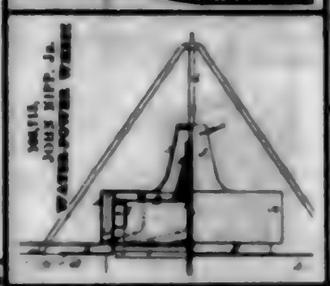
106,712. JAMES MEEHAN. LUBRICATOR.



106,713. E. MONTGOMERY. FORGE OF SHOVE FOR CORRUGATED METAL BEAMS.



106,714. CHARLES MOST. PIPE-CRACKING MACHINE.



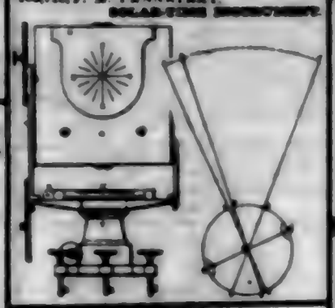
106,715. JOHN RIPP, JR. WATER-POWER WHEEL.



106,716. M. P. NORTON. HAND-STAMP.

106,717. JAMES O'NEIL. TREATING BITUMINOUS SUBSTANCES FOR PAVEMENTS, &c.

106,718. F. W. PANNETRAT. SOLAR-TIME INDICATOR.



106,719. SANFORD D. PAYNE. FRUIT-BASKET.

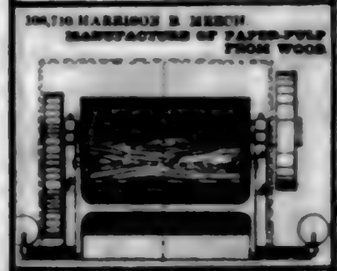


106,720. NOAH C. PERRY. MACHINE FOR BENDING WIRE SCREW-EYES.

106,721. JAMES McMILLAN. BRAKE-WHEEL.



106,722. HARRISON B. MERCH. MANUFACTURE OF PAPER-PULP FROM WOOD.



106,723. HARRISON B. MERCH. REPAIRING AND REBACKING PAPER STOCK.



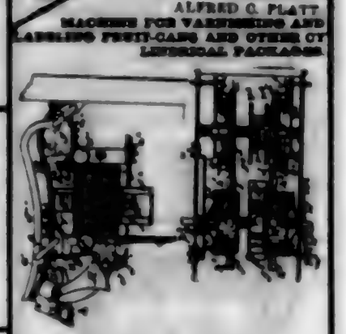
106,724. CHARLES PLAGGE. BOX-MACHINE.



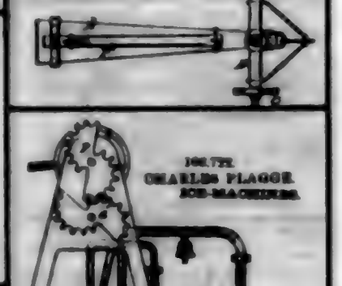
106,725. ALFRED C. PLATT. CAR-COUPLING.



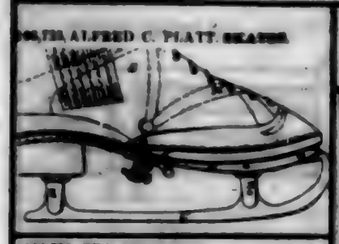
106,726. ALFRED C. PLATT. MACHINE FOR VARNISHING AND LABELING PRUIT-CANS AND OTHER CYLINDRICAL PACKAGES.



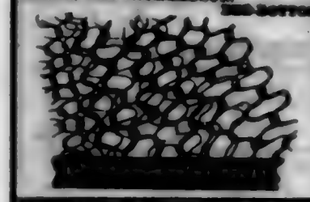
106,727. ALFRED PETERSON. SOLE-PEGGING MACHINE.



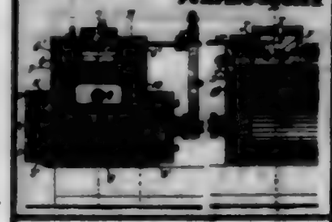
106,728. ALFRED C. PLATT. SEAPER.



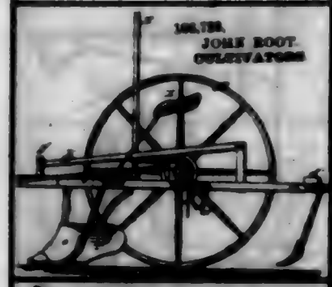
106,729. GEO. RICHARDSON. SEED-SOWER.



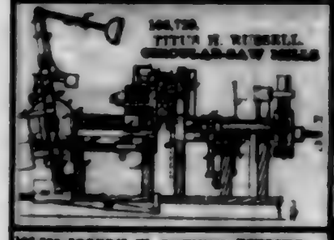
106,730. LOUIS C. RODIER. PUDDLING-FURNACE.



106,731. JOHN ROOT. CULTIVATOR.



106,732. TITUS H. RUSSELL. CIRCULAR-SAW MILL.



106,733. JOSEPH W. SAWYER. BRIDING ATTACHMENT FOR SEWING-MACHINES.



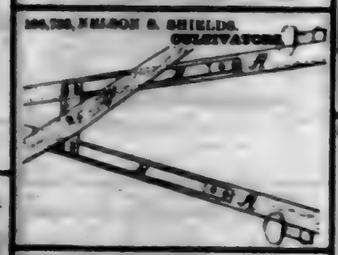
106,734. HENRY SAYLER. SPOKE-WHEELS OF CARRIAGES.



106,735. WILLIAM F. SCHATZ. BRIDGING ATTACHMENT FOR HORSES.



106,736. NELSON S. SHIELDS. CULTIVATOR.



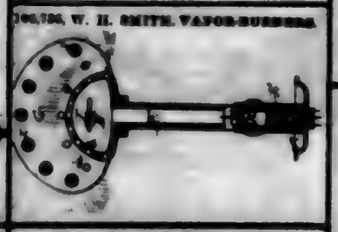
106,737. A. B. SMALL. METALLIC SEALS.



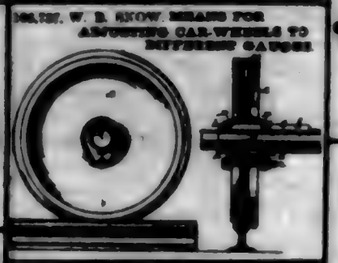
106,738. DWIGHT L. SMITH. POCKET SUN-DIAL.



106,739. W. H. SMITH. VAPOR-BURNER.



106,740. W. B. SNOW. BRAKE FOR ADJUSTING CAR-WHEELS TO DIFFERENT GAUGES.



106,741. D. M. SOMERS. SUSPENSION HINGE.



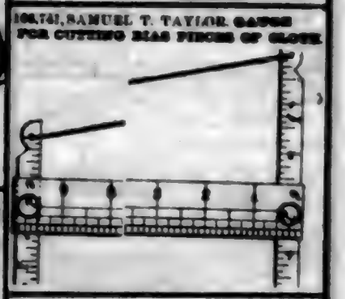
106,742. W. HORACE SOPER. RAILWAY-CAR SEATS.



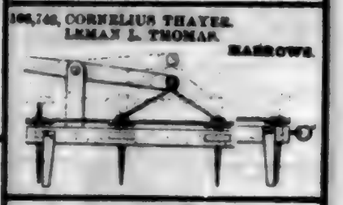
106,743. ISAAC B. STAPLES. STOCK OR BLANK FOR SHACKLES.



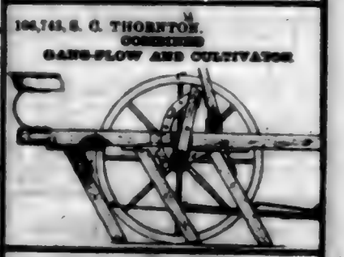
106,744. SAMUEL T. TAYLOR. GAUGE FOR CUTTING BIAS PIECES OF GLOVE.



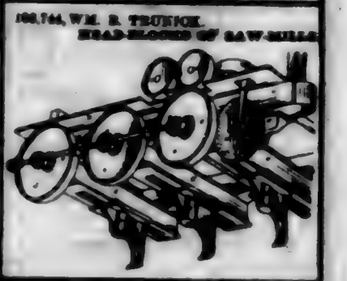
106,745. CORNELIUS THAYER. LEMAN L. THOMAS. HARROWS.



106,746. E. C. THORNTON. CORNSHELLER AND GANG-PLOW AND CULTIVATOR.



106,747. WM. B. TRUPIN. HEAD-BLOCKS OF SAW-MILLS.



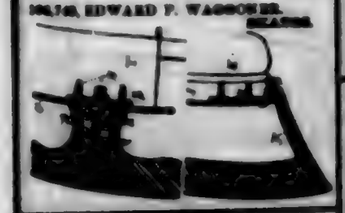
106,748. JOHN VAN. BOT-AIR FURNACE.



106,747, JOHN L. WAGER.
ABRAM L. SCUDDER.
CASE FOR BOOKS AND PAPERS.



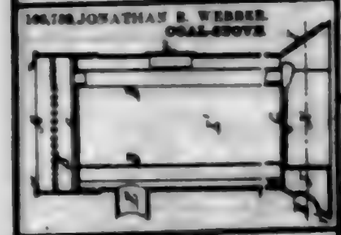
106,748, EDWARD P. WADSWORTH.
BEATER.



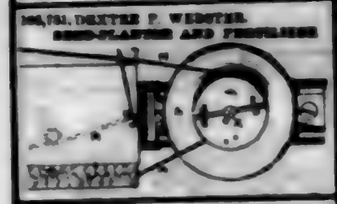
106,749, JAMES WEATHERS.
WALKS FOR BUILDINGS.



106,750, JONATHAN B. WEBBER.
COAL-STOVE.



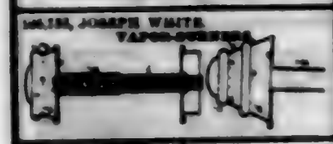
106,751, DEXTER P. WEBSTER.
SEED-PLANTER AND FERTILIZER.



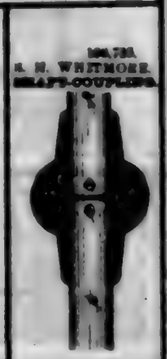
106,752, W. W. WELLS.
SHUTTLE FOR SEWING-MACHINE.



106,753, JOSEPH WHITE.
VAPOR-BURNER.



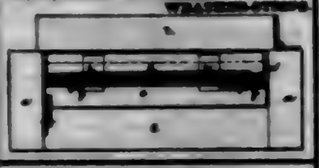
106,754, H. H. WHITMORE.
DRAFT-COUPLING.



106,755, SETH M. WHITMORE.
DRAFT-COUPLING.



106,756, HENRY W. WICKES.
WRAPPING-STRING.



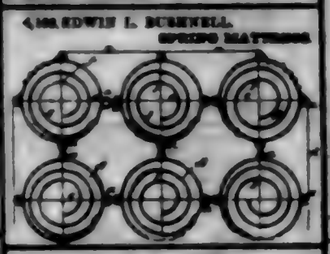
106,757, MILTON WENGER.
CORRUGATED FORK AND HAY-CUTTER.



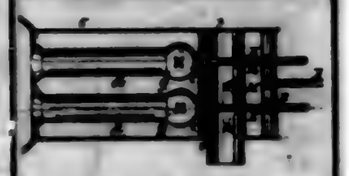
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KASSON FRASER,
DEVICES FOR REMOVING LIME FROM HARD WATER.



4,106, EDWIN L. BURNELL.
SPRING MATTRESS.



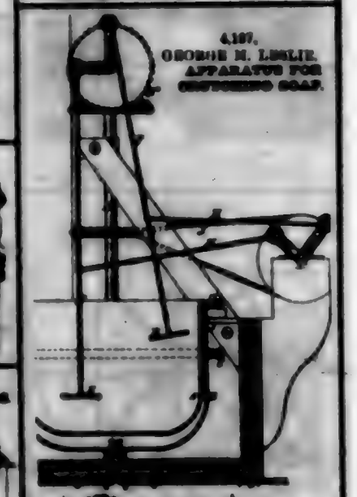
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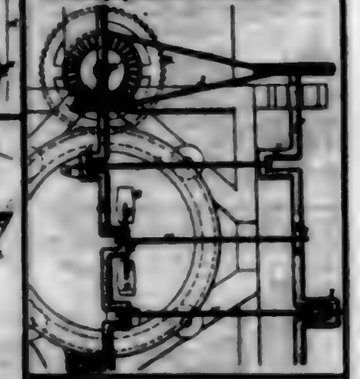


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SPRING PAVEMENT.



4,107,
GEORGE H. LESLIE.
APPARATUS FOR MANUFACTURING SOAP.

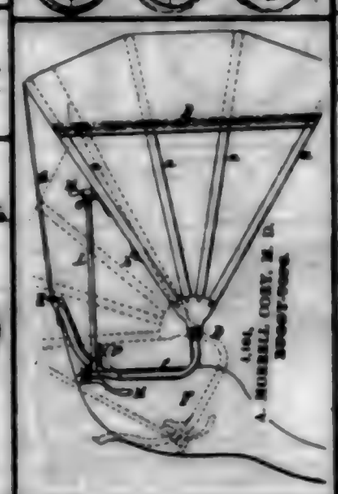




4,108,
U. S. BRICK MACHINE COMPANY
BRICK-MACHINES.



A. BURNELL, CONST. & D.
DESCRIPTION.



ILLUSTRATIONS OF PATENTS

ISSUED FROM

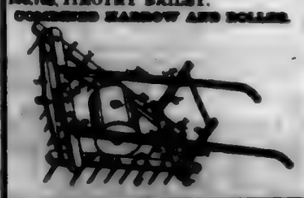
THE UNITED STATES PATENT OFFICE

AUGUST 30, 1870.

106,769, JOHN S. ADAMS.
TRUSS-BRIDGE.



106,770, TIMOTHY BAILEY.
CORRUGATED HARROW AND ROLLER.



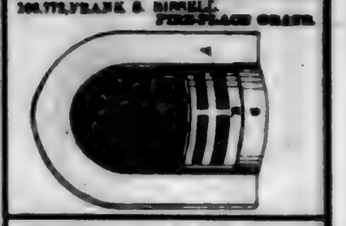
106,771, JOHN F. BACH.
OUTSIDE-CORD TIGHTENER.



106,771, GEO. C. BESTOR.
FIRE-PROOF RAILWAY-CARS.



106,772, FRANK S. BISSELL.
FIRE-PLACE GRATE.



106,773, WILLIAM B. BLAKE.
TOOTH-PICKS.



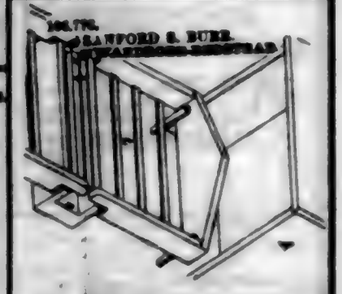
106,774, THEODOR BOSSHARD.
SHUTTLE-STOPPING DEVICE.



106,775, WILLIAM BOWDEN.
MACHINE FOR UPSETTING STEEL.



106,776,
SANFORD S. BURR.
WAGGON-BRIDGE.



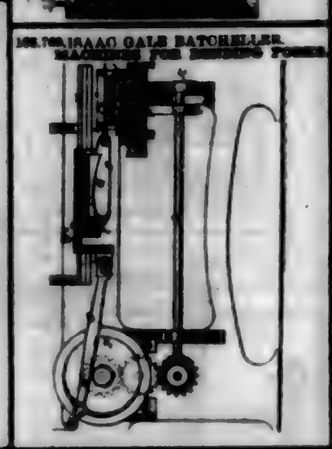
106,777, HENRY L. BUTLER.
THOS. A. CHRISTIE.
STEAM-ENGINE.



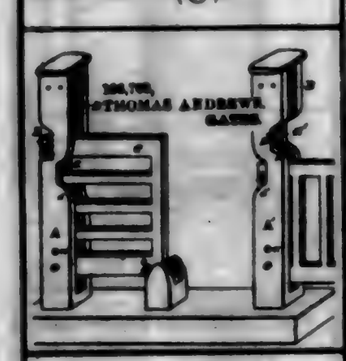
106,778, THEO. F. AUSTIN.
FIRE-PLACE.



106,779, ISAAC GALE BATCHELLER.
MACHINES FOR BENDING FELLOES.



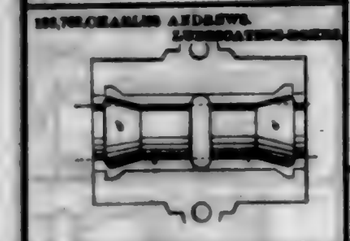
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THOMAS ANDREWS.
SAFE.



106,781, MORITZ ALTHAUS.
HOOK-EYE.



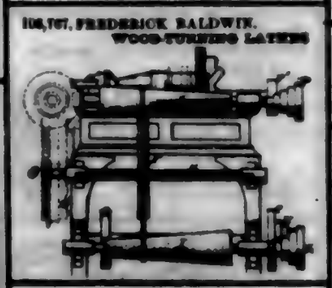
106,782, CHARLES ANDREWS.
LUBRICATING-CUP.



106,783, VINCENT M. BAKER.
WATER-WHEEL.



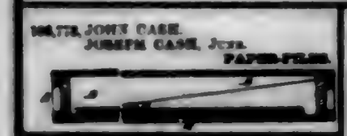
106,784, FREDERICK BALDWIN.
WOOD-TURNING LATHE.



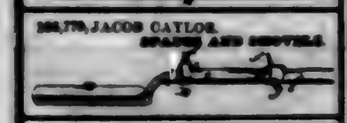
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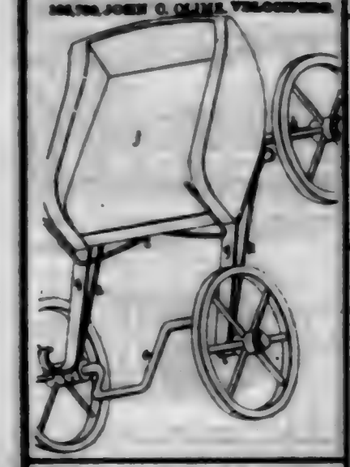
106,778, JOHN CASH.
JOSEPH CASH, Jun'r.
PAPER-FILER.



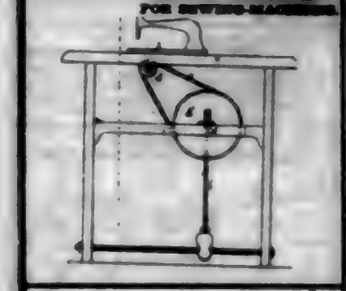
106,779, JACOB CAYLOR.
SHAFTS AND SHOVELS.



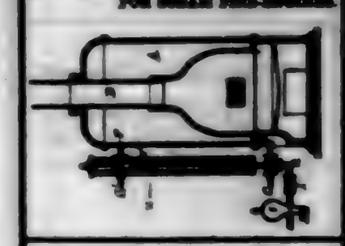
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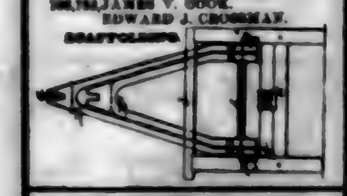
106,781, JOHN COCHRANE, Jr.
DRIVING MECHANISM FOR SEWING-MACHINES.



106,782, HENRY V. COLEMAN.
CIRCULATING WATER-HEATING FOR STEAM FIRE-ENGINES.

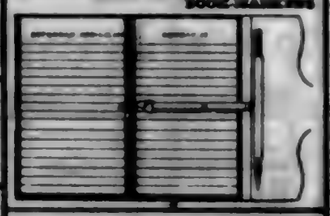


106,783, JAMES V. COOK.
EDWARD J. CROSSMAN.
DRAFT-CLIPPER.



106,784, G. F. CORNELIUS.
MANUFACTURE OF PAINT AND VARNISH.

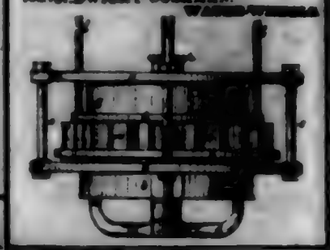
106,785, SAMUEL COTTLE.
DOOR-MAT.



106,786, JOHN DIXIE CURRY, RAIL-ROAD CAR-BRAKE AND VENTILATOR.



106,787, DWIGHT CUSHMAN.
WATER-WHEEL.



106,788, J. A. DAVIS.
GATHERING DEVICE FOR SEWING MACHINES.



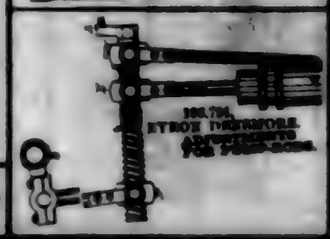
106,789, JOS. A. DAVIS.
GATHERING ATTACHMENT FOR SEWING-MACHINES.



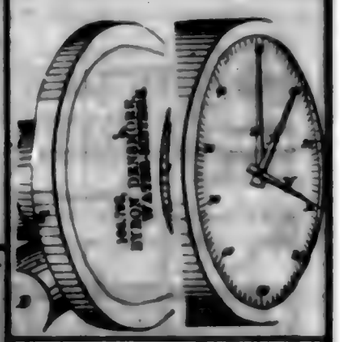
106,790, CLAYTON DENE.
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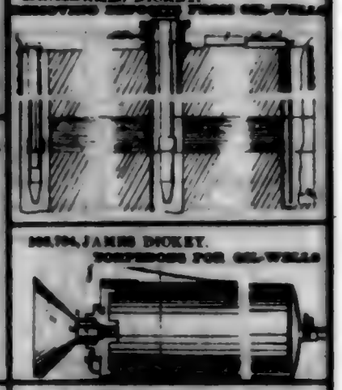
106,791, BYRON DENSMORE.
ADJUSTMENTS FOR PIPE-DIES.



106,792, JAMES DICKEY.
IMPROVED SUSPENDER FOR OIL-WELLS.



106,793, JAMES DICKEY.
SUSPENDER FOR OIL-WELLS.



106,794, MORRIS W. DILLINGHAM.
BRUSH-CHARTERER.



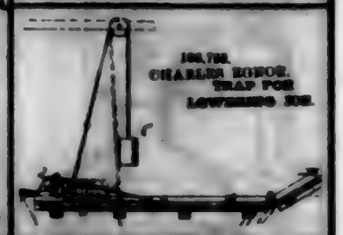
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TENSION DEVICE FOR SEWING-MACHINES.



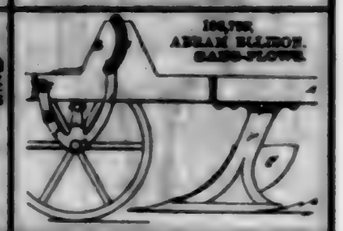
106,796, WARREN W. DUTCHER.
ROLLING-PINPLES FOR LOOMS.



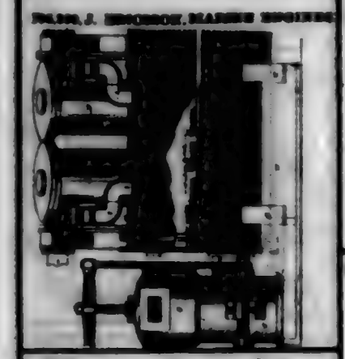
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CHARLES EDSON.
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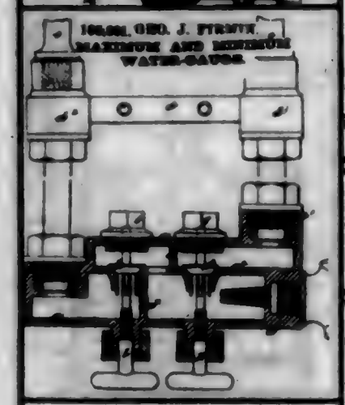
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ABRAM ELLISON.
GANG-PLOWS.



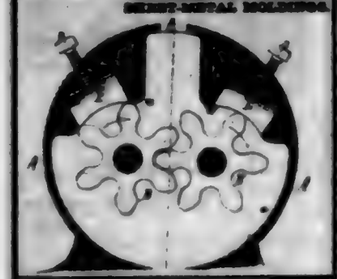
106,800, J. HENDRICK, MARINE ENGINES.



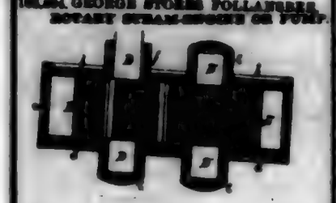
106,801, GEO. J. FINNEY.
MAXIMUM AND MINIMUM WATER-GAUGE.



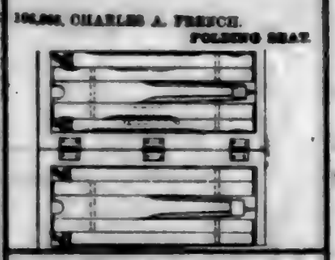
106,802, HENRY G. FISKE.
MACHINE FOR FORMING SHEET-METAL MOLDINGS.



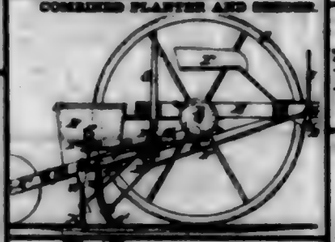
106,803, GEORGE STORRS FOLLANSBEE.
ROTARY STEAM-ENGINE OR PUMP.



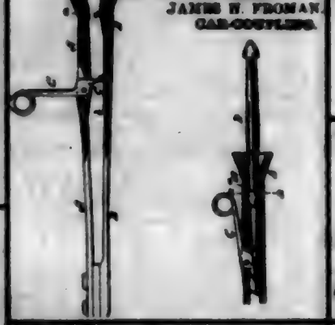
106,804, CHARLES A. FRENCH.
FOLDING SEAT.



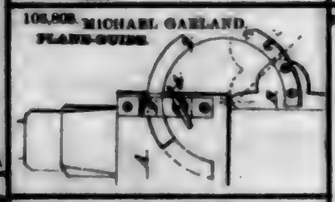
106,805, WILLIAM B. FRICK.
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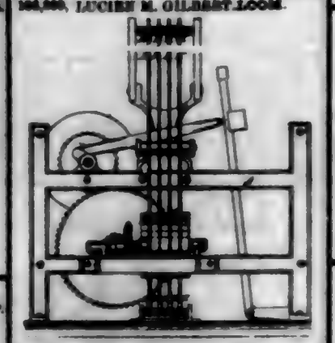
106,807,
JAMES H. FROMAN.
CAR-COUPLING.



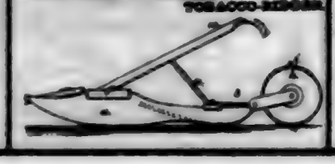
106,808, MICHAEL GARLAND.
PLANE-GUIDE.



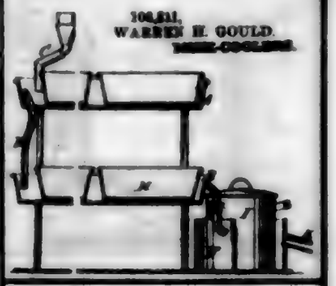
106,809, LUCIEN M. GILBERT, LOOM.



106,810, OZIAS W. GOSLEE.
TOBACCO-RINSER.



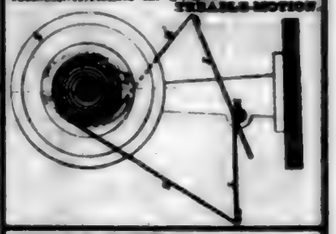
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WARREN H. GOULD.
[illegible]-COOLING.



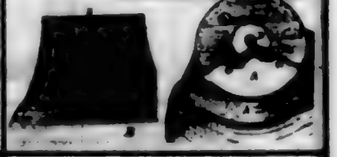
106,812, DR. JOHN A. GRISWOLD.
FIRE-ESCAPE.



106,813, CHARLES M. GUESS.
TREADLE-MOTION.



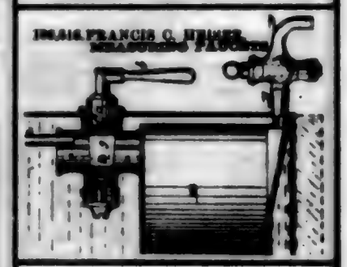
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G. F. PINNEY
BOOT AND SHOE-HEELS.



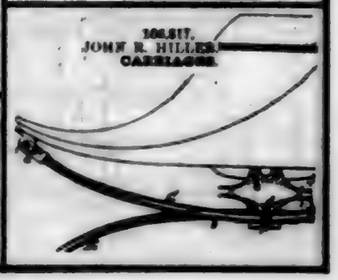
106,815, WILLIAM HART.
ESCAPEMENTS FOR WATCHES &c.



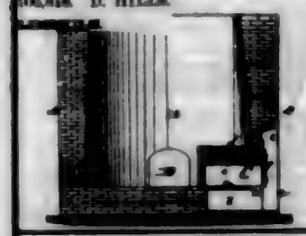
106,816, FRANCIS C. HEISER.
REGULATING PIVOT.



106,817,
JOHN R. HILLER.
CARRIAGE.



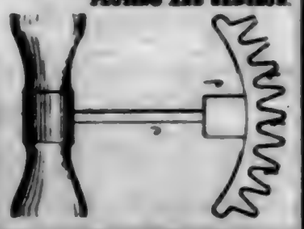
106,816. D. HILLS.



106,817. GEORGE M. HUNTLY, Easton, Pa.



106,818. CHARLES HYATT.
FLUSHING AND SAD-IRON.



106,819. CONSTANTINE HINONES.
COVERING METAL ARTICLES WITH INDIA RUBBER.

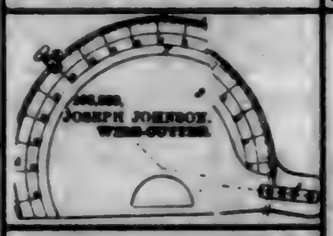
106,820. GEO. M. HOPKINS,
JOHN A. STRAIGHT.
LOW-WATER INDICATOR.



106,821. GEO. M. HOPKINS,
JOHN A. STRAIGHT.
LOW-WATER ALARM INDICATOR.



106,822. JOSEPH JOHNSON.
WIRE-CUTTER.



106,823. FRED'K W. JUDD.
GEORGE M. HUBBARD.



106,824. HIRAM HOPKINS.
HOOSE-CROUPE SUPPOSITORIA.



106,825. JAMES S. HOWARD.
COLORING GUN-BARRELS.

106,826. LEWIS HOWARD.
CHARLES HOWARD.
PROPELLER.

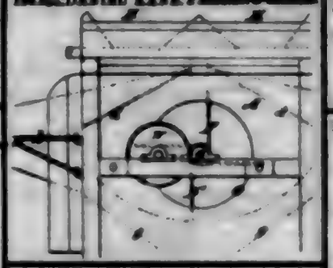


106,827. SEYMOUR HUGHES. ROOFING.



106,828. ELI HUNT. PORTABLE FENCE.

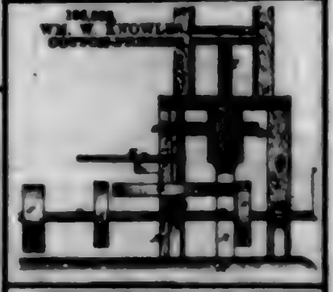
106,829. DANIEL KANE. PASSING-BELLS.



106,830. JOHN STAFFORD KELLY, U. S. A.
PAVEMENTS.

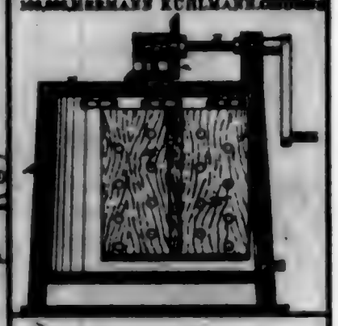


106,831. WM. W. KNOWLES.



106,832. JOSEPH KRAFT. MACHINERY FOR PRINTING OIL-CLOTH, &c.

106,833. HERMANN KUHLMANN, Cincinnati, O.



106,834. JACOB M. LANDES, Cincinnati, O.
CONCRETE FLOW AND OBSERVATOR.



106,835. JOHN LANE.
MANUFACTURE OF SLOW-BURNING.



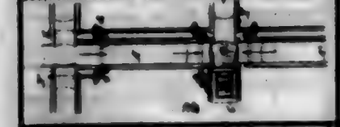
106,836. ALCIDE LANDRY.
SUGAR-CANE SCRAPER.



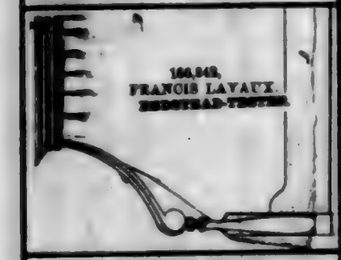
106,840. NATHAN LAWRENCE.
CALL-BELL AND VENDER.



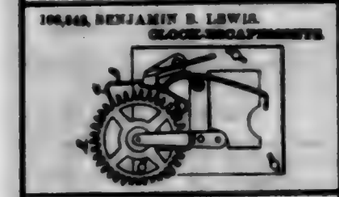
106,841. ALFRED LAWTON. ELEVATORS.



106,842.
FRANCIS LAVAUX.
BEDSTEAD-TENTER.



106,843. BENJAMIN B. LEWIS.
CLOCK-ESCAPEMENT.



106,844. JAMES E. HALL.
USE FOR DYEING AND PRINTING, AND WATER-POWER FABRICS.



106,845. JOHN MARCHBANK.
CONSTRUCTION OF REVOLVER.

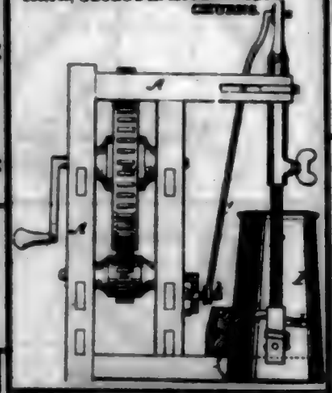


106,846. ANN AUGUSTA MABEL.
MEDICAL COMPOUND.

106,847. ANTHONY S. MARTIN.
AXLE-BOX FOR RAILWAY CAR-BRAKE.



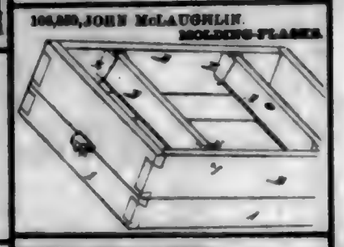
106,848. GEORGE H. McGLOTHLEN.
CHURN.



106,849. B. L. McGOWAN, Cincinnati, O.
LOCK-NUTS AND SPLICE-BARS.

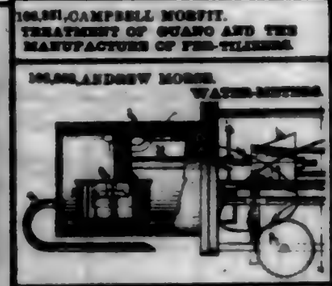


106,850. JOHN McLAUGHLIN.
MOULDING-PLANER.

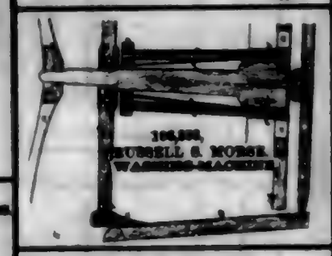


106,851. CAMPBELL MORFIT.
TREATMENT OF GUANO AND THE MANUFACTURE OF PER-TILIZERS.

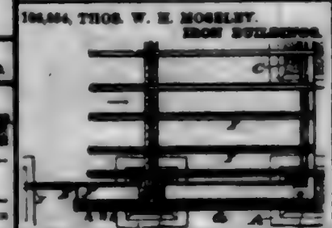
106,852. ANDREW MORSE.
WATER-METER.



106,853. RUSSELL G. MORSE.
WASHING-MACHINE.



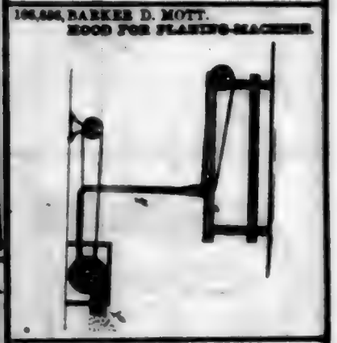
106,854. THOS. W. H. MOSELEY.
IRON BUILDING.



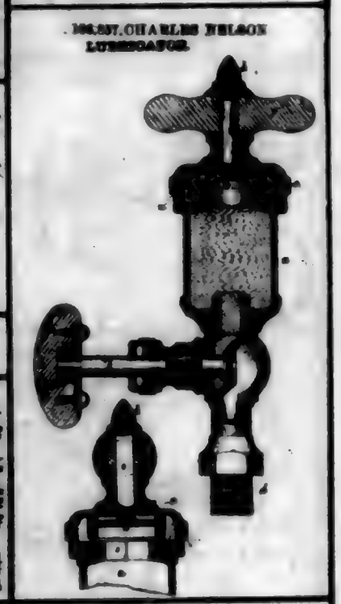
106,855.
THOS. W. H. MOSELEY.
BRIDGES.



106,856. BARKER D. MOTT.
HOOD FOR PLANING-MACHINE.



106,857. CHARLES NELSON
LUBRICATOR.

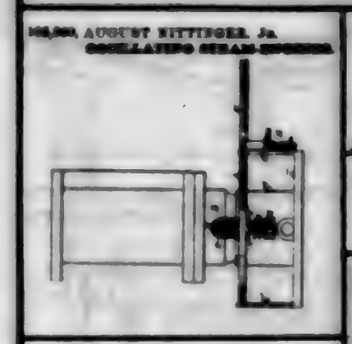


106,858.
ABNER NEWTON.
ANIMAL TRAP.

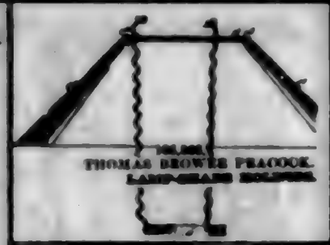


106,859. HENRY NICHOLLS.
COTTON-SEED PLANTER.

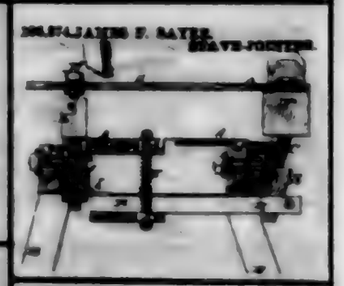




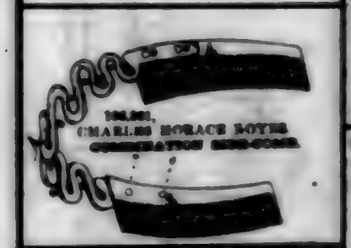
AUGUST KITTINGER, Jr.
OSCILLATING STEAM-ENGINE.



THOMAS BROWER PEACOCK.
LAND-SEARS BOLSTERS.



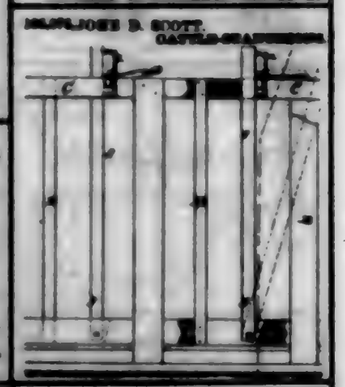
JAMES F. SAYER.
HEAVE-JOISTER.



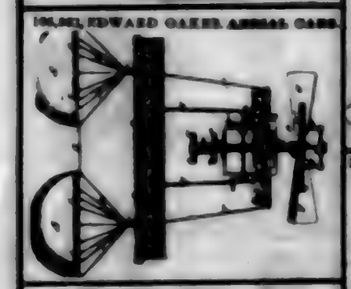
CHARLES HORACE BOYER.
CONDENSATION SIDE-CORKS.



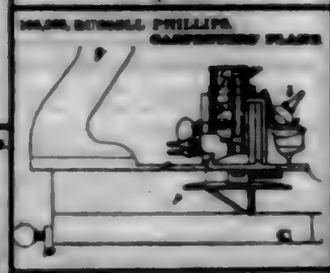
ABRAHAM L. PENNOCK.
OPERATING VALVES.



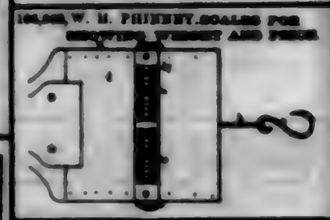
JOHN B. SCOTT.
CATTLE-GUARD FENCE.



EDWARD OAKES, Assignor.
ANIMAL GAME.



RUSSELL PHILLIPS.
CARPET-SWEEPING PLANT.

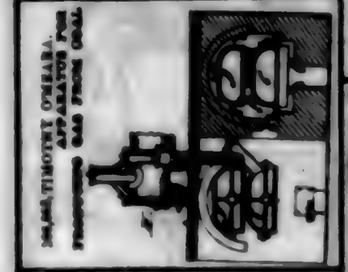


W. H. PHINNEY.
SCALING FOR WEIGHING CURRENT AND PRESS.



THOMAS C. SCOTTRON.
SIDNEY PLUMMER.
CORRUGATING FOR SHEATHING VESSELS, &c.

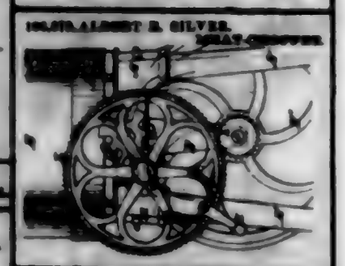
ROBERT C. GIBBONS.
LOCK-MECHANISM.



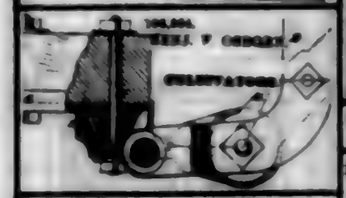
TIMOTHY O'NEILL, Assignor.
AIR-ADAPTOR FOR GAS FROM COAL.



JAMES PEENE.
WASHING-MACHINE.



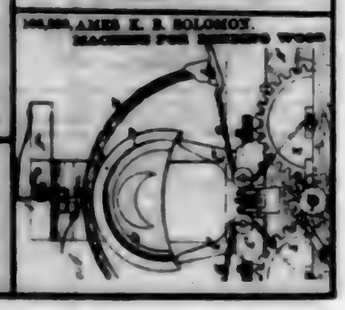
ALBERT B. GILVER.
HEAT-CONDUCTOR.



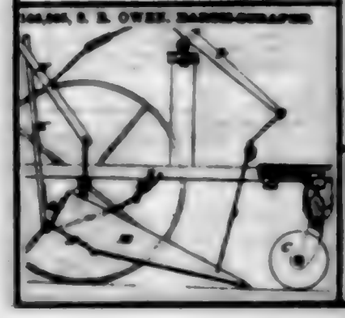
HENRY V. OSBORN.
CULTIVATORS.



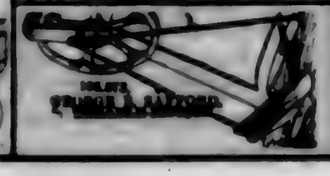
HENRY W. RUDOLF.
FENCING FOR GARDEN-PURPOSES.



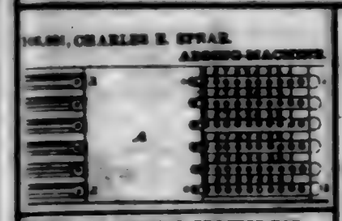
AMOS K. B. SOLOMON.
MACHINE FOR SAWING WOOD.



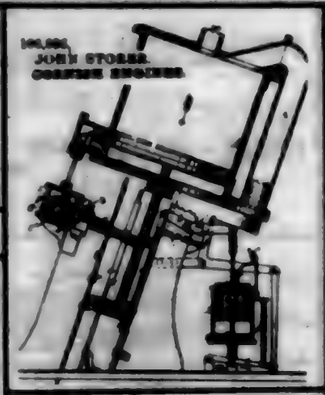
E. S. OWEN.
HARROW-ATTACHMENT.



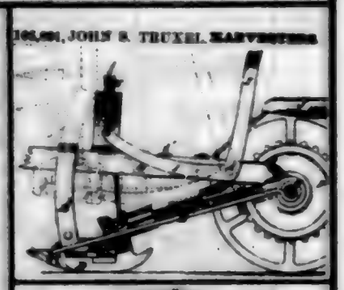
THOMAS L. SAYCORD.



CHARLES E. STRAT.
ARMING-MACHINE.

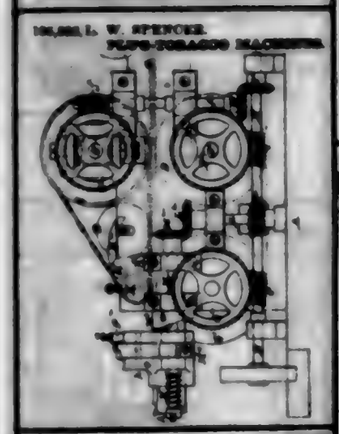


JOHN STOBER.
COOKING STOVES.

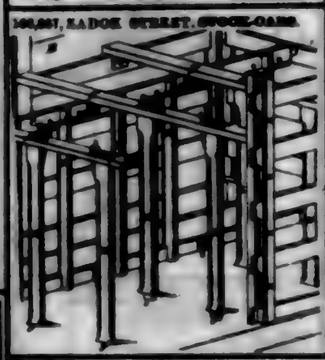


JOHN S. TRUXEL.
HARVESTER.

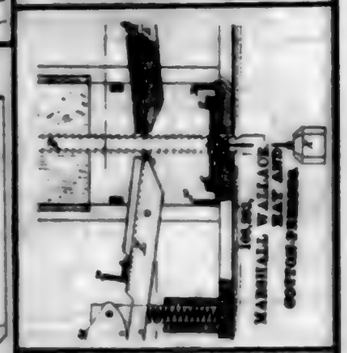
L. W. SPENCER.
MACHINE FOR MANUFACTURING PLUG TOBACCO.



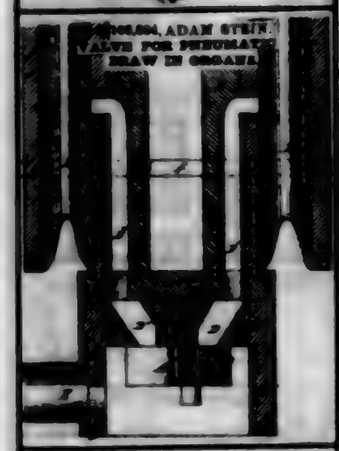
L. W. SPENCER.
PLUG-TOBACCO MACHINE.



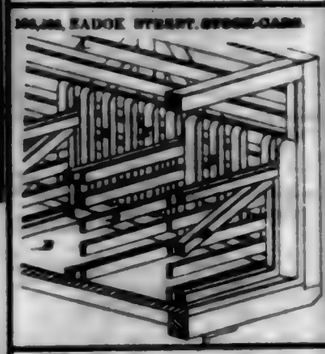
RADOK STREET.
STOCK-GAGE.



CHARLES VOGEL.
COMPRESSED-AIR FORCE-PUMP.



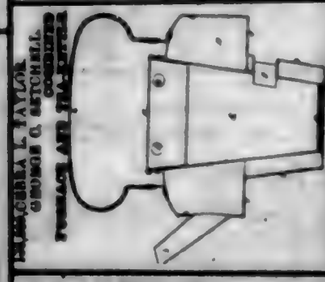
ADAM STEIN.
VALVE FOR PNEUMATIC DRAW IN GROANS.



RADOK STREET.
STOCK-GAGE.



AUGUSTUS M. STOUT.
MACHINE FOR SAWING WOOD AND SHEARING WAX.



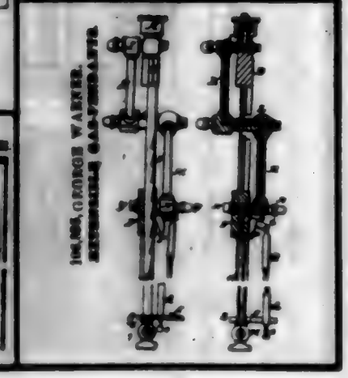
LAWRENCE L. TAYLOR.
GEORGE G. MITCHELL.
CONSTRUCTION OF PNEUMATIC AIR-BRAKES.



C. M. THURLOW.
CHURN-DASHER.

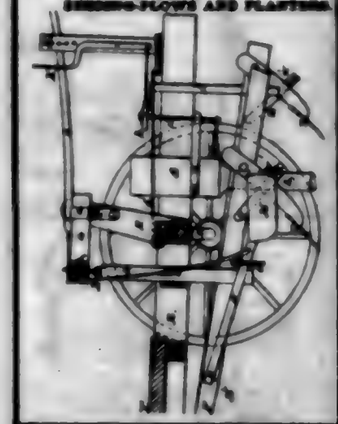
DANIEL B. WARE.



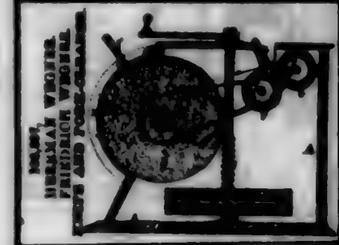


GEORGE WARNER.
REGULATING GAS-BURNERS.

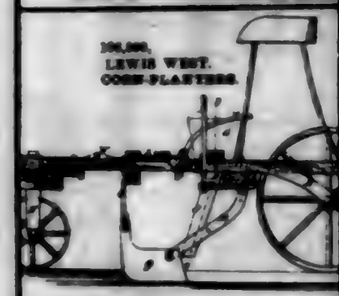
106,906, JAMES B. WATT.
JOHN C. WATT.
SEEDING-PLOWS AND PLANTERS.



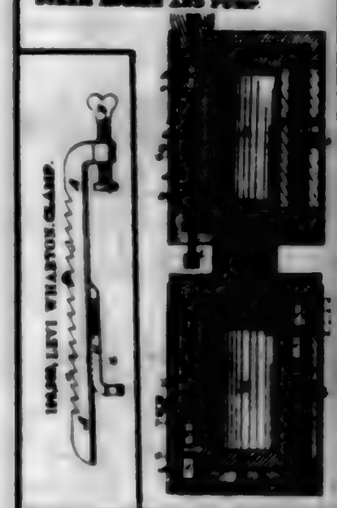
106,907, HERMAN VROTH.
FRIEDRICH WROTH.
HOPS AND POLE-GRAPPLE.



106,908, LEWIS WEST.
CORN-PLANTERS.

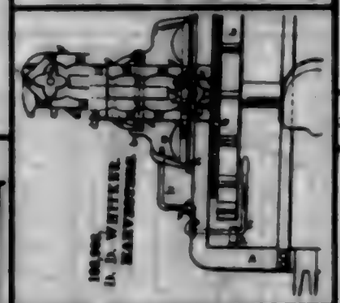


106,909, G. WESTINGHOUSE, Jr.
STEAM ENGINE AND PUMP.

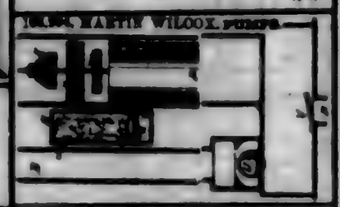


106,910, LEVI THAYER, CLAMP.

106,911, J. D. WHITNEY, HARVESTER.



106,912, MARTIN WILCOX, PUMPS.



106,913, WILLIAM M. WILSON, and DALLAS S. DENTON, MEDICAL COMPOUNDS.

106,914, ALBERT WIEDEKE, PRESSING FABRICS.



106,915, GEORGE B. WOOD, APPARATUS FOR TREATING COAL TARS.



106,916, STEPHEN WOODARD, HARROW.
ALBERT WOODARD.



106,917, CHARLES E. TAGUE, MACHINE FOR BORING AXLE AND HUBS.

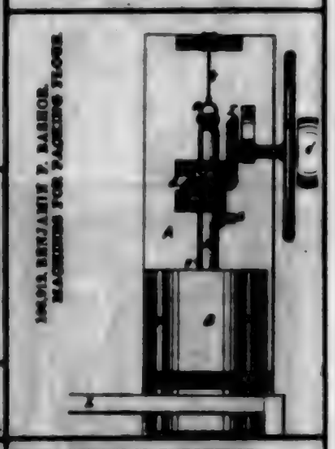


106,918, HENRY J. ALVORD, WOOD-SAWING MACHINE.



106,919, DANIEL ARNDT, CHIMNEY-TOP.

106,920, BENJAMIN F. BARNES, MACHINERY FOR PACKING PLOWS.



106,921, JOSEPH M. BATCHELOR, TRACE-LIFTER.

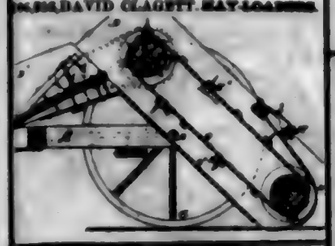


106,922, MICHAEL K. CARPENTER, BOXING APPARATUS.

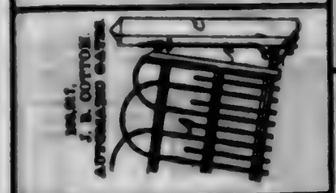


106,923, G. CHEVRIER, TREATING ACID TARS FROM COAL.

106,924, DAVID CLAGETT, HAY-LOADER.

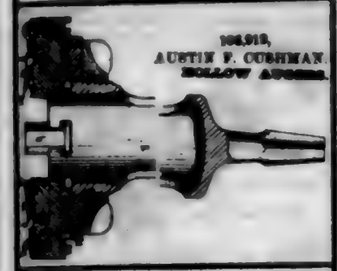


106,925, J. B. COTTON, ADJUSTABLE GATE.



106,926, B. B. CROASDALE, FERTILIZER.

106,927, AUSTIN F. CUSHMAN, HOLLOW AUGER.



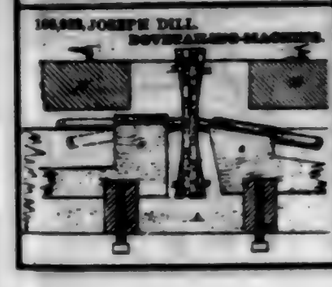
106,928, JOSEPH B. DALLON, FASTENING FOR GARMENTS.



106,929, ALEXANDER T. DE PUY, CASH-STAND.

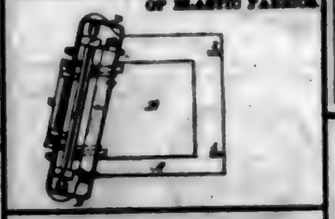


106,930, JOSEPH DILL, DOUBLE-SEWING MACHINE.

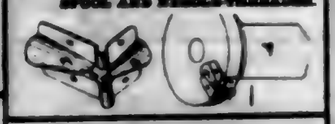


106,931, WILLIAM W. DUDLEY, LIQUID SIZING FOR FORMING BLACK-BOARDS, &c.

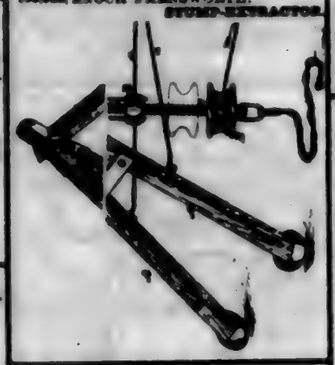
106,932, CHAS. A. ENSIGN, APPARATUS FOR THE MANUFACTURE OF ELASTIC FABRICS.



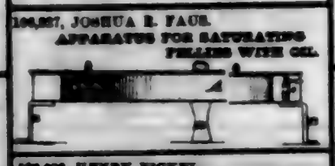
106,933, GEORGE PETERS FARMER, SPOOL AND BOBBIN-HEADING.



106,934, ENOCH FARNSWORTH, STUMP-EXTRACTOR.



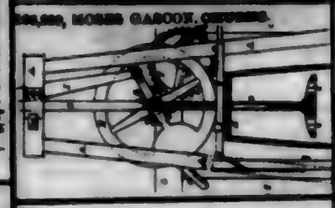
106,935, JOSHUA B. FAUL, APPARATUS FOR SATURATING FELLIES WITH OIL.



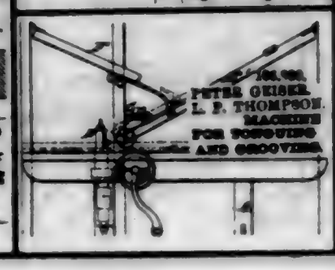
106,936, HENRY FICKEL, HARNESS-FASTENING.



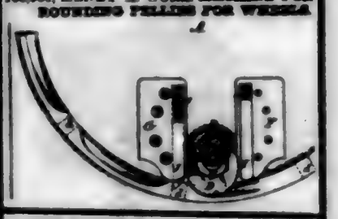
106,937, MOSES GAGNON, CHURN.



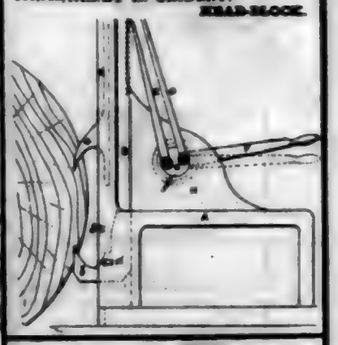
106,938, PETER GEISER, I. P. THOMPSON, MACHINE FOR TONGUING AND GROOVING.



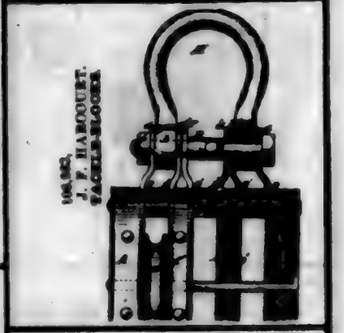
106,939, HENRY A. GORE, MACHINE FOR BOUNDING FELLIES FOR WHEELS.



106,940, HENRY H. GRIDLEY, HEAD-BLOCK.



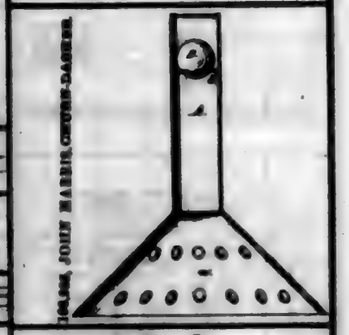
106,941, J. F. HARCOURT, FASTEN-BLOCKS.



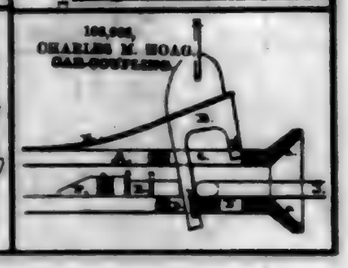
106,942, THOMAS A. HARRIS, CORSET-SPRINGS.

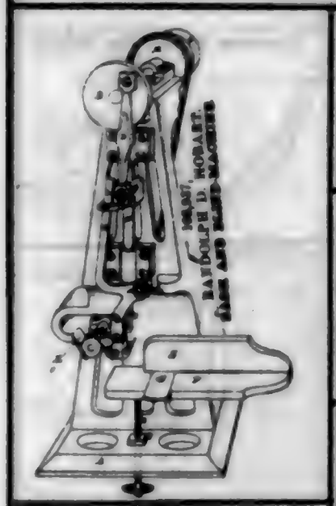


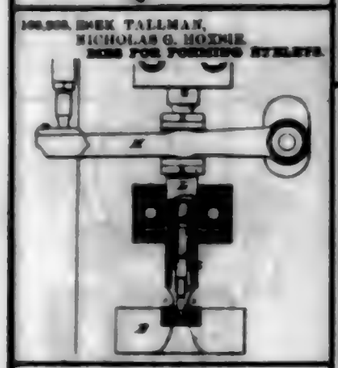
106,943, JOHN HARRIS, CHURN-DASHER.

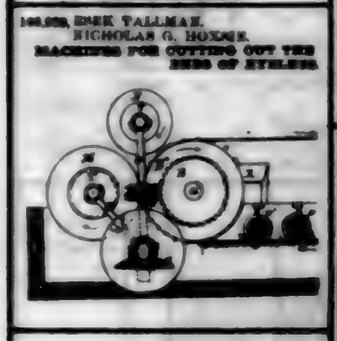


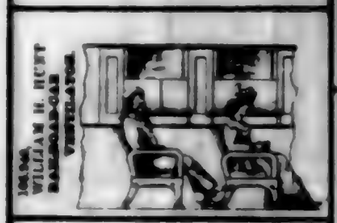
106,944, CHARLES M. HOAG, GAS-BURNER.

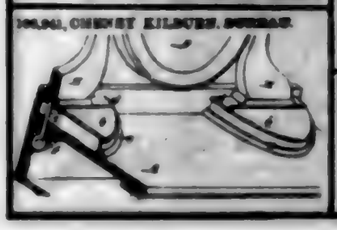




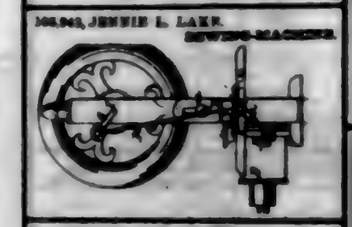


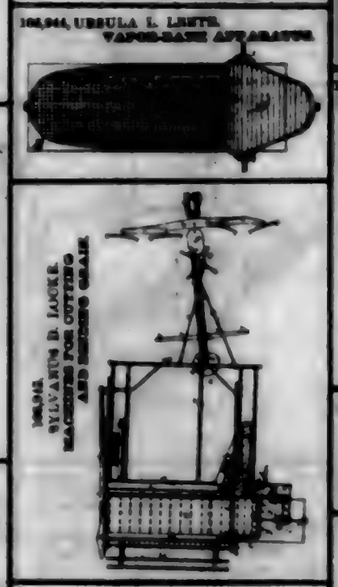


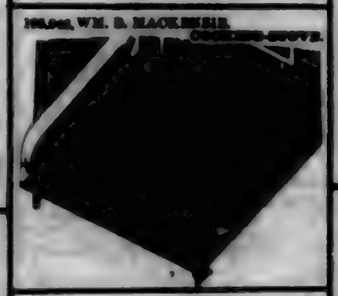






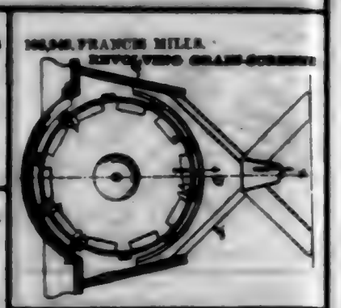






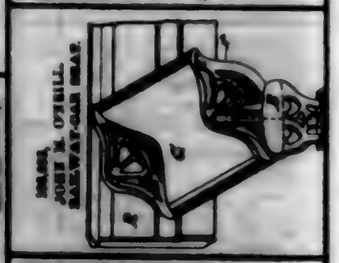


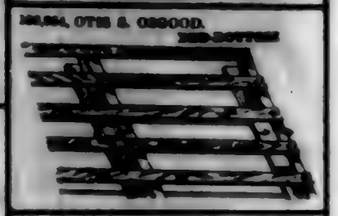


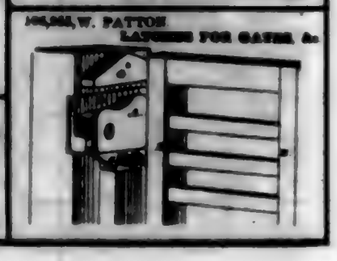


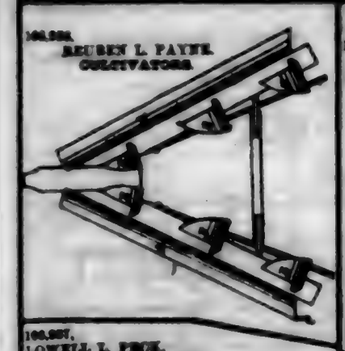


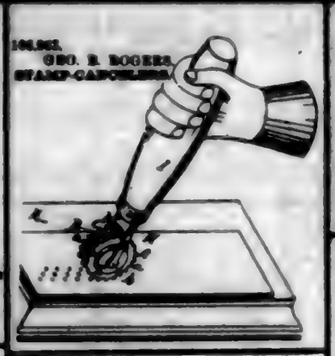


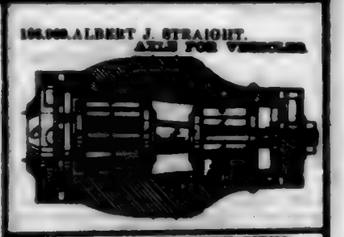


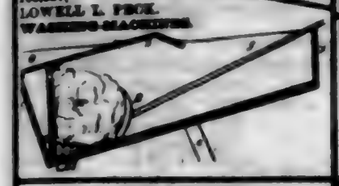


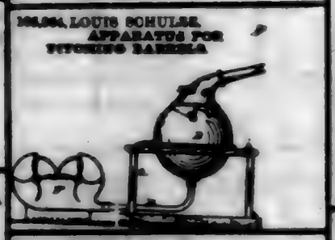


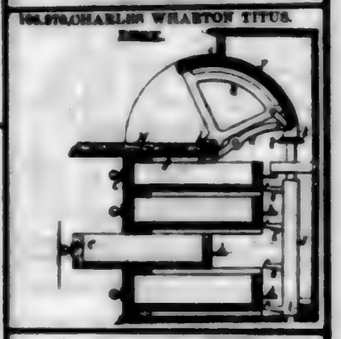


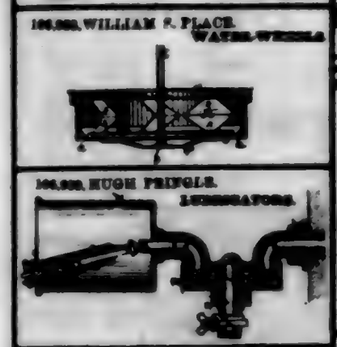


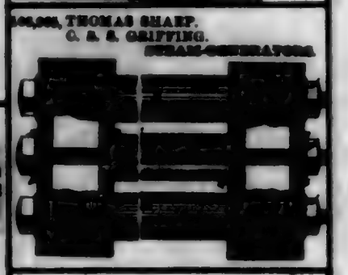


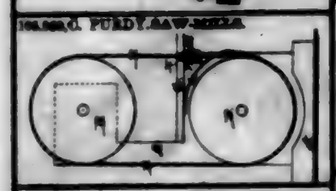


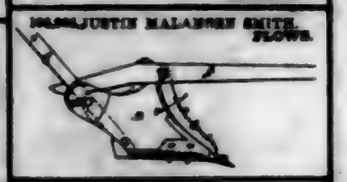


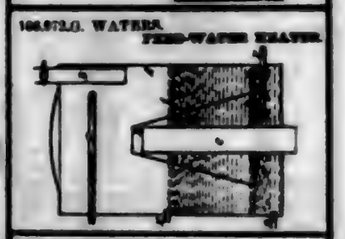


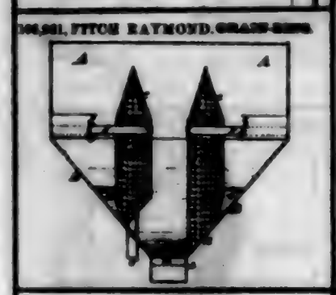


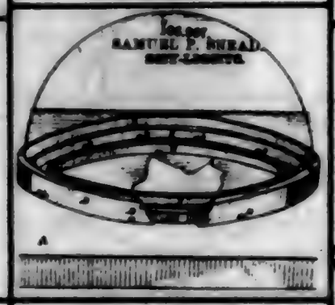


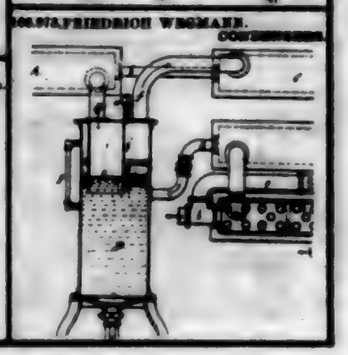




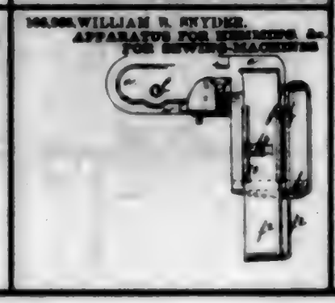




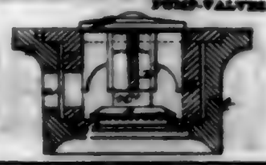




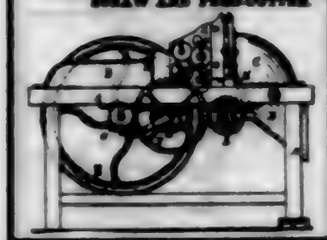




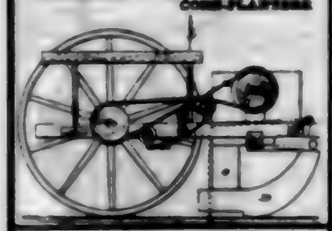
108,974. GEORGE H. WEINMAN. FEED-VALVES.



108,975. AUGUST WERNER. STRAW AND FEED-CUTTER.

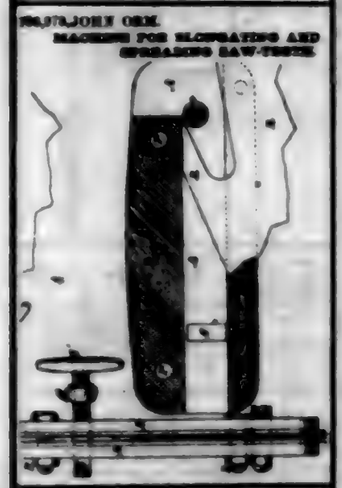


108,976. LUCIUS WINSTON. CORN-PLANTERS.

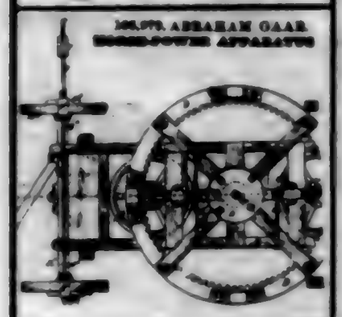


108,977. HOWELL W. WRIGHT. COATING YACHT AND BARK WITH COPPER.

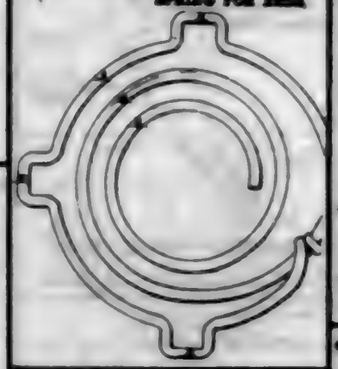
108,978. JOHN OEM. MACHINE FOR SLOPPATING AND SPREADING SAW-TEETH.



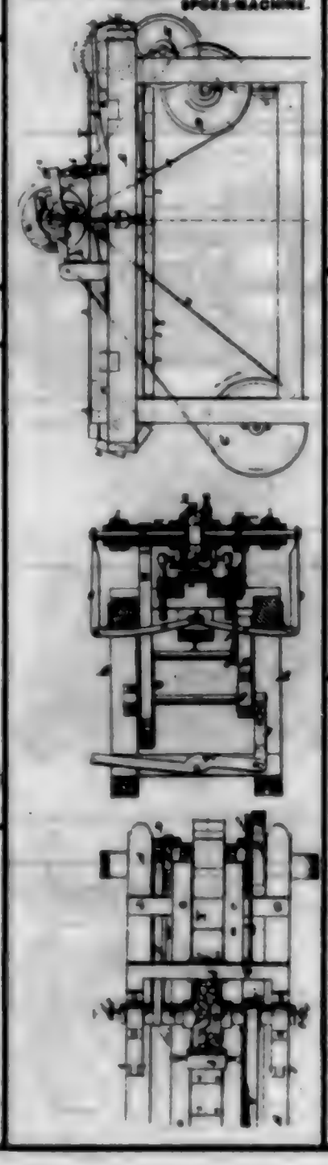
108,979. ABRAHAM OAAR. SMOKE-CONSUMING APPARATUS.



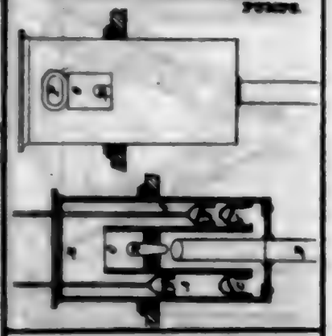
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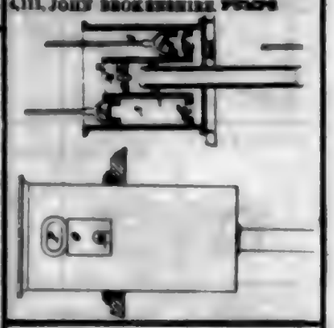
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4,110. JOHN BROKENSHIRE. PUMPS.



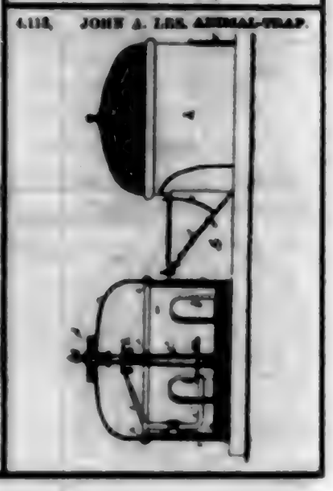
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4,112. JOHN JACOB LERRAU. PARING-KNIFE.



4,113. JOHN A. LEE. ANIMAL-TRAP.



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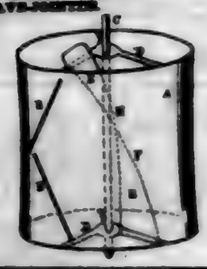
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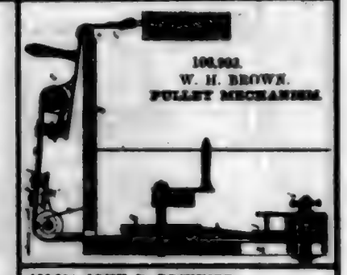
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108,982. JOHN B. BELL. STAVE-JOINTER.



108,983. W. H. BROWN. PULLEY MECHANISM.



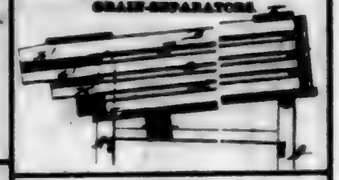
108,984. JAMES H. ANDREWS. SAND-SLOWS.



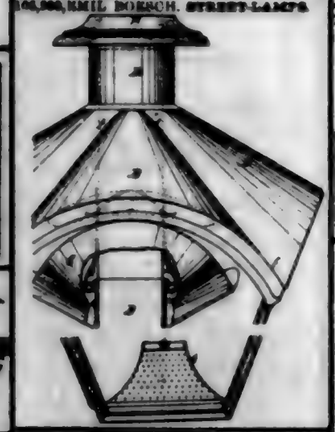
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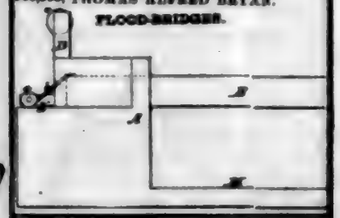
108,986. JOHN D. BRUNNER. E. H. J. UEBERROTH. GRAIN-SEPARATORS.



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108,989. JAS. E. ANDER. EGG-CARRIERS.



108,990. CHARLES W. BAILEY. DETACHABLE BOOT AND SHOE-HEEL.



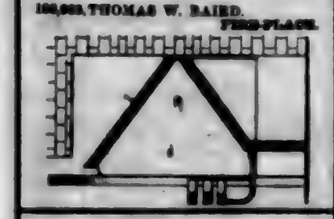
108,991. JAMES BRITTON. FUSE FOR SHRUNK-METAL CASE.



108,992. CORODON S. CANNON. CLINTON D. CANNON. FRUIT-LADDERS.



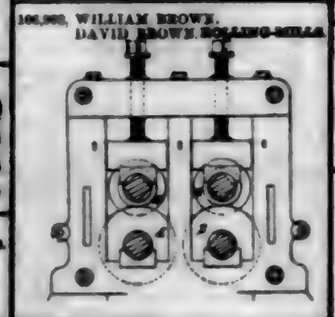
108,993. THOMAS W. BAIRD. FEED-FLACK.



108,994. G. W. BATES. BOX.



108,995. WILLIAM BROWN. DAVID BROWN. ROLLING-MILLS.



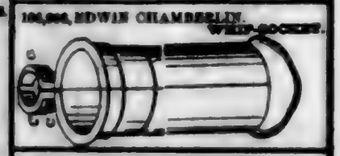
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108,997. GUSTAV A. BECKER. FOUNTAIN PENS.



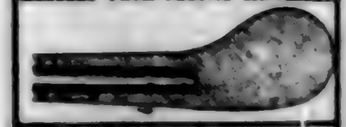
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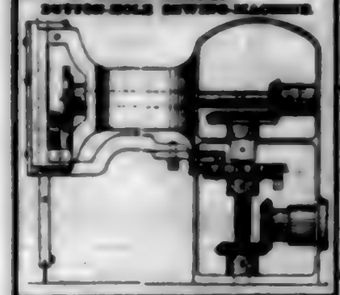
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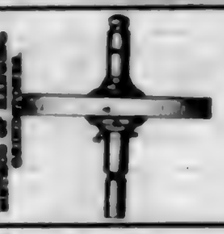
107,000. LEVI CHAPMAN.
MODE OF FORMING UMBRELLA RAFTERS FROM FLAKING MATERIAL.



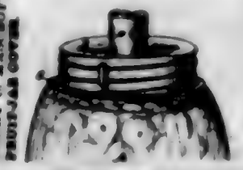
107,001. WILLIAM CHICKEN.
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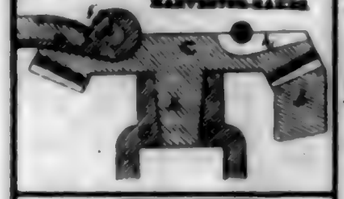
107,002. HENRY H. CHURCH.
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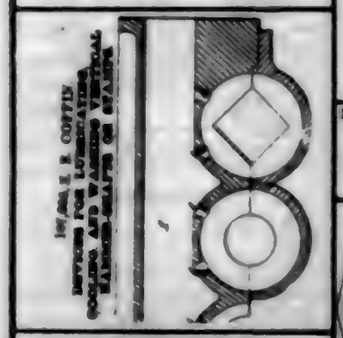
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107,004. DANIEL CLOW.
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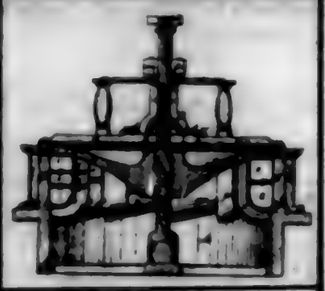
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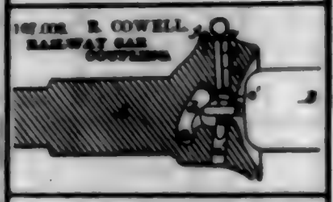
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107,007. I. M. COOK. WATER-WHEEL.



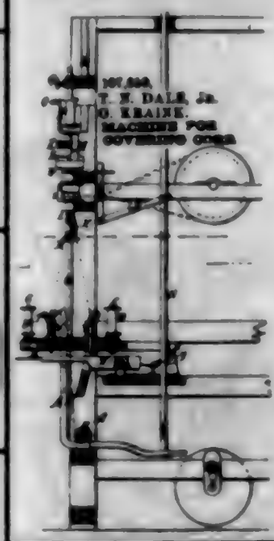
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107,009. DAVID H. CUNNINGHAM.
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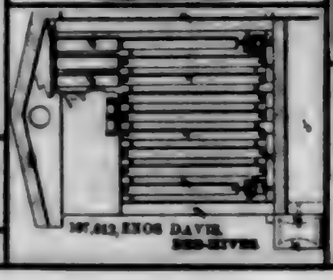
107,010. T. N. DALE, Jr.
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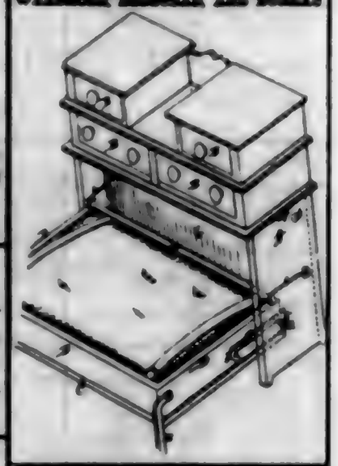
107,011. CORNELIUS B. DAVE.
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107,012. ENOS DAVE.
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107,013. JOHN ADOLPH DAVIS.
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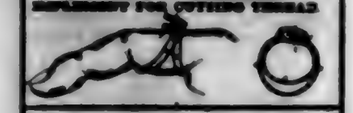
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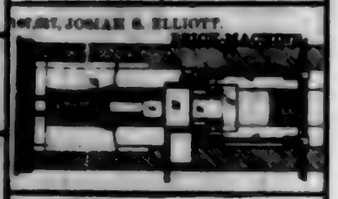
107,015. ELIZA D. DODGE.
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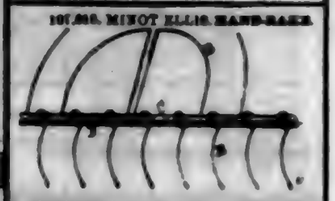
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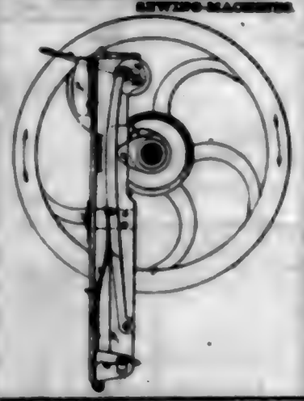
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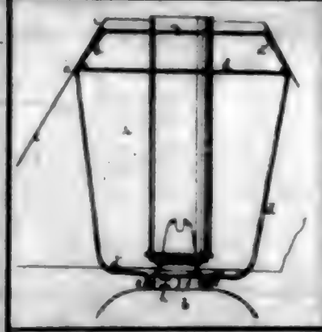


107,018. MINOT ELLIS. HAND-RAKE.

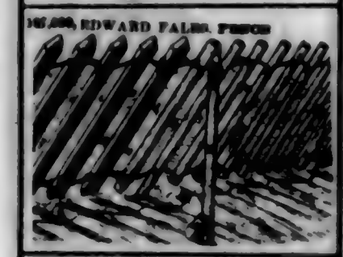


107,019. GEORGE A. FAIRFIELD.
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107,020. EDWARD FALES. FENCE.

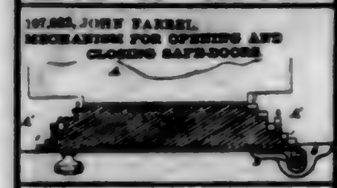


107,021. JOHN FARREL.
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107,022. JOHN FARREL.
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107,023. JOHN FARREL.
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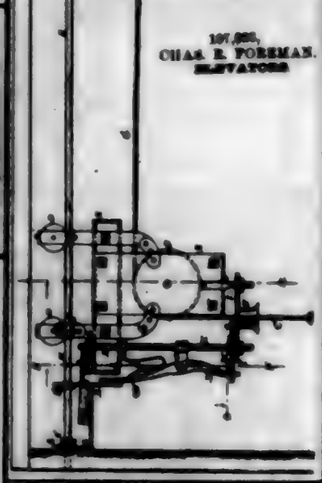
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107,025. WILLET FISHER.
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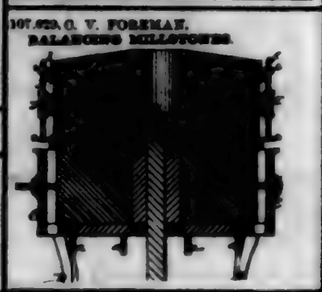


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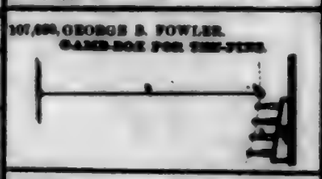
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107,028. C. V. FOREMAN.
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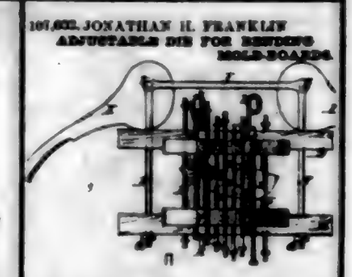
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107,030. WILLIAM J. FOX.
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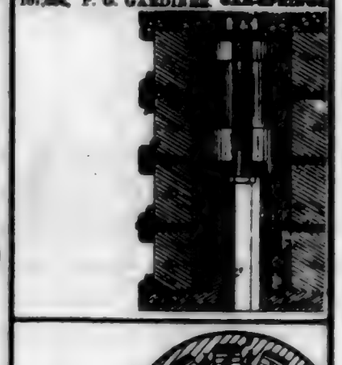
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107,032. HORATIO GALE. PLOWS.



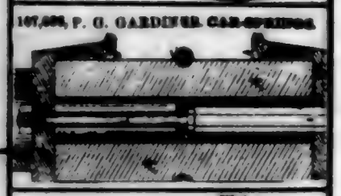
107,033. P. G. GARDINER. GAS-SPRINGS.



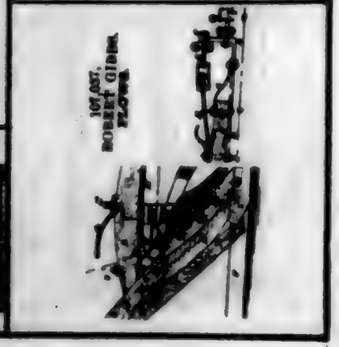
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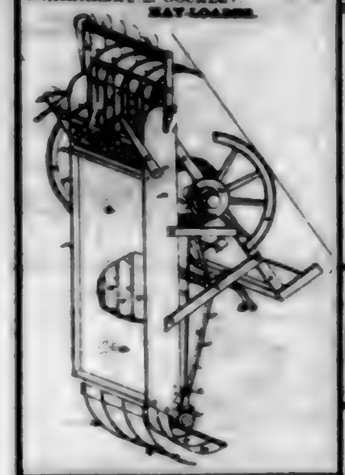
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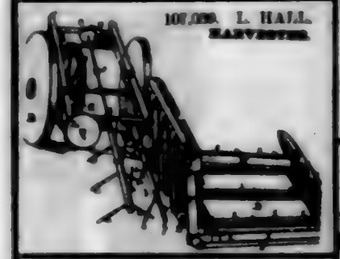
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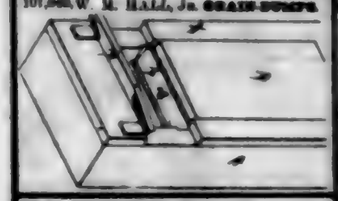
107,039. HENRY L. GOCKLEY. HAY-LOADER.



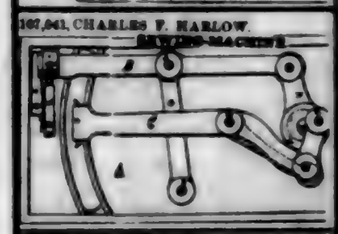
107,040. L. HALL. HARVESTER.



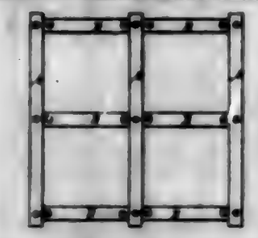
107,041. W. M. HALL, Jr. GRAIN-BINDER.



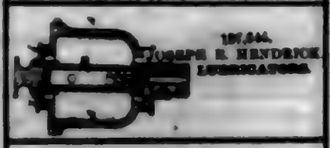
107,042. CHARLES F. HARLOW. SEWING-MACHINE.



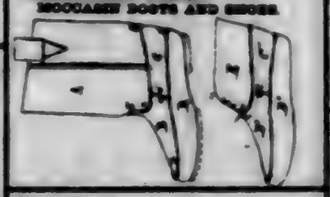
107,043. SAMUEL H. HARRIS. FRAMES OF SAFE GRATES FOR PAPERS.



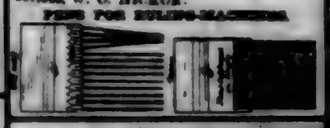
107,044. JOSEPH B. HENDRICK. LUBRICATORS.



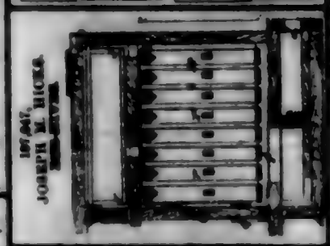
107,045. THOMAS HENRY. MOCCASIN BOOTS AND SHOES.



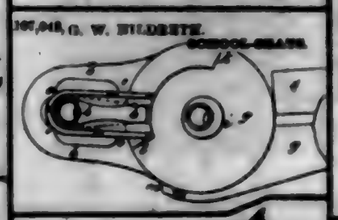
107,046. W. O. HICKOK. PENS FOR RULING-MACHINES.



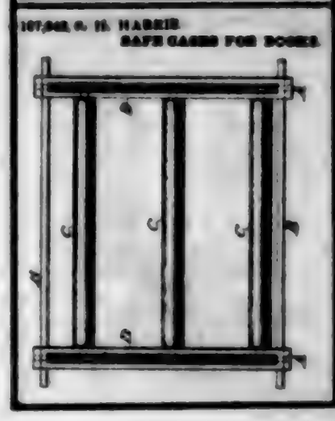
107,047. JOSEPH M. HICKS. SEEDER.



107,048. G. W. HILBERTE. SCHOOL-SEATS.



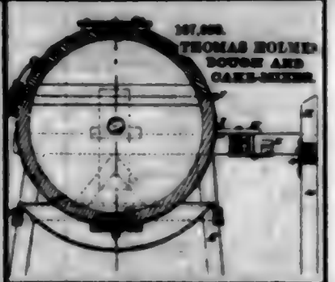
107,049. G. H. HARRIS. SAFE GRATES FOR BOOKS.



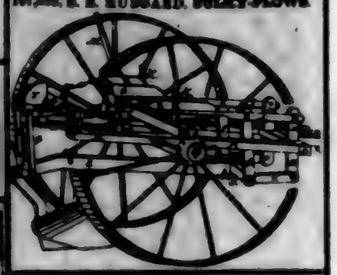
107,050. G. HITZELBERGER. BEAST-GUARD.



107,051. BENJAMIN F. HOUSEL, SIMEON O. THAYER. MACHINES FOR MAKING TUBULAR LOCKETS-CONDUCTORS.



107,052. B. B. HUBBARD. SULKY-PLOWS.



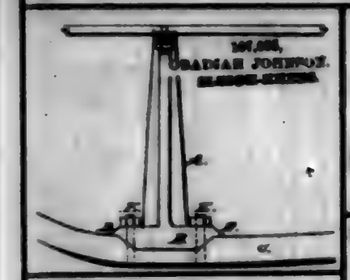
107,053. DAVID JAMES HUTTS. REGULATING GOVERNOR FOR GAS, &c.



107,054. EDWARD HUTTS. TRACE OR WAGGON-HOOK.



107,055. GRAHAM JOHNSON. [illegible]



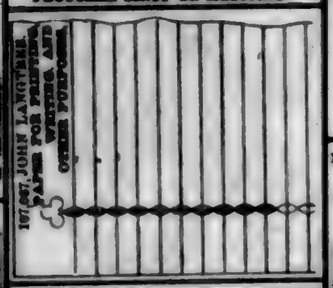
107,056. J. REEVA JONES. [illegible]



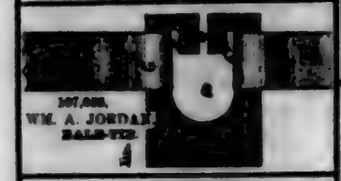
107,057. WILLIAM P. JONES. HARROWS.



107,058. JOHN KAUFFMAN. WINDOW-SCREEN.

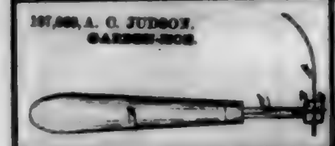


107,059. WM. A. JORDAN. BALE-TIE.



107,060. WILLIAM H. JORDAN. PAINT COMPOUNDS.

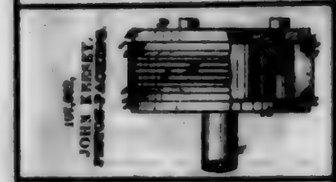
107,061. A. G. JUDSON. GARDEN-HOE.



107,062. JOSEPH KAUFMAN. CAN-OPENING.



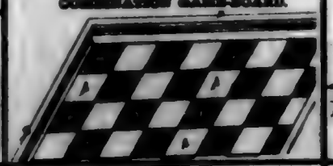
107,063. JOHN KINSEY. [illegible]



107,064. JONATHAN COYKENDALL. SHOE-FASTENING.

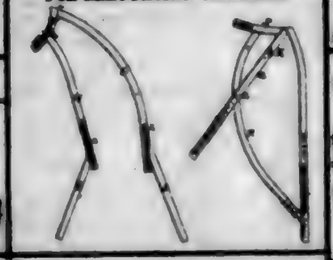


107,065. CONRAD KRATH, GUSTAV HERMANN MOLL. COMBINATION GAME-BOARD.



107,066. GEO. LA MONTAGUE. PICTORIAL SETUP OR MEDICINE.

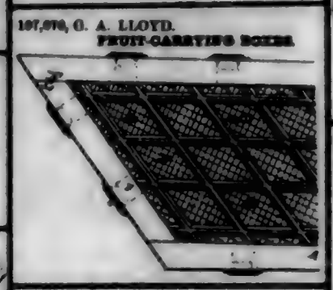
107,067. URSULA L. LEETE. INSTRUMENT FOR MEASURING GARMENTS.



107,068. JAS. B. LITTLE. CULTIVATORS.

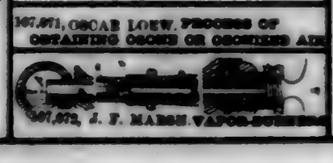


107,069. G. A. LLOYD. FRUIT-CARRYING BOXES.

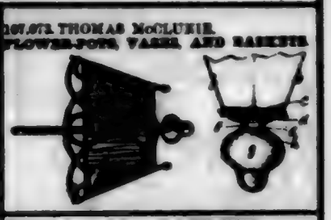


107,070. JOHN MAGUIRE. WATER-WHEEL.

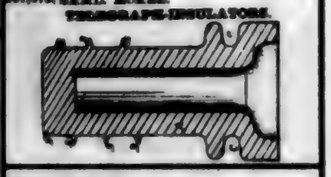
107,071. OSCAR LOEW. PROCESS OF OBTAINING OZONE OR OZONIZED AIR.



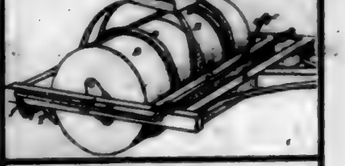
107,072. THOMAS McCLURIE. FLOWER-POTS, VASES, AND BASKETS.



107,073. SAML. McKEE. TELEGRAPH-INSULATORS.



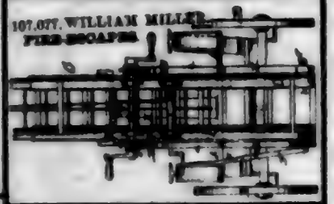
107,074. ROBERT ANDERSON McCORMICK. FIELD-ROLLERS.



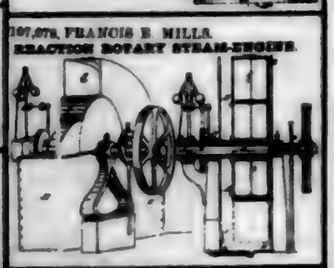
107,075. MICHEL MILLER. BOX-BOARD WAGONS.



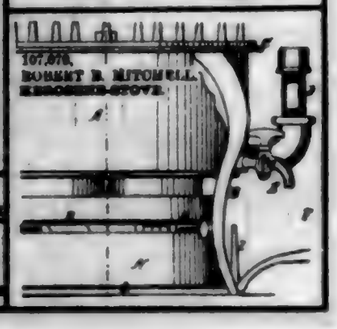
107,076. WILLIAM MILLER. FIRE-ESCAPES.



107,078. FRANCIS E. MILLS. REACTION ROTARY STEAM-ENGINE.



107,079. ROBERT B. MITCHELL. KEROSENE-STOVE.



107,088. JAS. H. MONOE. FOLDING COAT AND HAT-RACK.

107,087. W. H. MORGAN. [illegible]

107,089. J. J. A. MOUBIE. [illegible]

107,090. STEPHEN S. NASH. [illegible]

107,091. D. S. MONFY. [illegible]

107,092. CHARLES A. MOORE. CARRIAGE-POLE COUPLING.

107,093. A. J. HERSHALL. [illegible]

107,094. J. K. MORANGE. N. B. MORANGE. CONSTRUCTION OF GAS-WORKS.

107,095. GOVERNEUR M. PICKARD. MACHINES FOR BORING AND MORTISING.

107,096. EZEKIEL P. MORE. SAMUEL J. ANDERSON. POLISHING CHAIR.

107,097. W. H. MORGAN. TRACE-BOOK.

107,098. W. H. MORGAN. TRACE-BOOK AND CLIP FOR HARNESS.

107,099. CARL FORDELL. [illegible]

107,100. JAMES HUTE. APPARATUS FOR ATTACHING STANDING RIGGING TO MASTS.

107,101. JAMES H. HUTE. HARD-LOCKS.

107,102. T. W. POSTER. H. K. POSTER. METHOD OF HEATING WOOD.

107,103. THOS. W. OWENS. FENCE.

107,104. PETER PETERSON. BOLT-FASTENINGS.

107,105. ISAIAH F. POTTER. [illegible]

107,106. TITUS POWERS. LOCKS.

107,107. E. H. PURRELL. ELECTRO MAGNETIC RAILROAD ALARM.

107,108. J. RALSTON. COTTON GIN FEEDER.

107,109. GEO. RICHARDSON. BRASS-PIPES.

107,110. JAMES W. RIGGS. CAPSTANS.

107,111. HORACE T. ROBBINS. APPARATUS FOR LIGHTING GAS BY ELECTRICITY.

107,112. JACOB SEEBOLD. BRIDGES.

107,113. SAMUEL SHATTUC. MILK-CAN AND COOLER.

107,114. GEORGE F. SHAW. MOWING-MACHINES.

107,115. JOHN J. SIBLEY. TOOL-CHANGING ATTACHMENT FOR SEWING-MACHINES.

107,116. CHARLES A. SMITH. RAILWAY SWITCHES.

107,117. LEVI F. SMITH. LOW-WATER AND HIGH-STEAM INDICATOR.

107,118. WM. G. SMITH. SAFETY-TRUCK AND CAR-BRAKE.

107,119. ABRAM C. STANNARD. COMBINED POWER-PUNCH AND SHEARS.

107,120. CLARK SUTZ. CORN-PLOW AND PLANTER.

107,121. GEO. W. SIKER. W. M. OWEN. GUANO-DISTRIBUTING MACHINE.

107,122. CALFORD F. SMITH. CARRIAGE-AXLE.

107,117. HENRY A. STODDARD. LOCOMOTIVE ASH-PAN.

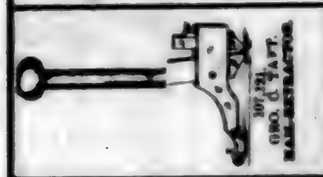
107,118. DANIEL STUKEY. HARVESTER-CUTTERS.

107,119. JAMES D'STUBORS. BRIDGE-GATES.

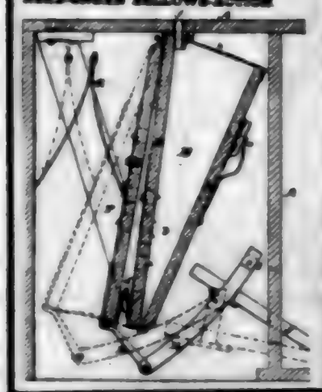
107,120. ROBERT SUTTON.
PROPELLERS FOR STEAM VESSELS.

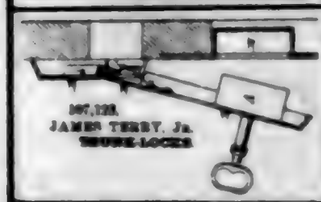


107,121. GEO. C. TAFT.
BAR-EXTRACTOR.



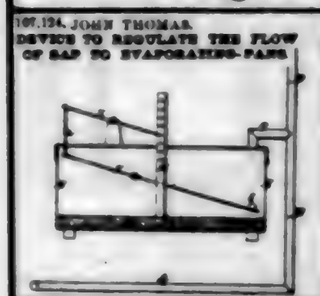
107,122. SIMEON TAYLOR.
REED-ORGAN BELLOWS-ACTION.



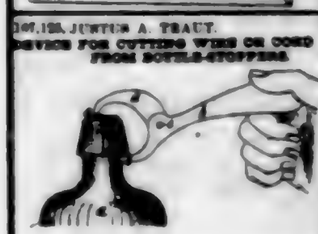


107,123. JAMES TERRY, Jr.
MORTISE-LOCKS.

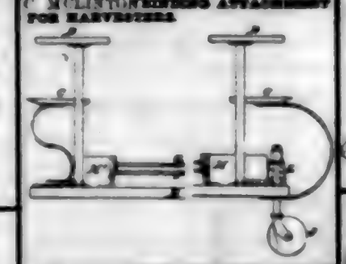
107,124. JOHN THOMAS.
DEVICE TO REGULATE THE FLOW OF SAP TO EVAPORATING-PANS.



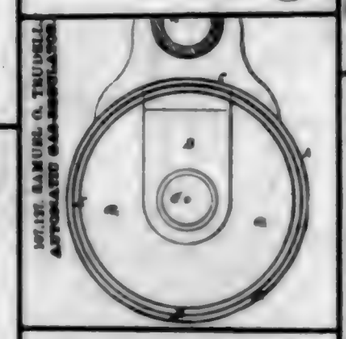
107,125. JUSTUS A. TRAUT.
DEVICE FOR CUTTING WIRE OR CORD FROM BOTTLE-STOPPERS.



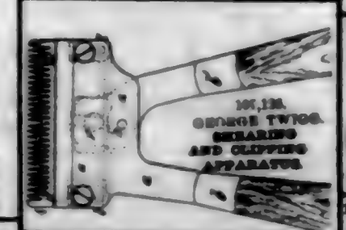
107,126. D. W. TRAVIS AND C. MCLINTON, ASSIGNORS TO ATTACHMENT FOR HARVESTERS.



107,127. SAMUEL G. TRUDELL.
APPARATUS FOR CONCENTRATING CANE-JUICE.



107,128. GEORGE TWIGG.
SHEARING AND CLIPPING APPARATUS.



107,129. DANIEL W. VAN RIPER.
PHOTOGRAPHIC BACKGROUND.

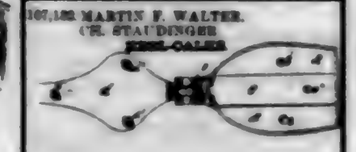


107,130.
JOHN H. VOGT.
GEORGE DIETZEL.
HAIR-DOLLS.



107,131. JAMES H. WAITE.


107,132. MARTIN F. WALTER, (ASSR. TO C. STAUDINGER.)
FIRE-GRATE.



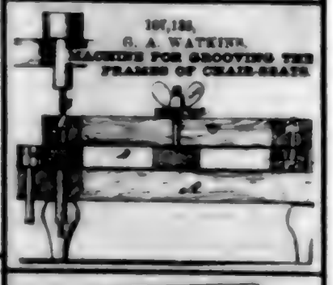
107,133. JEREMIAH W. WALTON.
WAGON-JACKS.



107,134. LORENZO R. WARD.
BREAST-STRAP PROTECTOR FOR HARNESS.



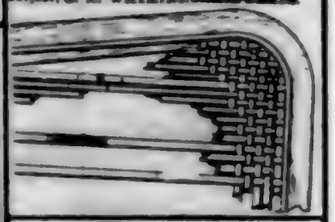
107,135. G. A. WATKINS.
MACHINE FOR GROOVING THE FRAMES OF CHAIR-SEATS.



107,136. G. A. WATKINS.
CHAIR-SEAT.



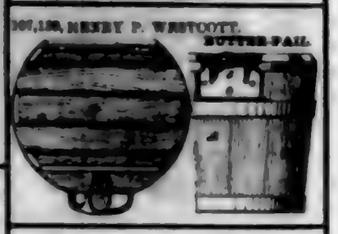
107,137. G. A. WATKINS. CHAIR-SEAT.



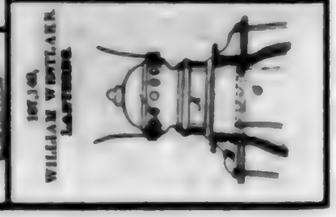
107,138. THOMAS H. WEAVER.
CHURN-DASHER.



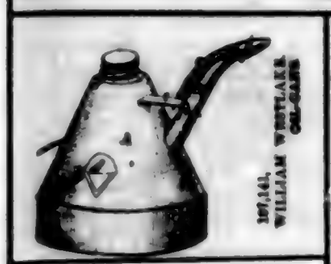
107,139. HENRY P. WESTCOTT.
BUTTER-PAIL.



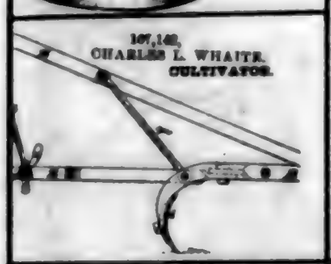
107,140. WILLIAM WESTLAKE, (ASSR. TO HIMSELF.)
LANTERNS.



107,140. WILLIAM WESTLAKE, (ASSR. TO HIMSELF.)
LANTERNS.



107,141. CHARLES L. WHAITE.
CULTIVATOR.



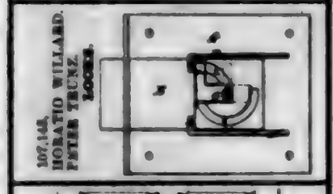
107,142. L. H. WHITNEY.
SCREW FOR SOLES AND HEELS OF SHOES.



107,143. FREDERICK M. WILDMAN.
GALLETS.



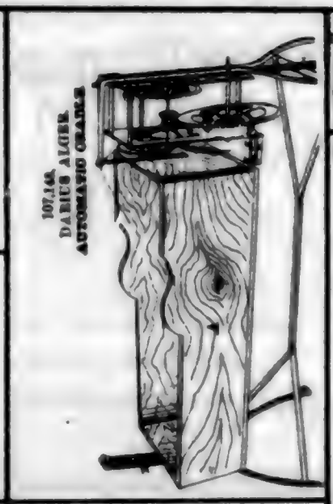
107,144. HORATIO WILLARD, (ASSR. TO PETER TRUNZ.)
LOCKS.



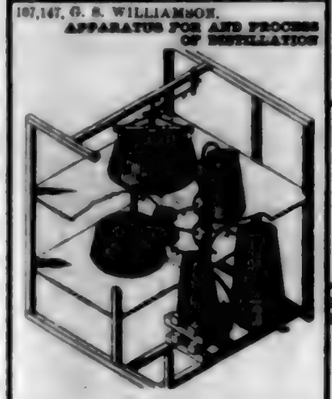
107,145. THOMAS S. WINN.
DRAWING-FRAME.



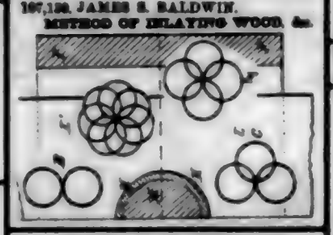
107,146. DARIUS ALGER.
AUTOMATIC GEARS.



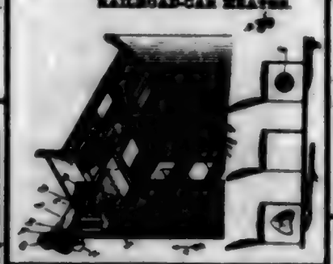
107,147. G. S. WILLIAMSON.
APPARATUS FOR AND PROCESS OF DISTILLATION.



107,148. JAMES S. BALDWIN.
METHOD OF INLAYING WOOD, &c.



107,149. J. G. ALLEN.
RAILROAD-CAR HEATER.



107,150. CHARLES G. BANKER.
ALEXANDER PURDY.
WASHING-MACHINE.



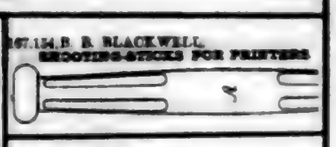
107,151. ALBERT BETTELEY.
WOOD-PAVEMENT.



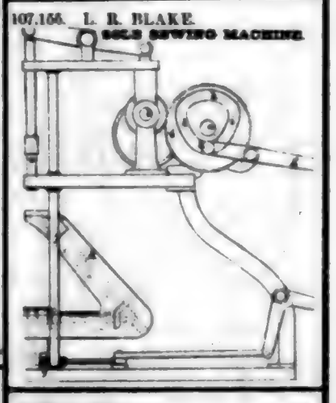
107,152. DANIEL M. RUSSELL.
JEWELERS' TOOLS.



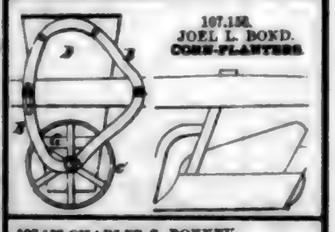
107,153. S. B. BLACKWELL.
SHOOTING-STICKS FOR PRINTERS.



107,154. L. R. BLAKE.
SOLE SEWING MACHINE.



107,155. JOEL L. BOND.
CORN-PLANTERS.



107,156. CHARLES S. BONNEY.
BASE-HOLDERS.



107,157. GUST. BOURGADE.
THE MANUFACTURE OF ALBUMEN.

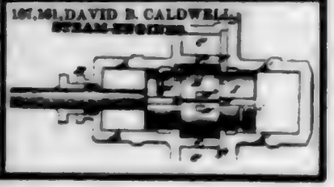
107,158. THOMAS H. BREED.
FLOOD-GATES.



107,159. FRED. BRUSO.
DIES FOR HEADING BOLTS.



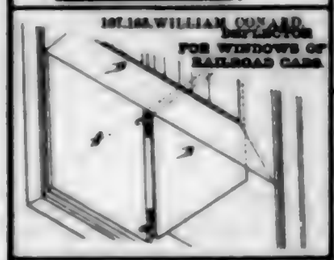
107,160. DAVID R. CALDWELL.
STEAM-ENGINES.



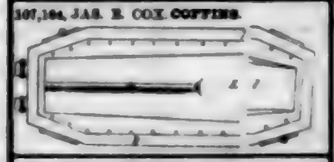
107,162. GEORGE CHAMBERLIN.
CULTIVATING-PLOWS.



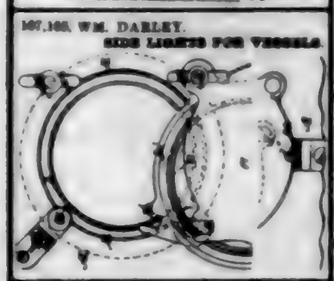
107,163. WILLIAM CONARD.
DEFLECTOR
FOR WINDOWS OF
RAILROAD CARS.



107,164. JAS. R. COX. COFFINS.



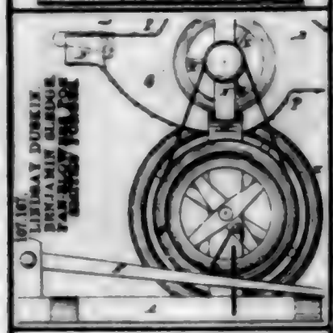
107,165. WM. DARLEY.
SIDE LIGHTS FOR VESSELS.



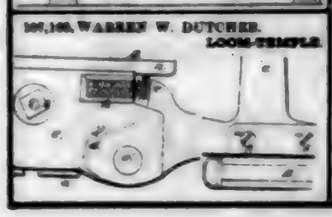
107,166. HIRAM C. DAVIS. ENVELOPES.



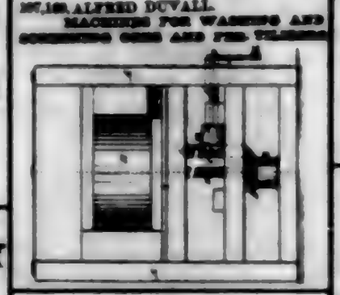
107,167. LIBERTY DUNKIN.
BENJAMIN SLEDGE.
PAPER-FILE.



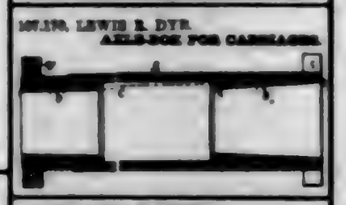
107,168. WARREN W. DUTCHER.
LOOM-TEMPLE.



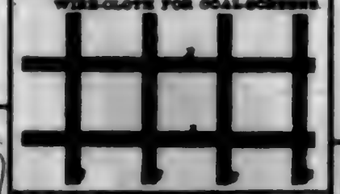
107,169. ALFRED DUVALL.
MACHINES FOR WASHING AND
SCOURING ORES AND FOR TEMPERING



107,170. LEWIS R. DYE.
AXLE-BOX FOR CARRIAGES.



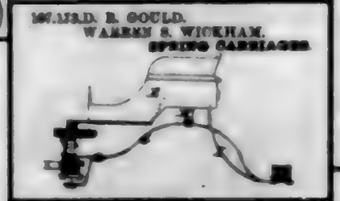
107,171. JACOB G. FRICK.
WIRE-CLOTH FOR COAL-SCREENS.



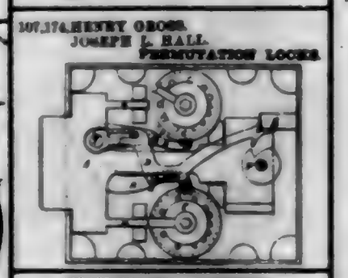
107,172. SAMUEL GAMWELL.
PRUNING-TOOL.



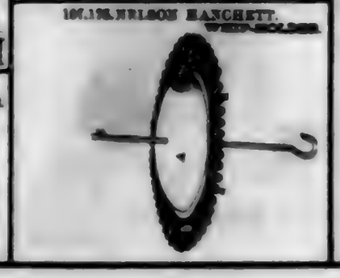
107,173. D. B. GOULD.
WARREN S. WICKHAM.
SPRING CARRIAGES.



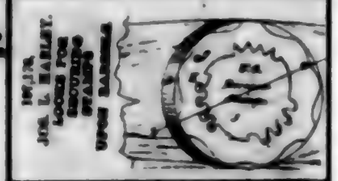
107,174. HENRY GROSS.
JOSEPH L. HALL.
PERMUTATION LOCKS.



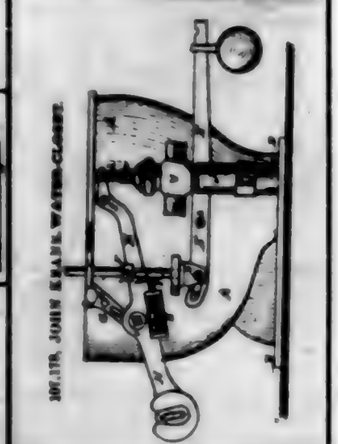
107,175. NELSON HANCHETT.
SPEED-MOTOR.



107,176. JOS. L. HARLEY.
LOOMS FOR
SECURING
PILE
WIRE.

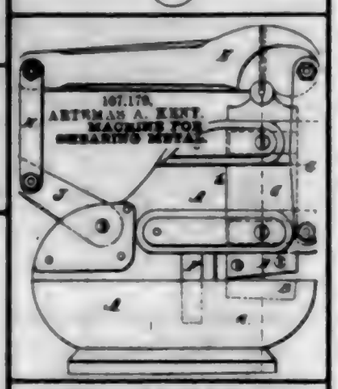


107,177. CLARENCE L. JENKINS.
TANNING LEATHER.

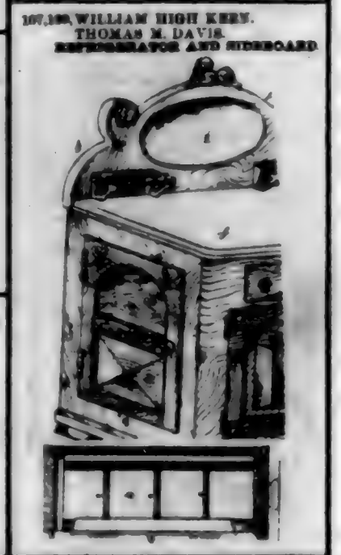


107,178. JOHN KRAUL. WATER-CLOSET.

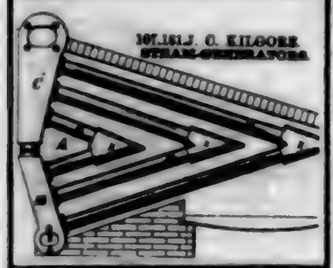
107,179. ARTEMAS A. KENT.
MACHINE FOR
SHEARING METAL.



107,180. WILLIAM HIGH KERR.
THOMAS M. DAVIS.
REFRIGERATOR AND SIDEBOARD.



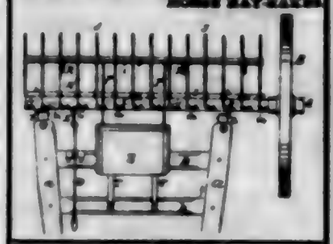
107,181. J. C. KILGORE.
STEAM-GENERATORS.



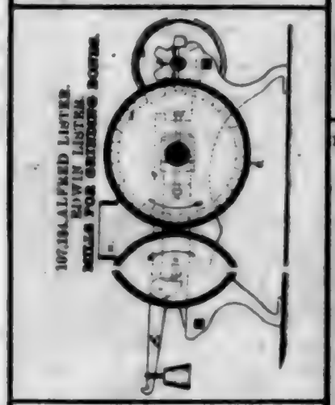
107,182. GEO. W. KING.
BALANCES.



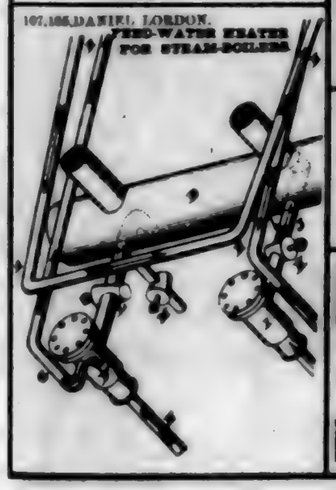
107,183. G. O. LACKEY.
HORSE HAY-RAKES.



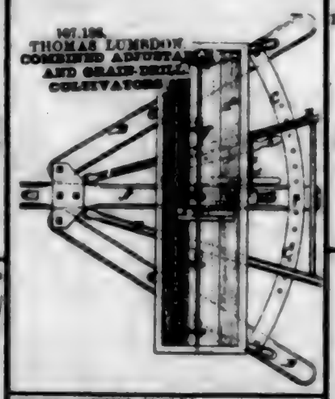
107,184. ALFRED LISTER.
IMPROVED LISTER-
AND LIGHTNING
GUIDE FOR CULTIVATING CORN.



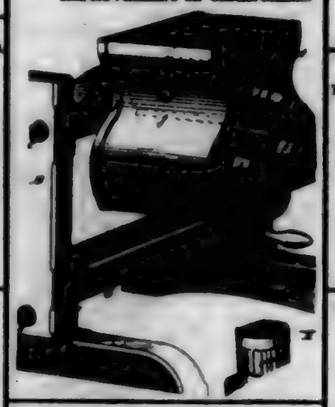
107,185. DANIEL LORDON.
FEED-WATER HEATER
FOR STEAM-BOILERS.



107,186. THOMAS LUMSDON.
COMBINED ADJUSTABLE
AND GRAIN-DRILL
CULTIVATORS.



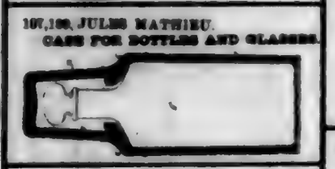
107,187. SAMUEL MALES.
IMPROVEMENT IN CIDER-MILLS.



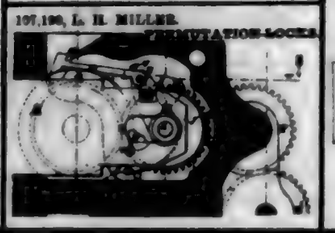
107,188. SAMUEL MALES. PRESS.



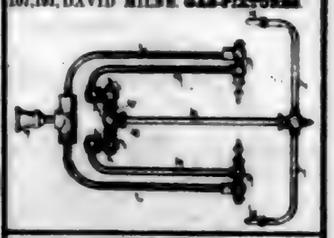
107,189. JULES MATHIEU.
CASE FOR BOTTLES AND GLASSES.



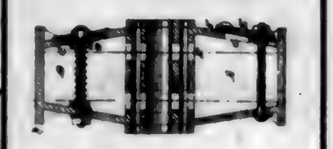
107,190. L. H. MILLER.
PERMUTATION-LOCKS.



107,191. DAVID MILNE. GAS-FIXTURES.



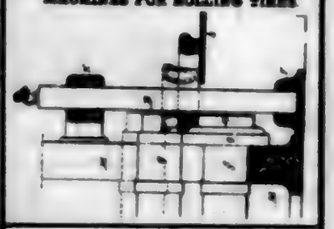
107,192. THOMAS J. MOORES.
LUBRICATORS.



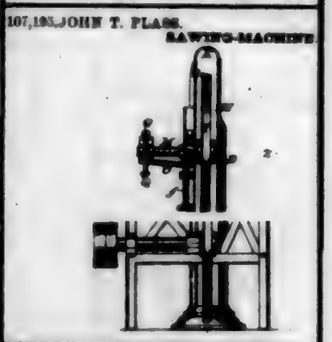
107,193. HALVOR H. NESTESTU.
HARVESTERS.



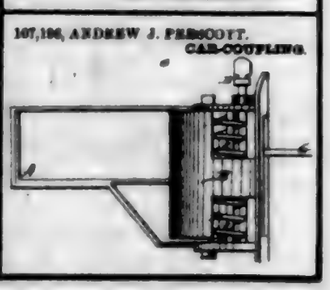
107,194. HIPPOLYTE ULYSSE PETIN.
MACHINES FOR ROLLING TIRES.



107,195. JOHN T. PLAGE.
SAWING-MACHINE.



107,196. ANDREW J. PRESCOTT.
CAR-COUPLING.



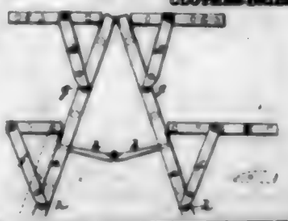
107,197, WILLIAM QUAY.
EZRA M. RITSDALE.
STOVE-GRATE.



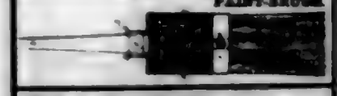
107,198, EZRA RANSOM.
PACKED ROTATING VALVE-STEM.



107,199, GEORGE W. RICHARDSON.
CLOTHES-DRYER.



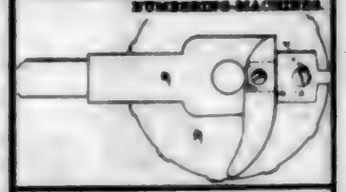
107,200, GEORGE L. SHUTTLEWORTH.
PAINT-BRUSH.



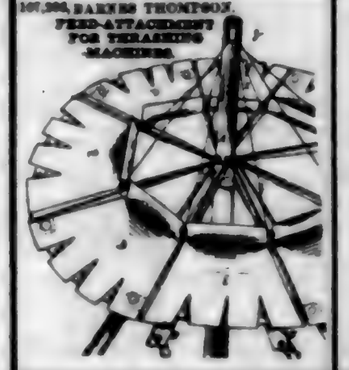
107,201, H. JULIUS SMITH.
TORPEDOES FOR OIL-WELLS.



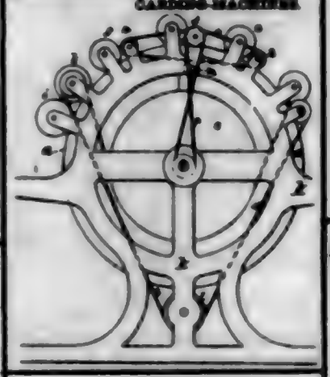
107,202, JAMES D. SMITH.
RUMBERING-MACHINES.



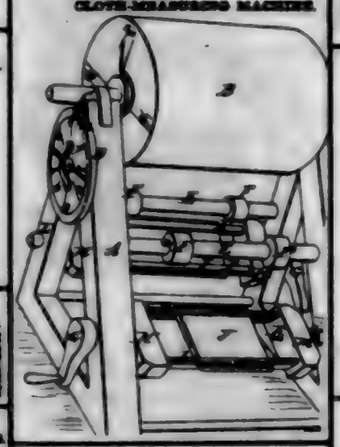
107,203, BARNES THOMPSON.
FEED-ATTACHMENT FOR THRASHING-MACHINES.



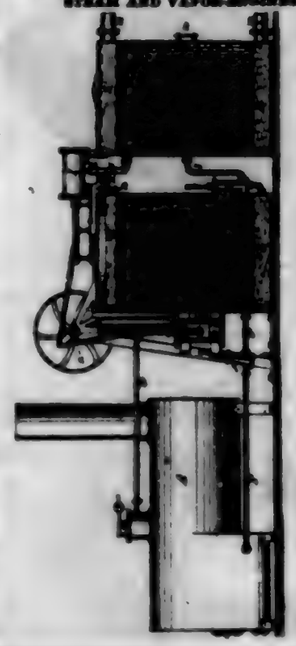
107,204, GEORGE THRESH.
CARDING-MACHINES.



107,205, THOMAS WEEDEN.
THOMAS TRIBE.
CLOTH-MEASURING MACHINES.



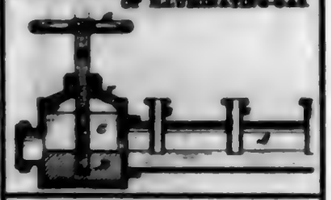
107,206, P. A. MORLEY.
STEAM AND VAPOR-ENGINES.



107,207, SAMUEL C. WEDDINGTON.
COMBINED LOCK AND LATCH.



107,208, HENRY G. LUDLOW.
APPARATUS FOR THE MANUFACTURE OF ILLUMINATING-GAS.



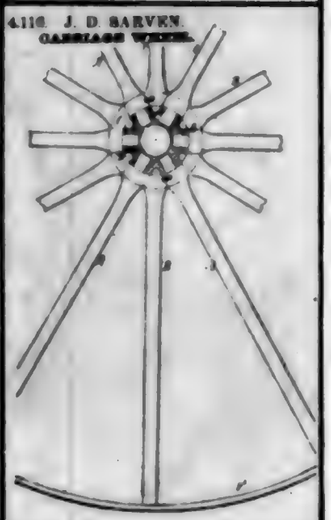
4,114, MATTW ANDREW.
ATTACHING KNOBS TO SPINDLES.



4,115, DANIEL B. LACY.
THOMAS T. LACY.
ISAAC A. LACY.
T. T. LACY.
WEIGHTS FOR SASHES, CLOCKS, &c.



4,116, J. D. SARVEN.
CARRIAGE WHEEL.



ILLUSTRATIONS OF PATENTS
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SEPTEMBER 13, 1870.

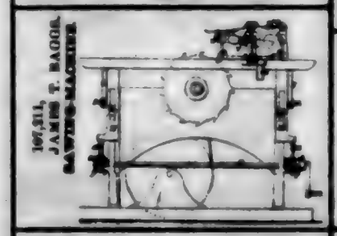
107,209, H. B. ADAMS. TAPER REAMER.



107,210, FRANKLIN BABCOCK.
FREDERICK BABCOCK.
REED-FASTENING.



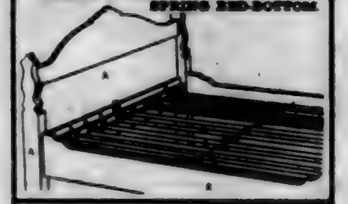
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LAWN-MOWER.



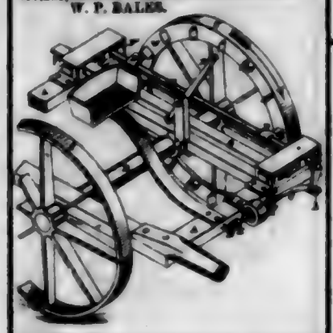
107,212, ALONZO B. BAILEY.
COFFIN-HANDLES.



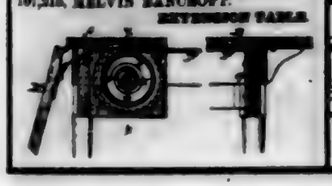
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SPRING BED-BOTTOM.



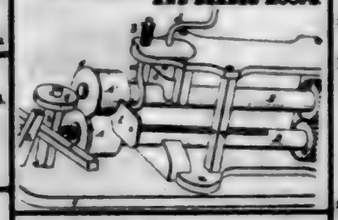
107,214, MOSES BALES. HARVESTING.
W. P. BALES.



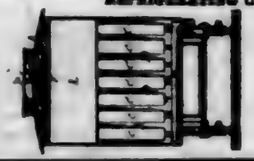
107,215, MELVIN BANCROFT.
EXTENSION TABLE.



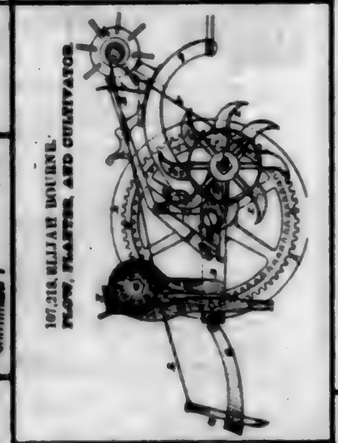
107,216, J. BLOOD.
MACHINES FOR MAKING FLANGES AND BEADED HOOPS.



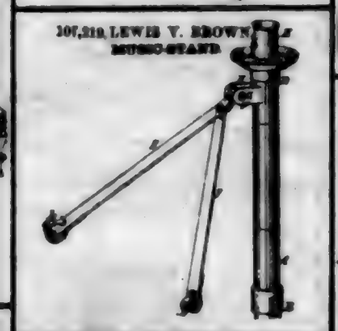
107,217, A. BOOTH.
REFRIGERATING CAR.



107,218, JAMES BOURNE.
CULTIVATOR AND CULTIVATOR-TEETH.



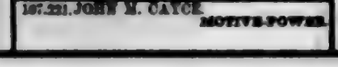
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MUSIC-STAND.

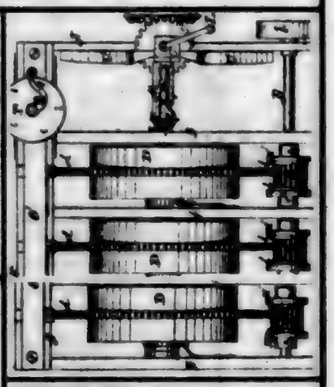


107,220, HUGO CARSTARDT.
SHUTTLE FOR LOOMS.

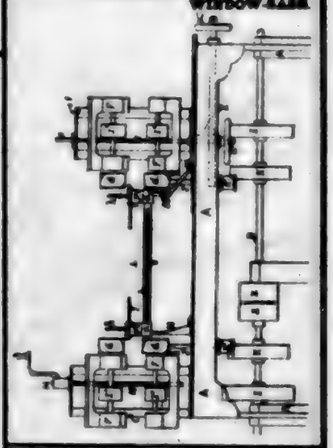


107,221, JOHN M. CAYCE.
MOTIVE-POWER.





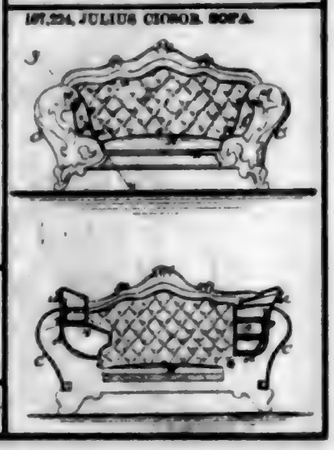
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MACHINES FOR TENONING WINDOW-SASH.



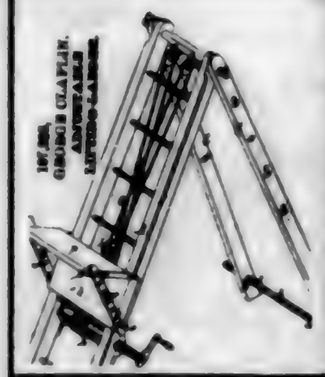
107,223, MATTHEW CHAPMAN.
HANDLES FOR TABLE AND OTHER CUTLERY.



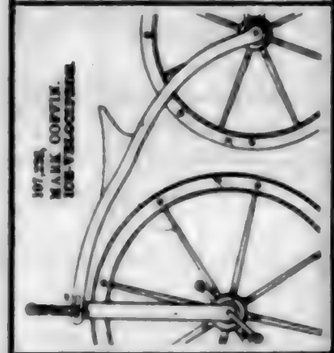
107,224, JULIUS CIMOR. SOFA.



107,226. GEORGE CHAPLIN. APPARATUS FOR REFRIGERATING.



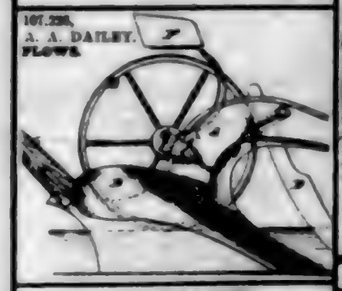
107,227. MARK COFFIN. ICE-VELOCIPEDE.



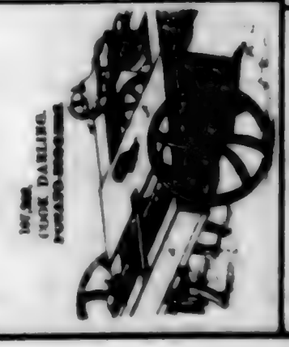
107,228. WILLIAM COVART. STONE AXE.



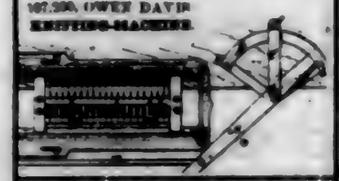
107,229. A. A. DAILEY. PLOWS.



107,230. JOHN DARLING. (ASSR.) POTATO-DIGGER.



107,231. OWEN DAVIS. KNITTING-MACHINE.

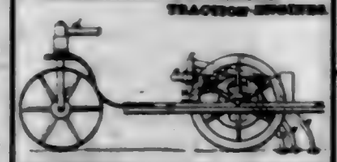


107,232. EDGAR F. DOTY. LASTING BOOTS.



107,233. JOSEPH V. DOUGLAS. ROOFING-COMPOUND.

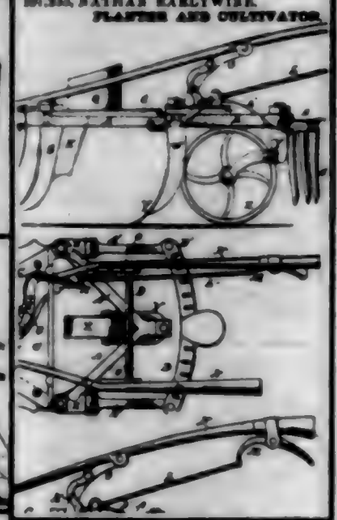
107,234. WILLIAM G. DOUTHETT. TRACTION-ENGINES.



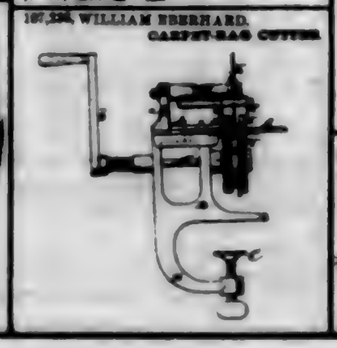
107,235. A. E. DUPAR. GAS-BURNERS.



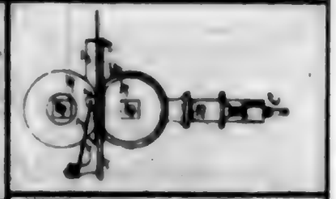
107,236. NATHAN EARLYWINE. PLANTER AND CULTIVATOR.



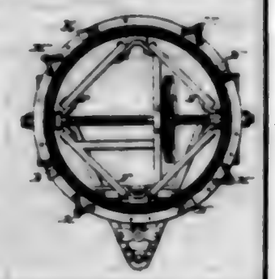
107,237. WILLIAM EBERHARD. CARPET-RAG CUTTER.



107,238. HENRY FAIRBANKS. RECORDING WEIGHING-SCALES.



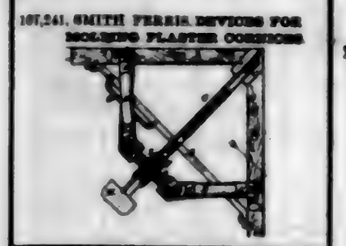
107,239. MASSENA R. ESKRIDGE. MOUNTED HORSE-POWER.



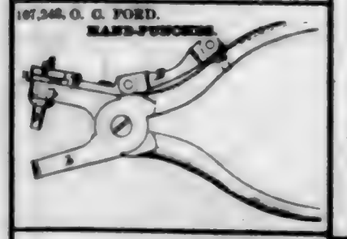
107,240. JAMES J. HOEY. PLASTIC RADIAL PUMPS.



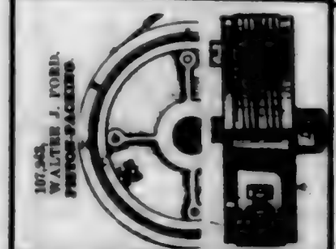
107,241. SMITH FERRIS. DEVICES FOR MOULDING PLASTER CORNICES.



107,242. O. C. FORD. HAND-PUNCHES.

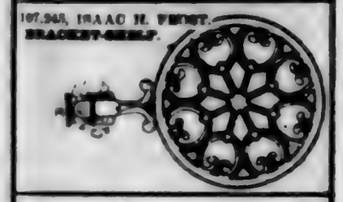


107,243. WALTER J. FORD. PERCUSSION-PACKING.



107,244. GEORGE WAKEFIELD FOX. MANNER OF TREATING COD-LIVER AND CASTOR-OILS.

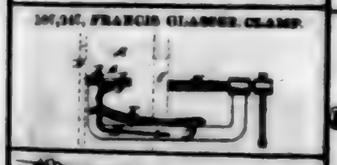
107,245. ISAAC H. FRYE. BRACKET-SHELF.



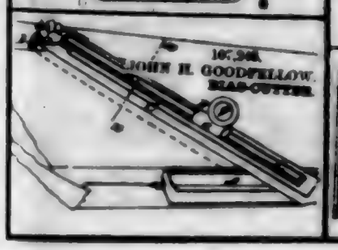
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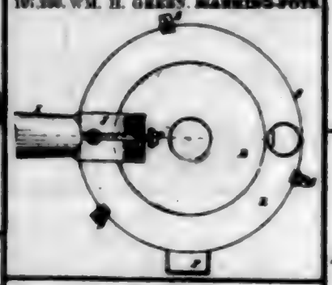
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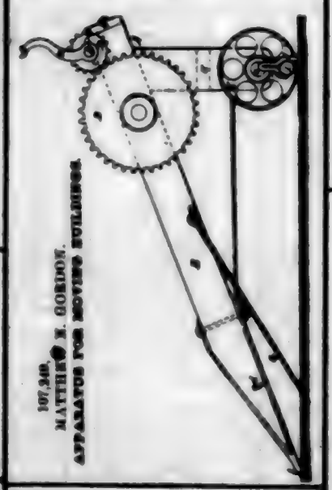
107,248. JOHN H. GOODFELLOW. RAG-CUTTER.



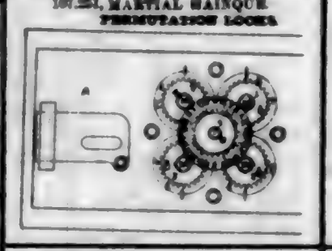
107,249. WM. H. GREEN. MARKING-POTS.



107,250. MATTHEW K. GORDON. APPARATUS FOR MOVING BUILDINGS.



107,251. MARTIAL HAINQUE. PERMUTATION LOCKS.



107,252. C. W. HAM. CARRIAGES.



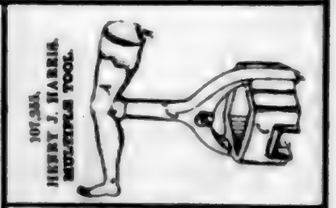
107,253. WILLIAM HAMILTON. LID-FASTENINGS FOR BURIAL-CASKETS.



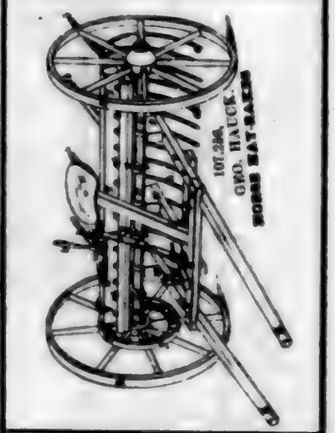
107,254. JACOB H. HARELY. GATES.



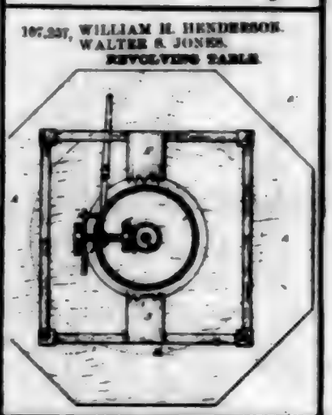
107,255. HENRY J. HARRIS. MOUSEPIECE TOOL.



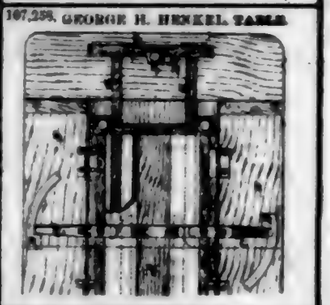
107,256. GEO. HAUCK. HORSE HAY-RAKES.



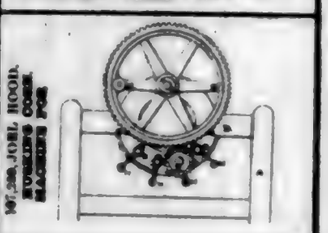
107,257. WILLIAM H. HENDERSON. WALTER S. JONES. REVOLVING TABLE.



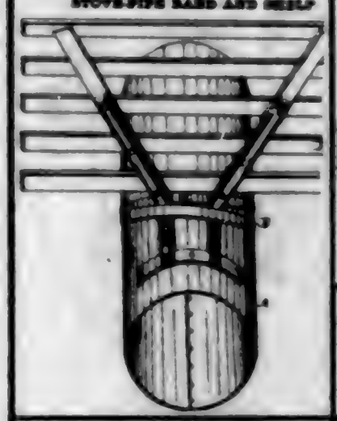
107,258. GEORGE H. HENKEL. TABLE.



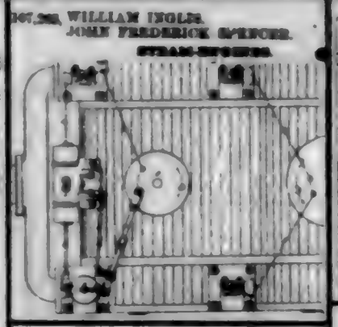
107,259. JOEL HOOD. KNEADING CORK MACHINES FOR

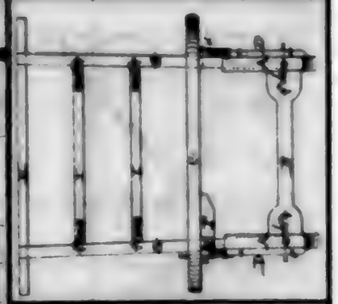


107,290, REUBEN HOOVER.
STOVE-PIPE BAND AND SHELF



107,291, WILLIAM INGLIS.
JOHN FREDERICK SPENCER.
STEAM-ENGINE.





107,292, SAMUEL B. JEROME.
MOLDS FOR DETING COAT-FELLOES.



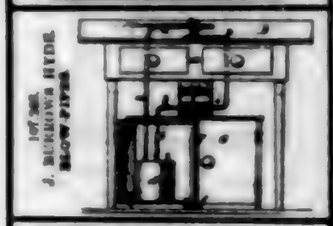
107,293, DARLINGTON HOSKINS.
SEED-SOWER.



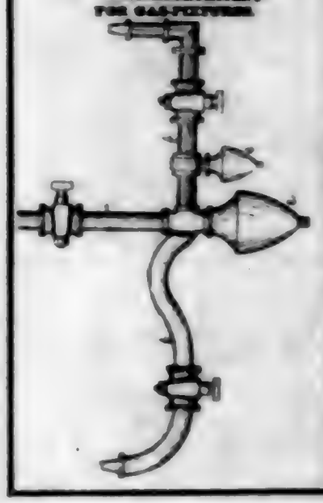
107,294, J. BURROWS HYDE.
APPARATUS FOR CARBURETING AIR AND GAS.



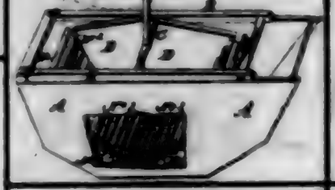
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GAS-REGULATOR.



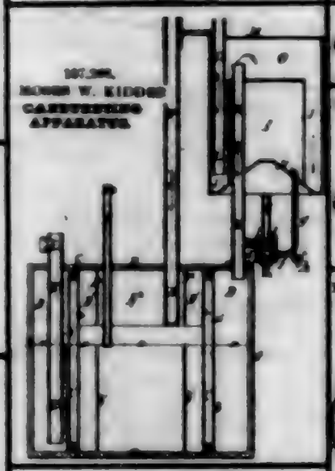
107,296, J. BURROWS HYDE.
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107,297, POWELL JOHNSON.
WASHING-MACHINE.



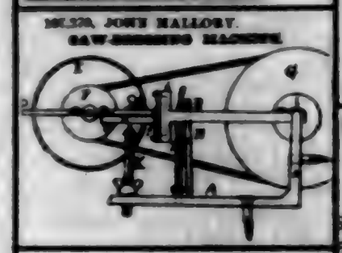
107,298, HOWARD W. KIDDER.
CARBURETING APPARATUS.



107,299, ANDREW J. LEWIS.
HARROW.



107,300, JOHN MALLORY.
SAW-SHARPENING MACHINE.



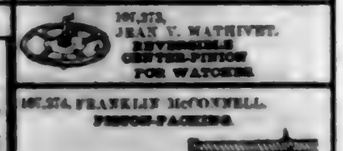
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JNO. P. MARTIN.
SEWING-GAUGE.

107,302.

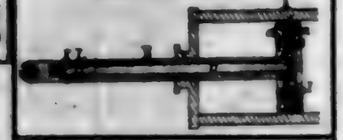
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JEAN VICTOR MATHIVET.
SPRING WEIGHING-SCALES.



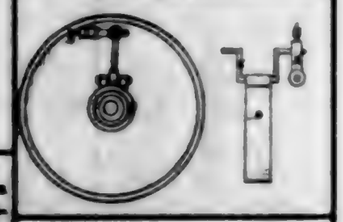
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JEAN V. MATHIVET.
REVERSIBLE CENTER-PIECE FOR WATCHES.



107,305, FRANKLIN McCONNELL.
PISTON-PACKING.



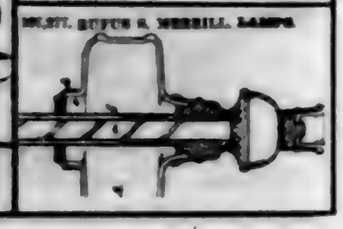
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SHORT AND LOOSE PULLEY.



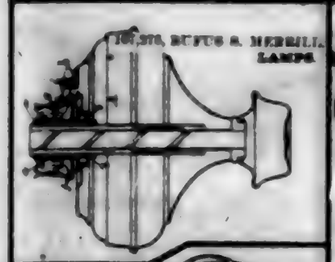
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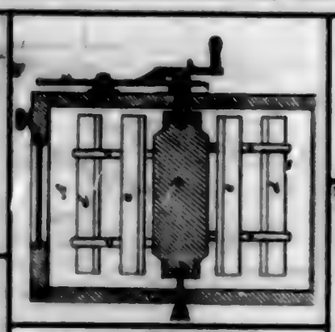


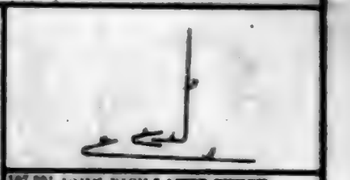
107,308, RUFUS S. MERRILL, LAMPS.



107,309, RUFUS S. MERRILL.
LAMPS.







107,310,
RUFUS S. MERRILL.
LAMP-BRACKETS.



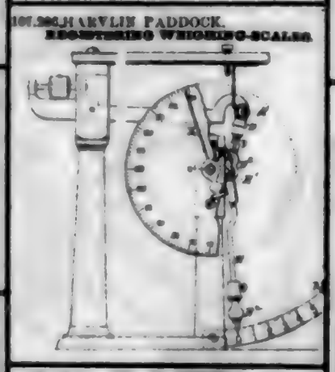
107,311, NORMAN O'DONNELL.
CUTTING OR LAP-BOARD.



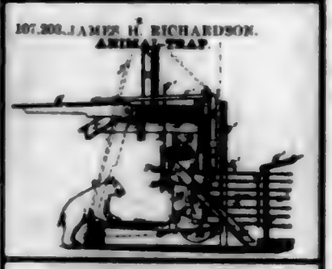
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107,313, HARVEY PADDOCK.
REGISTERING WEIGHING-SCALES.



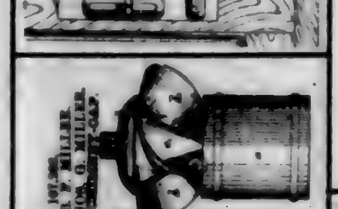
107,314, JAMES H. RICHARDSON.
ANIMAL-TRAP.



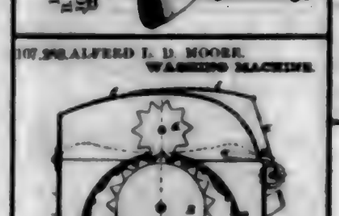
107,315, SOLOMON MICKLEY.
CORN-PLANTER.



107,316, A. D. MILLARD.
SASH-HOLDERS.



107,317,
H. F. MILLER,
JOS. G. MILLER.



107,318, ALFRED L. D. MOORE.
WASHING-MACHINE.



107,319, JOHN MOYER, CHURN.

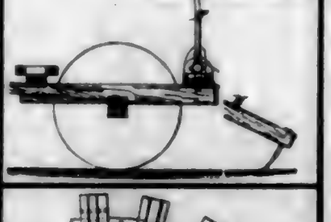
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SHOE.



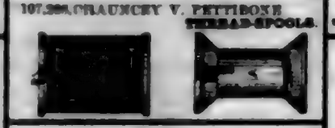
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MARINE STEAM-BOILERS.



107,322, ELI SAWYER.
MARKING ATTACHMENT TO CORN-PLANTERS.

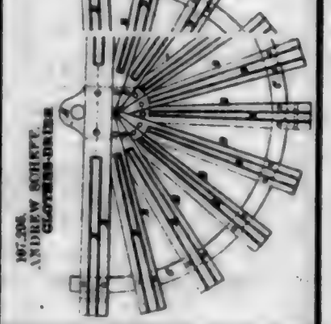


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THREAD-SPOOLS.

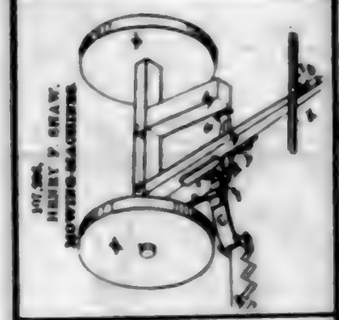


107,324, GEORGE A. REYNOLDS.
SEAMING THE ENDS OF METALLIC ROOFING-PLATES.

107,325,
ANDREW SCHUPP.
CLOTHES-DRIER.



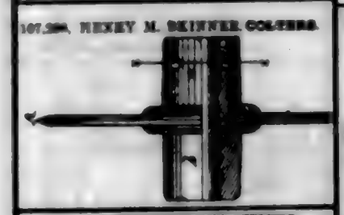
107,296. HENRY P. SHAW. MOWING-MACHINE.



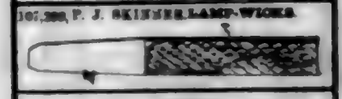
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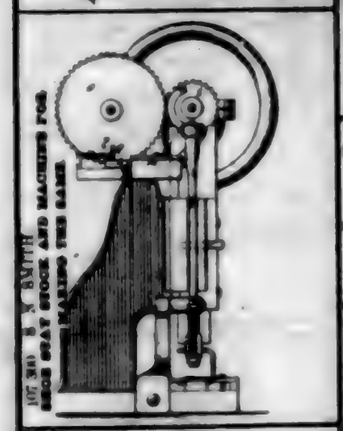
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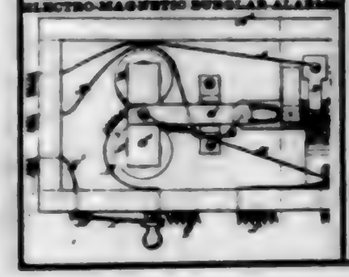
107,299. P. J. SKINNER. LAMP-WICKS.



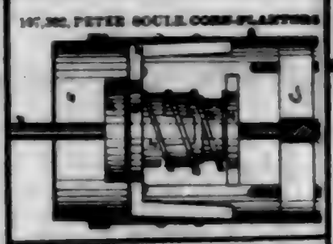
107,300. E. A. SMITH. HOOP-SHAVING MACHINE FOR SHAVING THE FACE AND BACK OF HOOP.



107,301. JAMES P. SNYDER. AUTOMATIC CIRCUIT-CLOSER FOR ELECTRO-MAGNETIC BURGLAR-ALARMS.



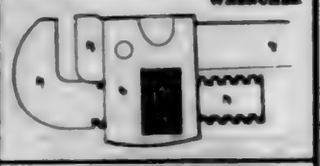
107,302. PETER SOULE. CORN-PLANTER.



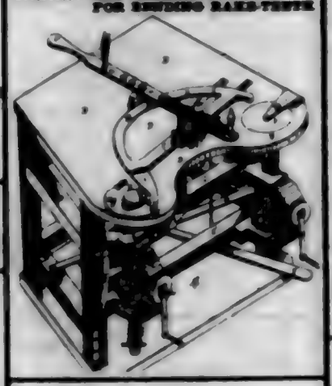
107,303. JOSEPH B. STEARNS. ATTACHING INSULATORS TO TELEGRAPH-POLES.



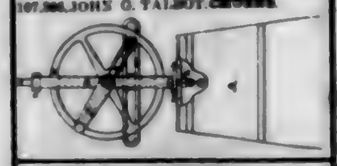
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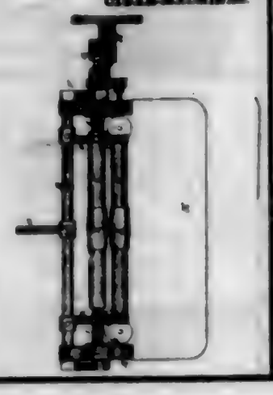
107,305. JAMES SUGDEN. MACHINE FOR RIVETING RAKE-TEETH.



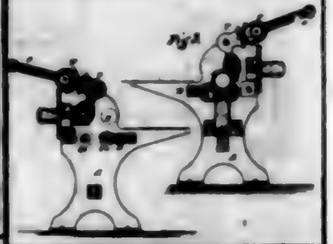
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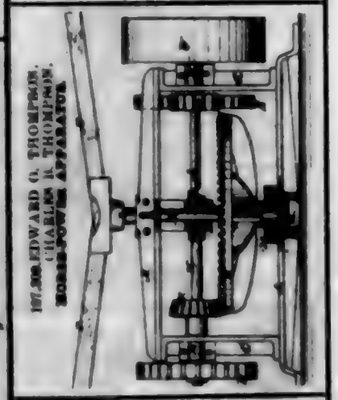
107,307. ISAAC TEN EYCK. JOHN O. REILLEY. CIGAR-MACHINES.



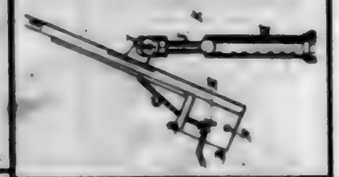
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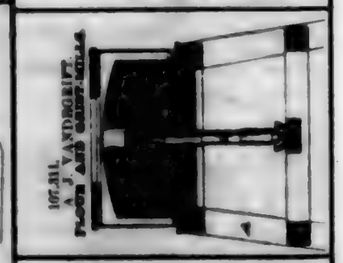
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107,310. WM. J. THORN. BOOK-HOLDERS.



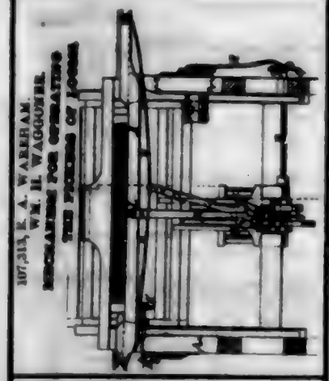
107,311. A. J. VANDERBILT. PLOW AND SUBSOIL-PLOW.



107,312. PETER VOSS. J. P. HAX. HENRY KRUG. DEVICE FOR CATCHING AND HOLDING HOGS.



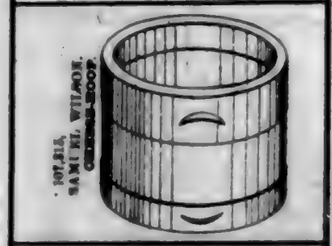
107,313. E. A. WARMAN. WM. H. WAGGONER. MECHANISM FOR OPERATING THE PICKING OF LOOMS.



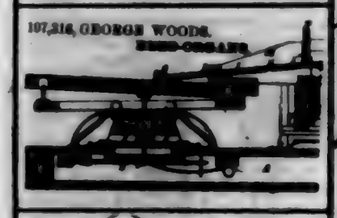
107,314. WILLIAM P. WENTWORTH. SNOW-SHOVELS.



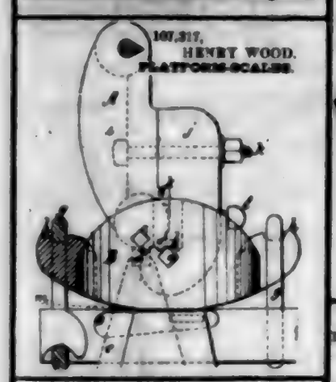
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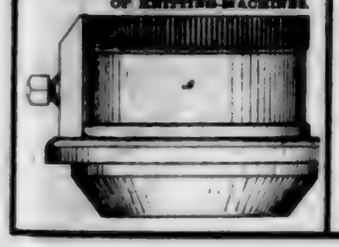
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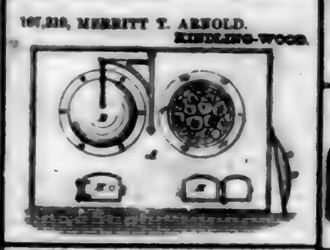
107,317. HENRY WOOD. PLATFORM-SCALES.



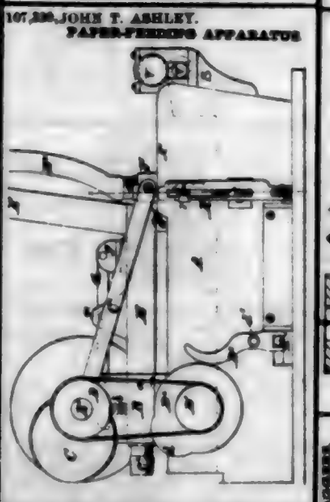
107,318. CHARLES H. YOUNG. CONSTRUCTION OF CYLINDERS OF KNITTING-MACHINES.



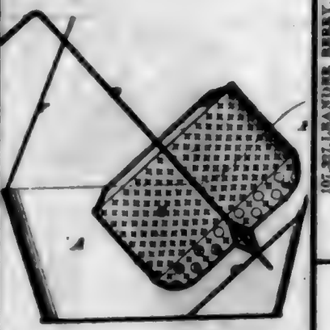
107,319. MERRITT T. ARNOLD. KINDLING-WOOD.



107,320. JOHN T. ASHLEY. PAPER-FEEDING APPARATUS.

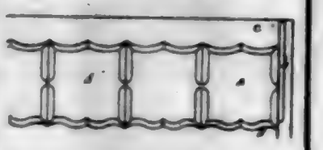


107,321. M. B. ATKINSON. POTATO AND FRUIT PEELERS.

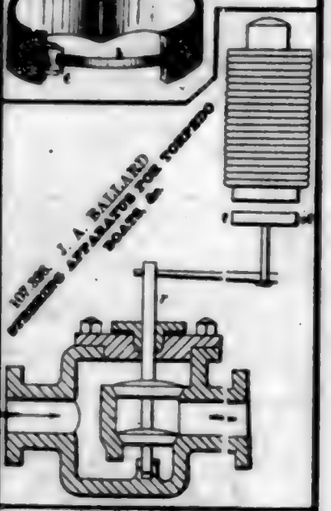


107,322. JAMES B. ATWOOD. REFINING IRON AND STEEL.

107,323. CLARK AVERY. SIDING FOR BUILDINGS.



107,324. J. A. BALLARD. WINDING APPARATUS FOR TORPEDO BOATS &c.

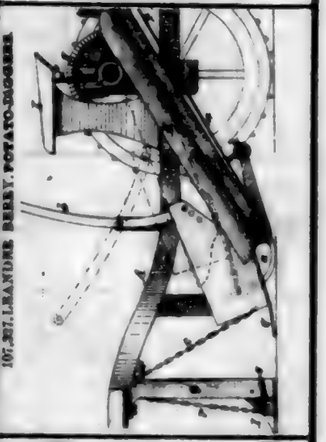


107,325. WM. H. BALL. THOMAS BARNARD. BRACE-BITS.

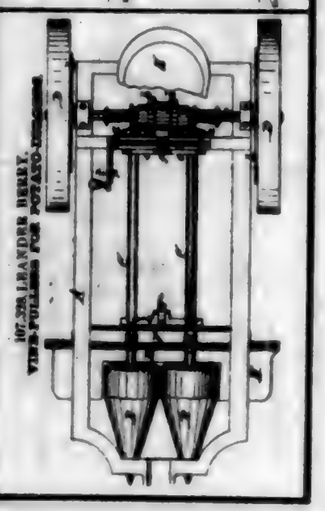


107,326. E. T. BABBITT. PROCESS OF OBTAINING GLYCERINE FROM SOAP-MAKERS' SPENT LYES.

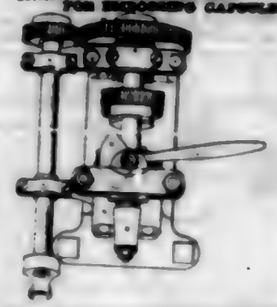
107,327. LEANDER BERRY. POTATO-DIGGERS.



107,328. LEANDER BERRY. VINE-PULLERS FOR POTATO-DIGGERS.



107,339. W. WITTE, MACHINE FOR REMOVING CAPSULES.



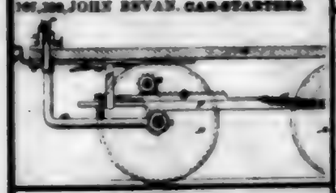
107,340. GEORGE CHAMBERLIN. DRAFT-MACHINE.



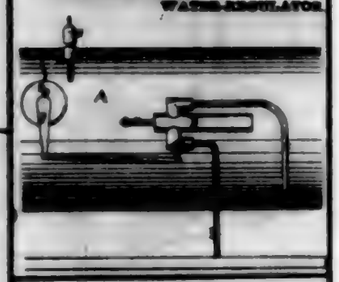
107,341. MATTHEW A. CROOKER. PANNEL-WORKER.



107,342. JOHN BEVAN. CAR-STARTER.



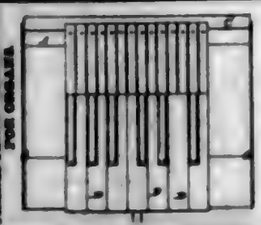
107,343. GEORGE W. DARBY, AMOS S. MOOR. WATER-REGULATOR.



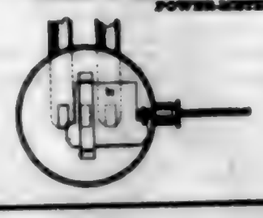
107,344. EUGENE CHAPMAN. BROOM OR MOP-CLAMP.



107,345. WILLARD G. DAY. TRANSMITTING MECHANISM FOR ORGANS.



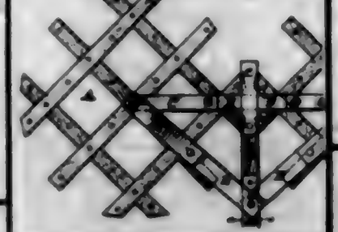
107,346. JOHN A. BRADSHAW, WM. H. BROWN, DARIUS WHITNEY. POWER-MOTOR.



107,347. T. C. BUSH. BUTTON-HOLE CUTTER.



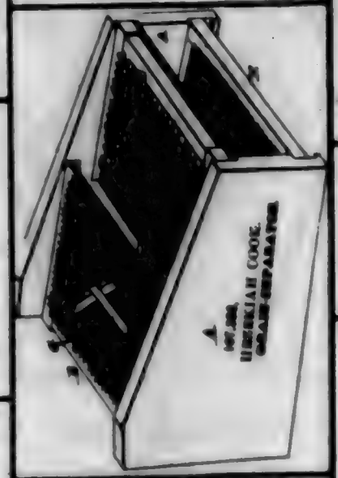
107,348. GEORGE COLLINS. ROTARY HARROW.



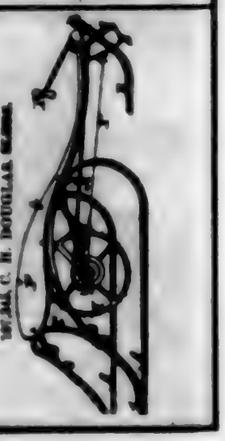
107,349. HARVEY L. BYRD. AWNING AND FAN FOR HORSE-RAKE.



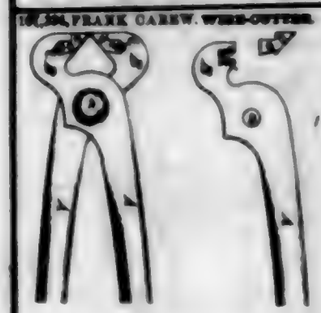
107,350. HERMIAH COOK. GRAIN-SEPARATOR.



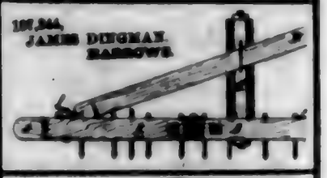
107,351. C. H. DOUGLAS. SAW-SWAGER.



107,352. FRANK CAREW. WIRE-CUTTER.



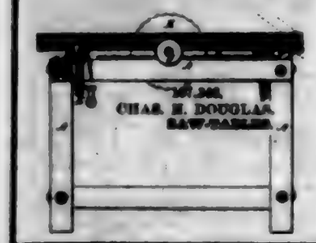
107,353. JAMES DUGNAN. HARROW.



107,354. JACOB D. COPENHAVER. CHARRING BARREL-HEADS.



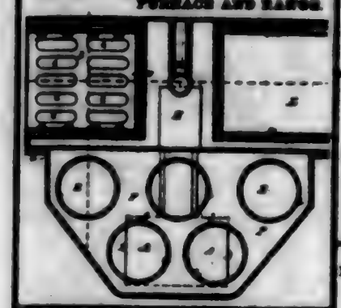
107,345. CHAS. H. DOUGLAS. SAW-SWAGER.



107,346. H. J. GIRDLESTONE, JOHN WARD GIRDLESTONE. BARTE-CLOSETS.



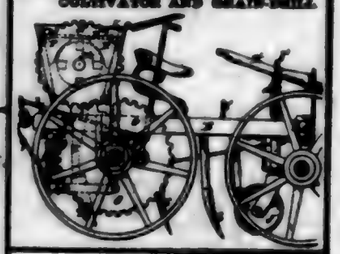
107,347. HUGH EDWARDS. FURNACE AND RANGE.



107,348. MAURICE FITZGIBBONS. WOOD PAVEMENT.



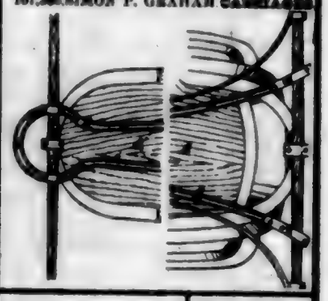
107,349. JOHN GIBB, ASSIGNOR TO CULTIVATOR AND GRAIN-DRILL.



107,350. JOSEPH A. FORMAN. GRINDING-MILLS.



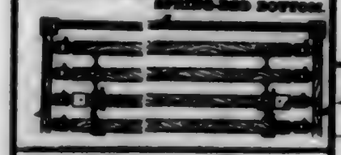
107,351. SIMON P. GRAHAM. CARRIAGES.



107,352. ALBERT L. FRANCE. SHUTTING FASTENERS.



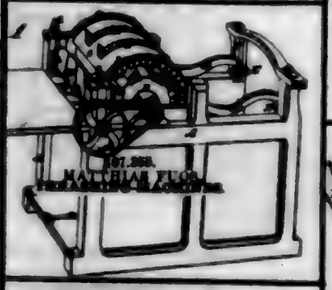
107,353. A. H. FATZINGER. SPRING-SEAT BOTTOM.



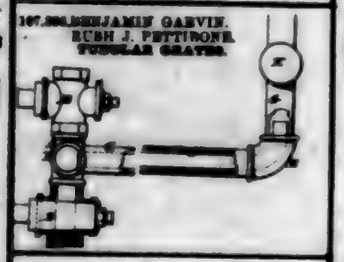
107,354. WM. B. FEE. MACHINE FOR HULLING COTTON-SEED.



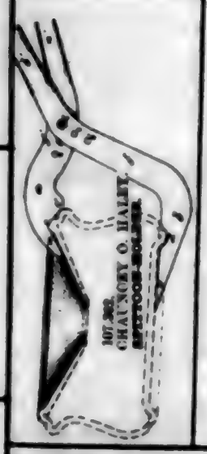
107,355. NATHANIEL FUGO. TRANSMITTING MECHANISM FOR ORGANS.



107,356. BENJAMIN GARVIN, RUBH J. PETTIBONE. TUBULAR GRATES.



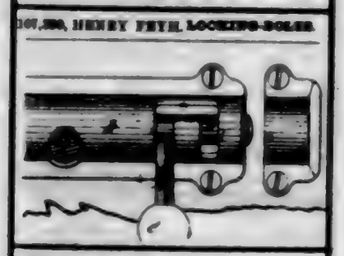
107,357. CHAUNCEY O. HALEY. SPECIES-BOARD.



107,358. HENRY A. HIBBARD. [illegible]

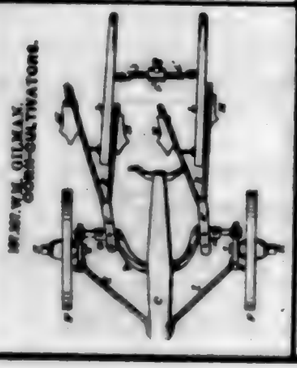


107,359. HENRY FEYH. LOCKING-BOLES.

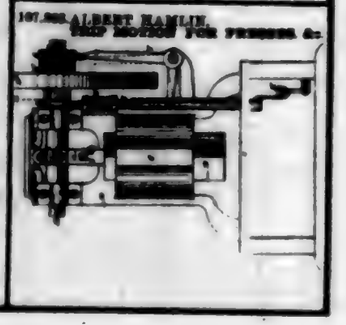


107,360. H. B. FITCH. SHEET-METAL CUTTING-MACHINE.

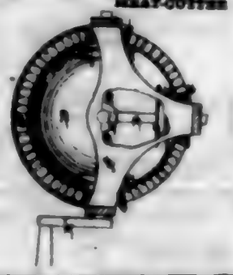
107,361. WM. GILMAN. CORN-CULTIVATOR.



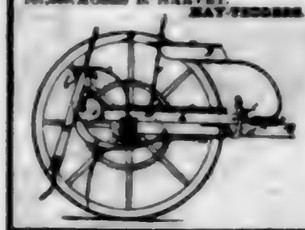
107,362. ALBERT HAMLIN. [illegible] FOR PRESSES, &c.



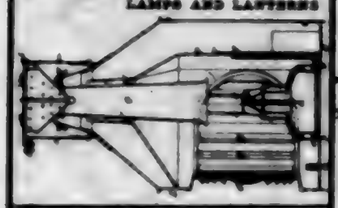
107,364. THOMAS HARTLEY.
MEAT-CUTTER



107,365. MORRIS B. HARVEY.
HAY-TEDDERS.



107,366. WM. HARVIE.
LAMPS AND LANTERNS

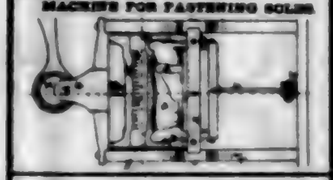


107,367. FRANCIS H. HATCH
H. B. HAWLEY.
PRESERVING MEAT.

107,368. RANDALL B. HAY. PROCESS FOR MANUFACTURING TOBACCO-PLUGS.



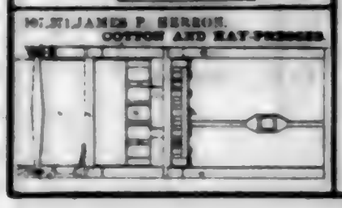
107,369. C. H. HELMS.
MACHINE FOR FASTENING SOLES.

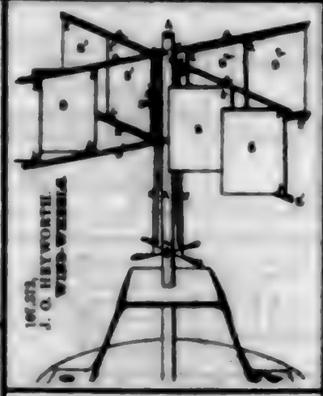


107,370. JAMES P. HERRON.
SEALS FOR METAL STRAPS ON BOXES.



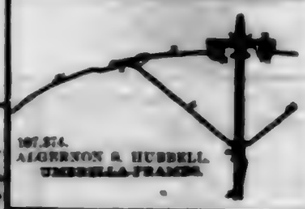
107,371. JAMES P. HERRON.
COTTON AND HAY-PRESSES.



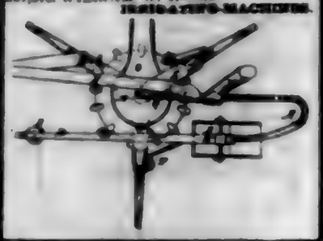


107,373. SUSPENDED.

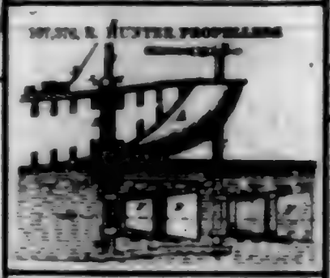
107,374.
ALGERNON S. HUBBELL.
UMBRELLA-FRAME.



107,375. WILLIAM W. HULL.
IRRIGATING-MACHINE.

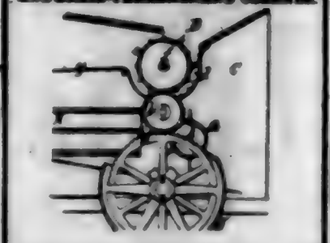


107,376. R. HUNTER. PROPELLER.



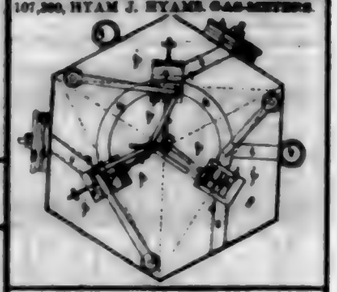
107,377. CANCELED.

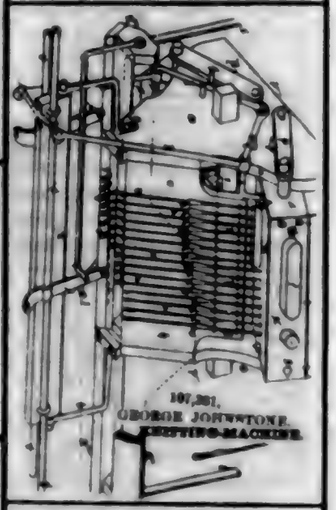
107,378. JAMES W. HUNTOON.
CORN-STALK CUTTER AND SHOCKER.





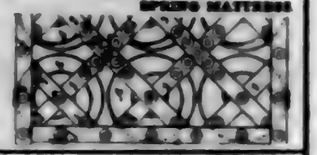
107,380. HYAM J. HYAMS. GAS-METER.



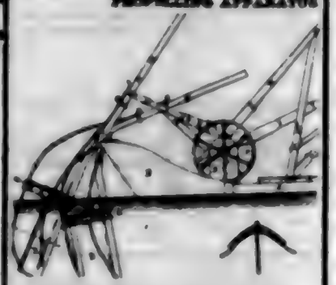


107,382. WM. H. JONES.
ROOFING COMPOSITION.

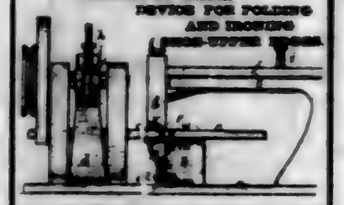
107,383. WILLIAM B. JUDSON.
SPRING MATTRESS.



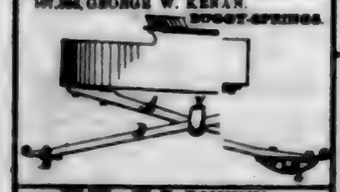
107,384. RICHARD KEARNEY.
PROPELLING APPARATUS.



107,385. CHARLES A. KEITH.
JEREMIAH KEITH.
THOMAS K. KEITH.
DEVICE FOR FOLDING AND IRONING [illegible]

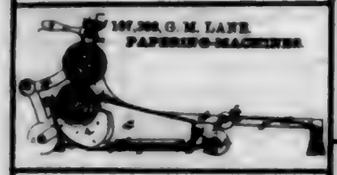


107,386. GEORGE W. KENAN.
BUDGET-SPRINGS.



107,387. W. T. KOSINSKI.
COATING FOR STEAM PIPES, BOILERS, [illegible]

107,388. G. M. LANE.
PAPERING-MACHINES.



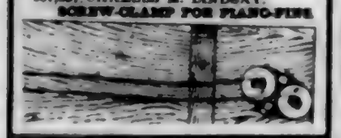
107,389. T. LAWRENCE.
HAT AND CAP BRACKET.



107,390. REUBEN LIGHTHALL.
WASHING-MACHINE.



107,391. CHARLES M. LINDSAY.
SCREW-CLAMP FOR PIANO-FINE.



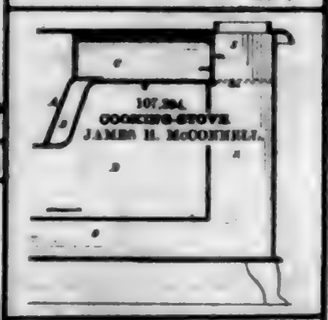
107,392.
ANDREW JACKSON LUFFBARRY, Jr.
OUTRIGGERS FOR ROW-BOATS.



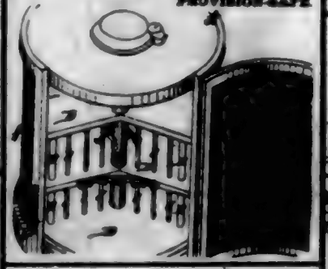
107,393. JOHN H. MARTIN.
CLINTON D. BRADSHAW.
STOCKERS AND GRADERS.



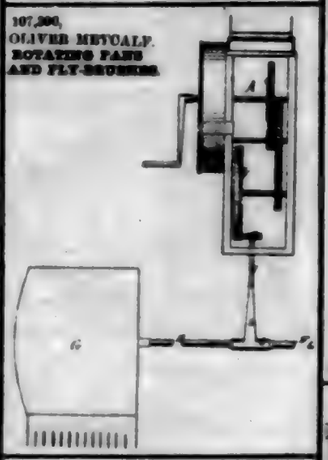
107,394.
COOKING-STOVE
JAMES H. McCONNELL.



107,395. WAIT MEAD.
GEORGE E. STARBUCK.
PROVISION-SAFE.



107,396.
OLIVER METCALF.
ROTATING PANS AND FLY-BRUSHES.

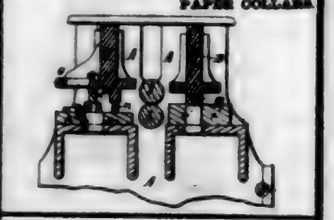


107,397. DAMIAN MINDERLE.
SCRUBBING-BRUSH.

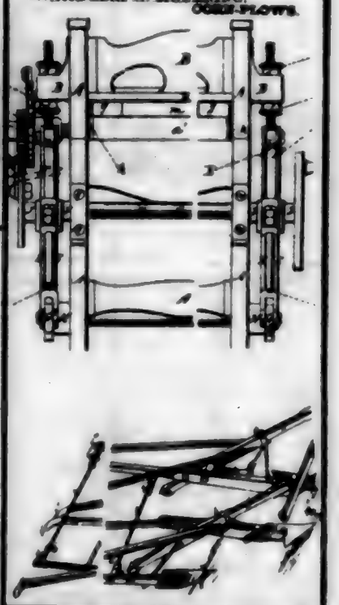


107,398. JOHN H. MOONEY.
DEVICE FOR SECURING COVERS UPON SEWING-MACHINES.

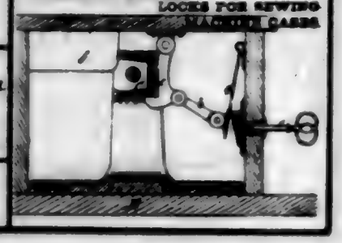
107,399. CHARLES E. MOORE.
MARTIN L. WYMAN.
MACHINE FOR MAKING PAPER COLLARS.



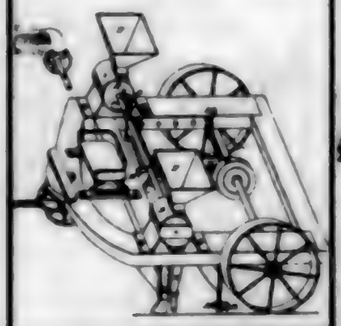
107,400. FELIX G. MOURNIEG.
CORN-PLOWS.



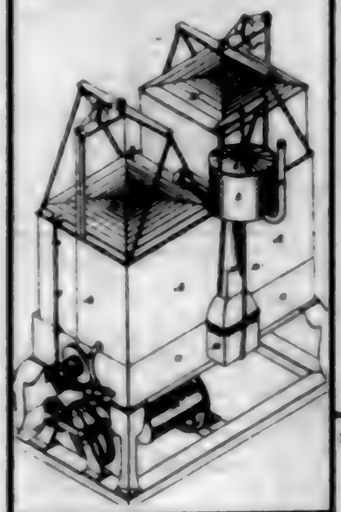
107,401. H. O. NAUEN.
LOCKS FOR SEWING MACHINE CASES.



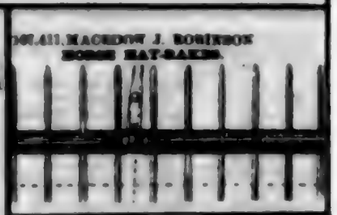
107,409. CORN-PLANTERS. HENRY AUSTIN NICHOLLS.



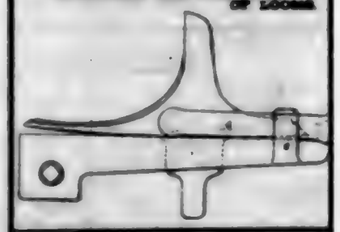
107,410. H. OERTEL. APPARATUS FOR CARBURETING AIR



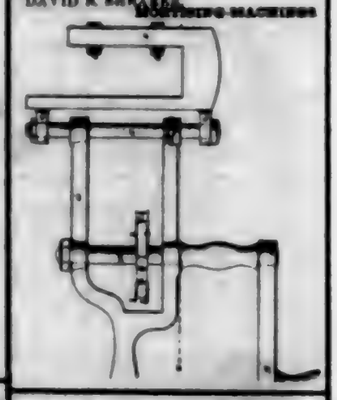
107,411. MACKENZIE J. ROBINSON. HORSE HAY-RAKES.



107,412. WANTON HOUSE. OPERATING THE PICKER-STAFF OF LOOMS.



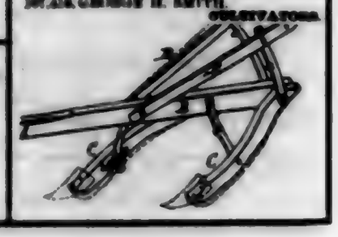
107,413. DAVID S. SHEARER. MORTISING-MACHINES



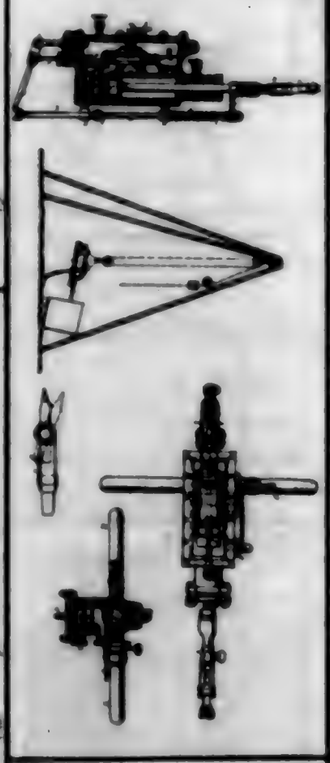
107,414. WRIGHT SLEEPER. COMPOUND MACHINES FOR SHEARING PUNCHING AND BENDING METAL.



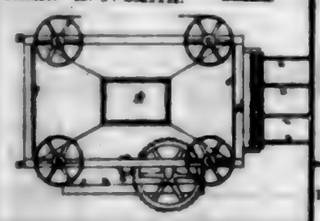
107,415. GEORGE H. SMITH. CHRONOMETERS.



107,416. L. POCHET. VALVES IN STEAM APPARATUS FOR DRESSING STONE.



107,417. M. P. SMITH. DRIER.



107,418. WILLIAM B. SPARKS. OUTBOARD-LATCHES.



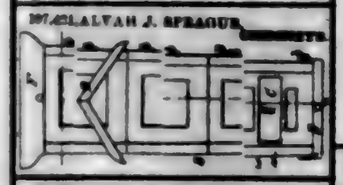
107,419. GEORGE H. SPENCER. SPOONS



107,420. GEORGE H. SPENCER. FINGER-GUARDS.



107,421. ALVAH J. SPRAGUE. [illegible]



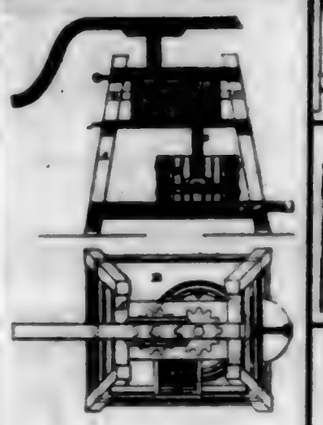
107,422. BERNARD STEINMETZ. LOCKS FOR SAFES &c.



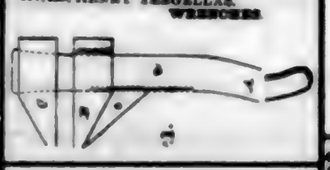
107,423. BYRON G. SWAIN. CURD-AGITATORS.



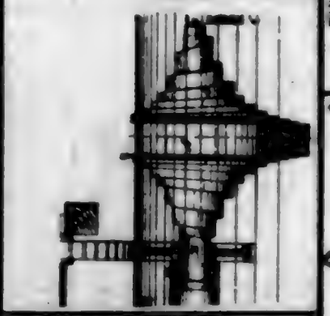
107,424. LEWIS B. TAYLOR. CURD-MILLS.



107,425. HENRY TREGELLAS. WRENCHES.



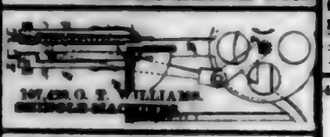
107,426. BERNHARD VATER. WATER-ELEVATORS.



107,427. DAVID S. WAGNER. MECHANISM OF SHAFTING.

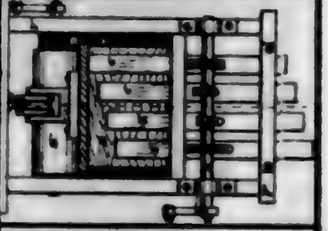


107,428. SYLVESTER P. WHEELER. COATING EMBOSSED WOOD.

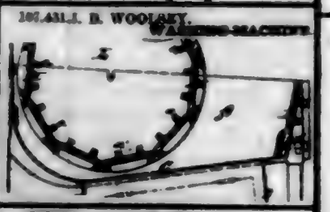


107,429. O. T. WILLIAMS. SHINGLE-MACHINES.

107,430. W. P. WITTE. WASHING-MACHINES FOR WASH &c.



107,431. I. B. WOOLSEY. WASHING-MACHINE.



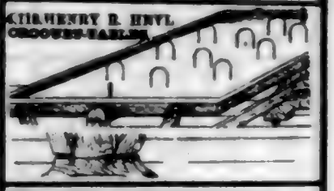
107,432. DANIEL ZERCHER. MECHANICAL MOVEMENT.



4,117. THOMAS M. HERRIOTT, SAMUEL MYERS. BALANCE SLIDE-VALVES.



4,118. HENRY R. HEVL. CROSSED-TAILINGS.



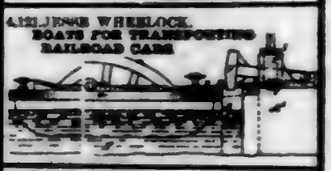
4,119. JAMES VANDEGRIFT. PLOWS.



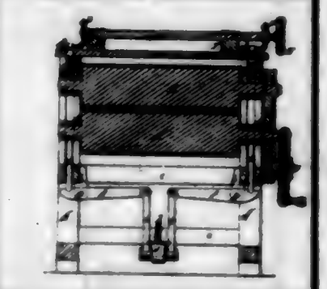
4,120. N. S. WARNER. HOT VELOCIPEDE.



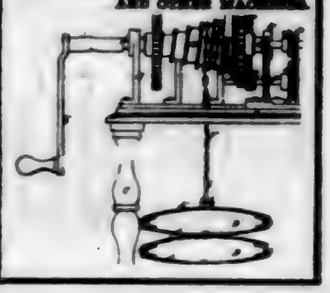
4,121. JESSE WHEELOCK. BOATS FOR TRANSPORTING RAILROAD CARS.



4,122. JOEL WHITNEY. MACHINE FOR ROLLING LEATHER.



4,123. JACOB BUCKERMANN. MOTIVE-POWER FOR SEWING AND OTHER MACHINES.



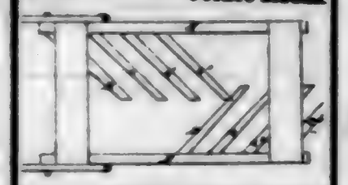
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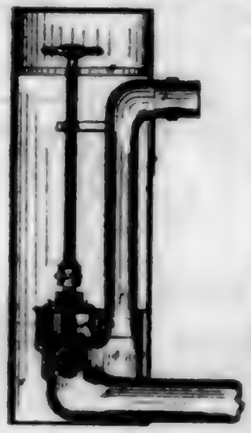
THE UNITED STATES PATENT OFFICE

SEPTEMBER 20, 1870.

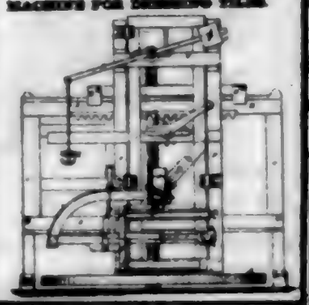
107,433. S. E. ANTHONY. PUMPS



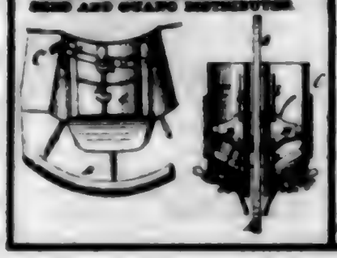
107,434. W. BAILEY. HYDRANT.



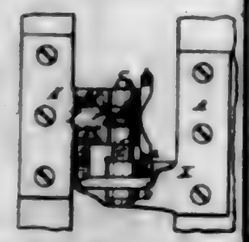
107,435. G. AND V. G. BARNEY. MACHINE FOR DRESSING FELOES.



107,436. E. BLACKLIDGE. SEED AND GUANO DISTRIBUTOR.



107,437. O. E. BOISSELIER. SELF LOCKING RINGS.



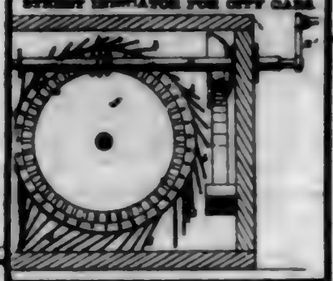
107,438. J. R. BROWN. SOD CUTTER.



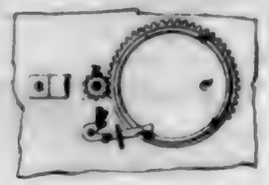
107,439. W. BROWN. SEAT FOR ROW BOATS.



107,440. W. BROWN. STREET INDICATOR FOR CITY CARS.



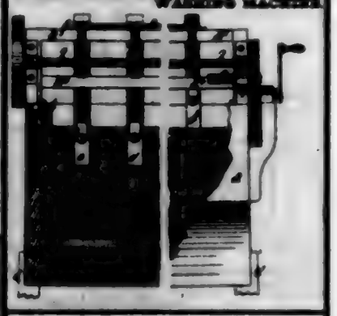
107,441. N. BRYAN. SOLAR CAMERA.



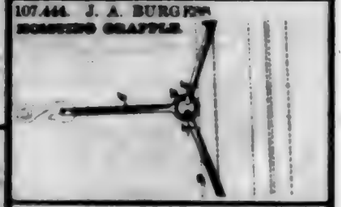
107,442. E. AND A. BUCKMAN. TOY GUN.



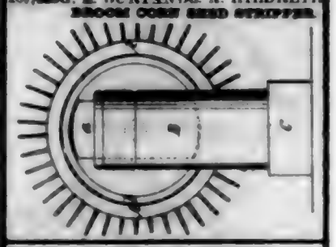
107,443. E. L. BULLOCK. WASHING MACHINE.



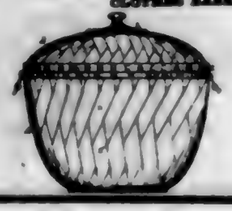
107,444. J. A. BURGESS. HORSING GRAPPLE.



107,445. E. BURTAND E. A. HILDRETH. BROOM CORN SEED STRIPPER.

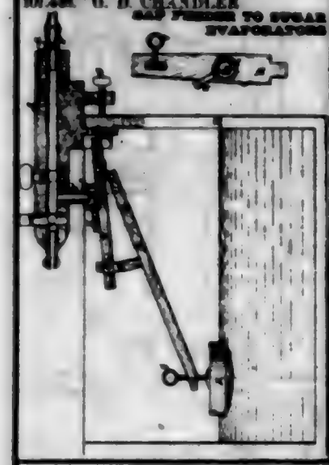


107,446. J. AND A. C. CARMAN. CLOTHES BASKET.

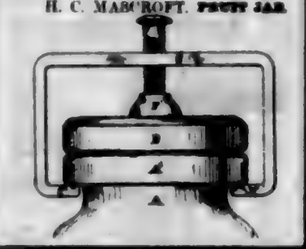


107,447. P. CASSON. REMOVING FURS FROM WOOL.

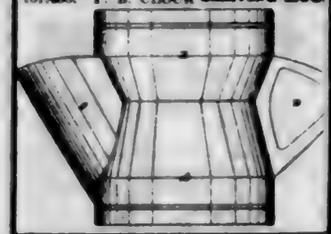
107,448. G. D. CHANDLER. SAP FEEDER TO SUGAR EVAPORATORS.



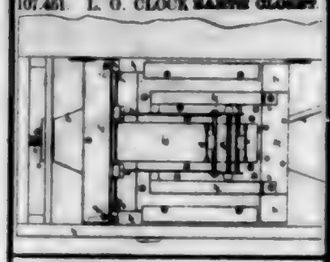
107,449. T. A. CLARK AND H. C. MABCROFT. FRUIT JAR.



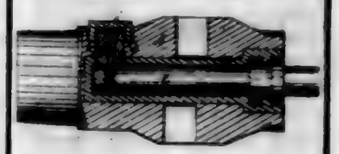
107,450. F. B. CLOCK. SHAVING RUG.



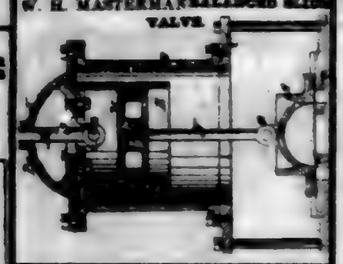
107,451. L. G. CLOCK. EARTH CLOSET.



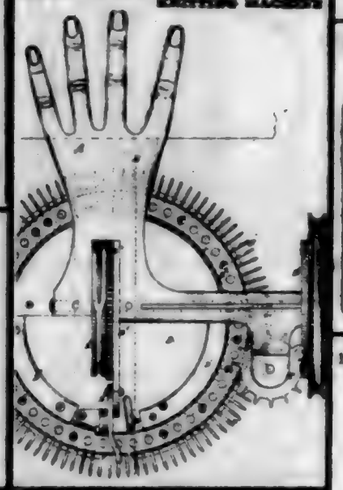
107,452. G. R. CLOW. SECURING RUNS TO AXLES.



107,453. O. COLLIER AND W. H. MASTERMAN. BALANCED SLIDE VALVE.



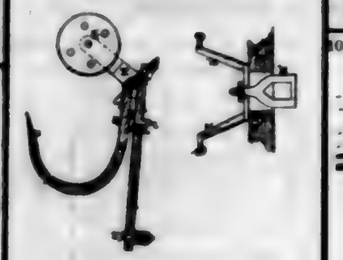
107,454. F. M. COMSTOCK. KNITTING MACHINE.



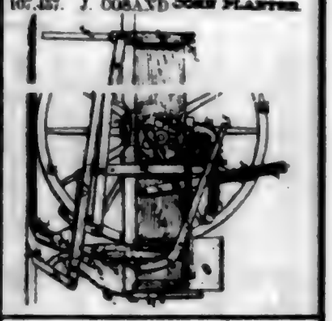
107,455. J. K. COOLIDGE AND N. H. HILL. FOLDING OR KNOCK DOWN CHAIR.



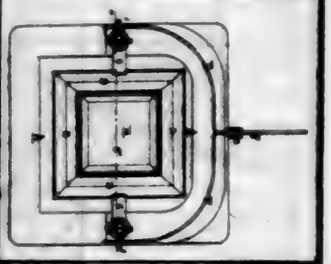
107,456. I. COPELAND. HORSE HOE.



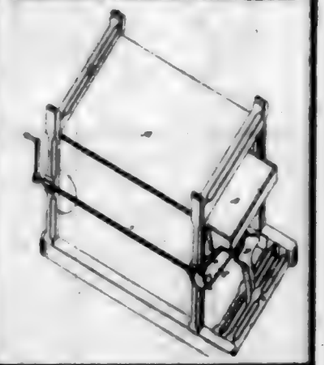
107,457. J. COSAND. CORN PLANTER.



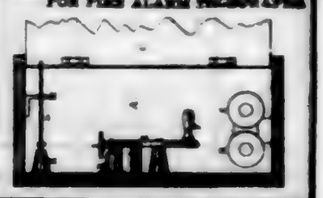
107,458. E. T. COVELL. SOLDERING MACHINE.



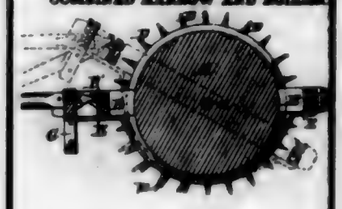
107,459. W. CRANE. DEVICE FOR BALANCING PANNING MILL SHOES.



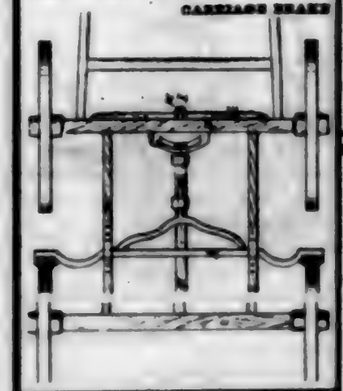
107,460. S. D. CUSHMAN. SIGNAL BOX FOR FIRE ALARM TELEGRAPHS.



107,461. P. A. DANN AND J. McKIBBEN. CORRUGATED HARROW AND ROLLER.



107,462. H. B. S. DAVIS. CARRIAGE BRAKE



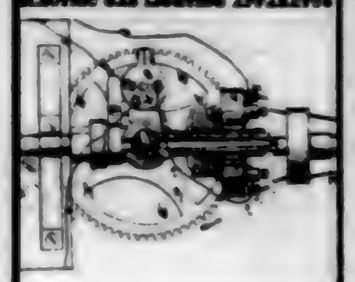
107,463. J. A. EBERLY. [illegible]



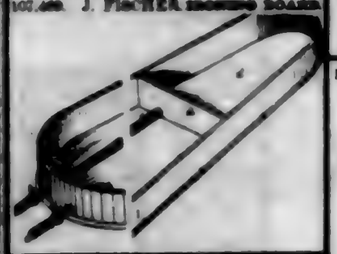
107,464. L. DEDERICK. [illegible]



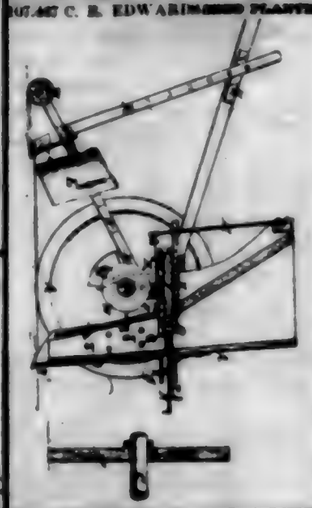
107,465. C. V. EALER. ELECTRIC GAS LIGHTING APPARATUS



107,466. J. FISCHER. [illegible]



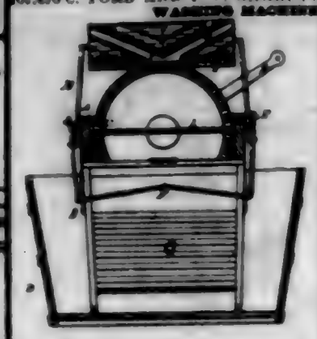
107,467. C. E. EDWARDS. [illegible]



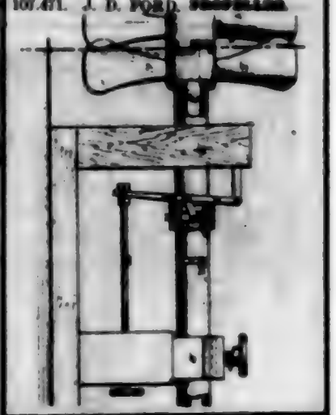
107,468. W. FERGUSON AND J. ANDERSON. [illegible]



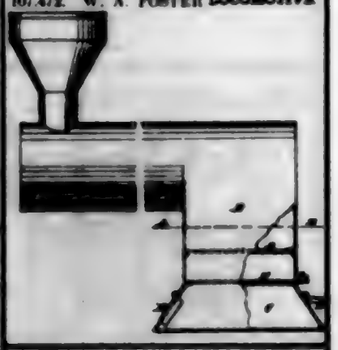
107,469. C. FORD AND F. C. GARRETT. WASHING MACHINE



107,470. J. D. FORD. [illegible]



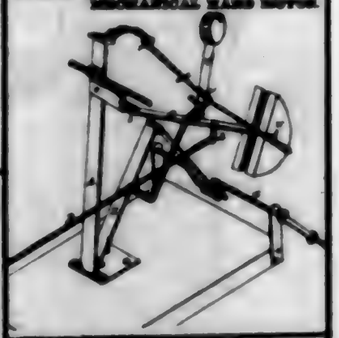
107,472. W. A. FOSTER. LOCOMOTIVE



107,473. V. FOUNTAIN, Jr. [illegible]



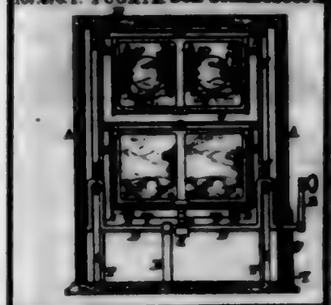
107,474. H. FOWLER. [illegible]



107,475. H. FOWLER. [illegible]



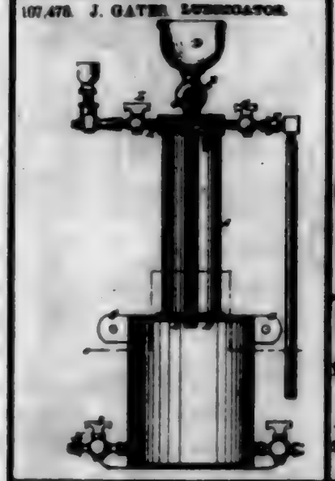
107,476. F. FUGATE. [illegible]



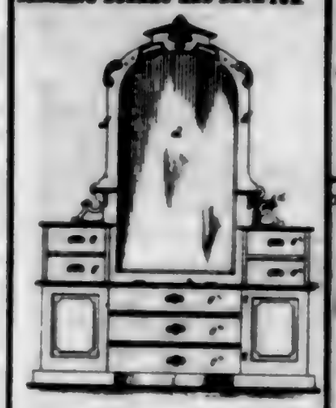
107,477. J. GALLAGHER. [illegible]



107,478. J. GATES. [illegible]



107,479. J. R. GILMAN. [illegible]



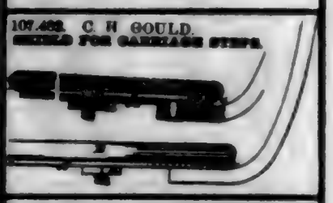
107,480. A. J. GLAB. APPARATUS FOR DECORTICATING, SEPARATING, AND DRYING GRAIN.



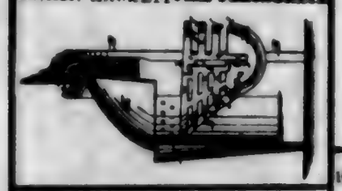
107,481. C. M. GORDON. PLOW.



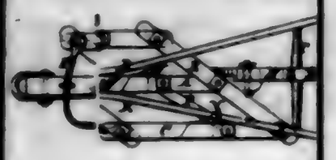
107,482. C. W. GOULD. [illegible]



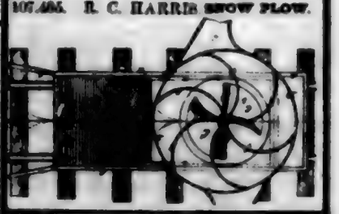
107,483. J. HACKETT. [illegible]



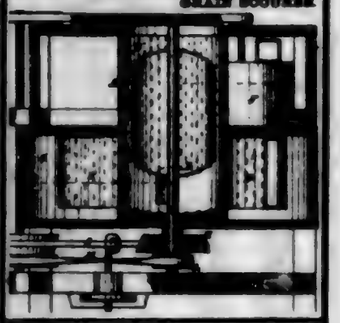
107,484. W. HAMILTON. [illegible]



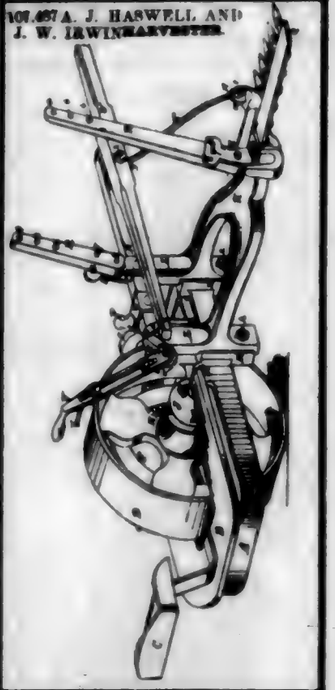
107,485. R. C. HARRIS. SNOW PLOW.



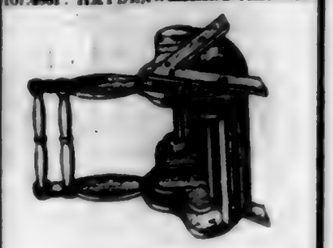
107,486. I. N. HARSHBARGER. GRAIN SCOURER.



107,487. A. J. HASWELL AND J. W. IRWIN. HARVESTER.



107,488. P. HAYDEN. WASHING MACHINE.



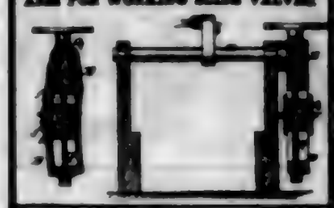
107,490. J. R. HAYES. COMPOSITION FOR PAVEMENTS.

107,491. J. R. HAYES. PREPARATION OF COMPOSITION FOR PAVEMENTS.

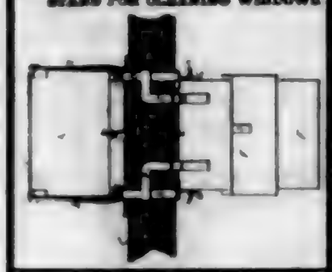
107,492. A. P. HAZARD. SECONDARY EDGE PLANE.



107,493. H. HENDRICKSON. ADJUSTABLE ARM FOR WORKING SLIDE VALVES.



107,494. E. HERNTER. STAND FOR CLEANING WINDOWS.



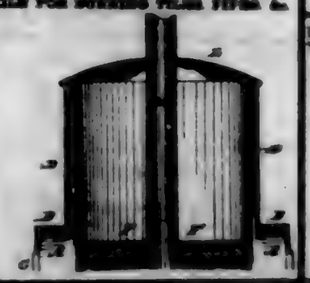
107,495. R. HILLSTEADBOOK LOUNGE.



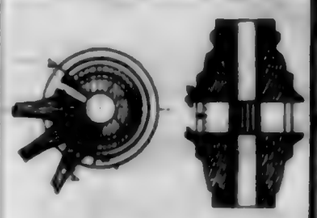
107,496. C. F. HITSELBERGER. SMOKING PIPE.



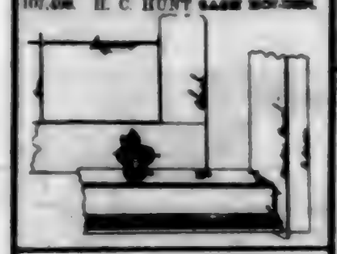
107,497. J. HORNBY. [illegible] FOR BURNING TUBE PIPES &c.



107,498. J. B. HUBBELL. WAGON BOX.



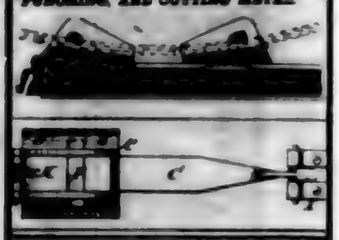
107,499. H. C. HUNT. SASH HOLDER.



107,500. J. HUNT. LIFE PRESERVING MATTRESS.



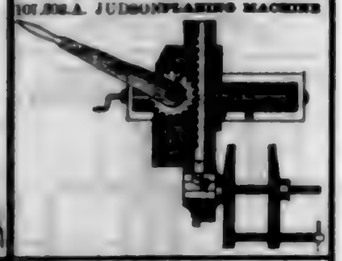
107,501. W. HUNT. COMPOUND MACHINE FOR UPSETTING PUNCHING AND CUTTING METAL.



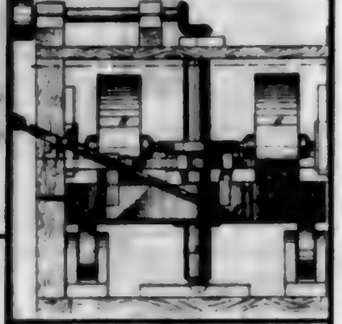
107,502. W. A. IRELAND. DEVICE FOR OPERATING HAND FAN.



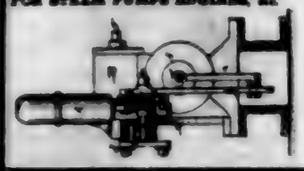
107,503. A. JUDSON. PLANING MACHINE.



107,504. J. KELLET. MUD AND ORE MILL.



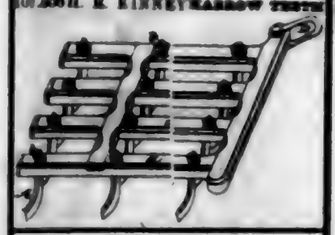
107,505. J. C. KING. VALVE GEAR FOR STEAM PUMPS ENGINES, &c.



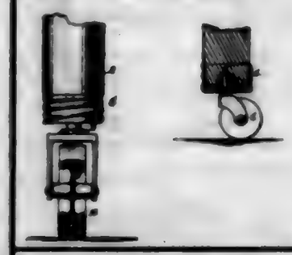
107,506. BALANCED ROCK VALVE. J. C. KING.



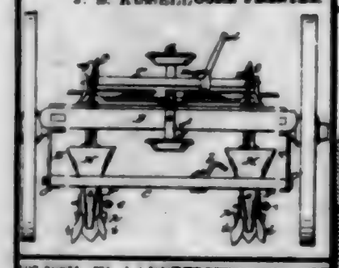
107,506. H. R. KINNEY. HARROW TEETH.



107,507. J. KINTZ. CASTER.



107,508. M. L. KISSELL AND J. B. RUSSELL. CORN PLANTER.



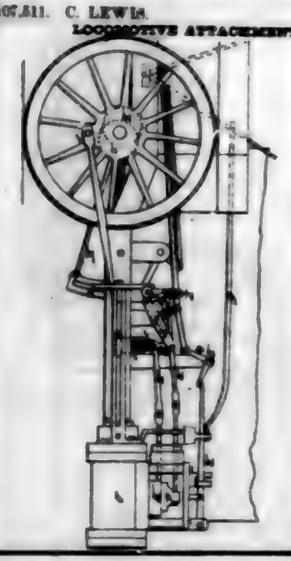
107,509. H. W. LADD. EDGETRAD AND CUT



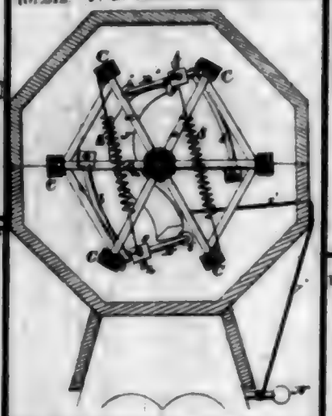
107,510. I. LEBO. THRASHING MACHINE SEPARATOR.



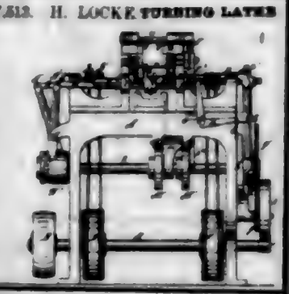
107,511. C. LEWIS. LOCOMOTIVE ATTACHMENT.



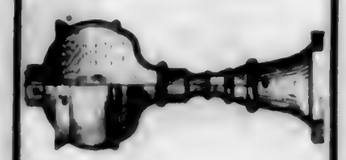
107,512. F. B. LEWIS. BOLTING REEL.



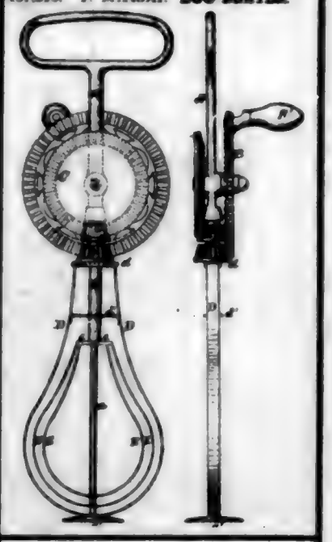
107,513. H. LOCKE. TURNING LATHE.



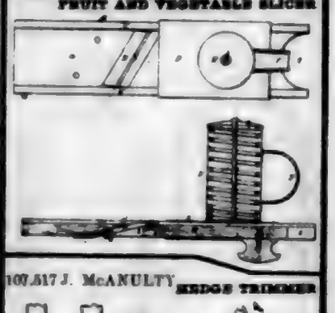
107,514. G. H. LOMAX. LAMP.



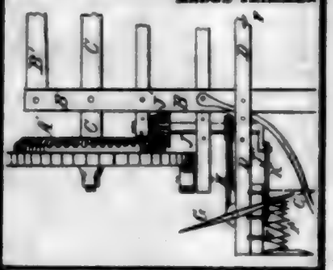
107,515. T. MARSH. BOG BEATER.



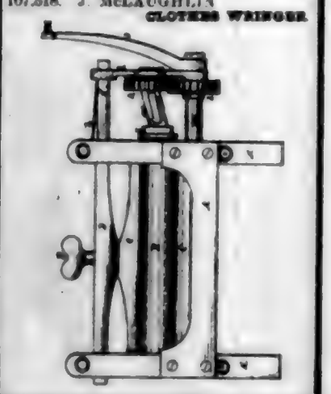
107,516. W. A. MAYHEW. FRUIT AND VEGETABLE SLICER.



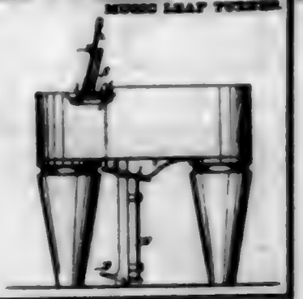
107,517. J. McANULTY. HEDGE TRIMMER.



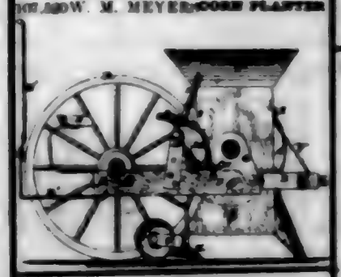
107,518. J. McLAUGHLIN. CLOTHES WRINGER.



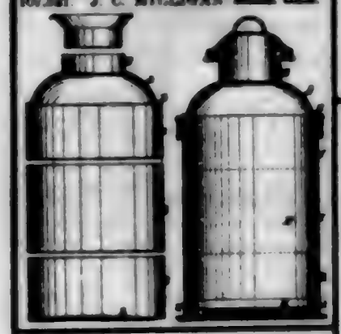
107,519. J. W. MELLOR. MUSIC LEAF TURNER.



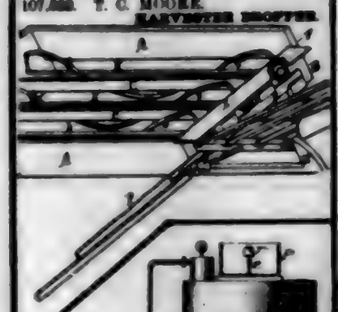
107,520. W. M. MEYER. CORN PLANTER.



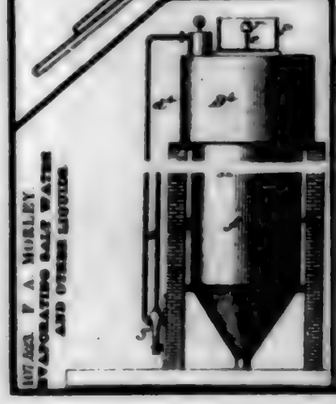
107,521. J. C. MILLIGAN. MILK CAN.



107,522. T. C. MOORE. HARVESTER DROPPER.



107,523. F. A. MORLEY. EVAPORATING SALT WATER AND OTHER LIQUIDS.



107,524. A. W. MORRELL. DOUBLE PITCH SHOVEL.



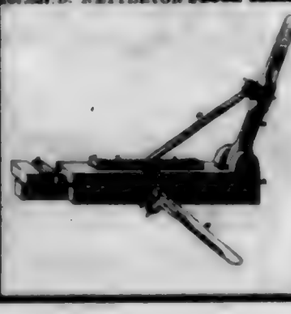
107,525. W. MORTATT AND F. KIPP. FOLDING CHAIR.



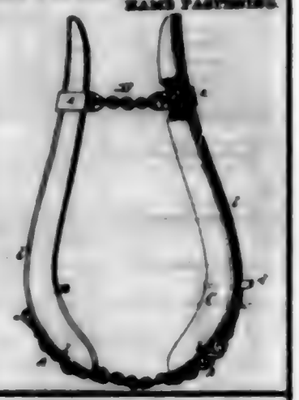
107,526. J. NEFF, Jr. CULTIVATOR.



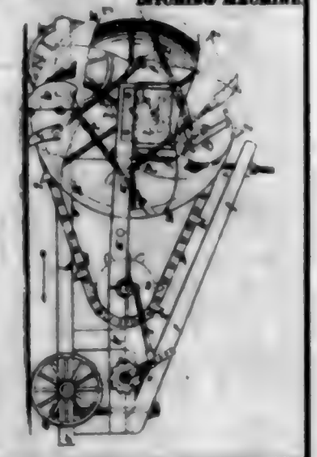
107,527. D. NETTLETON. FLOOR CLAMP.



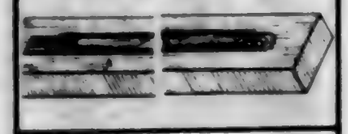
107,528 & D. G. NILES. HAME FASTENING.



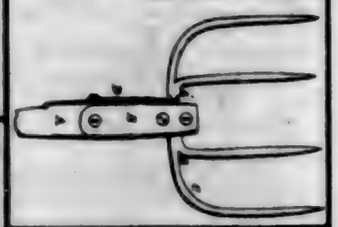
107,529. E. E. OSGOOD. DITCHING MACHINE.



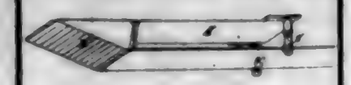
107,530. E. PARKER. TRACK RAIL FOR SLIDING DOORS.



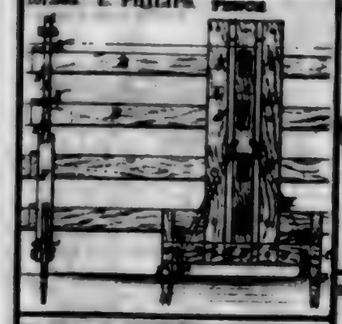
107,531. T. W. PEIRCE. HAY FORK AND HOOK.



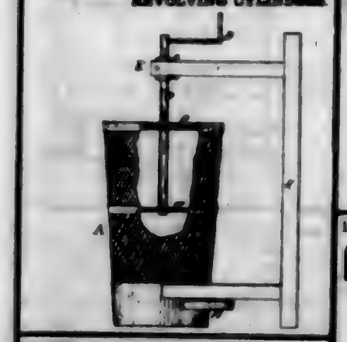
107,532. L. V. PERCIVAL AND J. LINK. ANIMAL TRAP.



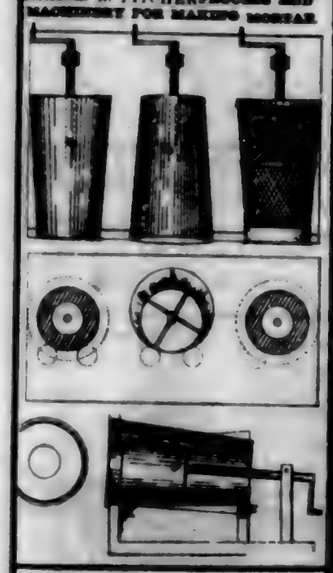
107,533. L. PHILIPS. FENCE.



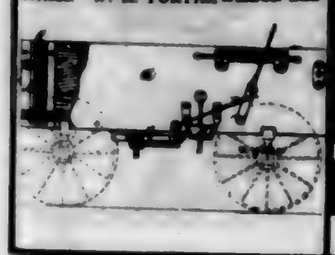
107,534. L. B. PITCHER. MANNER OF MOUNTING HOLLOW REVOLVING CYLINDERS.



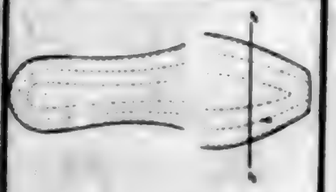
107,535. L. B. PITCHER. PROCESS AND MACHINERY FOR MAKING MORTAR.



107,536. W. H. PORTER. WAGON BED.



107,537. W. E. PRALL. SPRING SOLE FOR BOOTS AND SHOES.



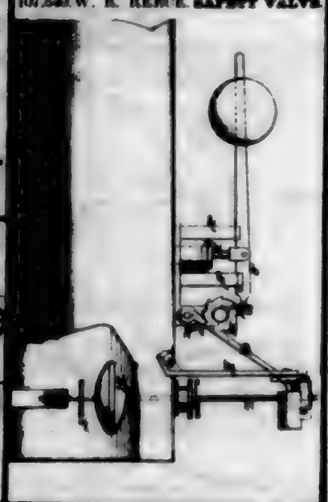
107,538. W. E. PRALL. COVER FOR BOOTS AND SHOES.



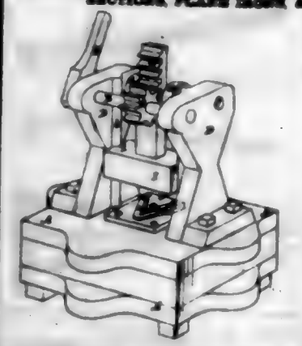
107,539. F. P. RAND. WRENCH.



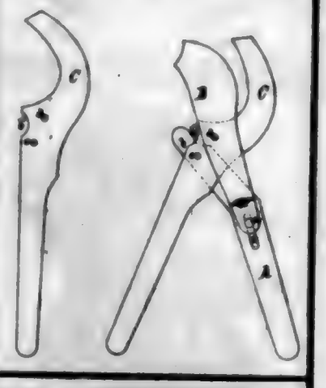
107,540. W. R. REECE. SAFETY VALVE.



107,541. S. P. REYNOLDS. MACHINE FOR TEMPERING SICKLE SECTIONS, PLANE IRONS, &c.



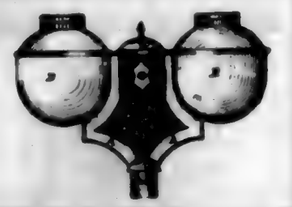
107,542. W. RICHARD. PRUNING KNIFE.



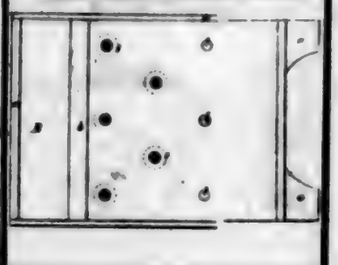
107,543. J. RIDGE. CARRIAGE WHEEL.



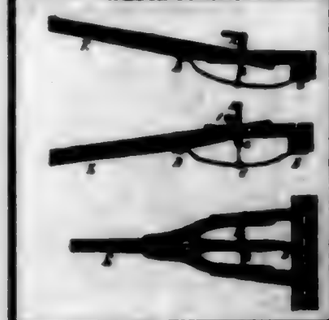
107,544. D. C. RIPLEY. GLASS LAMP.



107,545. C. ROBINSON. ALLEY BOARD FOR BALL GAMES.



107,546. D. D. ROBINSON.
WAGON TONGUE SUPPORT



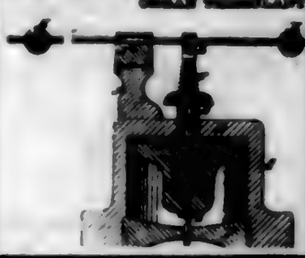
107,547. A. H. ROCKWELL.
SMOKE PIPE CONNECTOR



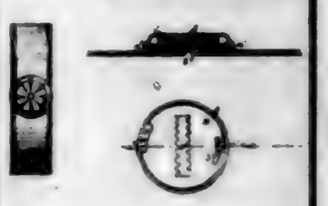
107,548. H. F. ROHM. [illegible]



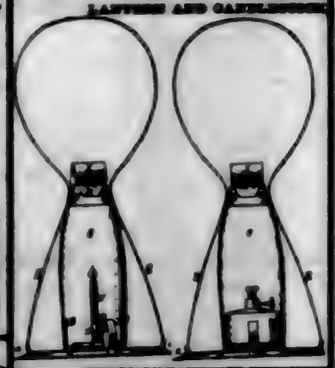
107,549. T. P. SANBORN
GRIST TRIP-LIFT



107,550. A. SCHEYDECKER.
CLASP FOR ELASTIC BANDS



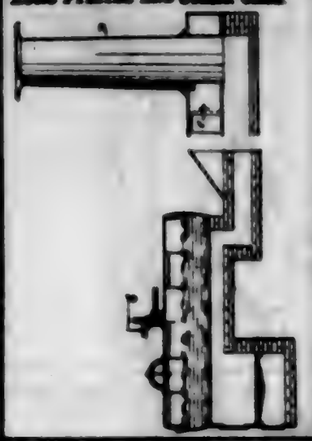
107,551. M. A. SHEPARD [illegible]
LANTERN AND GARDEN-HOOK



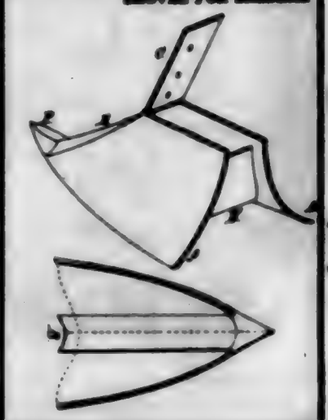
107,552. G. SHILLING, BURIAL CASE.



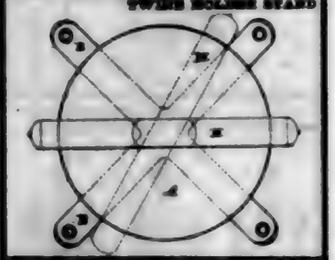
107,553. L. SIBERT, [illegible]
AXLES FOR [illegible] AND OTHER CARS.



107,554. D. SLAUGHTER
[illegible] FOR [illegible]



107,555. J. S. SMITH
TWINE HOLDER STAND



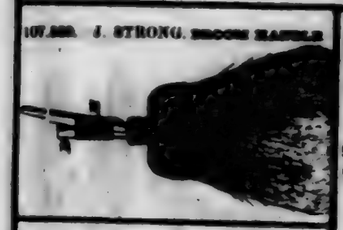
107,556. J. B. SMITH, S. A. GREELY AND A. CAMPAIGNE.
[illegible] HEAT OPERATOR.



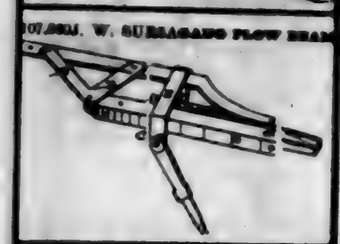
107,557. C. L. STEELE. FLOWER POT.



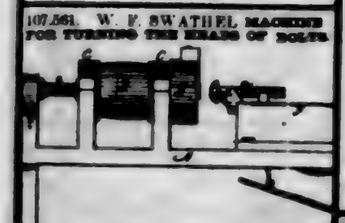
107,558. J. STRONG. BROOM HANDLE.



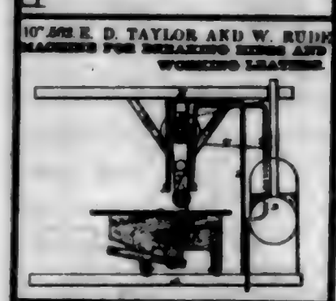
107,559. W. SURRAGANS PLOW BEAM.



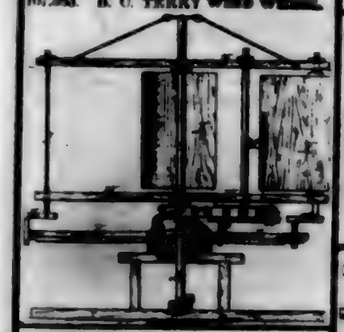
107,560. W. F. SWATHEL. MACHINE FOR TURNING THE HEADS OF BOLTS.



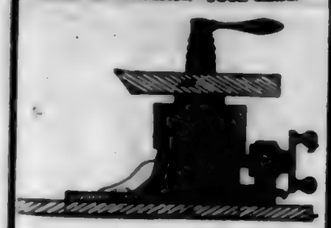
107,561. E. D. TAYLOR AND W. RUDE.
MACHINE FOR BREAKING HEMP AND WORKING LEATHER.



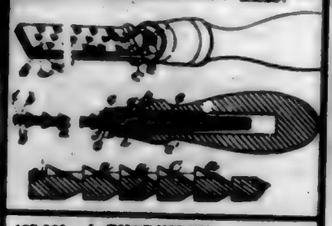
107,562. B. C. TERRY. WIRE WEAVING.



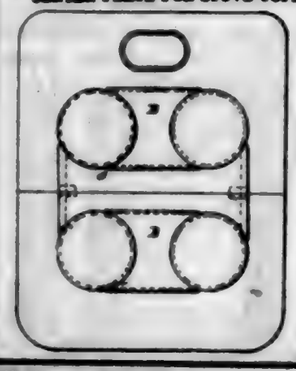
107,563. A. THOMAS. [illegible]



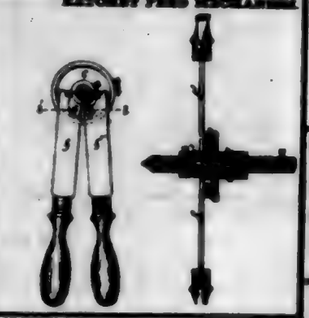
107,565. I. F. THOMPSON. RAKE.



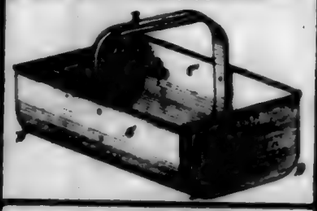
107,566. J. THORNILEY.
CENTRE PLATE FOR STOVE TOPS.



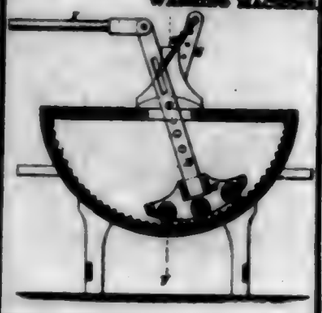
107,567. A. TURNBULL.
RATCHET FEED MECHANISM.



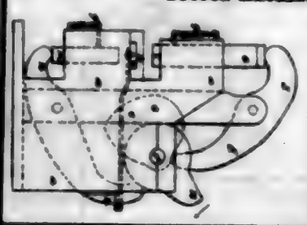
107,568. S. S. VAIL. WOOD BUCKET.



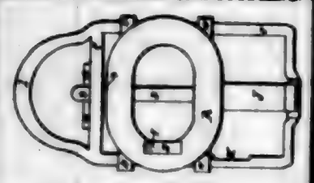
107,569. A. L. VAN NORMAN.
WASHING MACHINE.



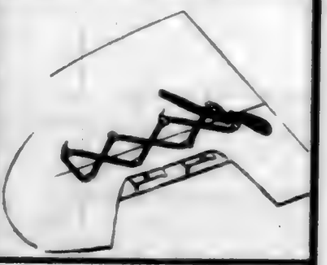
107,570. C. VOLKERT.
BUTTON MACHINE.



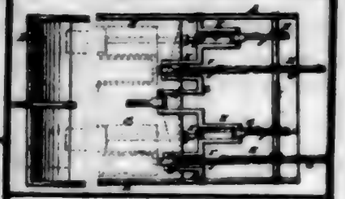
107,571. W. WALKER. GAS COUPLING.



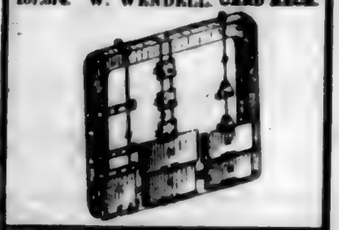
107,572. W. P. WARE. SHOE FASTENING.



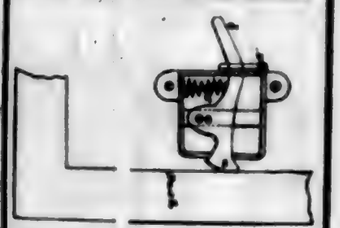
107,573. E. K. WATSON
PROPELLING CANAL BOATS.



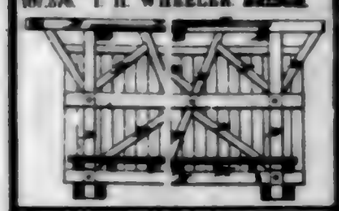
107,574. W. WENDELL. CARD RACK.



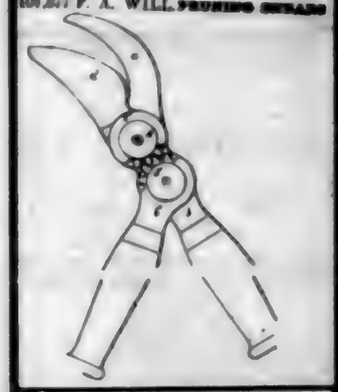
107,575. G. W. WHEAT. BASE HOLDER.



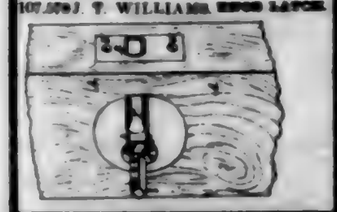
107,576. I. H. WHEELER. BRIDGE.



107,577. P. A. WILL. PRUNING SHEARS.

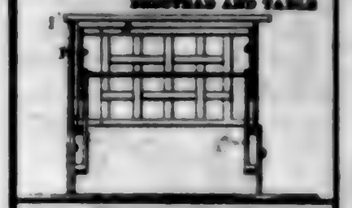


107,578. J. T. WILLIAMS. HOOP LATCH.

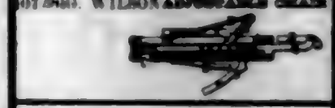


107,579. T. D. WILLIAMS. STUFFING AND FINISHING LEATHER.

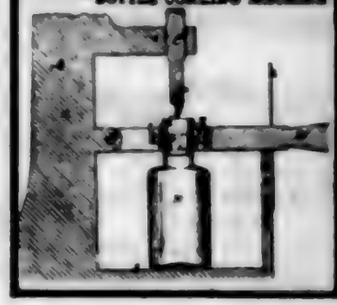
107,580. WILSON. SIDESTEAD AND TABLE.



107,581. WILSON. ADJUSTABLE CHAIR.



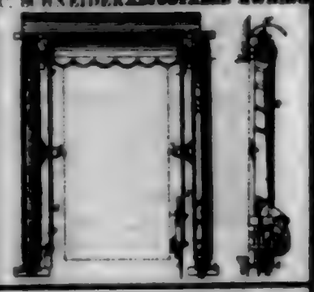
107,582. WOLFF AND W. N. NUMSEN. BOTTLE CORKING MACHINE.



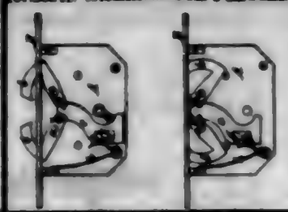
107,583. C. D. WRIGHTINGTON. PRINTING PRESS.



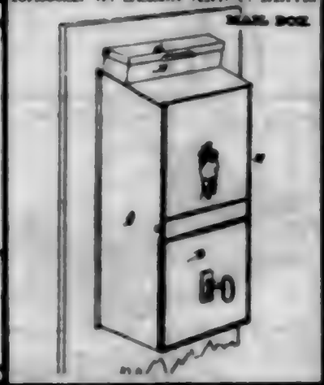
107,584. L. YENNE AND C. SCHNEIDER. ADJUSTABLE AWNING.



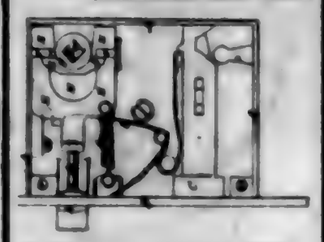
107,585. H. AHRENDACHE. PIANO FORTE &c.



107,586. A. W. ALLEN AND C. BEITZ. MAIL BOX.



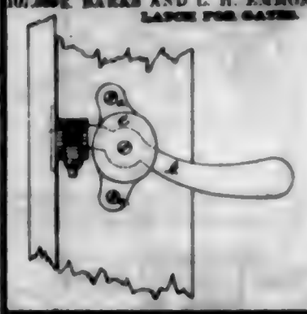
107,587. H. P. APPLETON. REVERSIBLE HOOP LATCH.



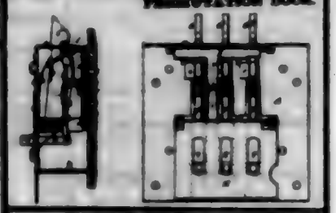
107,588. J. BARCLAY. BRACINGS.



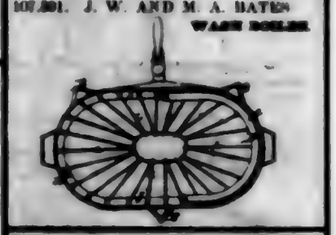
107,589. BARKS AND L. H. EMMONS. LATCH FOR GATES.



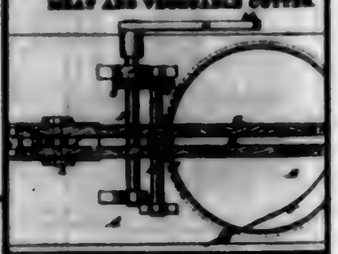
107,590. J. E. AND L. P. BARNES. PERMUTATION LOCK.



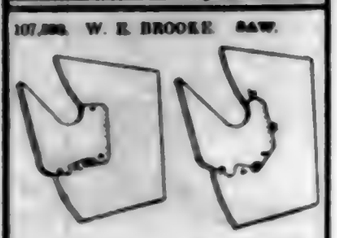
107,591. J. W. AND M. A. BATES. WASH BOILER.



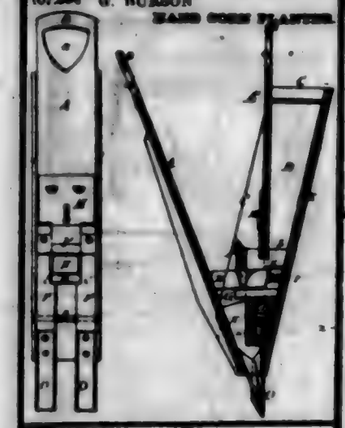
107,592. BONFILS AND J. GROSSMAN. MEAT AND VEGETABLE CUTTER.



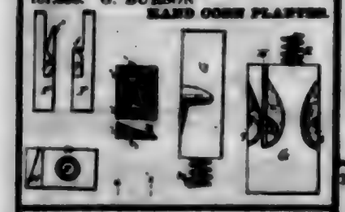
107,593. W. R. BROOKE. SAW.



107,594. G. BURSON. HAND CORN PLANTER.



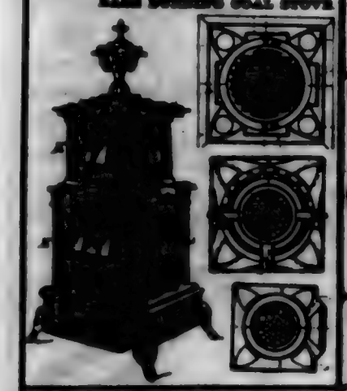
107,595. G. BURSON. HAND CORN PLANTER.



107,596. P. CEREDO. DEVICE FOR SUSPENDING AND REMOVING HAMS.



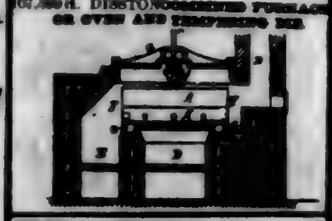
107,597. A. C. COBBE. BASE BURNING COAL STOVE.



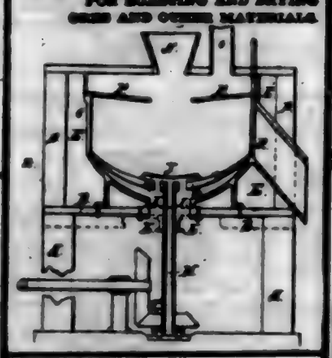
107,598. E. CROFT. PRESS JAR.



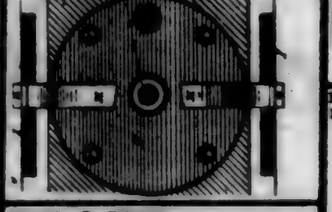
107,599. H. DISSTON. WOODEN FURNACE OR OVEN AND SUPPORTING RIM.



107,600. A. DUVALL. APPARATUS FOR ROASTING AND DRYING SEED AND OTHER MATERIALS.



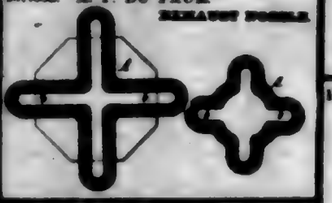
107,601. J. ELDER. ELECTRO MAGNETIC RAILROAD SIGNAL APPARATUS.



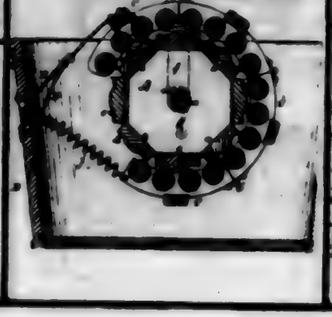
107,602. D. EVNON. ART OF MANUFACTURING SPIKES.



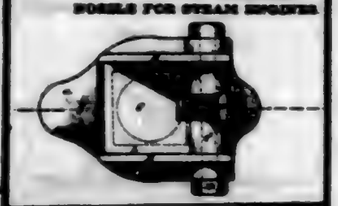
107,603. A. F. DU FAUR. RELIEVED FOUNDLE.



107,604. J. A. FLETCHER. WASHING MACHINE.



107,605. W. A. FOSTER. EXHAUST POINTS FOR STEAM ENGINES.



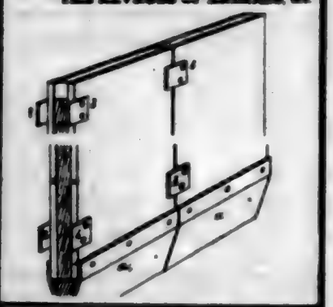
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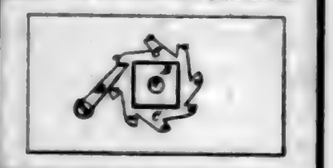
107,607. W. H. FRUN. LIQUID METER.



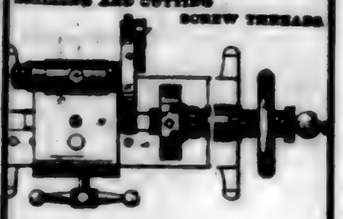
107,608. S. GARDNER. PROTECTING MINES AND ENBANKMENTS AGAINST THE RAVAGES OF ANIMALS, &c.



107,609. R. GILLILAND. NUT LOCK.



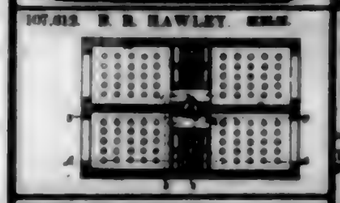
107,610. J. J. GRANT. MACHINE FOR DRILLING AND CUTTING SCREW THREADS.



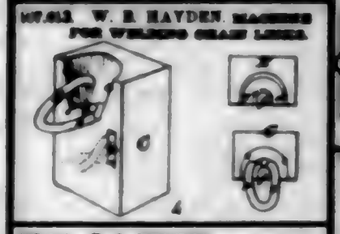
107,611 J. W. HAINES
CRUTCH FOR SELF-RAISING TURNIP...



107,612 R. R. HAWLEY. SIEVE.



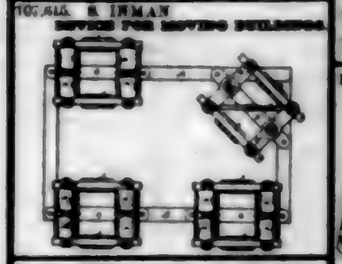
107,613 W. R. HAYDEN. MACHINE FOR WELDING CHAIN LINKS.



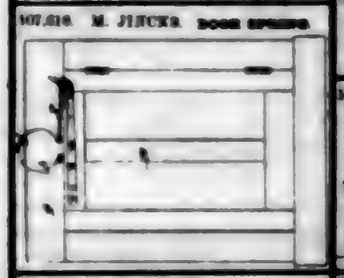
107,614 E. J. HELWIG
FASTENING FOR SHAFTING.



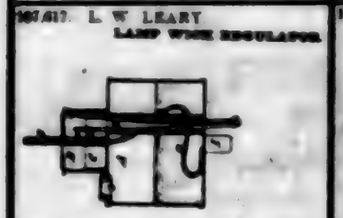
107,615 S. INMAN
DEVICE FOR RAISING BUILDINGS.



107,616 M. JINCKS. DOOR SPRING.



107,617 L. W. LEARY
LAND WIRE REGULATOR.



107,618 J. LEMMAN
...RAIL FASTENING.



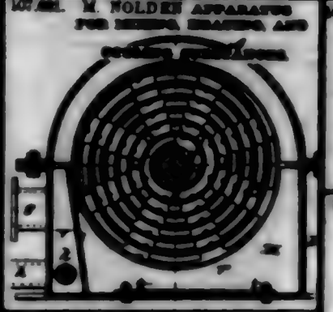
107,619 O. H. NEEDHAM.
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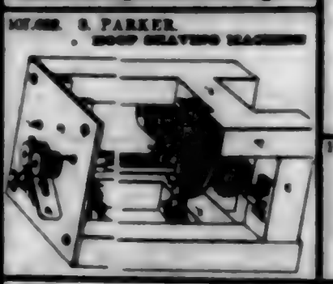
107,620 R. R. NICKERSON
...WOOD.



107,621 M. NOLDEN APPARATUS FOR ...



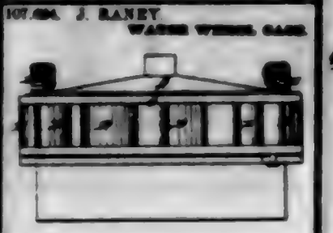
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...HEATING MACHINE.



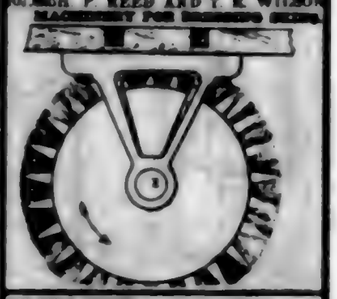
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APPARATUS FOR COUPLING CARS.



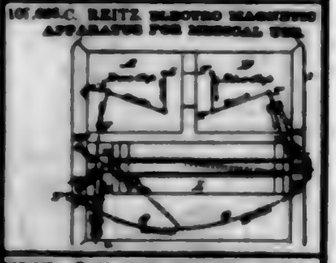
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WAGON WHEEL CARE.



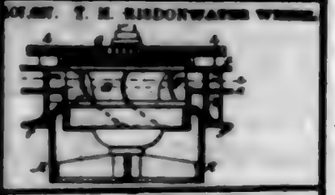
107,625 H. P. REED AND T. E. WILSON
MACHINERY FOR RIMMING BEDS.



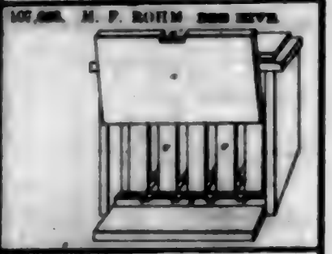
107,626 C. REITZ. REVOLVING MAGNETIC APPARATUS FOR MEDICAL USE.



107,627. T. H. SIDDONWATER WHEEL.



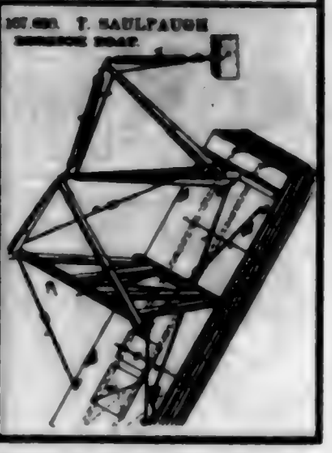
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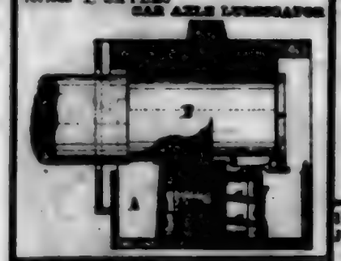
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BASE BURNING COOKING STOVE.



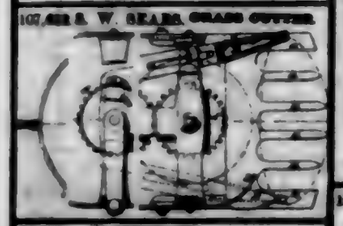
107,630 T. SAULPAUGH
SEWING HOOP.



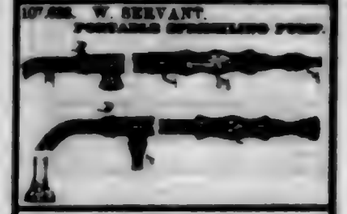
107,631 T. SAYLES
CAR AXLE LUBRICATOR.



107,632 S. W. SEARS. GRAIN CUTTER.



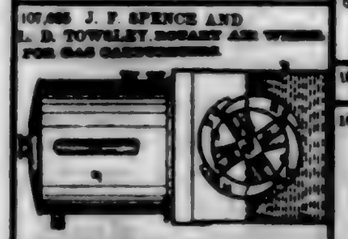
107,633 W. SERVANT.
PORTABLE SPRINKLING POT.



107,634 P. J. SHIRTS.
FASTENING FOR SHOULDER...



107,635 J. F. SPENCE AND L. B. TOWLEY. ROTARY AIR WHEEL FOR GAS GENERATORS.



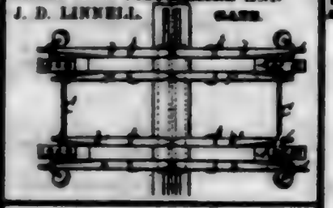
107,636 E. STILWELL.
SLIDE FOR EXTENDING TABLES.



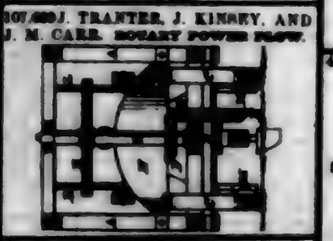
107,637. U. B. STRIBLING.
METHOD OF SETTING POSTS.



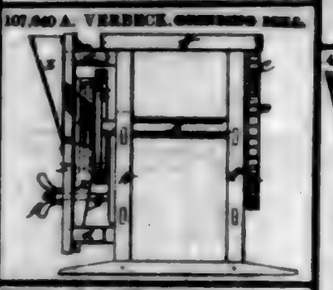
107,638 J. J. TOFFLEMIRE AND J. D. LINNELL.
GATE.



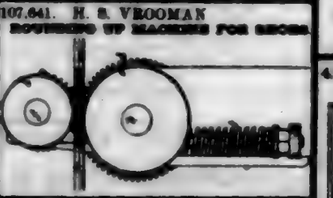
107,639 J. TRANTER, J. KINSEY, AND J. M. CARR. ROTARY POWER PLOW.



107,640 A. VERBECK. GRINDING MILL.



107,641. H. S. VROOMAN
ROUNDING UP MACHINES FOR SHOES.

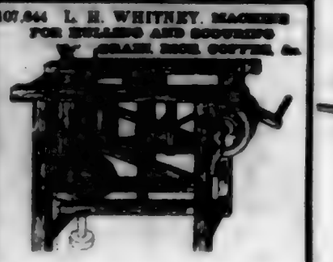


107,642 E. WAITE. PASTE FOR THE MANUFACTURE OF SHOES, &c.

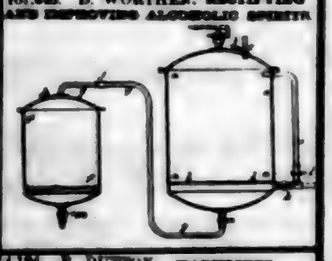
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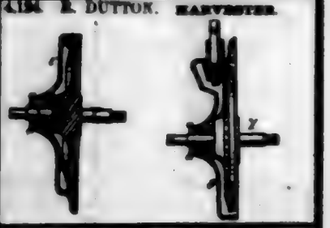
107,644 L. H. WHITNEY. MACHINE FOR INLAYING AND GOUGING ... GRAIN MILL CUTTER, &c.



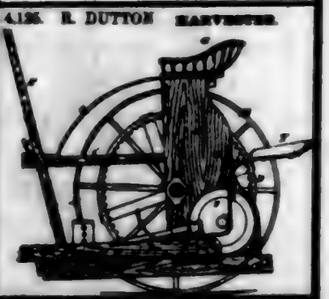
107,645. D. WORTHEN. RECTIFYING AND IMPROVING ALCOHOLIC SPIRITS.



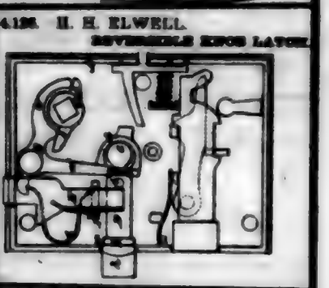
4,126. E. DUTTON. HARVESTER.



4,126. E. DUTTON. HARVESTER.



4,126. H. H. ELWELL.
REVERSIBLE DOOR LATCH.



4,127. P. F. RANDOLPH
POLISHING MACHINE.



4,128. J. H. SHIREMAN.
DOUBLE HAY RAKE.



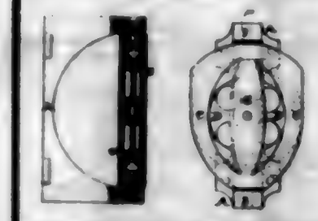
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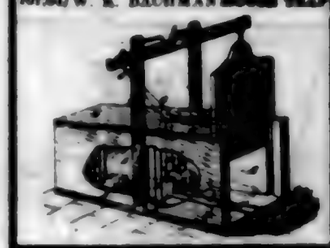
THE UNITED STATES PATENT OFFICE

SEPTEMBER 27, 1870.

107,646. E. S. AXTELL. BULLET FOR GUNS.



107,647 W. K. BACHMAN MOUSE TRAP



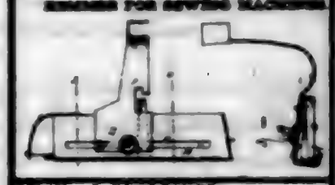
107,648. W. BAKER. [illegible]



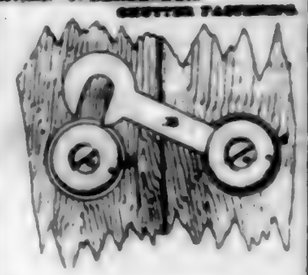
107,649 W. M. BARRY [illegible]



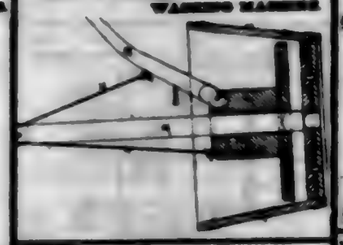
107,650. A. H. BARTLETT. [illegible] FOR SEWING MACHINES.



107,651. J. BERBECKER. [illegible] FASTENING.



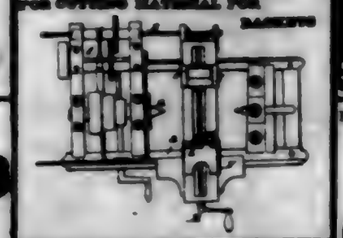
107,652. J. T. BEVER. WASHING MACHINE.



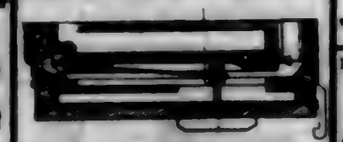
107,653. C. E. BOYNTON. [illegible] FOR CUTTING WOOD [illegible]



107,654 L. H. BRIDGEMAN MACHINE FOR CUTTING MATERIAL FOR [illegible]



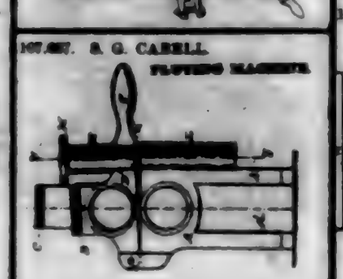
107,655. J. C. BRIGGS. [illegible]



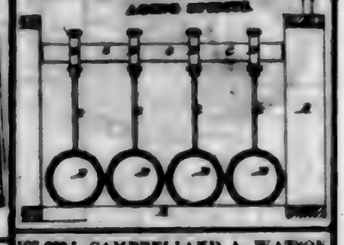
107,656. H. A. BROWN AND E. E. SMITH. [illegible] COUPLING SAME.



107,657. S. G. CARELL. [illegible] FASTENING MACHINE.



107,658. A. CALDWELL. [illegible] AMONG GUNNERS.



107,659 J. CAMPBELL AND A. WATSON. [illegible] WOOD GATE.



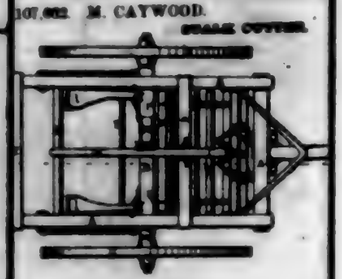
107,660. G. E. CARLETON. [illegible] HORSE HAY RAKE.



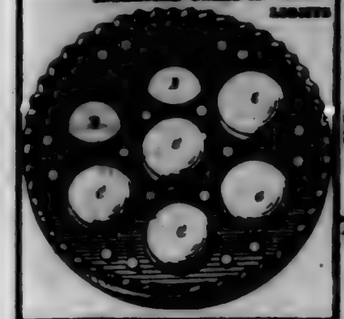
107,661. M. W. CATLIN. WASH BOARD AND TANK.



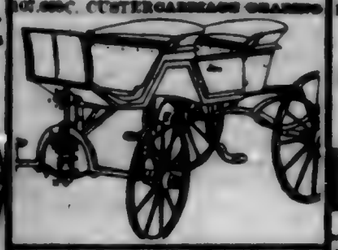
107,662. M. CAYWOOD. [illegible] SHANK CUTTER.



107,663. E. COBB. [illegible] OF REFLECTING GLASS IN VAULT LIGHTS.



107,664. C. CUSTERCARREANO CHASING [illegible]



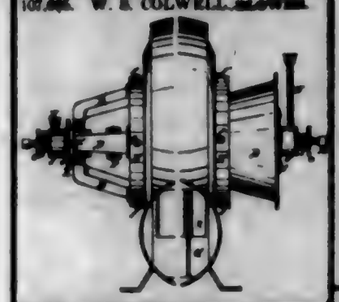
107,665. C. DANN. JOINTED OAR.



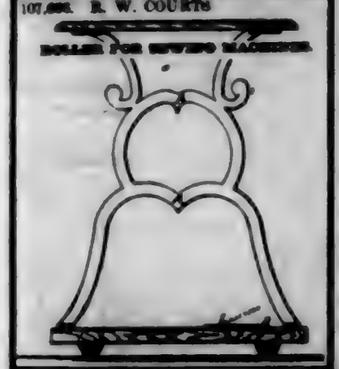
107,666. B. CODDINGTON. [illegible]



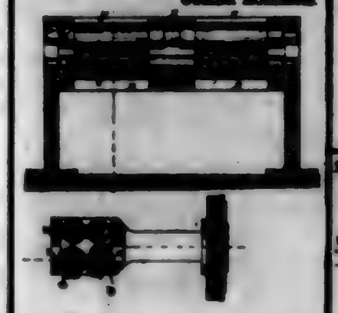
107,667. W. S. COLWELL. MOWER.



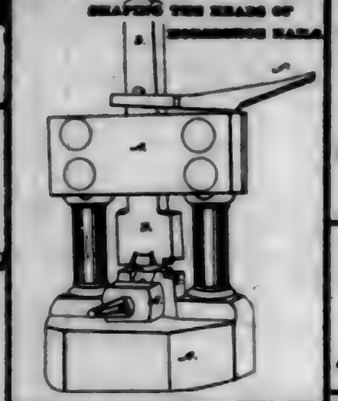
107,668. R. W. COURTS. ROLLER FOR SEWING MACHINES.



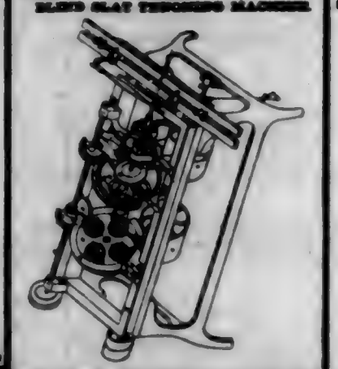
107,669. L. CRAWFORD. WEAVING APPARATUS FOR FINED AND [illegible] SELVAGE.



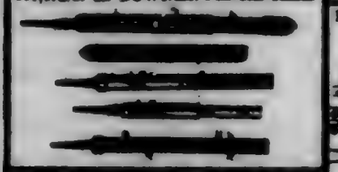
107,670. N. DEXTER. MACHINE FOR SHAPING THE SHANK OF [illegible] SHOE.



107,671. F. DOUGLAS. BLIND SLAT TENONING MACHINE.



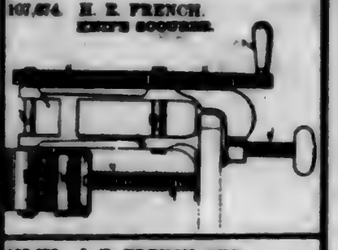
107,672. C. H. DOWNER. [illegible] GAGE.



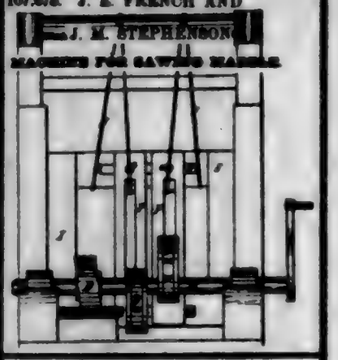
107,673. T. EARLE AND C. K. DEARBORN. [illegible] SHANK.



107,674. H. E. FRENCH. [illegible] SCOOTER.



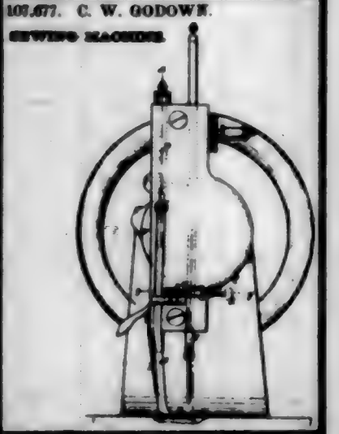
107,675. J. E. FRENCH AND J. M. STEPHENSON. MACHINE FOR SAWING MARBLE.



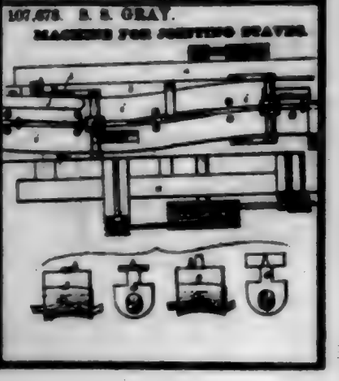
107,676. D. FULTON. PLOW.



107,677. C. W. GODOWN. SEWING MACHINE.



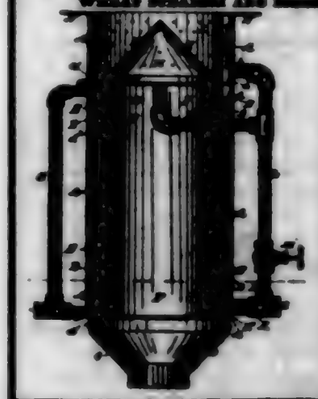
107,678. S. S. GRAY. MACHINE FOR JOINTING STAVES.



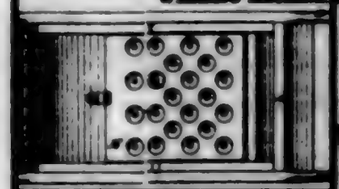
107,679. G. HASSELAND. BAR IRON.



107,680. C. T. HANNA. WHEAT SEPARATOR AND SCOURER.



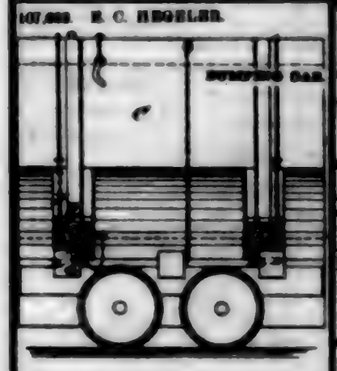
107,681. E. S. HARPER. WASHING MACHINE.



107,682. J. E. HARRINGTON. CARPET LINING.



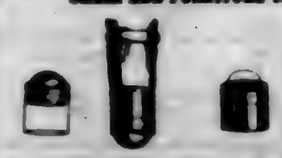
107,683. E. C. HEGELER. BURNING GAS.



107,684. C. F. HOLLENBECK. TAGGING IRON.



107,685. F. H. HOLTON. GEARS AND FURNITURE TIP.

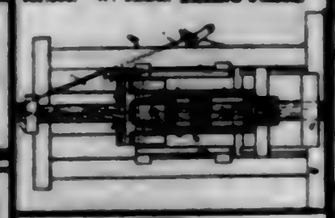


107,686. E. P. HUDSON. APPARATUS FOR PREPARING PARCHMENT OR WATER PROOF PAPER.



107,687. E. P. HUDSON. MANUFACTURE OF RUBBER COATED PARCHMENT PAPER.

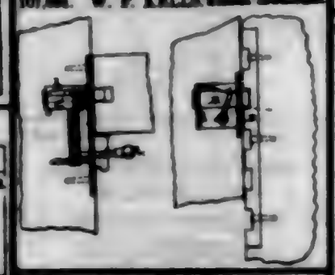
107,688. W. ILER. RAILING POSTS.



107,689. G. JAQUES. METHOD OF PRESERVING PEAT.

107,690. G. JAQUES. COMPOSITION OF MATTER FOR PRESERVING PEAT FROM DECAY.

107,691. W. F. KELLS. GAME BOARD.

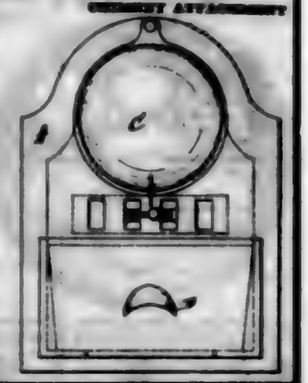


107,692. G. W. KIDWELL. ATTACHING DRAFT TO PLOWS.

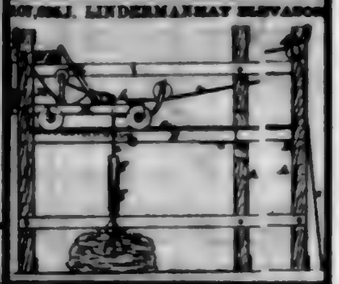


107,693. W. W. KILBOURN. SEWING GUM.

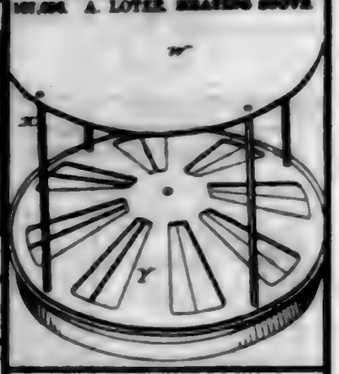
107,694. A. H. LANPHEAR. CURRENT ATTACHMENT.



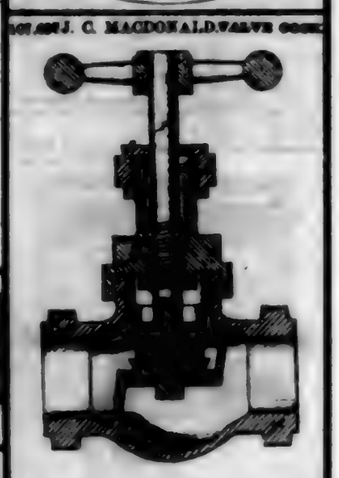
107,695. J. LINDERMANNAY. ELEVATOR.



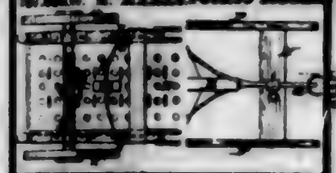
107,696. A. LOTER. HEATING STOVE.



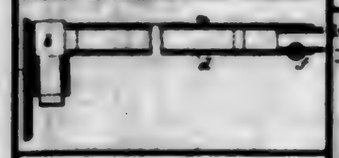
107,697. J. C. MACDONALD. VALVE GEAR.



107,698. M. MARKS. POTATO DIGGER.



107,699. E. MARSH. LAMP BRACKET.

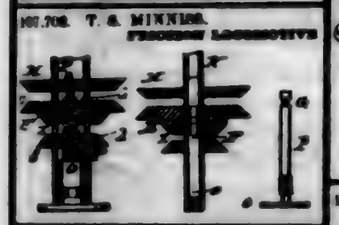


107,700. P. McCORMICK. WASHING CUTTER.

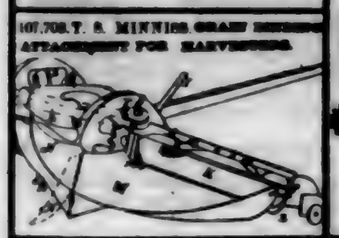


107,701. E. McILHENNY. PEPPER SAUCE.

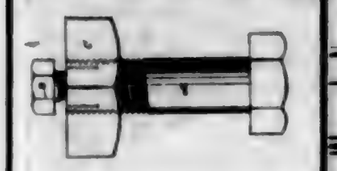
107,702. T. S. MINNIS. TRACTION LOCOMOTIVE.



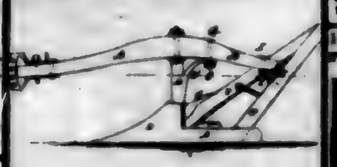
107,703. T. S. MINNIS. GRAIN BINDING ATTACHMENT FOR HARVESTERS.



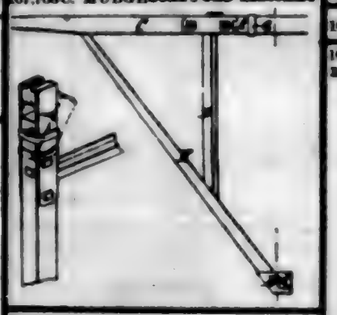
107,704. J. MOORCROFT. NUT LOCK.



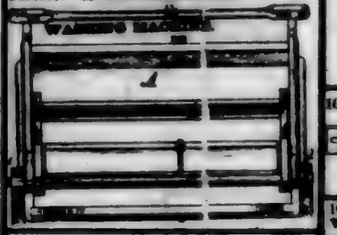
107,705. D. MORRIS. PLOW.



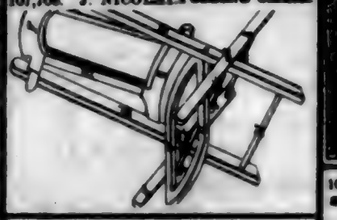
107,706. C. MUDGE. SCAFFOLD BRACKET.



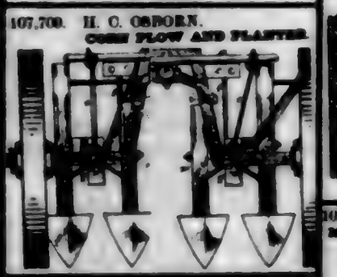
107,707. A. MUTERSBAUGH. WASHING MACHINE.



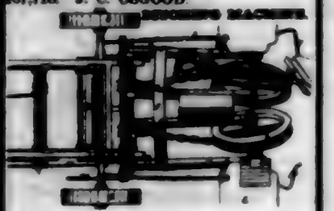
107,708. J. NICOLAI. FOLDING CHAIR.



107,709. H. C. OSBORN. CORN PLOW AND PLANTER.



107,710. J. C. OSGOOD. SEWING MACHINE.



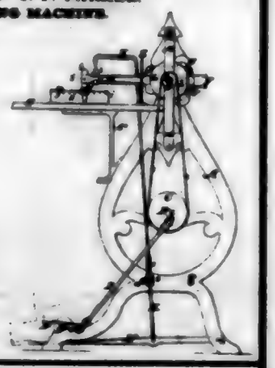
107,711. A. OTT. TREATING TIN SCRAP FOR THE MANUFACTURE OF STANNATE OF POTASH, &c.

107,712. A. OTT. FURNACE FOR SMELTING SCRAP TIN.



107,713. C. F. PANKNIN. TANNING.

107,714. C. F. PARKER. ROOFING MACHINE.



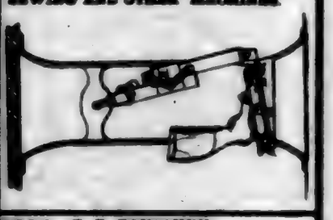
107,715. L. PENNOCK. BRACE GRAY.



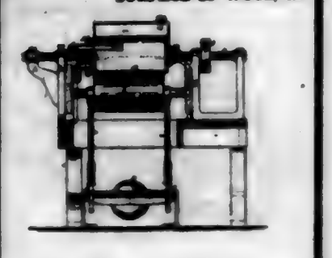
107,716. W. F. PHELPS. CAR VENTILATOR AND REFRIGERATOR.



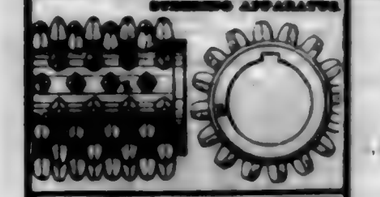
107,717. H. C. POLE. TENDRILS FOR SEWING AND OTHER MACHINES.



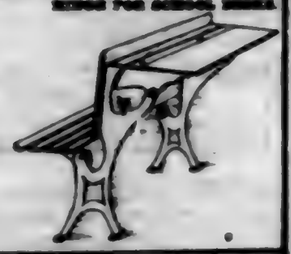
107,718. T. T. PONSONBY. MACHINE FOR ORNAMENTING THE SURFACE OF WOOD, &c.



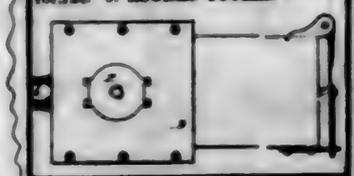
107,719. T. C. PURINGTON.
STEERING APPARATUS



107,720. A. E. BOBERTZ.
DESKS FOR SCHOOL ROOMS



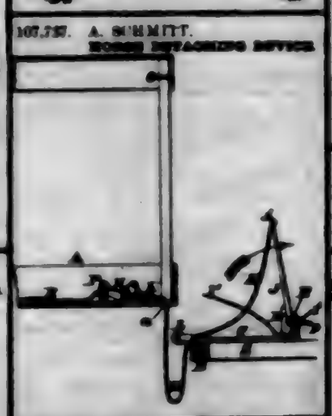
107,721. J. ROGERS, JUNIOR.



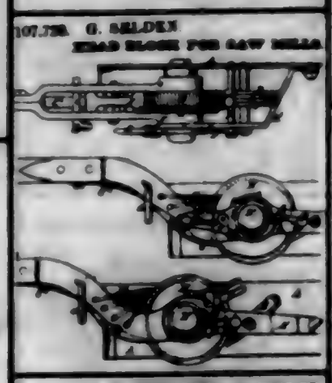
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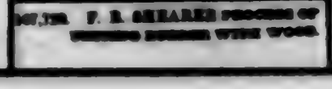
107,723. A. SUMMITT.
BOBBIN DETACHING DEVICE.



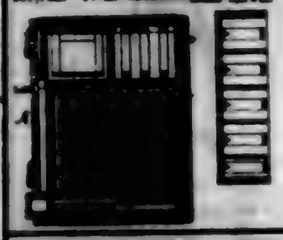
107,724. G. SELDEN.
HEAD BLOCK FOR SAW MILLS.



107,725. F. R. SHEARER. PROCESS OF



107,726. J. J. SMITH. SAD IRON.

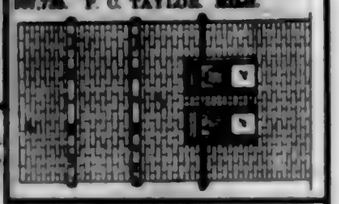


107,727. W. A. SMITH. SAW SET.



107,728. W. SPEARS.
MANUFACTURE OF HYDROCARBON OIL.

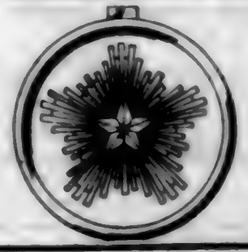
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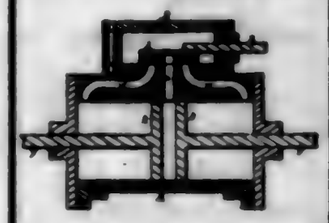
107,730. P. R. THEURER.
WIRE WINDING AND SETTING ATTACHMENT TO WATCHES.



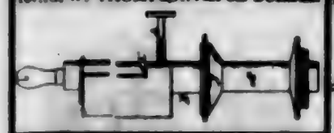
107,731. J. A. READ.
COVER FOR STOVE PIPE HOLES.



107,732. W. F. RICHARDSON.
STEAM ENGINE.



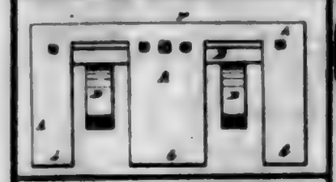
107,737. W. THOMPSON. VAPOR BURNER.



107,738. J. T. THOMSON. SHAPED CLEAT.



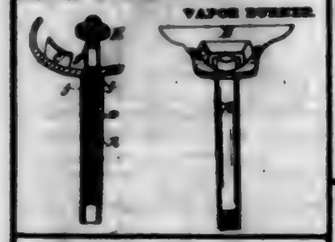
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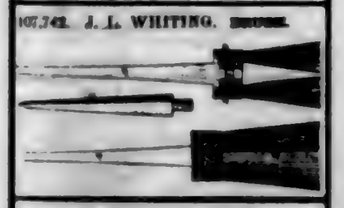
107,740. R. WARD. OYSTER TONGS.



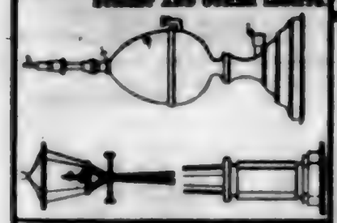
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VAPOR BURNER.



107,742. J. L. WHITING. BRUSH.



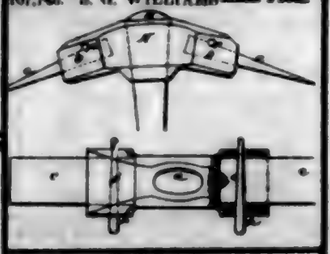
107,743. S. WHITNEY.
GAS CARBURETTING ATTACHMENT FOR BURNERS AND OTHER LIGHTS.



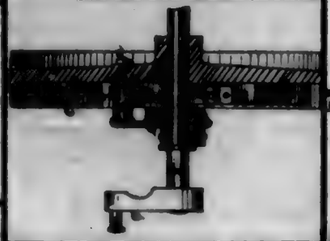
107,744. W. A. WICKS.
FASTENING FOR SHOULDER.



107,745. S. G. WILLIAMS. MILL PICK.



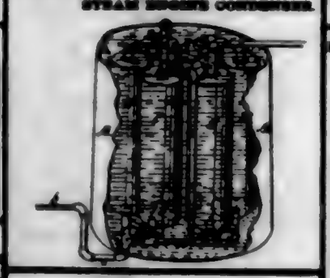
107,746. D. A. WOODBURY. AUTOMATIC CUT-OFF FOR STEAM ENGINES.



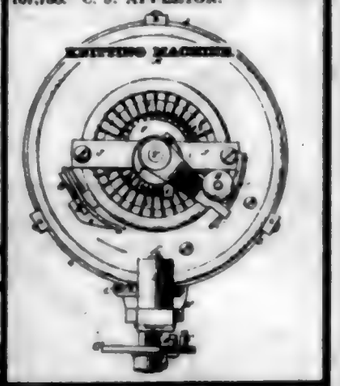
107,747. W. P. YATES.
CURTAIN FIXTURE.



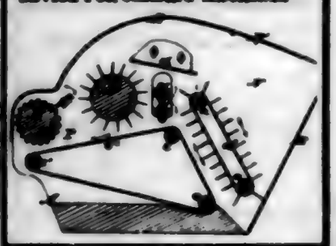
107,748. H. ANDERSON.
STEAM ENGINE CONDENSER.



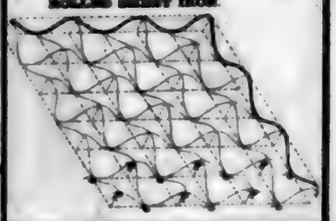
107,749. C. J. APPLETON.
KNITTING MACHINE.



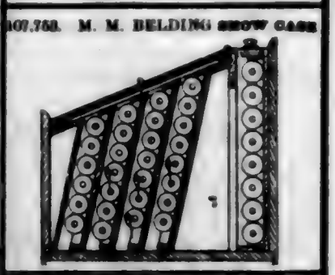
107,750. J. W. BARBOUR. FEEDING DEVICE FOR CARDING MACHINES.



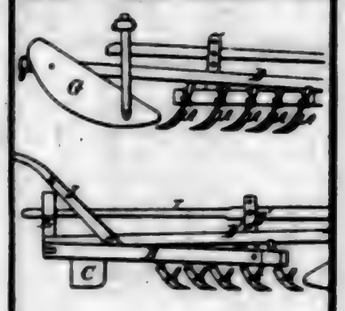
107,752. BARKER AND H. S. PRATT.
ROLLING SHEET IRON.



107,753. M. M. BELDING. SNOW GAGE.



107,754. V. BOLIMGUEVATOR. PLOW.



107,749. C. J. APPLETON. KNITTING MACHINE.

107,758. R. BURDETT. REED BOARD FOR ORGANS.

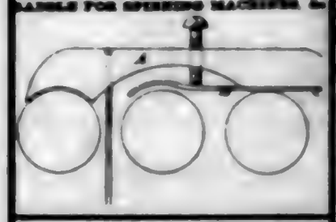


107,759. C. BURGESS. CEMENT WALK, PAVEMENT, AND ROAD.

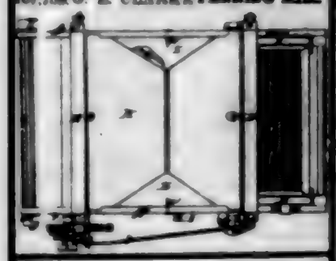
107,760. T. O. CALLAHAN. PLANE.



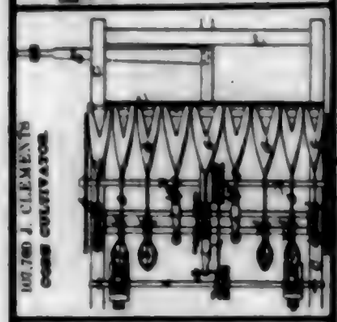
107,761. J. S. CASEY. BANDS FOR SPINNING MACHINES, &c.



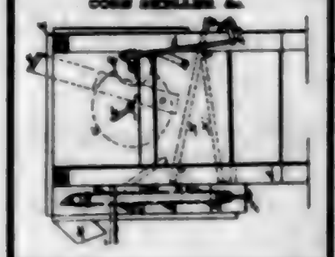
107,762. O. E. CLARKE. FANNING MILL.



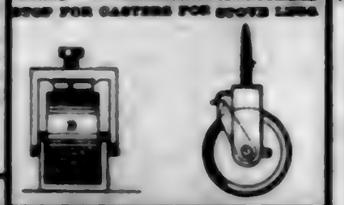
107,763. J. CLEMENTS. CORN CULTIVATOR.



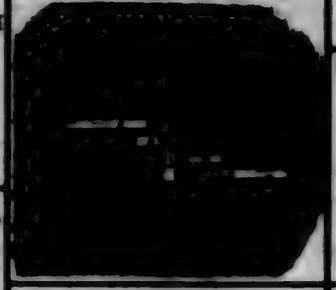
107,764. G. S. COLEMAN. CORN HUSKER, &c.



107,765. W. COUGHLIN. ADJUSTABLE STOP FOR CASTERS FOR STOVE LIDS.



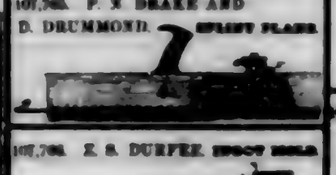
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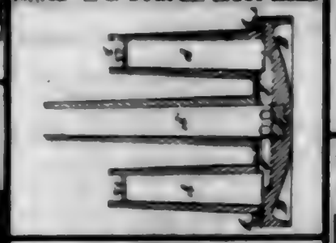
107,767. J. DOYLE. CURRANT PICKER.



107,768. P. N. DRAKE AND D. DRUMMOND. SPLINT PLANE.



107,769. E. S. DURFEE. SHOE HEEL.



107,770. H. A. EVERTS. REMOVABLE SHOE LINING.



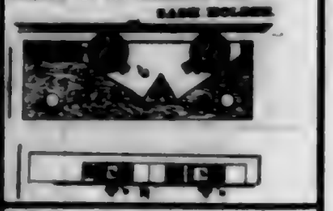
107,771. M. M. GILBERT. COFFEE ROASTER.



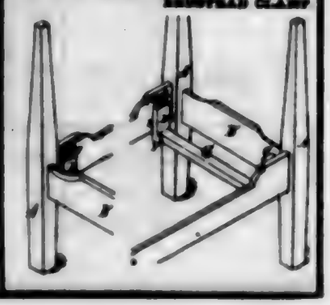
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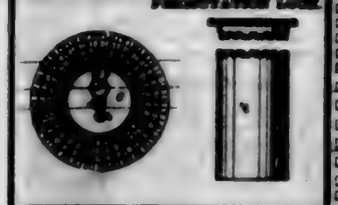
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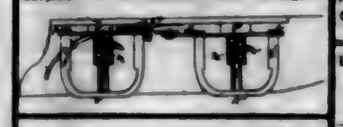
107,774. T. B. GREGORY. RENOVATED CLAMP.



107,775. W. N. HALL. FERMENTATION LOCK.



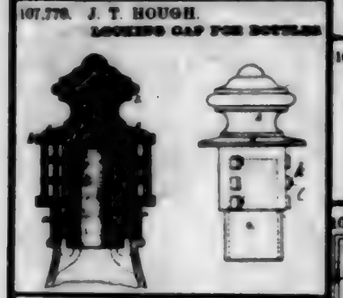
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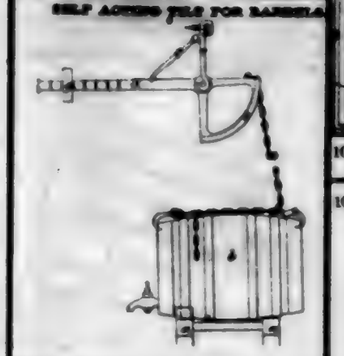
107,777. L. HOMRIGHOUSE. CULTIVATOR.



107,778. J. T. HOUGH. LOOKING GAS FOR BOTTLES.



107,779. HUDSON AND W. MINSHALL. SELF ACTING JIG FOR BANDSAWS.

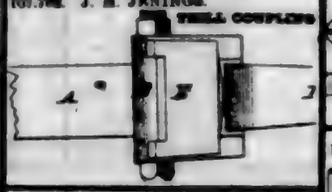


107,780. R. A. HUTCHINSON. GRATE FOR FURNACES.

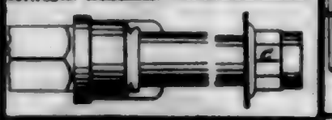


107,781. R. A. JACKSON. CONVERTING CAST IRON AND CAST IRON ARTICLES INTO STEEL.

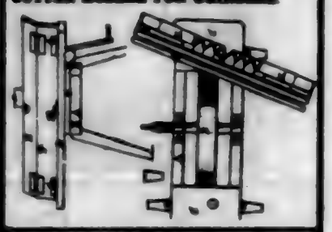
107,782. J. H. JENINGS. TRAIL COUPLING.



107,783. H. KILLAM. CARRIAGE AXLE.



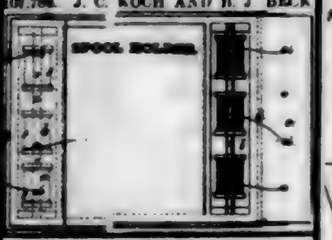
107,784. T. E. KING. HARVESTER CUTTER HOLDER FOR GRINDING.



107,785. J. KNIGHT. WEATHERER BOOK.

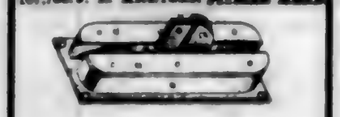


107,786. J. C. KOCH AND B. J. BECK. SPOOL HOLDER.

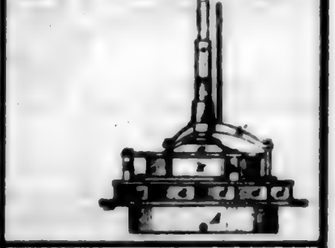


107,787. H. KOEHLER. MANUFACTURE OF SPIRITS FROM STARCH.

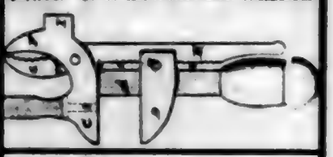
107,788. J. L. KRETSER. SUBSOIL HOE.



107,789. D. LANE. WATER WHEEL.



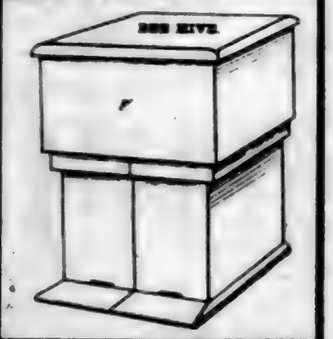
107,790. O. C. LAWBAUGH. WRENCH.



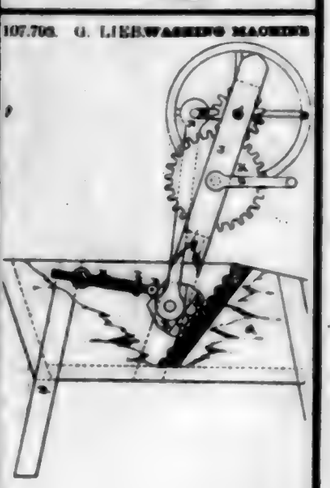
107,791. C. LEHNERT. MUSIC STAND.



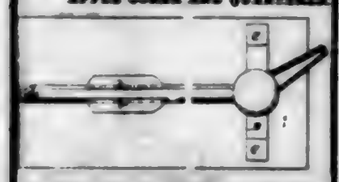
107,792. J. LEFFEL AND E. HARRISON. BEE HIVE.



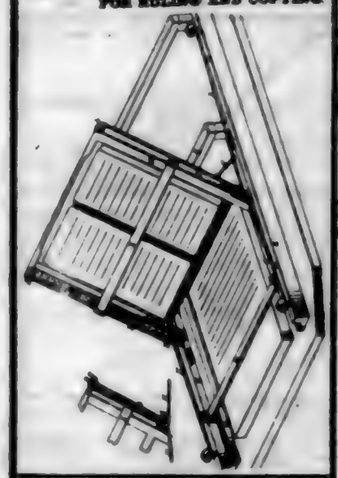
107,793. G. LIEBWASHING MACHINE.



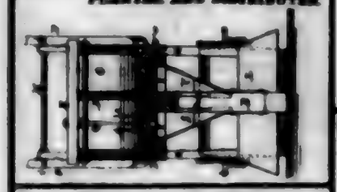
107,796 R. J. McVEELY. APPLE CORER AND QUARTERER.



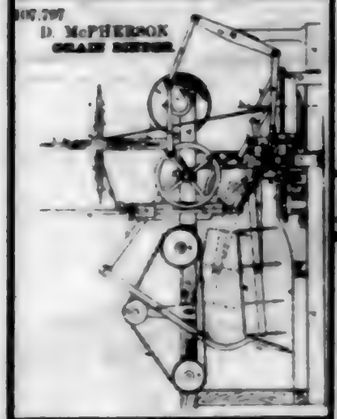
107,797 G. McHENRY. MACHINE FOR RULING AND COPYING.



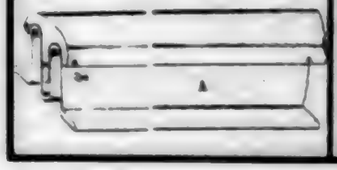
107,798 D. McKELLAR. PLANTER AND DISTRIBUTER.



107,797 D. McPHERSON. GRAIN SEPTOR.



107,798 R. MONTGOMERY. RAILWAY RAIL.

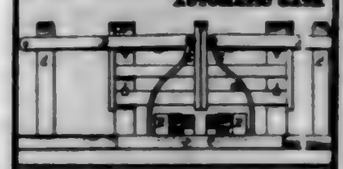


107,799 W. H. NEWTON. BAKING OVEN.



107,800 P. NORDEN AND H. MISCHO. STEERING PUMP.

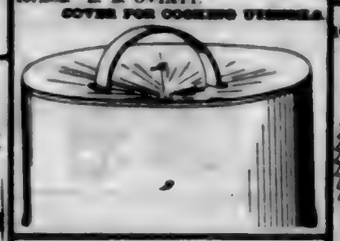
107,801 M. OREWILER. AUTOMATIC GANG.



107,802 G. B. OSBORN. BIRD CAGE.



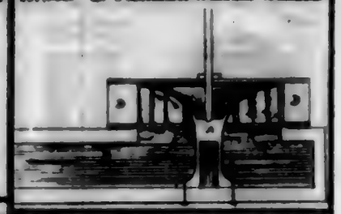
107,803 L. B. OVIATT. COVER FOR COOKING UTENSILS.



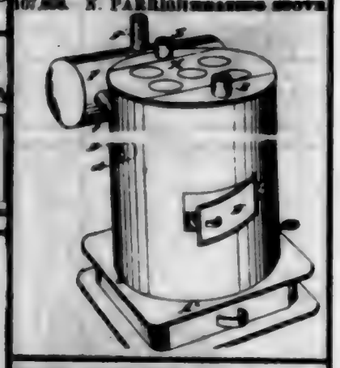
107,804 C. N. OWEN. HARVESTING RAKE.



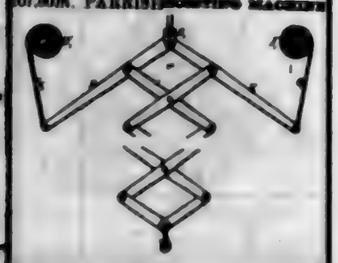
107,805 E. PARKER. WAGON WHEEL.



107,806 N. PARRISH. HEATING STOVE.



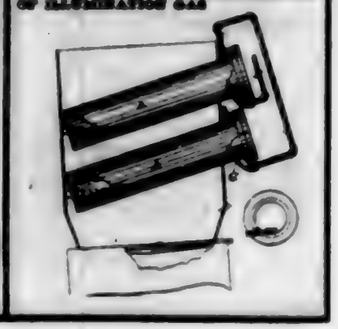
107,807 N. PARRISH. ROASTING MACHINE.



107,808 J. PHILLIPS. SAW.



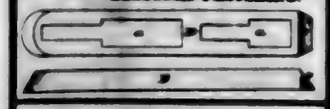
107,809 E. A. AND G. H. POND AND M. S. RICHARDSON. MANUFACTURE OF ILLUMINATING GAS.



107,810. W. PORTER. MANUFACTURE OF FRICTION MATCH CIGAR LIGHTER.

107,811. E. PREVOST. LIQUID FOR GALVANIC BATTERIES.

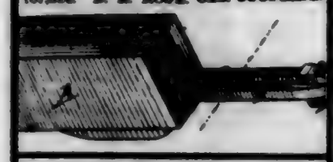
107,812. C. D. FURDY. RIVETED FASTENING.



107,813. A. RANKIN. SPRING HINGE FOR DOORS, &c.

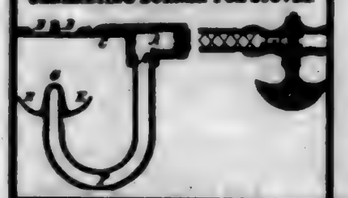


107,814. B. R. ROSE. GAS COUPLING.

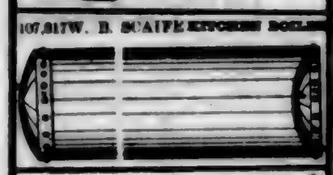


107,815. A. RUTTKAY. MANUFACTURE OF ASPHALTIC COMPOSITION FOR PAVEMENTS, BOARDS, &c.

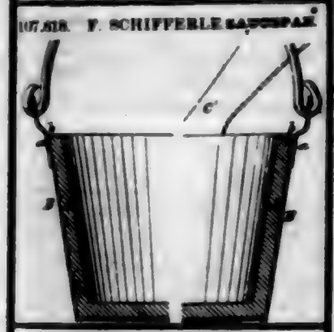
107,816. D. R. RYAN. VAPOR GENERATING BURNER FOR STOVES.



107,817. W. B. SCAIFE. KITCHEN BOILER.



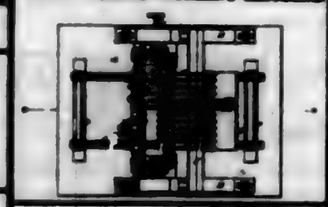
107,818. F. SCHIFFERLE. SAUCEPAN.



107,819. A. F. SCHIFFLING. SPRING HINGE FOR DOORS, &c.



107,820. C. F. SCHLICKEYSEN. STONE WORKING MACHINE.



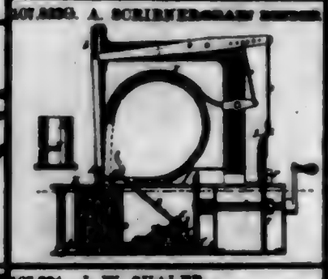
107,821. S. R. SCOGGINS. REFRIGERATOR.



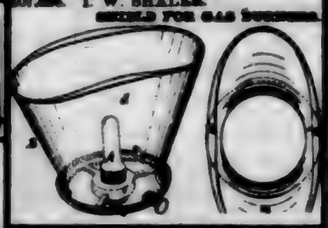
107,822. W. SCOTT. [illegible] LADDER.



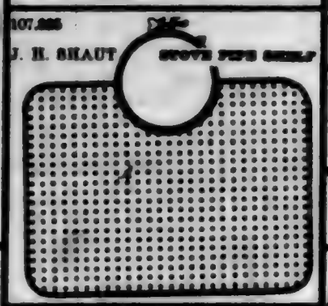
107,823. A. SCRIBNER. [illegible]



107,824. I. W. SHALER. SHIELD FOR GAS BURNERS.



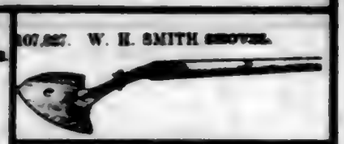
107,825 J. H. SHAUT. STOVE PIPE SHELF.



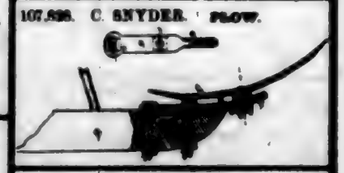
107,826. L. F. SMITH. LUBRICATOR.



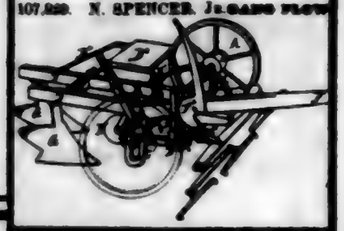
107,827. W. H. SMITH. SHOVEL.



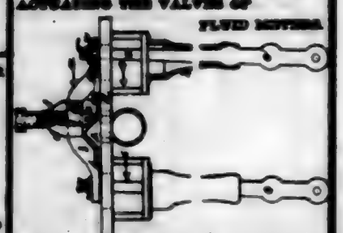
107,828. C. SNYDER. PLOW.



107,829. N. SPENCER, Jr. SAND PLOW.



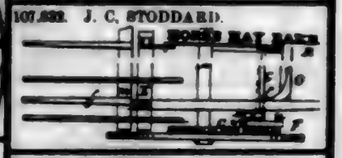
107,830. D. B. SPOONER. DEVICE FOR ACTUATING THE VALVES OF FLUID MOTORS.



107,831. STOCKTON AND J. SCHEPLER. CORPSE PRESERVER.

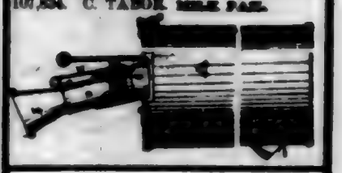


107,832. J. C. STODDARD. BOOT AND SHOE RACK.

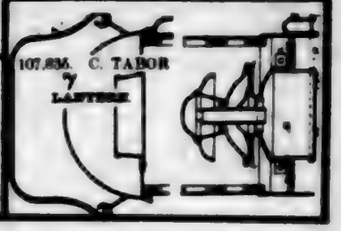


107,833. J. STUART. SEPARATING ANIMAL FROM VEGETABLE FIBRES.

107,834. C. TABOR. MILK PAIL.



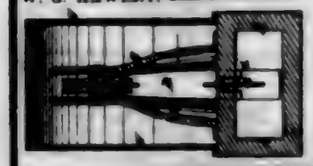
107,835. C. TABOR. LANTERN.



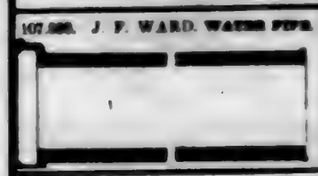
107,836. C. TABOR. PAPER FILE.



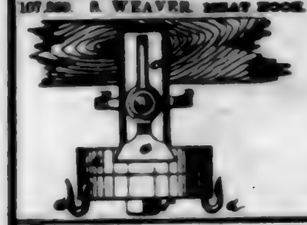
107,837. G. B. TERRY AND W. G. HAWLEY. GAS COUPLING.



107,838. J. F. WARD. WATER PIPE.



107,839. S. WEAVER. BRAT HOOK.



107,840. W. W. R. AND N. WESTON AND B. BRETT. STEAM GENERATOR.



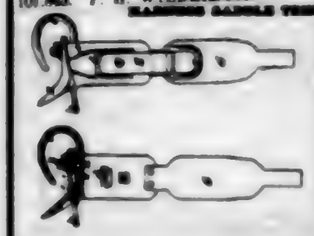
107,841. J. T. WHIPPLE. PUMP VALVE.



107,842. W. H. WHITING. CARDING MACHINE TOOTH.



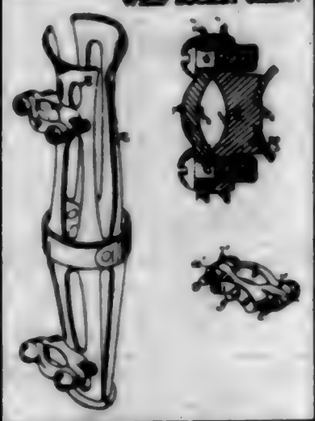
107,843. P. H. WIEDERSUM. HARDING SADDLE TREE.



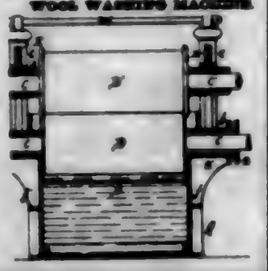
107,844. J. J. WOOD. ANIMAL TRAP.



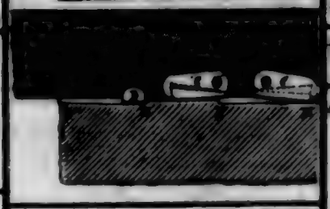
107,845. A. WORDEN. WIRE SOCKET CLASP.



107,846. J. AND W. YEWDALL. WOOL WASHING MACHINE.



107,847. H. AND J. L. YOUNG. MACHINE FOR CUTTING STONE.



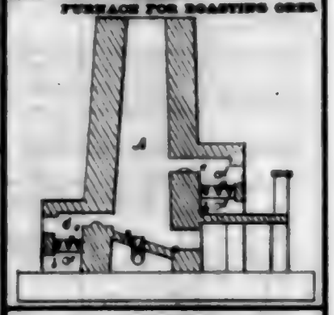
107,848. W. YOUNG AND P. BRASH. MANUFACTURING ILLUMINATING GAS.

4,130. W. B. BRITTINGHAM. TANNING AND STUFFING LEATHER.

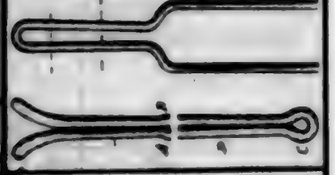
4,131. H. A. DANIELS. LUBRICATOR.



4,132. E. P. HUDSON. FURNACE FOR ROASTING ORES.

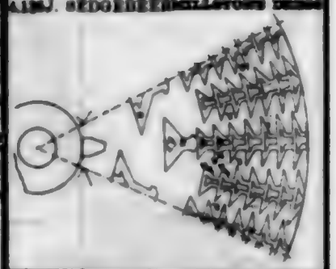


4,133. E. C. PATTERSON. REST HOLDER FOR CARRIAGES.

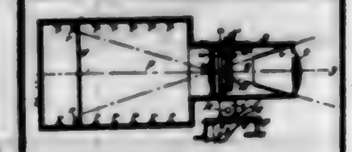


4,134. J. RILEY AND C. W. BISSELL. COMPOSITION FOR COVERING STEAM BOILERS, STEAM PIPES, &c.

4,135. J. SEDGEBEER. MILLSTONE DRESS.



4,136. W. H. MASTERS. SOLAR CAMERA.



4,136. T. W. BROWN. COFFEE MILL.



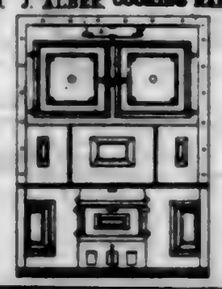
ILLUSTRATIONS OF PATENTS

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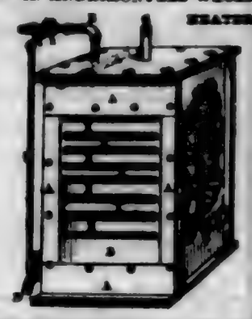
THE UNITED STATES PATENT OFFICE

OCTOBER 4, 1870.

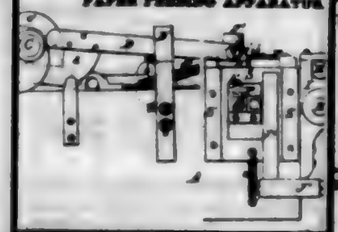
107,840. J. ALBER. COOKING RANGE.



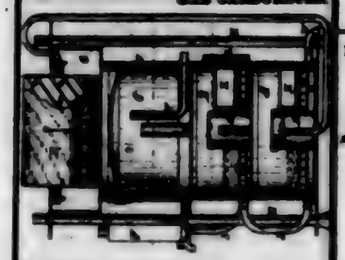
107,850. H. ANDERSON. FEED WATER HEATER.



107,851. J. T. ASHLEY. PAPER FEEDING APPARATUS.

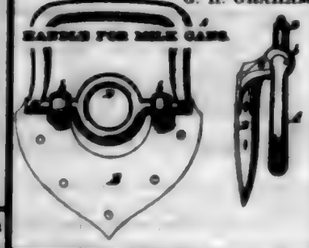


107,852. J. L. BARTLETT. GAS GENERATOR.

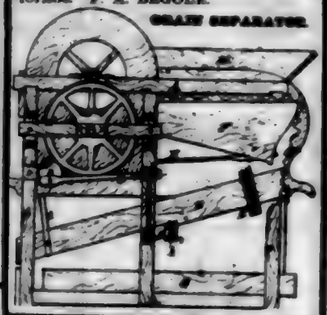


107,854. H. H. BEACH. PROCESS FOR SEASONING LUMBER.

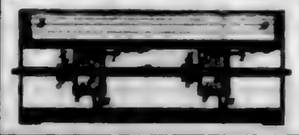
107,855. A. C. BECKWITH AND G. H. GRAHAM. HANGER FOR MILK CANS.



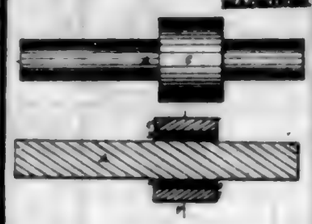
107,856. F. A. BEGOLE. GRAIN SEPARATOR.



107,857. H. C. BESHLEBOOSH. PLANTER.



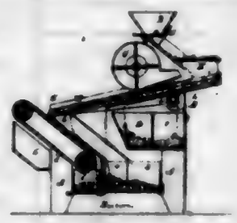
107,858. E. S. BLAKE. ROLL FOR CRUSHING AND PULVERIZING MACHINES.



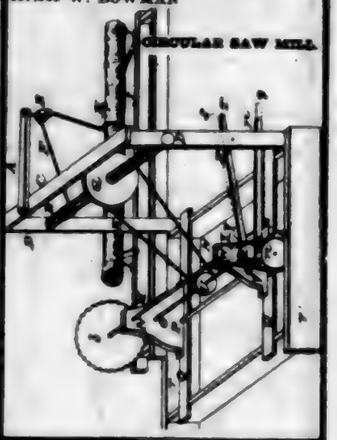
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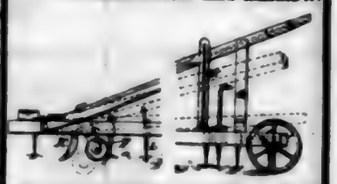
107,860. N. M. BOWEN. GRAIN AND SEED CLEANER.



107,861. W. BOWMAN. CIRCULAR SAW MILL.



107,862. J. F. BRAUCHER. COMBINED PLOW AND HARROW.



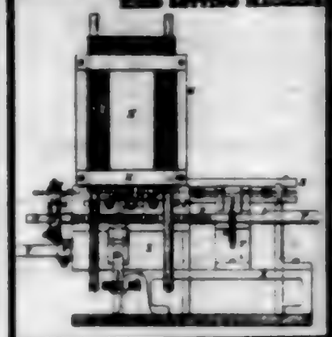
107,863. G. B. BRAYTON. SLIDE VALVE.



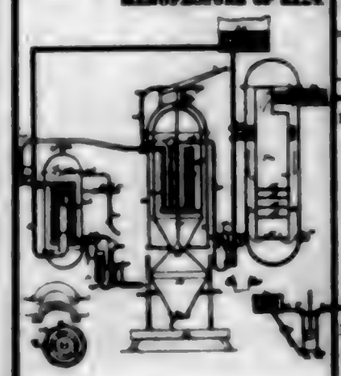
107,864. W. H. BROOKHOUSE.
MANUFACTURE OF BOOTS AND SHOES



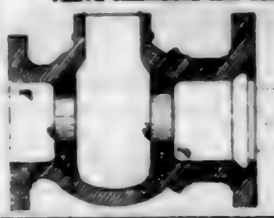
107,865. J. BROWNING.
SEWING MACHINE



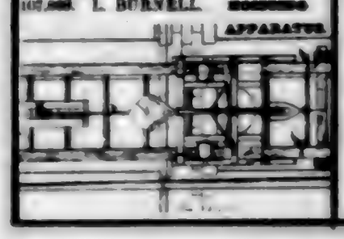
107,866. J. B. BUCHANAN.
MANUFACTURE OF SALT.



107,867. J. K. BURKE. CASTING VALVE CHAMBERS AND SEATS



107,868. L. BURNELL. SCOURING APPARATUS



107,869. L. BURNELL. SUBSOIL PLOUGHS.



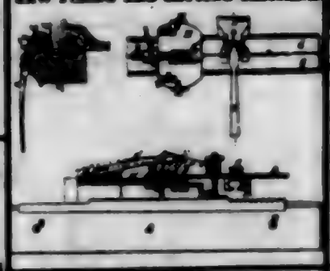
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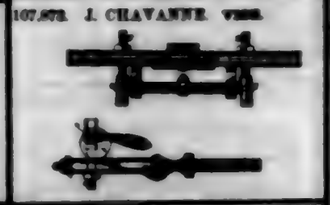
107,871 R. CAMPBELL AND W. SAUL. WINDOW



107,872 H. D. CHANCE AND D. RISHE. SAW FILING AND SETTING MACHINE.



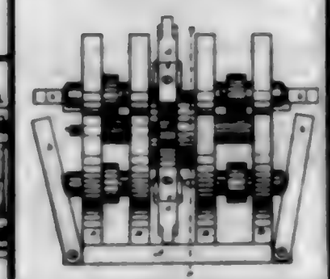
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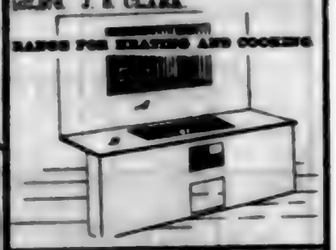
107,874. S. E. CHUBBUCK. STOVE LID.



107,875. J. B. CLARK. MACHINE FOR SHELLING CARRIAGE SHACKLES.



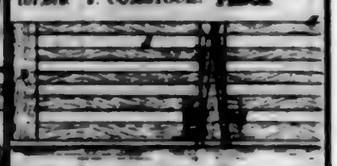
107,876. J. S. CLARK. RANGE FOR HEATING AND COOKING.



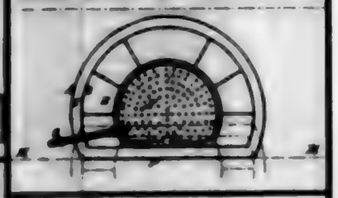
107,877 H. W. CLOUD. MINERAL COMPOUND.

107,878. J. COMMINS. MANUFACTURE OF FERTILIZERS.

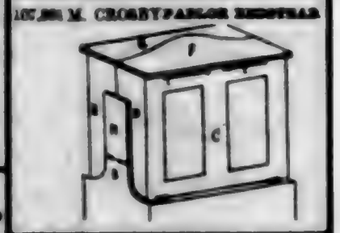
107,879. J. COMSTOCK. PUMP.



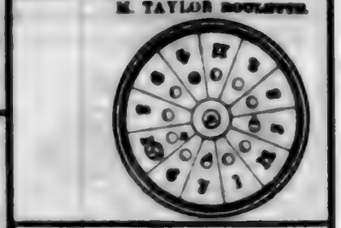
107,880. L. R. COMSTOCK. WATER COOLER AND REFRIGERATOR.



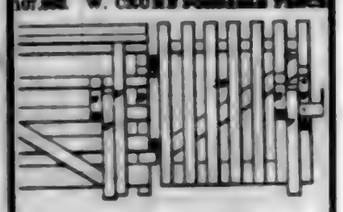
107,881 M. CROSBY. PARLOR HEATER.



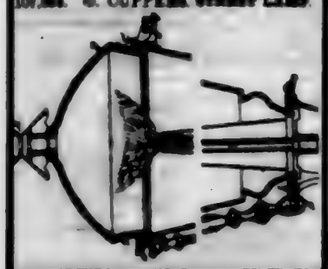
107,882. A. H. CROKER AND M. TAYLOR. BOOTJACK.



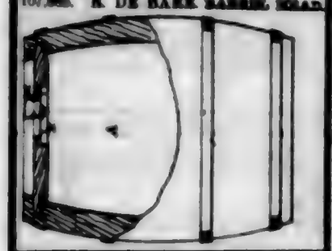
107,883. W. CRUMB. PORTABLE FENCE.



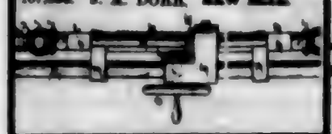
107,884. G. CUPPERS. STREET LAMP.



107,885. R. DE BARR. BARREL HEAD.



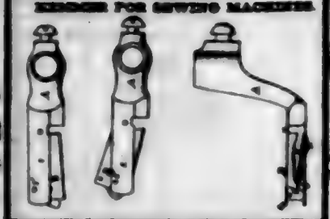
107,886. J. A. DORR. SAW SET.



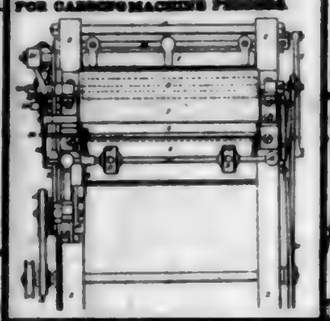
107,887. J. T. EARLE. MACHINE FOR FELTING AND HARDENING HAT BODIES.



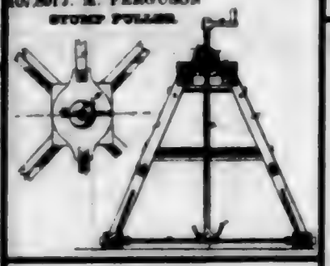
107,888. J. V. D. ELDREDGE. RESERVOIR FOR SEWING MACHINES.



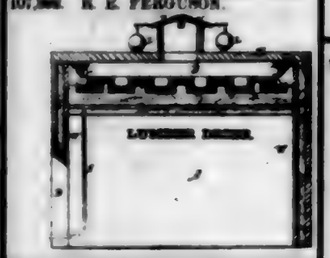
107,889 C. EVANS AND H. J. H. KING. WEIGHING ATTACHMENT FOR CARDING MACHINE FEEDERS.



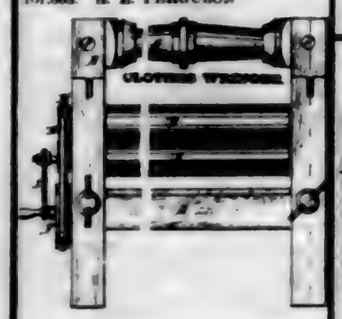
107,890 J. M. FERGUSON. STONE PULLER.



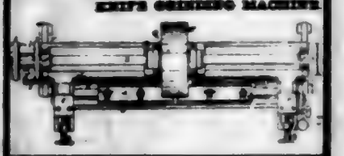
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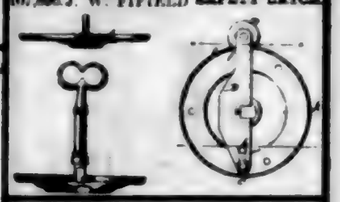
107,892. R. E. FERGUSON. CLOTHES WRINGER.



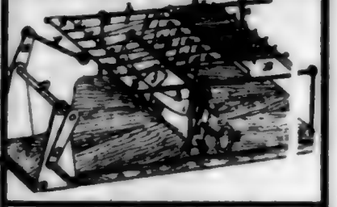
107,893. E. S. M. FERNALD. KNIFE GRINDING MACHINE.



107,894 J. W. FIFIELD. SAFETY LATCH.



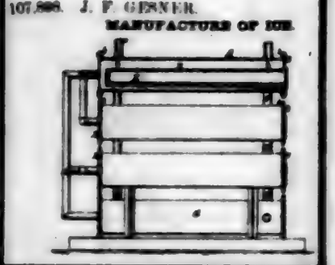
107,895. T. FOWLER. MACHINE FOR POLISHING THE TYPE OF SEWING MACHINE FEEDERS.



107,897. O. S. AND J. G. GARRETSON. MOP HEAD.



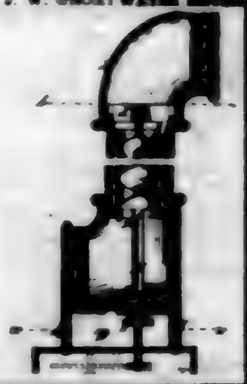
107,898. J. F. GENNER. MANUFACTURE OF ICE.



107,899. F. GLICK AND C. KECK. GRATE.



107,899 J. W. CROAT WATER METER

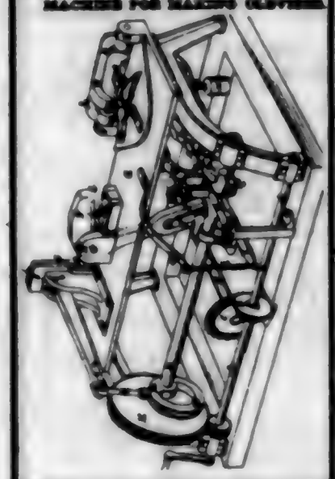


107,900 J. R. HAYES. PRESERVING WOOD

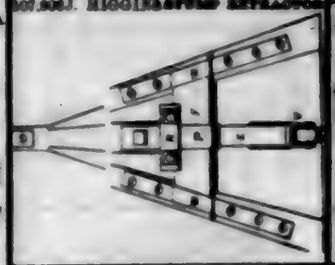
107,901 I. HICKERSON CIGAR TIP



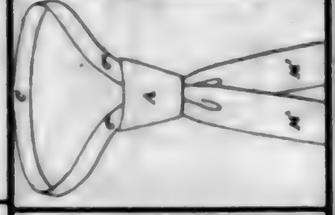
107,902 J. S. HALL. MACHINE FOR MAKING GLOVERS.



107,903 J. HIGGINS. STUMP EXTRACTOR



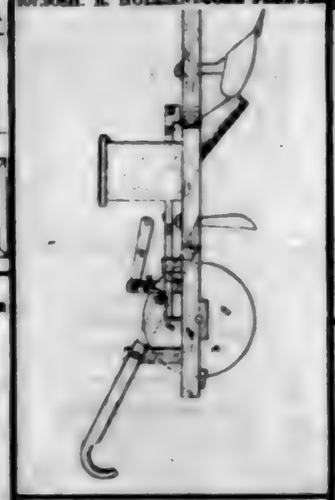
107,904 J. G. HITCHCOCK. SPOKE-TIP



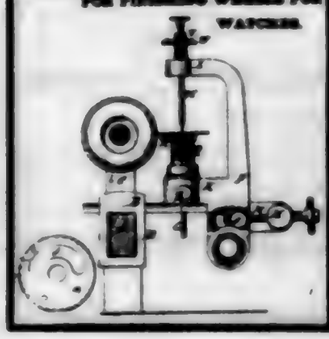
107,905 E. W. HASTINGS. ADJUSTABLE WINDOW SHADE.



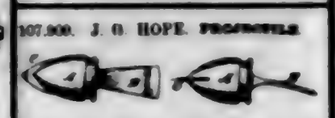
107,906 H. R. HOLLAND. CORN PLANTER



107,907 J. L. HATHAWAY. MACHINE FOR FINISHING WHEELS FOR WATCHES.

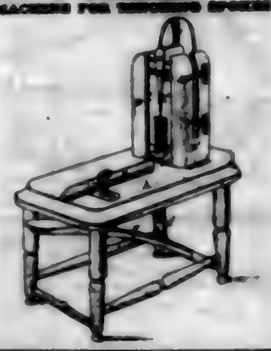


107,908 J. O. HOPE. PROPELLER

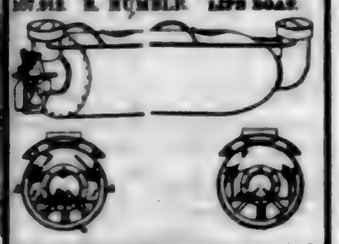


107,909 J. K. HOVER. CEMENT FOR PAVING AND BUILDING.

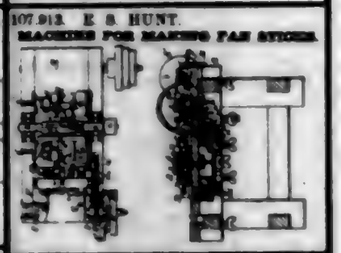
107,910 J. W. HUFFMAN. MACHINE FOR TURNING SPOKES.



107,911 R. HUMBLE. LIFE BOAT.

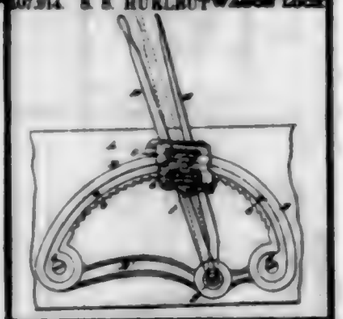


107,912 E. S. HUNT. MACHINES FOR MAKING PAN STICKS.

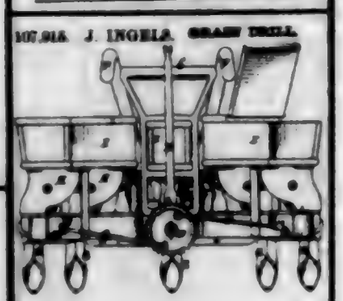


107,913 E. S. HUNT. MACHINE FOR MAKING PAN STICKS.

107,914 S. S. HURLBUT. WAGON LOCK



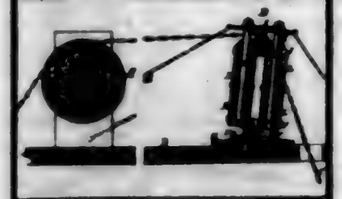
107,915 J. INGELS. GRAIN DRILL.



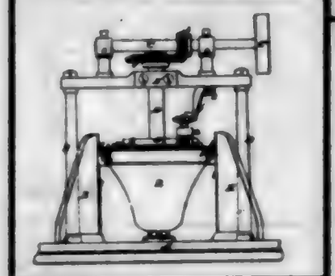
107,916 M. W. JAMES. MANUFACTURING BARREL OF WATCHES.



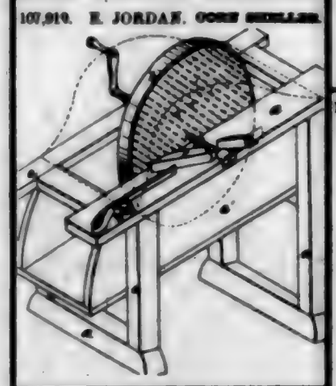
107,917 J. R. JONES. CORSET SKELETON.



107,918 O. JONES. MACHINE FOR TURNING OR PLANING TENONS ON BILLS OR OTHER CASTINGS.



107,919 E. JORDAN. CORN SHELLER.



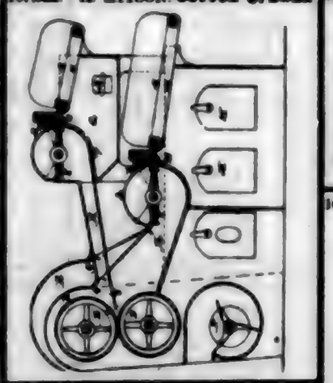
107,920 J. LAMB. ROCKING OR TILTING CHAIR.



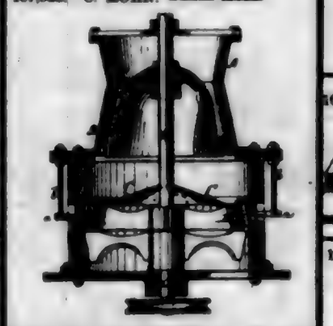
107,921 J. LANE. MOLD BOARD FOR PLOWS.



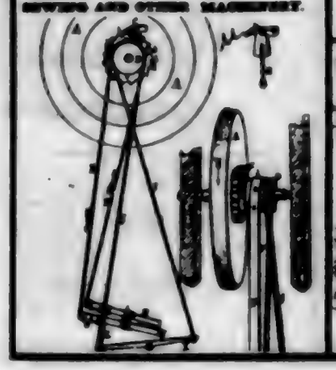
107,922 R. KITSON. COTTON OPENER.



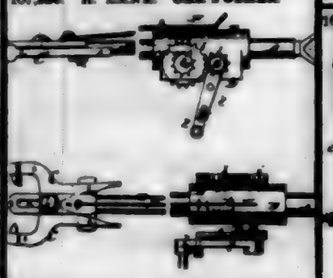
107,923 C. KORN. BARK MILL.



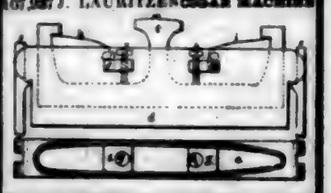
107,924 B. KIRKHAM. STRAINER FOR SEWING AND OTHER MACHINERY.



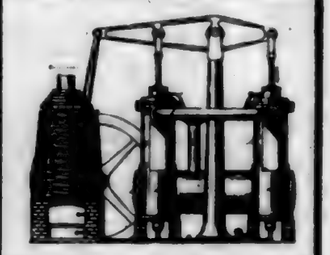
107,925 R. LANE. GAS FURNACE.



107,926 J. LAURITZEN. CIGAR MACHINE.



107,927 C. P. LEAVITT. HOT AIR FURNACE.



107,928 W. J. LEWIS. HAMMER STRAP.



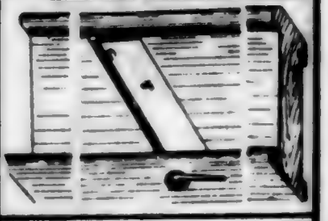
107,929 W. J. LEWIS. BACK FOR WAGON BRACES.



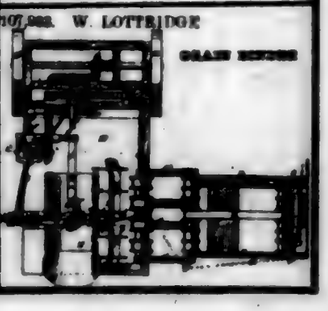
107,930 W. J. LEWIS. BLANK FOR HAMMER STRAPS FOR WAGONS.



107,931 P. H. LINDSEY. MEAT AND VEGETABLE SLICER.



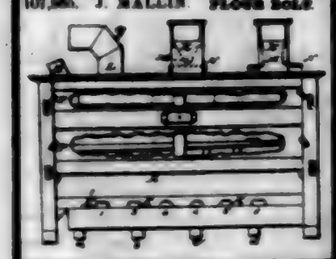
107,932 W. LOTTRIDGE. GRAIN BINDER.



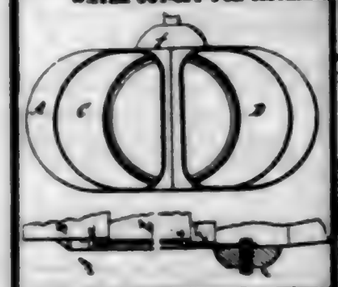
107,934. M. N. LYNN. WATER INDICATOR AND ALARM.



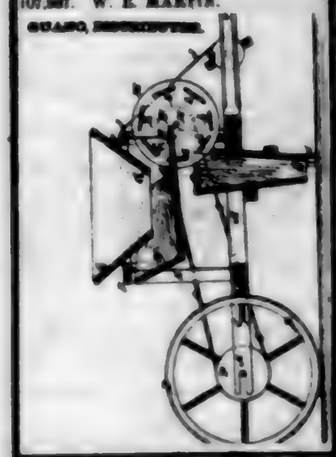
107,935. J. MALLIN. PLOUGH BOLT.



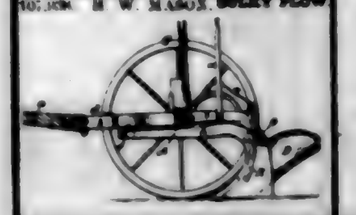
107,936. J. R. MANNY. WATER CUT-OFF FOR CISTERNS.



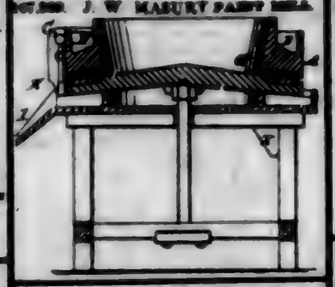
107,937. W. R. MARTIN. GUARD, RESPECTED.



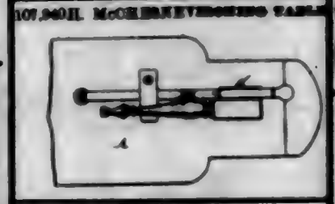
107,938. H. W. MASON. SULEY PLOW.



107,939. J. W. MASURY PAINT MILL.



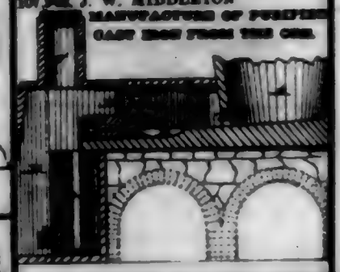
107,940 H. McGILRAEVEY SEWING TABLE.



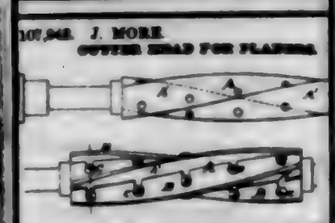
107,941 W. T. MESSEREAU SPARE ROD.



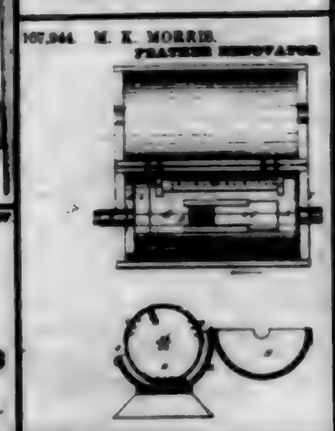
107,942. J. W. MIDDLETON MANUFACTURE OF PURIFIED CAST IRON FROM THIS ORE.



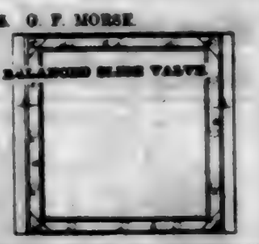
107,943. J. MORE. CUTTER HEAD FOR PLANING.



107,944. M. K. MORRIS. FEATHER RENOVATOR.



107,945. G. F. MORSE. BALANCED SLIDE VALVE.



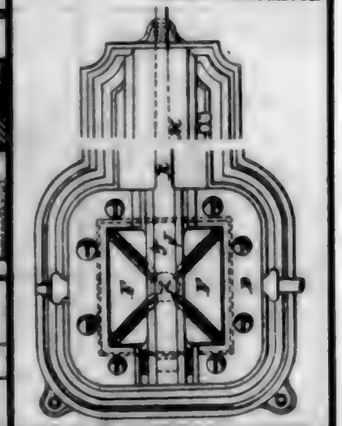
107,946. F. MURGATROYD. SPEAKING TAP.



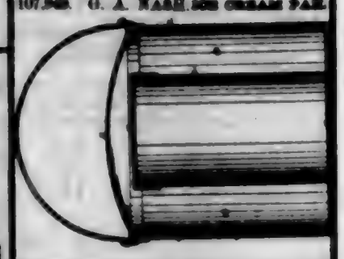
107,947. J. MURPHY. PIANO LOCK.



107,948. J. H. MURRILL. DAMPER REGULATOR.



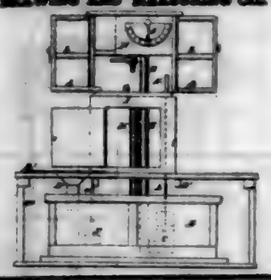
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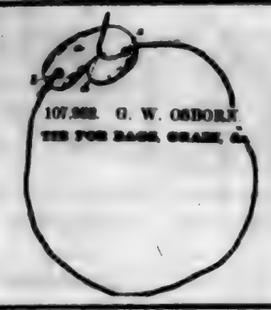
107,950. E. NORRIS. RAILWAY CAR COUPLING.



107,951. P. NOYES. APPARATUS FOR HEATING AND REHEATING OIL.

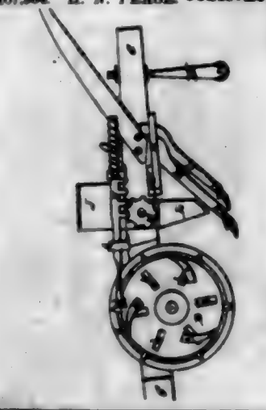


107,952. G. W. OSBORN. TIE FOR BAGS, GRAIN, &c.

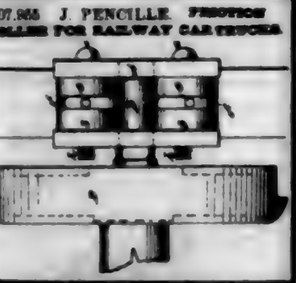


107,953. J. S. PARSONS. WIRE.

107,954. H. N. PEASE. CULTIVATOR.



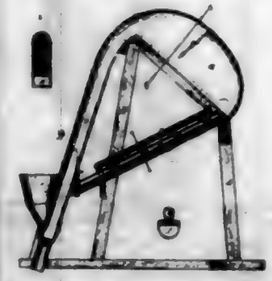
107,955. J. PENCILLE. PROTECTOR ROLLERS FOR RAILWAY CAR TRUCKS.



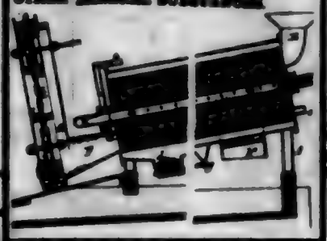
107,956F. G. PEORL. MOUSTACHE PICTURE.



107,957. E. PLATT. APPARATUS FOR WASHING ORES AND MINERALS.



107,958. J. B. PLATT. MACHINE FOR WASHING ORES AND OTHER MINERAL SUBSTANCES.



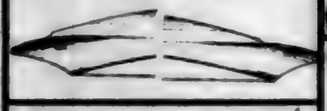
107,959. C. M. POWERS AND T. L. ROBINSON. WASHING MACHINE.



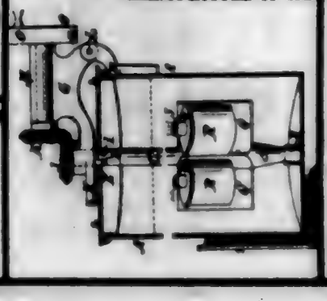
107,960. D. R. PRINDLE. TREE AND PLANT PROTECTOR.



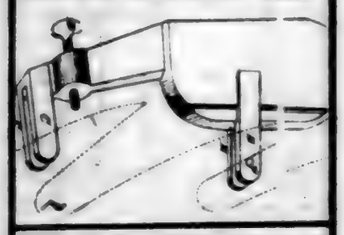
107,961L. P. RIDERHULL OF VESSELS.



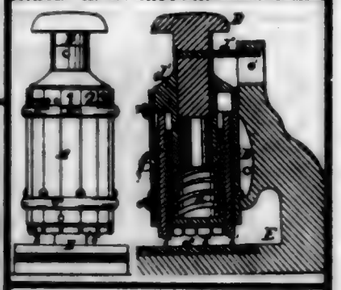
107,962. M. ROSENSTEIN. MANUFACTURE OF ICE.



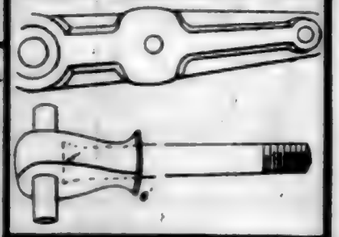
107,963. W. H. RUDOLPH. DEVICE FOR SPREADING CIRCULAR SAW TEETH.



107,964. H. W. SAFFORD. HAND STAMP.



107,965 S. SELDEN AND M. GRISWOLD. LINK CONNECTING THE HANDLES AND VALVE RODS OF PUMPS.



107,966. F. W. SHELLEY. HEAD BLOCK FOR SAW MILLS.



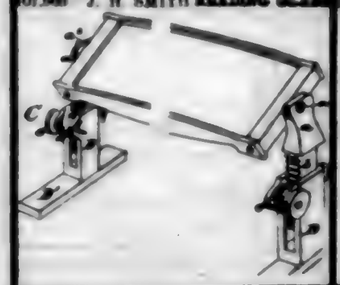
107,967. G. SHOVE. ROOFING.



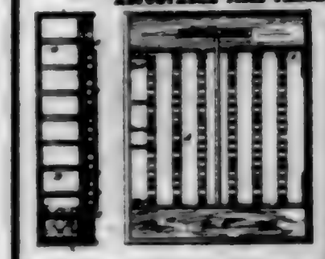
107,968. F. M. SMITH. TEMPORARY PAPER BINDER.



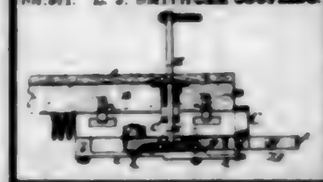
107,969 J. H. SMITH READING GLASS



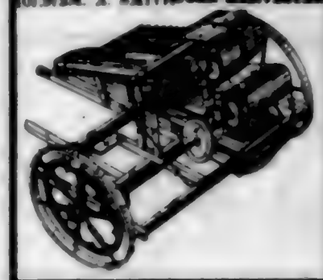
107,970 L. J. SMITH ADJUSTABLE TIRE TABLE



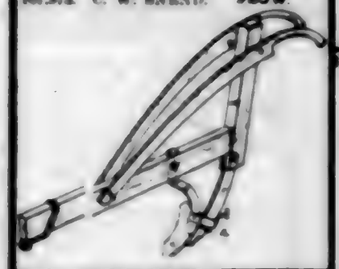
107,971 L. J. SMITH CAR COUPLING



107,972M. A. SMITH HORSE HARVESTER



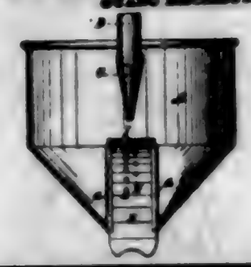
107,973 C. W. STEAD PLOW



107,974 W. A. AND H. F. STARRETT DEVICE FOR ATTACHING STEELS TO CORSETS



107,975 E. E. STEDMAN GUARD ATTACHMENT



107,976 H. J. STEIN CONSTRUCTION OF STEAM BOILERS AND TANKS



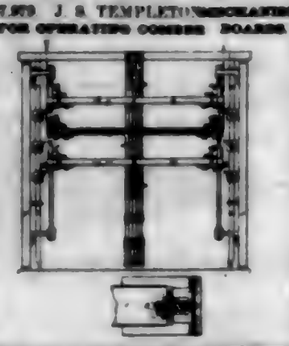
107,977 C. L. STEVENS STEAM PUMP



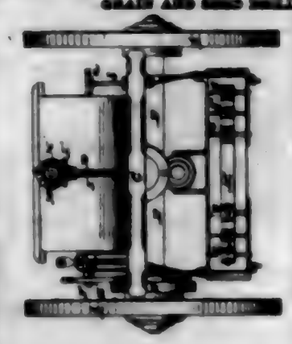
107,978 T. F. TAFTCRAFT COUPLING



107,979 J. S. TEMPLETON INCRUSTATION FOR OPERATING CORNISH BOARDS



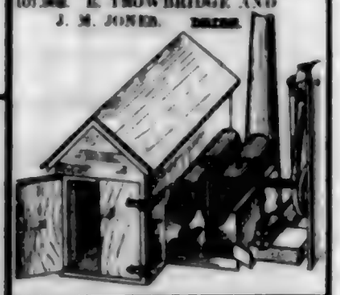
107,980 G. M. THIRKETTLE GRAIN AND SEED DRILL



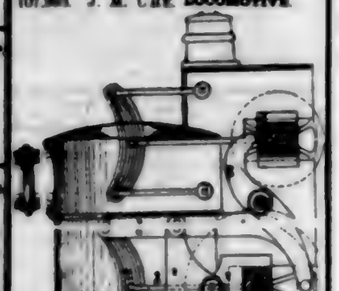
107,981 C. H. TRASK MACHINE FOR LAPPING METAL



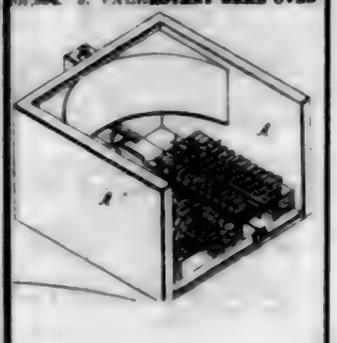
107,982 E. TROWBRIDGE AND J. M. JONES DRIER



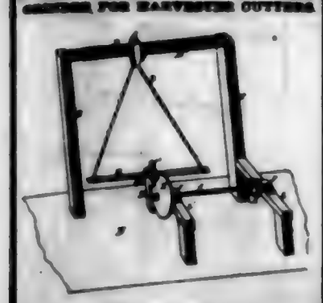
107,983 J. M. URE LOCOMOTIVE



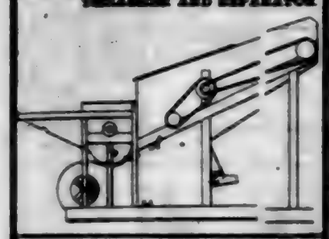
107,984 J. VALE ROTARY BAKE OVEN



107,985 S. O. AND P. W. VAUGHAN GRINDING FOR HARVESTING CUTTERS



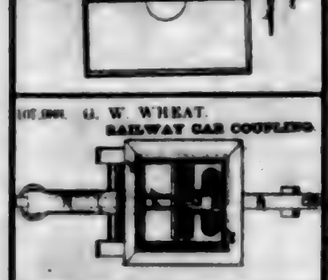
107,986 A. A. WALKER THRASHER AND SEPARATOR



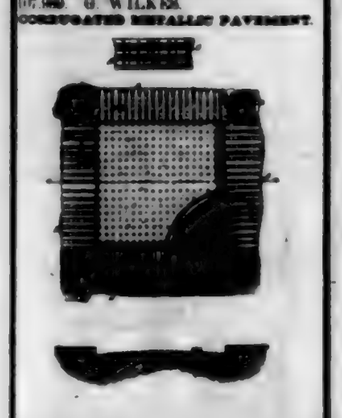
107,987 A. B. WEEKS FURNACE GRATE



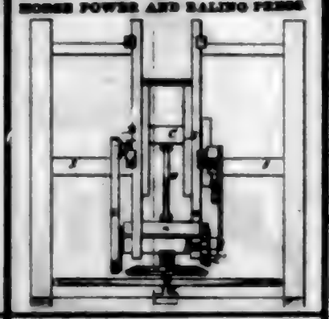
107,988 G. W. WHEAT RAILWAY CAR COUPLING



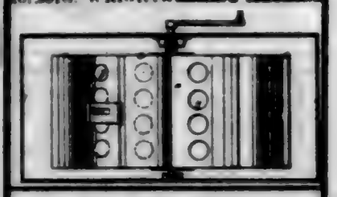
107,989 G. WILKES CORRUGATED METALLIC PAVEMENT



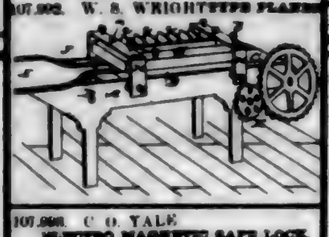
107,990 C. A. WRIGHT COMBINED HORSE POWER AND BALING PRESS



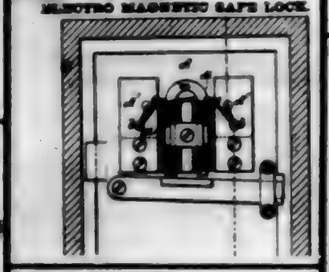
107,991 W. WRIGHT WASHING MACHINE



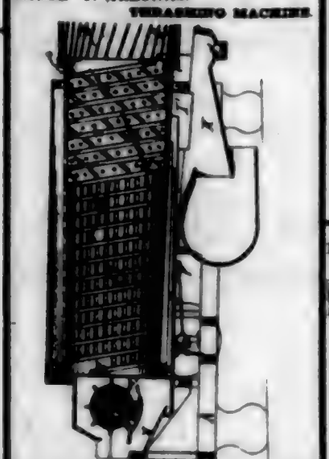
107,992 W. S. WRIGHT STEPS FOR PLANES



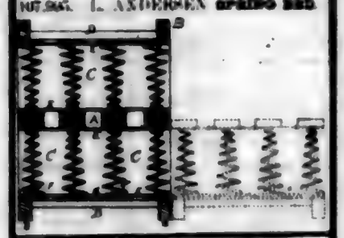
107,993 C. O. YALE ELECTRO MAGNETIC SAFE LOCK



107,994 J. ALLONAS THRASHING MACHINE



107,995 L. ANDERSEN SPRING BED

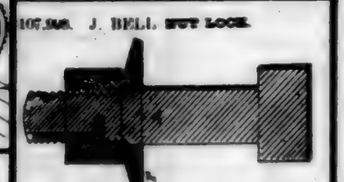


107,996 H. BAUMAN AND H. MUELLER CLOTHES RACK

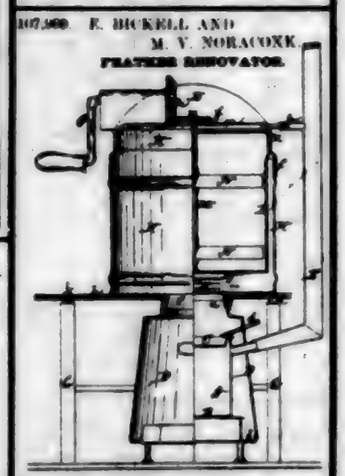


107,997 F. BECK COMPOUND FOR COLORING PAPER AND OTHER FABRICS

107,998 J. BELL NUT LOCK



107,999 E. BICKELL AND M. V. NORACOXK FEATHER RENOVATOR



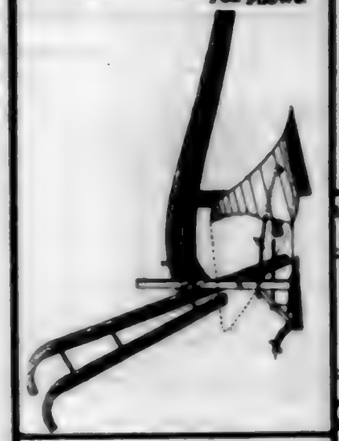
108,000 J. BLAKE AUXILIARY TABLE ATTACHMENT



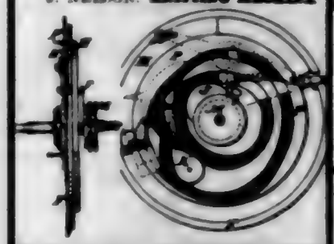
108,001. E. BOURNE. RAMAPOO.



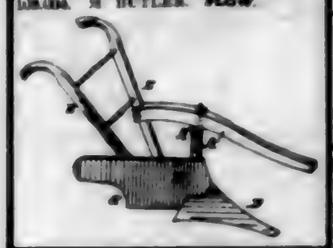
108,002. L. E. BURDIN. SUBSOIL PULVERIZING ATTACHMENT FOR PLOWS.



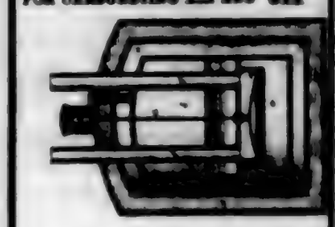
108,003. W. W. BURSON AND J. NELSON. KNITTING MACHINE.



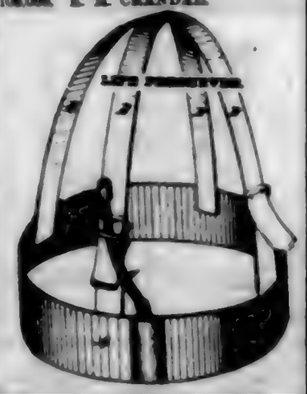
108,004. M. BUTLER. PLOW.



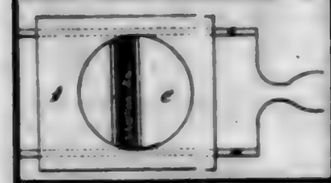
108,005. H. A. CHAPIN. APPARATUS FOR CARBURETING AIR AND GAS.



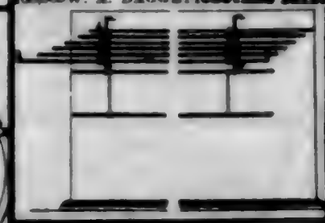
108,006. E. M. CRANDAL. LIFE PRESERVER.



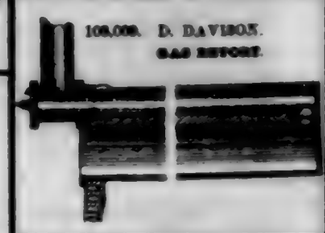
108,007. F. CURTIS. VEGETABLE CUTTER.



108,008. W. A. DAGGETT. CLOTHES DRIER.



108,009. D. DAVISON. GAS METER.



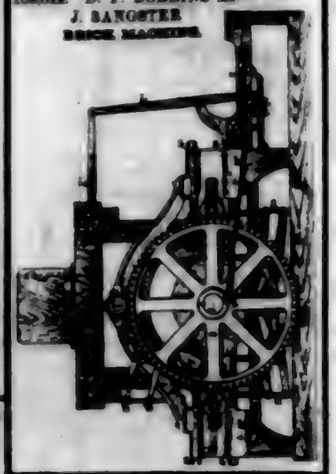
108,010. A. DEYO. CLAPBOARD GUAGE.



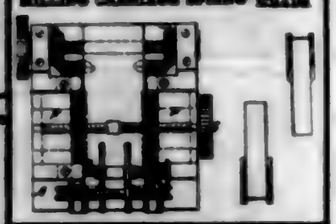
108,011. M. DISTON. SAW.



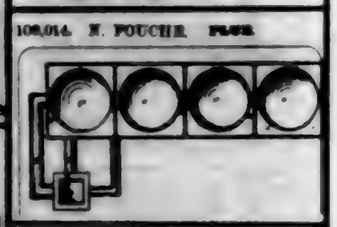
108,012. D. F. DOBBINS AND J. SANGSTER. BRICK MACHINE.



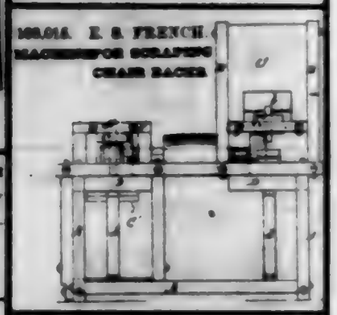
108,013. W. EVANS. MACHINE FOR MILLING CARRIAGE SPRING LEAVES.



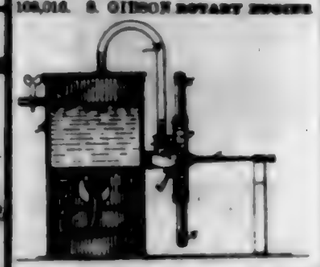
108,014. N. FOUCHE. PLOW.



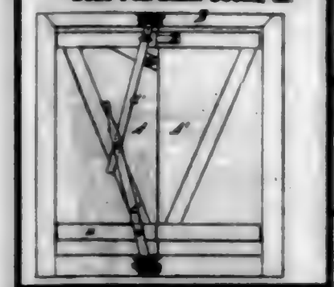
108,015. E. S. FRENCH. MACHINE FOR SCRAPING CHAIR BACKS.



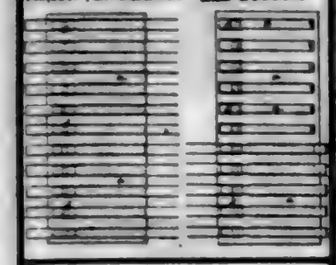
108,016. S. GIBSON. ROTARY ENGINE.



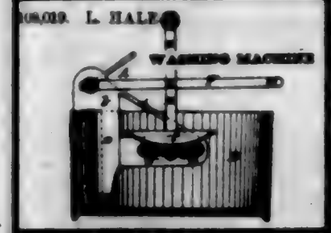
108,017. M. R. GREEN. BOLT FOR BARN DOORS, &c.



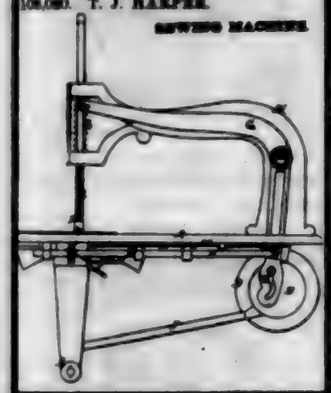
108,018. R. GREGG. BED BOTTOM.



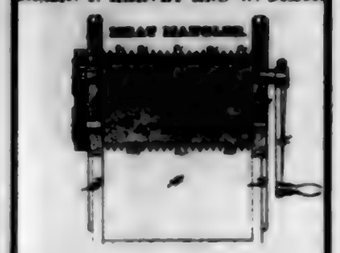
108,019. L. HALE. WASHING MACHINE.



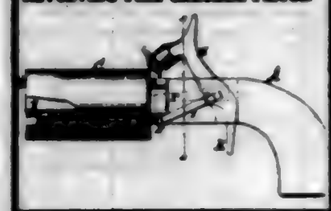
108,020. T. J. HARPER. SEWING MACHINE.



108,021. J. T. HARVEY AND W. DIXON. HEAT HANDLES.



108,022. H. HAWES AND O. W. BROCK. REVOLVING FIRE CRACKER PISTOL.



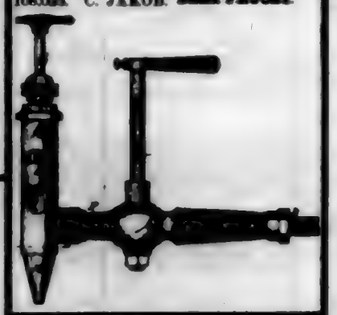
108,023. J. C. HIGGINS. TEST HAMMER AND ANVIL STOCK.



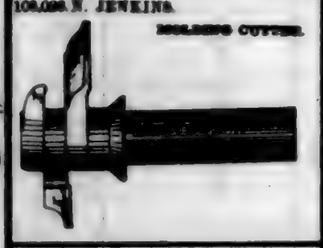
108,024. A. A. HOTCHKISS. HEAD BLOCK.



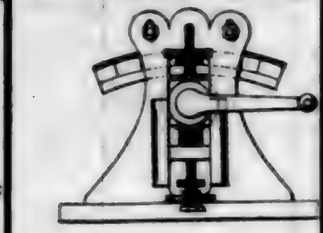
108,025. C. JAKOB. BEER FAUCET.



108,026. N. JENKINS. MOULDING CUTTER.



108,027. N. JENKINS. PAPERING MACHINE.



108,028. T. J. JOHNSON. HOT TORPEDO.

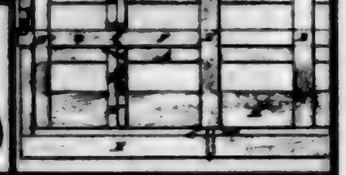


108,029. P. KELLER. GAS REGULATOR.

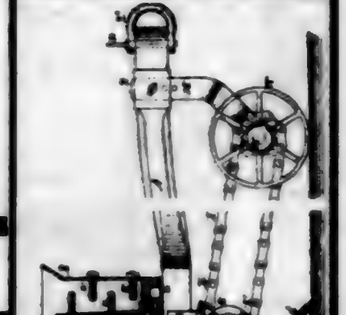


108,030. S. KEPNER. COMPOSITION FOR DESTROYING WORMS IN FRUIT TREES.

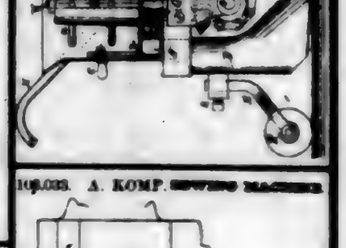
108,031. S. KEPNER. GATE.



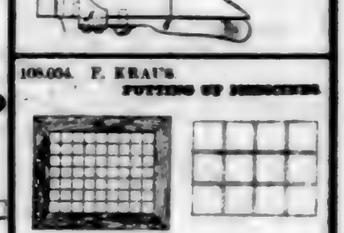
108,032. P. KLING. PLOW AND PLANTER.



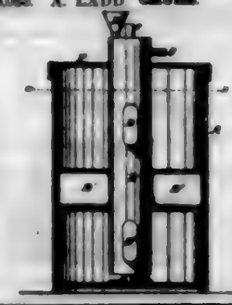
108,033. A. KOMP. SEWING MACHINE.



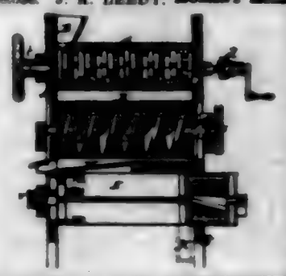
108,034. F. KRAUS. PUTTING UP PRESERVES.



108,035. A. LADD. CHURN.



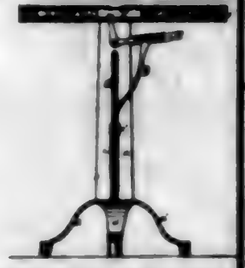
108,036. J. K. LEEDY. ROTARY MILL.



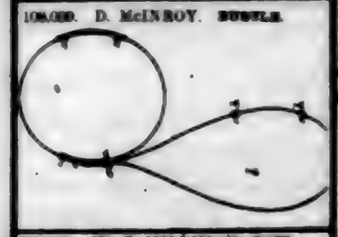
108,037. J. R. LITTLE. CULTIVATOR.



108,038. J. McFATRICK. ADDRESSING MACHINE.



108,039. D. McINROY. BUSTLE.

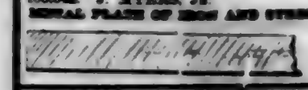


108,040. W. P. MILLIMAN. SAW.



108,041. A. G. MORVAN. BLOWING PIPES FOR BLACKSMITHING AND BRAZIERS.

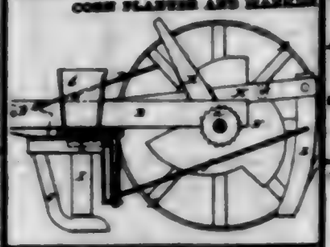
108,042. J. MYERS, Jr. METAL PLATE OF IRON AND STEEL.



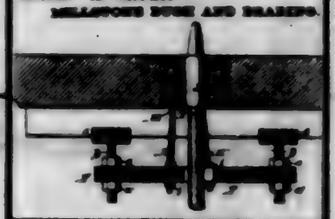
108,043. T. H. O'BRIEN. CUSHIONS, MATTRESSES, &c.



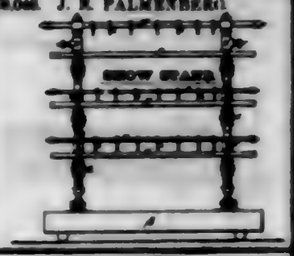
108,044. F. OGDEN. CORN PLANTER AND MARKER.



108,045. A. ORTLIP. MELODEONS DOME AND BRACING.



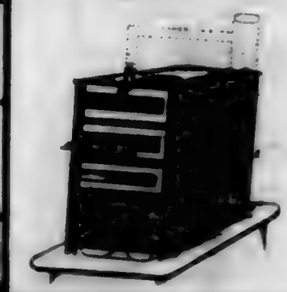
108,046. J. R. PALMENBERG. SNOW GUARD.



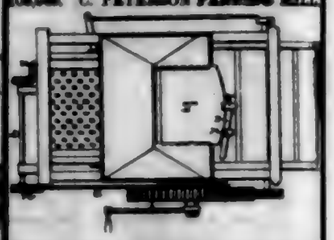
108,047. P. B. PARCELL. SHOVEL PLOW.



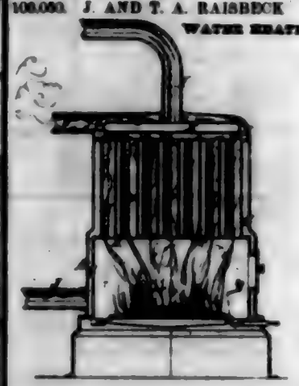
108,048. O. P. PENCE. FRUIT DRIER.



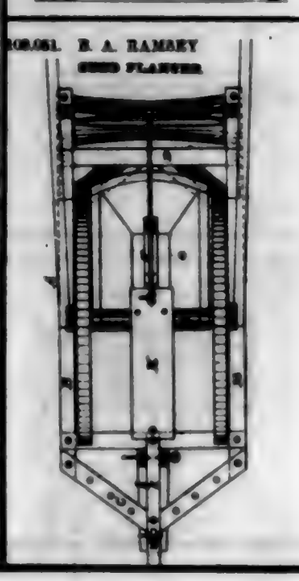
108,049. C. PETERSON. FANNING MILL.



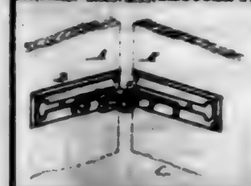
108,050. J. AND T. A. RAISBECK. WATER HEATER.



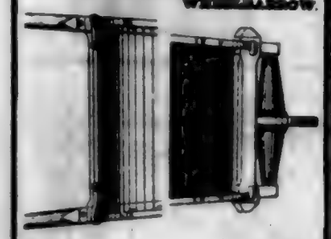
108,051. B. A. RAMSEY. SEED PLANTER.



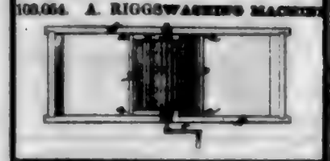
108,052. RANKIN. SURFACE FASTENER.



108,053. R. M. REYNOLDS. WEEDER AND HARROW.

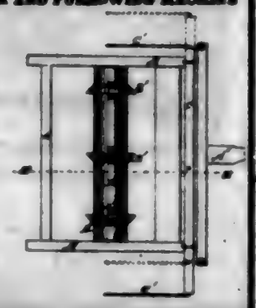


108,054. A. RIGGS. WASHING MACHINE.

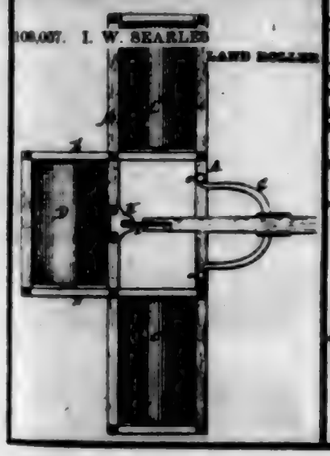


108,055. J. RILEY. COMPOSITION FOR COVERING STEAM BOILERS AND FOR OTHER PURPOSES.

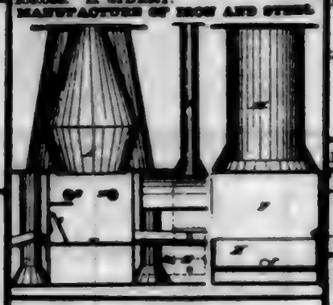
108,056. M. M. ROBBINS. FIELD ROLLER AND FURROWING MACHINE.



108,057. I. W. SEARLES. LAND ROLLER.



108,058. L. SIBERT. MANUFACTURE OF IRON AND STEEL.



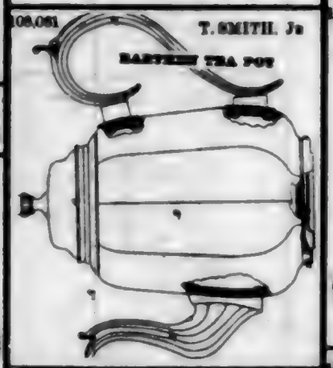
108,059. J. SMITH. SAW.



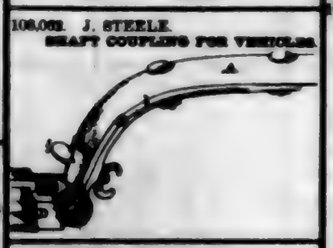
108,060. J. E. AND C. L. SMITH. TANNING VAT.



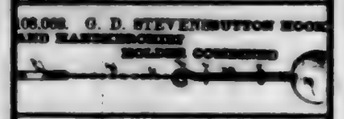
108,061. T. SMITH, Jr. BANTERN TEA POT.



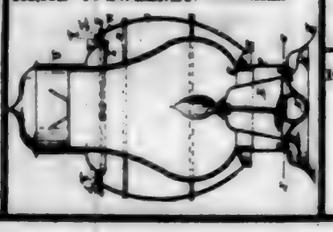
108,062. J. STEELE. DRAFT COUPLING FOR VEHICLES.



108,063. G. D. STEVENSBUTTON. HOOK AND HARNESSRING. HOLDER CONNECTED.



108,064. P. SWEENEY. LANTERN.



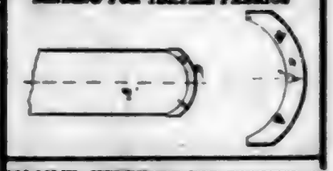
108,065. N. SWIGART. CORN PLANTER.



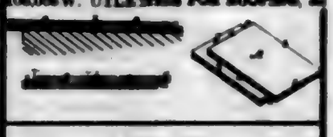
108,066. W. TERRELL. TONGS FOR FORGING THE ARMS OF FIFTH-WHEELS.



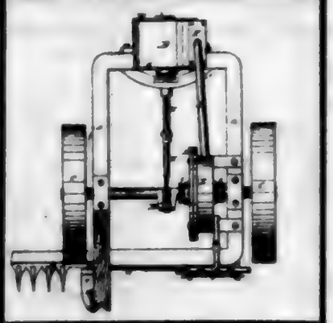
108,067. J. TWAMLEY. METALLIC SEIZING FOR TEXTILE FABRICS.



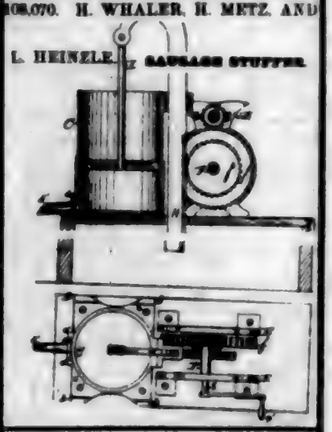
108,068. W. UTLEY. TILES FOR ROOFING, &c.



108,069. A. H. WAGNER. HARVESTER.



108,070. H. WHALER, H. METZ, AND L. HEINELE. SAUSAGE STUFFER.

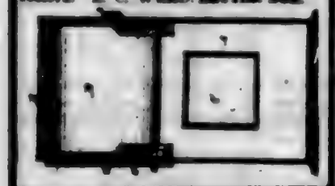


108,071. J. F. WALSHOAP. HORSE COLLAR.

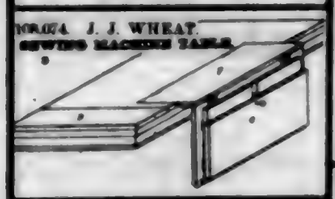


108,072. A. WARTH
RESTORING LEATHER IMPERVIOUS TO HYDROCARBON LIQUIDS.

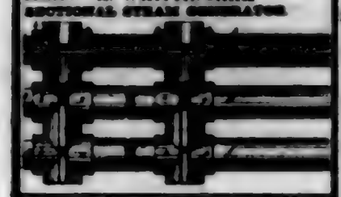
108,073. E. C. WELD. LETTER BOX.



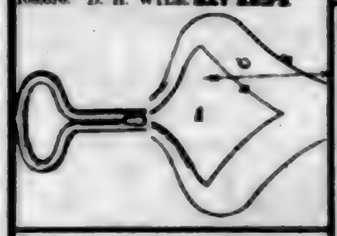
108,074. J. J. WHEAT.
SEWING MACHINE TABLE.



108,075. H. WHITTINGHAM
SECTIONAL STEAM GENERATOR.



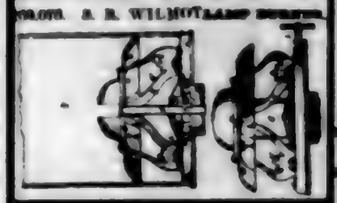
108,076. D. H. WILE. HAY RAKE.



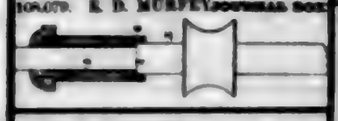
108,077. R. C. WILLIAMS. UMBRELLA.



108,078. A. R. WILMOT. LAMP BURNER.



108,079. E. D. MURFEY. JOURNAL BOX.



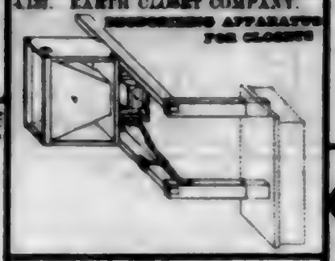
108,080. D. MURFEY. JOURNAL BEARING.



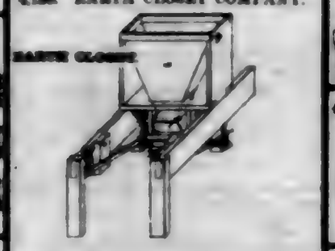
108,081. E. D. MURFEY. JOURNAL BOX.



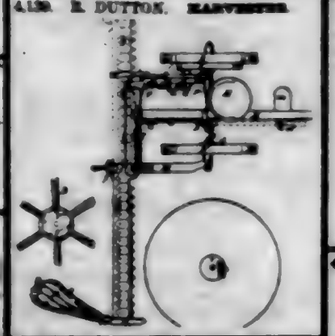
4,138. EARTH CLOSET COMPANY.
DEODORIZING APPARATUS FOR CLOSETS.



4,139. EARTH CLOSET COMPANY.
EARTH CLOSET.



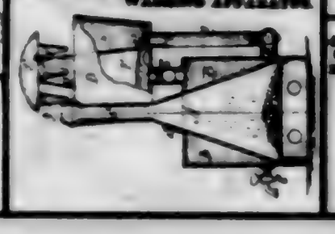
4,139. R. DUTTON. HARVESTER.



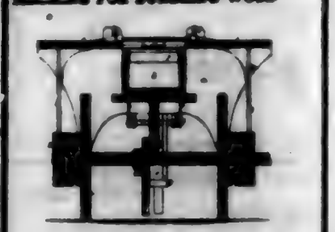
4,140. J. P. GALLAGHER. COCK.



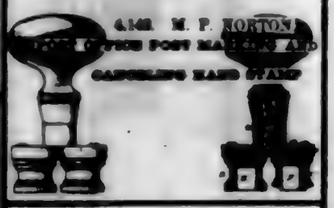
4,141. J. T. GROSE.
WASHING APPARATUS.



4,142. W. L. WILLIAMS AND T. J. O'CONNOR.
MACHINE FOR DOWELING WOOD.



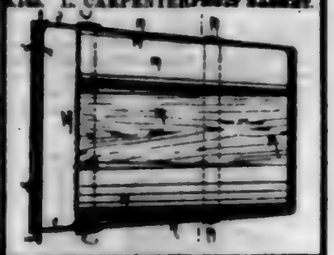
4,143. M. P. NORTON.
CAPSTAN HAND STAND.



4,144. M. P. NORTON.
CAPSTAN STAND.



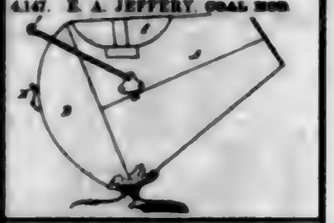
4,145. L. CARPENTER. FRUIT BASKET.



4,146. G. L. GERARD.
TABLE LEAF SUPPORTER.



4,147. E. A. JEFFERY. COAL HOD.



4,148. P. L. PERRY AND C. MANHEIM. MANUFACTURE OF RUBBER OR GUTTA PERCHA HOSE.



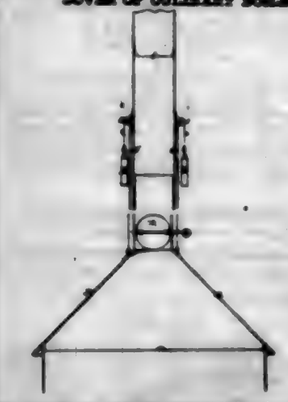
ILLUSTRATIONS OF PATENTS

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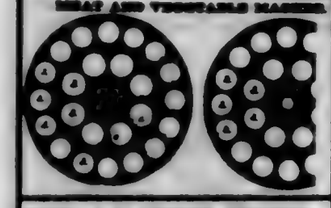
THE UNITED STATES PATENT OFFICE

OCTOBER 11, 1870.

108,082. P. J. AND J. ABBOTT.
COVER OF CULINARY BOILER.



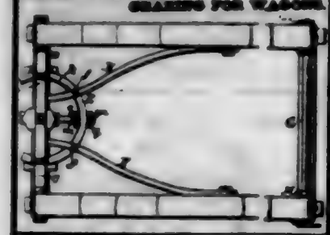
108,083. G. A. ANDERSON AND C. J. BAKER.
MEAT AND VEGETABLE MASHER.



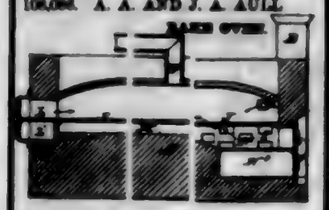
108,084. J. R. ATWOOD. CRUCIBLE FOR MELTING IRON AND STEEL.



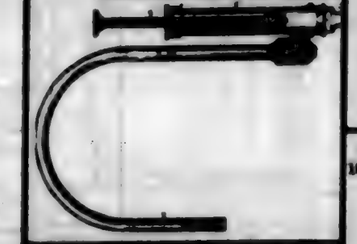
108,085. J. B. AUGUR.
BRAKING FOR WAGONS.



108,086. A. A. AND J. A. AULL.
BAKE OVEN.



108,087. J. D. AVERELL, G. A. HIGGINS AND T. GORDON.
COMBINED PUMP AND SYPHON.

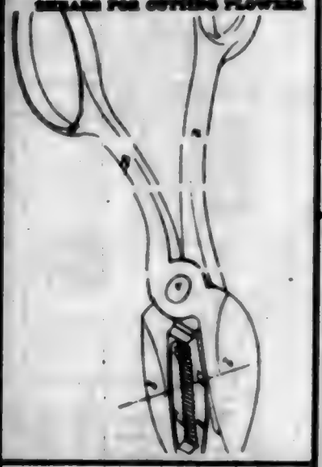


108,088. H. M. BAKER. PROCESS FOR THE MANUFACTURE OF CARBONATE OF SODA, HYDROCHLORIC ACID, &c.

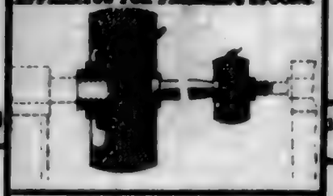
108,089. H. M. BAKER. MANUFACTURE OF ALUMINATE OF SODA.

108,090. W. M. BAKER.
MANUFACTURE OF NITRIC ACID.

108,091. J. W. BARBOUR.
SHEARS FOR CUTTING FLOWERS.



108,092. H. BARRETT. BUFFING APPARATUS FOR FINISHING SPOONS.



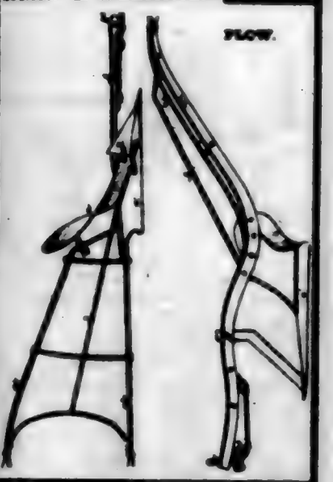
108,092A. L. BAUMANN. POCKET KNIFE.



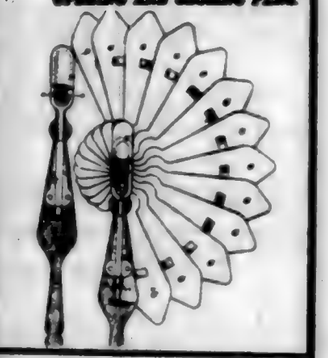
108,094. S. BEBOUTHORSE. HAY FORK.



108,095. B. C. BLOMSTEN.
PLOW.

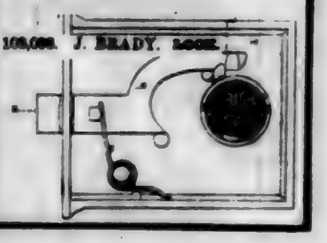


108,096. G. BORDES. DEVICE FOR OPENING AND CLOSING PANS.

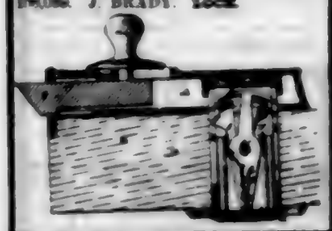


108,097. C. D. BOSS AND C. D. BOSS, Jr. MANUFACTURE OF BRUSHES.

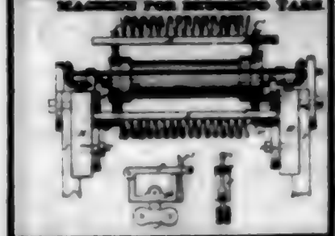
108,098. J. BRADY. LOCK.



108,099. J. BRADY. LOCK.



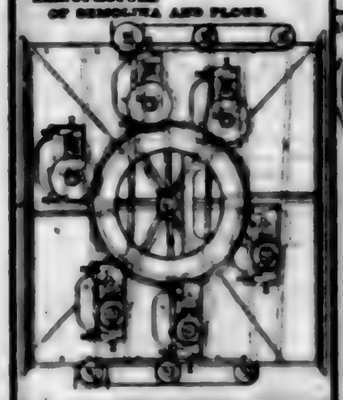
108,100. J. BRADY. MACHINE FOR REVOLVING TABS.



108,101. D. D. BROWN. CHOCK FOR HOLDING ROPES.



108,102. G. A. BUCHHOLZ. MANUFACTURE OF HEMATINA AND FLOUR.



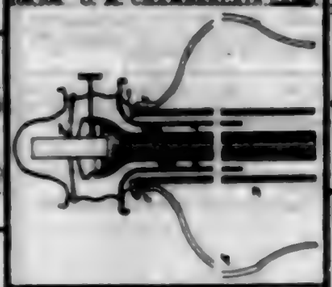
108,103. E. AND A. BUCKMAN. SPOOL TRAP.



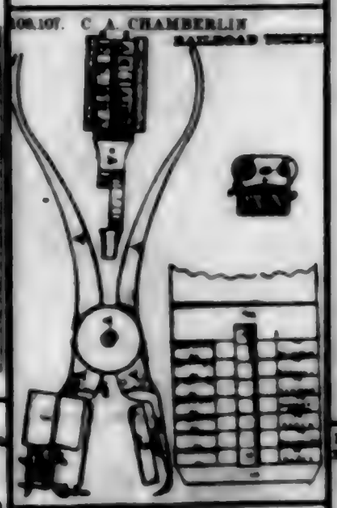
108,105. J. C. BURDINEOVE. PASTURE.



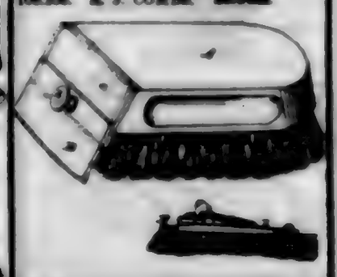
108,106. O. M. CHAMBERLAIN. LAMP.



108,107. C. A. CHAMBERLIN. RAILROAD TICKET.



108,108. R. J. COMBS. MUSIC.



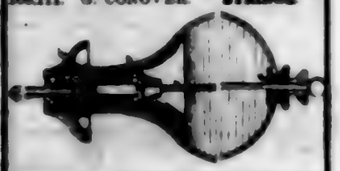
108,109. F. C. CONE. CANDLESTICK.



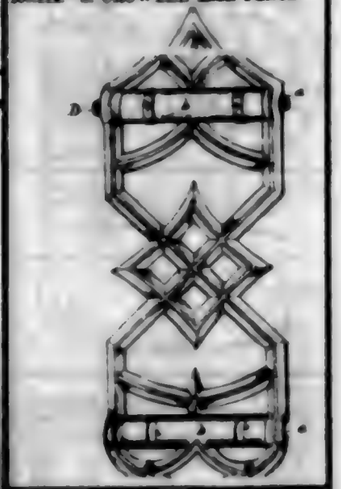
108,110. F. C. CONE. FOUNTAIN PEN.



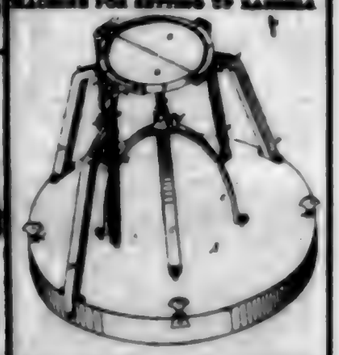
108,111. G. CONOVER. STIRRUP.



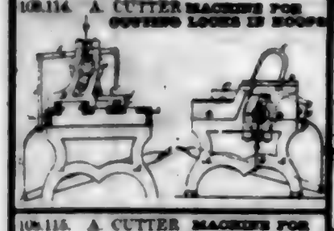
108,112. B. CROWELL. HOOP FENCE.



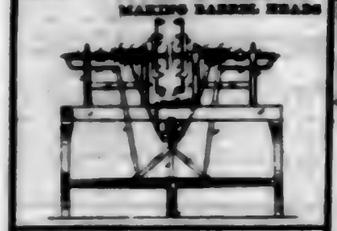
108,113. A. CUTTER. MACHINE FOR SETTING UP BASKETS.



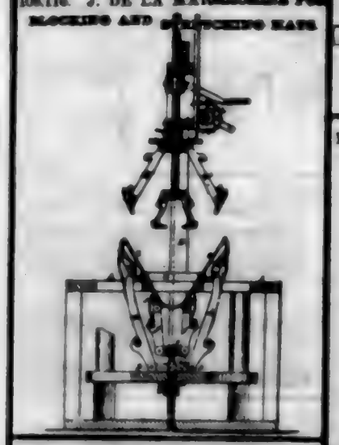
108,114. A. CUTTER. MACHINE FOR COVERING LOCKS IN BOOKS.



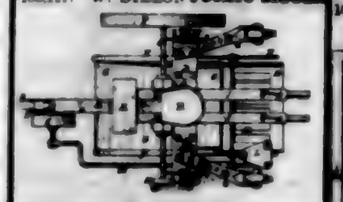
108,115. A. CUTTER. MACHINE FOR MAKING BARREL HEADS.



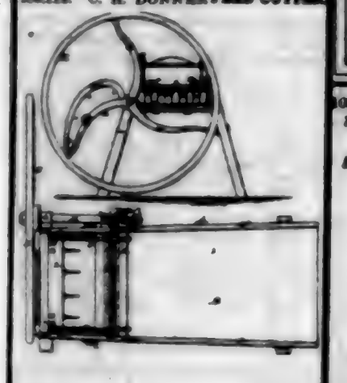
108,116. J. DE LA MAR. MACHINE FOR BLOCKING AND TRIMMING HATS.



108,117. W. DILLON. POTATO DIGGER.



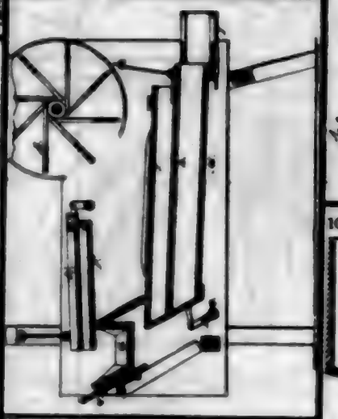
108,118. C. R. DONNER. FEED CUTTER.



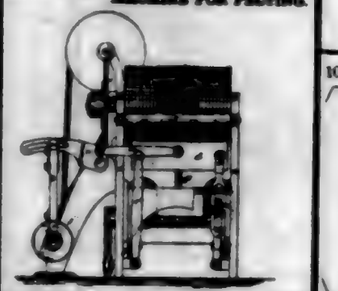
108,119. J. G. DREHER. TOBACCO CUTTER.



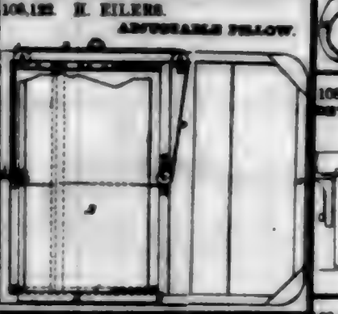
108,120. A. DUUR. GRAIN SEPARATOR.



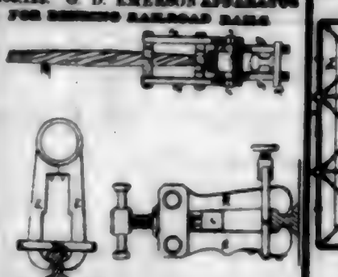
108,121. R. EICKEMEYER. MACHINE FOR FILING.



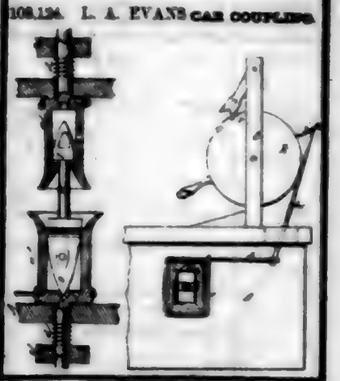
108,122. H. EILERS. ADJUSTABLE PILLOW.



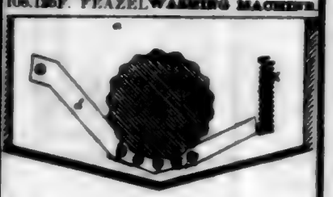
108,123. G. D. EMERSON. APPARATUS FOR BENDING RAILROAD RAILS.



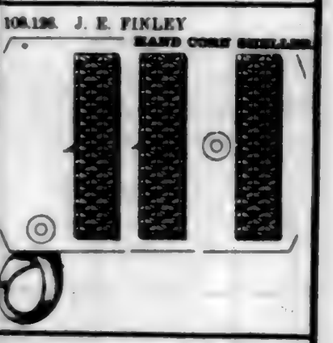
108,124. L. A. EVANS. CAR COUPLING.



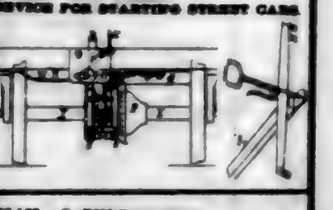
108,125. F. FEAZEL. WASHING MACHINE.



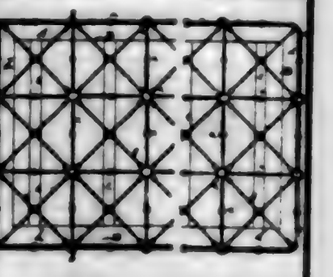
108,126. J. E. FINLEY. HAND CORN SHELLER.



108,127. G. P. FRICK. DEVICE FOR STARTING STREET CARS.

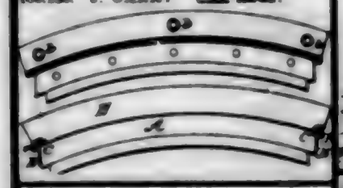


108,128. C. FULTON. SPRING MATTRESS.

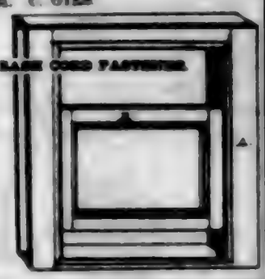


108,129 T. EVANS. COMPOSITION FOR WELDING AND HARDENING STEEL.

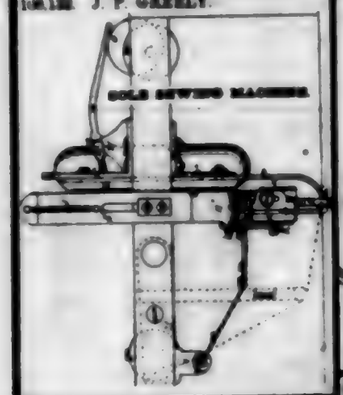
108,130 J. GARRY. CAR ROOF.



108,131 C. GIES. SASH CORD FASTENER.



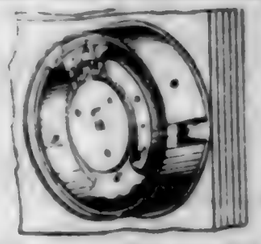
108,132 J. P. GREELY. SOLE SEWING MACHINE.



108,133 L. A. GRILL. SOCKETS.



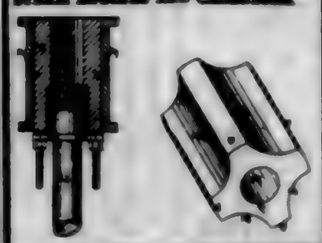
108,134 H. GROSS. PERMUTATION LOCK.



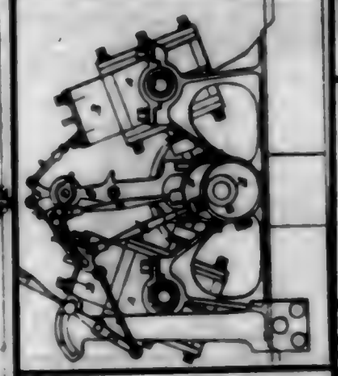
108,135 C. A. HEOR. GATE SPRINGS.



108,136 T. HILL. TREENAIL FOR STEAM ENGINES AND CALENDERS.

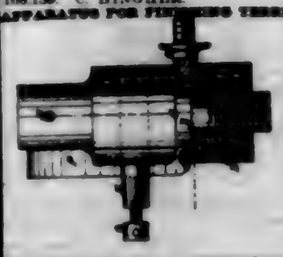


108,137 T. HILL. VALVE GEAR FOR STEAM ENGINES.

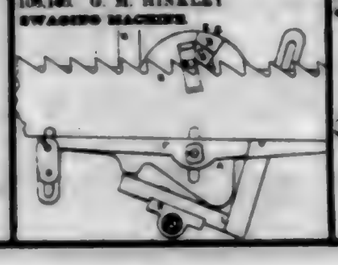


108,138 A. J. HINDEMEYER. COMPOSITION FOR WELDING, PUDDLING AND BRAZING METALS.

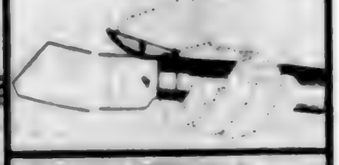
108,139 C. HINGHER. APPARATUS FOR FINISHING THREAD.



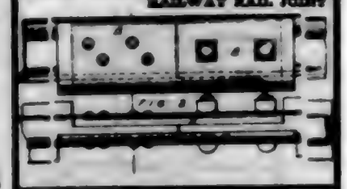
108,140 G. M. HINKLEY. SWAGING MACHINE.



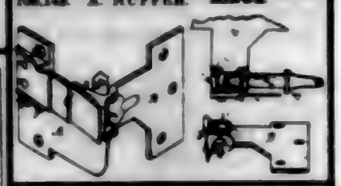
108,141 P. HOUSEMAN AND C. C. CAMPBELL. DUPLICATE KEYS.



108,142 G. A. HUDDART. RAILWAY RAIL JOINT.



108,143 A. HUPPER. HINGE.

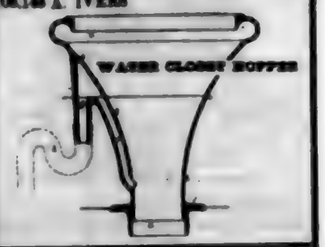


108,144 J. C. HULL. WINDOW WASHER AND SCOURING PAD.

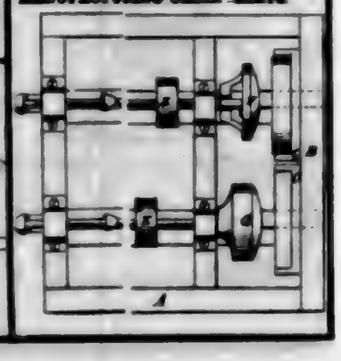


108,145 I. C. HUSTED. COMPOSITION FOR PRINTING ROLLERS.

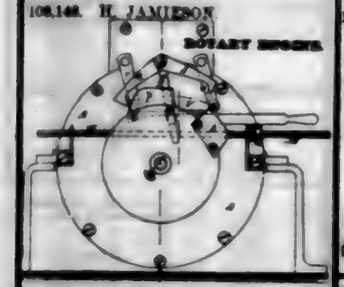
108,146 A. IVERS. WATER CLOSET HOPPER.



108,147 E. S. JACKSON. MACHINE FOR MANUFACTURING CHAIR SEATS.



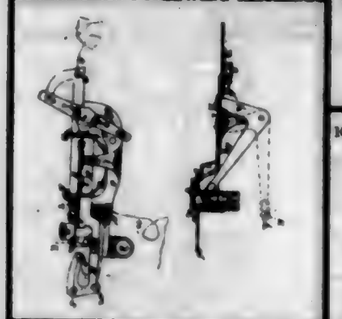
108,148 H. JAMIESON. ROTARY ENGINE.



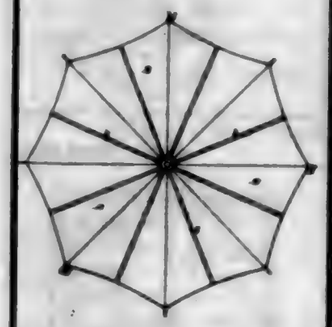
108,149 J. R. P. JETT. PLOW.



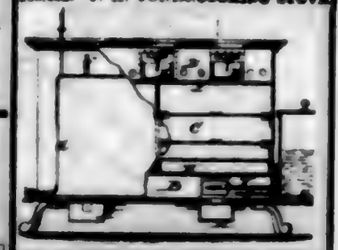
108,150 A. W. JOHNSON. ATTACHMENT FOR SEWING MACHINES.



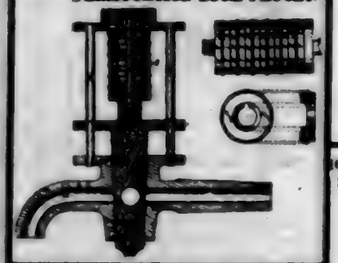
108,151 F. JOHNSON AND W. HATCHMAN. UMBRELLA.



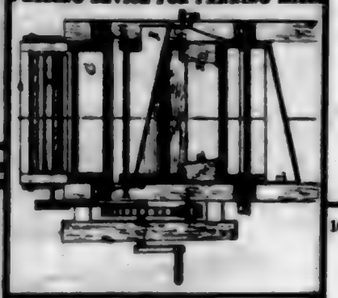
108,152 J. H. JONES. COOKING STOVE.



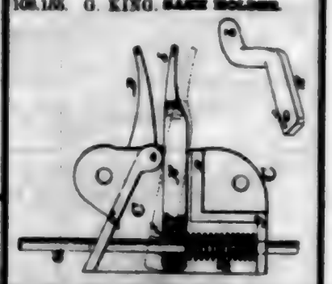
108,153 W. F. JONES. PERMUTATION LOCK FAUCET.



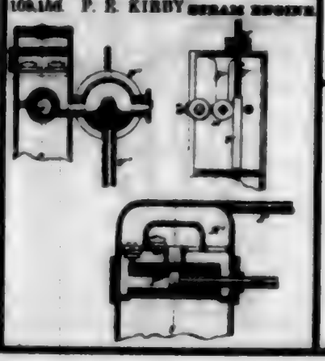
108,154 N. KIBLER. FEEDING DEVICE FOR PAPERING MILLS.



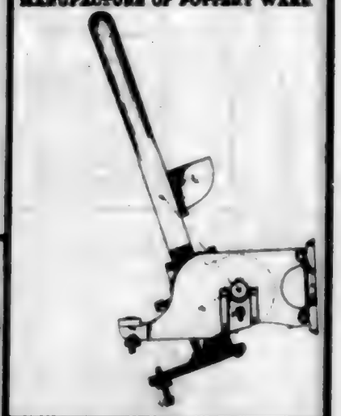
108,155 G. KING. GAGE HOLDER.



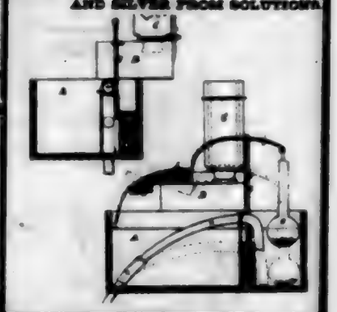
108,156 P. E. KIRBY. STEAM ENGINE.



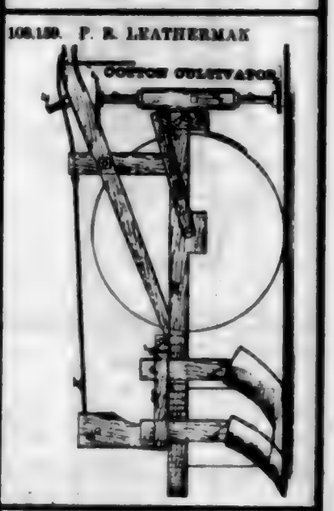
108,157 I. W. KNOWLES. MANUFACTURE OF POTTERY WARE.



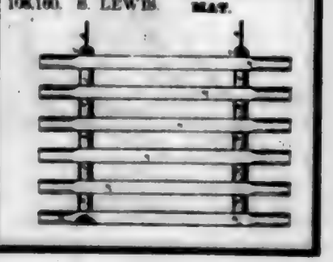
108,158 W. S. LAIGHTON. APPARATUS FOR PRECIPITATING GOLD AND SILVER FROM SOLUTIONS.



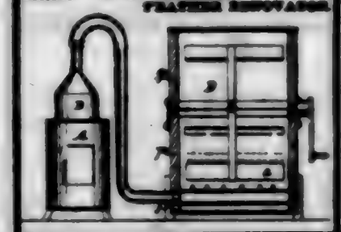
108,159 P. R. LEATHERMAN. COTTON CULTIVATOR.



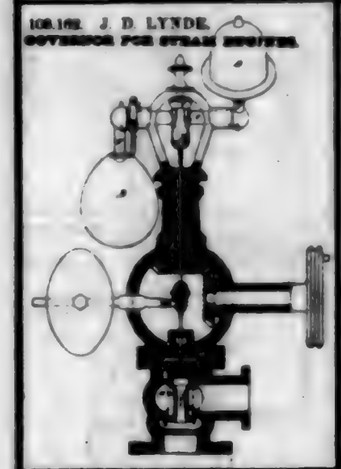
108,160 S. LEWIS. MAT.



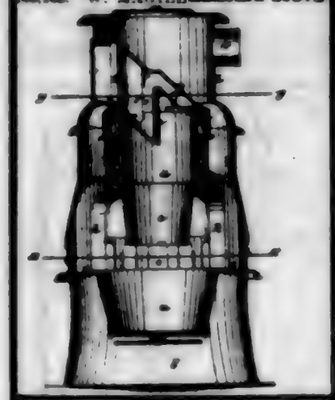
108,161. W. G. LUMBARD. FEATHER RENOVATOR.



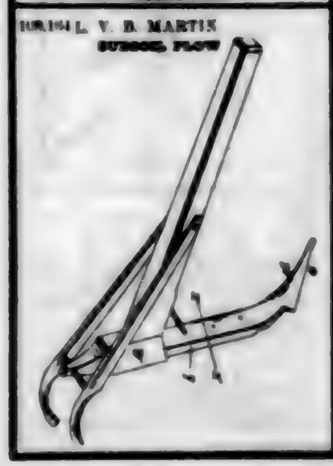
108,162. J. D. LYNDE. GOVERNOR FOR STEAM ENGINES.



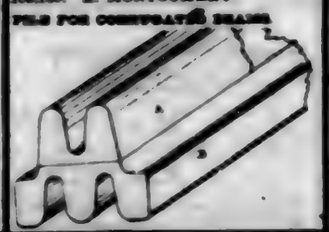
108,163. W. MAGILL. HEATING STOVE.



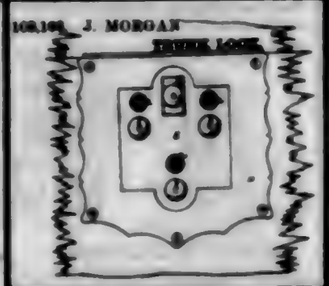
108,164. L. V. B. MARTIN. SUBSOIL PLOW.



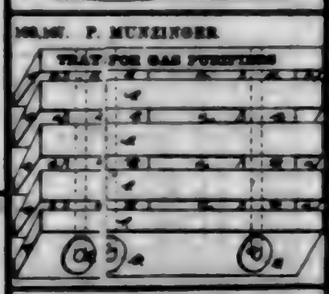
108,165. R. MONTGOMERY. PILE FOR CONSTRUCTING DRAINS.



108,166. J. MORGAN. TUBE LOCK.



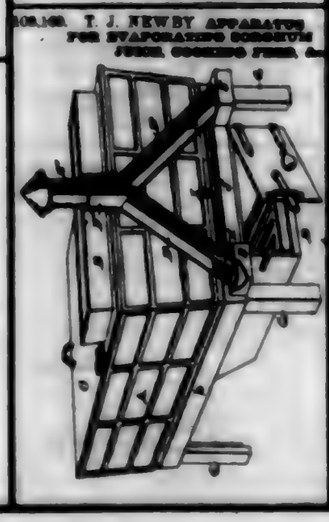
108,167. P. MUNZINGER. TRAP FOR GAS FURNITURE.



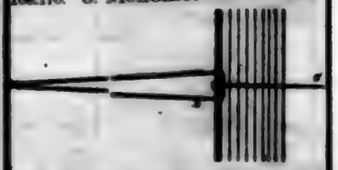
108,168. G. E. NEBINGER. WASHING MACHINE.



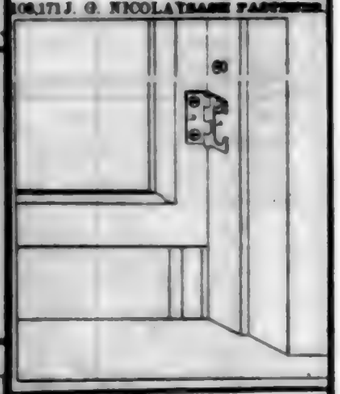
108,169. T. J. NEWBY. APPARATUS FOR EVAPORATING SORGHUM JUICE, CONCRETE FIRE, &c.



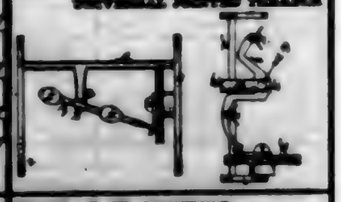
108,170. O. NICHOLSON. COLOR-STOPS.



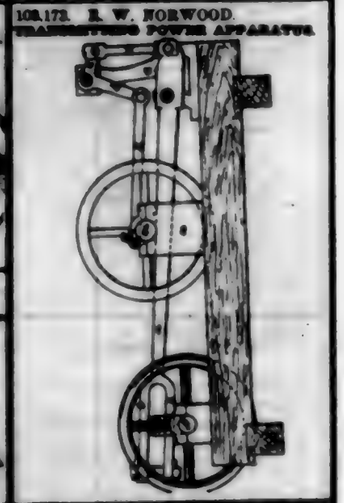
108,171. J. G. NICOLAY. BRACE FASTENER.



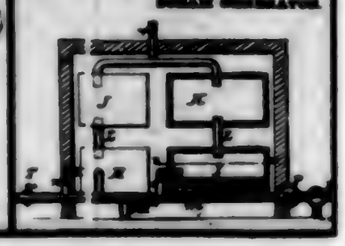
108,172. A. NIELSON. REVERSIBLE JOINTED TERRACE.



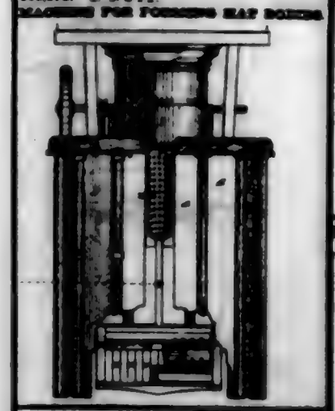
108,173. R. W. NORWOOD. TRANSMITTING POWER APPARATUS.



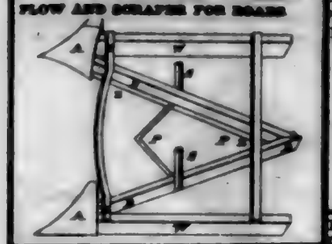
108,174. S. B. B. NOWLAN. STEAM GENERATOR.



108,175. I. NUTT. MACHINE FOR FORMING HAT BODIES.

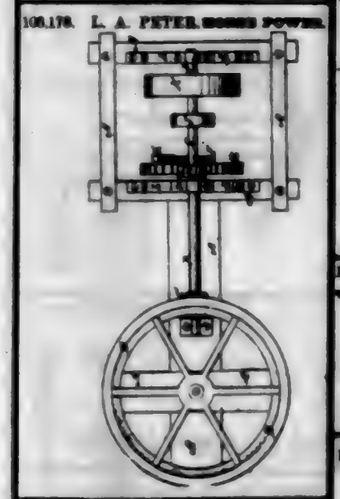


108,176. T. B. PARKER, ASSIGNOR. FLUE AND SCRAPER FOR BOILERS.

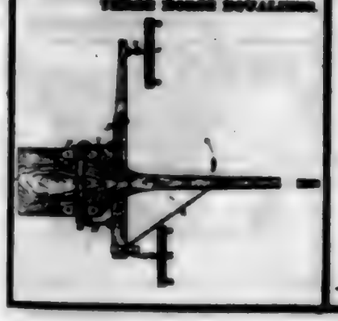


108,177. H. PEMBERTON. MANUFACTURE OF PAPER.

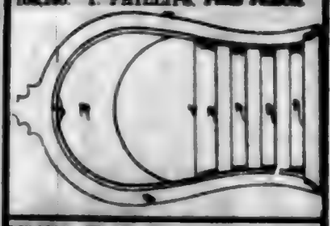
108,178. L. A. PETER, ASSIGNOR. POWER.



108,179. J. C. PFEIL. THREE-HORSE EQUALIZER.



108,180. T. PHILLIPS. FIRE-PLACE.



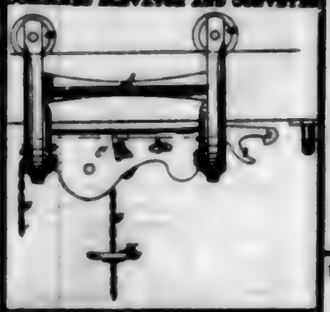
108,181. W. PLATTWOOD. PAVEMENT.



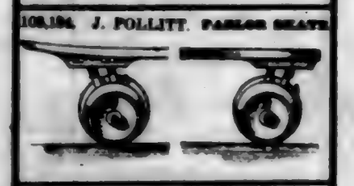
108,182. S. POOCK. WINDOW-BLIND.



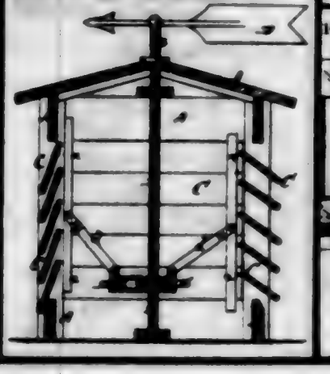
108,183. T. J. POWELL. CONDENSED ELEVATOR AND CONVEYER.



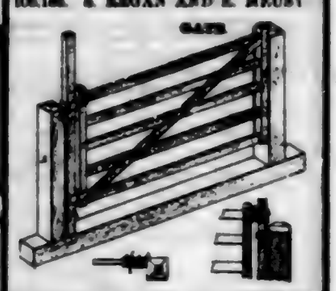
108,184. J. POLLITT. PARLOR SEAT.



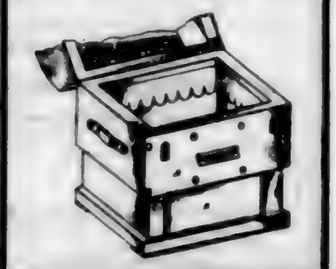
108,185. E. F. PRENTIS. AUTOMATIC VENTILATOR.



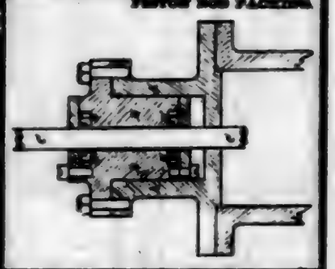
108,186. S. REGAN AND E. MEUSY. GATE.



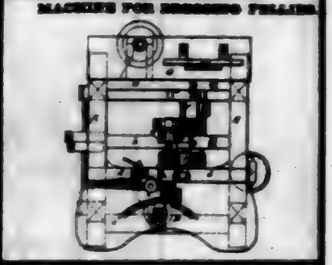
108,187. J. RICE. EXTENSION TRUNK.



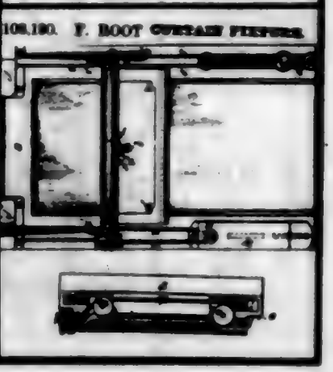
108,188. E. A. RICHMOND. PISTON-ROD PACKING.



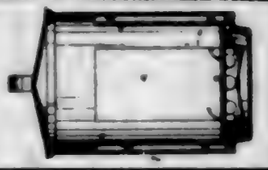
108,189. W. H. RODEHEAVER. MACHINE FOR DRESSING PELLETS.



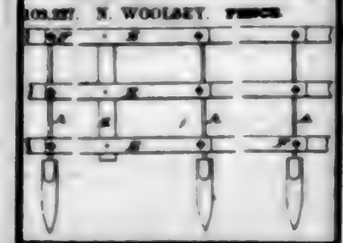
108,190. F. ROOT. CURTAIN FIXTURE.



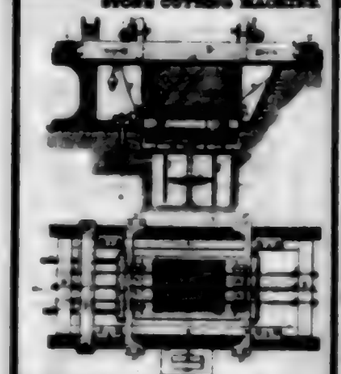
108,236. T. WOODMAN. WASH BOILER.



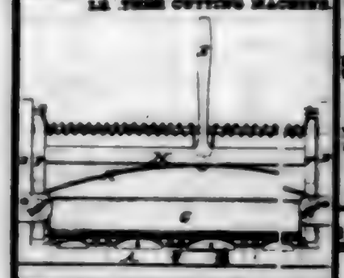
108,237. N. WOOLSEY. FENCE.



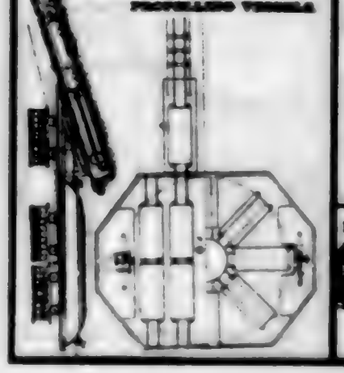
108,238. H. AND J. L. YOUNG. STOVE CUTTING MACHINE.



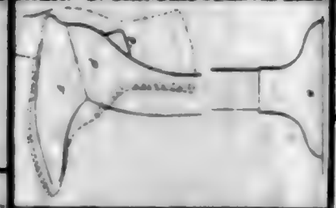
108,239. A. L. ZENT. LIME FUME CUTTING MACHINE.



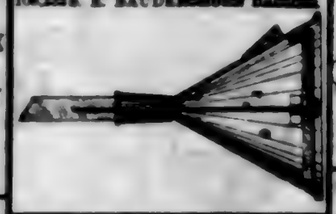
108,240. J. L. ARMAN. PROPELLING VESSELS.



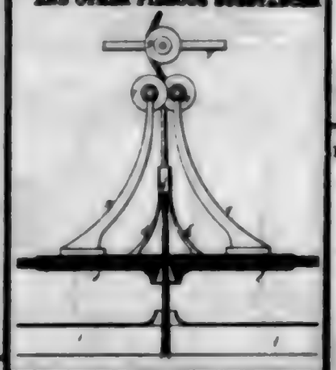
108,232. D. RAILBRIDGE. ANVIL. (Last.)



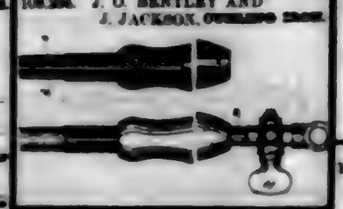
108,233. E. BAUDER. ROTARY BLOWER.



108,234. E. BAZIN. APPARATUS FOR SPINNING HEMP, FLAX, AND OTHER FIBROUS SUBSTANCES.



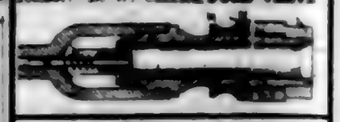
108,235. J. O. BENTLEY AND J. JACKSON. CURLING IRONS.



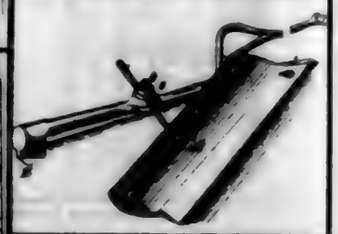
108,241. O. BRUDOK. SPRING PAD.



108,237. D. W. CLARK. STOP VALVE.



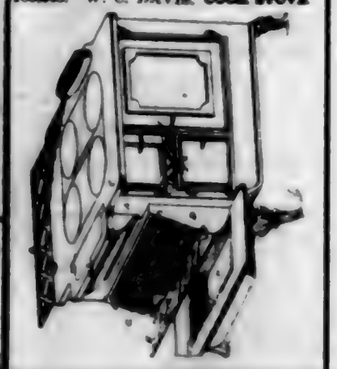
108,238. G. CLARK. ROAD SCRAPER AND RITCHER.



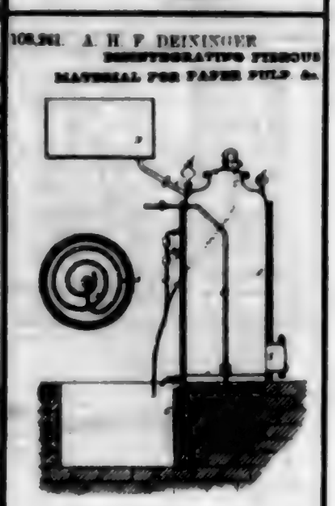
108,239. W. C. CLIFTON. CORN PLOW.



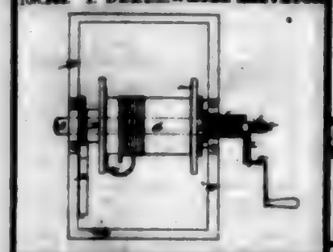
108,240. W. C. DAVIS. COOK STOVE.



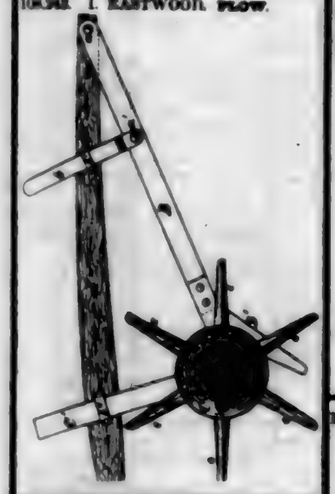
108,242. A. H. F. DEININGER. DISINTEGRATING FIBROUS MATERIAL FOR PAPER PULP &c.



108,243. I. DEKLEWATER. ELEVATOR.



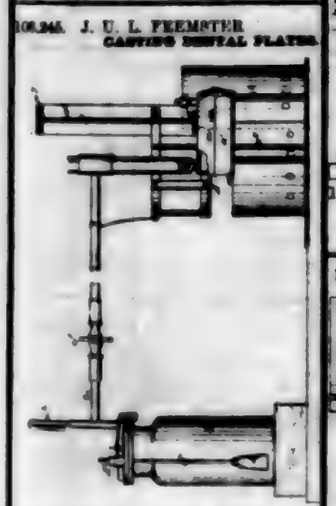
108,244. I. EASTWOOD. PLOW.



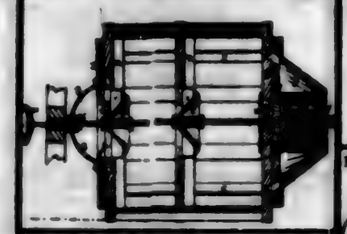
108,244. C. EMBREY. [illegible] RIVE.



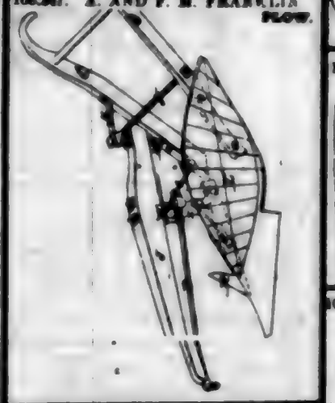
108,245. J. U. L. FREMSTER. CASTING DENTAL PLATES.



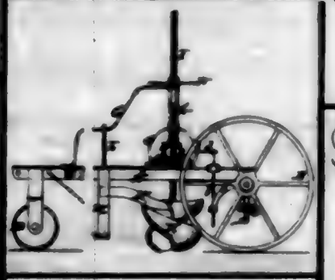
108,246. J. FICKINGER. FLOUR DOOR.



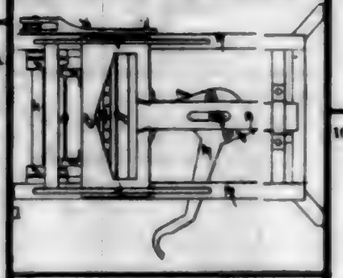
108,247. A. AND F. M. FRANKLIN. PLOW.



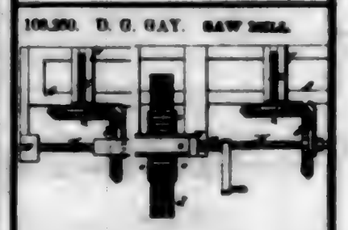
108,248. S. F. GARD. STITCHING MACHINE.



108,249. F. F. GARNER. FEED CUTTER.



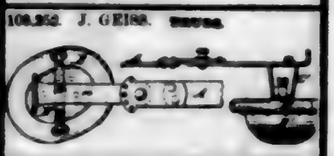
108,250. D. G. GAY. SAW SETT.



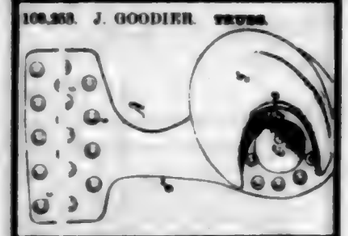
108,251. D. G. GAYMAN. BAG FASTENER.



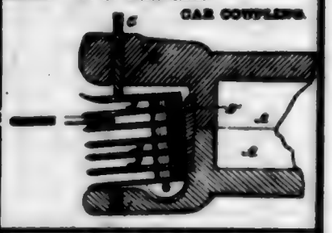
108,252. J. GEISS. TRUSS.



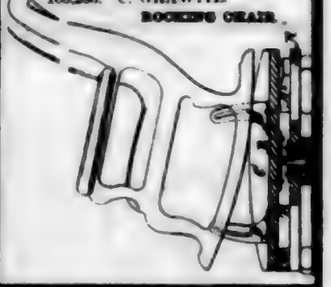
108,253. J. GOODIER. TRUSS.



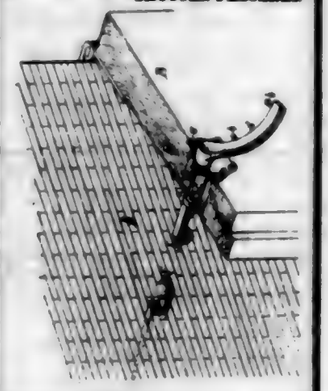
108,254. W. F. GRASLER. CAR COUPLING.



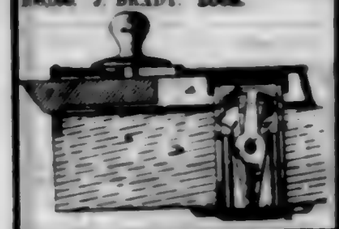
108,255. C. GRAWITZ. ROCKING CHAIR.



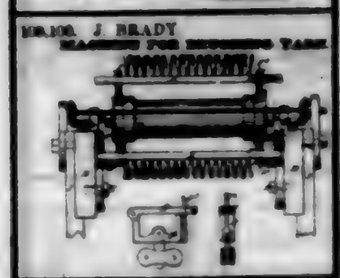
108,256. H. GROW. SHUTTER FASTENER.



108,099. J. BRADT. LOCK.



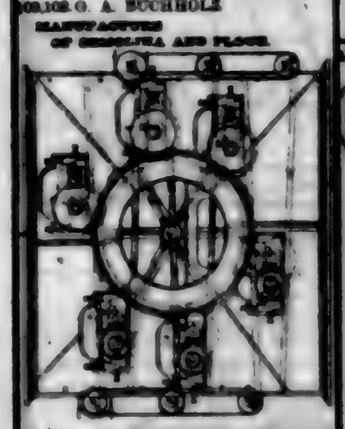
108,100. J. BRADY. MACHINE FOR MORTISING TABS.



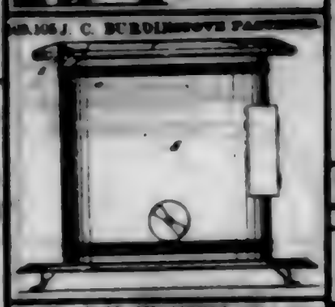
108,101. D. D. BROWN. CHUCK FOR HOLDING BOOTS.



108,102. G. A. BUCHHOLZ. MANUFACTURE OF CHOCOLATE AND PLASTE.



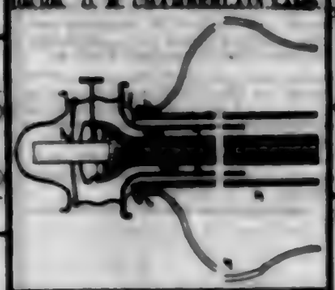
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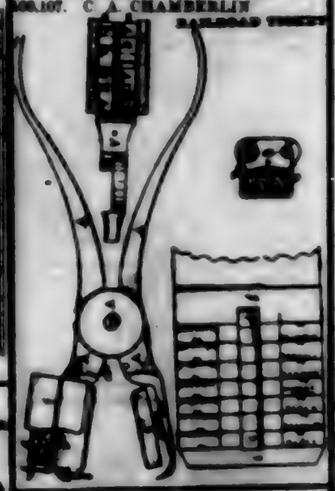
108,104. E. AND A. BUCKMAN. MOUSE TRAP.



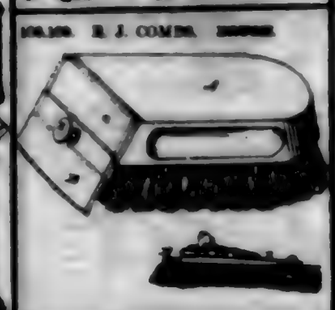
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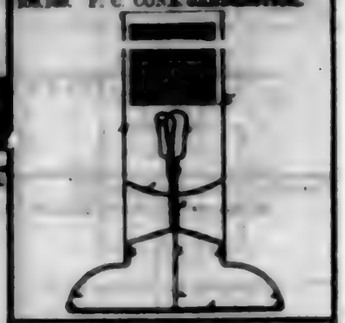
108,106. C. A. CHAMBERLIN. RAILROAD TRUCK.



108,107. R. J. COMBS. MOWER.



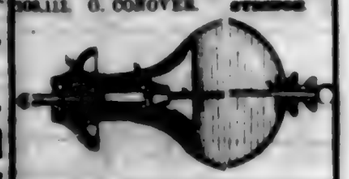
108,108. P. C. CONE. CARBURETOR.



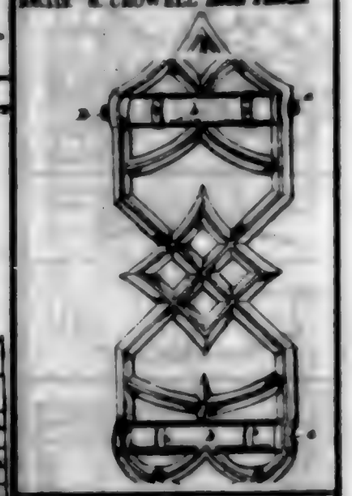
108,109. P. C. CONE. FOUNTAIN PEN.



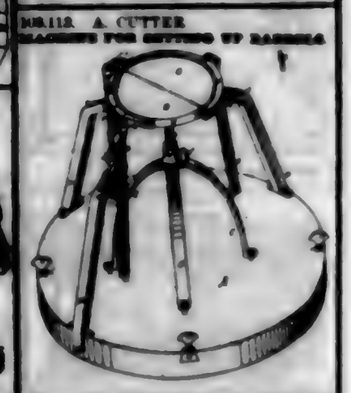
108,110. O. CONOVER. STIRRUP.



108,111. S. CROWELL. SNOW PLOW.



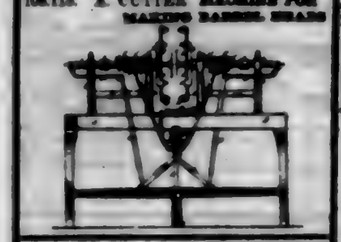
108,112. A. CUTTER. MACHINE FOR CUTTING UP RAGGING.



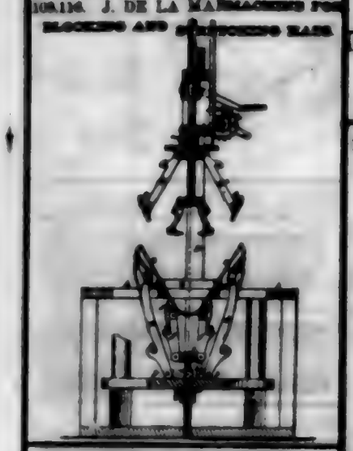
108,114. A. CUTTER. MACHINE FOR CUTTING LOCKS IN BOOTS.



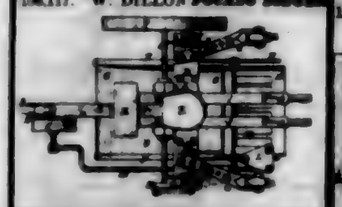
108,115. A. CUTTER. MACHINE FOR MAKING RAGGING BRAID.



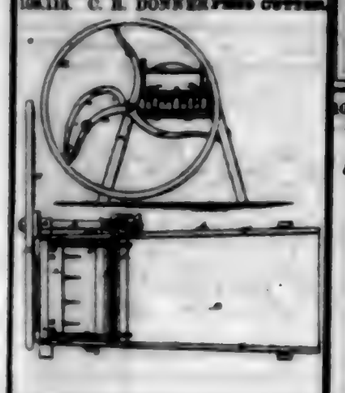
108,116. J. DE LA MARMACHINE FOR BLOCKING AND [illegible] BASE.



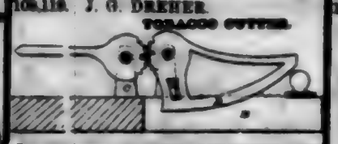
108,117. W. DILLON. POTATO DIGGER.



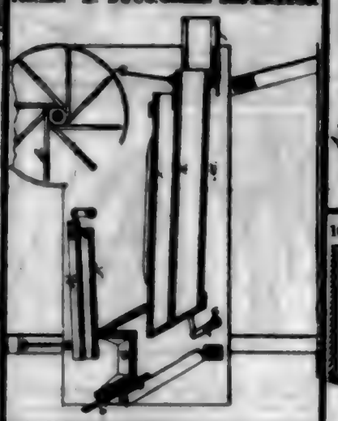
108,118. C. B. DONNER. FEED CUTTER.



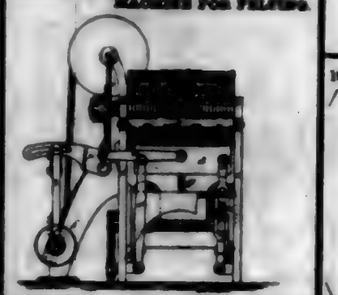
108,119. J. G. DREHER. TOBACCO CUTTER.



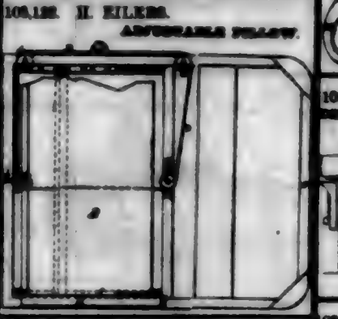
108,120. A. DUUS. GRAIN SEPARATOR.



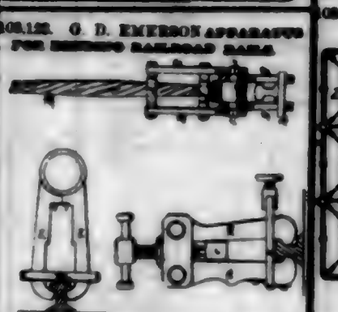
108,121. R. EICKMEYER. MACHINE FOR FELLOES.



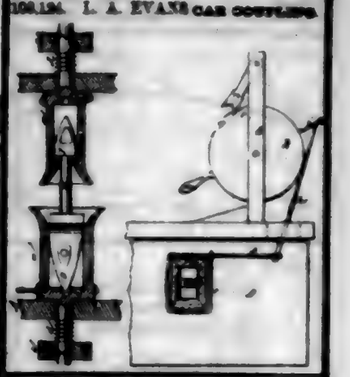
108,122. H. EILERS. ADJUSTABLE PLOUGH.



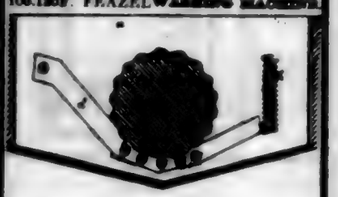
108,123. G. D. EMERSON. APPARATUS FOR BENDING RAILROAD RAILS.



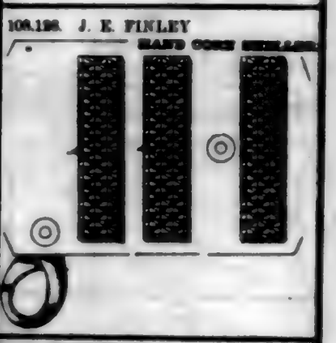
108,124. L. A. EVANS. CAR COUPLING.



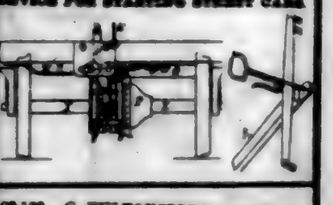
108,125. F. FRAZEL. WASHING MACHINE.



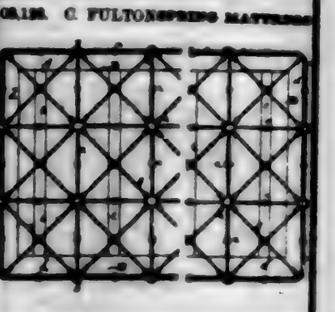
108,126. J. E. FINLEY. HAND CORN SHELLER.



108,127. G. F. FRICK. DEVICE FOR STARTING STREET CARS.



108,128. C. FULTON. SPRING MATTRESS.

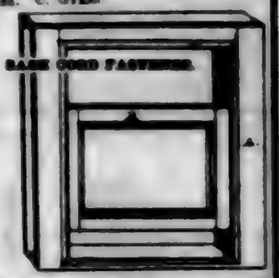


108,129. T. EVANS. COMPOSITION FOR WELDING AND HARDENING STEEL.

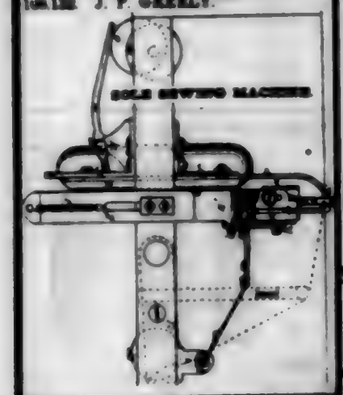
108,130. J. GARRY. CAR ROOF.



108,131. C. GIES. BASE CORD FASTENER.



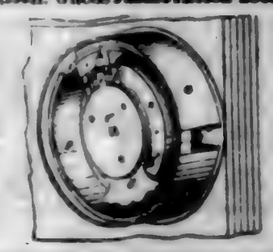
108,132. J. P. GREELY. SOLE SEWING MACHINE.



108,133. L. A. GRILL. SECRETE.



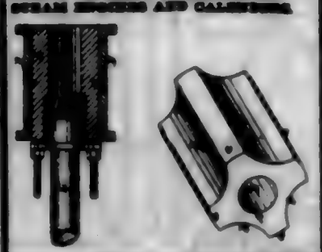
108,134. H. GROSS. PERCUSSION LOCK.



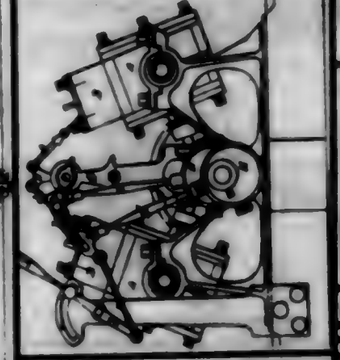
108,135. C. A. HEDE. CANE STRIPPER.



108,136. T. HILL. TRUNNION FOR STEAM ENGINES AND CALENDERS.

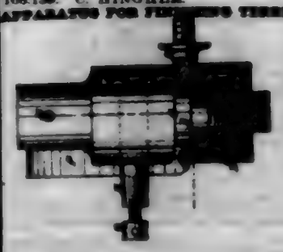


108,137. T. HILL. VALVE GEAR FOR STEAM ENGINES.

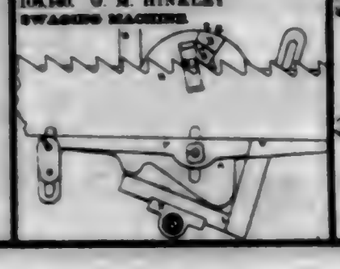


108,138. A. J. HINDEMEYER. COMPOSITION FOR WELDING, PUDDLING AND BRAZING METALS.

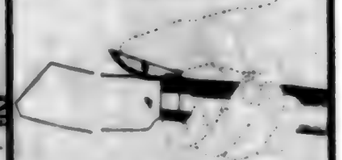
108,139. C. HINGHER. APPARATUS FOR FINISHING TIRES.



108,140. O. M. HINKLEY. SWAGING MACHINE.



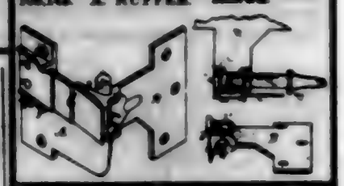
108,141. P. HOUSEMAN AND C. C. CAMPBELL. BUTCHER'S KNIFE.



108,142. G. A. HUDDART. RAILWAY RAIL JOINT.



108,143. A. HUFFER. SEWER.



108,144. J. C. HULL. WINDOW WASHER AND SCREENING PAD.

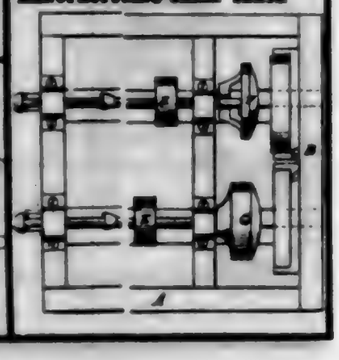


108,145. I. C. HUSTED. COMPOSITION FOR PRINTING ROLLERS.

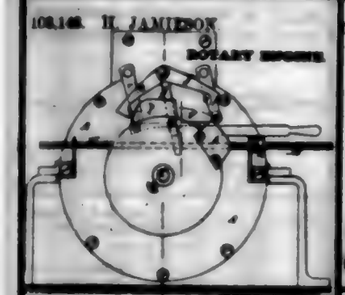
108,146 A. IVERS. WATER CLOSET BOWEL.



108,147. E. S. JACKSON. MACHINE FOR MANUFACTURING CHAIR SEATS.



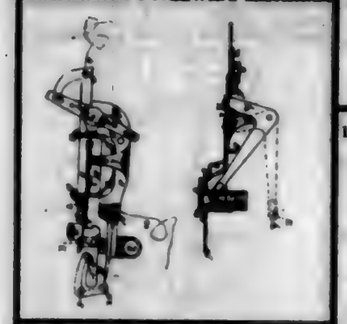
108,148. H. JAMIESON. ROTARY ENGINE.



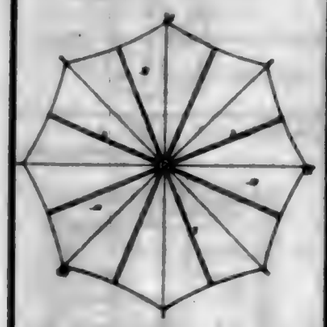
108,149. J. R. P. JETT. PLOW.



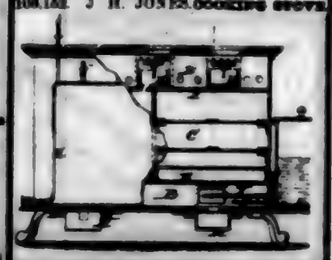
108,150. A. W. JOHNSON. ATTACHMENT FOR SEWING MACHINES.



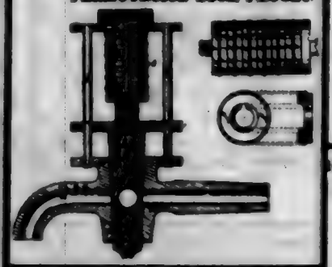
108,151. F. JOHNSON AND W. HATCHMAN. UMBRELLA.



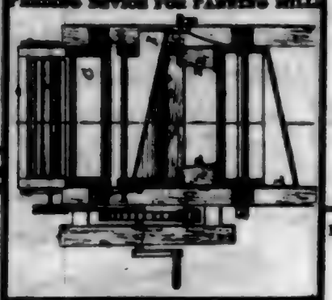
108,152. J. H. JONES. COOKING STOVE.



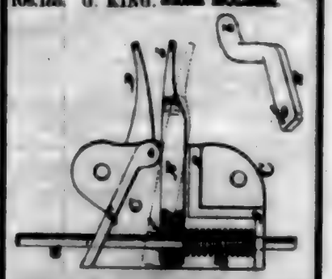
108,153. W. F. JONES. PERCUSSION LOCK PATENT.



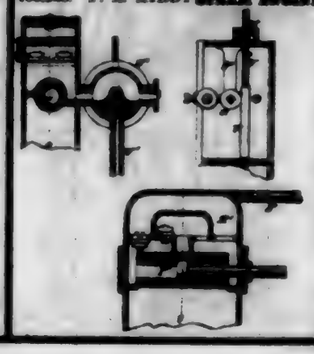
108,154. N. KIBLER. FEEDING DEVICE FOR FANNING MILLS.



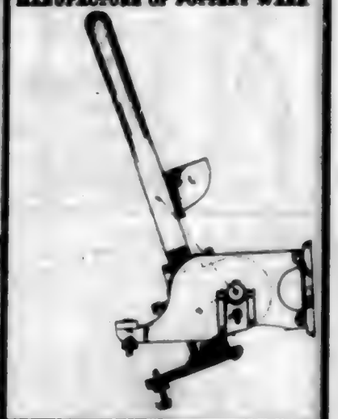
108,155. G. KING. CANE BOILER.



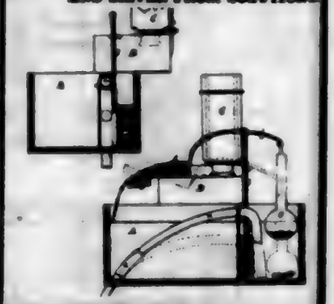
108,156. F. K. KIRBY. STEAM ENGINE.



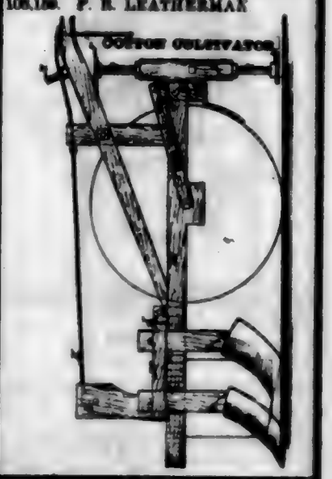
108,157. I. W. KNOWLES. MANUFACTURE OF POTTERY WARE.



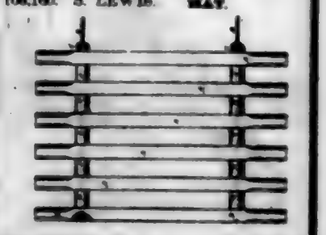
108,158. W. S. LAIGHTON. APPARATUS FOR PRECIPITATING GOLD AND SILVER FROM SOLUTIONS.



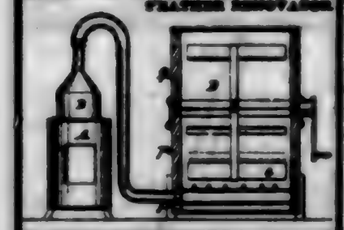
108,159. F. R. LEATHERMAN. COTTON CULTIVATOR.



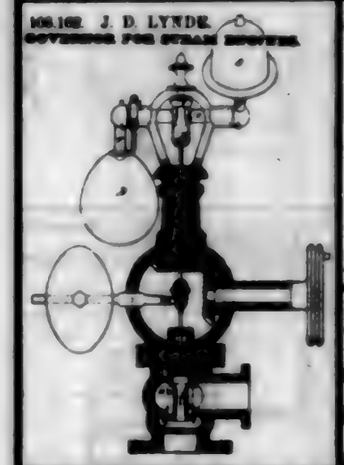
108,160. S. LEWIS. MAT.



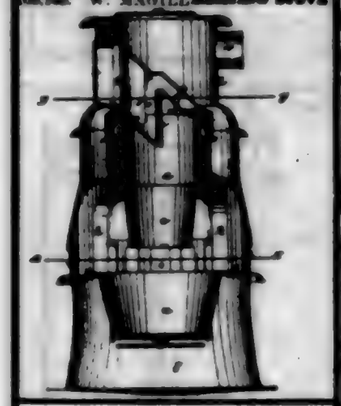
168,161. W. G. LUMBARD.
FEATHER RENOVATOR.



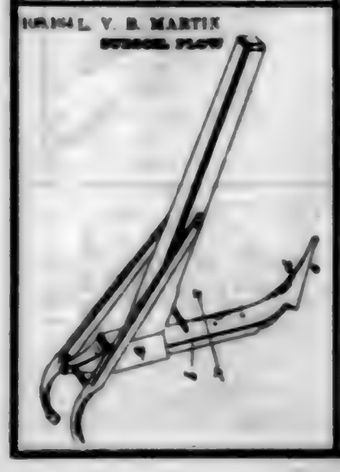
168,162. J. D. LYNDE.
GOVERNOR FOR STEAM ENGINES.



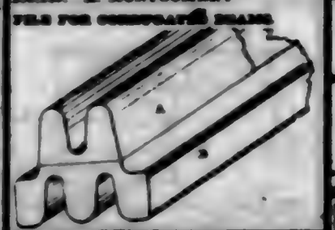
168,163. W. MAGILL. HEATING STOVE.



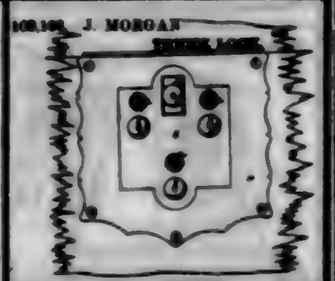
168,164. L. V. B. MARTIN.
SUBSOIL PLOW.



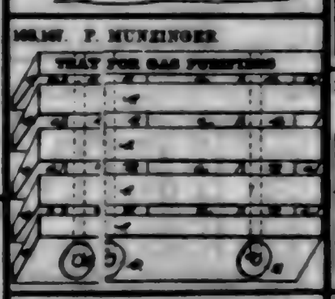
168,165. R. MONTGOMERY.
TILE FOR CONSTRUCTING DRAINS.



168,166. J. MORGAN.
BURNER LOCK.



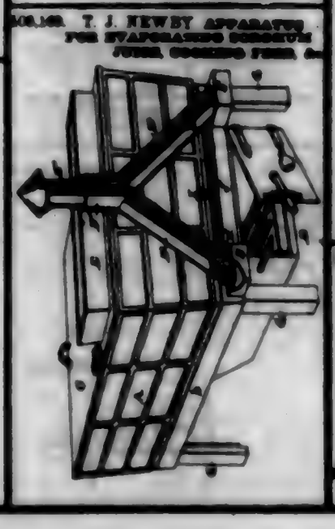
168,167. P. MUNZINGER.
TRAY FOR GAS PURIFIERS.



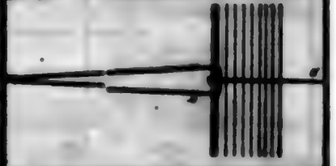
168,168. C. A. NEBINGER.
WASHING MACHINE.



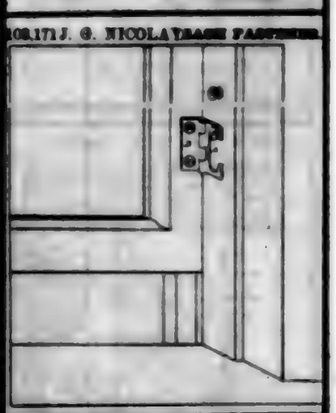
168,169. T. J. NEWBY. APPARATUS FOR EVAPORATING SORGHUM JUICE, COOKING CANE JUICE, &c.



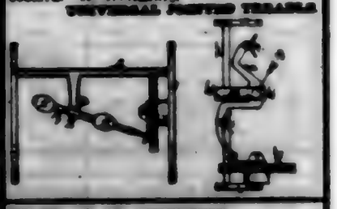
168,170. O. NICHOLSON. CORSET-STAY.



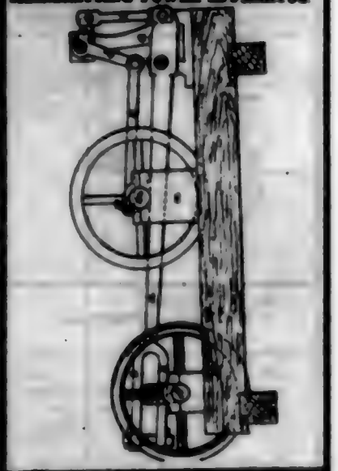
168,171. J. G. NICOLAY. BRACE FASTENER.



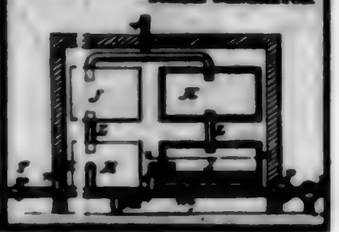
168,172. A. NIELSON.
UNIVERSAL JOINTED TENAILLE.



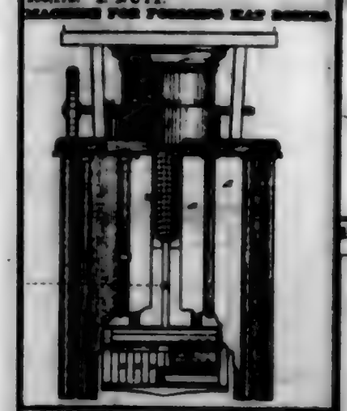
168,173. R. W. NORWOOD.
TRANSMITTING POWER APPARATUS.



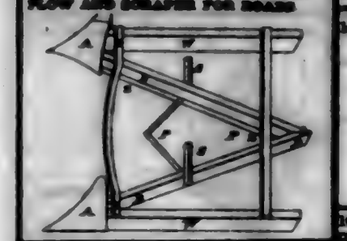
168,174. S. S. S. NOWLAN.
STEAM GENERATOR.



168,175. I. NUTT.
MACHINE FOR FORMING HAT BODIES.

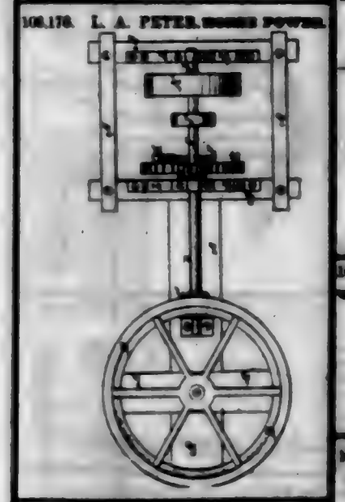


168,176. T. B. PARKER, ASSIGNOR TO HIMSELF AND J. H. BOARD.
PLOW AND SCRAPER FOR ROADS.

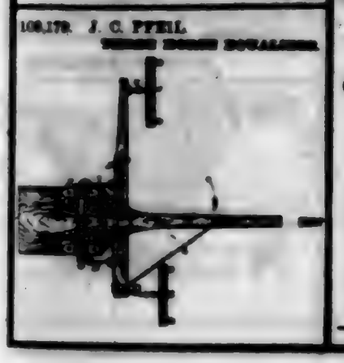


168,177. H. PEMBERTON.
MANUFACTURE OF PAPER.

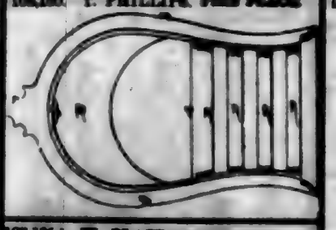
168,178. L. A. PETER, ASSIGNOR TO HIMSELF AND J. POWER.



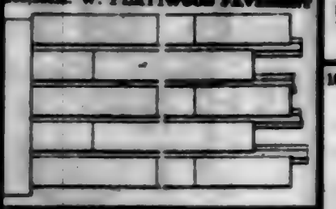
168,179. J. C. PFEIL.
HORSE HORSE-SHOEING.



168,180. T. PHILLIPS. FIRE-PLACE.



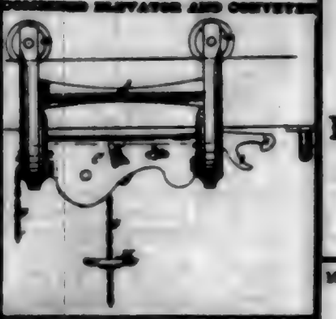
168,180A. W. PLATTWOOD. PAVEMENT.



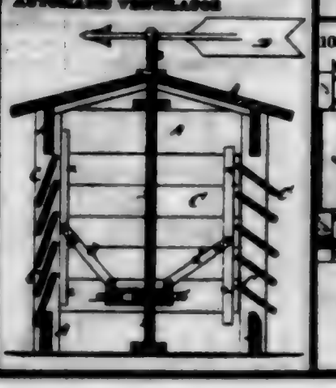
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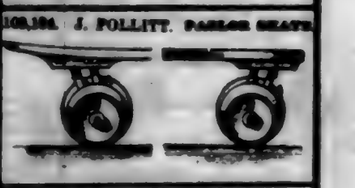
168,182. T. J. POWELL.
CONDENSED ELEVATOR AND CONVEYOR.



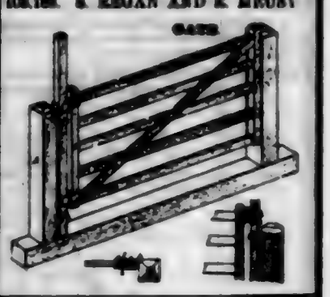
168,183. E. F. PRENTIS.
AUTOMATIC VENTILATOR.



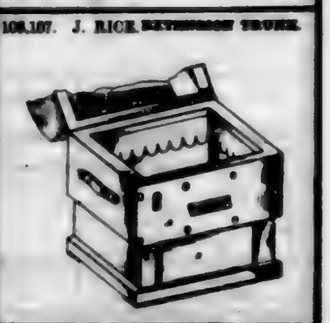
168,184. J. POLLITT. RAILWAY SEAT.



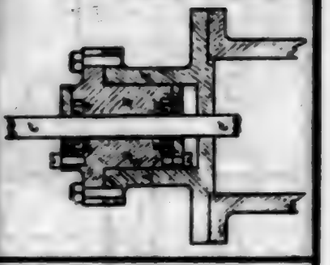
168,185. S. REGAN AND E. MEUBY.
GATE.



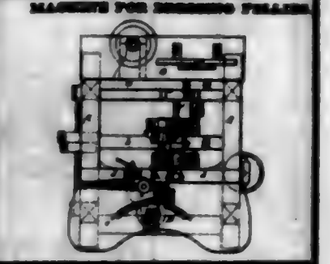
168,186. J. RICE, ASSIGNOR TO TRUNK.



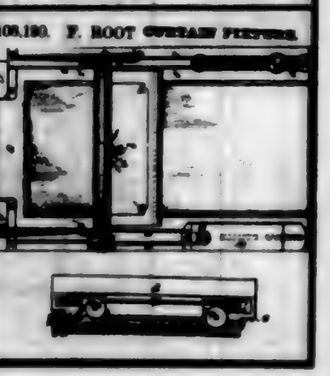
168,187. E. A. RICHMOND.
PISTON BED PACKING.



168,188. W. H. RODERHEAVER.
MACHINE FOR SHEARING PLATES.

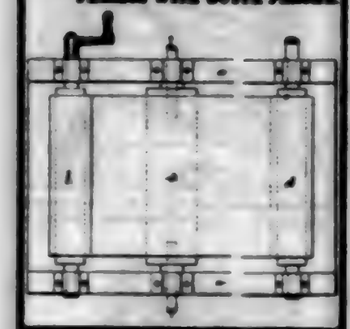


168,189. F. ROOT. CURTAIN FIXTURE.



108,191. J. P. BUST, Shipping Oleaginous Fibrous Waste Leathers.

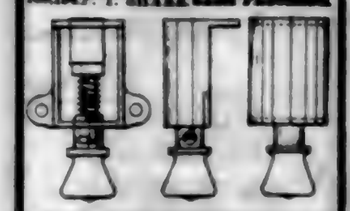
108,192. E. A. SCHUETTE, Apparatus for Water Proofing Fabrics with Gutta Percha.



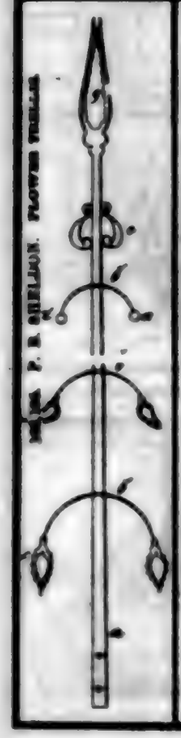
108,193. M. SCHWERIN, Gaiter for Trotters.



108,194. P. T. SHARP, Gang Planing Machine.



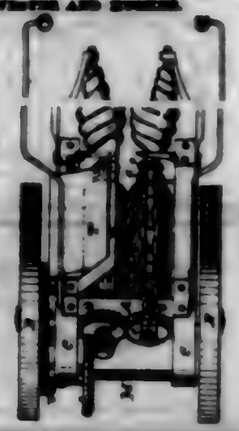
108,195. P. R. SHERLOCK, Flower Trellis.



108,196. J. SHIPLEY, Fruit Gatherer.



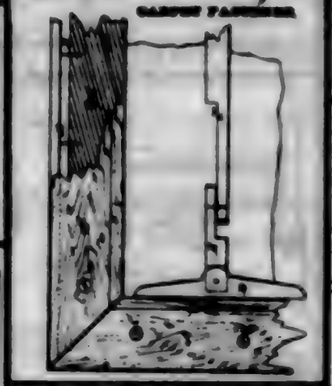
108,197. A. SMITH, Combined Grain Harvester and Binder.



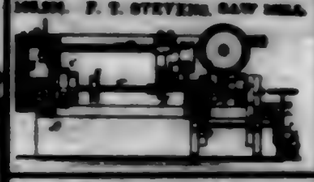
108,198. M. SMITH, Furnishing Rosin for the Manufacture of Sale.

108,199. H. SMITH, Wash for the Cure of Scab in Sheep &c.

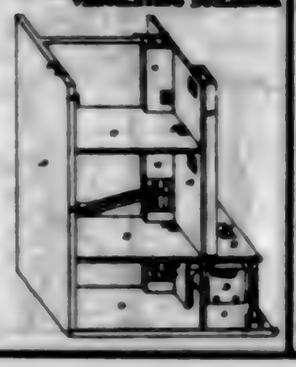
108,200. J. H. STANTON, Gauging Fanning Mill.



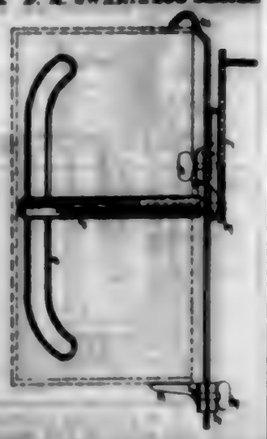
108,201. F. T. STEVENS, Saw Mill.



108,202. J. STOVER, Apparatus for Heating and Ventilating Buildings.



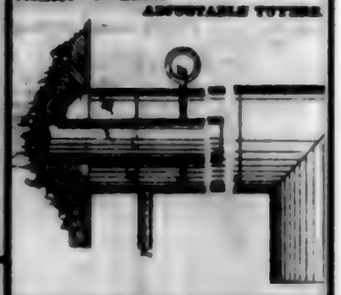
108,203. D. M. SWARTZ, Dog Starter.



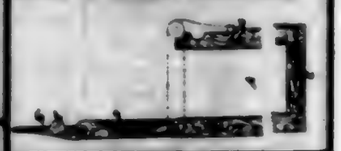
108,204. H. B. SWARTZ, Gang Ploughs.



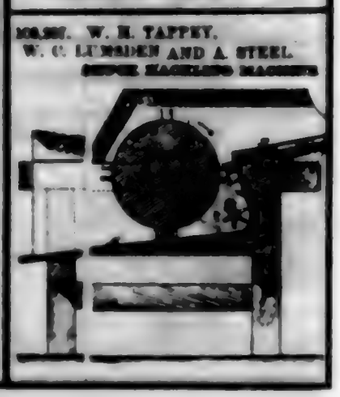
108,205. P. SWEENY, Adjustable Tuyere.



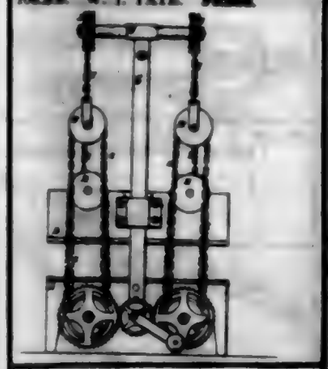
108,206. F. TALBUT, Sliding Lock.



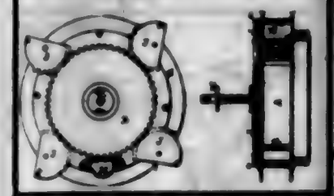
108,207. W. H. TAPPEY, W. C. LUNSDEN and A. STEEL, Sewing Machine Machine.



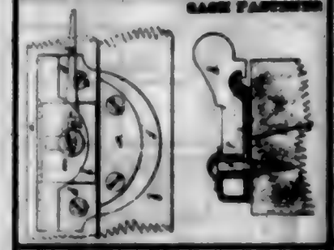
108,208. W. I. TATE, Press.



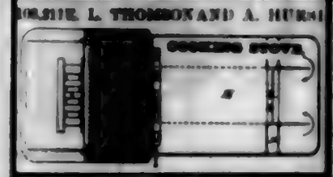
108,209. P. TEACHOUT, Water Wheel.



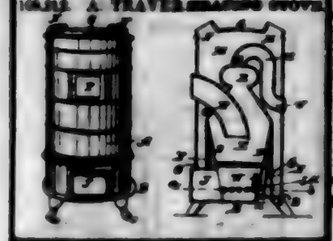
108,210. W. H. THOMAS, Gang Fastener.



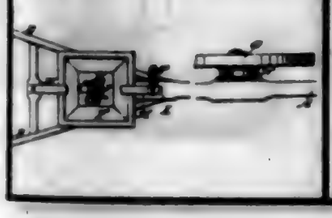
108,211. L. THOMSON and A. HURST, Cooking Stove.



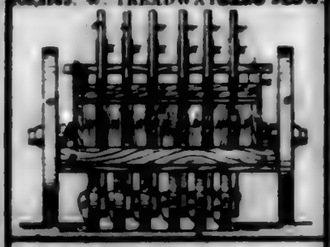
108,212. A. TRAVER, Heating Stove.



108,213. W. I. TRAYUHAM, Grain Planter and Guano Distributor.



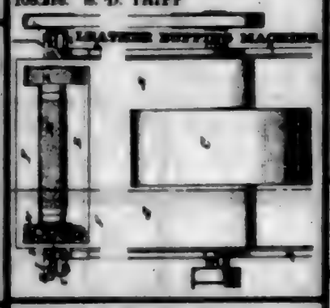
108,214. J. W. TREADWAY, Gang Plow.



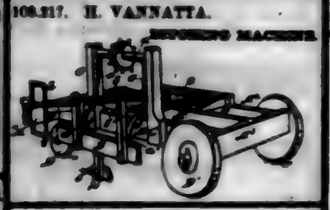
108,215. S. D. TRIPP, Steam Trap.



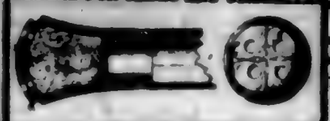
108,216. S. D. TRIPP, Leather Buffing Machine.



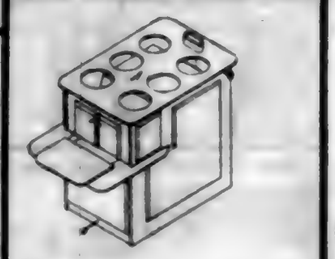
108,217. H. VANNATTA, Reaping Machine.



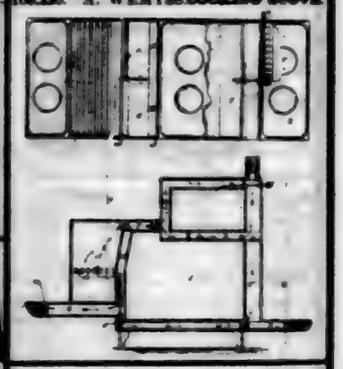
108,218. A. WANNER, Blanks for Gauges and Thimbles.



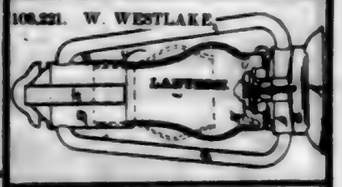
108,219. DWEBBER, Cooking Stove.



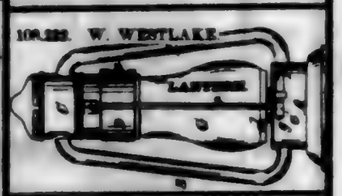
108,220. A. WEMYSS, Rocking Stove.



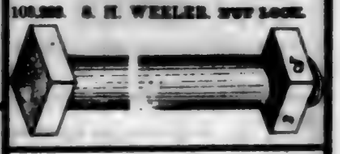
108,221. W. WESTLAKE, Lantern.



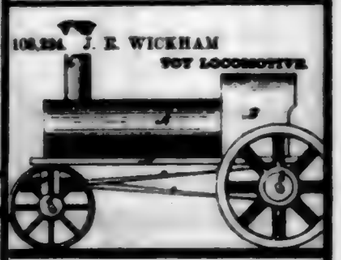
108,222. W. WESTLAKE, Lantern.



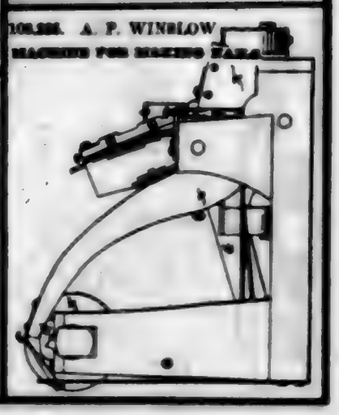
108,223. S. H. WHEELER, Nut Lock.



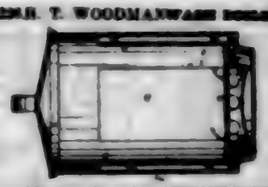
108,224. J. R. WICKHAM, Toy Locomotive.



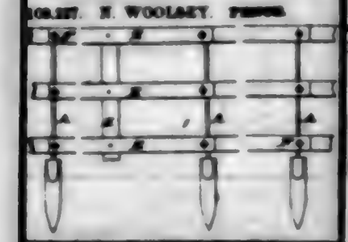
108,225. A. P. WINSLOW, Machine for Making Rake.



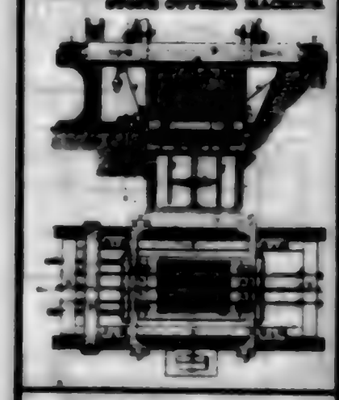
109,236. T. WOODMAN. WASH BOILER.



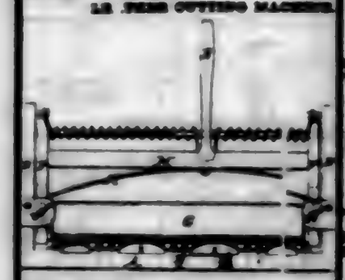
109,237. H. WOOLSEY. PITMAN.



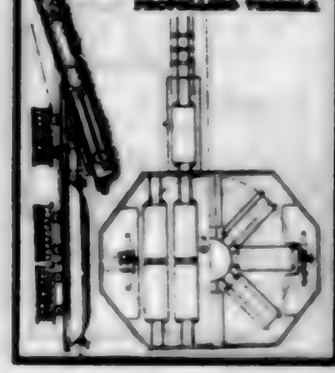
109,238. H. AND J. L. YOUNG. STONE CUTTING MACHINE.



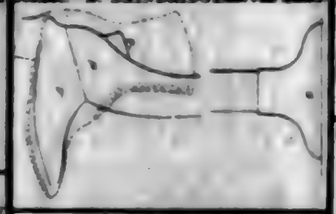
109,239. A. L. ZENT. LIB. TUBE CUTTING MACHINE.



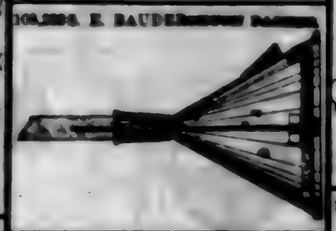
109,240. J. L. ARMAN. PROPELLING WHEEL.



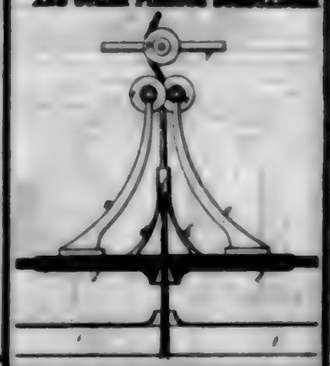
109,235. D. RAINBRIDGE. CARVING LASTS.



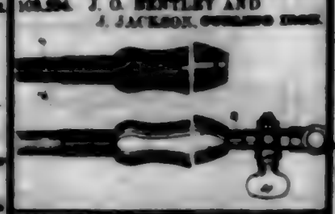
109,236. E. BAUDER. PUMP.



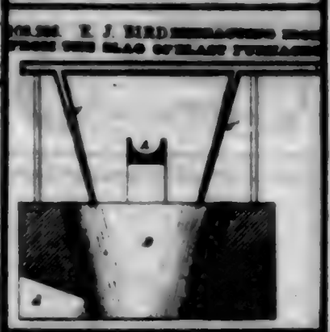
109,242. E. BAZIN. APPARATUS FOR SPINNING HEMP, FLAX, AND OTHER FIBROUS SUBSTANCES.



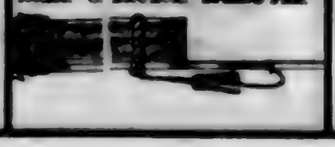
109,243. J. O. BENTLEY AND J. JACKSON. COUPLING HOOK.



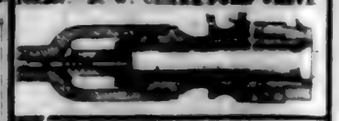
109,244. E. J. BIRD. REGULATING THE FLOW OF GAS OR LIQUID FUEL.



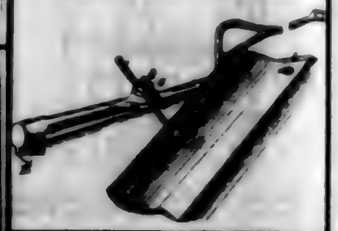
109,245. G. BRUECK. SPRING PAD.



109,257. D. W. CLARK. PUMP VALVE.



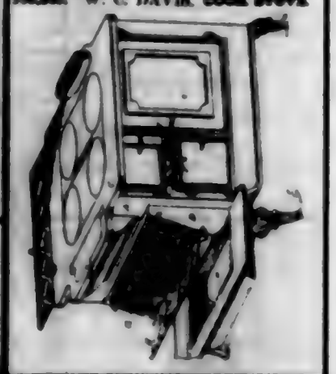
109,258. G. CLARK. ROAD SCRAPER AND RUTCHER.



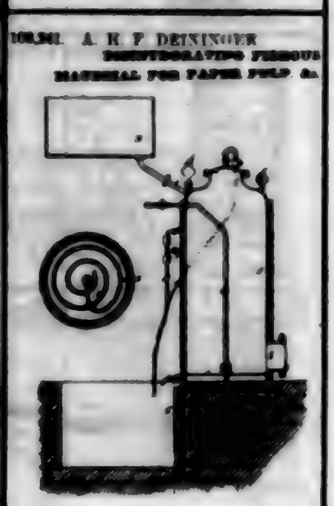
109,259. W. C. CLIFTON. CORN PLOW.



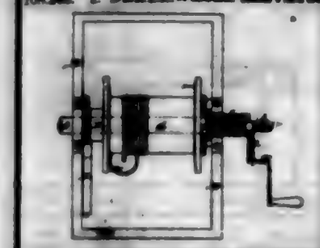
109,260. W. C. DAVIS. COOK STOVE.



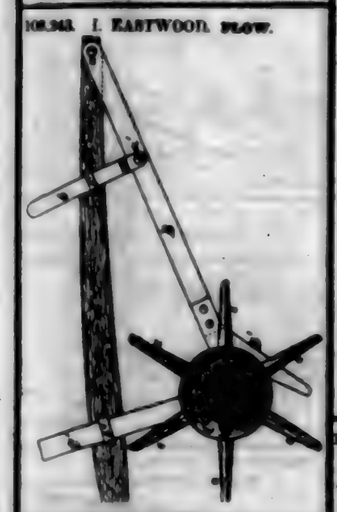
109,261. A. H. F. DEININGER. DISINTEGRATING FIBROUS MATERIAL FOR PAPER PULP &c.



109,262. I. DEKLEWA. GRAIN ELEVATOR.



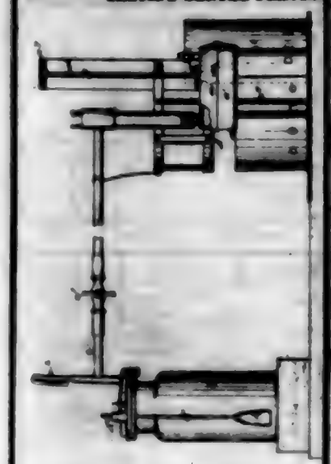
109,263. I. EASTWOOD. PLOW.



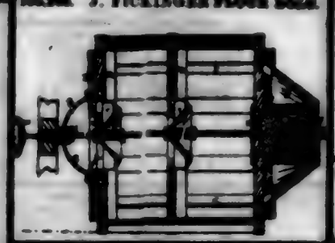
109,264. C. EMBREY. BIRD HOUSE.



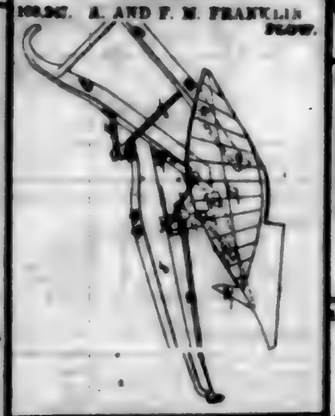
109,265. J. U. L. FREEMSTER. CASTING DENTAL PLATES.



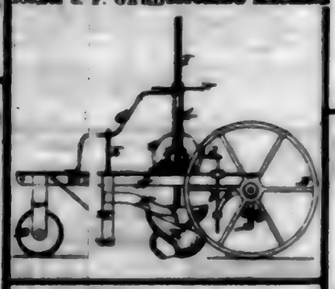
109,266. J. FICKINGER. FLOUR BOLT.



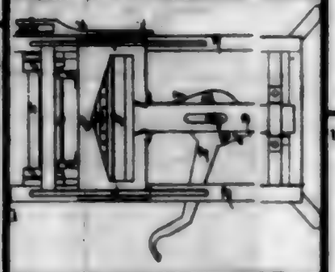
109,267. A. AND F. M. FRANKLIN. PLOW.



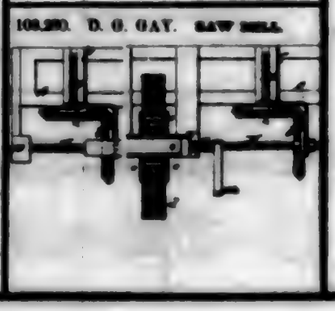
109,268. S. F. GARDNER. SEWING MACHINE.



109,269. F. R. GARNER. FEED CUTTER.



109,270. D. G. GAY. SAW MILL.



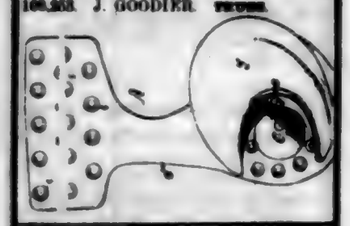
109,271. D. G. GAYMAN. BAG FASTENER.



109,272. J. GEISS. SEWING.



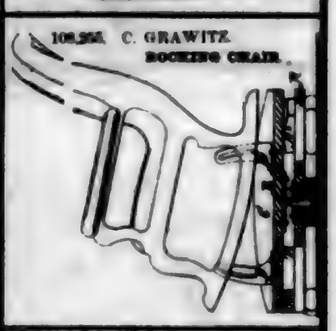
109,273. J. GOODIER. PITMAN.



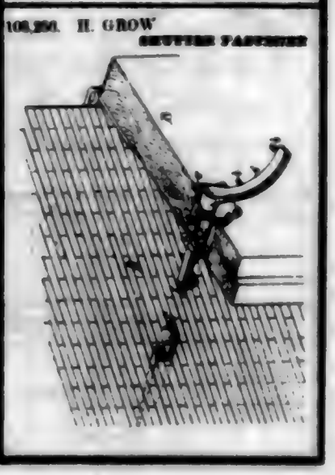
109,274. W. F. GRABLER. CAR COUPLING.



109,275. C. GRAWITZ. ROCKING CHAIR.



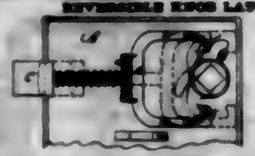
109,276. H. GROW. SHUTTER FASTENER.



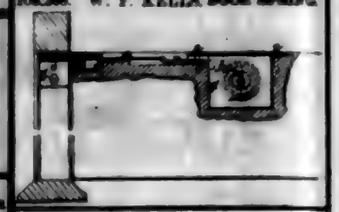
108,267. W. B. GUERNSEY. ELECTRO MAGNETIC BURGLAR ALARM.



108,268. A. M. HILL. REVERSIBLE KNOB LATCH.



108,269. W. F. KELLA. DOOR SPRING.



108,270. B. F. HINKLEY. GUARD ATTACHMENT FOR REED SEWING MACHINES.



108,271. S. M. KING. MACHINE FOR CLEANING AND STONING RICE FIELDS.



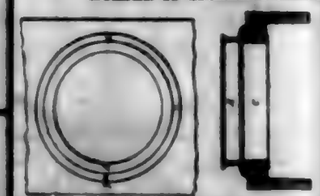
108,272. J. HALL. BAKE OVEN.



108,273. P. HODGE. DRY GAS METER.



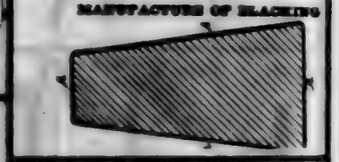
108,274. G. W. KNIGHT. MOLDS OF SPINNING RINGS.



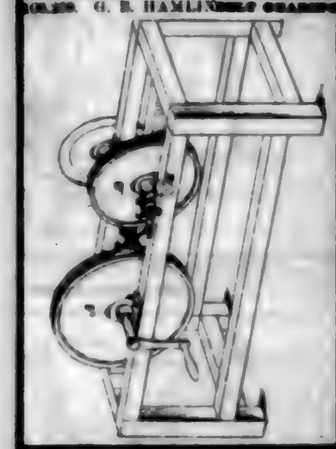
108,275. D. O. HOLMAN. PUMP.



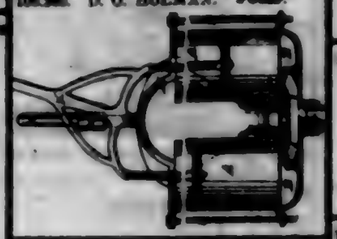
108,276. J. L. LUCAS. MANUFACTURE OF BLACKING.



108,277. G. B. HAMLIN. REED CHAIR.



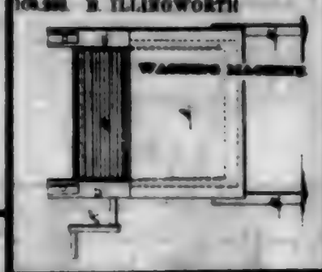
108,278. D. O. HOLMAN. PUMP.



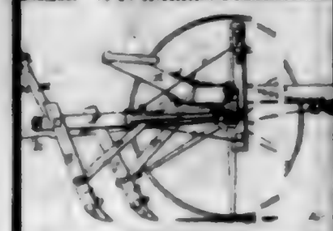
108,279. L. LUPPEN. SHOVEL PLOW.



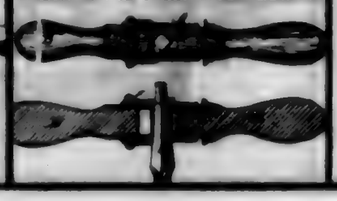
108,280. B. ILLINGWORTH. WARPING MACHINE.



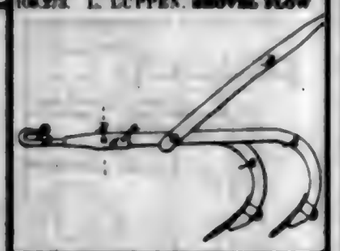
108,281. V. P. HARRIS. CULTIVATOR.



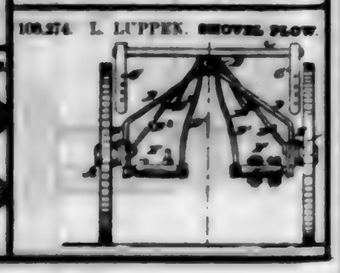
108,282. W. A. IVES. APPLE PARER.



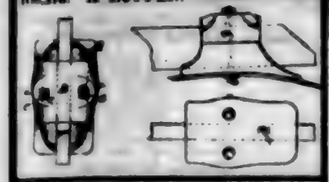
108,283. L. LUPPEN. SHOVEL PLOW.



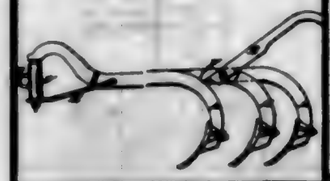
108,284. L. LUPPEN. SHOVEL PLOW.



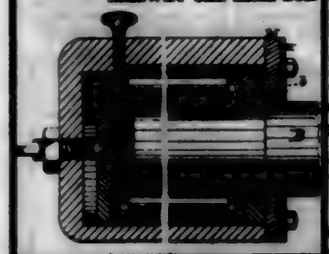
108,275. L. LUPPEN. SHOVEL PLOW.



108,276. L. LUPPEN. SHOVEL PLOW.



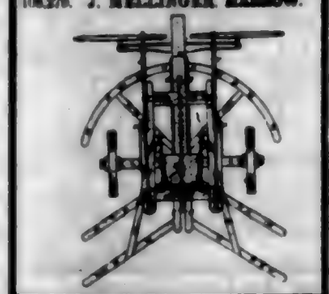
108,277. G. F. LYNCH. RAILWAY CAR AXLE BOX.



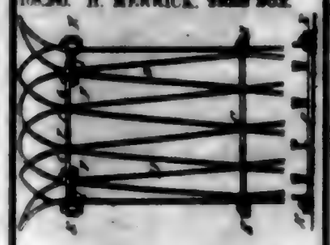
108,278. J. R. MARVEL. WORK BOX.



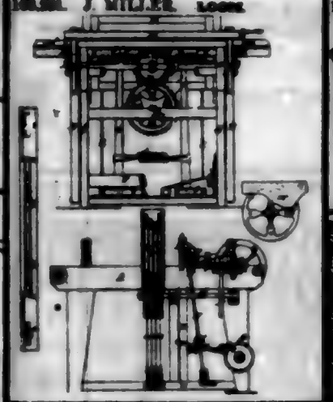
108,279. J. MELLINGER. HARROW.



108,280. H. MERRICK. TRUSS BOX.



108,281. J. MILLER. LOOM.



108,282. F. B. MORSE. KING BOLT.



108,283. F. B. MORSE. DIE FOR SWAGING CARRIAGE CLIPS.



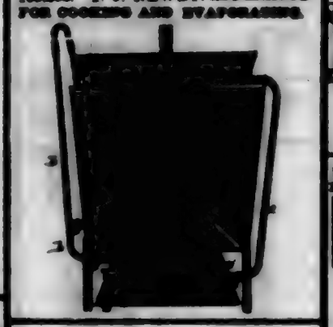
108,284. E. D. MURFEY. IMPREGNATING FIBROUS MATERIAL FOR PACKING, &c.

108,285. E. D. MURFEY. SATURATING FIBROUS MATERIAL WITH POWDERED SUBSTANCES FOR SHEATHING AND PACKING.

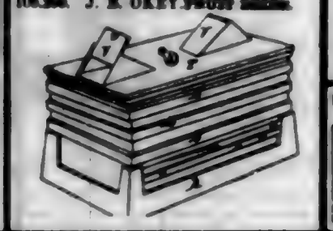
108,286. E. D. MURFEY. MATERIAL FOR PACKING AND SHEATHING.

108,287. C. M. NEE. MANUFACTURE OF STEEL.

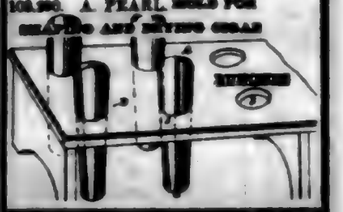
108,288. T. J. NEWBY. APPARATUS FOR COOKING AND EVAPORATING.



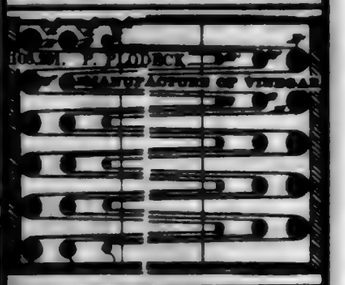
108,289. J. R. OKEY. FRUIT DRIER.



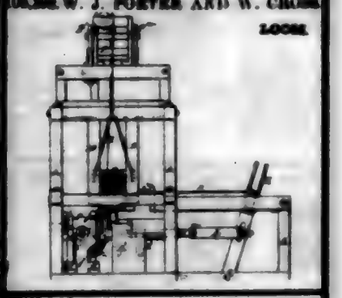
108,290. A. PEARL. MOLD FOR MELTING AND REFINING GRAIN.



108,291. P. POOLEY. GRAPE SCISSORS OR PRUNERS.



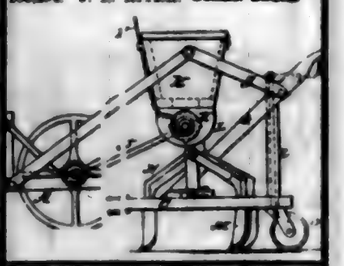
108,292. W. J. PORTER AND W. CROSS. LOOM.



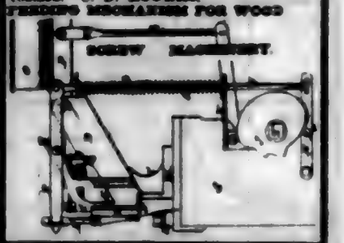
108,293. N. PURDEY. BOX OPENER.



108,294. J. L. RITER. GRAIN DRILL.



108,295. C. D. ROGERS. FEEDING MECHANISM FOR WOOD SCREW MACHINERY.



108,296. L. W. ROSECRANS. BITTER MACHINE.



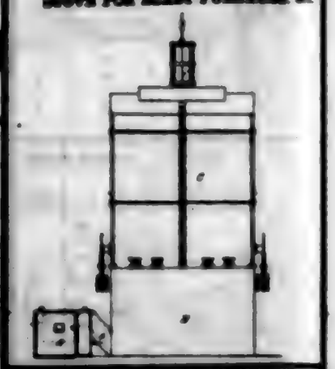
108,307. H. SAGGAN. CHURN.



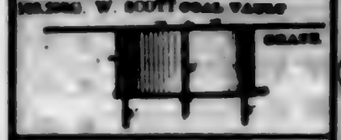
108,308. C. VAN HAAGEN. TURNING AND BORING MECHANISM.



4,149. J. HENDERSON AND J. M. LAWFORD. HOT BLAST STOVE FOR BLAST FURNACES, &c.



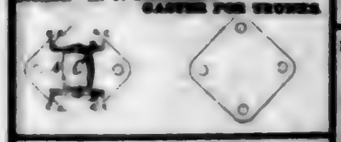
108,309. W. SCOTT. COAL VASES.



108,310. A. J. SESSIONS. TRUNK CLASP.



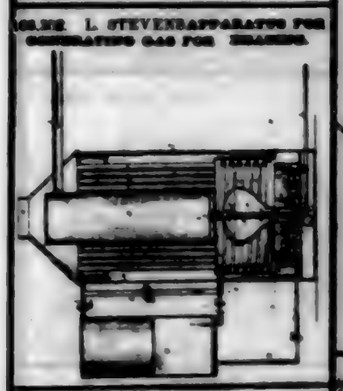
108,311. A. J. SESSIONS. CASTING FOR TRUNKS.



108,312. A. J. SHIRLEY. WELL TUBE.



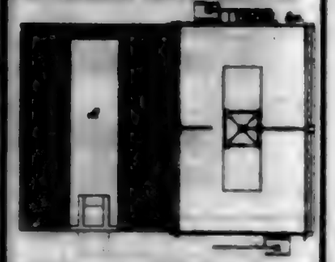
108,313. L. STEVENS. APPARATUS FOR GENERATING GAS FOR HEATING.



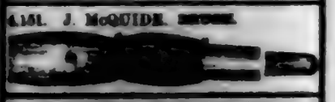
108,314. M. WARNE. HEAD BLOCK.



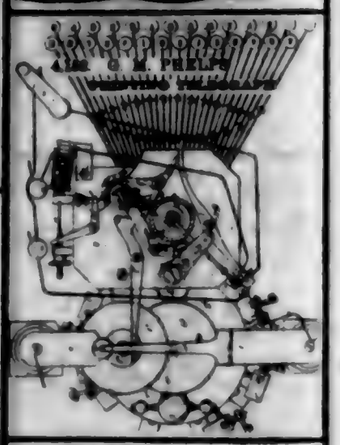
4,150. J. HENDERSON AND J. M. LAWFORD. APPARATUS FOR HEATING THE BLAST FOR FURNACES WHEN IN OPERATION, &c.



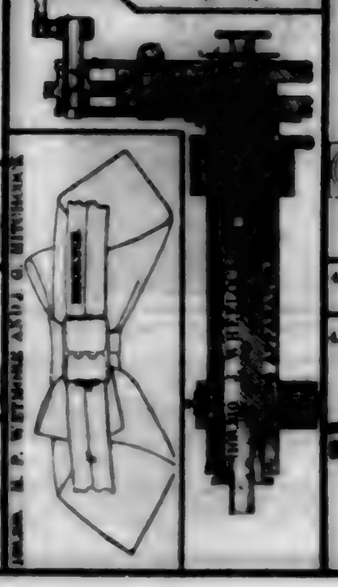
4,151. J. McQUIDE. SPOKE.



108,315. C. M. PHELPS. CUTTING NAILS.

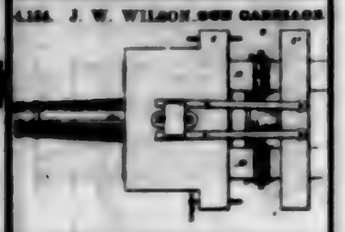


108,316. L. STEVENS AND C. HITCHCOCK. PLANING MACHINE.



4,152. L. LA BRECHE-VIGER. MANUFACTURE OF CAST STEEL.

4,153. J. W. WILSON. GUN CARRIAGE.



108,317. J. R. TUTTLE. CHURN.



108,318. W. P. VALENTINE. MOP HEAD.



108,319. C. VAN HAAGEN. PLANING MECHANISM.



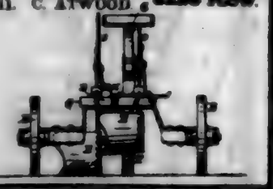
ILLUSTRATIONS OF PATENTS

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OCTOBER 18, 1870.

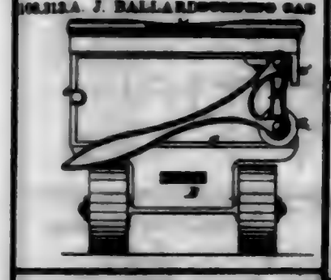
108,311. C. ATWOOD. GAS BLOW.



108,312. P. R. AUSTIN. FEED DEVICE FOR POWER PRESSES.



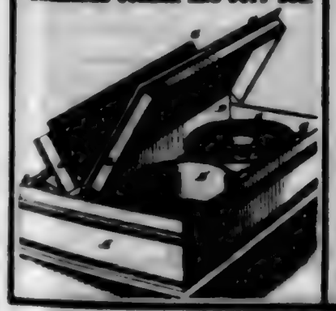
108,312A. J. BALLARD. SPRING GAS



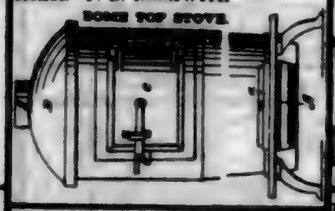
108,313. E. BARTELS. FOLDING CHAIR.



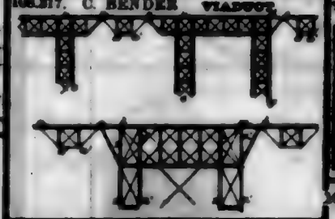
108,313A. J. C. BAUER. COMBINED COLLAR AND CUFF BOX.



108,316. P. D. BECKWITH. DOME TOP STOVE.



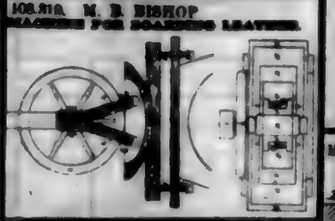
108,317. C. BENDER. VIADUCT.



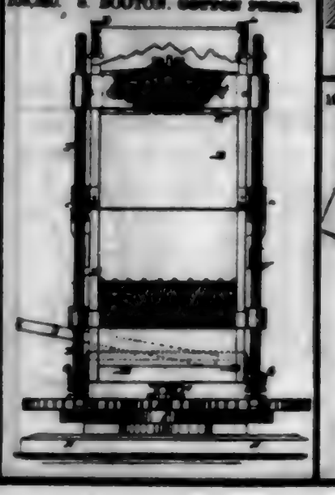
108,318. E. BIGELOW. APPARATUS FOR COOLING LIQUIDS WHEN PURIFYING.



108,318. N. B. BISHOP. MACHINE FOR SCARFING LEATHER.



108,319. S. BOOTON. COTTON PRESS.



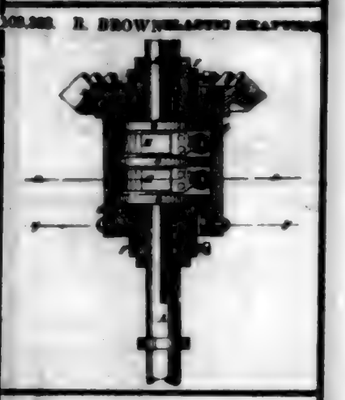
108,321. J. R. BROWN. BOX SCRAPER.



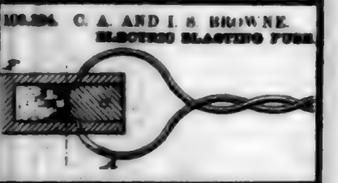
108,322. M. W. BROWN. BOX OR CASE TO CONTAIN RACKS, HAME SIDES, &c.



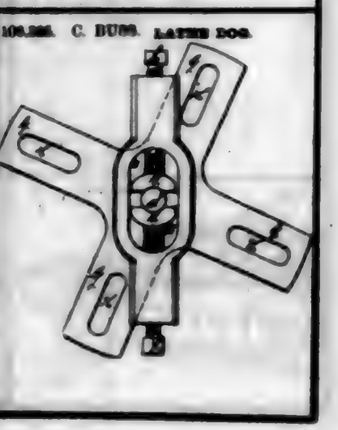
108,323. R. BROWN. PLASTIC SHAPING



108,324. C. A. AND I. S. BROWNE. ELECTRIC BLASTING FUSE.



108,325. C. BUSH. LATHE DOG.



J. C. BUTTERFIELD AND J. HAY

D. STARLINGER

M. L. CALLENDER

L. CARLETON

J. F. CASE

B. L. COLE

D. G. CURRIER

B. DENSMORE

D. W. DENTON

A. DICK

C. DION

B. F. DUDLEY

A. DUNBAR

J. DUNN

A. EICKERT

J. ENNIS

J. N. FARRAR AND J. STONE

D. GOODWILLIE

J. W. HANKINSON AND W. BAKER

O. GALLAGHER

J. T. GRAVES

H. V. GRIFFITH

O. GILMORE

R. HOLBROOK, Jr.

H. A. GOLL

H. H. H. GROSSKOPF

C. GOLDTHWAIT

A. GUEST

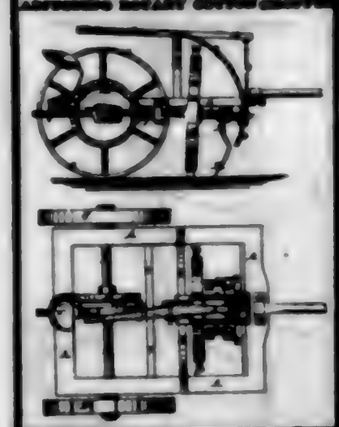
A. GUILD AND W. H. PIERCE

J. H. GOLLADAY

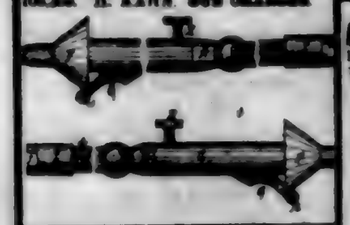
W. D. HUBERTSHUSS

J. IVES

108,369. S. A. JEFFERSON. SHAFT ADJUSTABLE ROTARY COTTON CROPPER.



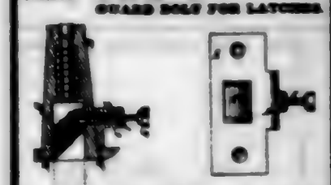
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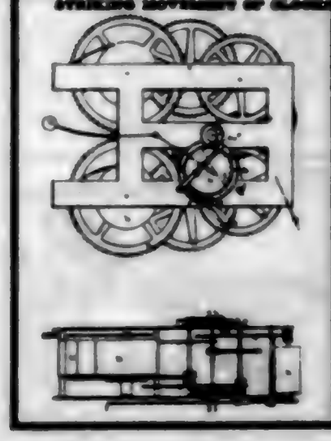
108,371. F. B. KALKBRENNER. COMBINATION LOCK.



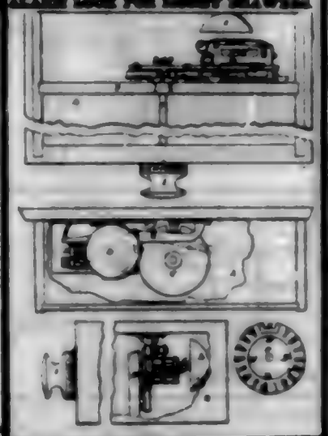
108,372. R. H. KENT. GUARD BOLT FOR LATCHES.



108,373. F. KIENAST. STRIKING MOVEMENT OF CLOCKS.



108,374. G. KIMBALL. ADJUSTABLE BRACE FOR SECRET DRAWERS.



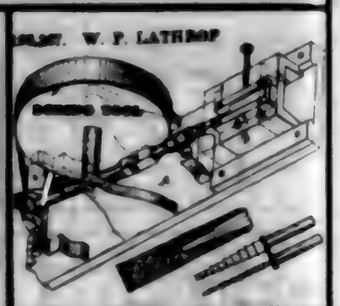
108,375. W. E. KLINE. [illegible] AND CORRUGATED HEAD.



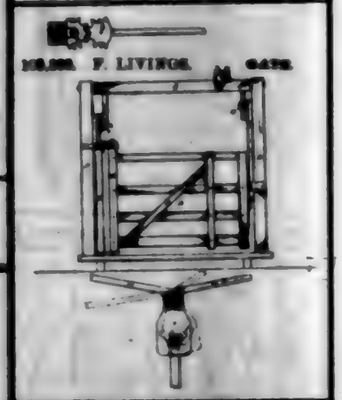
108,376. A. KNIGHT.



108,377. W. F. LATHROP. [illegible].



108,378. F. LIVINGS. GATE.



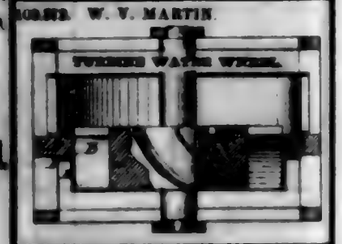
108,379. J. M. LOWENSTEIN. FIRE-KINDLING COMPOUND.

108,380. C. W. LOMBARD. SAWING MACHINE.

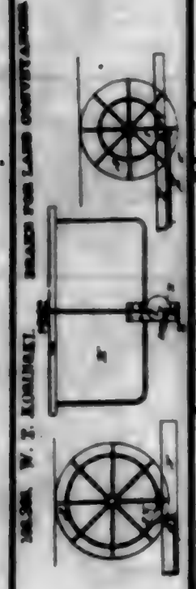


108,381. J. D. LOVE. MEDICAL COMPOUND OR LINIMENT.

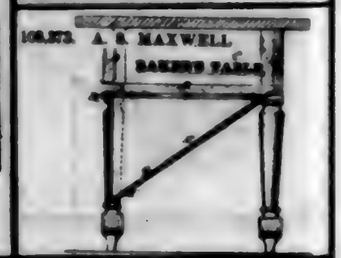
108,382. W. V. MARTIN. TURBINE WATER WHEEL.



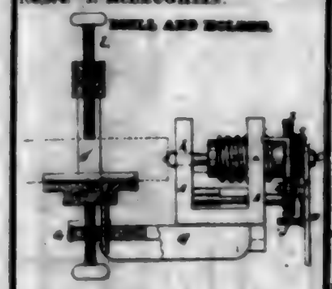
108,383. W. F. KOMINAT. BRACE FOR LAID CONVEYANCE.



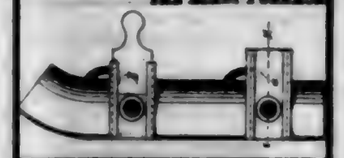
108,384. A. S. MAXWELL. BAKERS PANS.



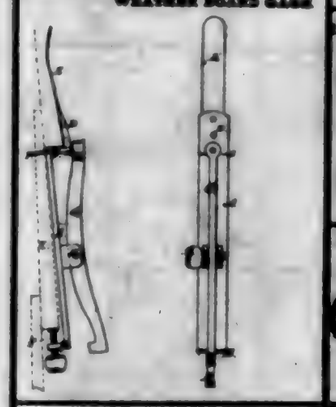
108,374. J. McLAUGHLIN. [illegible] AND BOLSTER.



108,375. J. W. MIDDLETON. PRODUCING CASTINGS DIRECT FROM THE BLAST FURNACE.



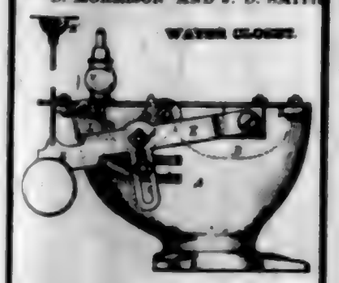
108,376. J. M. MILHOLLIN. WEATHER BOARD GAGE.



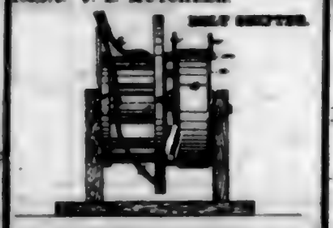
108,377. H. MILLER. COMBINED TOOL.



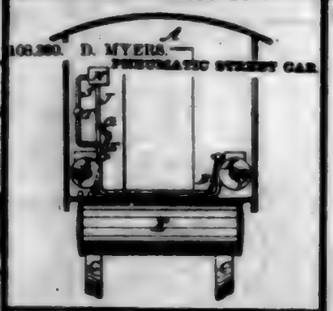
108,378. D. MORRISON AND J. D. SMITH. WATER CLOSET.



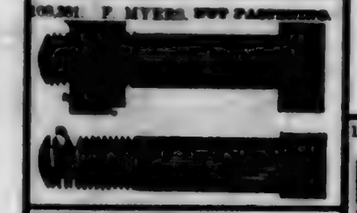
108,379. J. B. MUTCHLER. BELT SHIFTER.



108,380. D. MYERS. PNEUMATIC STREET CAR.



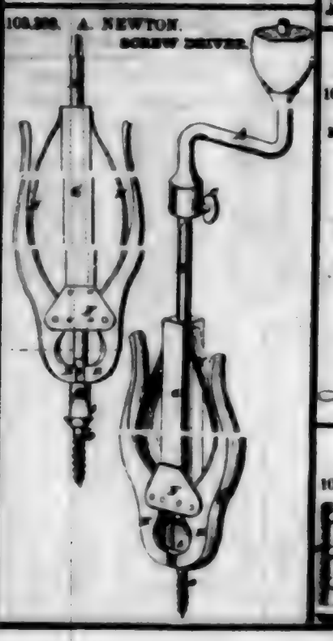
108,381. F. MYERS. NUT FASTENING.



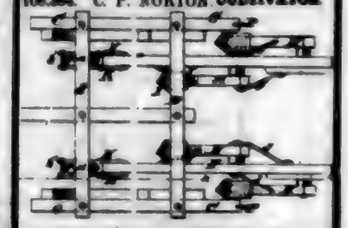
108,382. F. MYERS. NUT FASTENING.



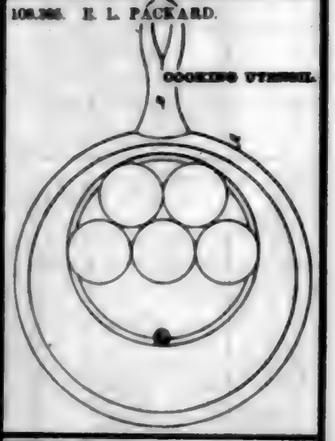
108,383. A. NEWTON. SCREW DRIVER.



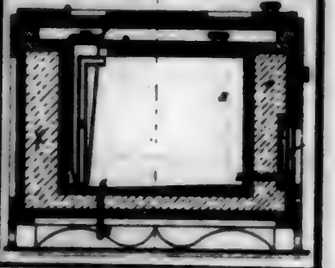
108,384. C. P. NORTON. CULTIVATOR.



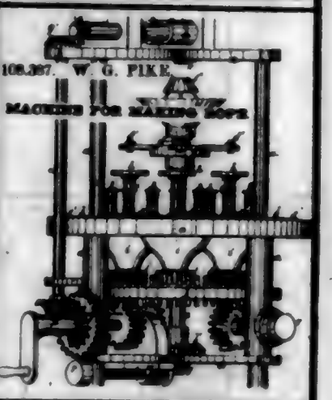
108,385. E. L. PACKARD. COOKING UTENSIL.



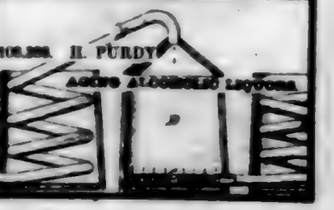
108,386. A. H. PHELPS. REFRIGERATOR.



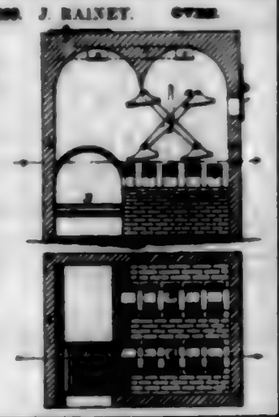
108,387. W. G. PIKE. MACHINE FOR MAKING HOOPS.



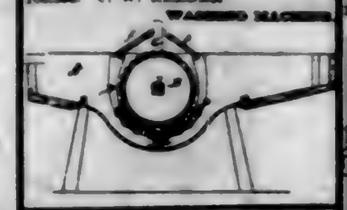
108,388. H. PURDY. AGING ALCOHOLIC LIQUORS.



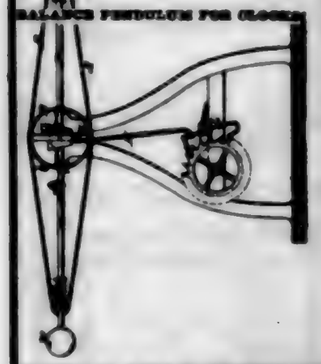
108,399. J. RAINEY. OVEN.



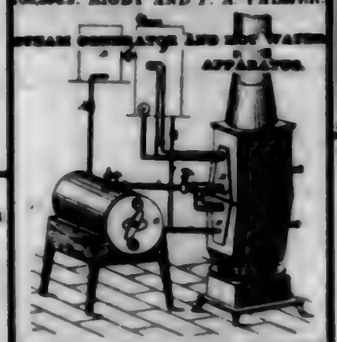
108,400. C. W. REEDER. WASHING MACHINE.



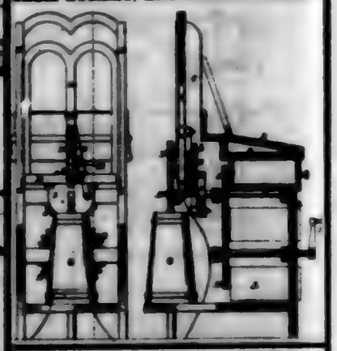
108,401. R. R. RAMSDELL AND C. A. WHITCOMB. BALANCE PENDULUM FOR CLOCKS.



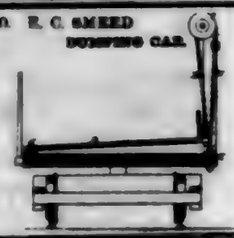
108,402. J. RIGBY AND P. A. PALMER. STEAM GENERATOR AND HOT WATER APPARATUS.



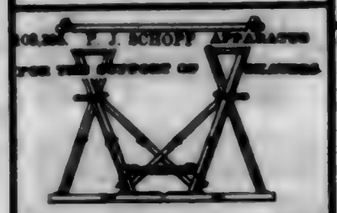
108,403. J. J. SLATER. DRIER, BURNER, AND GRINDER POWER.



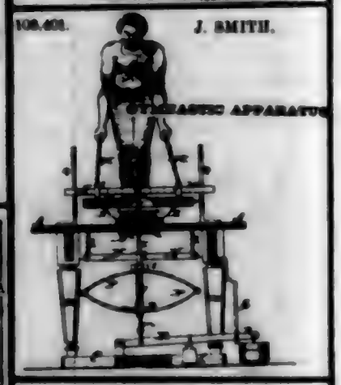
108,404. E. C. SMEED. DUMPING CAR.



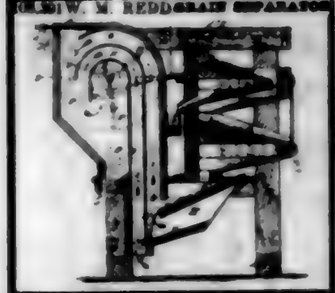
108,405. P. J. SCHOFF. APPARATUS FOR THE MANUFACTURE OF GAS.



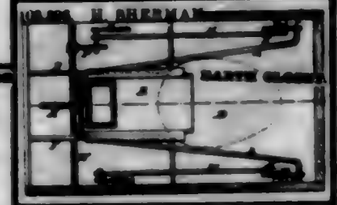
108,406. J. SMITH. GYMNASTIC APPARATUS.



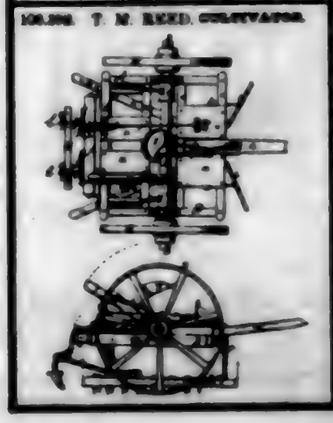
108,407. W. M. REDDGRAVE. SEPARATOR.



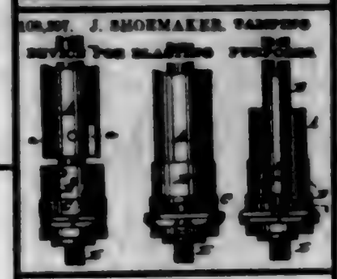
108,408. H. SHERMAN. EARTH CLEANER.



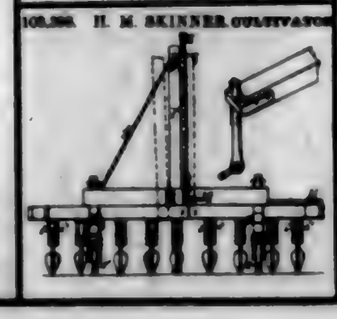
108,409. T. M. REED. CULTIVATOR.



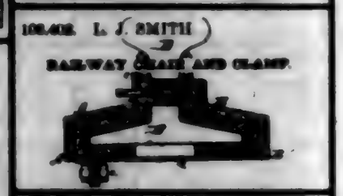
108,410. J. SHOEMAKER. FASTENING FOR THE PLATFORM PANELS OF CARS.



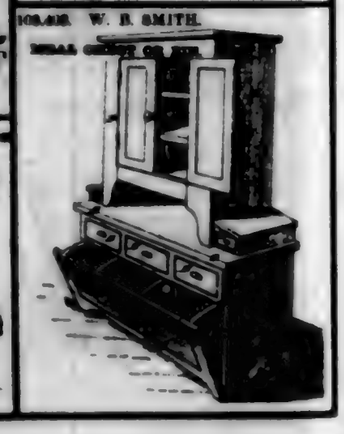
108,411. H. M. SKINNER. CULTIVATOR.



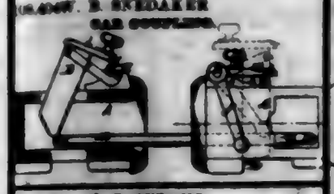
108,412. L. J. SMITH. RAILWAY CHAIR AND CLAMP.



108,413. W. B. SMITH. SEWING CHAIR.



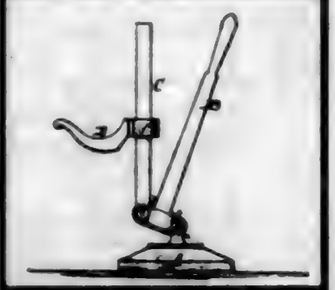
108,414. W. B. SNEDAKER. CAR COUPLING.



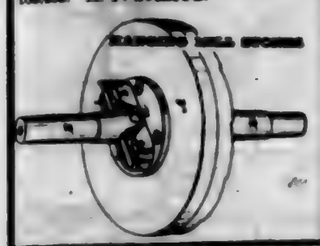
108,415. H. E. TOWLE. SEWING.



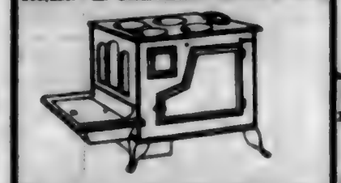
108,416. L. D. WARREN. MOWING MACHINE.



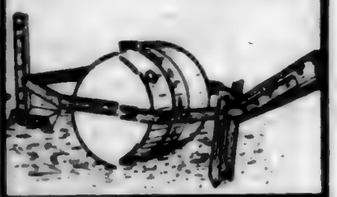
108,417. H. P. STRAUB. HARVESTING MILL STONES.



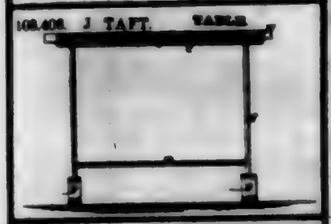
108,418. A. TRAVER. COOKING STOVE.



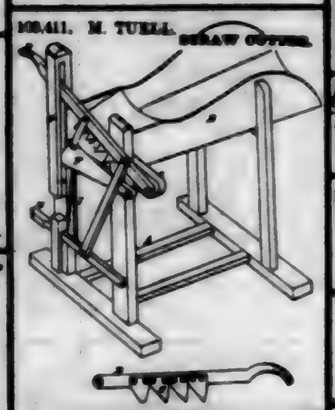
108,419. B. H. WASHINGTON. PLANTER AND FERTILIZING COTTON DISTRIBUTER.



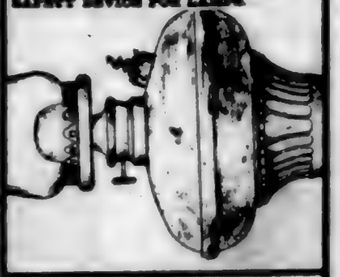
108,420. J. TAFT. TABLE.



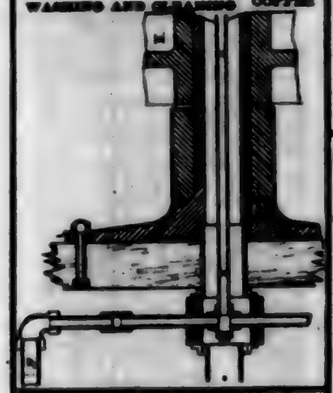
108,421. M. TUELL. STRAW CUTTER.



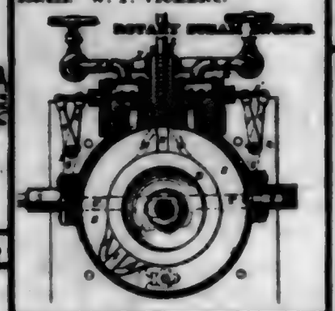
108,422. H. W. M. WASHINGTON. SAFETY DEVICE FOR LAMPS.



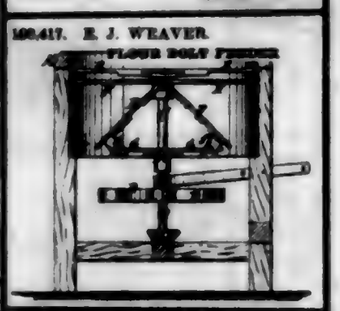
108,423. S. THOMPSON. MACHINE FOR WASHING AND CLEANING COTTON.



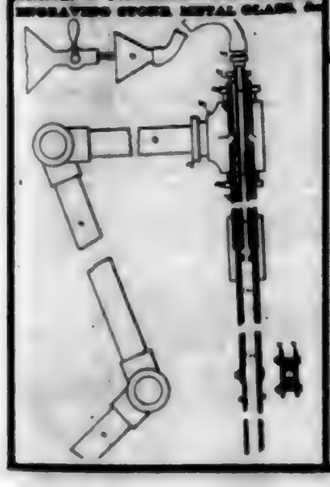
108,424. W. P. VICKERY. ROTARY ENGINE.



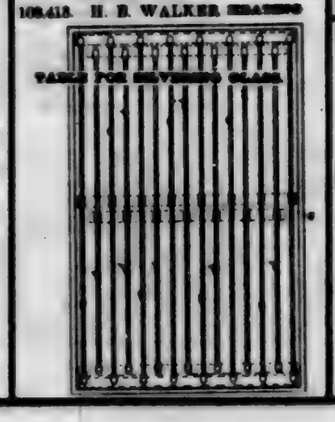
108,425. E. J. WEAVER. FLOUR BOLT FRAME.



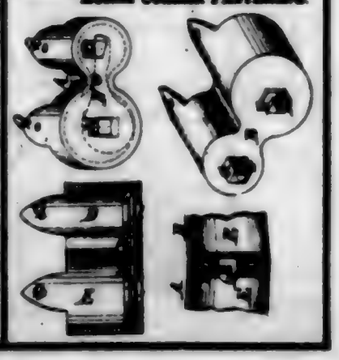
108,426. O. TILGHMAN. CUTTING AND ENGRAVING STONE, METAL, GLASS, &c.



108,427. H. B. WALKER. HEATING VALVE FOR REVERSING GEARS.



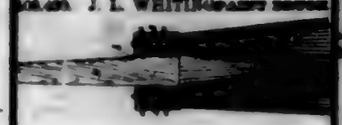
108,428. E. I. WELBOURN. SPRING COLLAR FASTENING.



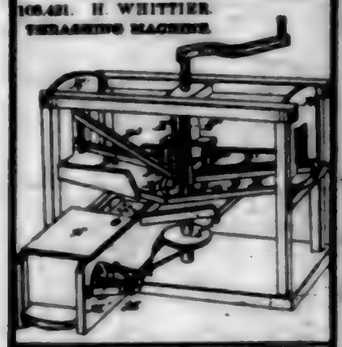
108,429. J. W. WEST. WAGON.



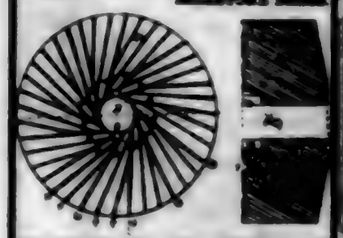
108,430. J. L. WHITLINGER. [illegible]



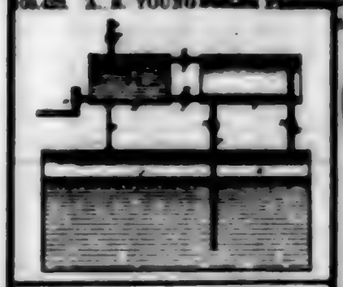
108,431. H. WHITTIER. THRASHING MACHINE.



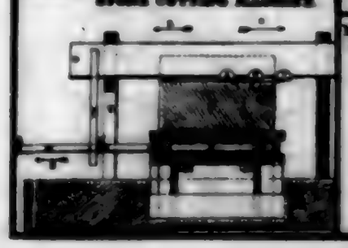
108,432. J. P. H. WOHLENBERG. [illegible]



108,433. A. B. YOUNG. [illegible]



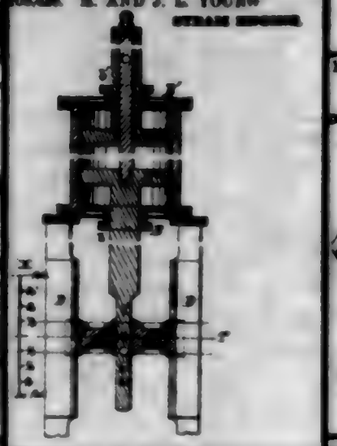
108,434. H. AND J. L. YOUNG. STONE CUTTING MACHINE.



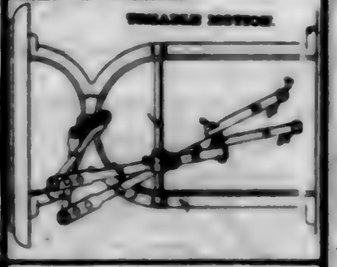
108,435. H. AND J. L. YOUNG. TOOL FOR CUTTING STONE.



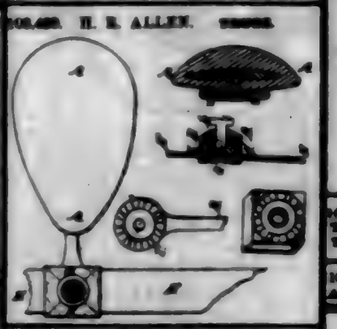
108,436. H. AND J. L. YOUNG. STRAM ENGINE.



108,437. A. M. ALLEN. THRASH BOTTOM.



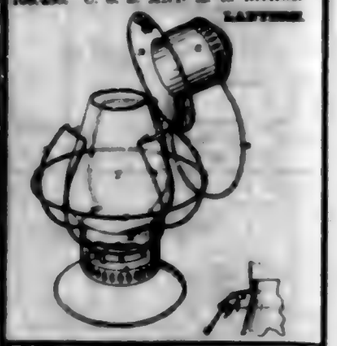
108,438. H. B. ALLEN. [illegible]



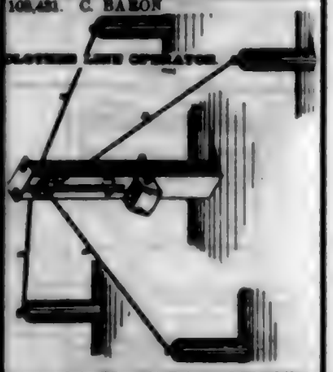
108,439. J. ARMSTRONG. METHOD OF FORMING EDUCATING RIMS OF RAILWAY CHECKING.



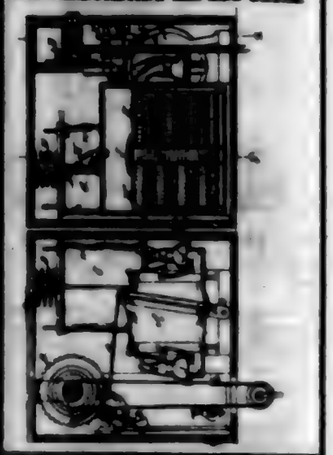
108,440. C. & S. AND A. L. BARON. LANTERN.



108,441. C. BARON. [illegible] AND OPERATION.

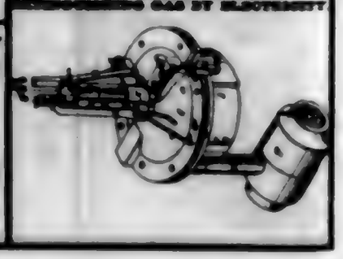


108,442. A. BARTHOLF. APPARATUS FOR CARBURETTING AIR AND GASES.

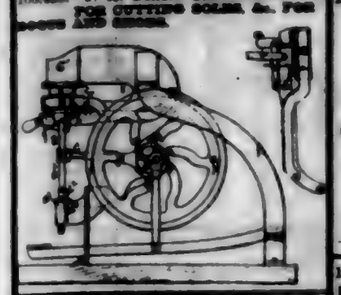


108,443. E. O. BARTLETT. TREATING THE ORES OF LEAD AND ZINC FOR THE MANUFACTURE OF PIGMENTS &c.

108,444. P. BEAN. APPARATUS FOR MEASURING AND [illegible] GAS BY ELECTRICITY.



108,435. J. H. BEAN. MACHINE FOR CUTTING SOLES, &c. FOR [illegible] AND HEELS.



108,436. E. B. BEARDSLEY. TURBINE WATER WHEEL.

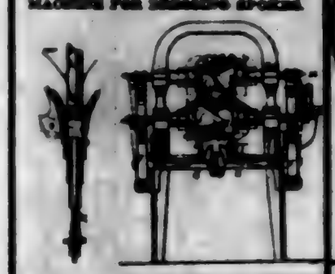


108,437. W. BERRI, Jr. MANUFACTURE OF OIL CLOTH.

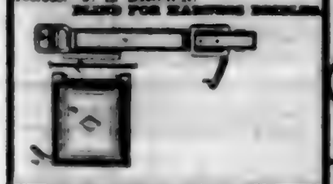
108,438. G. W. BISHOP. GASH BOILER.



108,439. R. H. AND H. S. BOYNTON. MACHINE FOR BENDING SPOKES.



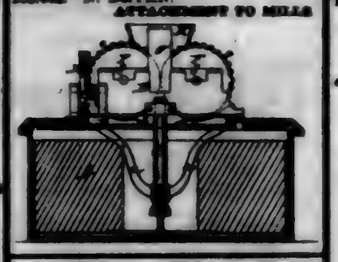
108,440. J. L. BROWN. HEAD FOR HARVING MACHINE.



108,441. S. BRYAN. HUB FOR CARRIAGES.



108,442. S. BRYAN. ATTACHMENT TO MILLS.



108,443. T. BULLIVANT. WINDOW.



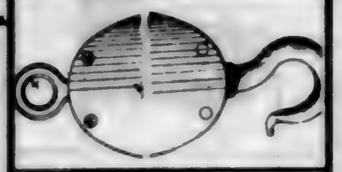
108,444. W. T. BUNN. PLOW.



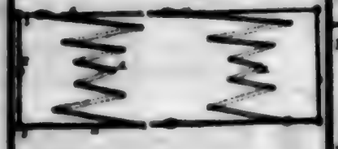
108,445. M. S. BURNS. COTTON SEED PLANTER.



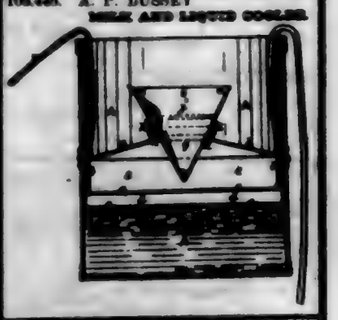
108,446. J. A. BURROUGHS. BLOCK.



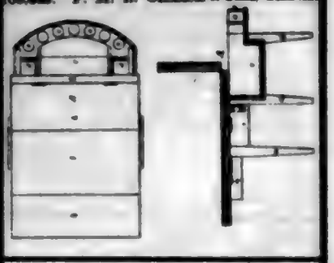
108,447. R. L. BUSHNELL. BED BOTTOM.



108,448. A. P. BUSSEY. MILK AND LIQUID COOLER.



108,449. F. M. B. CLARK. WORK TABLE.



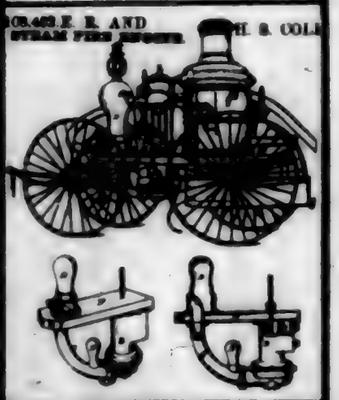
108,450 M. B. CLARK. COTTON BALE TIE.



108,451. A. F. CLOUDMAN AND G. W. COFFIN. COMPOSING STICK.



108,452. F. R. AND [illegible] H. S. COLE. STEAM FIRE ENGINE.



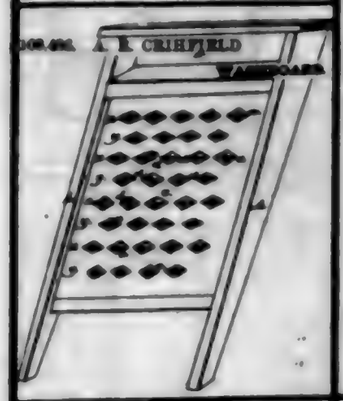
108,453. T. L. COTTEN. MEDICAL COMPOUND FOR HOG CHOLERA.

108,454. J. C. COTTINGHAM. BOAT DETACHING APPARATUS.

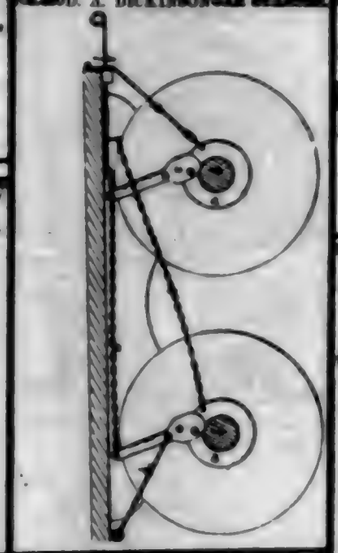


108,468. O. CRANDELL. [illegible]

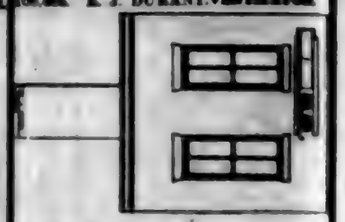
108,469. A. R. CRISFIELD. WASHBOARD.



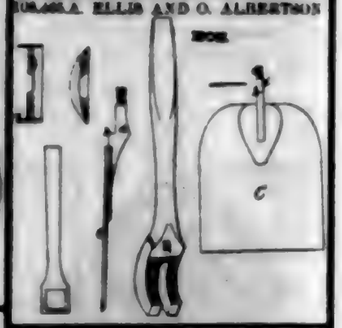
108,470. D. A. DICKINSON. CAR STARTER.



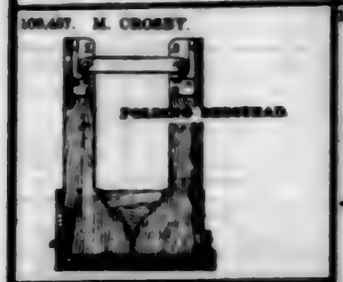
108,471. R. J. DURANT. VENTILATOR.



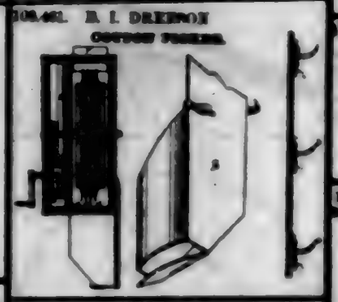
108,472. A. ELLIS AND O. ALBERTSON. [illegible]



108,473. M. CROSBY. [illegible]



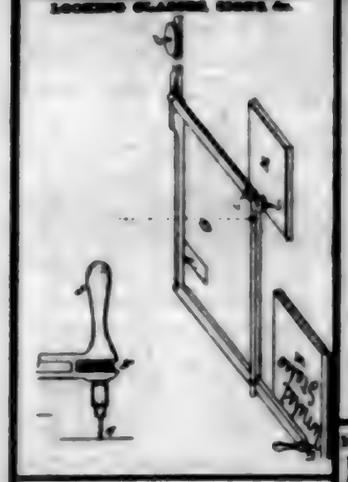
108,474. B. I. DREPSON. [illegible]



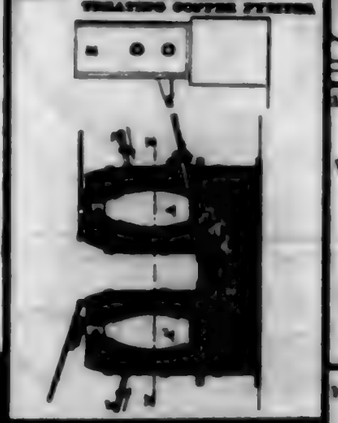
108,475. H. H. ELWELL. [illegible]



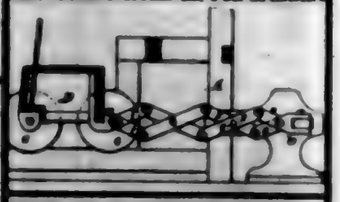
108,476. W. M. DAVIS. MACHINE FOR [illegible]



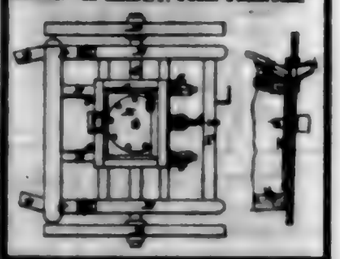
108,477. C. M. T. DU MOTAY. [illegible]



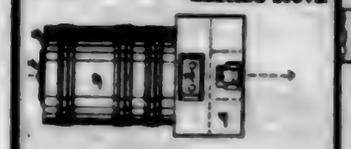
108,478. J. ENTWISTLE. [illegible]



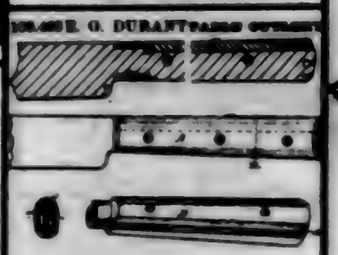
108,479. R. HERDLY. CORN PLANTER.



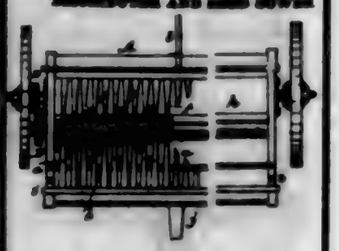
108,480. I. DE HAVEN. [illegible]



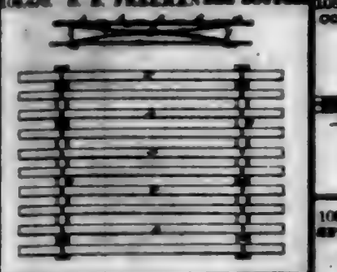
108,481. E. G. DURANT. [illegible]



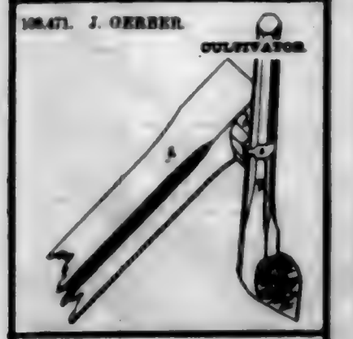
108,482. S. L. FRASER. MACHINE [illegible]



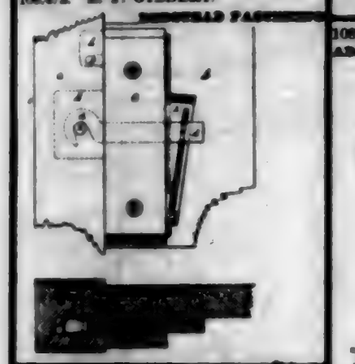
108,470. S. B. FREEMAN. [illegible]



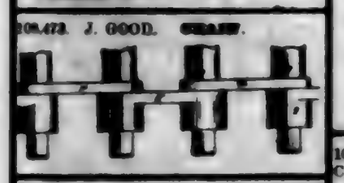
108,471. J. GERBER. CULTIVATOR.



108,472. E. F. GILBERT. [illegible]



108,473. J. GOOD. [illegible]

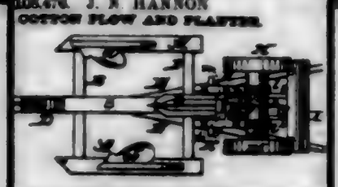


108,474. F. GRIFFIN AND R. TARRY. [illegible]

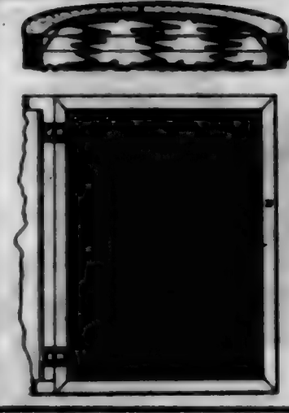
108,475. J. HAMILTON AND G. F. MORSE. [illegible]



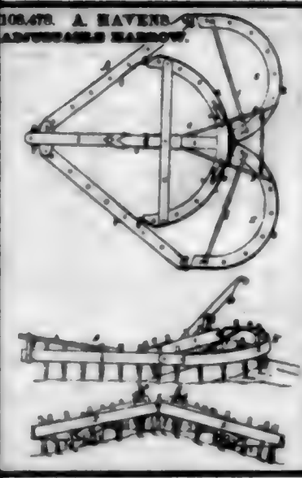
108,476. J. N. HANNON. COTTON PLOW AND PLANTER.



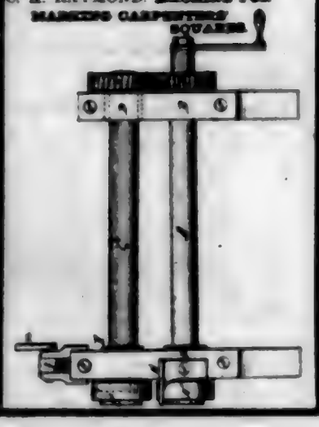
108,477. W. B. HATCH. SPRING CUSHION FOR CAR SEATS.



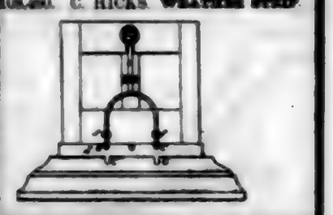
108,478. A. HAVENS. ADJUSTABLE HARROW.



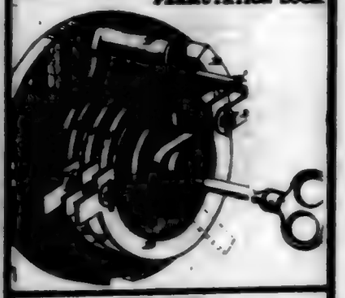
108,479. A. M. HEALY AND C. H. RAYMOND. MACHINE FOR MARKING CARPENTERS' SQUARES.



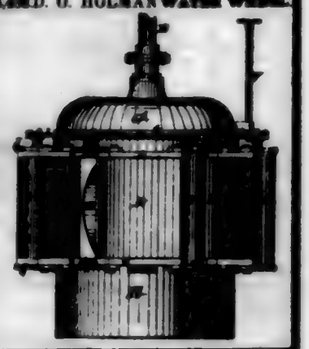
108,480. C. HICKS. WEATHER STRIP.



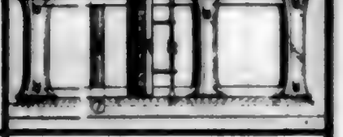
108,481. J. C. HINTZ, Jr. PERMUTATION LOCK.



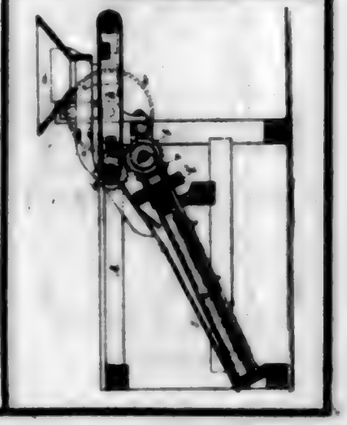
108,482. D. O. HOLMAN. WATER WHEEL.



108,483. J. HUGHES. [illegible]



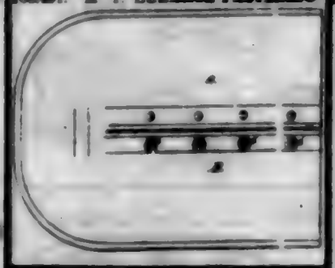
108,484. M. C. JEFFERS. CORN HUSKING MACHINE.



108,488 J. H. JOHNSON SUBSOIL PLOW



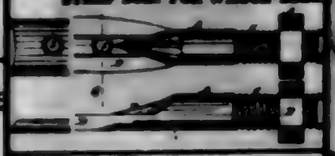
108,491. H. T. LEESIDE FASTENING



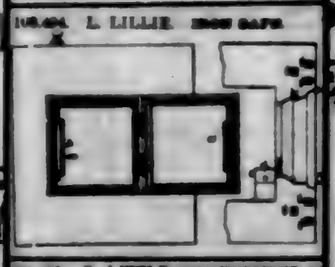
108,492. A. M. LESLIE
RUFFLER FOR SEWING MACHINES.



108,493. W. J. LEWIS AND H. W. OLIVER, Jr.
STRAP BOLT FOR WAGON BOXES



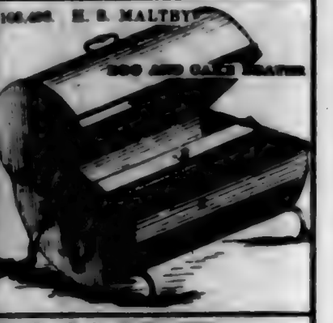
108,494. L. LILLIE SAFE



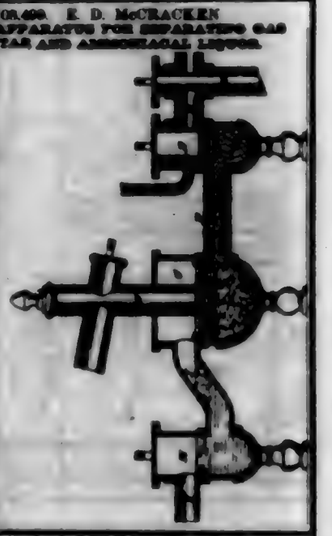
108,495. E. K. MALTBY WASH PROTECTOR



108,497. E. S. MALTBY
SAFE AND CASH BOX



108,498. E. D. McCRACKEN
APPARATUS FOR SEPARATING GAS TAR AND AMMONIACAL LIQUOR.

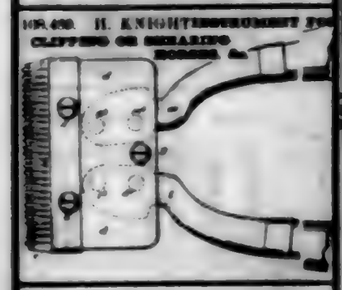


108,496. M. L. KEEN.
MANUFACTURE OF PAPER STOCK

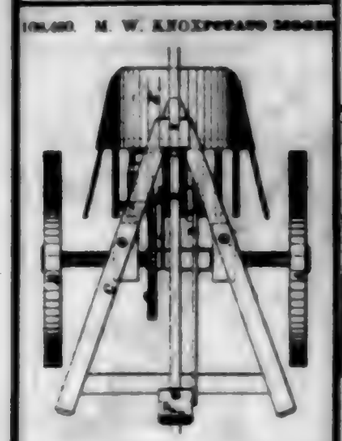
108,499. H. M. KEITH, Jr. PLOW.



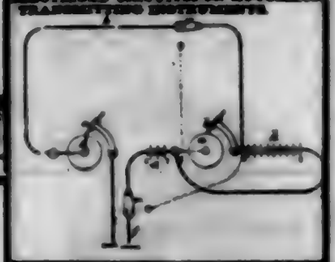
108,500. H. KNIGHTENHUMMET FOR CLIPPING OR SHEARING HORSES.



108,501. M. W. KNOX AND [illegible]



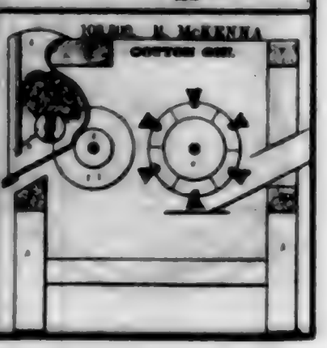
108,502. G. LITTLE ARRANGEMENT OF ELECTRICAL CIRCUITS FOR AUTOMATIC TRANSMITTING INSTRUMENTS



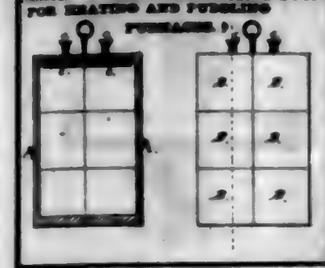
108,503. G. LITTLE.
CHEMICAL TELEGRAPH



108,504. M. McKENNA
COTTON GIN.



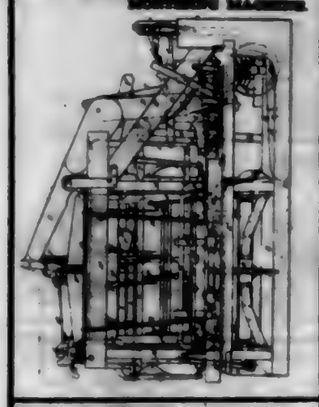
108,507. S. McLAUGHLIN SLIDE DOOR FOR HEATING AND PUDDLING FURNACES.



108,508. T. MEIKLE
DIE FOR SWAGING WHEELS.

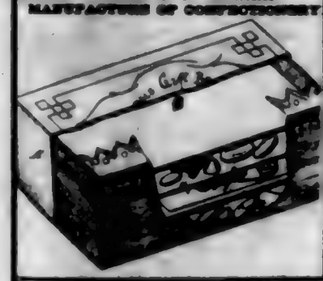


108,509. L. G. MERRILL
MORTISING MACHINE.

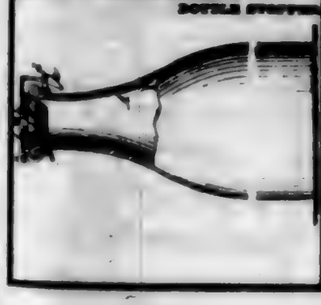


108,504. E. MILLER. MINNOW.

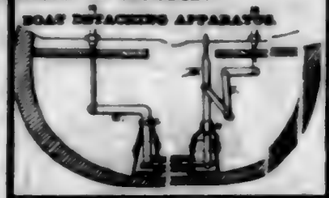
108,506. G. AND C. B. MILLER
MANUFACTURE OF CONFECTIONERY



108,506. W. MOROENSTERN
DOUBLE STOPPER.

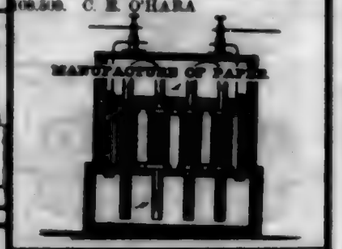


108,507. M. V. NOBLES
BOAT DETACHING APPARATUS.

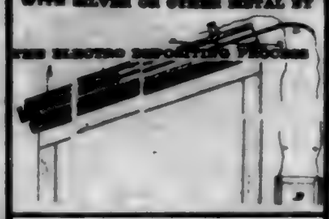


108,508. W. W. OGLESBY
MEDICAL COMPOUND

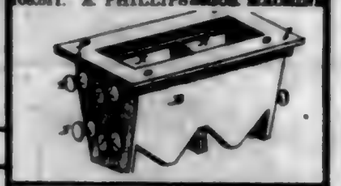
108,509. C. E. O'HARA
MANUFACTURE OF PAPER



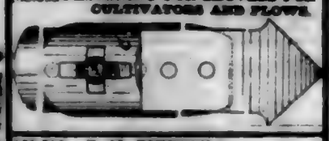
108,510. D. D. PARMELEE, COATING THE INTERIOR OF PIPES, TUBES &c. WITH SILVER OR OTHER METAL BY THE ELECTRO DEPOSITING PROCESS



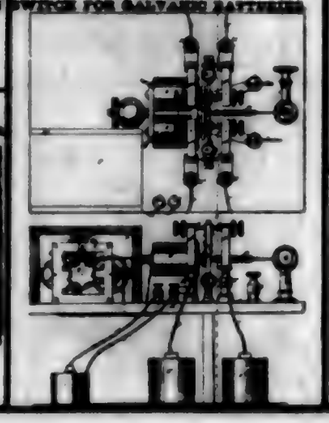
108,511. E. PHILLIPS BRICK MACHINE



J. PIERPONT AND S. S. TUTTLE
108,512 FASTENING FOR SHOVELS FOR CULTIVATORS AND PLOWS.



108,513. E. M. PIERSON
DYNAMO FOR GALVANIC BATTERIES

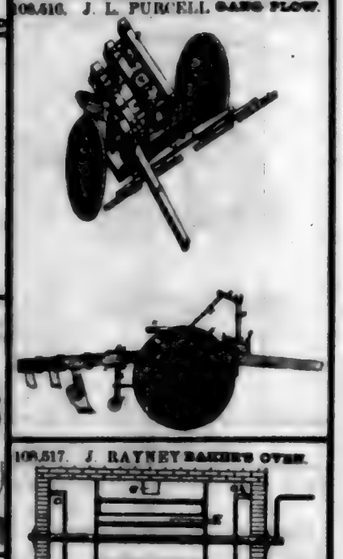


108,514. J. POEY
MANUFACTURE OF SUGAR

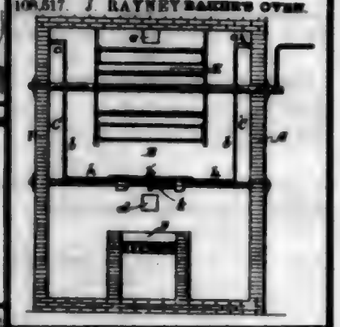
108,515. J. L. POST
RACE LASH FOR MILL GRAZING



108,516. J. L. PURCELL. GANG PLOW.



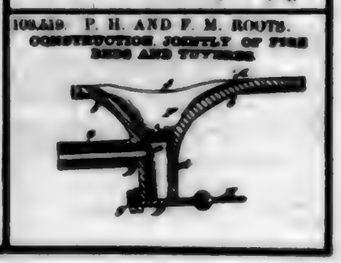
108,517. J. RAYNEY BAKER'S OVEN.



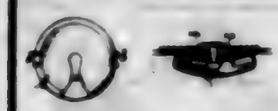
108,518. M. REED
COTTON AND CORN CULTIVATOR



108,519. P. H. AND F. M. ROOTS.
CONSTRUCTION, JOINTLY OF FIRE BRICK AND TUYERES

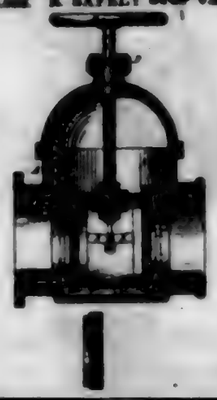


108,530. W. SACKERMANN
BROOCH FASTENING.



108,531. C. SACRE, S. PERKINS, AND W. SMELLIE.
MANUFACTURE OF WROUGHT IRON.

108,532. R. SAFELY STOP VALVE.

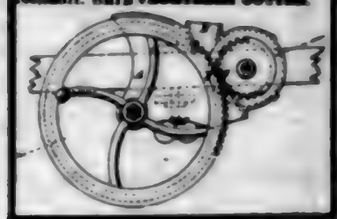


108,533. W. W. SANBORN
STRING WOOLLEN GOODS.

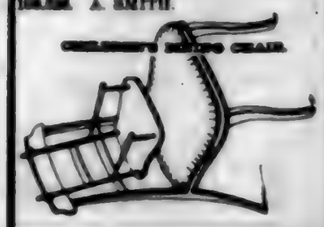
108,534 W. B. SCAIFE



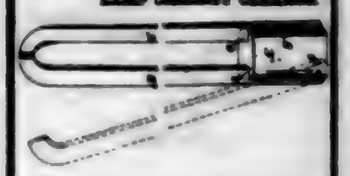
108,535. SHIP VEGETABLE CUTTER.



108,536. A. SMITH.
CHILDREN'S RIDING CHAIR.



108,537. A. D. SMITH
LAND CROCKET CLEANER.



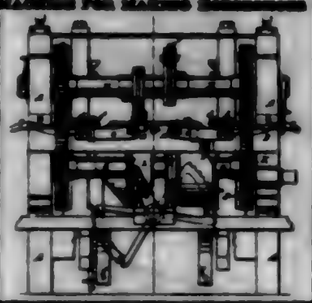
108,538. C. E. SMITH.
VAPOR BURNER.



108,539. I. W. SNYDER. WATER WHEEL.



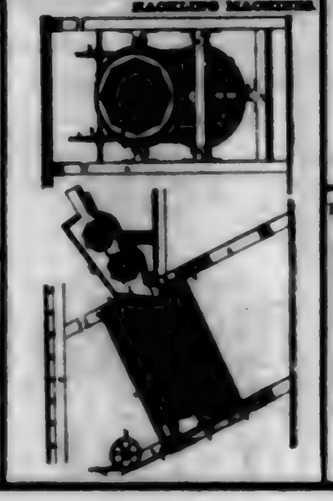
108,540. J. H. SNYDER.
MACHINE FOR MAKING HORSESHOES.



108,541. D. E. AND F. C. SOMER.



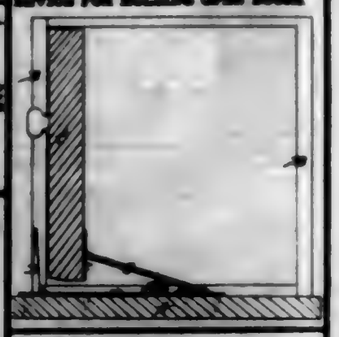
108,542. G. B. STACY.
SEPARATING ATTACHMENT FOR HUSK MACHINES.



108,543. J. STOVER, PERSONS PUBLIST.



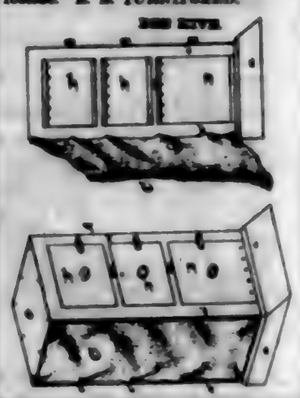
108,544. J. B. SWEETLAND.
DEVICE FOR HOLDING OPEN DOORS.



108,545. J. F. THOMAS. SHOVEL.



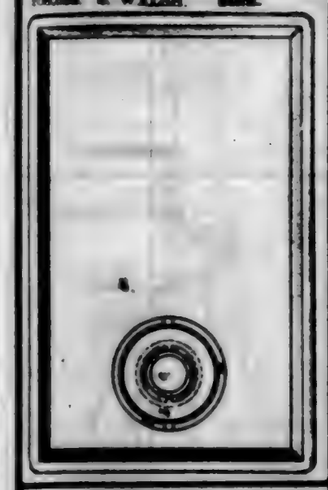
108,546. R. R. TURNIPSEED.
SEED DRILL.



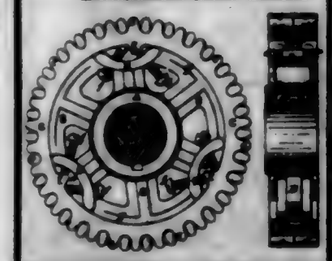
108,547. N. VANDENBURGH
POTATO DIGGER.



108,539. S. WALSH. SHOE.

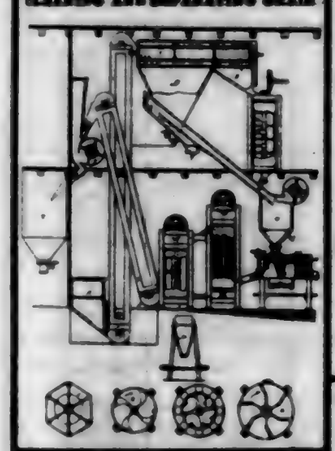


108,540. W. H. WARD.
ADJUSTABLE GEAR WHEEL.



108,541. A. WARFIELD
MANUFACTURE OF SOAP.

108,541. F. WEGMANN MACHINE FOR CLEANING AND SEPARATING GRAIN.

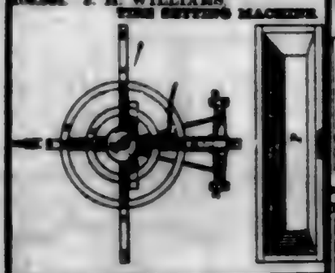


108,542. C. S. WELLS, MANUFACTURE OF BOXES, CARTRIDGE CASES, &c.

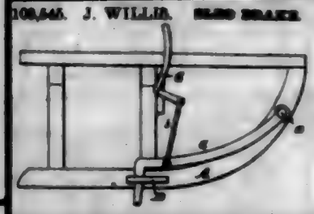
108,543. D. E. WILLIAMS, CARTRIDGE.



108,544. J. H. WILLIAMS.
TIRE SETTING MACHINE.



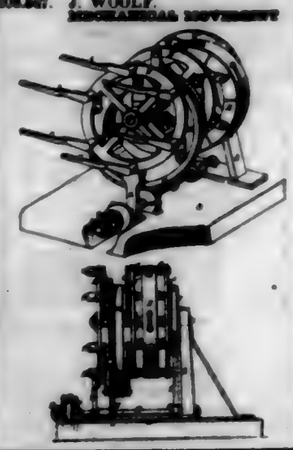
108,545. J. WILLIS. SLED BRAKE.



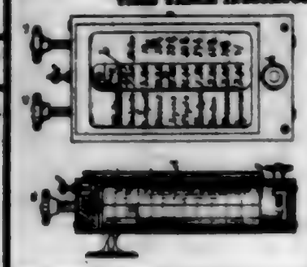
108,546. A. WISSLER, SEPARATOR OF THRASHING MACHINES.



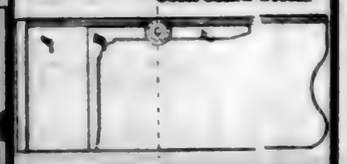
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MECHANICAL MOVEMENT.



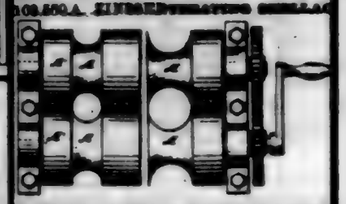
108,548. L. WRIGHT.
TIRE TAPER INDICATOR.



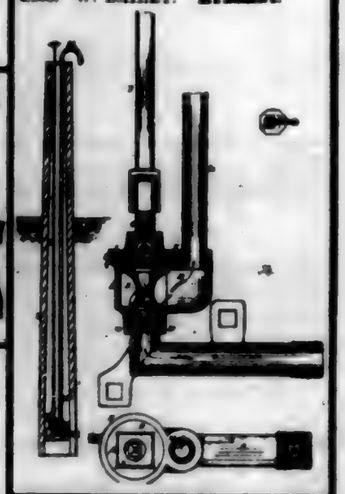
108,549. R. C. YOUNG
COMPOSING STICK.



108,550. A. ZINSER, OPERATING SHELLAC



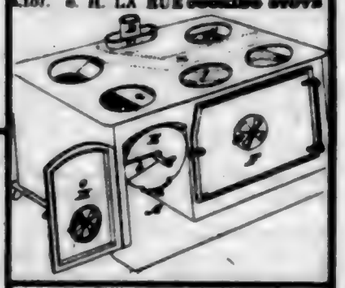
4,135. W. BAILEY. HYDRANT.



4,136. W. A. IVES. AWNING.



4,137. S. H. LA RUE COOKING STOVE



4,138. J. L. SAMUELS.
PRESERVING AND HARDENING WOOD.

4,139. D. S. WOOD
SCREEN FOR PAINTS.

ILLUSTRATIONS OF PATENTS

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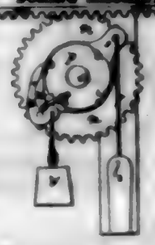
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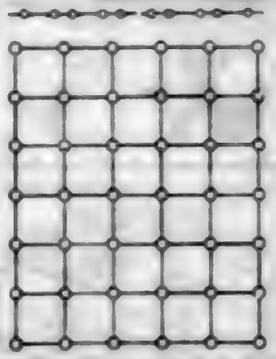
108,551 C. N. BALDWIN
HORSE HAY FORK.



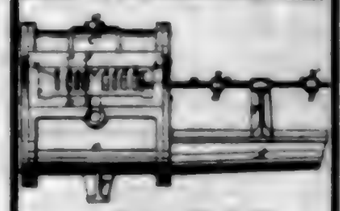
108,552 C. N. BALDWIN
BORING MACHINE



108,553 W. BECK
METALLIC TYRE FOR &c.



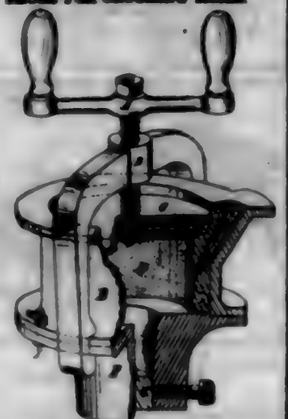
108,554 O. P. BLAKE STEAM PUMP.



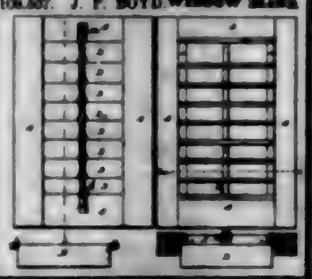
108,555 J. BLOMGREN
CROSSARM FOR MINING



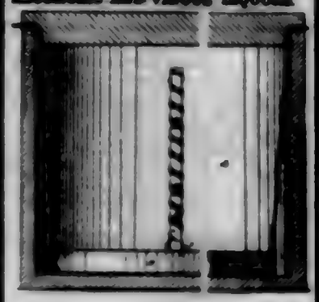
108,556 H. BOLTHOFF.
FLASK FOR CASTING STAND
BOXES FOR GRINDING MILLS



108,557. J. P. BOYD. WINDOW BLIND.



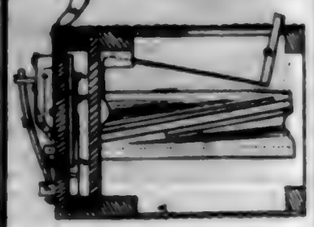
108,558. L. BRADLEY. APPARATUS FOR DISCHARGING AND DISPOSING ALCOHOLIC AND VINOUS LIQUORS.



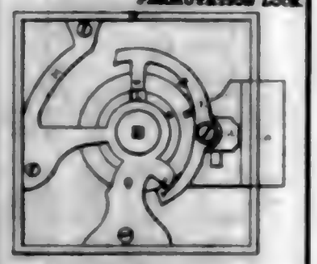
108,559. A. BRATNOBER.
HORSE COLLAR FASTENING



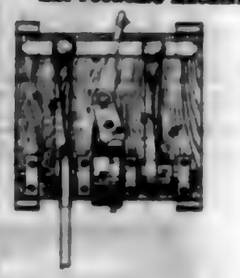
108,560. T. BRETT. MILLSTONE.



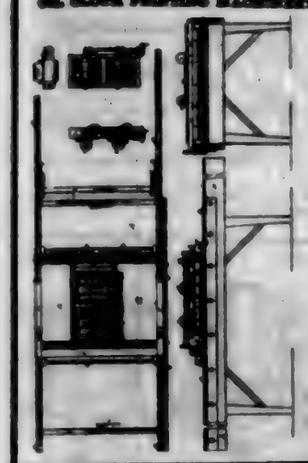
108,561. E. W. BRETTELL.
PERMUTATION LOCK.



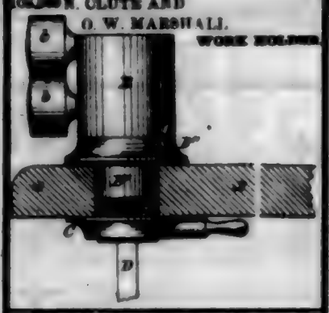
108,562. J. B. BROWN
HAT POUNCING MACHINE.



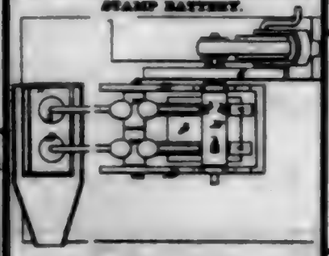
108,568. A. F. BUCHANAN
OIL CLOTH PRINTING MACHINERY



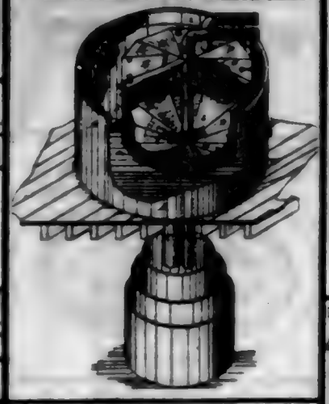
108,569 N. CLUTE AND O. W. MARSHALL.
WORK HOLDER.



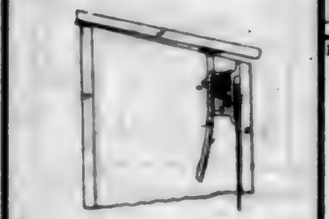
108,570. G. D. CROCKER.
STAMP BATTERY.



108,571. C. W. DWELLE.
MANUFACTURE OF WHITE LEAD.



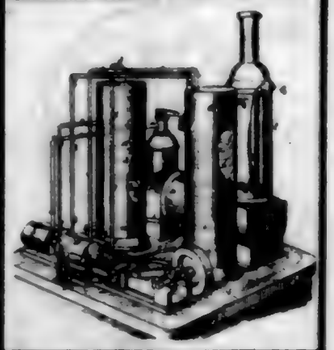
108,572. W. DYATT.
DEVICE FOR OPERATING SKYLIGHTS.



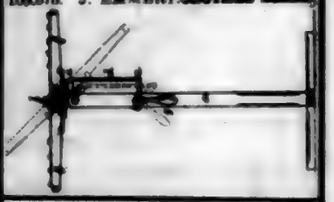
108,573. C. A. EATON. FENCE HOLDER.



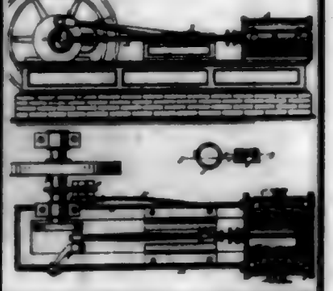
108,574. J. A. H. ELLIS.
COMBINED STEAM AND GAS ENGINE.



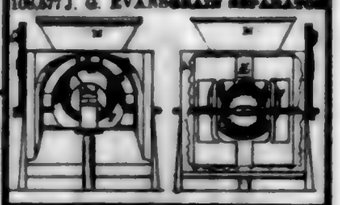
108,575. J. EMMERT. CLOTHES DRIER.



108,576. P. ESTER. STEAM ENGINE.



108,577 J. G. EVANS. GRAIN SEPARATOR.



108,578. I. FARJEON AND W. H. HORTON. JEWELRY PIN.



108,579. C. S. FORD. GAS BURNER.



108,580. W. P. GLASS AND L. W. SAFT. FAUCET.

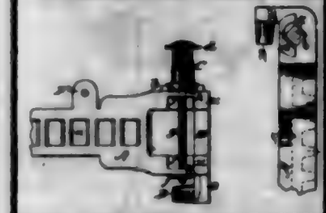


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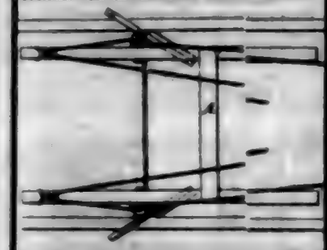


108,566. A. C. CAMPBELL.
ASPHALT PAVEMENT.

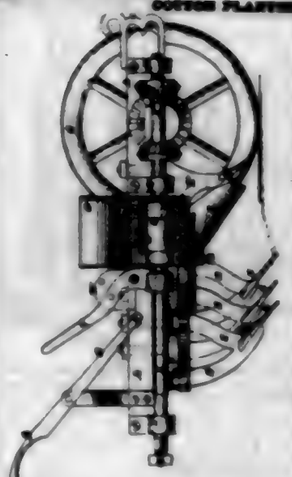
108,564. O. E. BURT. LINK FOR REELING GEARS BOXES POWER.



108,565. A. M. BUTTS. SNOW PLOW.



108,580. A. G. W. FOSTER
COTTON PLANTER.



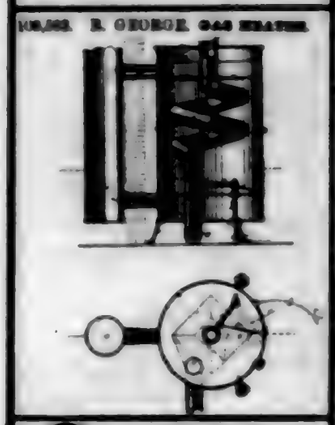
108,581. B. GALLAGHER
SKATE FASTENING.



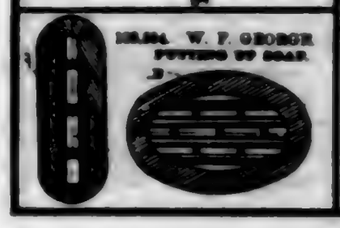
108,582. C. GATTERWOOD PAVEMENT.



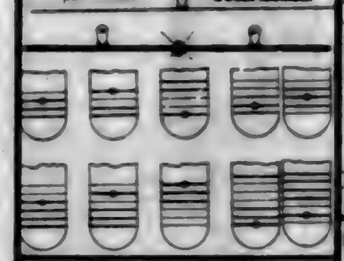
108,583. R. GEORGE. GAS HEATER.



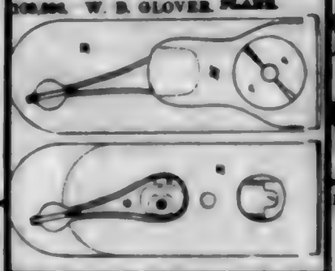
108,584. W. F. GEORGE
PUTTING UP COAL.



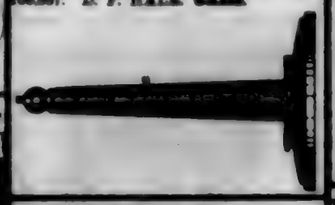
108,585. J. W. GIRDLESTONE
PREVENTING THE DEVIATION OF SHIPS' COMPASSES.



108,586. W. B. GLOVER. PLANE.



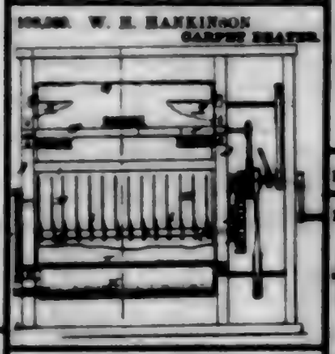
108,587. D. F. HALE. GAME.



108,588. H. B. HALE
FASTENING ARTIFICIAL TEETH TO METALLIC PLATES.



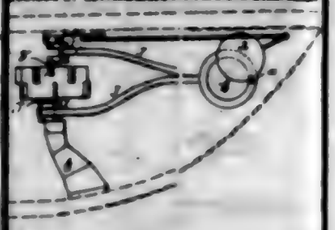
108,589. W. H. HANKINSON
CARPET BEATER.



108,590. F. HAYDEN
[illegible] EAR RACK.



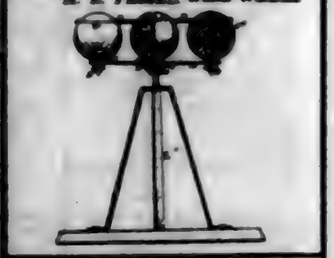
108,591. T. HERBERT. POTATO PLANTER.



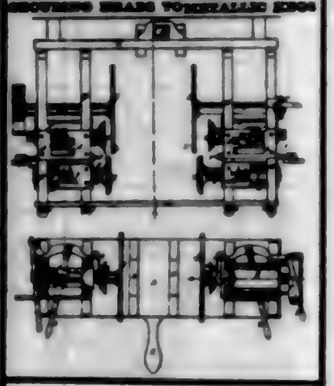
108,592. J. M. HINE. FLOWER GARDEN.



108,593. J. O. HEYWORTH AND E. E. FESSEL. WIRE WEBS.

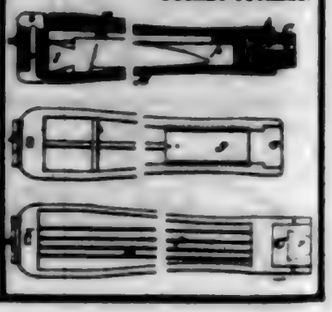


108,594. W. HILL. MACHINES FOR SHOUTING SHANK TO METALLIC KNOB.

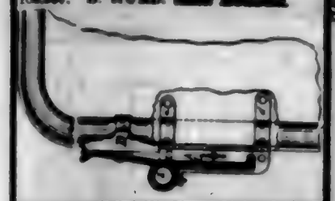


108,595. I. L. HOARD. THREAD SPOOL.

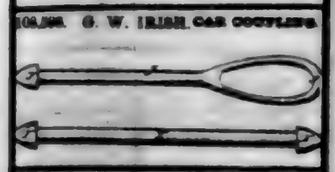
108,596. D. R. HUNDLEY.
POCKET OUTLERY.



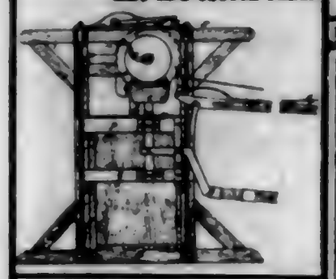
108,597. D. HURD. HORSE SHOEING.



108,598. G. W. IRISH. CAR COUPLING.



108,599. J. H. JOHNSON
HAT AND COTTON PRESS.



108,600. E. P. JONES
COTTON BALE TIE.



108,601. S. KEENE. HOLDER AND CUTTER FOR SHOE-CUTTING MACHINES.

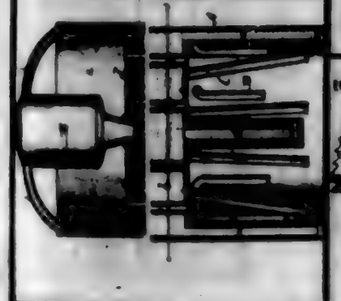


108,602. J. KIDDER. GALVANIC BATTERY.

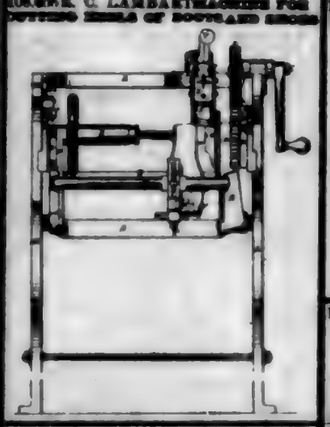


108,603. J. H. KIPP
MEDICAL COMPOUND FOR POWDER.

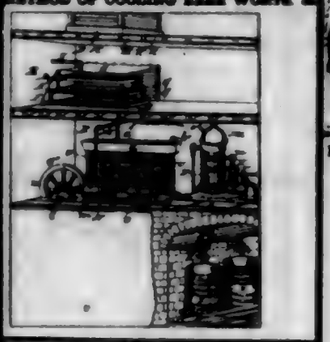
108,604. T. S. LA FRANCE
STEAM GENERATOR.



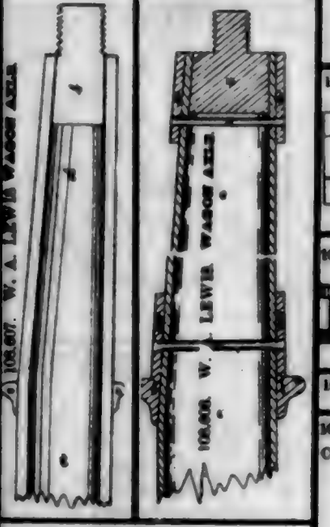
108,605. R. C. LAMBART. MACHINE FOR CUTTING HEELS OF BOOTS AND SHOES.



108,606. O. P. LEWIS.
METHOD OF COOLING BEER WORTS.



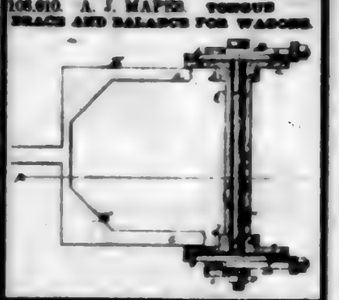
108,607. W. A. LEWIS. WAGON AXLE.



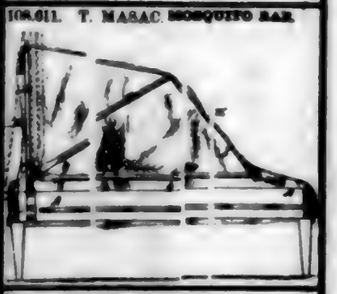
108,608. W. A. LEWIS. WAGON AXLE.



108,610. A. J. MAPES. TONGUE BRACE AND BALANCE FOR WAGONS.



108,611. T. MASAC. MOSQUITO BAR.



108,612. J. A. MAYNARD
NUT FOR CARRIAGES.



108,613. H. W. McAULEY. NUT LOCK.

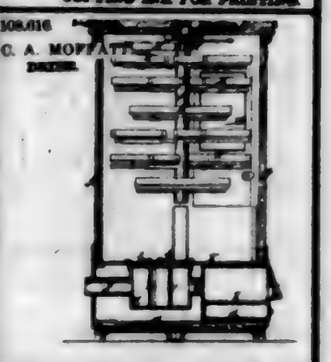


108,614. W. B. McCLURE. CART SADDLE.

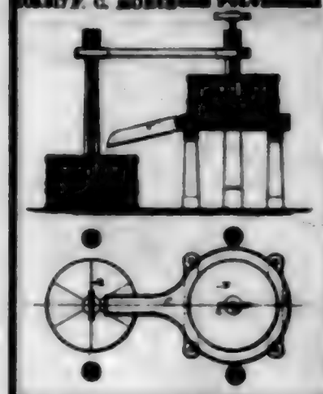


108,615. C. McILVAINE.
COPYING INK FOR PRINTING.

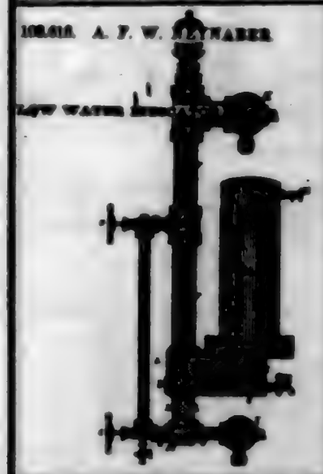
108,616. C. A. MOFFATT. DRIER.



108,617 F. C. MORRISON PULVERIZER



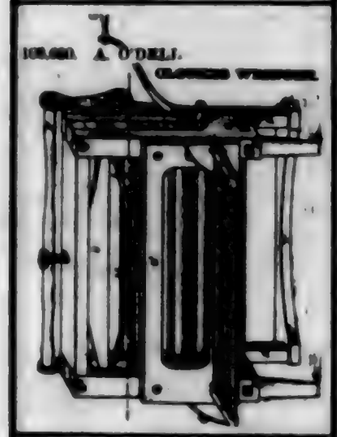
108,618 A. F. W. MEYNABER



108,619 G. C. NOYES. CAR COUPLING STAKE.



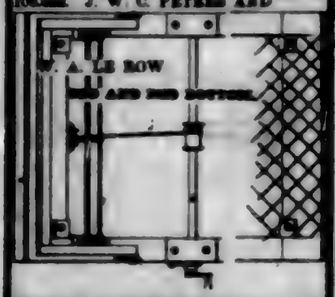
108,620 A. O'DELL. CLOTHES WRINGER.



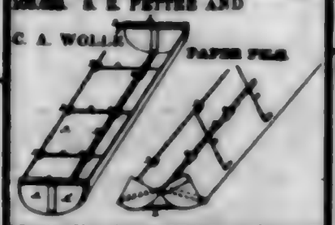
108,621 D. A. PELOUBET. SHAFT LOOP AND BAR.



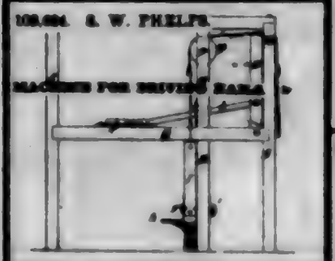
108,622 J. W. C. PETERS AND [illegible] BOW AND BOX SOCKET.



108,623 E. E. PETTEE AND C. A. WOLLE. PAPER FILE.



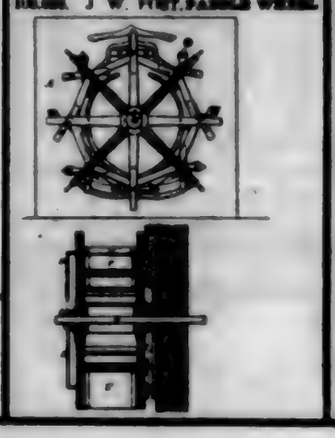
108,624 E. W. PHELPS. MACHINE FOR BRUSHING HAIR.



108,625 W. F. PHELPS. MAP STAND.

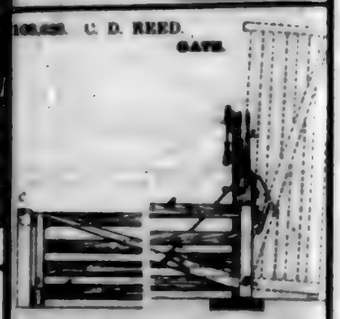


108,626 J. W. POST. PADDLE WHEEL.

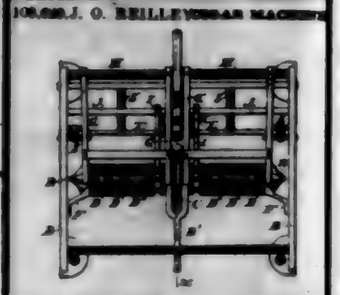


108,627 E. L. RANSOME. GROOVING SOLUBLE SALTS FROM ARTIFICIAL STONE.

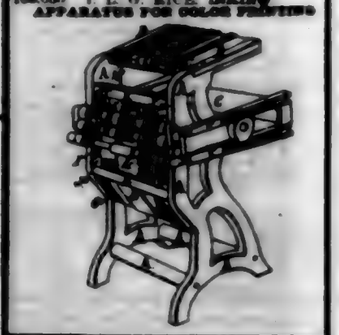
108,628 C. D. REED. GATE.



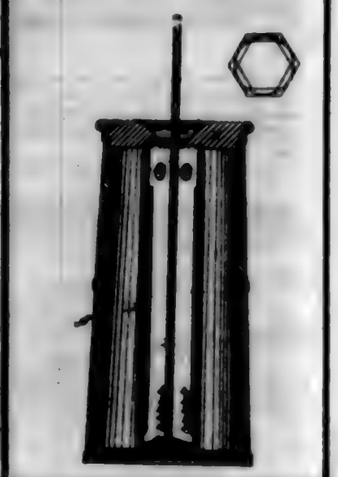
108,629 J. O. REILLEY[illegible] MACHINE.



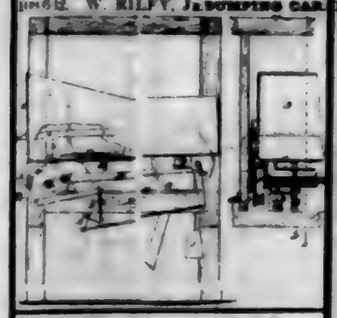
108,630 I. L. O. RICE. DECIMAL APPARATUS FOR COLOR PRINTING.



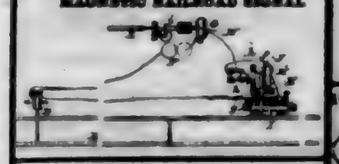
108,631 J. C. RICHARDSON AND L. TAYLOR. CHURN.



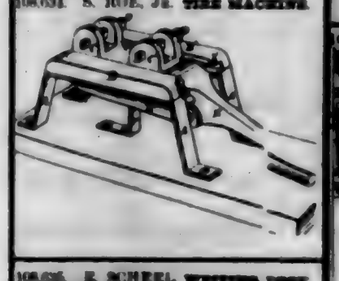
108,632 W. RILEY, Jr. DUMPING CAR.



108,633 W. ROBINSON. ELECTRO MAGNETIC RAILROAD SIGNAL.



108,634 S. ROE, Jr. TIRE MACHINE.



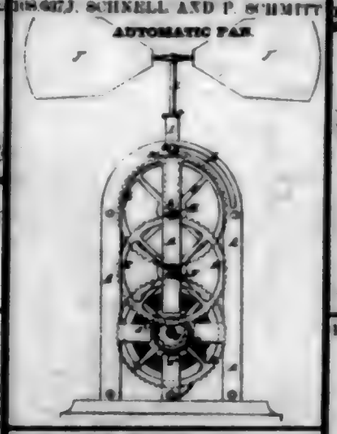
108,635 E. SCHEEL. WRITING DESK.



108,636 J. M. SCHMIDT. SPRING.



108,637 J. SCHNELL AND P. SCHMITT. AUTOMATIC FAN.



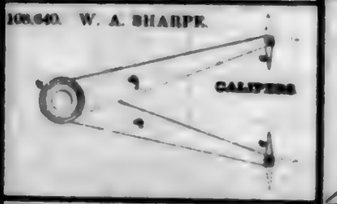
108,638 F. B. SCOTT. REED HOLDER.



108,639 J. G. SERT AND C. L. SCHURR. AWNING.

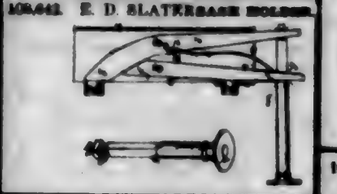


108,640 W. A. SHARPE. CALIPERS.



108,641 W. H. SINGER. PLATE AND BAR FOR CONSTRUCTION OF PLOWS, CULTIVATOR TEETH, &c.

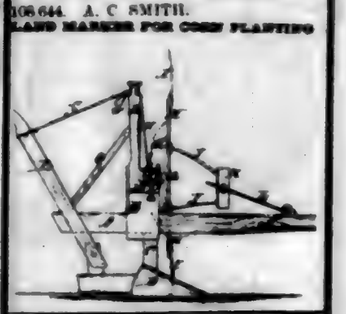
108,642 E. D. SLATERBACK. HOLDER.



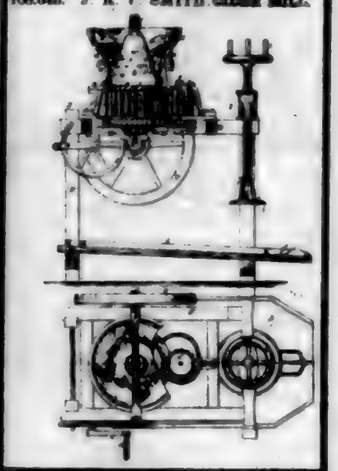
108,643 A. C. SMITH. COTTON SEED PLANTER.



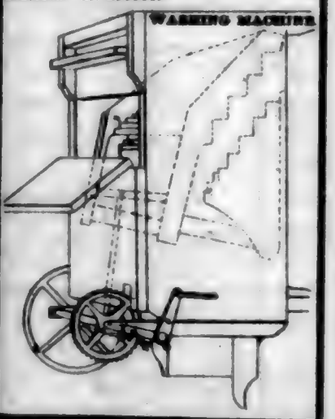
108,644 A. C. SMITH. LAND MARKER FOR CORN PLANTING.



108,645 J. K. P. SMITH. CIDER MILL.



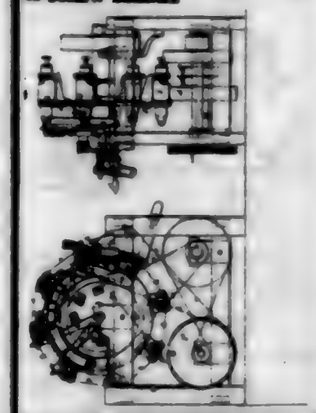
108,646 S. M. SMITH. WASHING MACHINE.



108,647 W. SMITH. MOLDING PIPE.



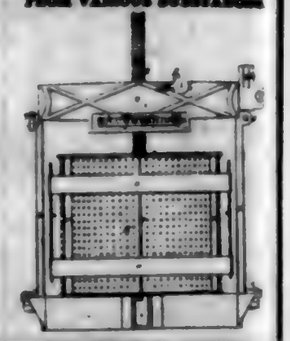
108,666. J. F. STARRETT
MACHINE FOR SHAVING THE SHANK OF SCREW BLANKS



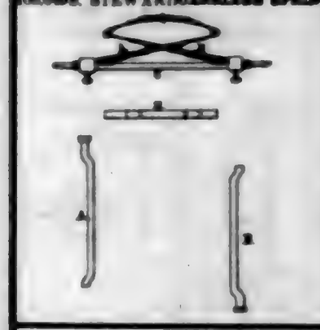
108,667. T. J. TRAPP. PUMP SUPPORT.



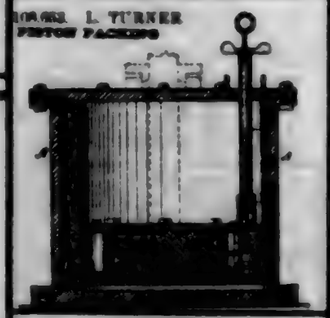
108,668. J. WATKINS PIPES FOR REMOVING LIQUID MATTER FROM VARIOUS SUBSTANCES



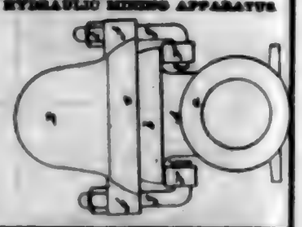
108,669. STEWART AND GLASS SPRING



108,670. L. TURNER
PISTON PACKING



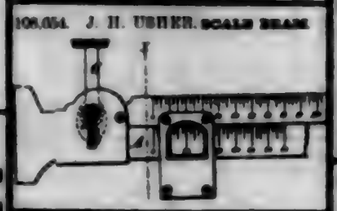
108,671. T. WATSON
HYDRAULIC MINING APPARATUS



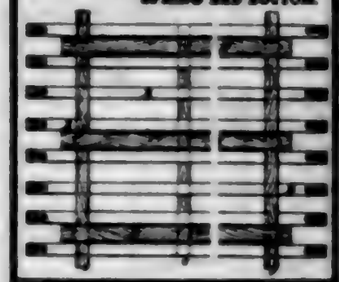
108,672. E. WEBB. PRESERVING WOOD



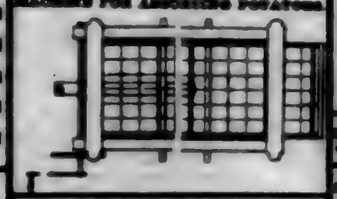
108,673. J. H. USHER. SCALE BEAM



108,674. P. STOVALL.
SPRING BED BOTTOM.



108,675. D. AND D. A. VANDERVORT AND T. DENISE.
MACHINE FOR ASCERTAINING POTATOES.

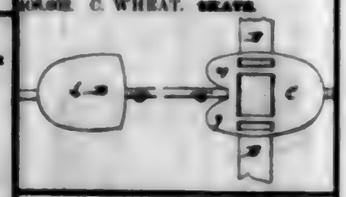


108,676. W. M. WELLING
BED FOR HOLDING BUTTONS

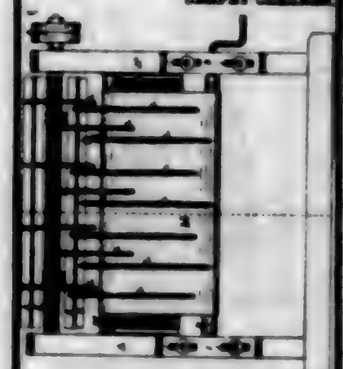


108,677. H. M. WESTMANCOAT FOR COATING AND PROTECTING WOOD.

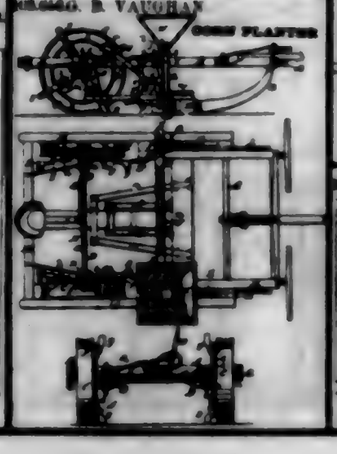
108,678. C. WHEAT. SEATS.



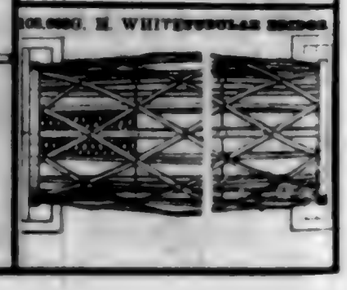
108,679. R. TERRY AND F. W. HAFKENSCHEID
CARPET CLEANER.



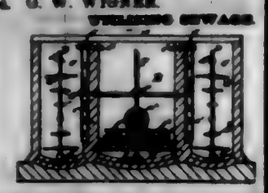
108,680. B. VAUGHAN
CORN PLANTER



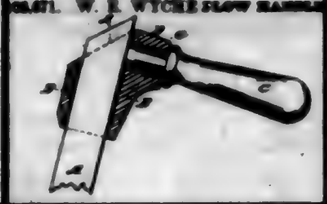
108,680. H. WHITEHOUSE. BRIDGE



108,664. G. W. WIGNER
WEIGHING SEWAGE.



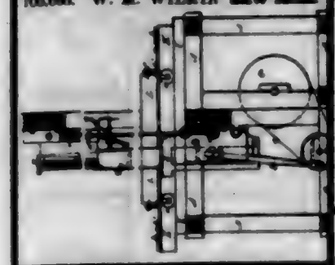
108,671. W. R. WYCHE. SLAW MACHINE.



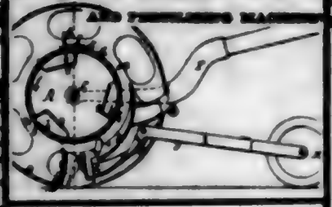
108,670. S. A. REMIS, A. E. POTH AND J. W. GOODRICH. PAPER CUTT.



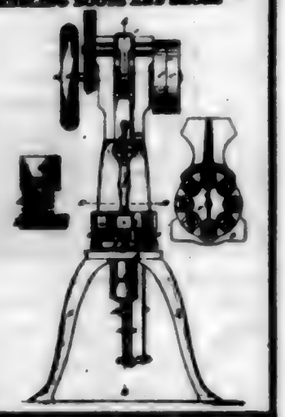
108,665. W. M. WILKIN. SAW MILL.



108,672. S. L. ALLEN. PLANTING AND FURROWING MACHINE.

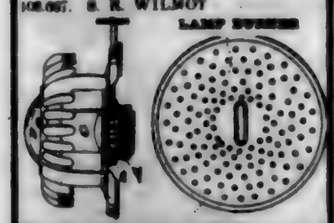


108,677. H. H. BIGELOW. MACHINE FOR MOULDING DOORS AND SHOES.

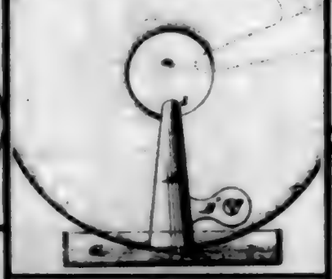


108,666. J. T. WILKINSON
ROOFING CEMENT.

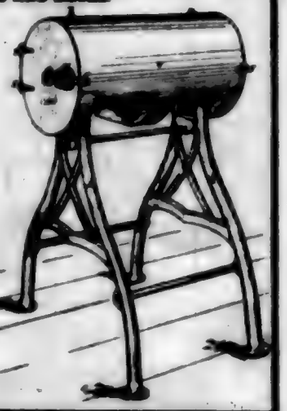
108,667. S. R. WILMOT
LAMP BURNER.



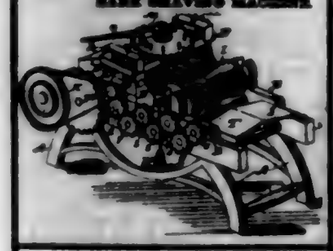
108,672. W. ARMSTRONG
LUBRICATING DEVICE FOR SOLE PRESSING MACHINES.



108,678. H. H. BIGELOW
MACHINE FOR FINISHING EDGES OF DOORS AND SHOES.



108,668. M. WINGER
BARK SHAVING MACHINE.



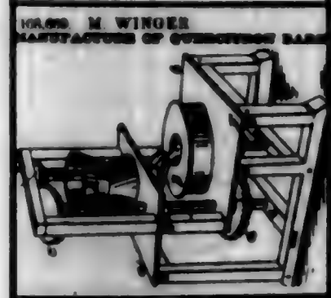
108,674. R. G. W. BARTLETT
WEIGHING MACHINE.



108,679. P. BOYDEN
BRACKARDT SHOVEL WORK.



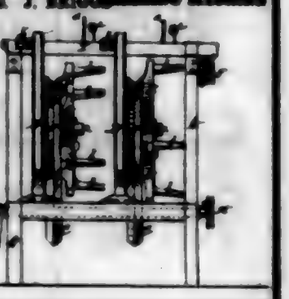
108,669. M. WINGER
MANUFACTURE OF CURRYCOMB BACK



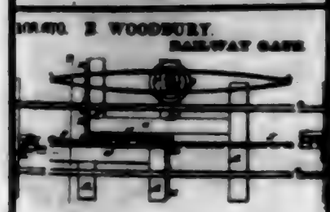
108,675. H. J. BEARD.
MACHINE FOR PEELING TIMBER.



108,680. J. BRIGGS. BRIDGE MACHINE



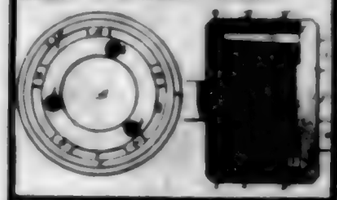
108,670. E. WOODBURY.
RAILWAY GATE.



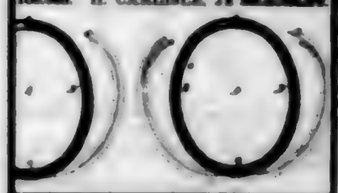
108,691 O. BRUECK. FAN.



108,692 I. D. BUCK. PISTON.



108,693 H. CARLISLE, Jr. SEAMLESS



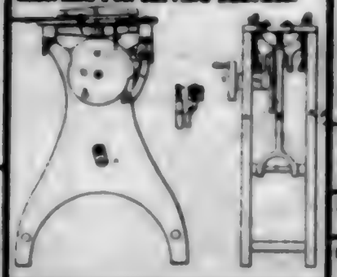
108,694 J. K. CHRISTOPHER



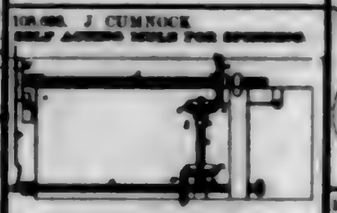
108,695 T. J. AND G. M. CLARKSTON APPARATUS FOR HARVESTING



108,696 J. P. CROOKS MACHINE FOR SEWING LEATHER



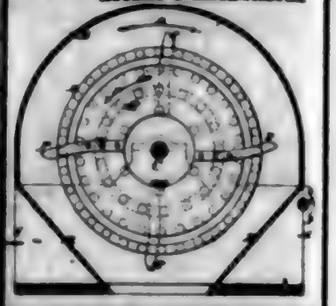
108,697 J. CUMNOCK SELF ADJUSTING BUILD FOR STUDDING



108,698 E. DAVIS WASHING MACHINE

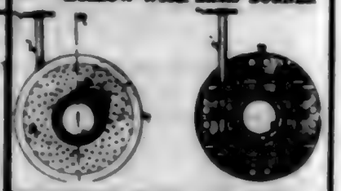


108,699 H. DUSH ROTARY DISTRIBUTOR

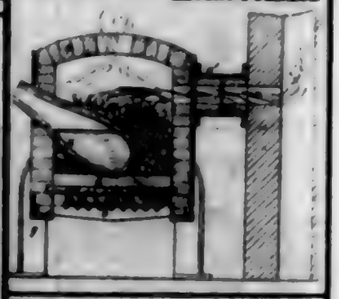


108,700 G. H. & DUPTUS CONCRETE FOR PAVEMENT &c.

108,701 J. W. EMERSON HOLLOW WICK LAMP BURNER



108,702 A. F. DU FAUR REVERT FURNACE



108,703 L. S. FILBERT PAVEMENT.

108,704 L. T. FOLLANSBEE WOOD PAVEMENT

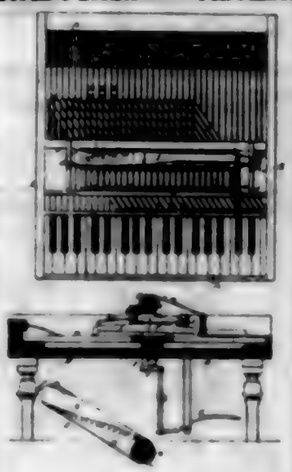
108,705 P. O. GARDINER RAILWAY CAR COUPLER AND BUFFER



108,706 M. L. GUBIE PLOW.



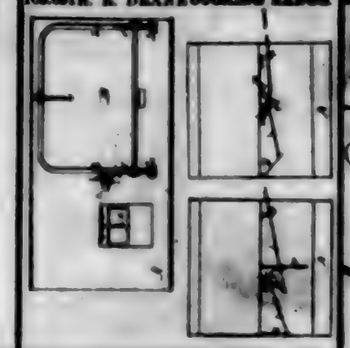
108,707 J. CLARK COUPLING ATTACHMENT FOR PIANOS



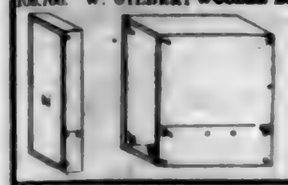
108,708 J. DAWSON HARROW.



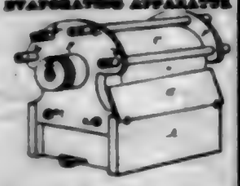
108,709 R. R. DEANE COOKING RANGE.



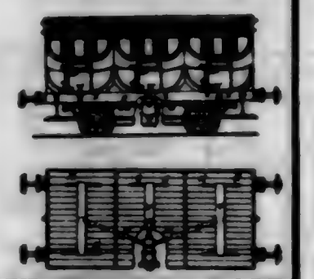
108,700. W. GILBERT WOODEN BOX.



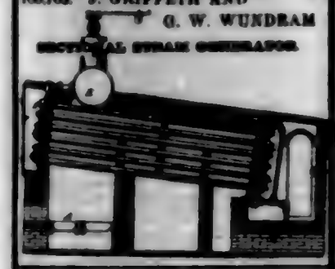
108,701. S. D. GILSON EVAPORATING APPARATUS



108,702. P. GRANDJEAN RAILROAD CAR HEATER



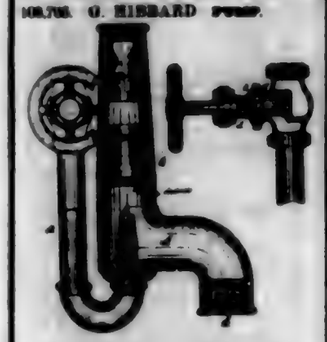
108,703. J. GRIFFETH AND G. W. WUNDRAM ROTARY STEAM GENERATOR



108,704 T. J. HAMER AND M. WALLS BALANCE SLIDE VALVE



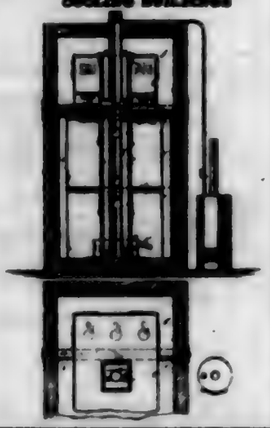
108,705. G. HIBBARD PUMP.



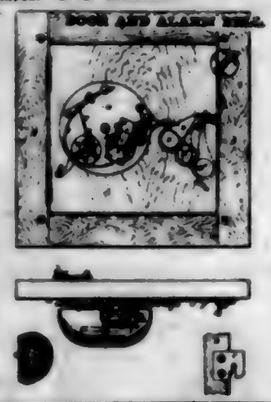
108,706. A. A. HOLLING SQUARE SAIL FOR FORE AND AFT VESSELS



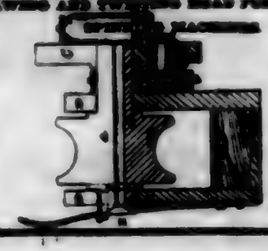
108,707 T. KRAUSCH COOLING DEVICES



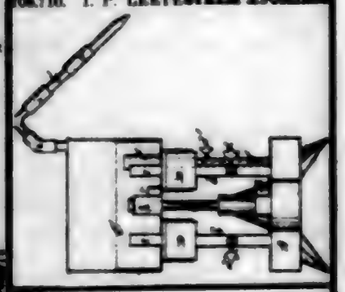
108,708. G. O. LACKEY. DOOR AND ALARM BELL



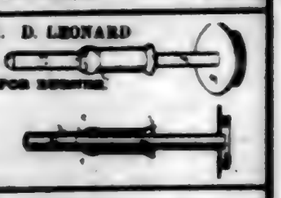
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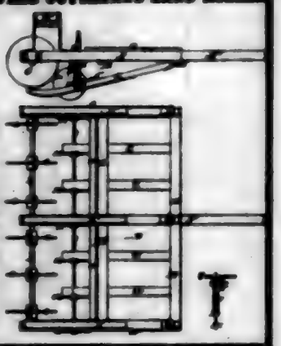
108,710. I. P. LEETE STEAM APPARATUS



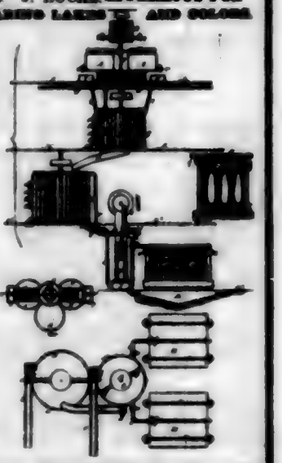
108,711. D. LEONARD VAPOR BURNER



108,712. W. LESLIE CONCRETE SCALE AND WHEEL OUTRIGGER AND LAND ROLLER



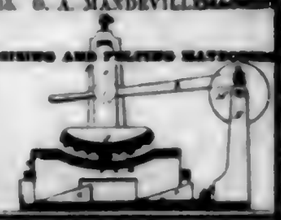
108,713 J. LUCAS APPARATUS FOR PREPARING LARD OIL AND COLOGNE



108,714. H. G. LUDLOW AND J. STONE STEAM VALVE.



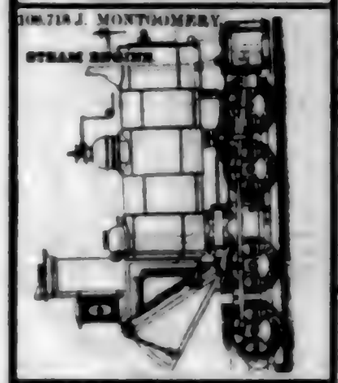
108,716. O. A. MANDEVILLE, MACHINE FOR SEWING AND PEGGING HATS.



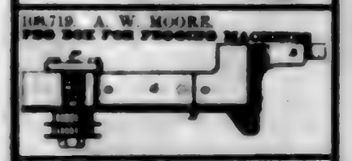
108,717. I. N. MONROE, CORSET COVERS.



108,718. J. MONTGOMERY, STEAM ENGINE.



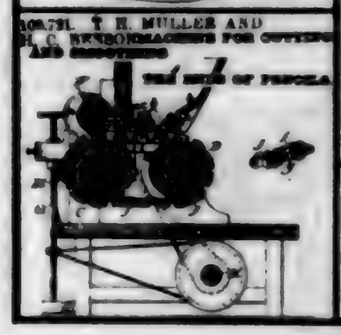
108,719. A. W. MOORE, PIN BOX FOR PEGGING MACHINES.



108,720. P. B. MORSE, GARMENT CLIP.



108,721. T. H. MULLER AND F. C. BENDO, MACHINES FOR CUTTING AND SKIVING HEEL SEAT OF PIECES.

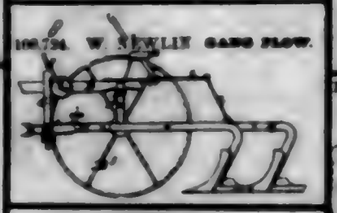


108,722. E. D. MURFEY, MATERIAL FOR FOUNDARS AND BEARINGS.

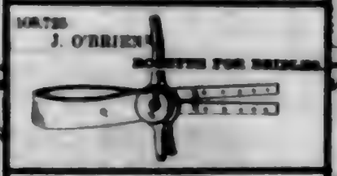
108,723. J. W. MYERS, EARTH EXCAVATOR.



108,724. W. NEWLIN, GANG PLOW.



108,725. J. O'BRIEN, ROLLER FOR BRIDLES.



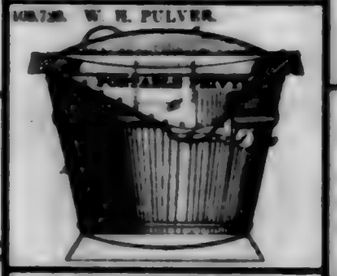
108,726. H. J. PALMER, FLUE CLEANER FOR COOKING STOVES.



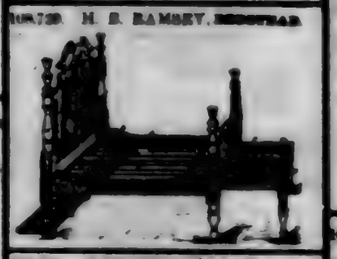
108,727. W. M. PERKINS AND T. P. VANDERGIFT, DRAFT EQUALIZER.



108,728. W. H. PULVER, PORTABLE OVEN.



108,729. H. B. RAMSEY, RECLINING CHAIR.



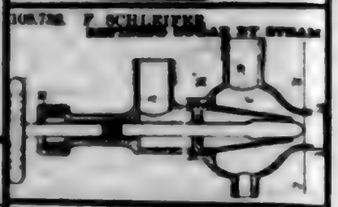
108,730. G. W. REAM, PLOW.



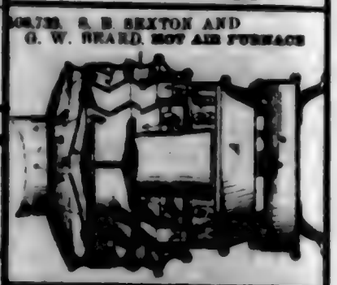
108,731. J. RUSHWORTH, MACHINE FOR DOUBLING YARN.



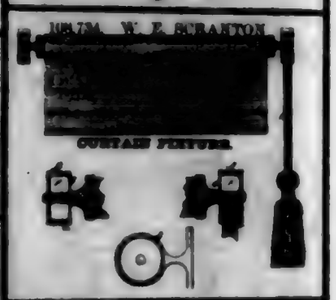
108,732. F. SCHLEIFER, APPARATUS FOR HEATING BY STEAM.



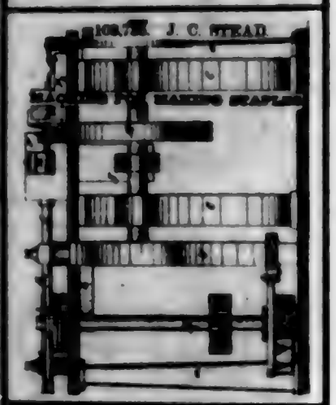
108,733. S. B. SEXTON AND G. W. BEARD, HOT AIR FURNACE.



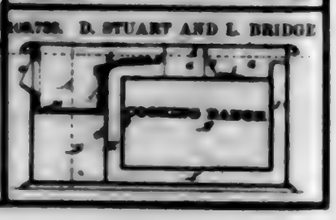
108,734. W. F. SCRANTON, CURTAIN FIXTURE.



108,735. J. C. STEAD, MACHINE FOR MAKING STAPLES.



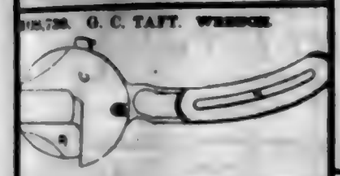
108,736. D. STUART AND L. BRIDGE, PACKING PAPER.



108,737. H. G. SUPLEE, SHUTTLE.



108,738. O. C. TAFT, WRENCH.



108,739. W. H. TAYLOR, MARKING BOOK.



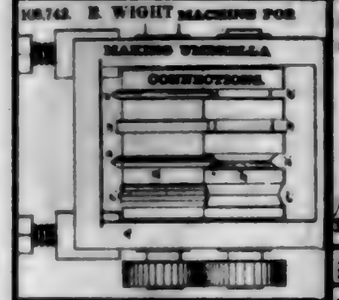
108,740. J. A. WHITE, HANDLE OF TABLE KNIFE.



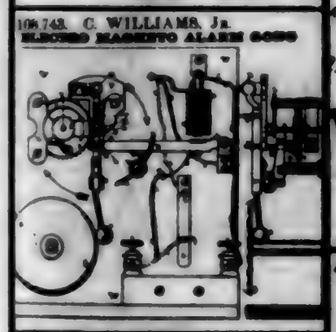
108,741. J. T. WHITLOCK, HORSE HOE.



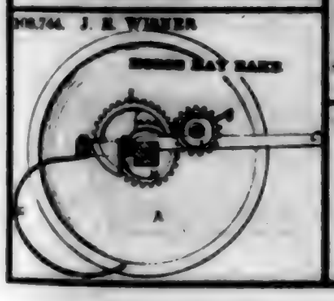
108,742. E. WIGHT, MACHINE FOR MAKING VERMICELLI.



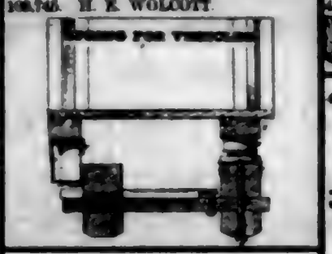
108,743. C. WILLIAMS, Jr., ELECTRO MAGNETO ALARM GONG.



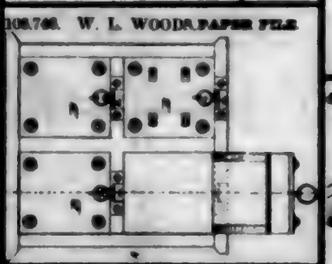
108,744. J. R. WISNER, HORSE HAY RAKE.



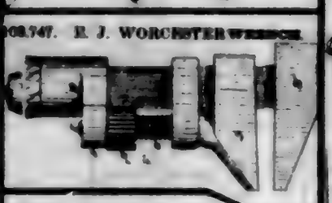
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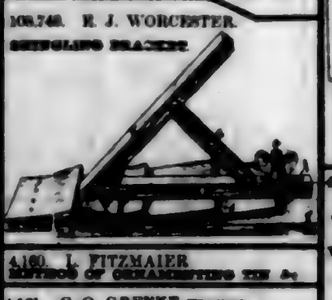
108,746. W. L. WOODS, PAPER FILE.



108,747. E. J. WORCESTER, WRENCH.

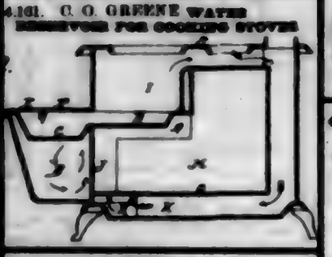


108,748. E. J. WORCESTER, SHINGLING BRACKET.



4,160. I. FITZMAIER, METHOD OF ORNAMENTING THE &c.

4,161. C. O. GREENE, WATER RESERVOIR FOR COOKING STOVES.



4,162. W. H. HART, Jr., HOLDER FOR BRACELETS.



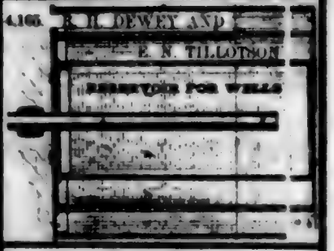
4,163. W. H. HART, Jr., BOX FOR PACKING BRACELETS.



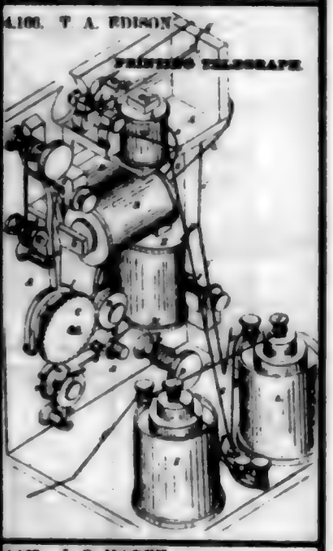
4,164. O. A. BINGHAM, CHAIR SEAT.



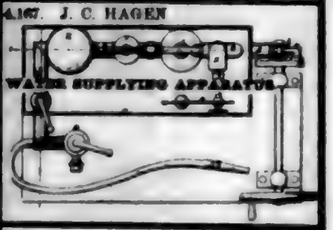
4,165. E. H. DEWEY AND E. N. TILLOTSON, RESERVOIR FOR WELLS.



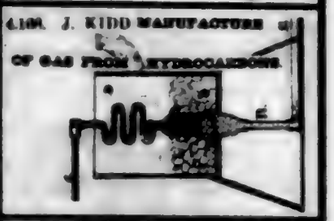
4,166. T. A. EDISON, PRINTING TELEGRAPH.



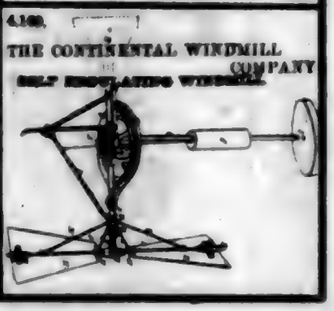
4,167. J. C. HAGEN, WATER SUPPLYING APPARATUS.



4,168. J. KIDD, MANUFACTURE OF GAS FROM HYDROCARBONS.



4,169. THE CONTINENTAL WINDMILL COMPANY, SELF REGULATING WINDMILL.



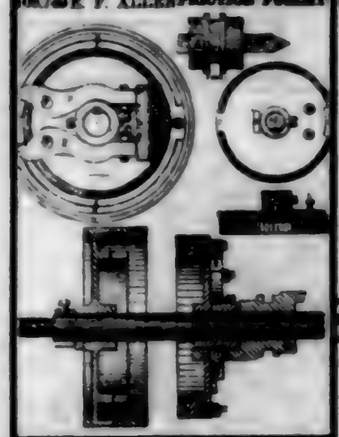
ILLUSTRATIONS OF PATENTS

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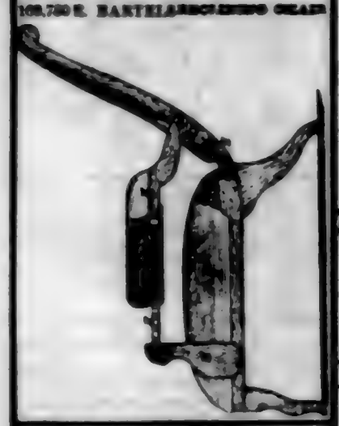
THE UNITED STATES PATENT OFFICE

NOVEMBER 1, 1870.

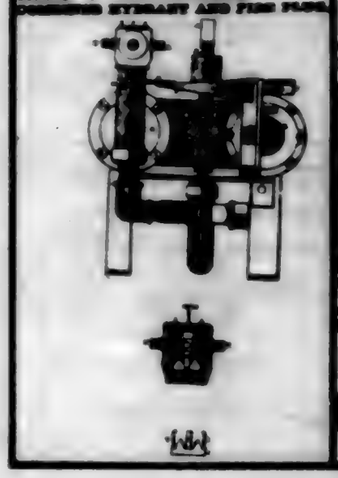
108,749 E. F. ALLEN PNEUMATIC PULLEY



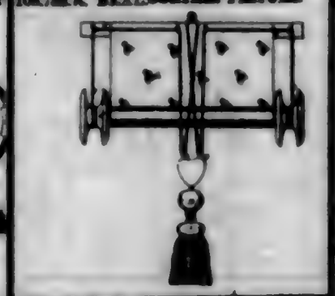
108,750 R. BARTHELMEH SEWING CHAIR



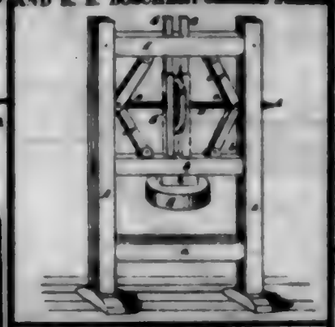
108,751 F. BAUCHTLIKER HYDRANT AND FIRE PLUG



108,752 R. BEAL ORNAMENTAL PICTURE



108,753 O. B. BOOMER, T. G. MORSE AND E. E. DOSCHER



108,754 E. F. BROWNING AND T. [illegible]



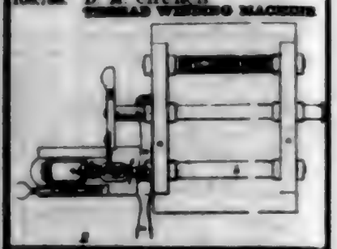
108,755 J. C. BUDD



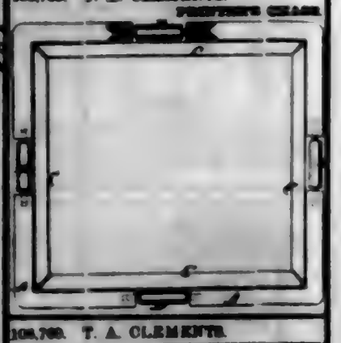
108,756 E. E. CAPAMAGIAN

108,757 J. T. CASE WASHING MACHINE

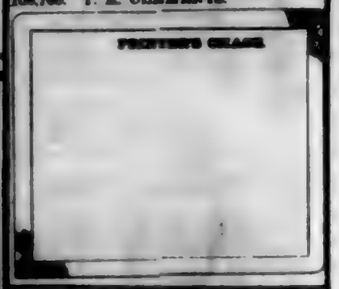
108,758 D. M. CHURCH THREAD WINDING MACHINE



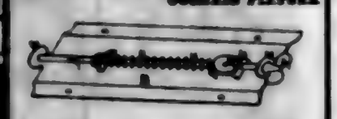
108,759 T. A. CLEMENTS PRINTER'S CHASE



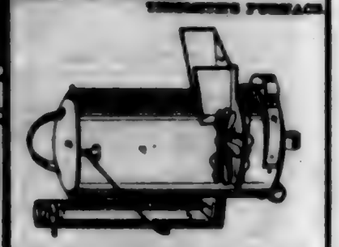
108,760 T. A. CLEMENTS PRINTER'S CHASE



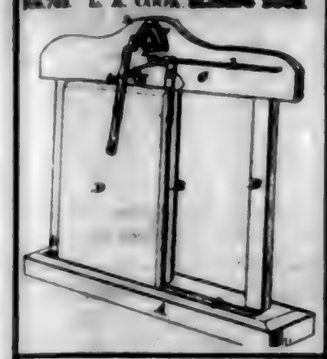
108,761 W. C. CLOVER ORNAMENT FASTENER



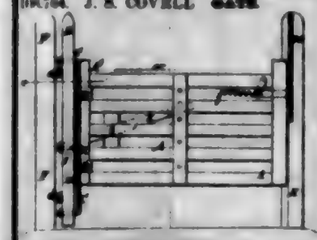
108,762 M. CONNER



108,763 L. A. COOK SLIDING DOOR



108,764 J. S. COVELL GATE



108,765 A. CRAWFORD SOAP DISH AND BRUSH RACK



108,766 T. CROSBY LIFT AND WIRE TIGHTENER



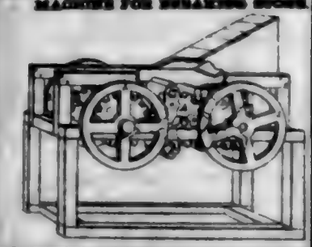
108,767 J. DAVIDSON LOCK FOR SLIDING DOOR



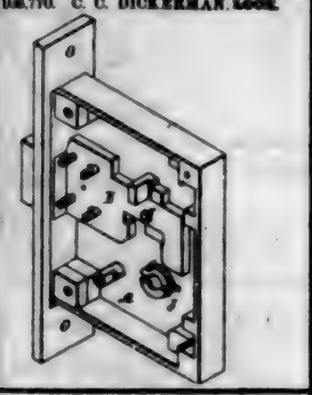
108,769 A. DICK BROILER



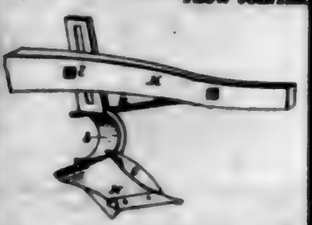
108,769 A. DIETZ MACHINE FOR BREAKING STONE



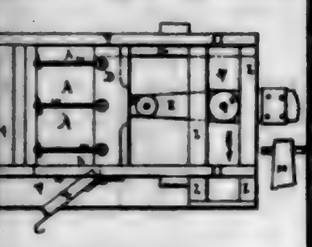
108,770 C. C. DICKERMAN LOCK



108,771 D. DILLENBACK PLOW JOINTER

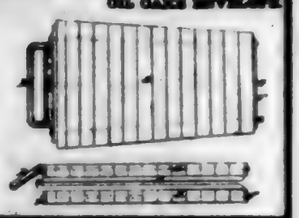


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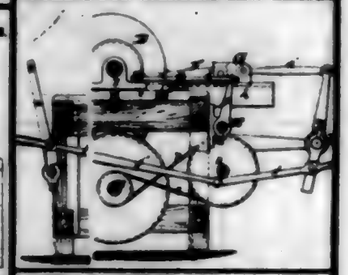


108,773 J. ELLIKOWOOD PRESERVING ALCOHOLIC LIQUORS FROM GRAIN

108,774 C. ESKETT AND H. SEAMLE OIL CAKE ENVELOPE



108,775 C. J. GARDNER MACHINE FOR GRINDING SAW BLADES



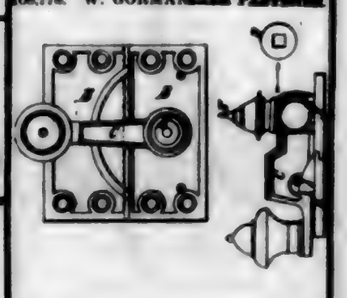
108,776 J. GARVEY AND M. H. KIMBALL CLOTHES LINE HOOK



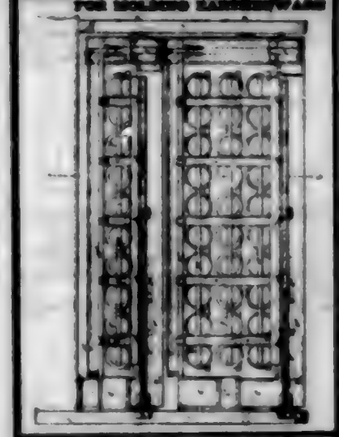
108,777 T. J. GIFFORD SPRING SEAT FOR RAILWAY CARS



108,778 W. GORMAN CASE FASTENER



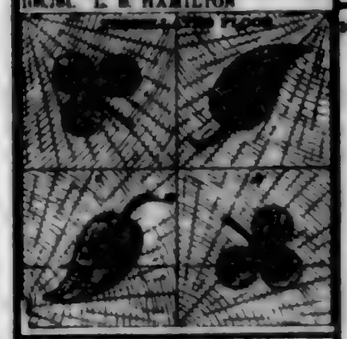
108,779. T. G. GREEN MACHINE FOR MOLDING SADDLETREES AND



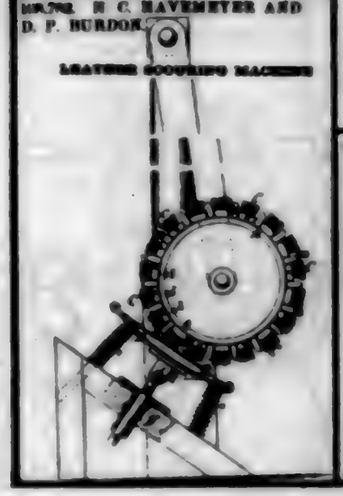
108,780. H. B. GUDGE SELF WASHER.



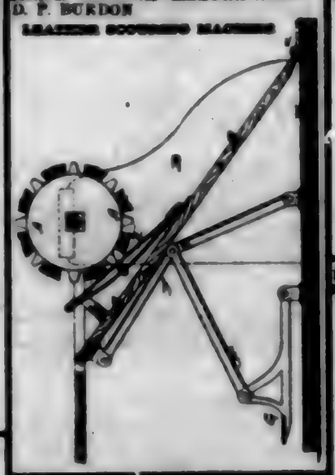
108,781. L. B. HAMILTON



108,782. H. C. HAVEMEYER AND D. P. BURDON LEATHER SCOURING MACHINE



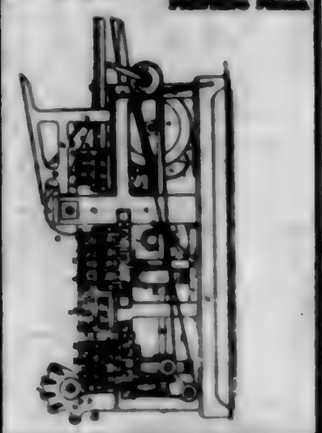
108,782. H. C. HAVEMEYER AND D. P. BURDON LEATHER SCOURING MACHINE



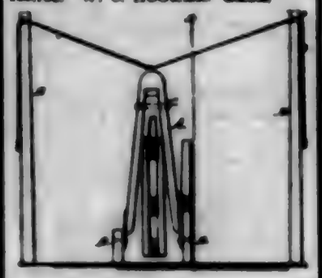
108,784. R. S. HILDRETH, Trustee.



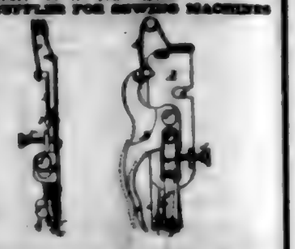
108,785. M. HOE AND S. D. TOKKE PRINTING PRESS.



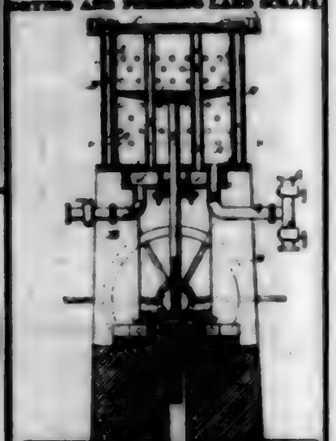
108,786. W. C. HOOKER GATE.



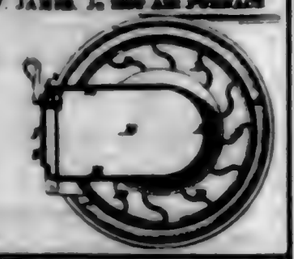
108,787. C. W. HOWARD BUFFLER FOR SEWING MACHINES



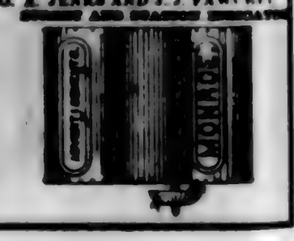
108,788. A. K. HOWE APPARATUS FOR SETTING AND POINTING LAND SCRAPE



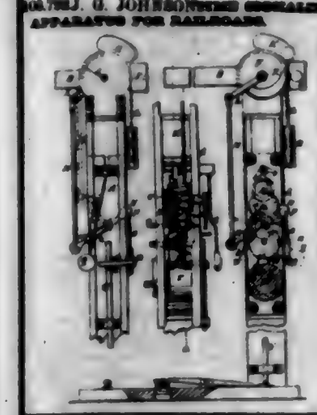
108,789. H. JAMES AND W. JAMES, Jr. KILN AND FURNACE



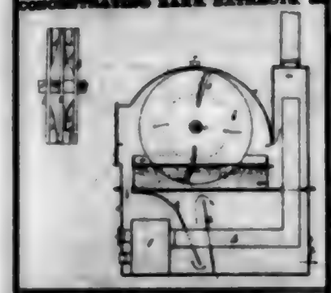
108,790. O. A. JENKS AND J. J. FAWCETT SHINGLE AND HEADING MACHINE



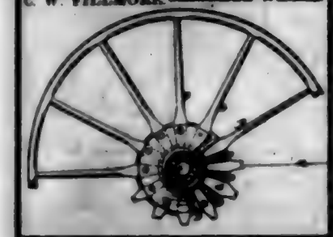
108,792. J. G. JOHNSON FINED SIGNALING APPARATUS FOR RAILROADS.



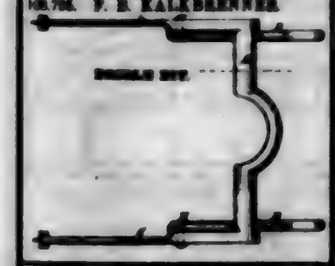
108,793. T. W. JOHNSON, Jr. AND A. W. GOODELL. APPARATUS FOR EVAPORATING AND CONCENTRATING DARK EXTRACTS.



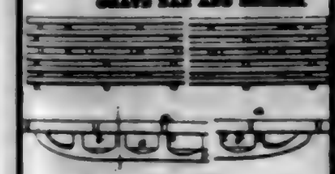
108,794. T. M. JONES AND C. W. FILLMORE CARRIAGE WHEEL.



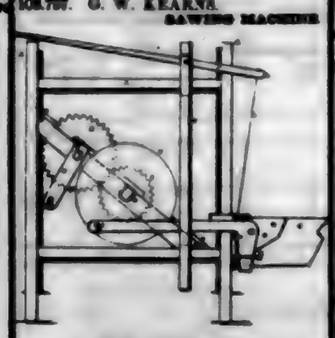
108,795. F. B. KALKBRENNER



108,796. W. KEARNEY GRATE BAR AND BRACKET.



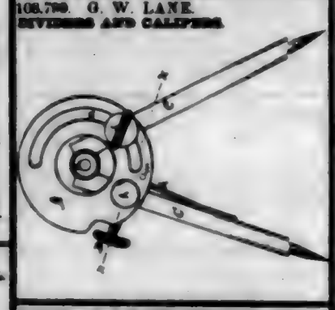
108,797. G. W. KEARNS. SAWING MACHINE.



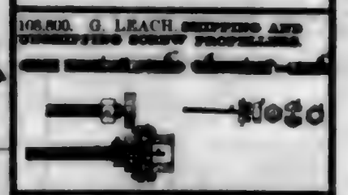
108,798. H. KEENAN BEEF GAUGE FOR PARMESELAS



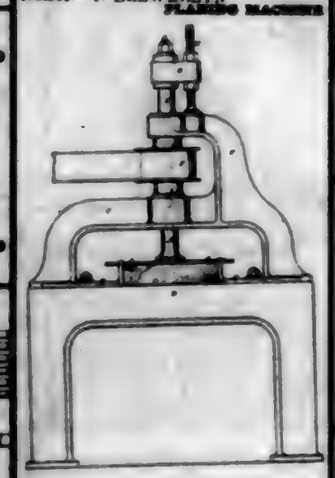
108,799. G. W. LANE. DIVIDERS AND CALIPERS.



108,800. C. LEACH. SHIPPING AND UNSHIPPING SCREW PROPELLER.



108,801. T. LLEWELLYN PLANING MACHINE.

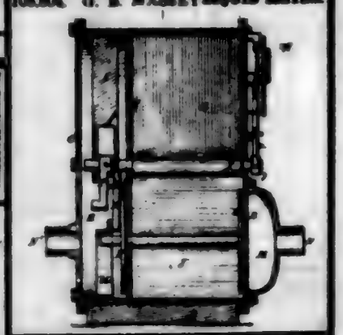


108,802. C. S. LYNCH FIX FOR PUDDLING FURNACES

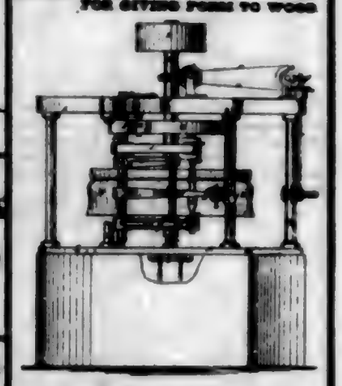
108,803. J. B. MARGESON MACHINE FOR JOINTING STAIR RAILS



108,804. G. B. MASSEY LIQUID METER.



108,805. G. B. MATHER APPARATUS FOR DRIVING PILES TO WOOD



108,806. U. K. MAYO. MANUFACTURE OF GOLD PENS, ORNAMENTAL PURPOSES.

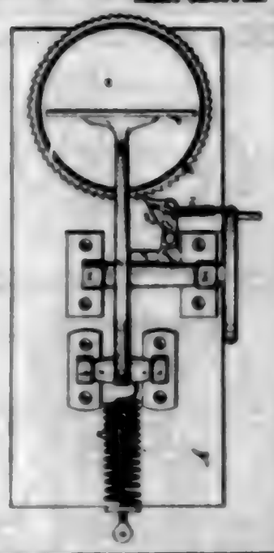


108,807. W. H. McCORMICK WEIGHING SCALE.



108,808. H. MEARS BRAIDING MACHINE.

108,808. G. H. MELLEN
HEAT CONDUCTOR.



108,810. W. MERRINGTON AND E. KIRKWOOD
PUDDLING BAR.

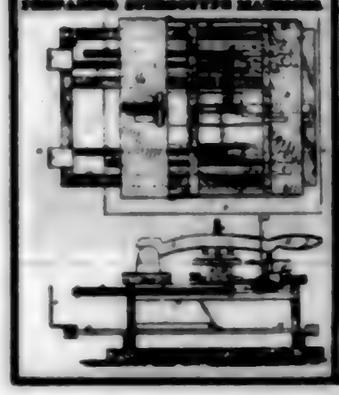


108,811. J. J. MILLS AND W. PERRY
REGISTER OR PAGE INDEX.

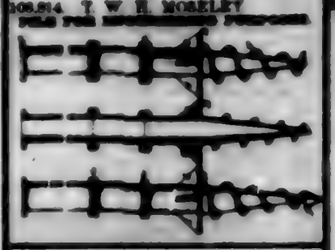
108,812. E. L. MORGAN
SEWING MACHINE TABLE.



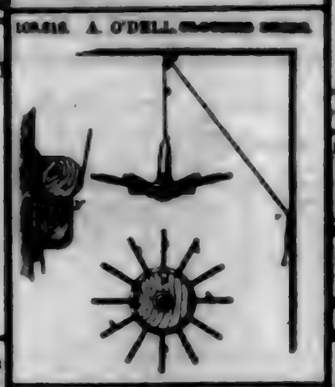
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MACHINE FOR



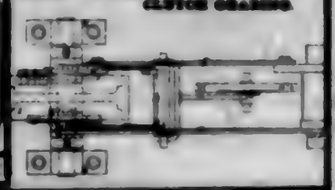
108,814. T. W. H. MOSELEY
PIER FOR



108,816. A. O'DELL
PLOWING



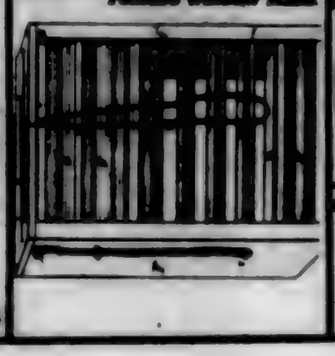
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CLUTCH COUPLING.



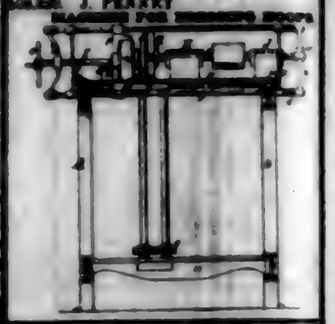
108,818. J. NEWSHAM, W. H. HAINES AND W. S. HEXSON
MANUFACTURE OF



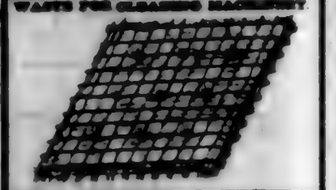
108,820. F. R. OSGOOD
PLANING



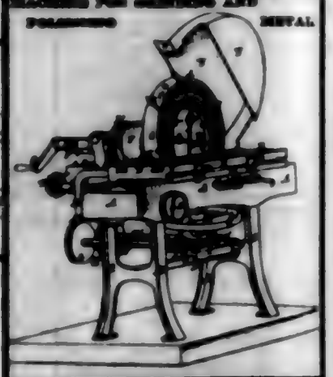
108,821. J. PENNEY
MACHINE FOR



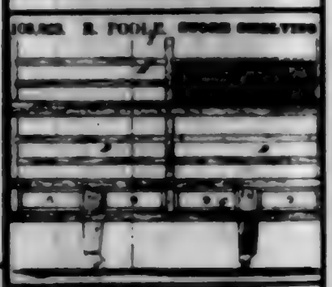
108,822. A. PEPLE
PREPARING



108,823. N. PITKIN AND J. G. LANK
MACHINE FOR



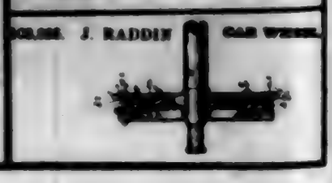
108,824. R. POOLE
SPOKE



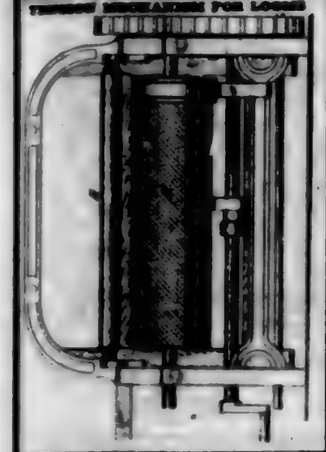
108,824. A. PUTNAM, Jr.
FASTENER



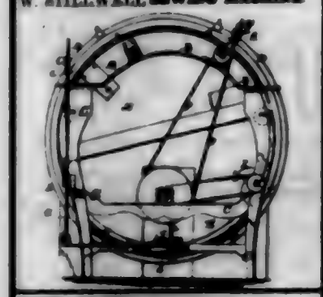
108,826. J. RADDIN
CAR



108,826. J. F. RANDALL
WARP



108,827. W. A. RAYER AND W. STILLWELL
SEWING MACHINE.

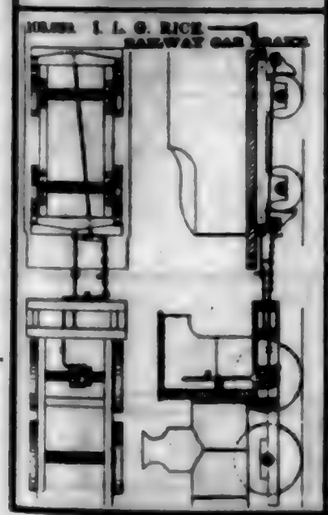


108,828. F. RAYNSFORD
LOW WATER

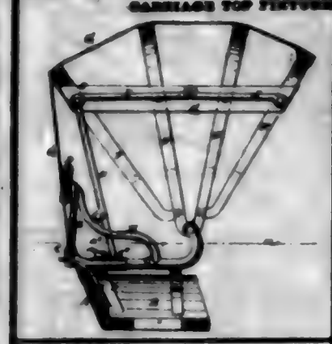


108,829. J. RESTLE
TRANSPARENCY

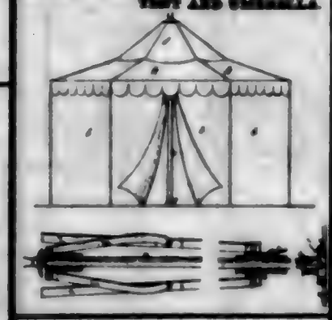
108,830. I. L. G. RICE
RAILWAY CAR



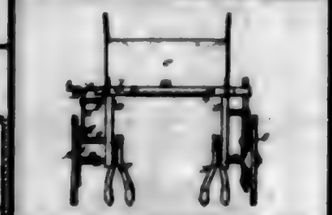
108,831. E. RICHARDSON
CARRIAGE TOP



108,832. J. AND G. RITCHIE
TENT AND UMBRELLA



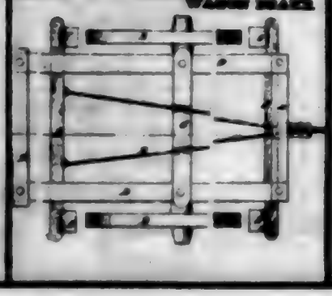
108,833. R. I. ROBERSON AND W. NASH
CORRUGATED CULTIVATOR AND



108,834. E. G. AND A. D. ROWELL, J. R. RICE, AND S. M. SEELEY
GROOVED PLOW AND CULTIVATOR.



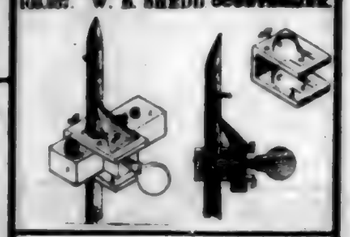
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WAGON BRAKE.



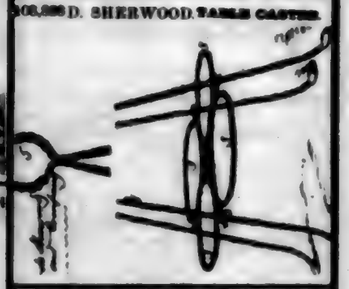
108,836. P. SCHULER
BREECH LOADING FIRE ARM.



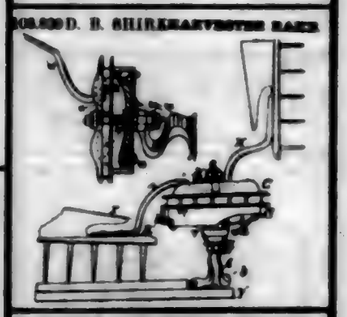
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COUNTERSINK.



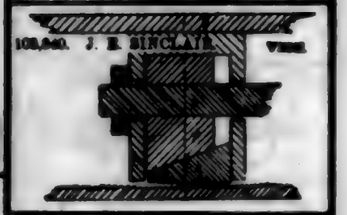
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TABLE CASTER.



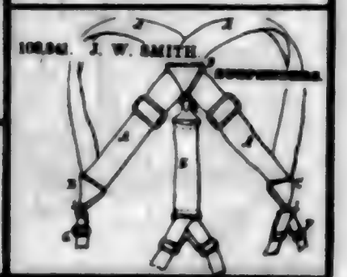
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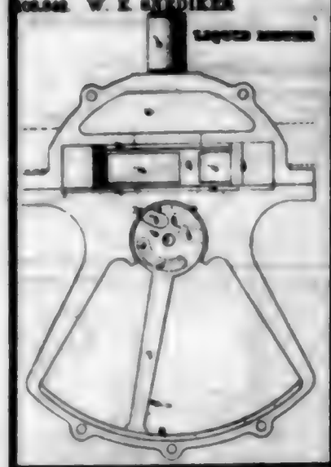
108,840. J. B. SINCLAIR
VISE.



108,841. J. W. SMITH
CULTIVATOR.



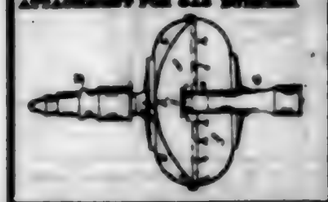
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108,843. R. R. AND H. T. SPEDDEN



108,844. J. H. STEINER



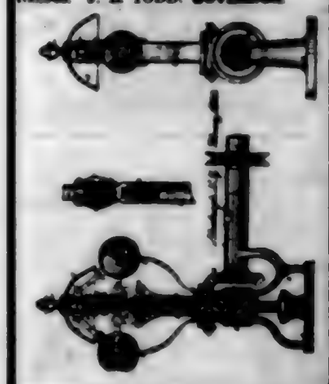
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108,846. D. H. TAYLOR

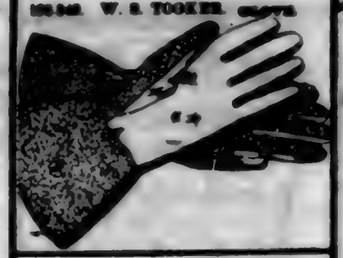
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108,848. J. L. TODD



108,849. W. S. TOOKER



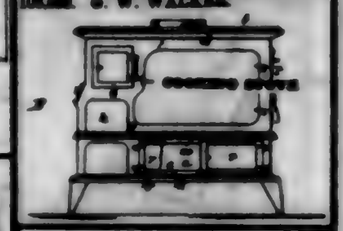
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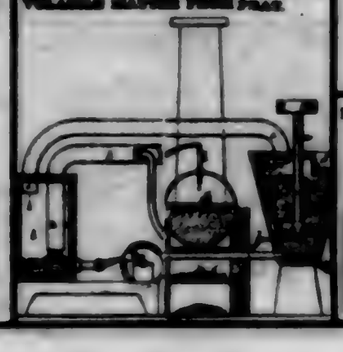
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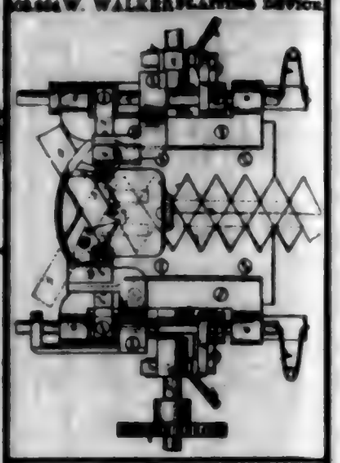
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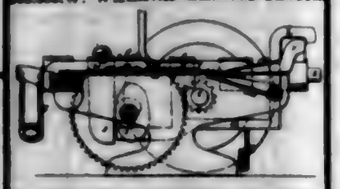
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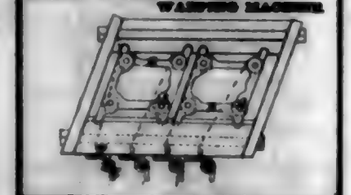
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108,855. W. WALKER



108,856. J. AND T. WALMSLEY



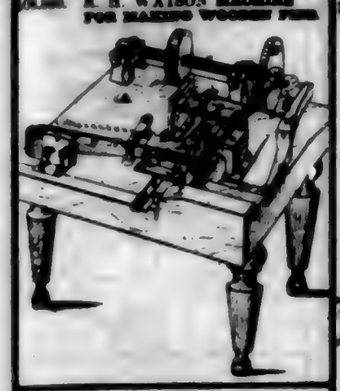
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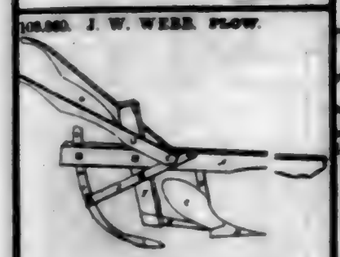
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108,859. R. H. WATSON

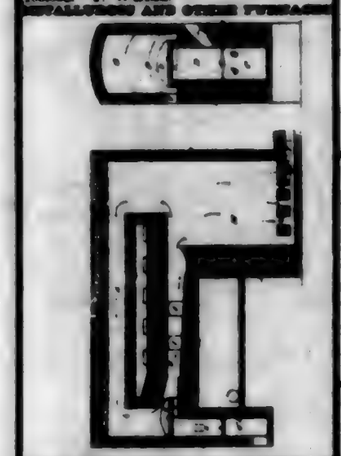


108,860. J. W. WEBB. PLOW.

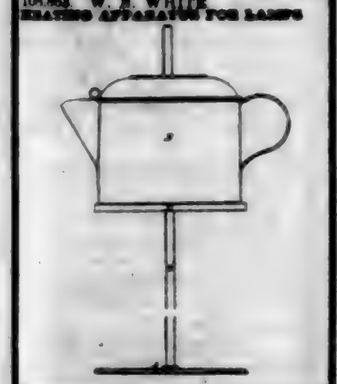


108,861. A. WRICHERT.

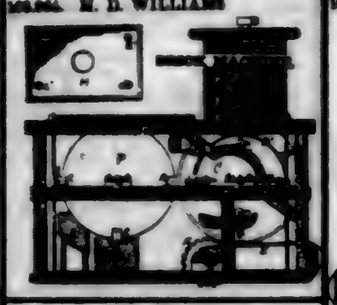
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108,863. W. H. WHITE



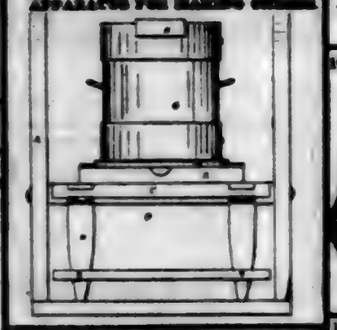
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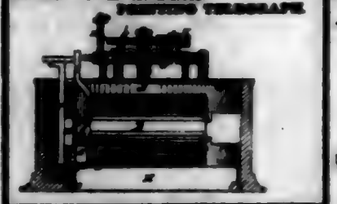
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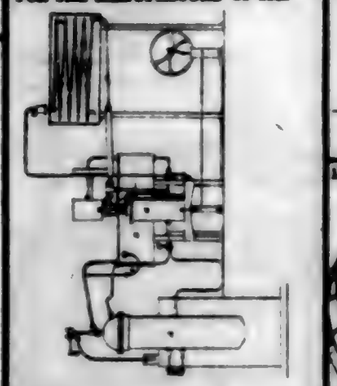
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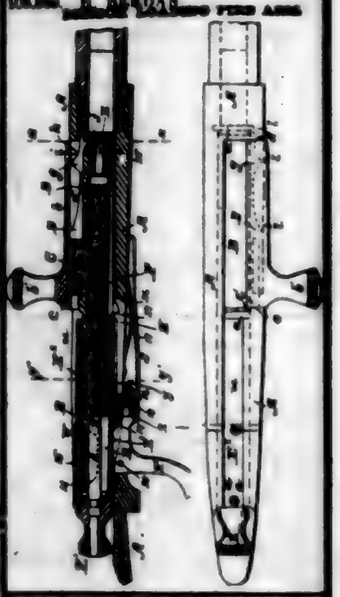
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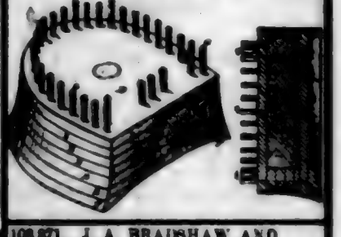
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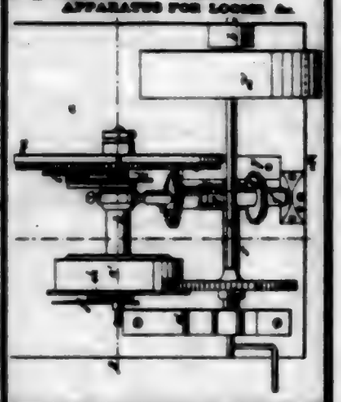
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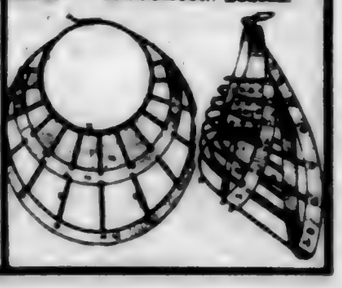
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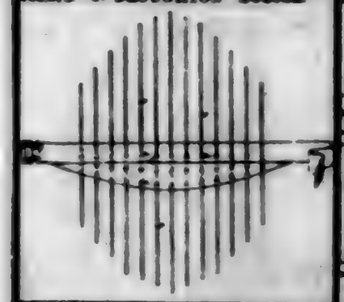
108,871. J. A. BRADSHAW AND S. L. CROCKETT.



108,872. J. BROUGHTON.



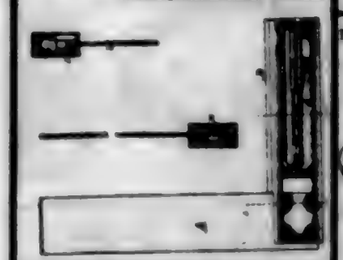
108,873 J. BROUGHTON SPINDLE.



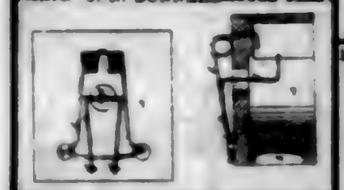
108,874 J. T. BROWN AND L. HIRD
AUTOMATIC FURNITURE LOCK.



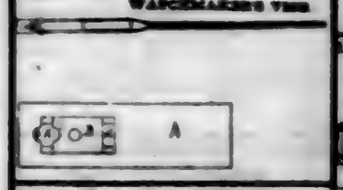
108,875 H. L. BUCKWALTER
TRY-SQUARE AND LEVEL.



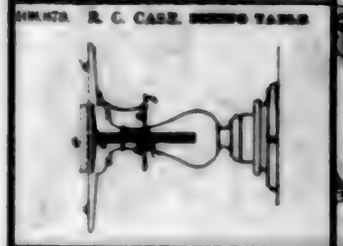
108,876 J. S. BUNNELL, MOUSE TRAP



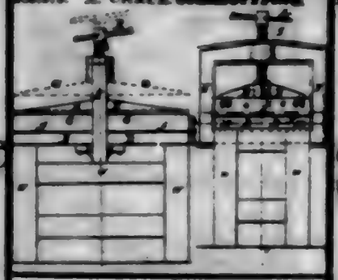
108,877 A. W. BUSH
WASCHEMAKERS VISE



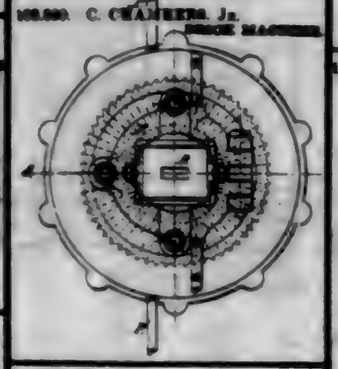
108,878 R. C. CASE, SEWING TABLE



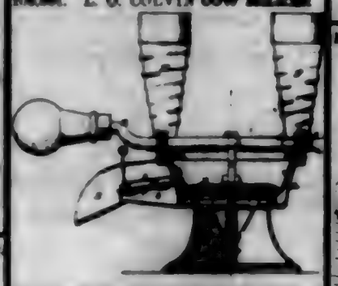
108,879 A. CHACE, CORRECTING



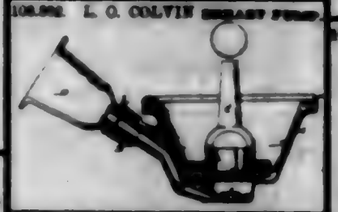
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DRIVE MACHINE.



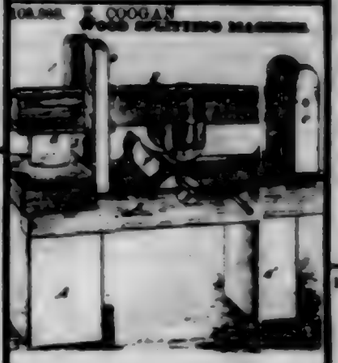
108,881 L. O. COLVIN, COW MILKER.



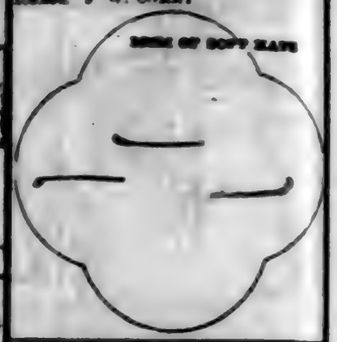
108,882 L. O. COLVIN, HORSE POWER.



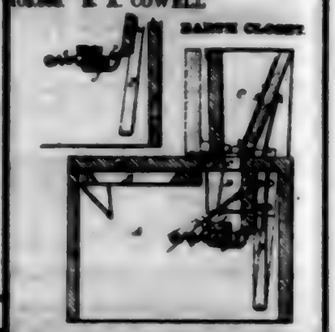
108,883 J. COGAN
WOOD SPLITTING MACHINE.



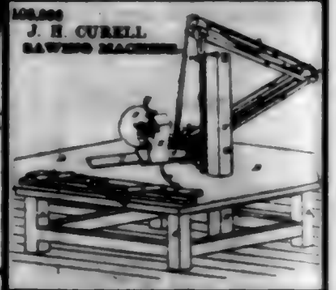
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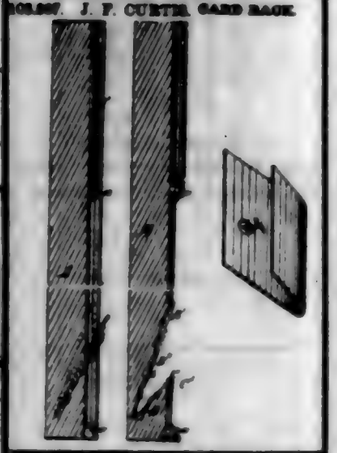
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SAFETY CLOSET.



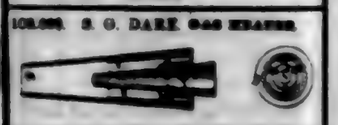
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SAWING MACHINE.



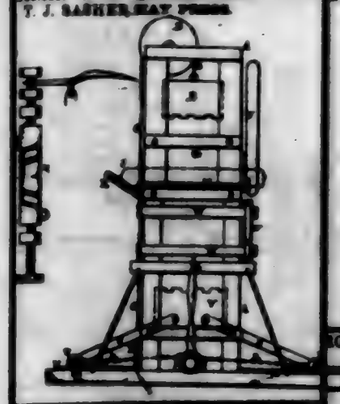
108,887 J. F. CURTIS, CARD RACK.



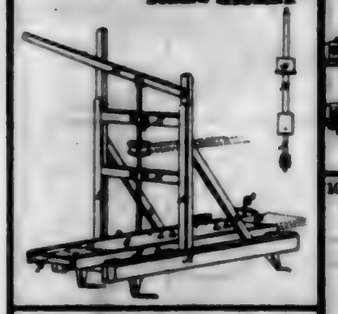
108,888 S. O. DARE, GAS HEATER.



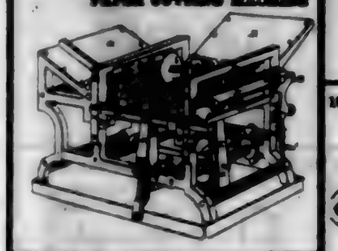
108,889 J. W. DAVISON AND T. J. BASHER, HAY PRESS.



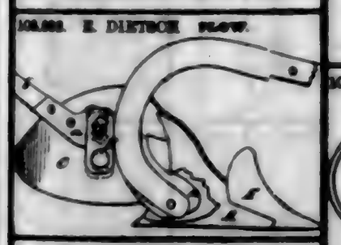
108,890 W. H. DEATRICK
DOUBLE MACHINE.



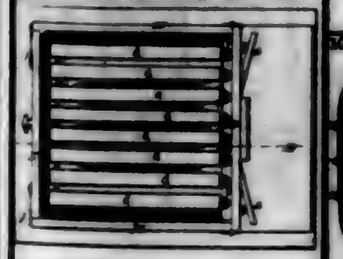
108,891 ST. CLAIR DENNY AND I. L. G. RICE
PAPER CUTTING MACHINE.



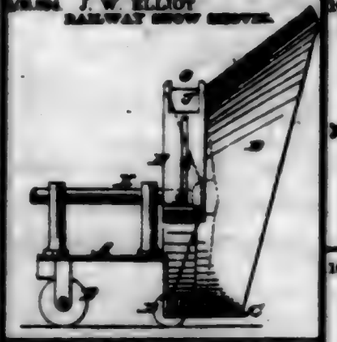
108,892 H. DIETSCH PLOW.



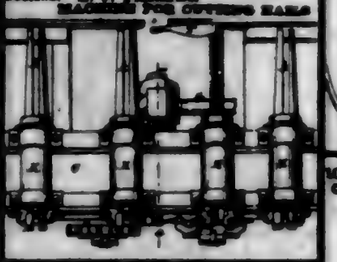
108,893 E. J. DONOVAN, SIDE RIVE.



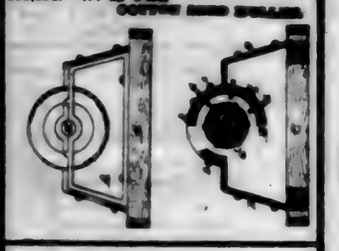
108,894 J. W. ELLIOT
RAILWAY SNOW SERVER.



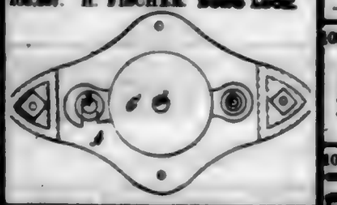
108,895 D. J. FARMER
MACHINE FOR CUTTING HAIR.



108,896 W. B. FEE
CUTTER HEAD SPEAKER.



108,897 H. FISCHER, SIDING LOCK.



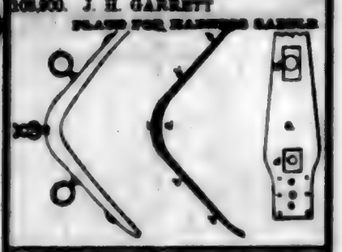
108,898 H. FISCHER, SIDING FASTENER.



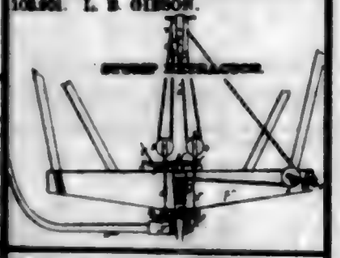
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CENTRIFUGAL SUGAR DRAINER.



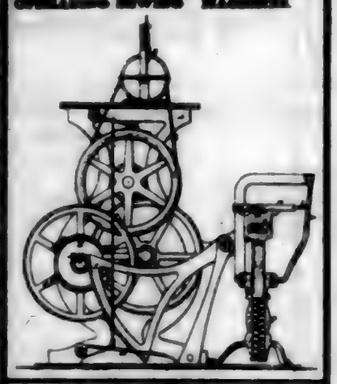
108,900 J. H. GARRETT
PLATES FOR HARDENING RAILROAD



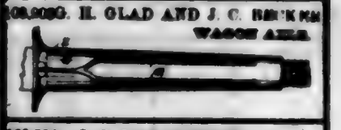
108,901 L. B. GIBSON.
STUMP EXTRACTOR.



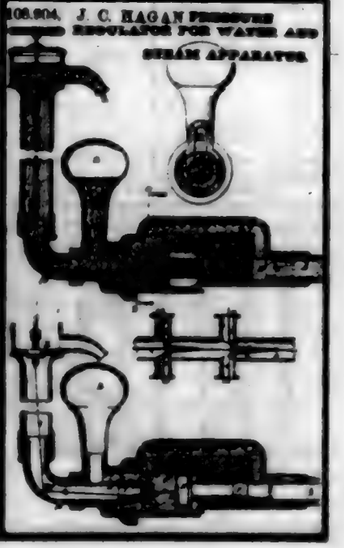
108,902 V. GIROUD, APPARATUS FOR OVERLOCKING SEWING MACHINES.



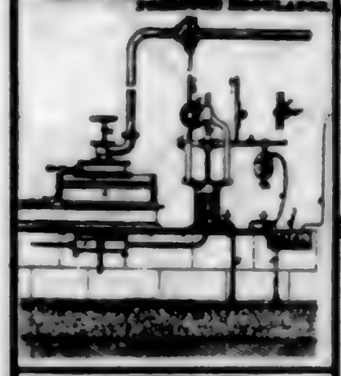
108,903. H. GLAD AND J. C. BRICKEN
WAGON AXLE.



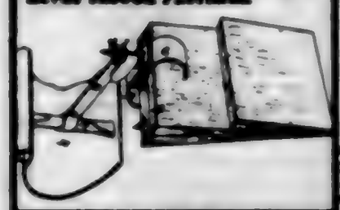
108,904. J. C. HAGAN, PRESSURE REGULATOR FOR WATER AND STEAM APPARATUS.



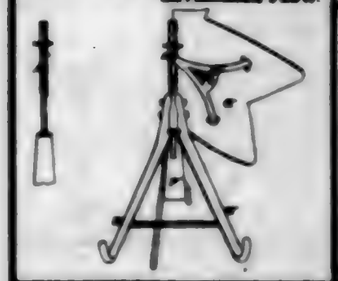
108,926. J. C. HAGAN.
STEAM AND WATER SUPPLY AND [illegible] APPARATUS.



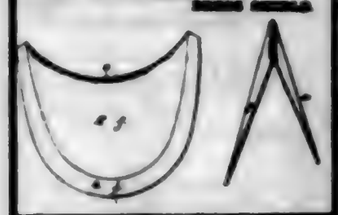
108,927. M. HENNEY AND W. R. HAGER.
HAVE TROUGH FASTENER.



108,928. E. C. HODGE.
REVERSIBLE PLOW.



108,929. R. M. HOTCHKISS.
[illegible]

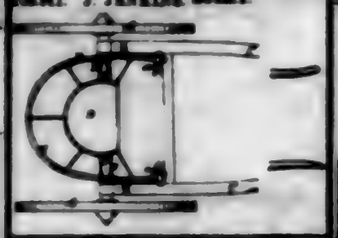


108,930. C. P. HOUGHTON.
MANUFACTURE OF [illegible]

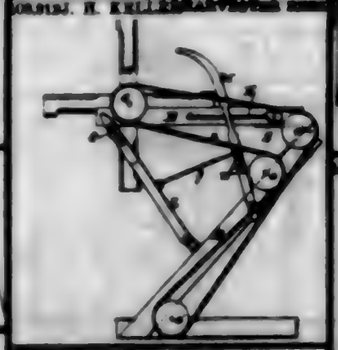
108,931. J. JACOBSON.
HARROW.



108,932. J. JENKINS, Sr.



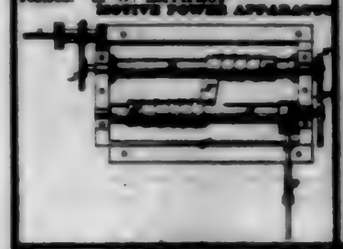
108,933. H. KELLER.
[illegible]



108,934. J. S. KENYON AND L. FOX.
MANUFACTURE OF [illegible]

108,935. J. S. KENYON AND L. FOX.
[illegible]

108,936. L. W. LATHROP.
MOTIVE POWER APPARATUS.



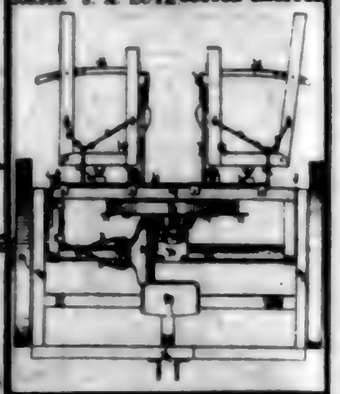
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[illegible]



108,938. J. LOGAN.
[illegible]



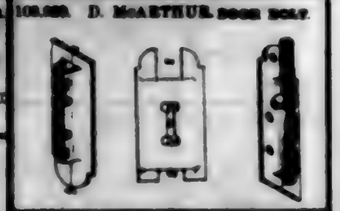
108,939. J. A. LUTZ.
COTTON GROPPER.



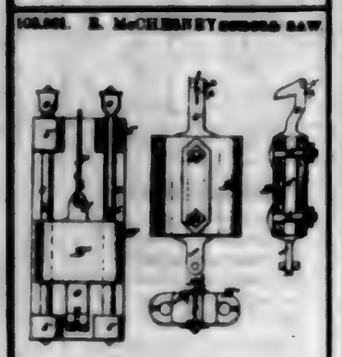
108,940. E. G. MATTHEWS.
SWIVEL PLOW.



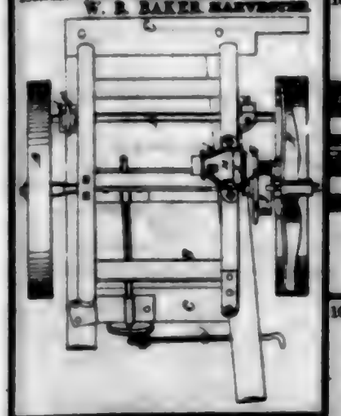
108,941. D. McARTHUR.
DOOR BOLT.



108,942. R. McCHESNEY.
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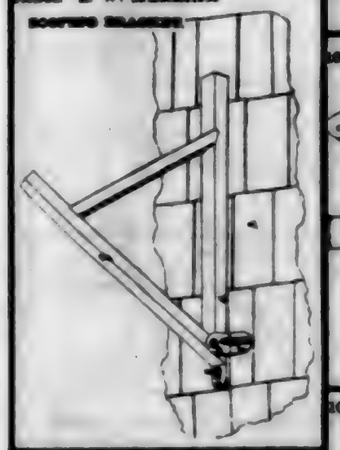
108,942. L. J. McCORMICK AND W. B. BAKER.
HARVESTER.



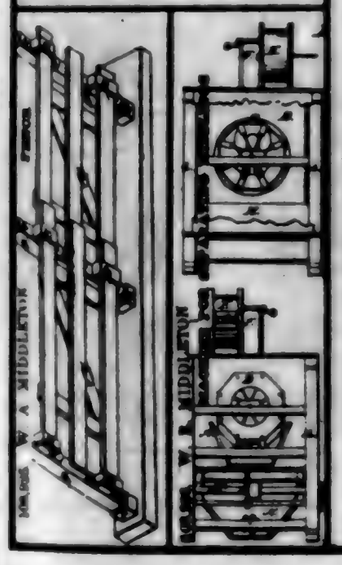
108,943. A. McDONALD.
[illegible]



108,944. L. W. MERRIAM.
[illegible]



108,945. W. A. MIDDLETON.

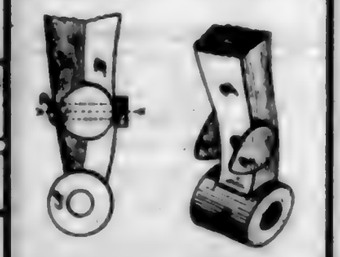


108,946. W. A. MIDDLETON.

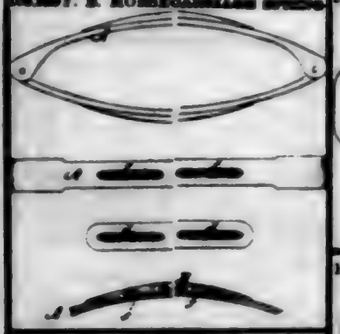
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LOCK NUT.



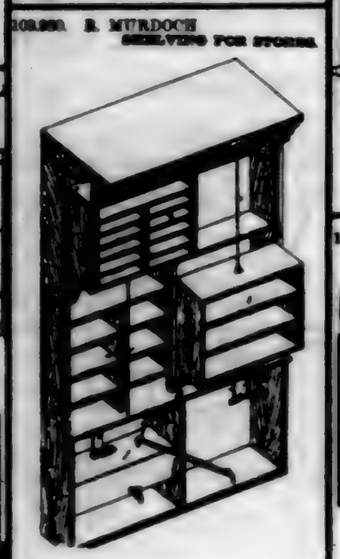
108,948. F. B. MORSE.
DRAFT IRON FOR CARRIAGES.



108,949. F. B. MORSE.
CARRIAGE SPRING.

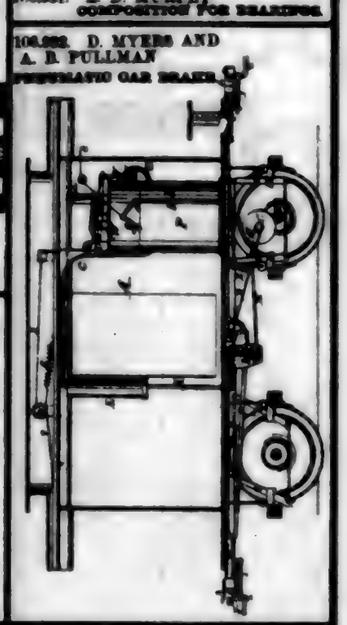


108,950. R. MURDOCH.
SHELVING FOR STORES.

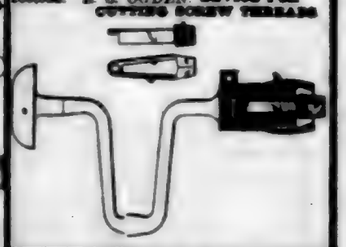


108,951. E. D. MURRAY.
COMPOSITION FOR BRAZING.

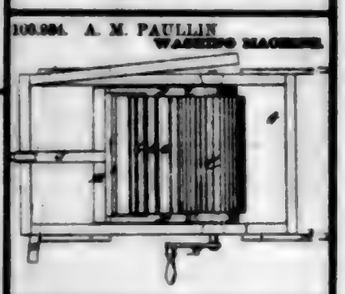
108,952. D. MYERS AND A. B. PULLMAN.
PNEUMATIC CAR BRAKE.



108,953. E. S. OGDEN.
DEVICE FOR CUTTING SCREW THREADS.



108,954. A. M. PAULLIN.
WASHING MACHINE.



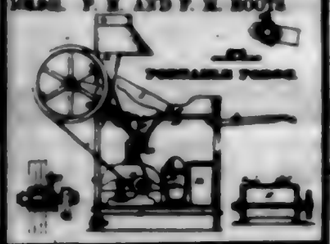
108,955. J. T. RICH.
STEAM GENERATOR.



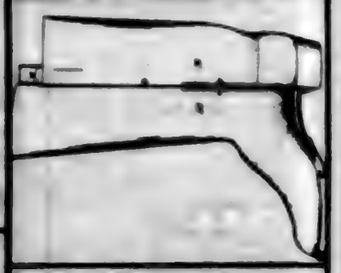
108,939 J. T. RICH.
STEAM GENERATOR.



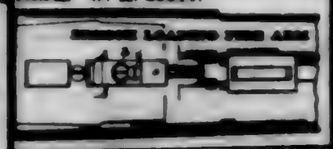
108,940 P. H. AND F. M. ROOTS
PORTABLE FURNACE.



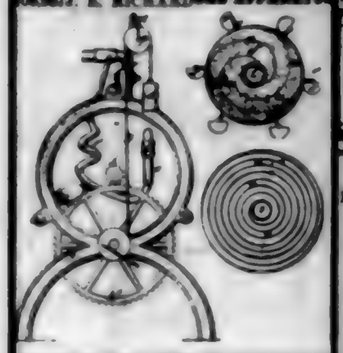
108,941 J. H. WALKER. DOOR.



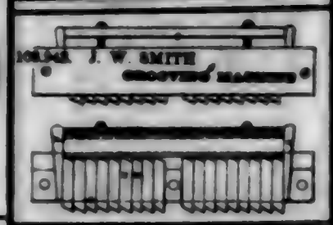
108,942 W. M. SCOTT.
[illegible] LEADING FIRE ARM.



108,943 J. E. RICHARDSON APPARATUS



108,944 J. W. SMITH
GROOVED MACHINE.



108,945 L. D. WHEELER
FAN BLOWER.



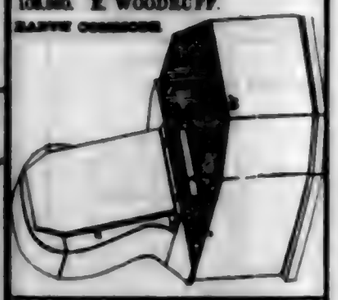
108,946 A. S. RICHARDS
CARPET STRETCHER.



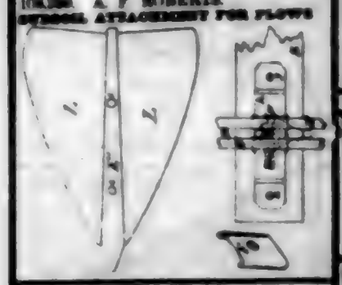
108,947 O. F. STEDMAN AND WARE BOILER.



108,948 R. WOODRUFF.
RAPID CHRONOMETER.



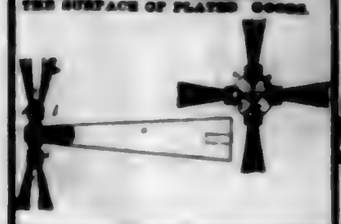
108,949 A. F. ROBERTS.
OUTRIGGER ATTACHMENT FOR PLOWS



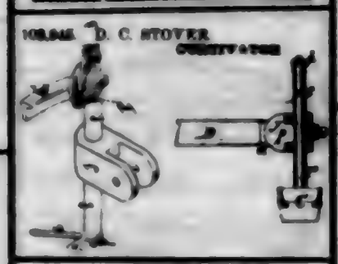
4,170 S. CROFT AND
J. C. SCHUELLERMAN
HASP FOR TRUNK LOCKS.



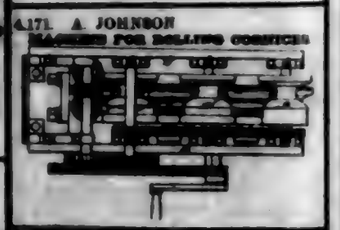
108,950 J. ROGERS. FINISHING
THE SURFACE OF PLATED GOODS.



108,951 D. C. STOVER.
CULTIVATOR.



4,171 A. JOHNSON
MACHINE FOR ROLLING CORSETS.

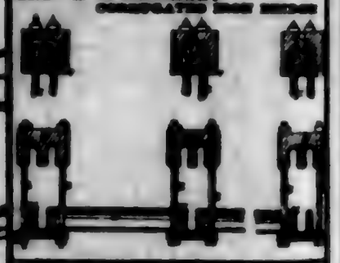


108,952 C. N. TUTTLE.



CAP FOR TEASE BOXES.

4,172 R. MONTGOMERY.
CORRUGATED IRON ROOFING.



108,953 E. WASTIE.
[illegible] CORN PLANTER.



4,173 E. WAITE.
FABRIC FOR
THE MANUFACTURE OF SHOES, &c.

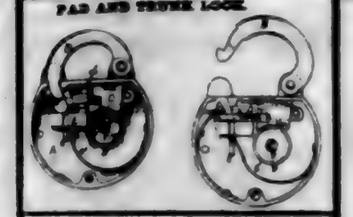
ILLUSTRATIONS OF PATENTS

ISSUED FROM

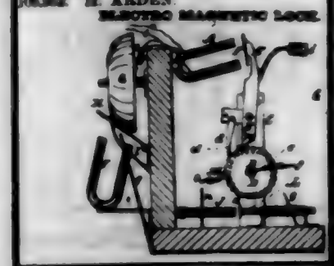
THE UNITED STATES PATENT OFFICE

NOVEMBER 8, 1870.

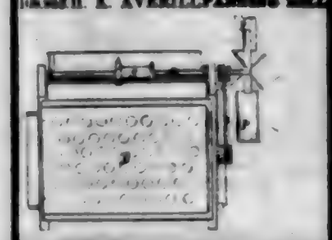
108,951. A. M. ADAMS.
PAD AND TEVER LOCK.



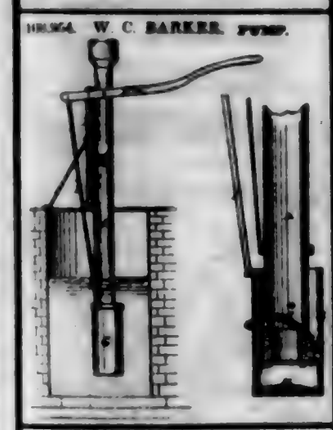
108,952. H. ARDEN.
ELECTRO MAGNETIC LOCK.



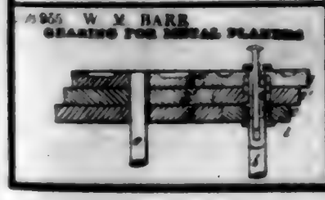
108,953 H. K. AVERILL PAPERING MILL.



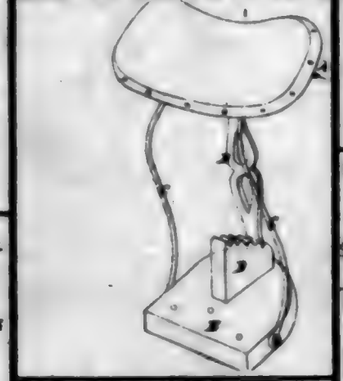
108,954. W. C. BARKER. PUMP.



108,955 W. M. BARR.
GEARING FOR METAL PLATING.

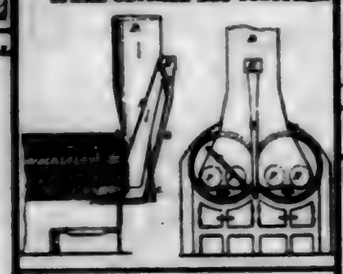


108,956. J. S. BARTLETT. HEAD REST.

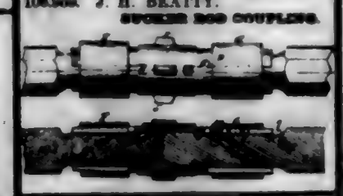


108,957 W. A. BATTERSBY. COMPOUND FOR PIPES, TILES, SIDEWALKS, &c.

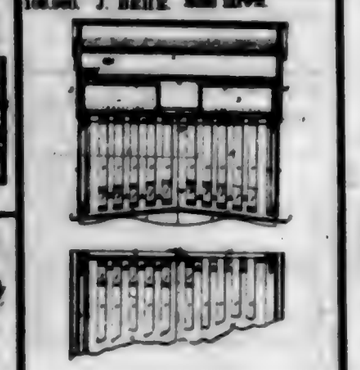
108,958. D. BEACH.
SPARK CATCHER AND CONDENSER.



108,959. J. H. BEATTY.
SUCKER ROD COUPLING.



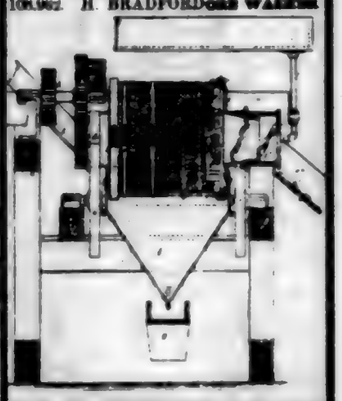
108,960. J. BEHR. [illegible] HIVE.



108,961. G. T. BENSON
HAT AND COAT RACK.

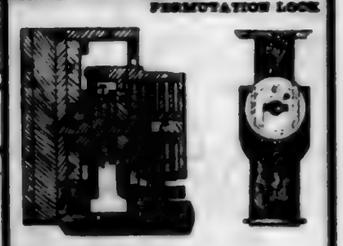


108,962. H. BRADFORD. CORE WASHER.

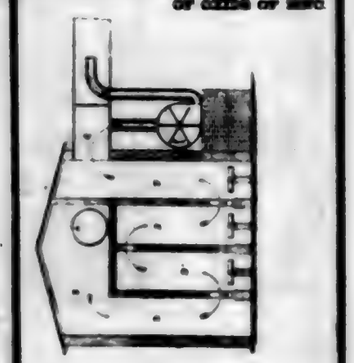


108,963. J. C. BRANCH AND
H. P. QUIN. LINIMENT.

108,964. F. H. BROWN.
PERMUTATION LOCK.



108,965. J. E. BURROWS. APPARATUS
FOR COOLING THE VAPORS
OF OILS OF PETC.



108,967 T. A. CARLSTROM AND DUTTON. [illustration]

108,967 A. CHRISTIAN. [illustration]

108,969 C. B. CLARK. [illustration]

108,969 T. COFFIELD AND S. HOLT. [illustration]

108,970 T. G. COGGIN. [illustration]

108,971 C. COLE. [illustration]

108,972 M. H. COLLINS. [illustration]

108,973 T. B. COMINS, Jr. [illustration]

108,974 E. A. CRALLE, Jr. [illustration]

108,975 B. S. CROCKETT. [illustration]

108,976 H. C. CROSBY. [illustration]

108,977 P. D. CUMMINGS. [illustration]

108,978 L. S. DANIELS. [illustration]

108,979 A. DAY. [illustration]

108,980 M. DE LA PEÑA. [illustration]

108,981 M. DELUDE. [illustration]

108,982 W. B. DODDRIDGE. [illustration]

108,983 J. B. DOTCH. [illustration]

108,984 J. A. DOUGLASS. [illustration]

108,985 C. S. DUNBRACK. [illustration]

108,986 A. C. AND I. L. DUNN. [illustration]

108,987 P. DYER, Jr., A. PARKER AND W. B. WAY. [illustration]

108,988 J. M. ELLIOTT. [illustration]

108,989 J. ELSON. [illustration]

108,990 J. E. EMERSON. [illustration]

108,991 W. S. ESTEY AND I. S. CLOUGH. [illustration]

108,992 J. FIPPS. [illustration]

108,993 I. N. FORRESTER. [illustration]

108,994 J. T. FOSTER. [illustration]

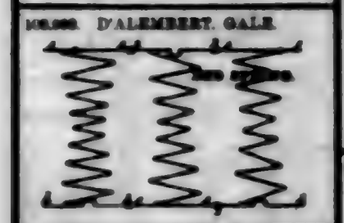
108,995 J. FRASER. [illustration]

108,996 D. FULLER. [illustration]

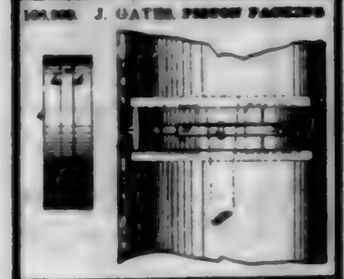
109,997. G. G. GABRION [illegible]



109,998. D'ALEMBERT. GALE

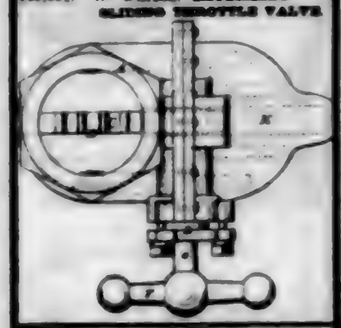


109,999. J. OATES. PISTON PACKING



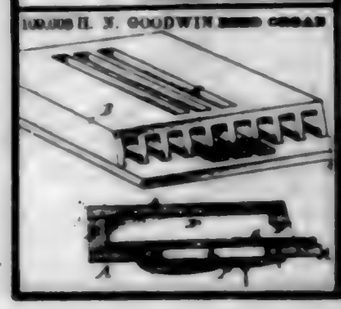
109,000. W. GELLER
COMPOSITION FOR PENCILS

109,001. W. GLASS. LATERALLY SLIDING THROTTLE VALVE



109,002. J. P. GODFREY
ROOFING COMPOSITION

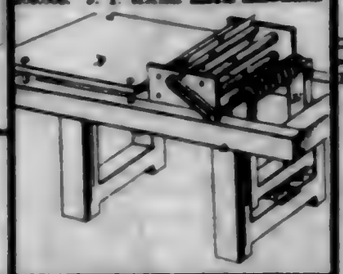
109,003 H. N. GOODWIN SEED DRILL



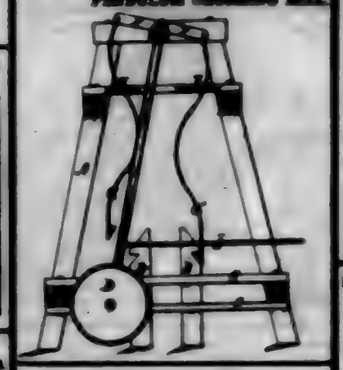
109,004. M. C. GOVE. STEAM TRAP.



109,005. J. T. HALL. LATHE MACHINE



109,006. J. HART
PENDULUM CHURNING MILL



109,007. W. HILDEBRAND. SAWING



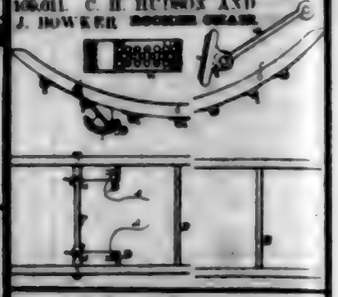
109,008. F. B. HILL. BOX SCRAPER.



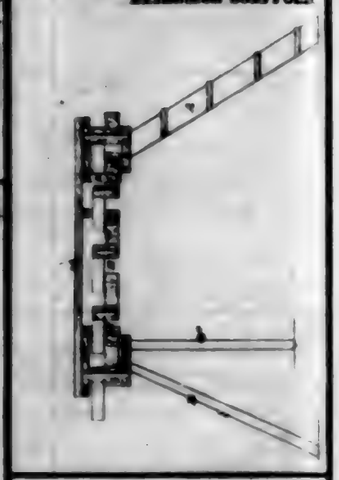
109,009. C. E. J. HOLMES.
PREPARATION OF PEAT

109,010. W. HORWITZ. LIQUID GAGE.

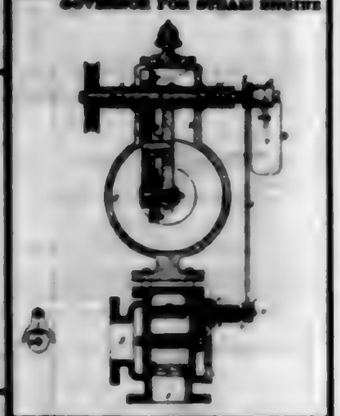
109,011. C. H. HUDSON AND J. BOWKER. ROCKING GEARS.



109,012. J. HUGHES.
EXTENSION SCAFFOLD



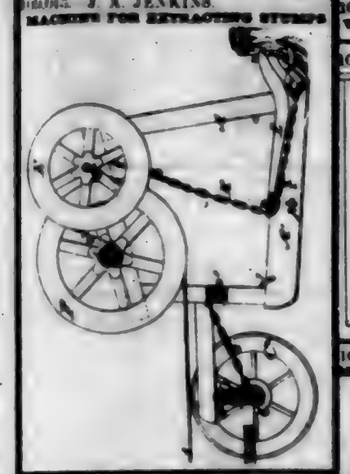
109,013. R. K. HUNTOON
GOVERNOR FOR STEAM ENGINE



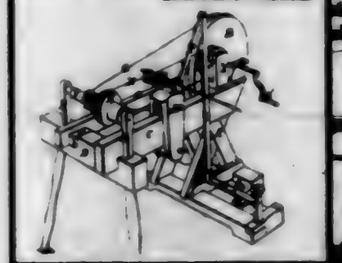
109,014. R. HUTCHISON
FIRE CRACKER PISTOL OR HOLDER.



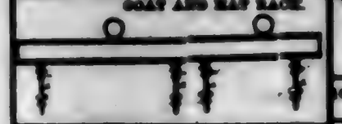
109,015. J. A. JENKINS.
MACHINE FOR EXTRACTING STUMPS



109,016. T. JOHNSTON
SPINNING WHEEL.

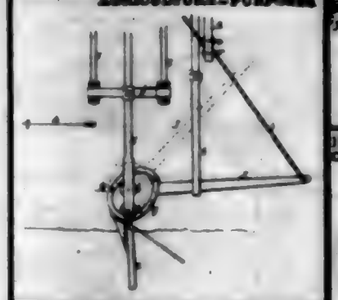


109,017. J. M. KEEP
COAT AND HAT RACK.

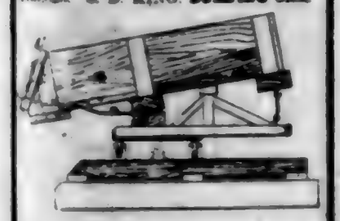


109,018. P. J. KELLY.
COMPOSITION FOR COATING BEARINGS

109,019. A. L. KENNEDY
BINDING MACHINE FOR AGRICULTURAL PURPOSES

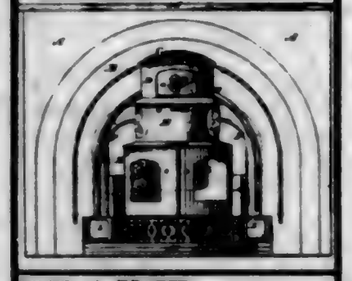


109,020. S. D. KING. DUMPING CAR.

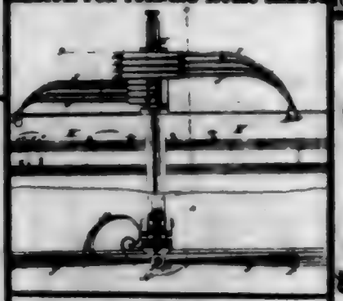


109,021. S. W. KIRK. FLUX FOR WORKING METALS AND MINERALS.

109,022 P. KLOTZ. FIRE PLACE STOVE



109,023. A. KRAFFT.
MACHINE FOR TURNING MUSIC SHEETS

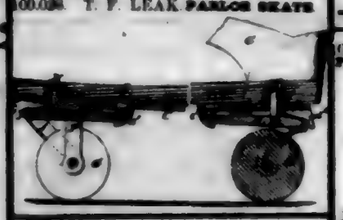


109,024. F. M. LA BOITEAUX
BUTTON FASTENER.

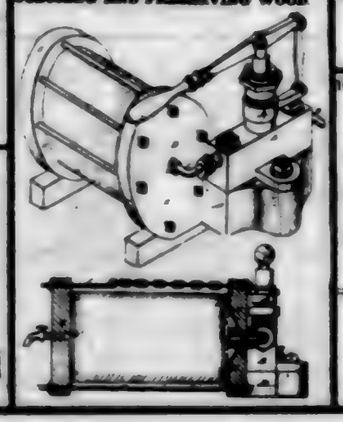


109,025. J. LAMBERT, Jr. REMOVING DYES MADE FROM ANILINE &c.

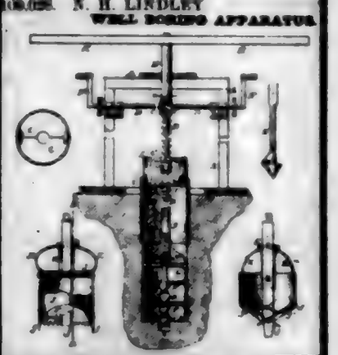
109,026. T. P. LEAK. PARLOR GRATE



109,027. F. LEAR.
COLORING AND PRESERVING WOOD



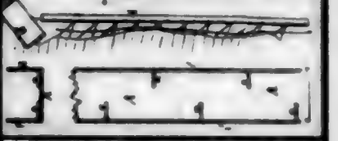
109,028. N. H. LINDLEY
WELL BORING APPARATUS



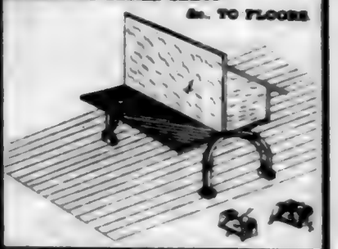
109,029 J. F. LOWE. DOUBLE AND SINGLE STEP ATTACHMENT FOR STREET CARS



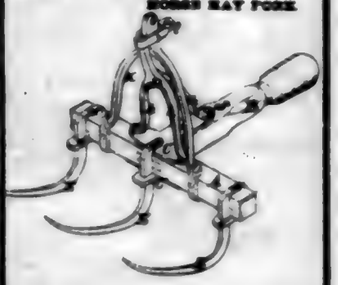
109,030. D. D. MALLORY
WASHING AND TRANSPORTING SAND



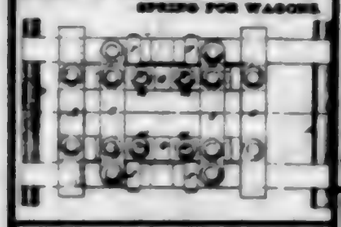
109,031 J. D. McAULIFF. DEVICE FOR FASTENING DESKS SEATS &c. TO FLOORS



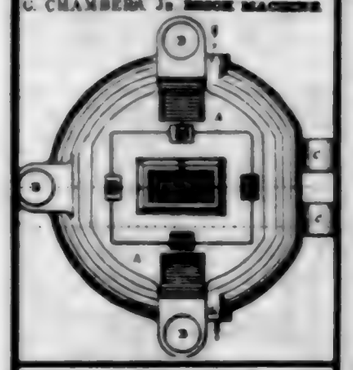
109,032. W. W. McFADDIN
HORSE HAY FORK



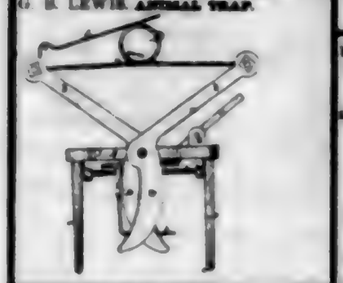
109,033. A. W. McKOWN. SPRING FOR WAGONS.



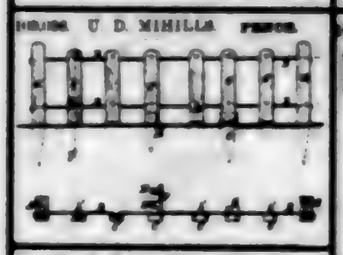
109,034. W. MENDHAM AND C. CHAMBERS Jr. RIDGE MACHINE.



109,035. J. B. MERRIMAN AND G. B. LEWIS. ANIMAL TRAP.



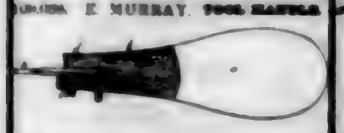
109,036. U. D. MIHILLS. FENCE.



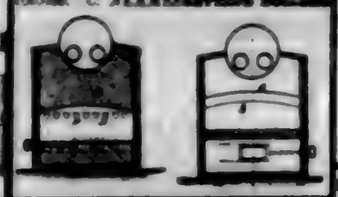
109,037. E. H. MORRIS. PLANE.



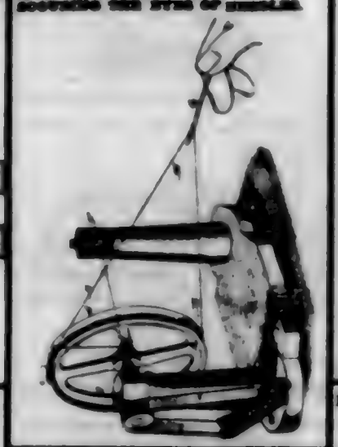
109,038. E. MURRAY. TOOL HANDLE.



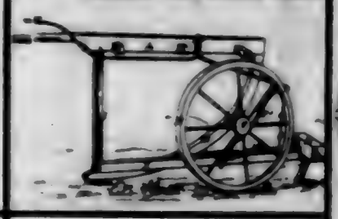
109,039. C. NEAME. SPINNING DOUBLER.



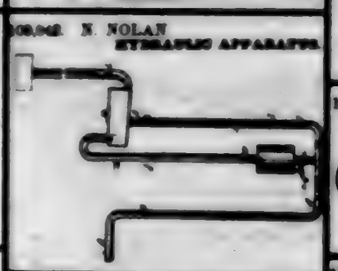
109,040. H. A. NETTLETON AND E. R. LAWTON. MACHINE FOR SQUARING THE ENDS OF SPOOLS.



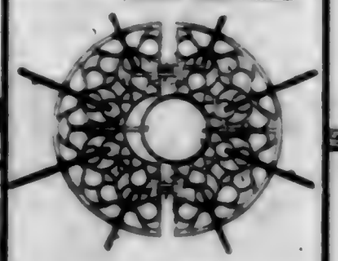
109,041. A. M. NEWLAND. CORRUGATED HARROW AND TURNED SHELL.



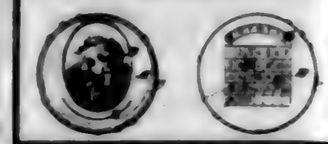
109,042. N. NOLAN. STERILIZING APPARATUS.



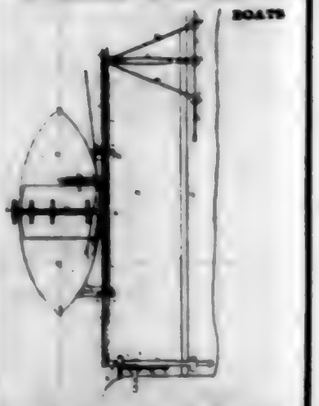
109,043. J. O'MALLEY. GROVE PIPE GRADE.



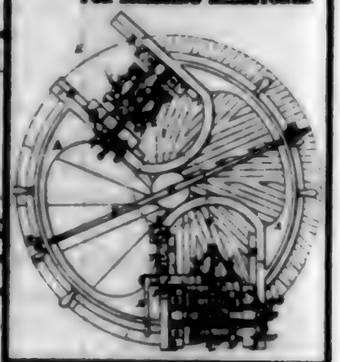
109,044. M. ORSBREE. FIRE CUSHION.



109,045. S. W. AND J. F. PALMER. APPARATUS FOR TOWING CANAL BOATS.



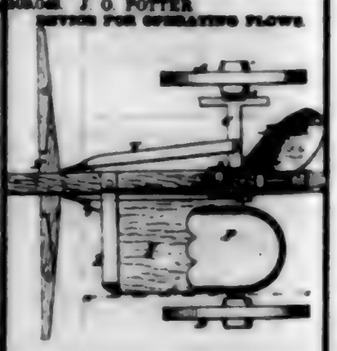
109,046. J. PEPPLER. MACHINE FOR RUBBING BELLOWS.



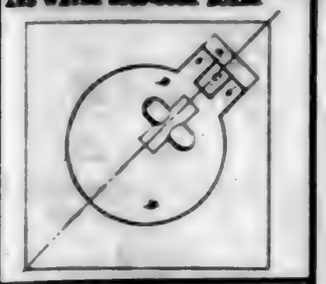
109,047. C. N. PERKINS. PITMAN.



109,048. J. O. POTTER. DEVICE FOR OPERATING FLOWS.



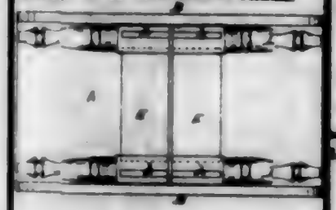
109,049. W. W. PULLIN. TOP OF GAS AND WATER HOOD-DOOR BOXES.



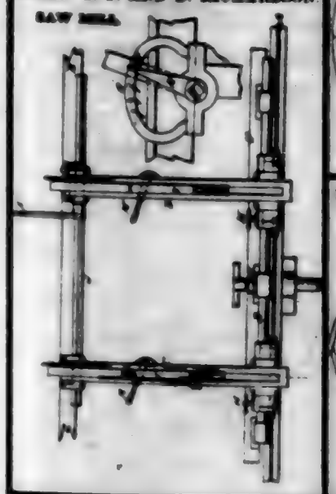
109,050. D. M. REYNOLDS. PORTABLE CRADLE OR COT.



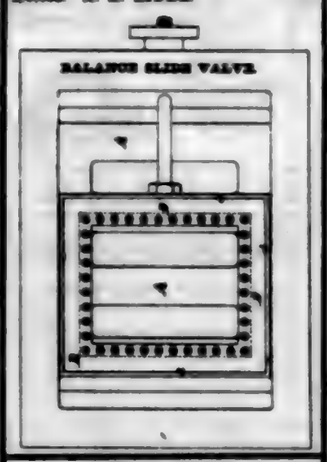
109,051. D. M. REYNOLDS. TABLE.



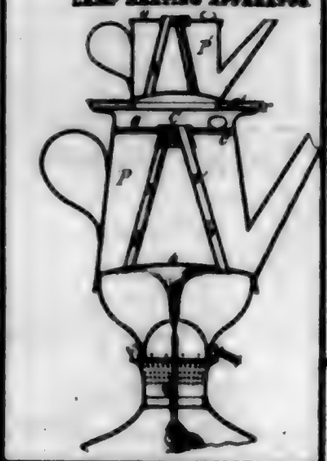
109,052. B. F. AND D. RICHARDSON. SAW MILL.



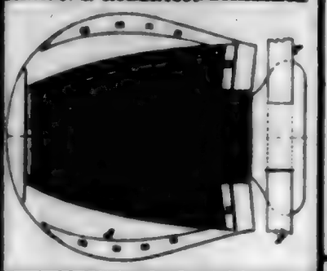
109,053. A. K. RIDER. BALANCE SLIDE VALVE.



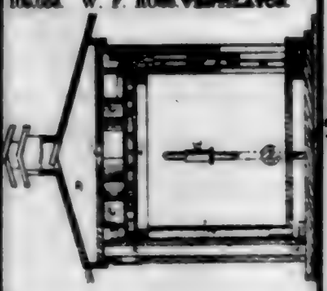
109,054. A. RITTENHOUSE. LAMP HEATING APPARATUS.



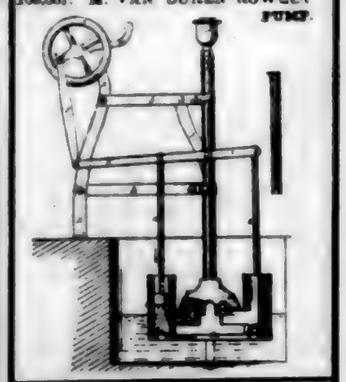
109,055. J. S. ROBERTSON. BOOKBINDER.



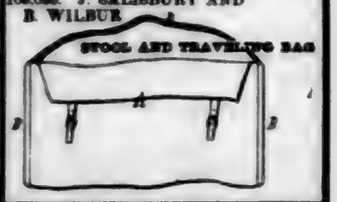
109,056. W. F. ROSS. VENTILATOR.



109,057. M. VAN BUREN ROWLEY. PUMP.



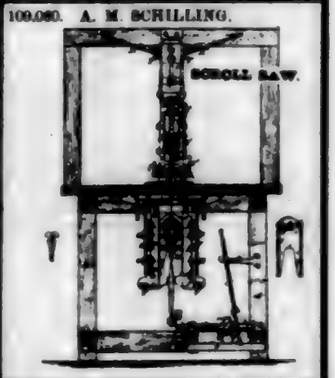
109,058. J. SALISBURY AND B. WILBUR. STOOL AND TRAVELING BAG.



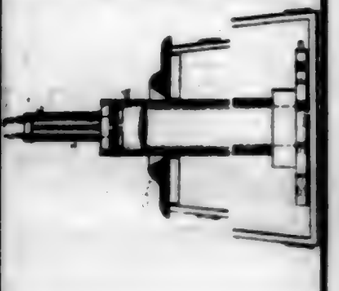
109,059. T. SAMPSON. DYE TUB.



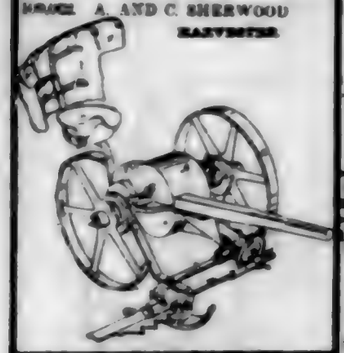
109,060. A. M. SCHILLING. SCROLL SAW.



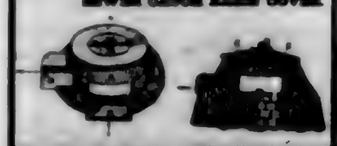
109,061. I. SCOTT. CHURN DASHER.



109,065. A. AND C. SHERWOOD
HARVESTER.

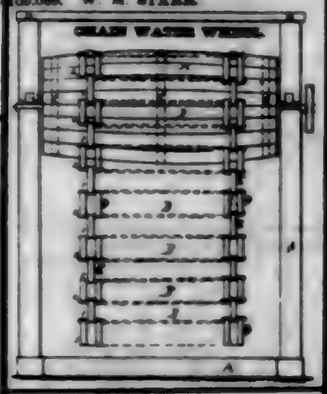


109,066. H. SMITH, Jr.
SEWER GAUGE BASIN COVER.

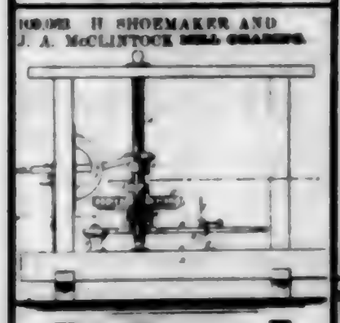


109,067. M. P. SMITH.
DRYING AND PRESERVING APPLES.

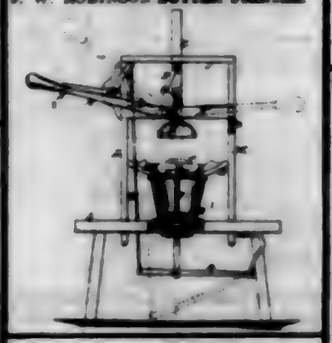
109,068. W. M. STARR.
CHAIN WATER WHEEL.



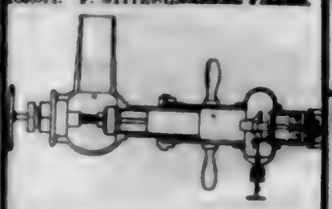
109,069. H. SHOEMAKER AND J. A. McCLINTOCK. MILL GRADING.



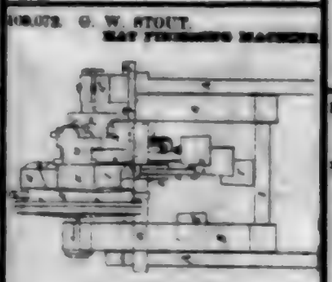
109,070. W. C. STERN AND J. W. ROBINSON. BUTTER PRINTER.



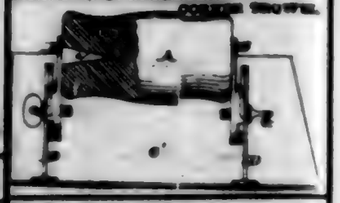
109,071. F. STITZEL. BARREL FILLER.



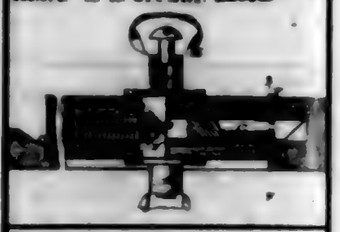
109,072. G. W. STOUT.
HAT FINISHING MACHINE.



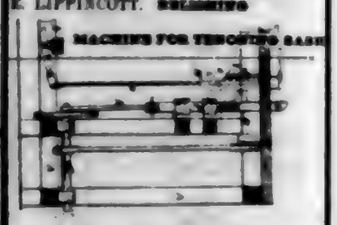
109,073. S. F. STREETER.
CORDING TROUSE.



109,074. A. A. STUART. LASTS.



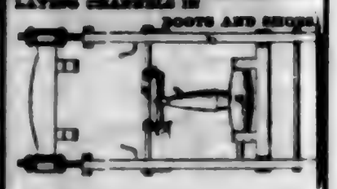
109,075. O. L. SULLIVAN AND E. LIPPINCOTT. SHINGLING
MACHINE FOR TEMPERING SAWS.



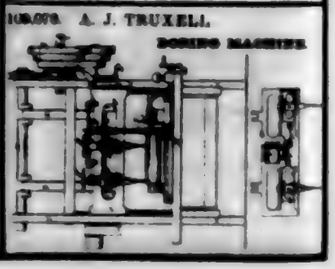
109,076. G. P. SWEEZY.
ADJUSTABLE COAT PATTERN.



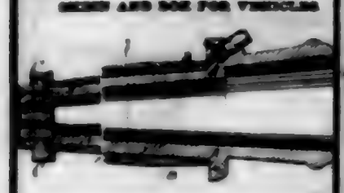
109,077. S. D. TRIPP. MACHINE FOR LAYING CHANNELS IN
BOOTS AND SHOES.



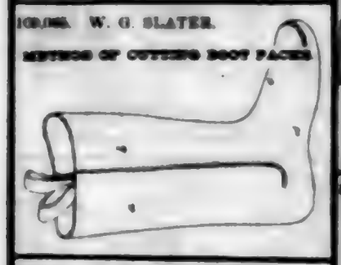
109,078. A. J. TRUXELL.
BOXING MACHINE.



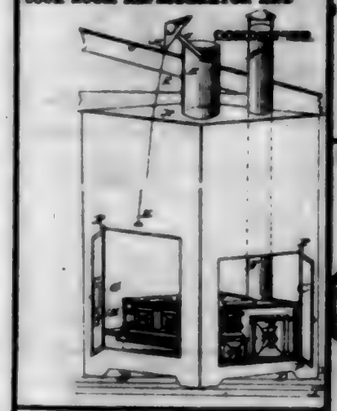
109,079. T. SMART, Jr. WHEELS
HUBS AND BOX FOR VEHICLES.



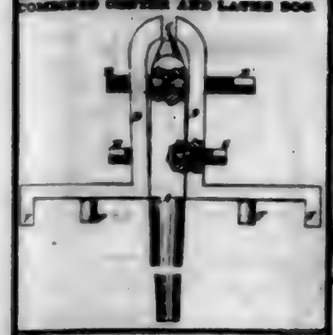
109,080. W. G. SLATER.
METHOD OF CUTTING BOOT FACES.



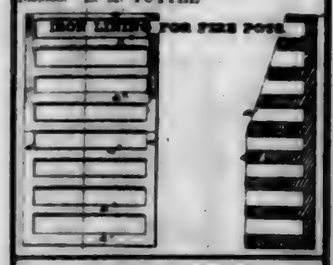
109,081. P. D. VAN DEVENTER.
COOK ROOM REFRIGERATOR AND CONDENSER.



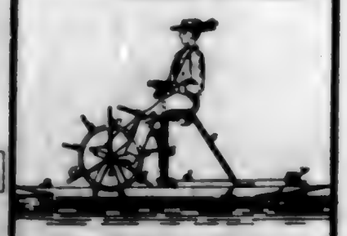
109,082. A. J. TRUXELL.
CONDENSED CHIPPER AND LASTING BOX.



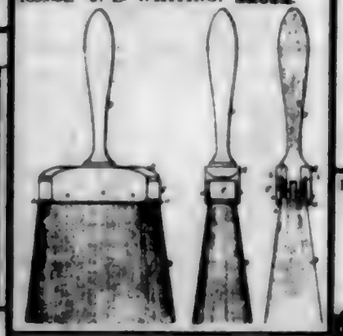
109,083. E. A. TUTTLE
IRON LINING FOR FIRE POTS.



109,084. C. O. WEDERKINCH AND A. STARKWEATHER.
FLOATING VELOCIPEDE.



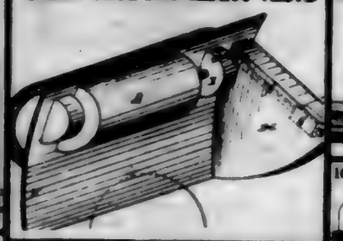
109,085. J. L. WHITING. BRUSH.



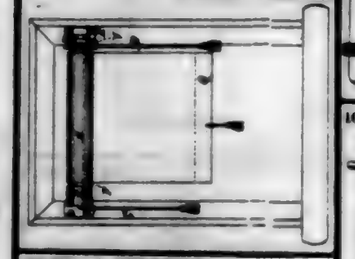
109,086. F. W. WHITNEY. PAPER FILE.



109,086. I. N. WHITTELSEY.
STEAM GAGE AND SAFETY VALVE.



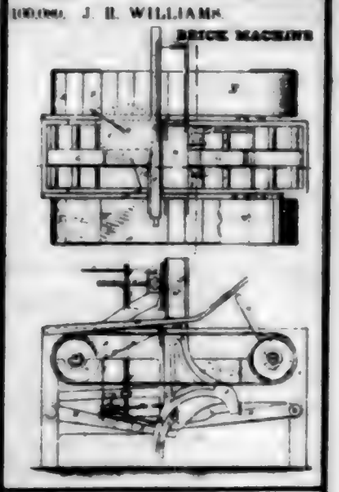
109,087. J. H. WILHELM.
CURTAIN FIXTURE.



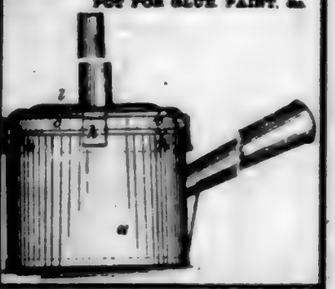
109,088. I. WILLIAMS.
DEVICE FOR UNLOADING WAGONS.



109,089. J. H. WILLIAMS.
BRICK MACHINE.



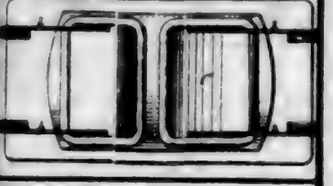
109,090. J. J. WILSON.
POT FOR GLUE, PAINT, &c.



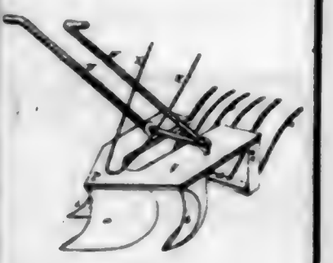
109,091. H. A. WINTER.
SPOOLING AND GRADING MACHINE.



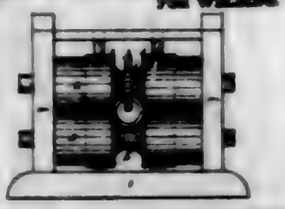
109,092. J. WISE. MACHINE FOR BOOKING TOBACCO LEAVES.



109,093. A. B. WIXOM. POTATO HOOER.



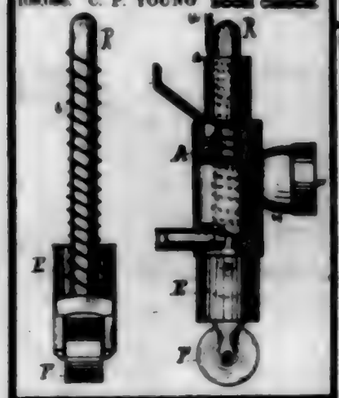
109,094 E. G. WOODWORTH, J. HRAWDY AND F. MERITHEW. MACHINES FOR BENDING HOOP PIPE FOR WELLING.



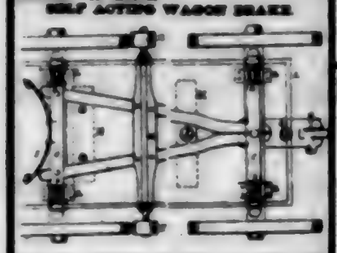
109,095 E. WRIGHT SPRING FOR VEHICLES.



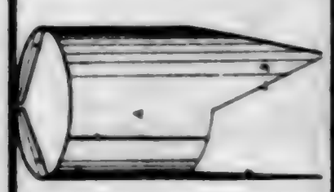
109,096 C. P. YOUNG HOOK CHOCK.



109,097 A. ZINK SELF ACTING WAGON BRAKE.



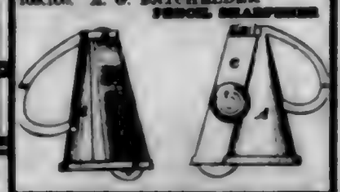
109,098 A. S. ADAMS TREE PROTECTOR.



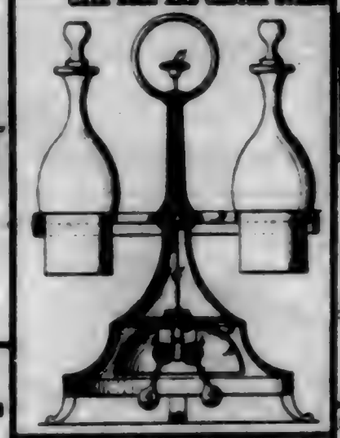
109,099 E. J. BARBER WAGON WHEEL.



109,100 A. G. BATCHELDER PENCIL SHARPENER.



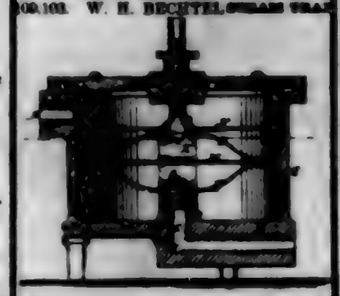
109,101 P. A. BLATTERLIEK CALL BELL AND GASTER STAND.



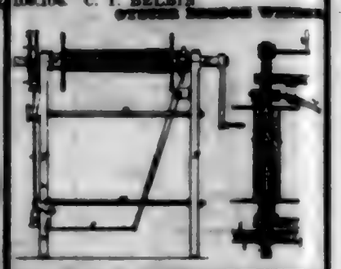
109,102 S. W. BEACH, CLAMPING MOVABLE SHAFE FOR CARRIAGES.



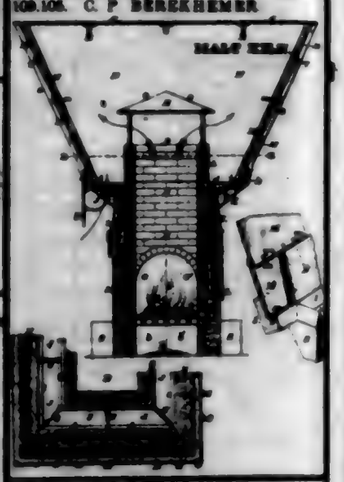
109,103 W. H. BECHTEL, STEAM TRAP.



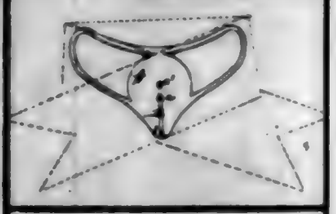
109,104 C. T. BELBIN OYSTER TONGUE WHEEL.



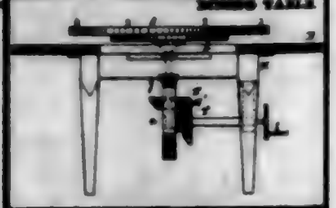
109,105 C. P. BEREKHEMER HALF TURN.



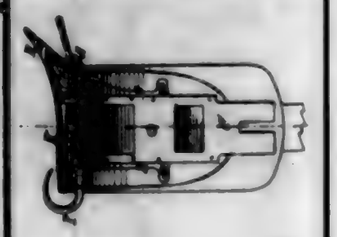
109,106 G. W. BISHOP. HOOK TIE FASTENING.



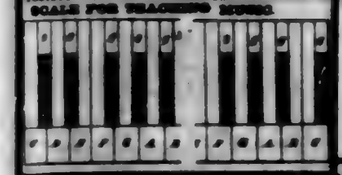
109,107 D. BOARDMAN. SEWING TABLE.



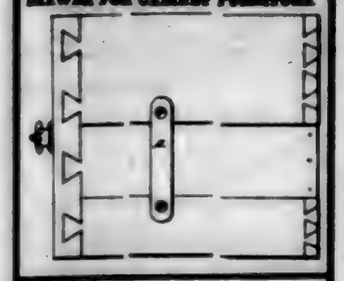
109,108 V. BORST. HANGING SADDLE.



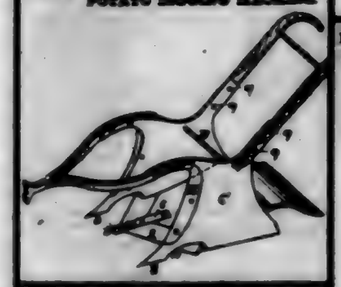
109,109 P. G. BRYAN. TRANSPARENT SCALE FOR TEACHING MUSIC.



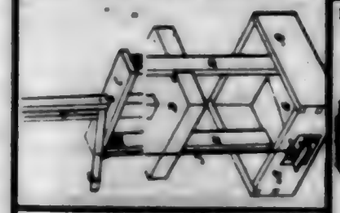
109,110 L. BURNELL. DRAWER FOR CARRYING FURNITURE.



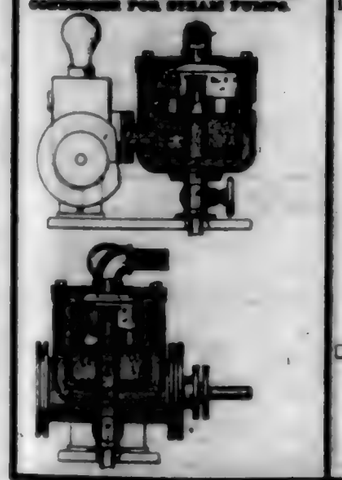
109,111 L. COCHRAN POTATO DIGGING MACHINE.



109,112 J. COSOLOWSKY ANIMAL TRAP.



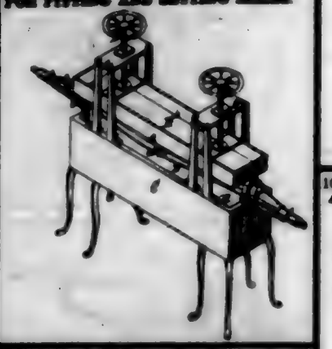
109,113 W. CRAIG AND H. L. BREVOORT CONDENSER FOR STEAM PUMPS.



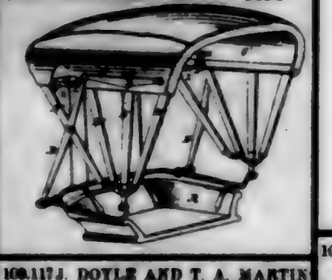
109,114 R. W. CROUSE HORSE POWER.



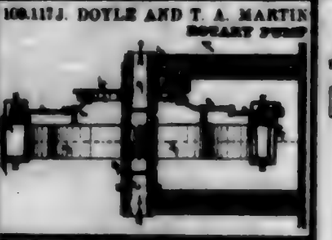
109,115 J. CUNNINGHAM APPARATUS FOR PITCHING AND SETTING AXLES.



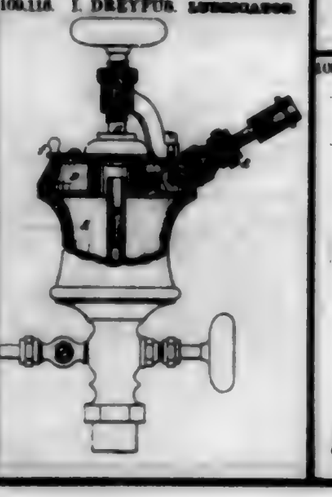
109,116 A. DOM SUPPORTING FRAME FOR FOLDING BUGGY TOPS.



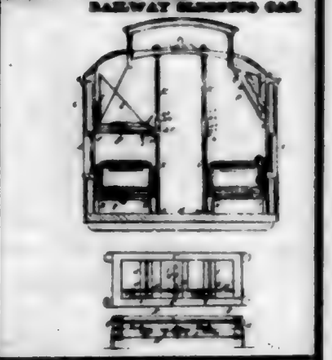
109,117 J. DOYLE AND T. A. MARTIN ROTARY PUMP.



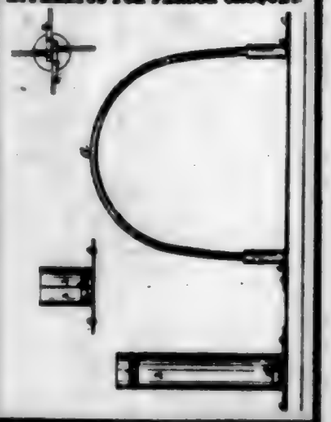
109,118 I. DREYFUS. LUBRICATOR.



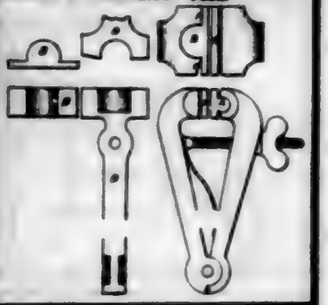
109,119 J. S. DU BOIS RAILWAY SLEEPING CAR.



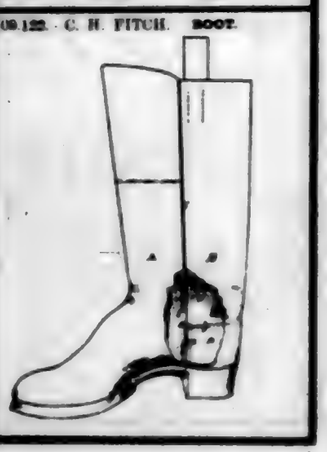
109,120 A. P. EASTMAN. APPARATUS FOR PARLOR CROQUET.



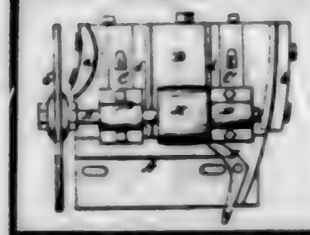
109,121 J. FINDLAY. VISE.



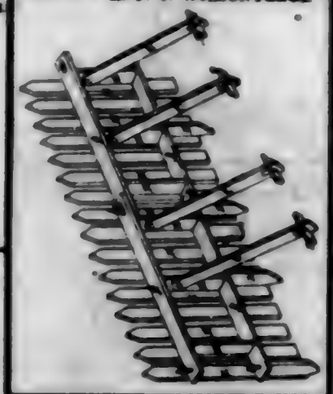
109,122 C. H. FITCH. BOOT.



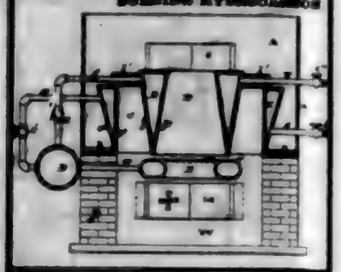
109,128. C. A. GRIFFIN AND J. W. WILKINS
COVERLESS MACHINE.



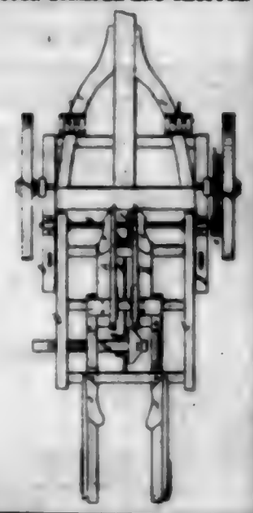
109,127. C. N. HITCHCOCK AND H. P. T. WILSON FENCE.



109,131. I. KENDRICK
BURNING HYDROCARBON



109,129. N. M. HALE.
COTTON SCRAPER AND CHOPPER.



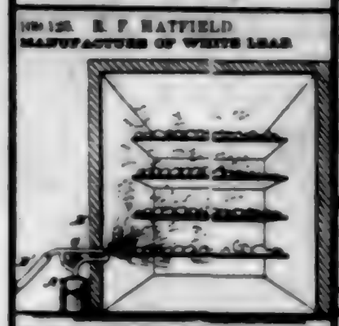
109,126. C. B. HOLDEN GUN LOCK.



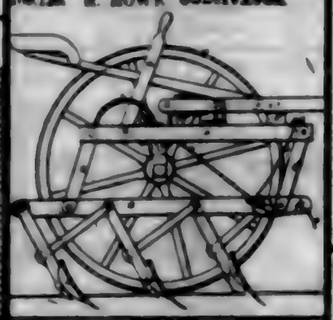
109,132. O. P. KNIFFIN
EXCAVATING SCOOP.



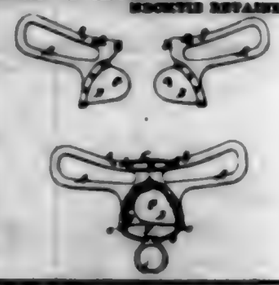
109,125. R. P. HATFIELD
MANUFACTURE OF WHITE LEAD.



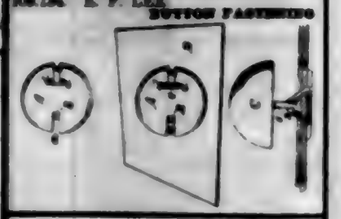
109,124. H. HOWE CULTIVATOR.



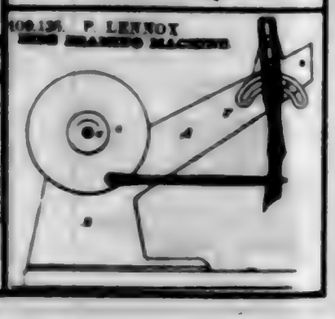
109,133. H. LAURENCE
BUCKTAIL RETAINER.



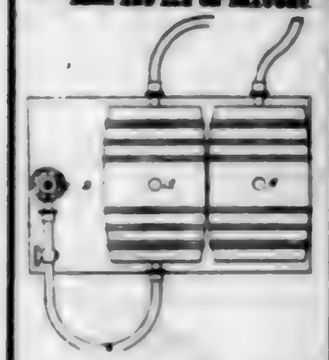
109,134. E. P. LEE
BUTTON FASTENING



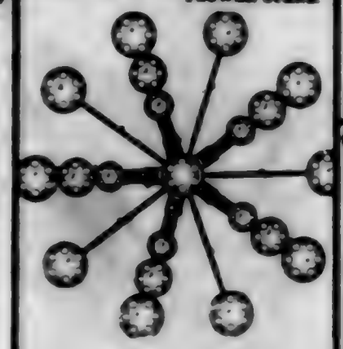
109,135. P. LENNOX
[illegible] MACHINE.



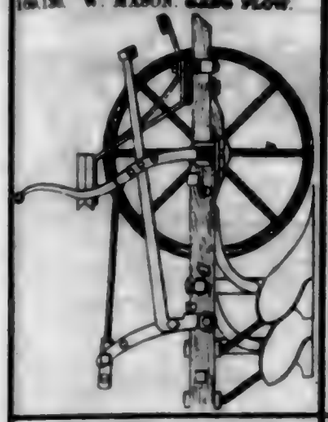
109,136. C. E. HAYNES PRESERVING [illegible] AND ALE OR BEATONIC.



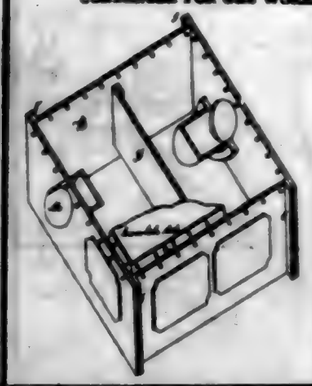
109,130. H. H. KENDRICK
FLOWER STAND.



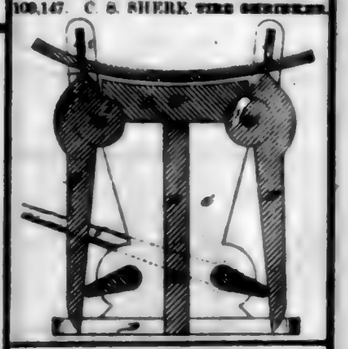
109,138. W. MASON. SAND FLOW.



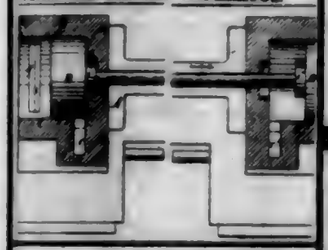
109,142. P. MUNZINGER
CONDENSER FOR GAS WORKS.



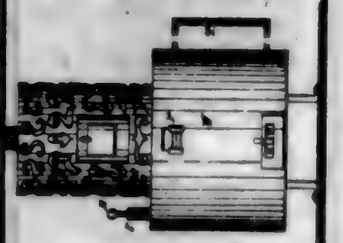
109,147. C. S. SHERK. FIRE SKIRMER.



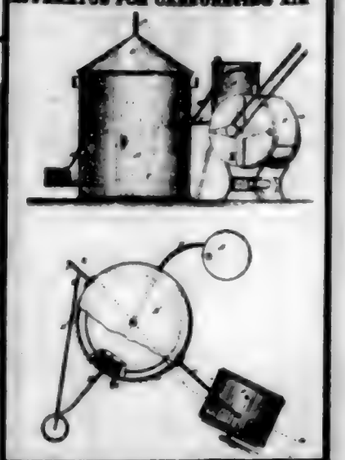
109,137. T. MAY
VARIABLE CUT-OFF APPARATUS.



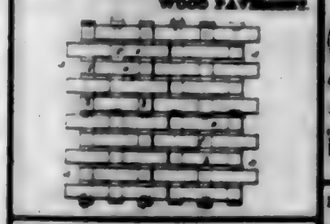
109,143. J. OLIPHANT
RAILROAD CAR STOVE.



109,148. J. D. SPANG
APPARATUS FOR CARBURETING AIR.



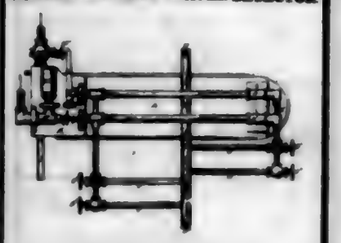
109,139. D. McKENZIE
WOOD PAVEMENT.



109,144. J. PUSEY NUT CRACKER.



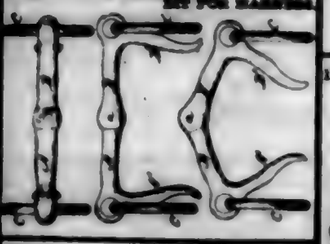
109,149. J. L. STARKEY. BOILER FEEDER AND LOW WATER DETECTOR.



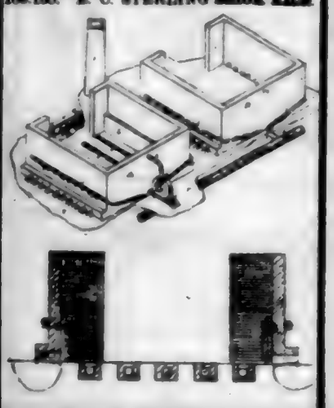
109,140. H. W. MILLAR [illegible] VALVE.



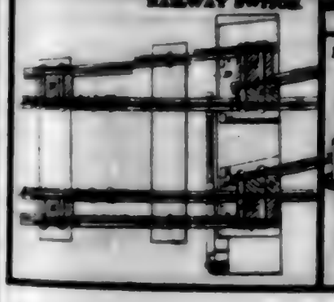
109,145. R. S. ROBERTS
SET FOR HARVESTER.



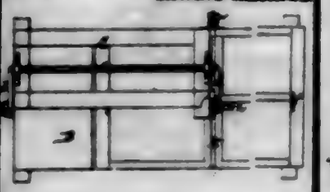
109,150. E. C. STERLING BRICK KILN.



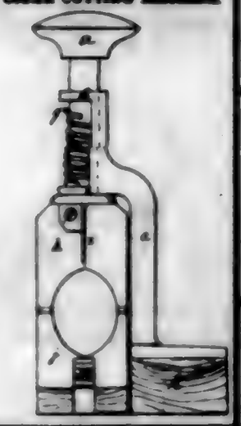
109,141. J. MINER AND S. MERRICK
RAILWAY SWITCH.



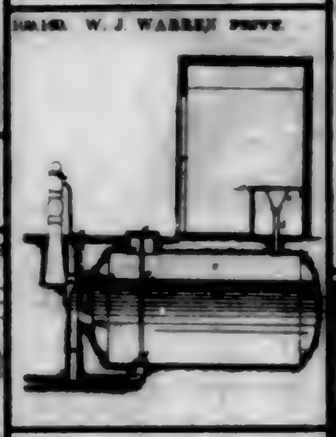
109,146. D. S. SHANABROOK
SAWING MACHINE.



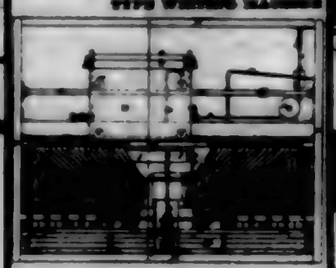
109,169. L. S. STIMSON, dec'd.
H. N. STIMSON administratrix.
CIGAR CUTTING MACHINE.



109,170. W. J. WARREN PRUYN.



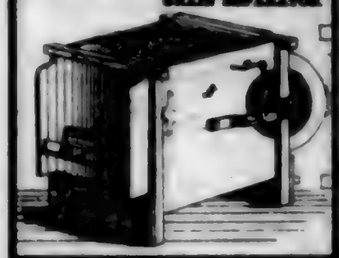
109,171. C. A. WASHBURN
PIPE WELDING MACHINE.



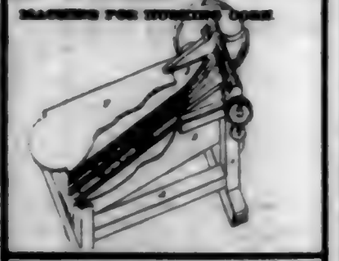
109,172. B. VAN CAMPEN TAYLOR.
GARMENT HOLDER.



109,173. F. SWIFT AND M. STANDISH.
GRAIN SEPARATOR.



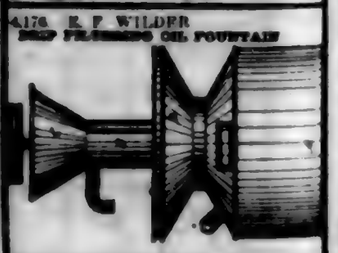
109,174. L. A. ASPINWALL.
MACHINE FOR HOOPING CASKS.



4,175. A. H. LA RUE.
HEATING STOVE.



109,175. E. F. WILDER.
SELF FEEDING OIL FOUNTAIN.



109,176. L. WINSTON. SWING.

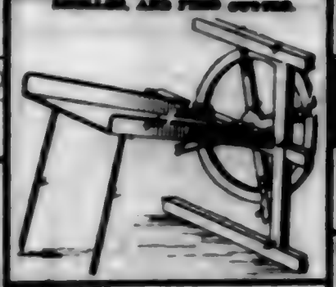


109,177. E. VON JEINSEN.
JOURNAL BOX FOR CARS.

109,178. D. F. WELSH.
APPARATUS FOR REGULATING THE SUPPLY OF MOTIVE MACHINERY.



109,179. T. THOMASSON. SPRING REGULATOR AND FEED GUTTER.



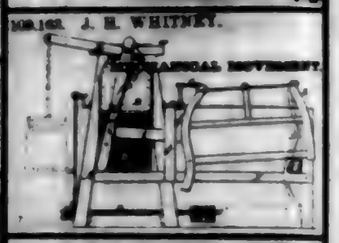
109,180. J. F. STILL. COFFEE POT.



109,181. D. F. SUTTON.



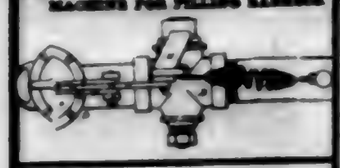
109,182. J. H. WHITNEY.
CAPSTAN MOVEMENT.



109,183. J. H. WHITNEY.
STEP MOTION GEAR WHEEL.



109,184. J. S. STEWART.
MACHINE FOR FELLING BARRELS.



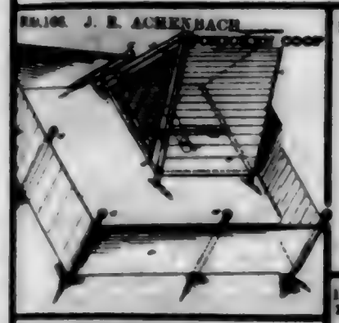
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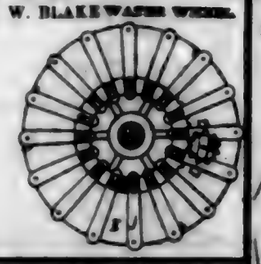
109,168. J. R. ACKENBACH.



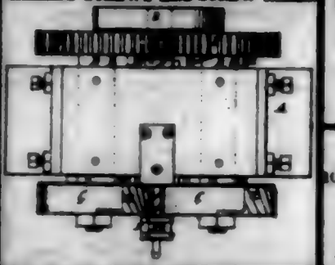
109,169. H. F. AMBOS.



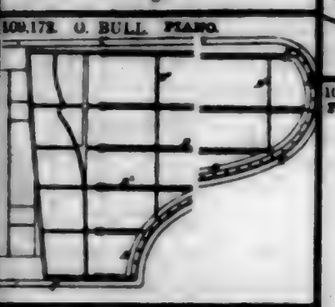
109,170. W. BLAKEWASER WHEEL.



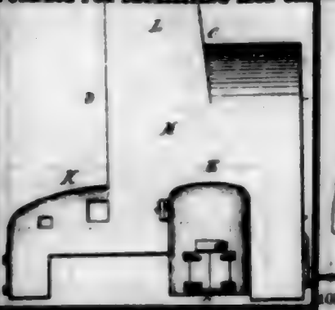
109,171. R. BOEKLEN. MACHINE FOR MAKING SCREWS AND SCREW BLANKS.



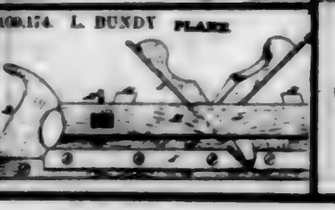
109,172. O. BULL. PIANO.



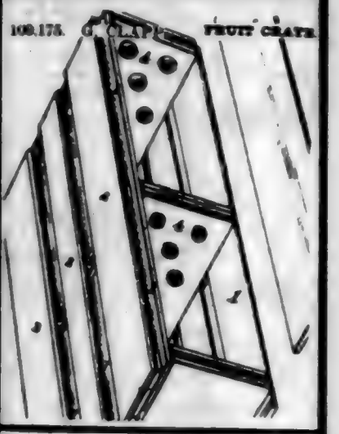
109,173. A. H. BRAINERD.
FURNACE FOR DECOMPOSING [illegible]



109,174. L. BUNDY. PLANE.



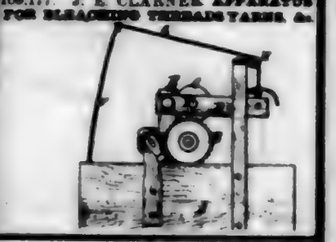
109,175. C. CLAPP. FRUIT CRATE.



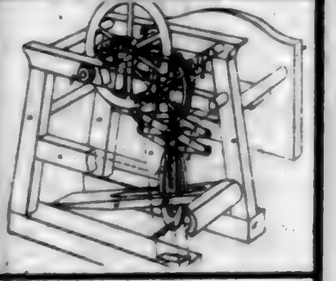
109,176. A. R. CLARK. HAY RIDER.



109,177. J. E. CLARNER. APPARATUS FOR BLEACHING TERRAS TABBY, &c.



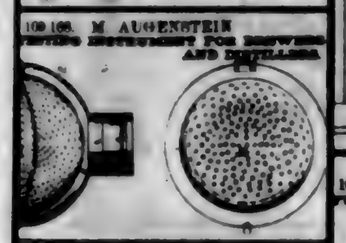
109,178. J. C. CLIME. SAWING MACHINE.



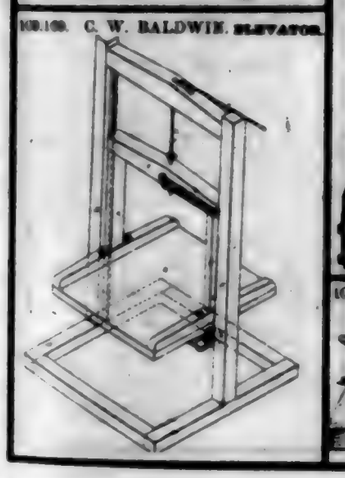
109,179. J. CONSTANTINE. ROTARY ENGINE.



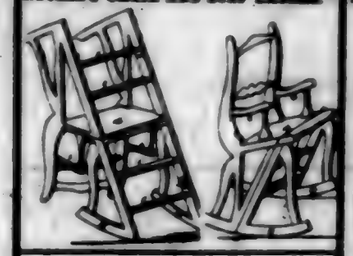
109,180. M. AUGENSTEIN.
BREWING APPARATUS FOR BREWING AND DISTILLING.



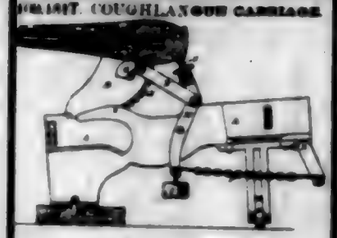
109,181. C. W. BALDWIN. ELEVATOR.



190,180 W. H. CUSH
ROCKING CHAIR AND SURF LADDER

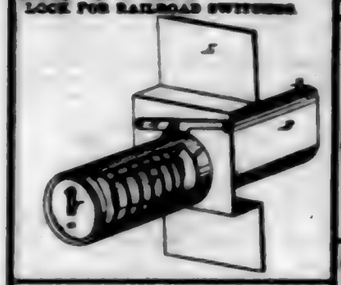


190,181 T. COUGHLANOUR CARRIAGE

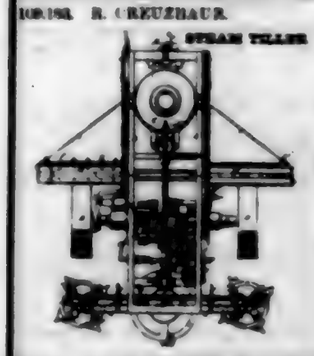




190,182 A. W. CRAM
LOCK FOR RAILROAD SWITCHES



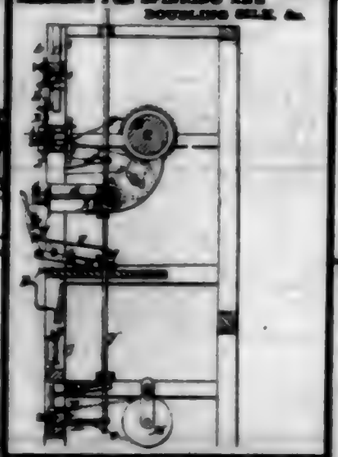
190,183 R. CREUZBAUR
STEAM TILLER



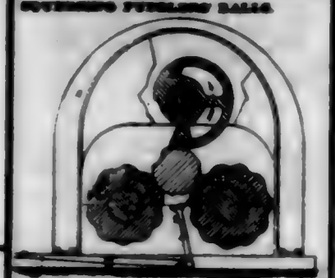
190,184 A. M. CUSHING SHEAVE



190,185 T. DALE Jr. AND G. KRAINE
MACHINE FOR SPINNING AND DOUBLING SILK, &c.



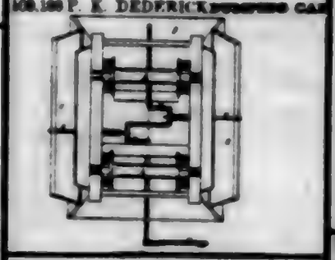
190,186 S. DANKS MACHINE FOR SPINNING FUSELAGE BALLS



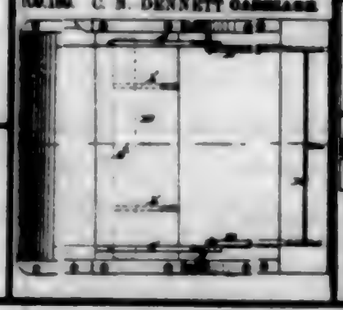
190,187 W. C. DAVIS
OVEN PLATE FOR COOKING STOVES



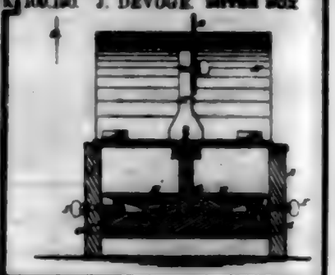
190,188 P. K. DEDERICK STOPPING CAR



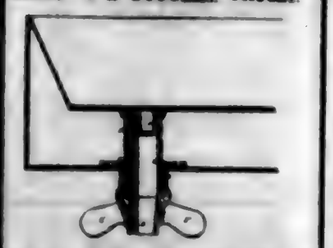
190,189 C. N. DENNETT CARRIAGE



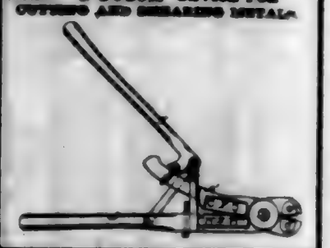
190,190 J. DEVOGE, MITRE BOX



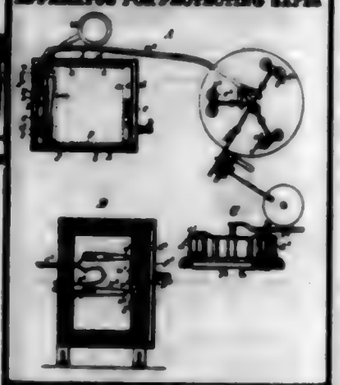
190,191 C. A. DOUGLAS, PAPCUT.



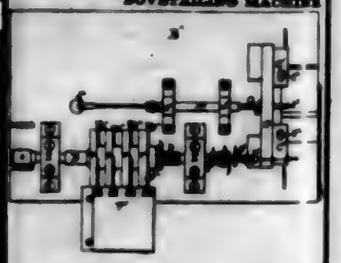
190,192 L. DUBOIS DEVICE FOR CUTTING AND SHEARING METALS



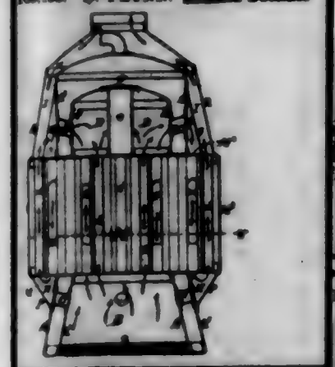
190,193 W. DUNCAN AND C. C. BOWELL, ELECTRO MAGNETIC APPARATUS FOR PROTECTING SAFES



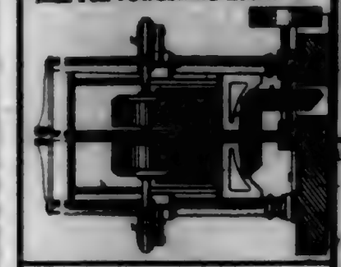
190,194 J. P. FLANDERS
DOVETAILING MACHINE



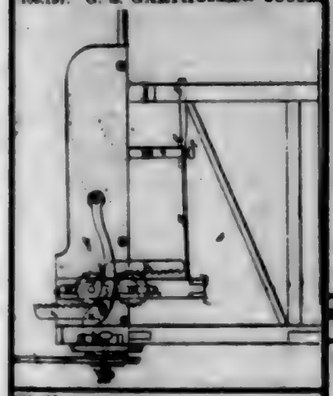
190,195 D. FLYNN, STEAM BOILER



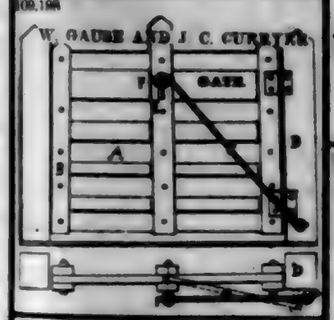
190,196 H. D. GARRISON
MILL FOR POWDERING ROCKS, &c.



190,197 G. S. GARTH STRAW CUTTER



190,198
W. GAUBE AND J. C. CURRYER.



190,199 C. GILPIN
FEED ROLL FOR PLANING MACHINES



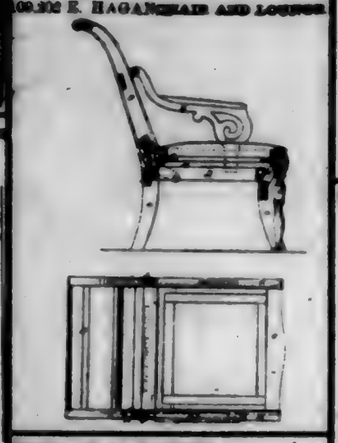
190,200 J. AND W. GNAU
CLOTHES DRYER



190,201 L. L. GOODWIN BEE HIVE



190,202 E. HAGAN, CHAIR AND LOUNGE

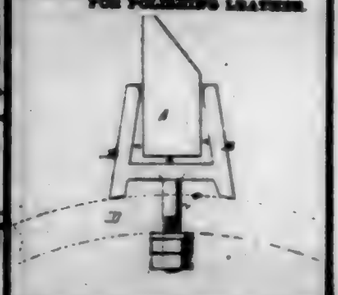


190,203 H. H. HAMMER
HORSE AND CATTLE LINIMENT

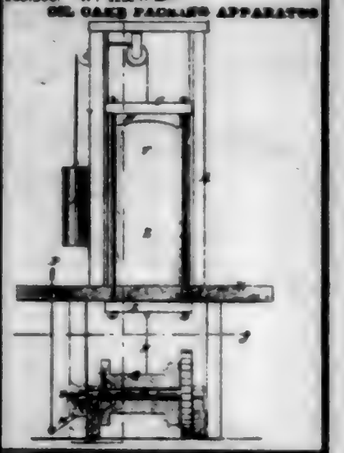
190,204 O. HARTZ TOY BALL



190,205 H. C. HAVEMEYER AND D. P. BURDON ATTACHING NICHE STONES TO WHEELS FOR POLISHING LEATHER



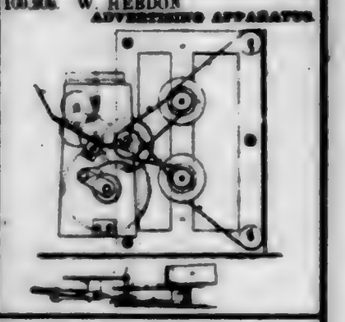
190,206 W. HAWES
OIL CAKE PACKING APPARATUS



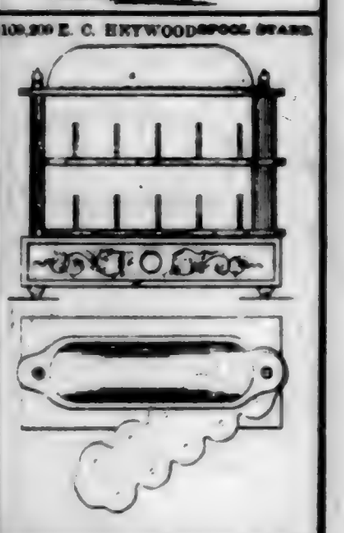
190,207 W. M. HEATH GRAPE TRELLIS



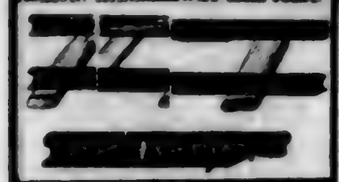
190,208 W. HEBDON
ADVERTISING APPARATUS



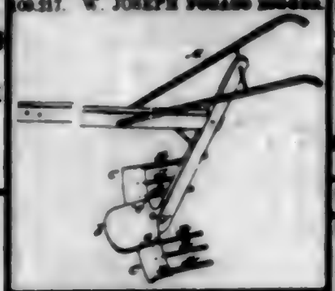
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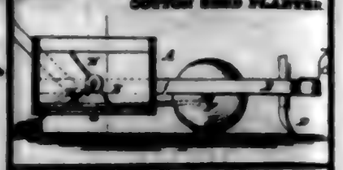
109,220 N. HILLMAN, WAY RAIL JOINT.



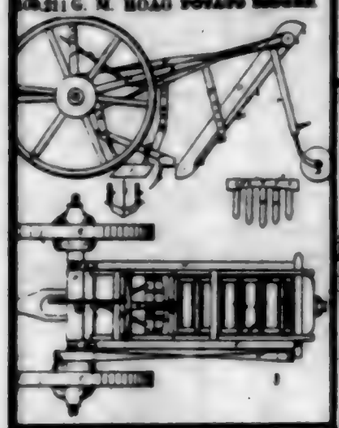
109,217. W. JOSEPH POTATO DIGGER.



109,222. J. C. KING, COTTON SEED PLANTER.

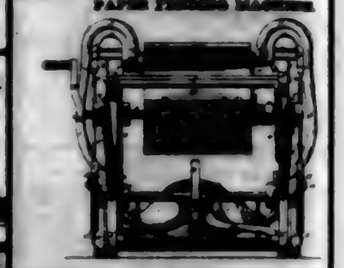


109,221 G. M. HOAG POTATO DIGGER.

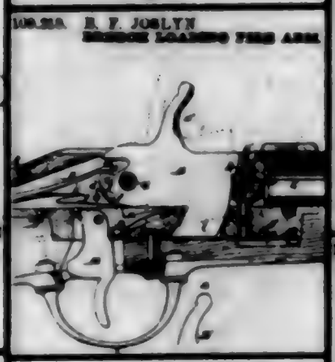


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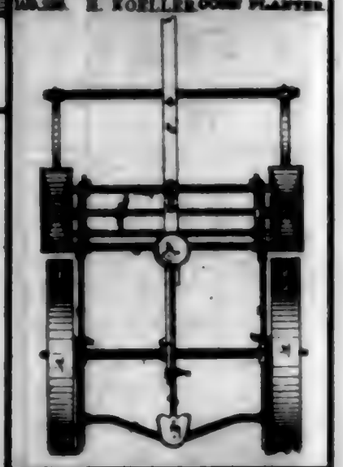
109,224. M. E. KNIGHT, PAPER FEEDING MACHINE.



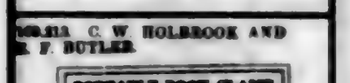
109,218. B. F. JOSLYN, BREECH LOADING FIRE ARM.



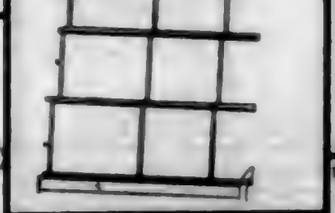
109,225. H. KOELLER, CORN PLANTER.



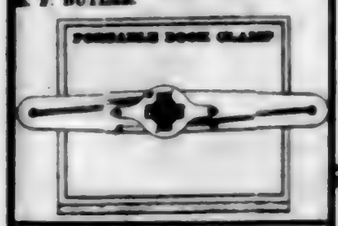
109,215 W. L. HOOVER, DOUBLE SHOVEL.



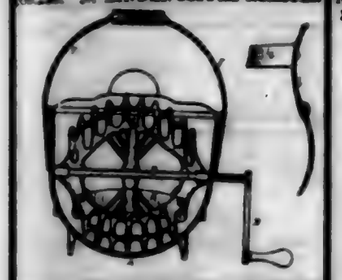
109,219. J. KASPAR, CLOTHES DRIER.



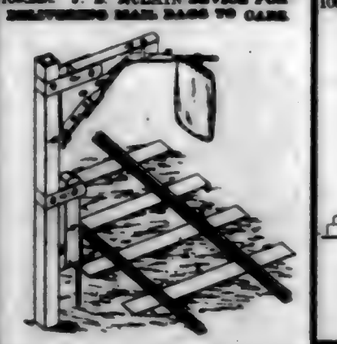
109,212 C. W. HOLBROOK AND R. F. BUTLER, PORTABLE DOOR CLAMP.



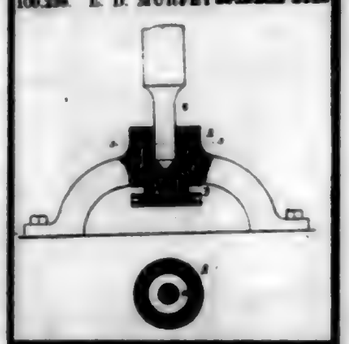
109,226. N. LINDEN, COFFEE ROASTER.



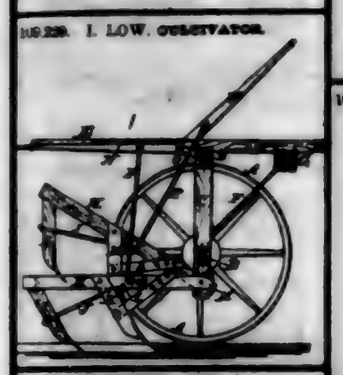
109,227. J. B. McLAIN, DEVICE FOR FASTENING MAIL BAGS TO CARS.



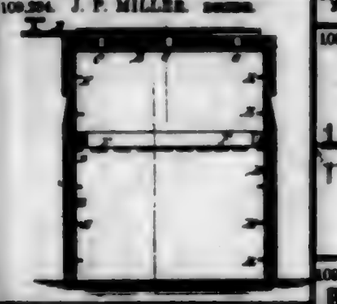
109,228. E. D. MURFEY, SHIELD STRIP.



109,229. I. LOW, CULTIVATOR.



109,224. J. P. MILLER, BRIDGE.

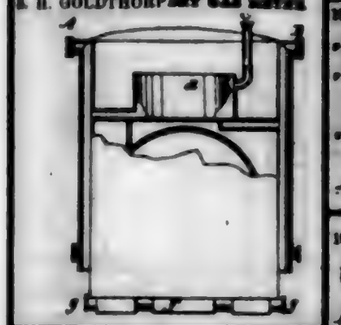


109,229. E. D. MURFEY, MATERIAL FOR BEARINGS AND JOURNALS.

109,240. J. W. NORTON, CLOTHES POUNDER.



109,230. G. LOWEN AND S. H. GOLDTHORPEY, GAS METER.



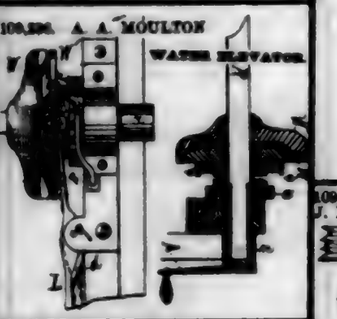
109,231. J. MONAGHAN, MATCH BOX.



109,241 J. L. OLIVER, CURTAIN FIXTURE.



109,232. A. A. MOULTON, WATER ELEVATOR.

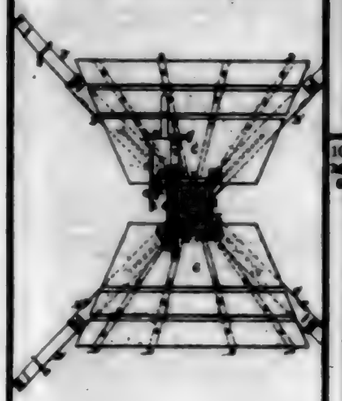


109,242. W. ORD, PISTON PACKING.

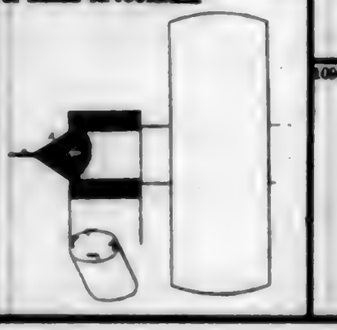


109,233 P. M. McGILL, ARTIFICIAL TUSK.

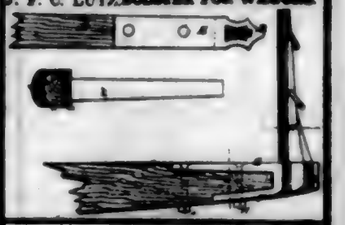
109,234. G. McKENZIE, ELEVATOR.



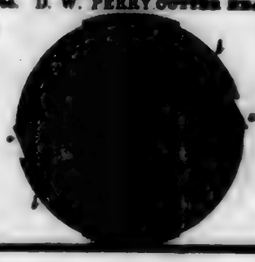
109,227. E. D. MURFEY, MODE OF PREVENTING THE HEATING OF AXLES OR JOURNALS.



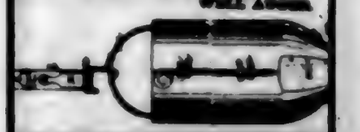
109,243. J. W. PEARMAN AND J. F. C. LUTZ, SOLDIER FOR WASHER.



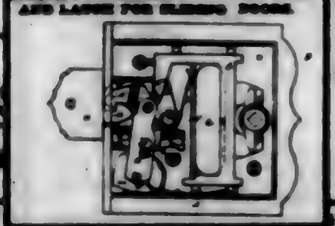
109,244. D. W. PERRY, CUTTER HEAD.



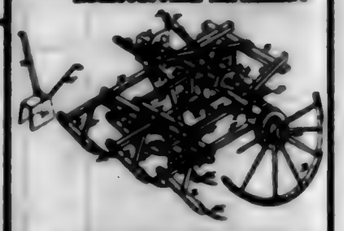
109,214 J. AND T. J. INGLIS, FUEL ADMER.



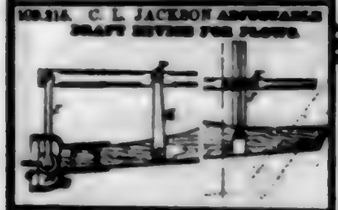
109,235. E. J. KEHOE, COMBINED LOCK AND LATCH FOR SLIDING DOORS.



109,236. I. LEHMANN, COMBINED AGRICULTURAL IMPLEMENT.



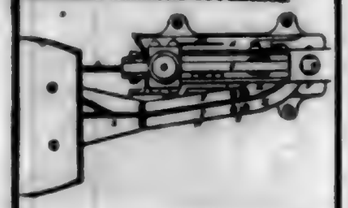
109,213 C. L. JACKSON, ADJUSTABLE DRAFT DEVICE FOR PLOWS.



109,237. J. R. KENNETT, ADJUSTABLE BRACKET FOR BOOTJACK.

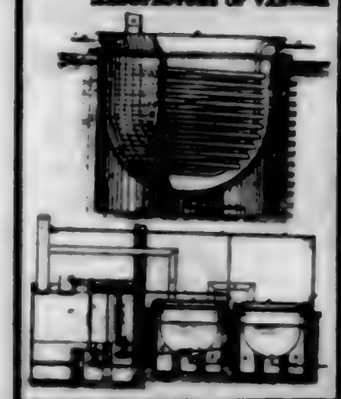


109,238. J. H. LEWIS, MACHINE FOR ATTACHING STUDS OR TUBULAR SHANKED BUTTONS TO FABRICS.



109,216. A. J. JENKINS, MEDICAL COMPOUND FOR CURE OF RHEUMATISM.

109,345. J. B. POLLOCK. MANUFACTURE OF VARNISH

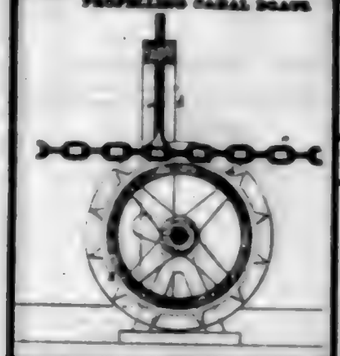


109,346 O. PORTER ROOFING CEMENT

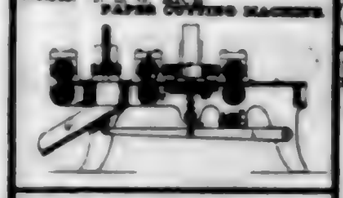
109,347. J. REHMAN CULTIVATOR.



109,348. J. REID PROPELLING CANAL BOATS.



109,349. J. L. G. RICE PAPER CUTTING MACHINE



109,350. L. W. RICHARDSON PLOW.



109,351. J. W. ROBERTS BUTCHERS MACHINE



109,352. S. ROWLAND AND T. C. TIPTON FLOOD GATE

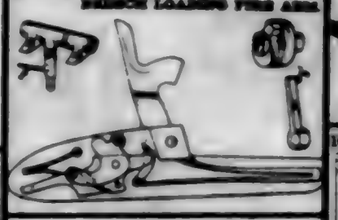


109,353. W. W. RUSSELL PAPER PULP



109,354. A. RUTTKAY ROOFING COMPOSITION

109,355. E. L. SARGENT BREECH LOADING FIRE ARM.



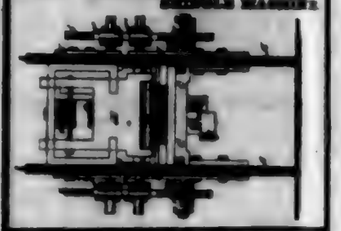
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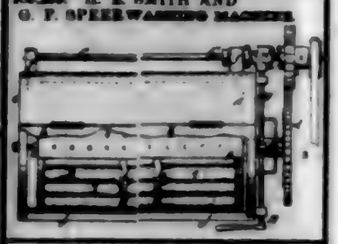
109,357. F. SCHIFFERLE FOUNTAIN PEN



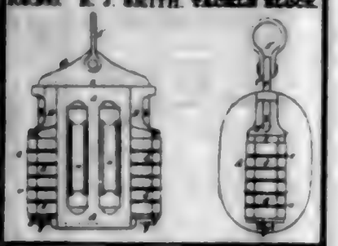
109,358. C. SHELMEDINE SHINGLE MACHINE



109,359. H. E. SMITH AND G. P. SPEER WASHING MACHINE



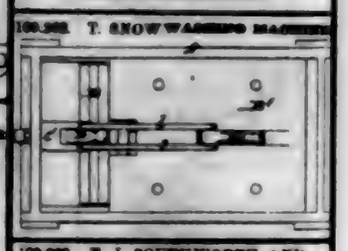
109,360. E. J. SMITH. TACKLE BLOCK.



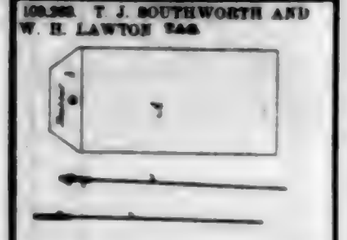
109,361. S. J. SMITH HAY RACK FOR WAGONS



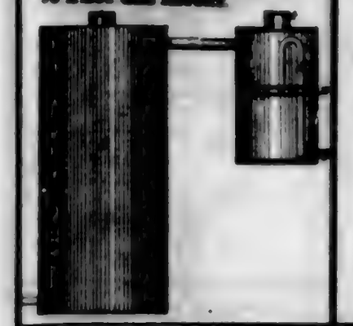
109,362. T. SNOW WASHING MACHINE



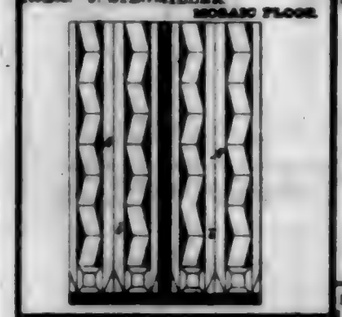
109,363. T. J. SOUTHWORTH AND W. H. LAWTON TAG



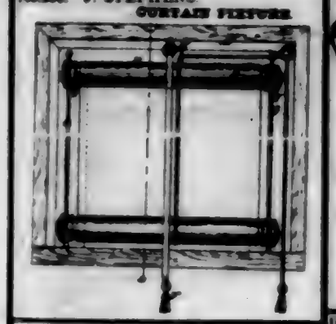
109,364. T. G. SPRINGER. FEEDING HYDROCARBON LIQUIDS TO A BLAST GAS BURNER.



109,365. J. STEGMILLER. MOSAIC FLOOR.



109,366. J. STEPHENS CURTAIN FIXTURE.

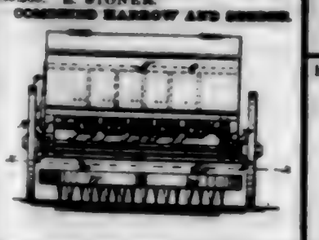


109,367. J. STEWART. RULING MACHINE.

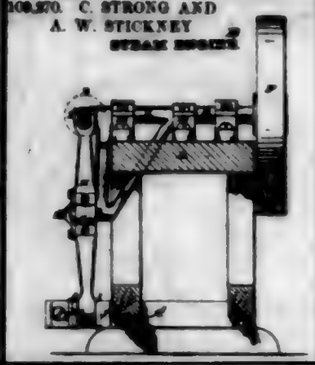


109,368. W. H. ST. JOHN AND P. CARTWRIGHT PURIFYING ILLUMINATING GAS.

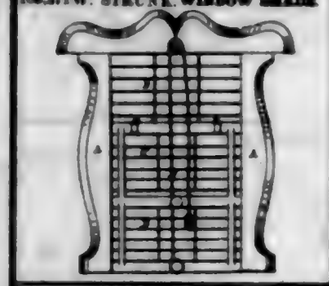
109,369. R. STONER. COMBINED HARROW AND SEEDER.



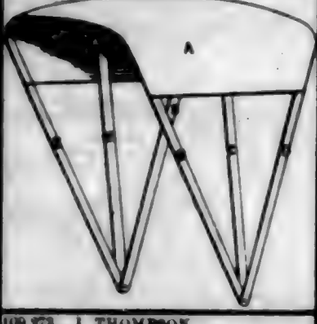
109,370. C. STRONG AND A. W. STICKNEY STEAM ENGINE.



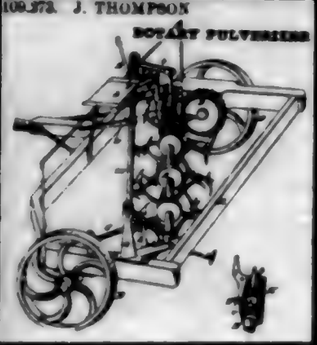
109,371. W. STRUNK. WINDOW SHADE.



109,372. G. L. SWETT AND J. P. LOCKEY MOLDING CARRIAGE TOP



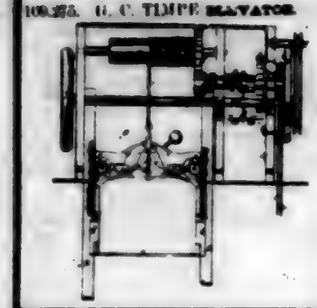
109,373. J. THOMPSON ROTARY PULVERIZER



109,374. J. R. THORNE HOOK FOR DUMPING TUBS.



109,375. G. C. TIMPE ELEVATOR.



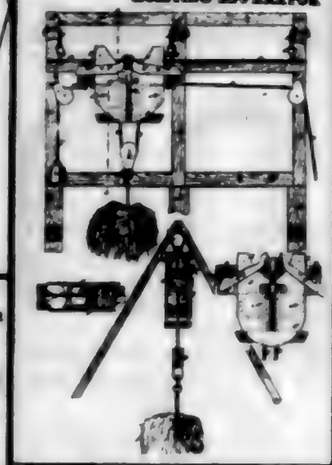
109,376. R. W. C. VANDERVEER EARTH CLOSET.



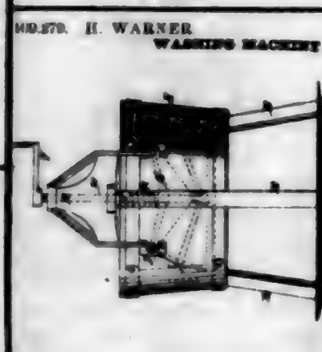
109,377. F. VETTERLIN. BREECH LOADING FIRE ARM.



109,378. J. H. VIOLETT. HOISTING APPARATUS.



109,379. H. WARNER WASHING MACHINE



109,292 W. WEIR MACHINES FOR MAKING SUGAR LOAVES

109,293 L. C. WEMPLE DOOR STOP

109,294 T. WILLIAMS ROACH AND RAT TRAP

109,295 A. G. WILSON REACTING GAS

109,296 E. WOOD ROTARY PUDDLING FURNACE

109,297 J. YOUDE, Jr. GRATE BAR

109,298 A. BATEMAN AND DANIEL WEBB

109,299 W. R. H. BEACH WASHING MACHINE

109,300 J. BEAN PUMP

109,301 J. BOWMAN CONCRETE TREADING MACHINE AND CURB MOULDS

109,302 T. R. C. BRIELY PLOW

109,303 H. L. BROWER CONNECTING FIRE DETECTOR WITH THE ALARM

109,304 A. AND F. BROWN MACHINES FOR CUTTING LOAF SUGAR

109,305 E. BROWN AND DRAG RAKE

109,295 F. BROWN MACHINES FOR CUTTING LOAF SUGAR

109,296 F. BROWN MACHINES FOR CUTTING LOAF SUGAR

109,297 C. L. BUSHNELL CONCRETE GATE AND WING

109,298 J. CAPRON CONCRETE LATCH AND LOCK FOR SLIDING DOORS

109,299 T. COLDWELL FRICTION CLUTCH

109,300 L. COTE APPARATUS FOR TIGHTENING HEELS OF BOOTS AND SHOES

109,301 A. G. CRANE AND W. T. JOHNSTON HARVESTER RAKE

109,302 C. E. DONNELLAN GASOLINE STAMP

109,303 H. H. DOTY APPARATUS FOR BURNING PARAFFINE AND OTHER HYDROCARBON OILS

109,304 W. E. DOYLE SCHOOL DESK

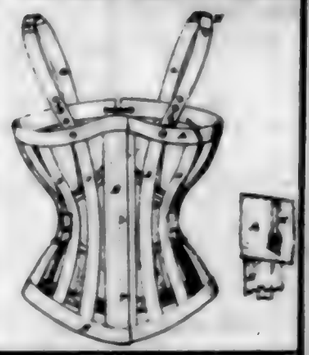
109,305 A. T. DUNBAR AND J. H. FELLOWS HORSE HAY FORK

109,306 T. G. EISWALD SAD IRON

109,307 H. L. ENNIS MOP WRINGER

109,308 W. EVANS STONE TRUCK

109,209 D. H. FANNING. SKIRT SUPPORTING HOOK FOR CORSETS.



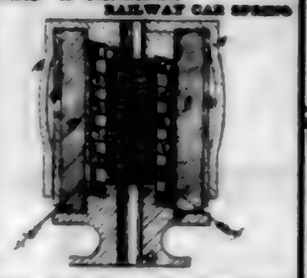
109,210. J. N. FARRAR. RAILWAY CAR WHEEL.



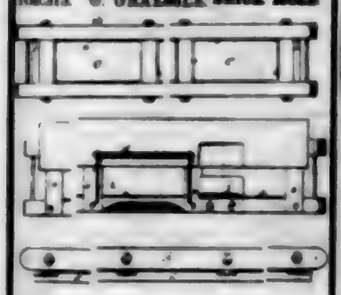
109,211. B. FRANCIS WATER ENGINE.



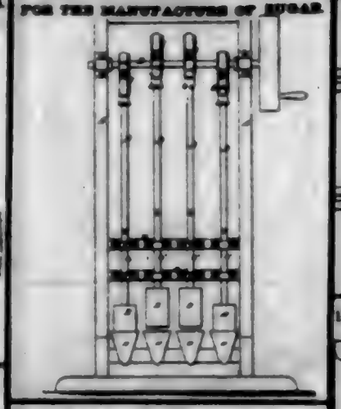
109,212. H. GARDINER. RAILWAY CAR SPRING.



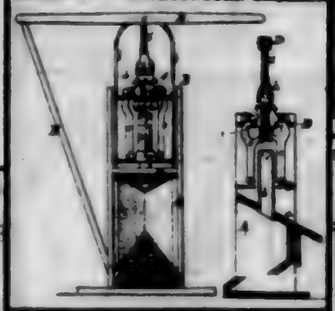
109,213. G. GRAESSLE. BRICK MOLD.



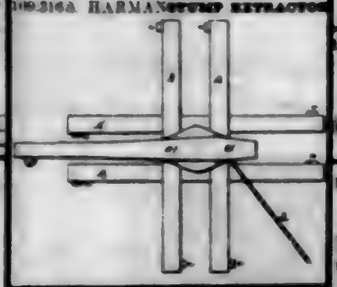
109,214. J. W. HAHN. APPARATUS FOR THE MANUFACTURE OF SUGAR.



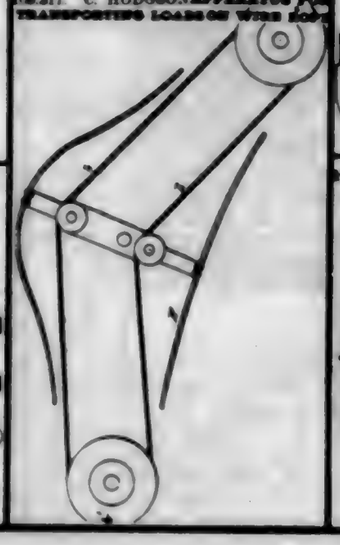
109,215. J. R. HAMILTON. CORN SHELLER.



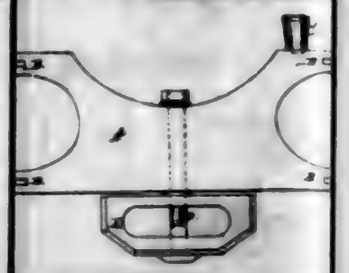
109,216. HARMAN. STUMP EXTRACTOR.



109,217. C. HODGSON. APPARATUS FOR TRANSPORTING LOADS ON WIRE ROPE.



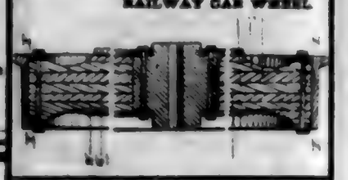
109,218. O. HOLMAN. CLOTHES LINE REEL.



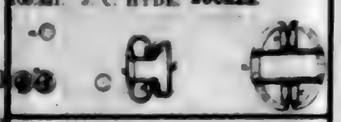
109,219. D. A. HOPKINS. JOURNAL BEARING.



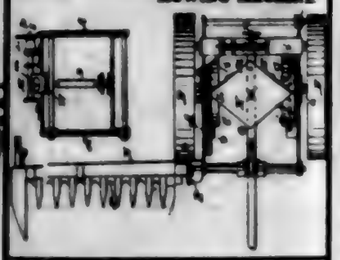
109,220. L. B. HUNT. RAILWAY CAR WHEEL.



109,221. J. C. HYDE. BUCKLE.



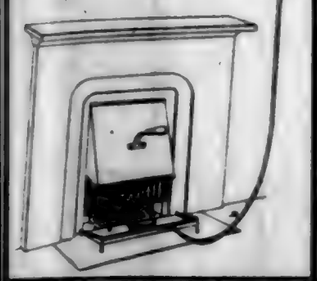
109,222. B. ILLINGWORTH. MOWING MACHINE.



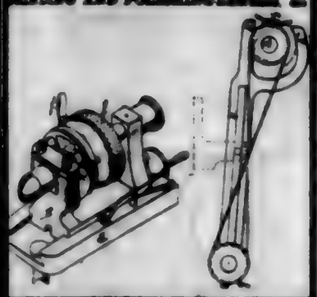
109,223. G. L. JAEGER. MUFF AND COLLAR BOX.



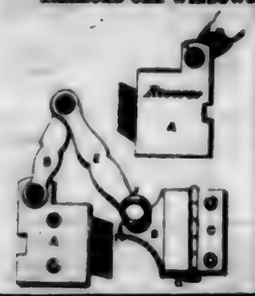
109,224. J. KENNEY, Sr. FIRE KINDLER.



109,225. H. D. KNIGHT. MACHINE FOR POLISHING LENSES, &c.



109,226. J. F. LASH. OPENING AND SHUTTING DEVICE FOR RAILROAD CAR WINDOWS.

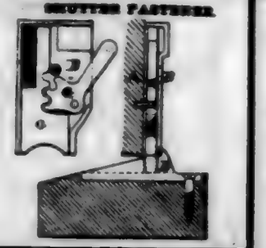


109,227. R. G. LOFTUS. BOX FOR WRITING.

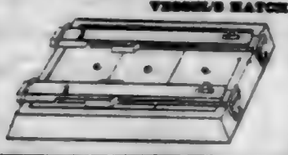
109,228. J. A. LORD, Jr. DETACHING HOOK.



109,229. I. O. LUEY. SHUTTER FASTENER.



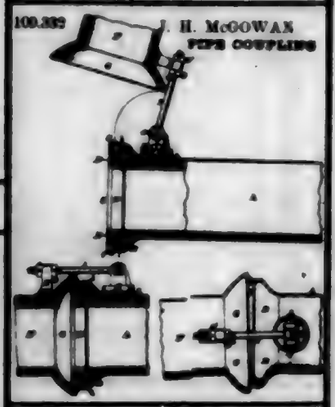
109,230. J. P. MADDOX. VESSEL'S HATCH.



109,231. W. K. MARVIN. ELEVATOR.



109,232. J. H. McGOWAN. PIPE COUPLING.

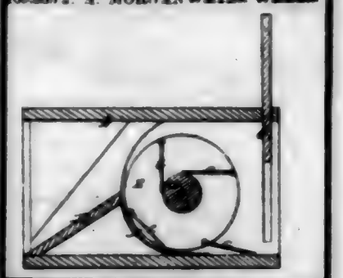


109,233. A. B. McKEON. CONCRETE PAVEMENT.

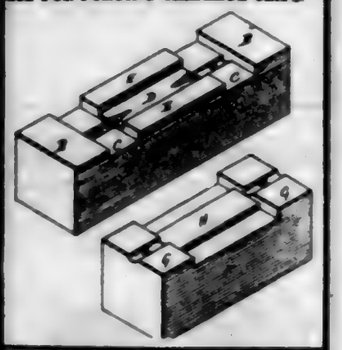
109,234. G. MILLIORN. COTTON AND COTTON SCRAPER.



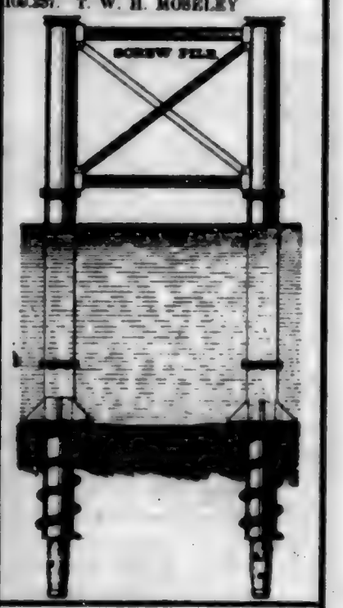
109,235. J. A. MORGAN. WATER WHEEL.



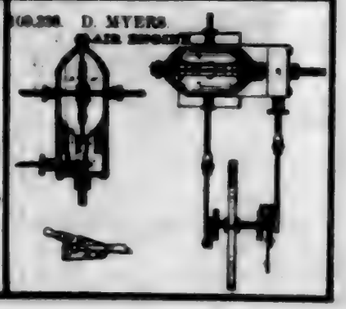
109,236. F. B. MORSE. DIE FOR FORGING CARRIAGE CLIPS.



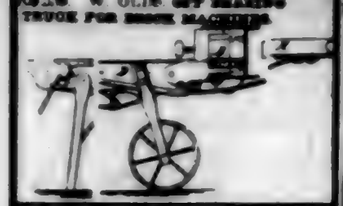
109,237. T. W. H. MOSELEY. SCREW JACK.



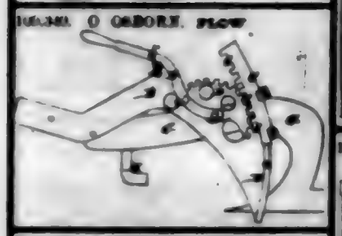
109,238. D. MYERS. HAIR BRUSH.



109,339 W. OLIS. Off Bearing Truck for Sewing Machines.



109,340 O. OSBORN. Plow.

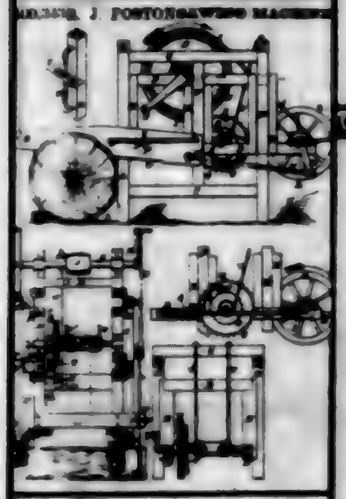


109,341 A. PARA. Manufacture and Application of Colors for Printing and Dyeing.

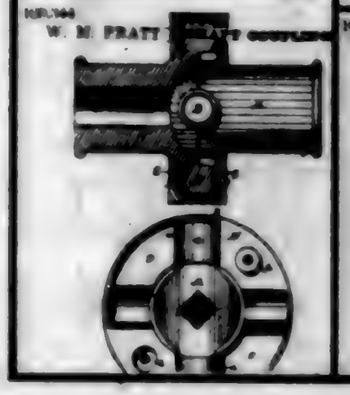
109,342 R. V. PHILLIPS. Door Gasper.



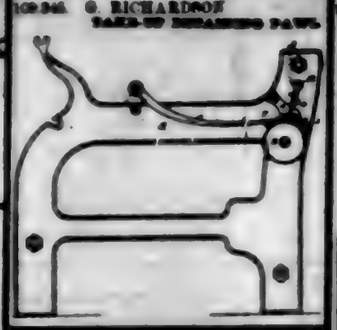
109,343 J. PORTON. Sawing Machine.



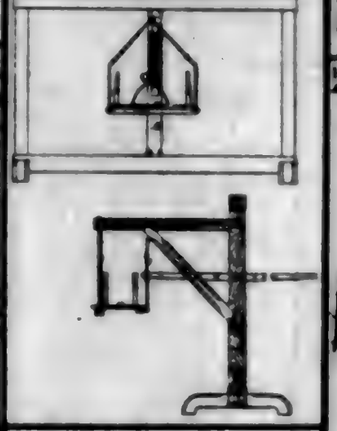
109,344 W. M. PRATT. Draft Governor.



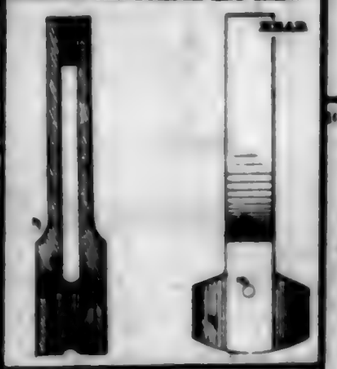
109,345 O. RICHARDSON. Take-up Indicating Pawl.



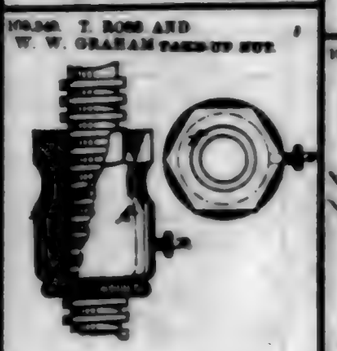
109,346 R. B. ROBBINS. Wood and Coal Bunker for Railways.



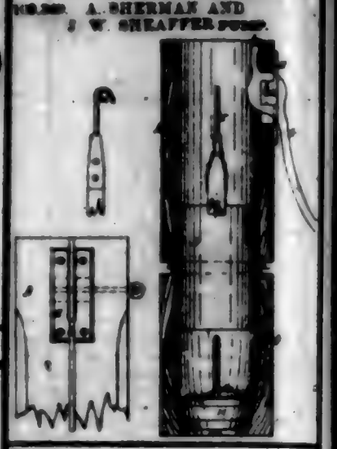
109,347 A. ROSS AND J. ARTHUR. Railway Car Bunker and Brake.



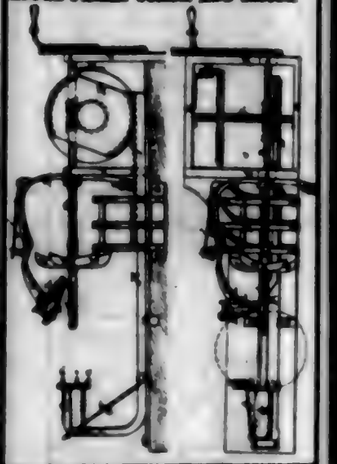
109,348 T. ROSS AND W. W. GRAHAM. Take-up Nut.



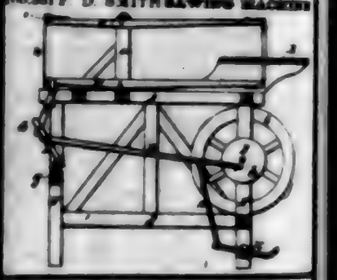
109,349 A. SHERMAN AND J. W. SHEAFFER. Pump.



109,350 J. SHOBE. Apple Parer, Corer, and Slicer.



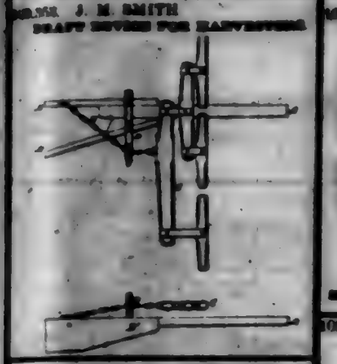
109,351 F. D. SMITH. Sawing Machine.



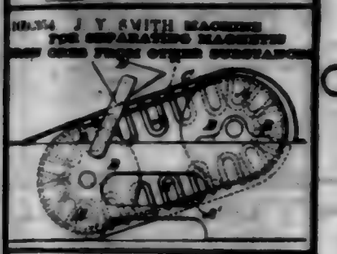
109,352. H. SMITH. Plow.



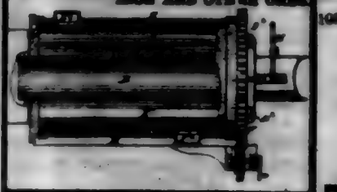
109,353 J. M. SMITH. Draft Device for Harvesters.



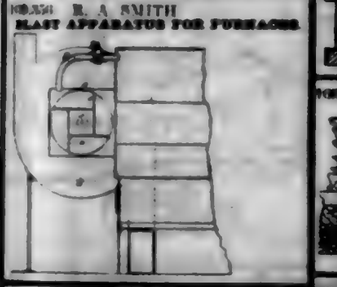
109,354 J. Y. SMITH. Machine for Separating Magnetic Iron Ores from other Substances.



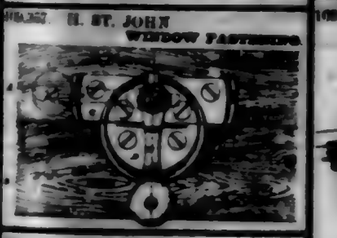
109,355 J. T. SMITH. Furnace and Process for Treating Iron and other Ores.



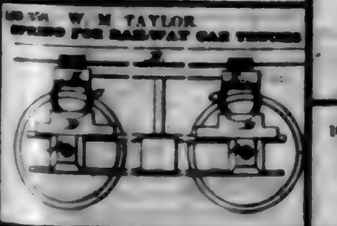
109,356 R. A. SMITH. Blast Apparatus for Furnaces.



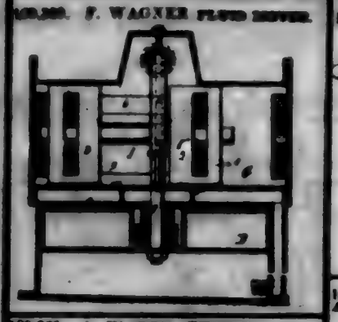
109,357 H. ST. JOHN. Window Fastening.



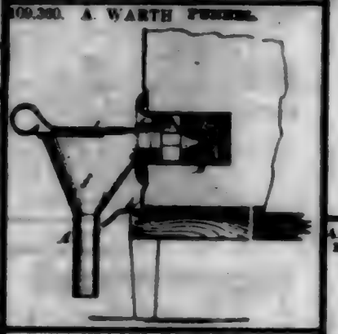
109,358 W. M. TAYLOR. Spring for Railway Car Trucks.



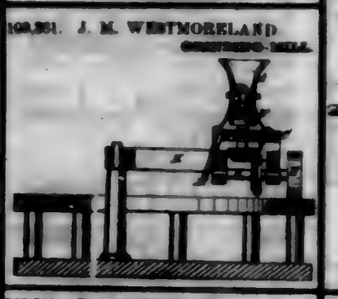
109,359 F. WAGNER. Plow Mould.



109,360. A. WARTH. Feeder.



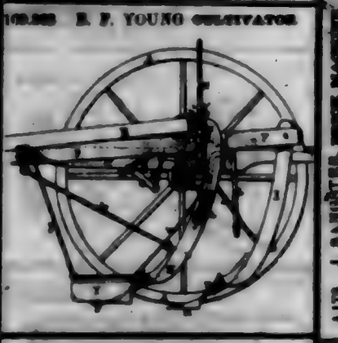
109,361. J. M. WESTMORELAND. Grinding-Mill.



109,362 R. H. WHEELER. Sash Holder.

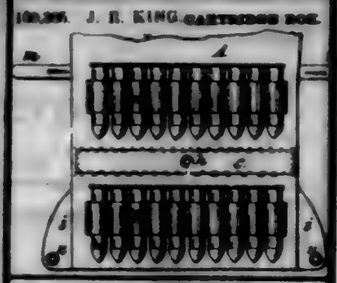


109,363 B. F. YOUNG. Cultivator.

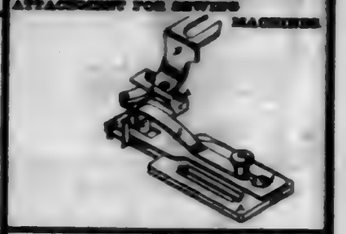


109,364 W. ZEIGLER AND J. H. SEAL. Flavoring Compound.

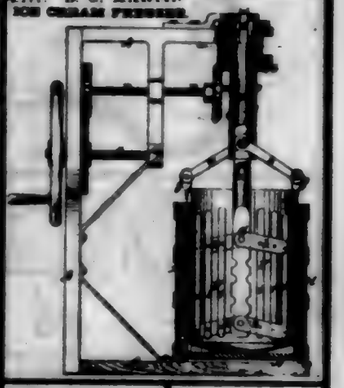
109,365 J. R. KING. Cartridge Box.



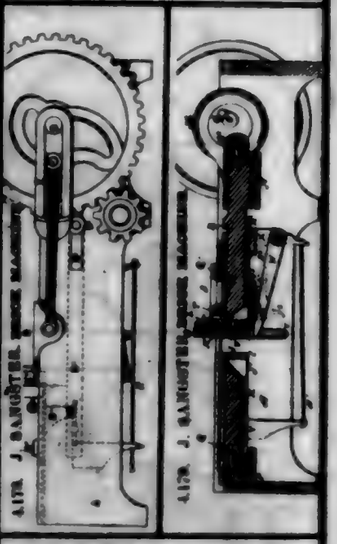
109,366 W. N. MARTIN. Sewing Attachment for Sewing Machines.



4,177. B. G. MARTIN. Ice Cream Freezer.



4,178. J. SANGSTER. Sewing Machine.



4,179. P. YEOMANS. Bottom.



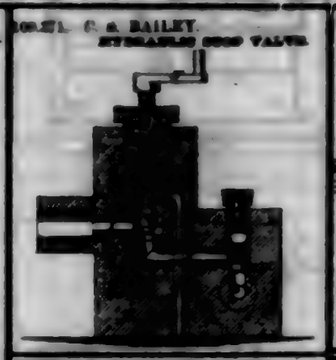
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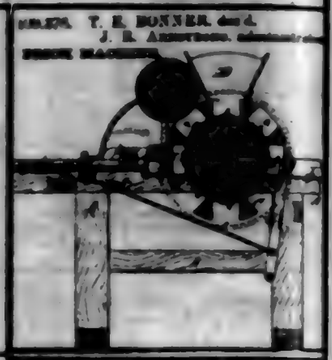
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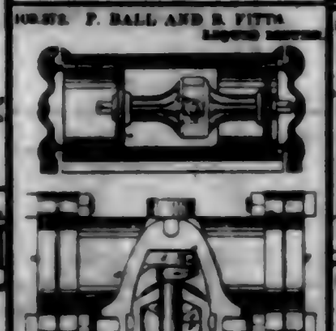
THE UNITED STATES PATENT OFFICE

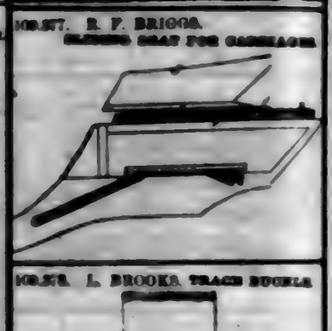
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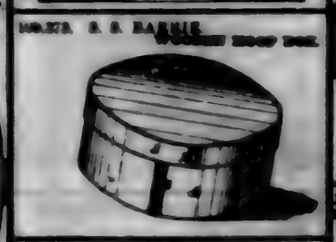


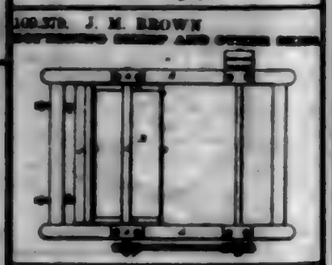


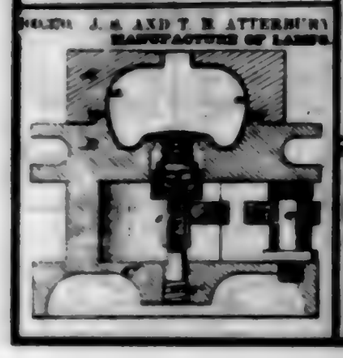




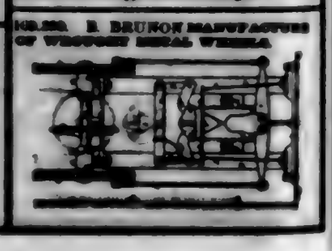




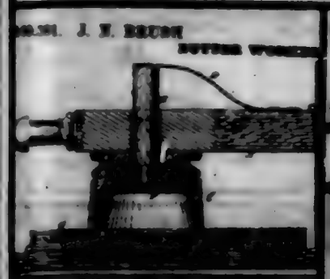








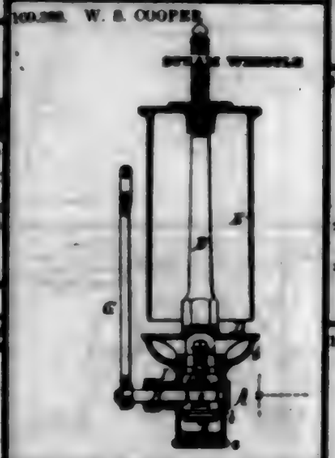
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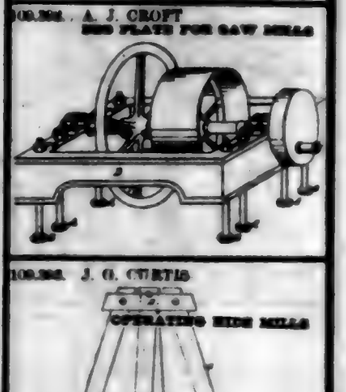


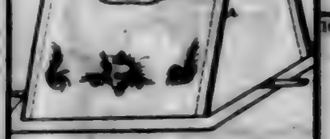


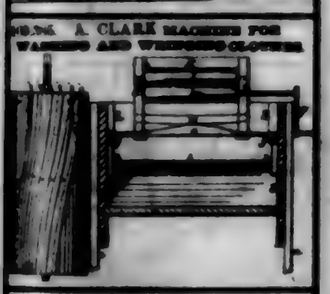


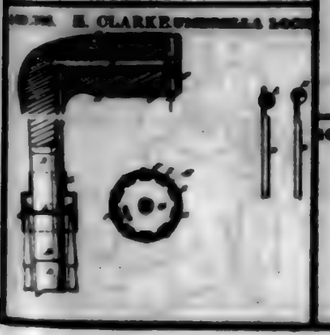


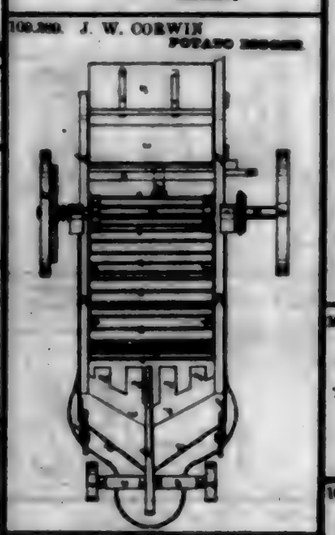


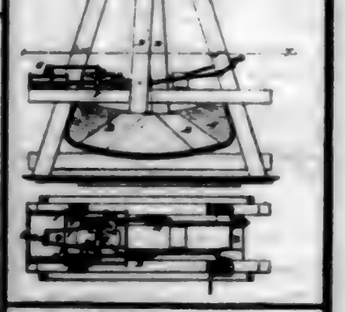


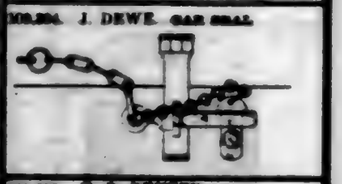


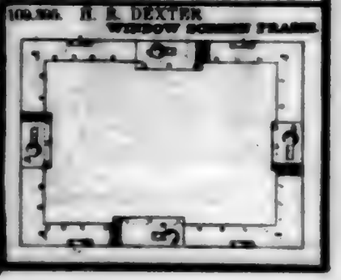




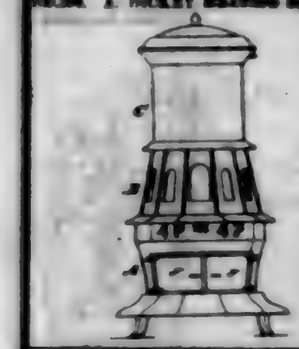




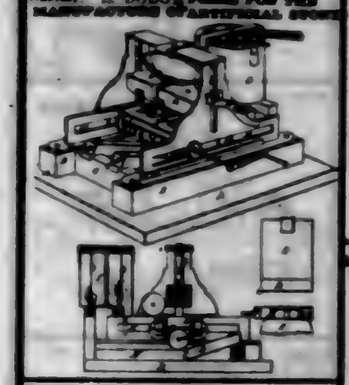




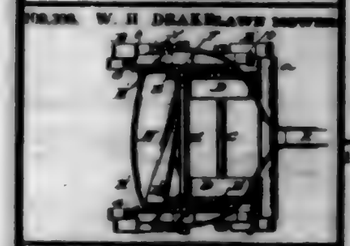
109,404. A. PICKET, HEATING STOVE.



109,407. L. DODGE, PRESS FOR THE MANUFACTURE OF ARTIFICIAL STONE.



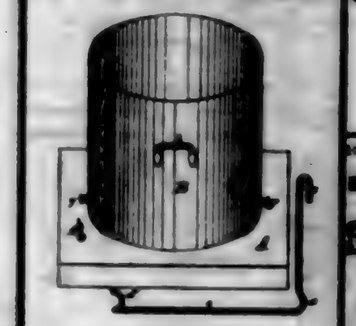
109,408. W. H. DRAKE, SAWS.



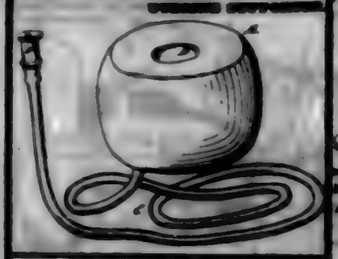
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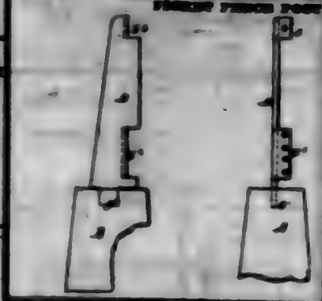
109,410. D. D. EDGERTON, HOUSE GAS FARNISHER.



109,401. B. FAULKNER, SPEAKING APPARATUS.



109,402. A. M. FREEMAN, C. P. IDELL AND B. VANDERHOVEN, PRESS FOR PRINTING POSTS.



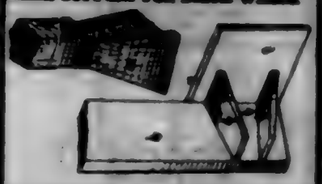
109,403. W. AND J. C. FRENCH, CORN PLOW.



109,404. A. FULTON, GAS ENGINE.



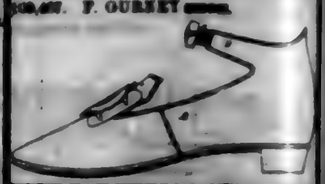
109,405. W. W. GOODRICH, APPARATUS FOR BRAKE SETTING FOR STEAM WAGGS.



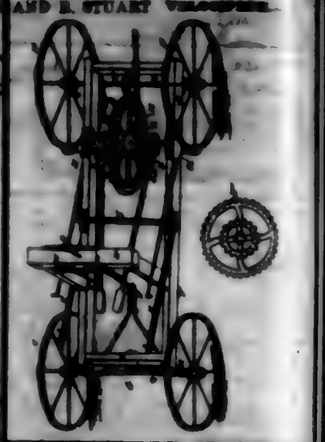
109,406. J. H. GOULD, VELOCIPEDE SPRING.



109,407. F. GURNEY, STOVE.



109,408. D. HANCHETT, J. C. DANLY AND B. STUART, WRENCHES.



109,409. J. J. HENDERSON, BOND FOR DOOR HINGE.



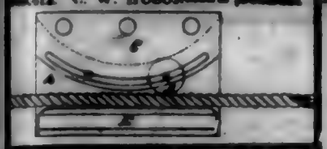
109,410. A. M. HUGHES, SEATER.



109,411. B. F. HUNT, REFRIGERATOR.



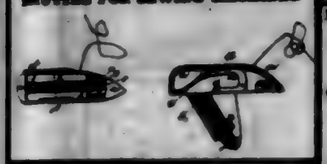
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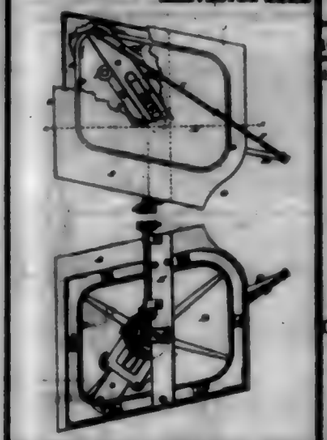
109,413. H. INGRAHAM, SPRING AND BUTTON.



109,414. A. W. JOHNSON, SHUTTLE FOR SEWING MACHINES.



109,415. I. A. JOHNSON, HARVESTER RAKE.

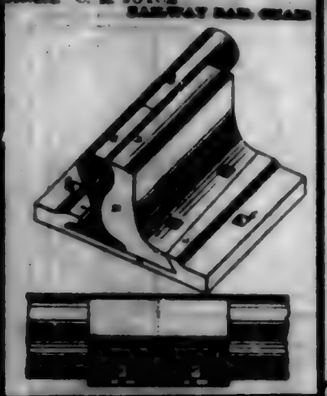


109,416. H. M. JOHNSTON AND F. BECK, PREPARATION OF MEDIA.

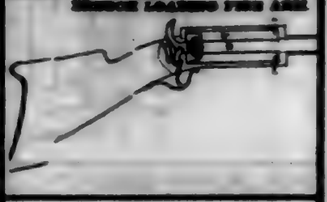
109,417. B. F. JOSLYN, REVOLVING FIRE ARM.



109,418. C. B. JOYCE, RAILWAY RAIL GUARD.

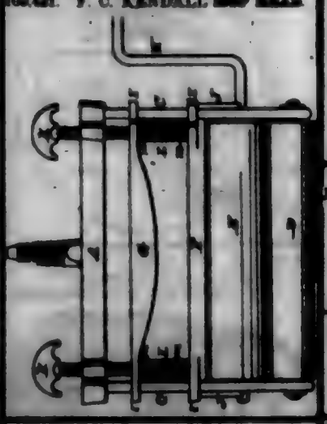


109,419. A. B. KAY, BREECH LOADING FIRE ARM.

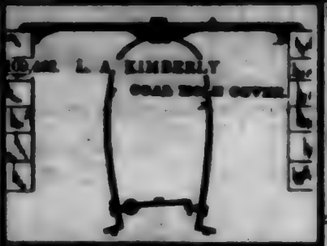


109,420. J. KAYE, SUPERHEATING BOILER.

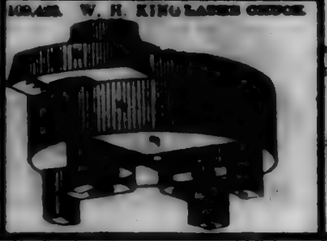
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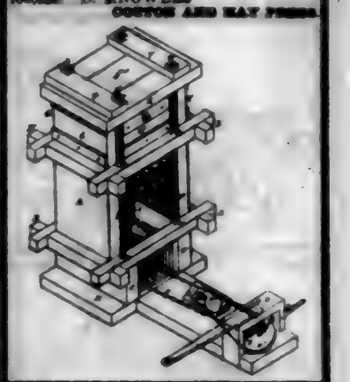
109,422. L. A. KIMBERLY, CHAIR SEAT COVER.



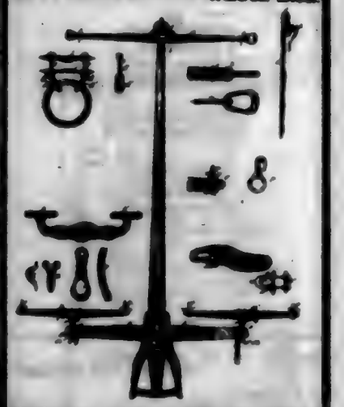
109,423. W. H. KING, LASTING CLEVIS.



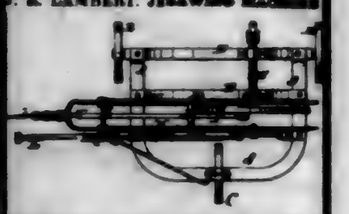
109,424. D. KNOWLES, COTTON AND HAY PRESS.



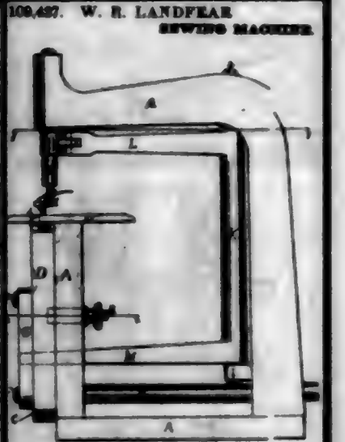
109,425. H. C. KOCHENSPERGER, WAGON BRAKE.



109,426. J. R. LAMBERT, JR., AND J. R. LAMBERT, SEWING MACHINES.



109,427. W. R. LANDFEAR, SEWING MACHINE.



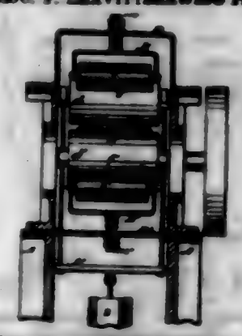
109,433. J. S. LANDIS [illegible]



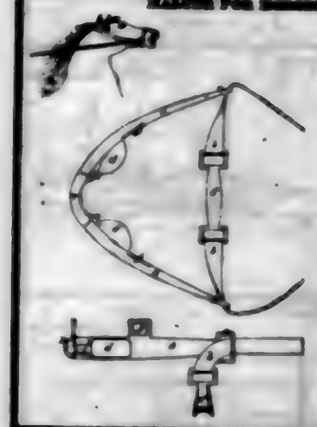
109,434. A. H. LAWRENCE [illegible]



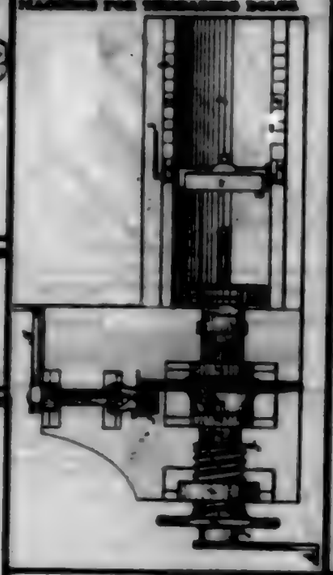
109,435. C. F. LEAVITT [illegible]



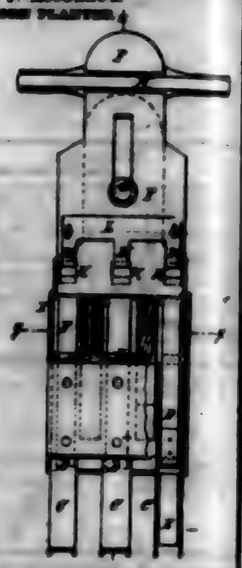
109,436. A. LE FLOREDOR [illegible]



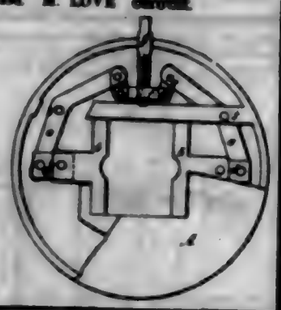
109,432. M. LOVE [illegible]



109,437. P. McCOLLUM [illegible]



109,438. M. LOVE [illegible]



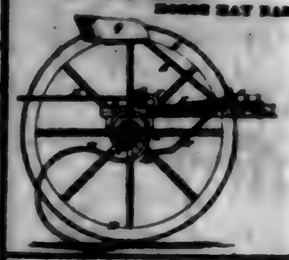
109,439. J. McCOMBER [illegible]



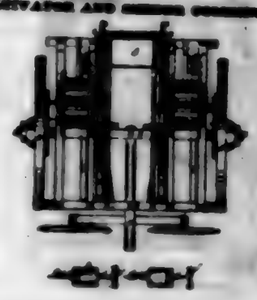
109,440. H. MANNECK AND C. STROHMENGER [illegible]



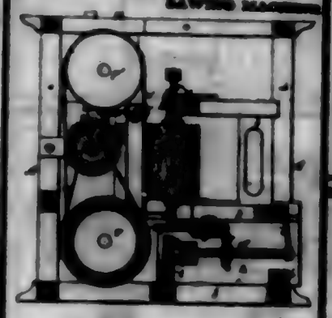
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109,442. J. LEWIS [illegible]



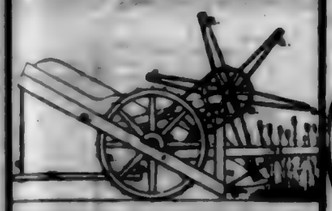
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109,440 W. T. NICHOLS [illegible]



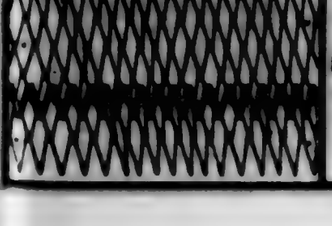
109,440. OVERLEIT [illegible]



109,442 D. B. OLIVER [illegible]



109,442 C. PARHAM [illegible]



109,444. J. PARKER [illegible]



109,445 J. F. PECKHAM [illegible]

109,446. G. C. PERKINS [illegible]

109,447. C. V. PETTIBONE [illegible]



109,448. C. P. CLAYTON AND A. K. TUTTLE [illegible]

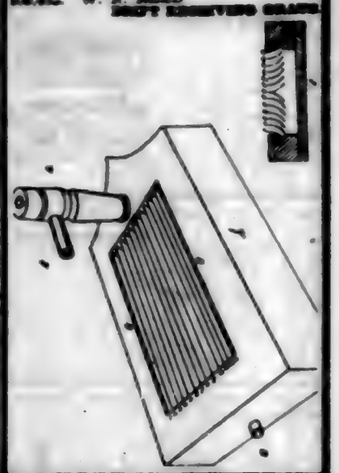


109,449. W. PIMLOTT. [illegible]

109,450. J. E. PLUMMER AND J. P. NOYES [illegible]

109,451. F. C. POOLE AND H. HOWE [illegible]

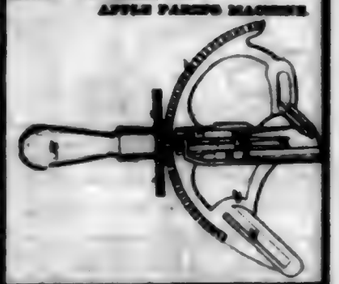
109,452. W. H. REED [illegible]



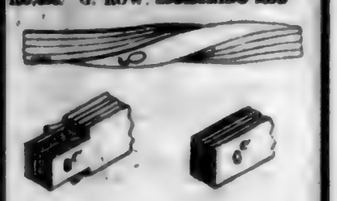
109,453. E. W. REYNOLDS [illegible]



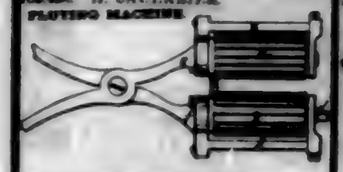
109,454. W. ROBB, 2nd [illegible]



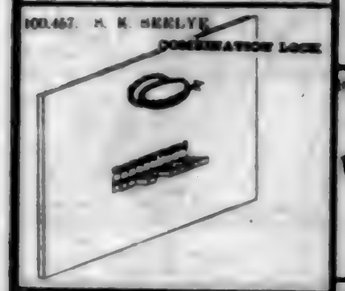
109,455. O. ROW. [illegible]



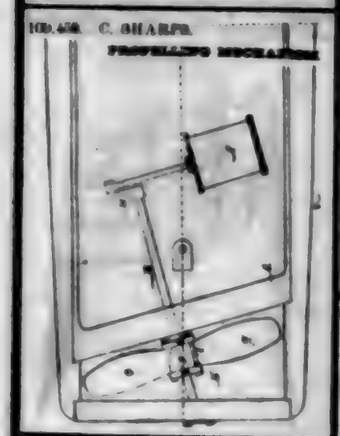
109,468. H. BAUERHIER
FLUTING MACHINE



109,469. S. K. BERLYE
COMBINATION LOCK



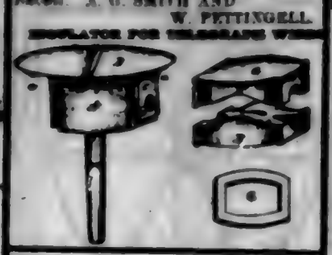
109,470. C. SHARPS
PROPELLING MECHANISM



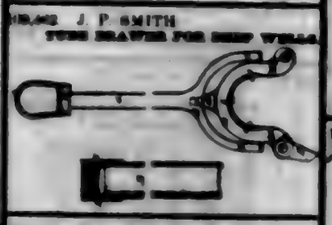
109,471. J. H. SHELTON
FURNITURE LOCK



109,472. A. G. SMITH AND W. PETTINGELL
INSULATOR FOR TELEGRAPH WIRE



109,473. J. P. SMITH
TUBE DRAWER FOR DEEP WELLS



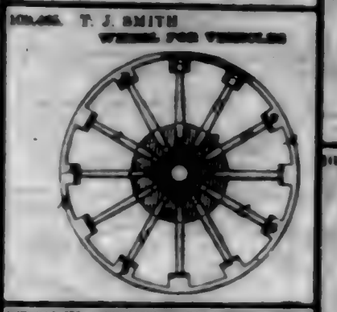
109,474. J. P. SMITH
TUBE DRAWER FOR DEEP WELLS



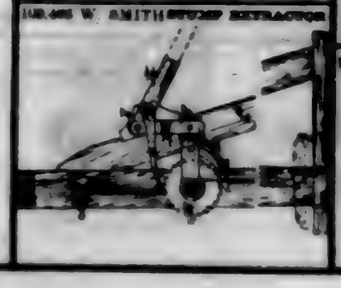
109,475. J. P. SMITH SPOKED ROD
DRAWER FOR DEEP WELLS



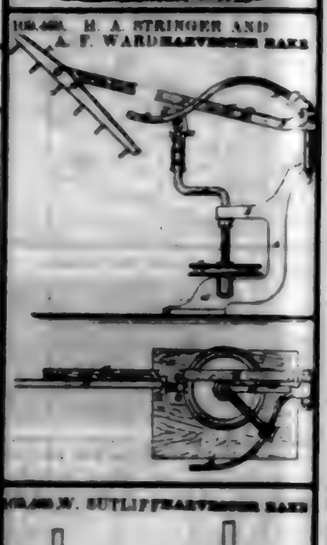
109,476. T. J. SMITH
WHEEL FOR VEHICLES



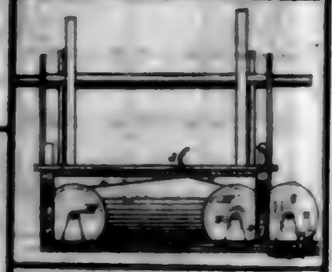
109,477. W. SMITH STUMP EXTRACTOR



109,478. H. A. STRINGER AND A. F. WARD HARVESTER RAKE



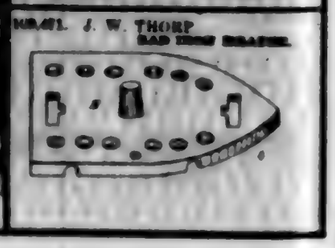
109,479. M. SUTLIFF HARVESTER RAKE



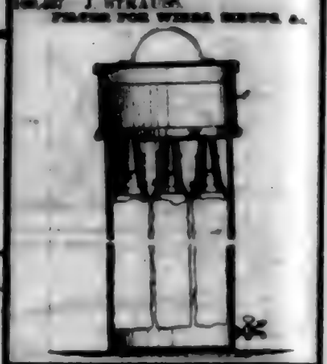
109,480. J. G. THOMPSON AND F. M. BRIGGS REED CUTTER



109,481. J. W. THORP
GAS TIGHT DRAFT



109,482. J. STRAUSS
PRESS FOR WIRING BOOKS &c.



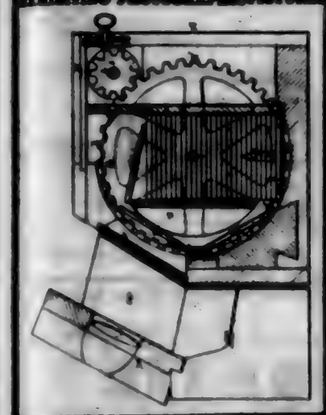
109,483. H. A. STRINGER AND A. F. WARD HARVESTER RAKE

109,484. W. SUTLIFF HARVESTER RAKE

109,485. J. G. THOMPSON AND F. M. BRIGGS REED CUTTER

109,486. J. W. THORP
GAS TIGHT DRAFT

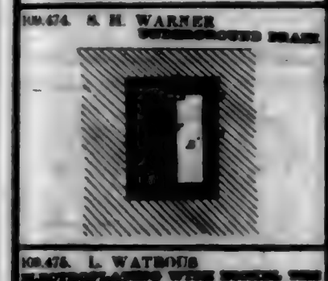
109,472. A. G. WALTON DEVICE FOR REGISTERING PHOTOGRAPHIC PICTURES



109,473. W. F. WARBURTON
VENTILATOR FOR HATS

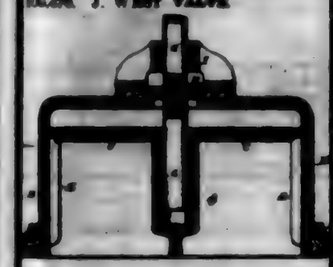


109,474. S. H. WARNER
UNDERGROUND DRAIN

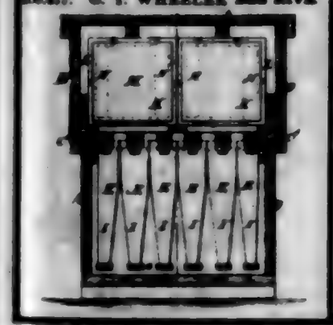


109,475. L. WATSON
ELECTROPLATING WIRE RINGS, THE METALLIC FACES OF COTTON GINS

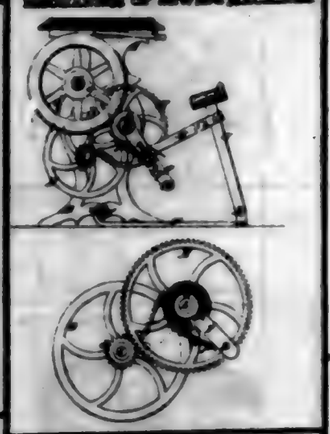
109,476. J. WEST VALVE



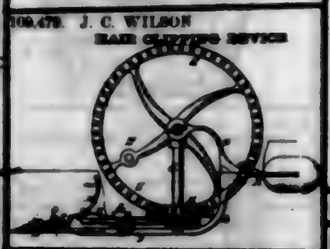
109,477. G. T. WHEELER BOOK REST



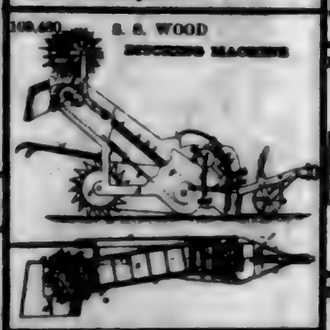
109,478. A. WHITTEMORE MOTIVE MECHANISM OF SEWING MACHINES



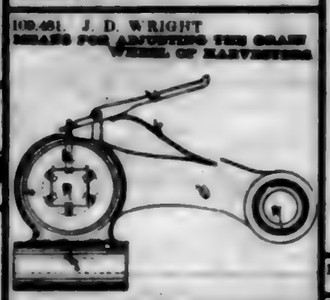
109,479. J. C. WILSON
HAIR CURLING DEVICE



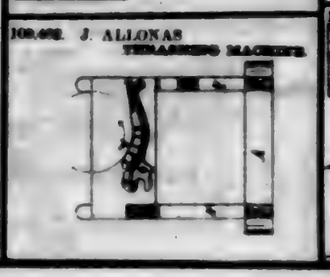
109,480. S. S. WOOD
BRICKING MACHINE



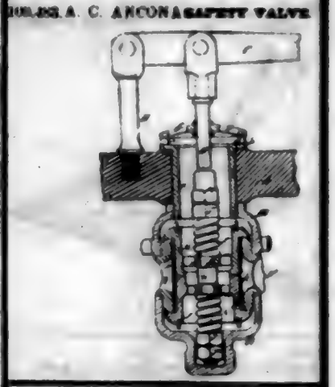
109,481. J. D. WRIGHT
BRAKE FOR ADJUSTING THE GRAIN WHEEL OF HARVESTERS



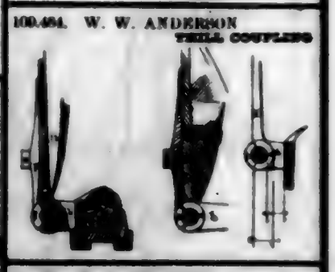
109,482. J. ALLONAS
TENANTING MACHINE



109,483. A. C. ANCONA SAFETY VALVE



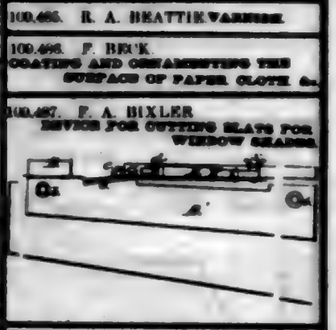
109,484. W. W. ANDERSON
THILL COUPLING



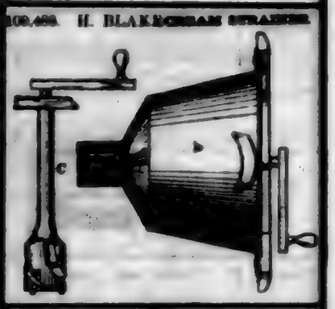
109,485. R. A. BEATTIE VARNISH

109,486. F. BECK
COATING AND ORNAMENTING THE SURFACE OF PAPER CLOTH &c.

109,487. F. A. BIXLER
DEVICE FOR CUTTING SLATS FOR WINDOW SHADES

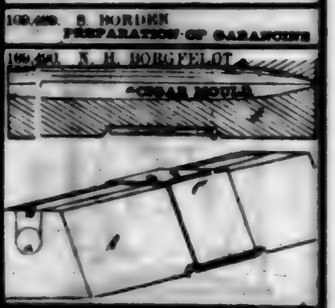


109,488. H. BLAKEMAN STRAINER



109,489. S. BORDEN
PREPARATION OF SARSAPARILLA

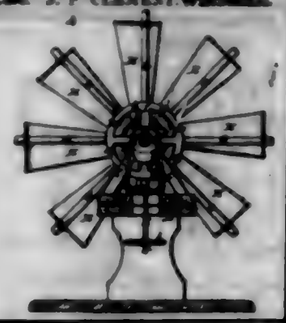
109,490. N. H. BORGFELDT
CIGAR MOULD



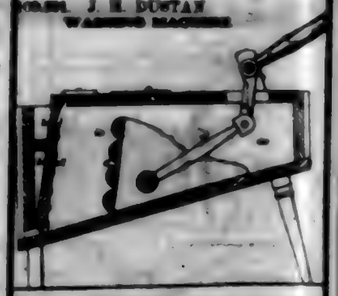
109,491. T. K. C. BRINLY
COTTON SWEEP



109,492. J. P. CLEMENT, Wetumka, I. T.



109,493. J. H. DUSTAN
WASHING MACHINE



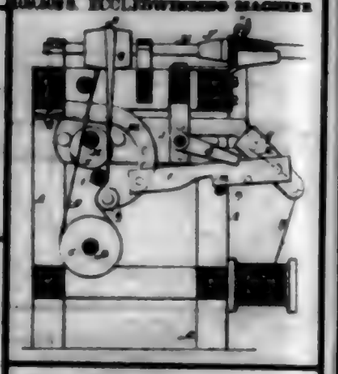
109,494. J. SULLIVANT.
FASTENING FOR BLOCKS OF LASTS.



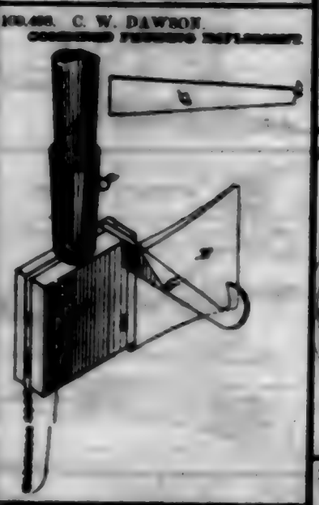
109,495. W. A. DAGGETT, Bread Pan



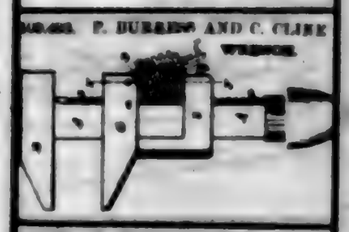
109,496. EXCELSIOR-WEAVING MACHINE



109,497. C. W. DAWSON.
CORN-PLANTING IMPLEMENT.



109,498. P. BURRING AND C. CLINE
VENEER.



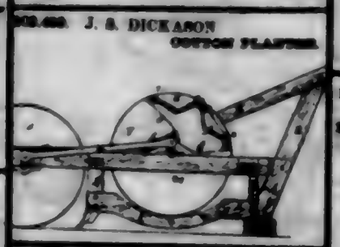
109,499. J. W. CAMPBELL.
GLUING HOPPER.



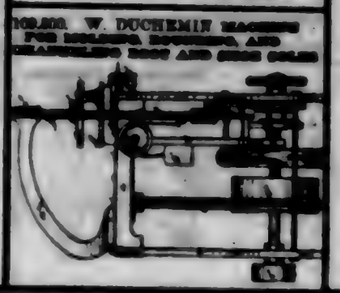
109,500. P. CERRIDO, Fort Graciosa.



109,501. J. S. DICKASON
COTTON PLANTER.



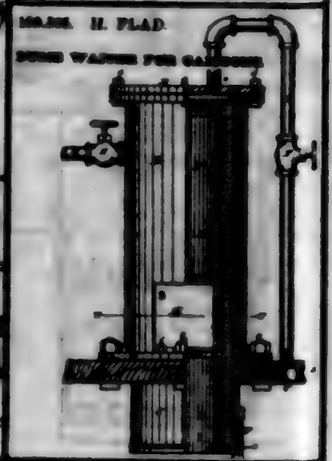
109,502. W. DUCHEMIN, Machine for Breaking Hemp and Flax, and Gathering Root and Fiber Ends.



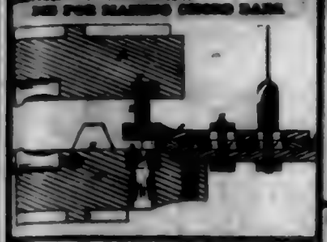
109,503. C. FISHER
METALLIC SLEEPER FOR RAILWAYS.



109,504. H. FLAD.
STEAM WATER FOR GALVANIZING.



109,505. W. FORSHAW
DIE FOR MAKING CROSS BARS.



109,506. C. GODFREY AND A. LIGHTHALL, Pendleton
IRON ARMATURE CORRUGATOR.

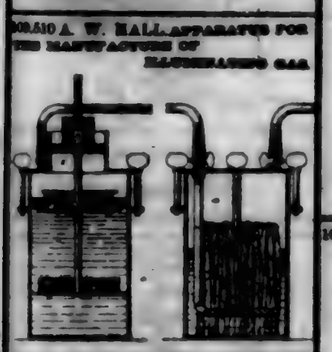
109,507. W. GALLOWAY



109,508. E. N. GREEN.
DOUBLE HAY RAKE.



109,509. A. W. HALL, Apparatus for the Manufacture of Illuminating Gas.



109,510. B. HARPSTER, Glass Fountain.



109,511. M. HARRINGTON
GAGE AND DOOR SPRING.



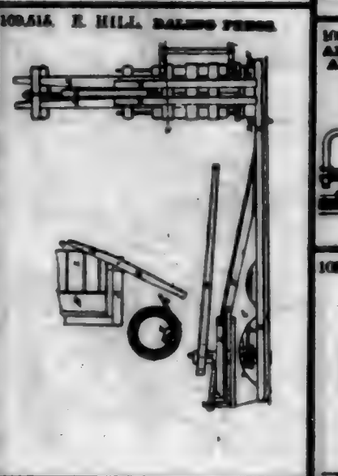
109,512. R. D. HAY.
SAFETY GUARD FOR FIREARMS.



109,513. R. D. HAY. GUN LOCK.



109,514. R. HILL, Baling Press.



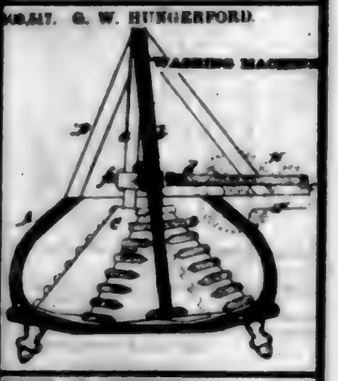
109,515. J. HUGHES, Gage Lock.



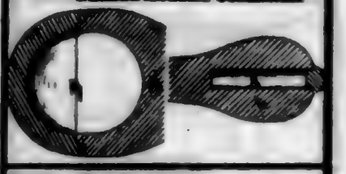
109,516. N. JOHNSON
SCHOOL DESK AND SEAT.



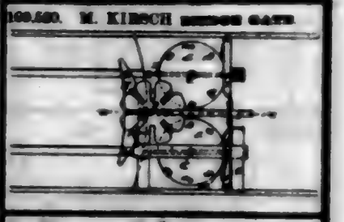
109,517. G. W. HUNGERFORD.
WASHING MACHINE.



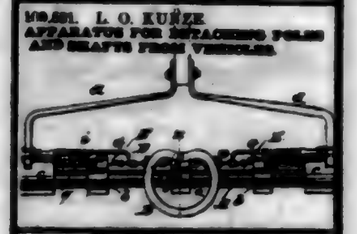
109,518. D. R. KEITH.
STOCKING LAST AND TARET AND HEELER HOLDER COMBINED.



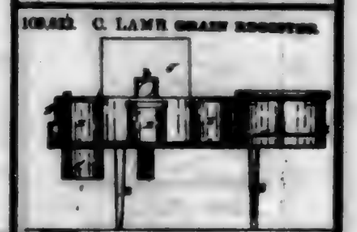
109,519. M. KIRSCH, Window Sash.



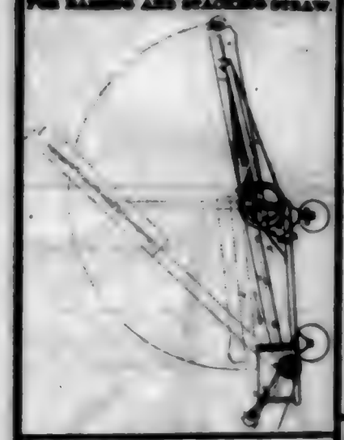
109,520. L. O. KUNZE
APPARATUS FOR DETACHING POLES AND SHAFTS FROM VEHICLES.



109,521. C. LAMB, Grain Register.



109,535. N. LEWIN, Delaware
FOR RAISING AND STACKING STRAW.

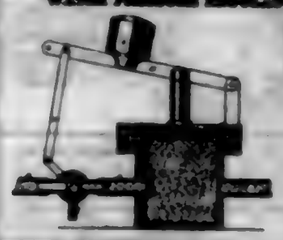


109,536. R. S. LEWIS.
CONCRETE COMPOSITION FOR WALKS FLOORING, &c

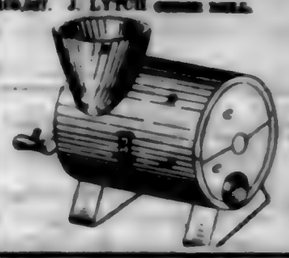
109,537. J. LICHTENSTEIN
CAR AXLE LUBRICATOR



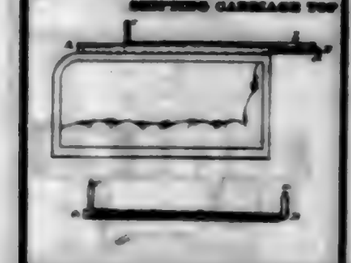
109,538. H. C. LOCK
WATER-PURIFYING APPARATUS.



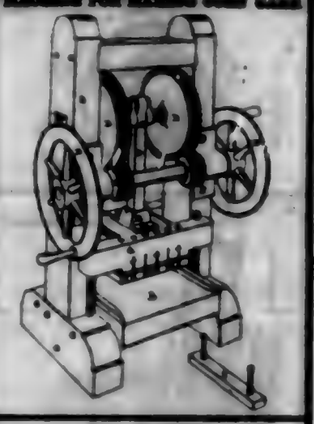
109,539. J. LYTCH, Ohio
GRIST MILL.



109,540. O. H. MALLORY
REVOLVING GARBAGE TUB



109,541. W. MANNING, Massachusetts
MACHINE FOR MAKING CORN CAKE



109,542. T. E. MARABLE, Arkansas
ANIMAL TRAP.



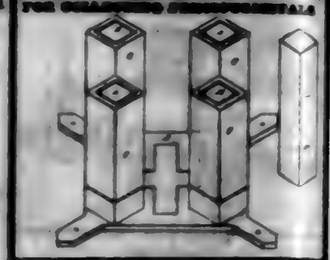
109,543. J. MARTIN, Missouri
SEEDER.



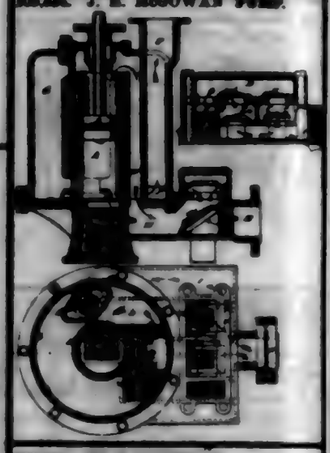
109,544. W. McCORMICK, Illinois
APPARATUS FOR BINDING



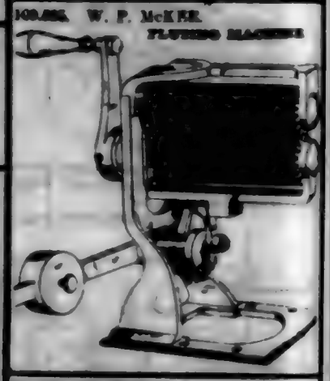
109,545. J. T. McDOUGALL, Kansas
APPARATUS FOR CULTIVATING SUBSOIL



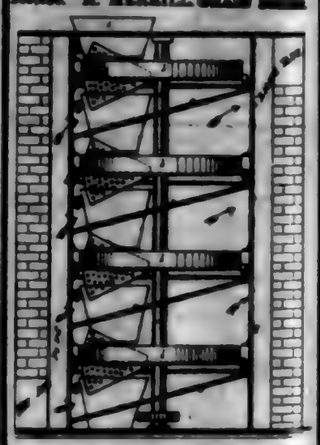
109,546. J. E. McGOWAN, Penn.
PUMP.



109,547. W. P. McKEE, Ohio
PLOWING MACHINE



109,548. H. MERRILL, Grand Haven, Mich.
GRAIN DRIER.



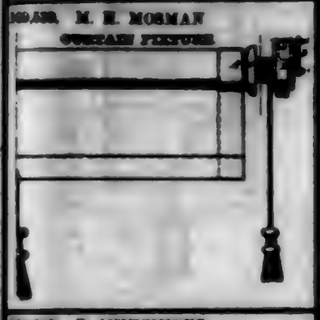
109,537. R. S. MERRILL, Ohio
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109,538. E. METZ AND W. B. GEDDES, Ohio
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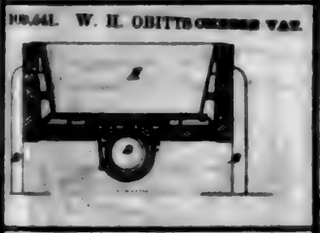
109,539. M. H. MORMAN, Ohio
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109,540. P. MUNZINGER, New York
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109,541. W. H. OBITTS, Greenup Co., Ky.
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109,542. G. AND H. O'CONNOR, Millstone Point, Conn.
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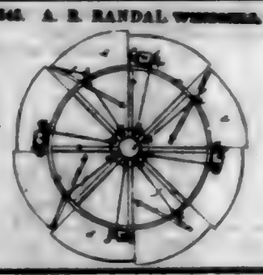
109,543. C. H. PEEK, Goose Pasture, Ky.
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109,544. T. H. PEUSHAW, Ohio
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109,545. A. B. RANDAL, Wisconsin
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109,546. D. REYNOLDS AND J. W. PAIGE, Manufacturers of Salt, Saginaw, Mich.
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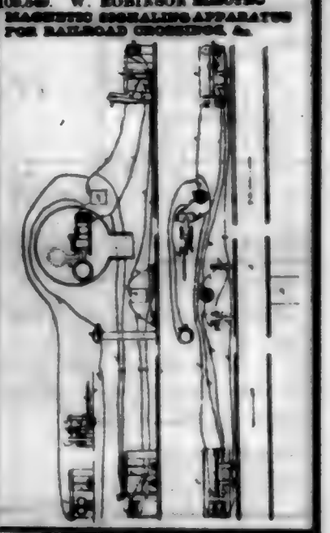
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109,548. E. P. RING, Apparatus for Steaming and Cooling Lard.



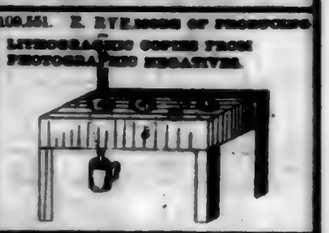
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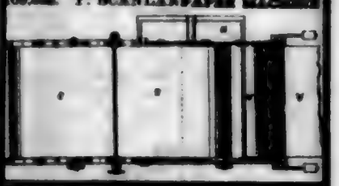
109,550. J. S. RUNYAN
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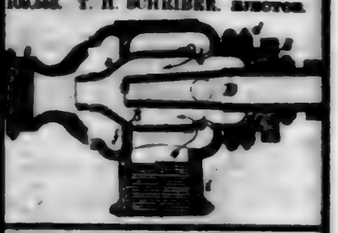
109,551. E. RYEMOON, of Philadelphia
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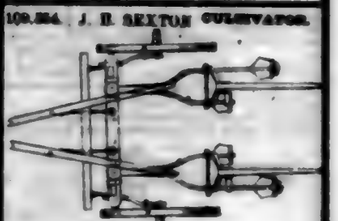
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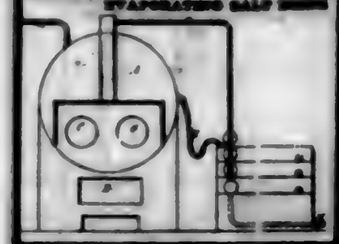
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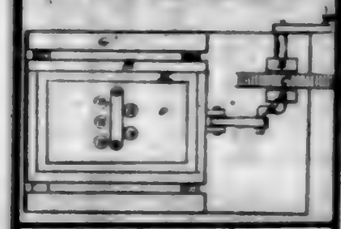
109,554. J. B. SEXTON, Cultivator.
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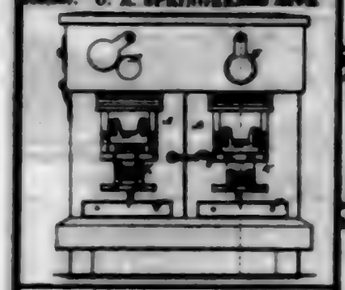
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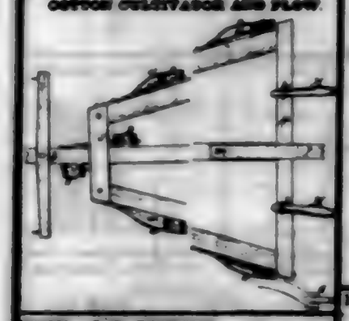
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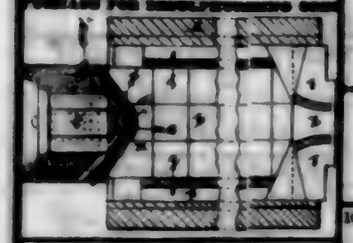
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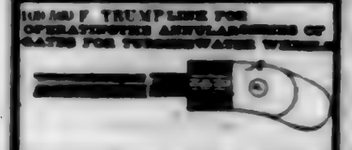
109,568. J. R. THOMAS
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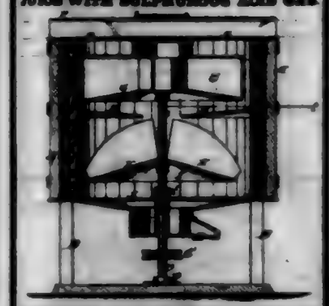
109,569. J. O. TROTTER
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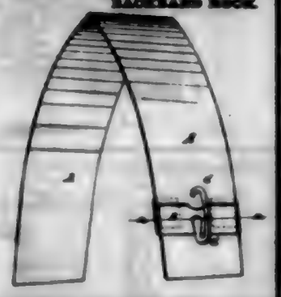
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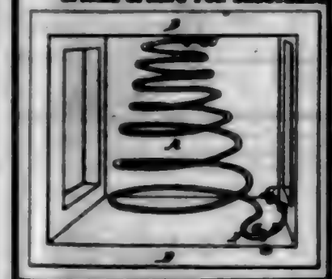
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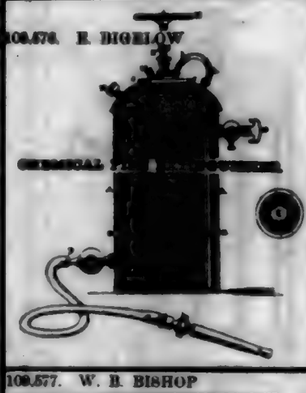
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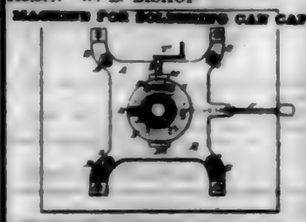
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109,576. R. BIGELOW

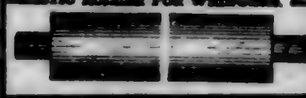


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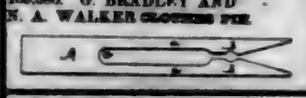


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109,580. G. BRADLEY AND N. A. WALKER CLOTHES PIN.



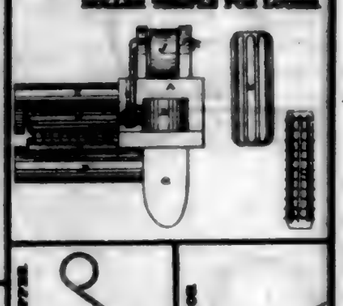
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109,583. W. H. BURNS
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109,584. M. R. W. CALDWELL.



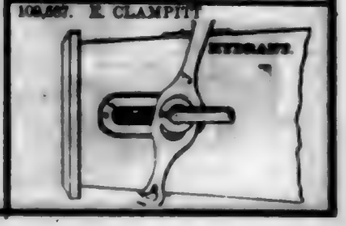
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4,163. G. E. HALSTEAD
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4,164. E. C. POLE, ASSIGNOR TO [illegible]
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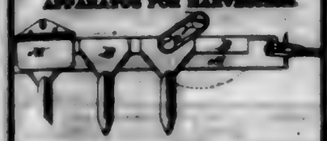
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THE UNITED STATES PATENT OFFICE

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109,620 H. A. HOUSE.

109,621 A. HUMBERT.

109,622 C. B. HUTCHINS.

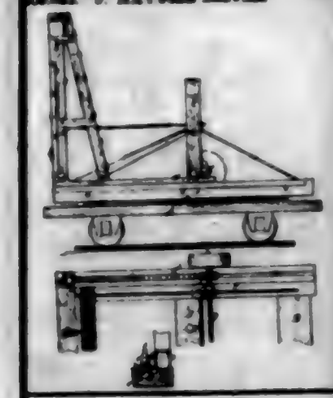
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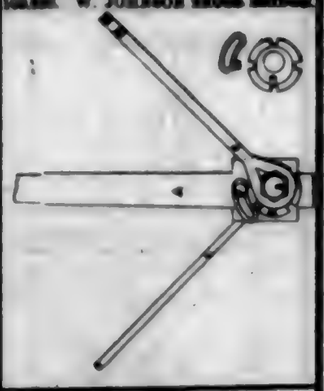
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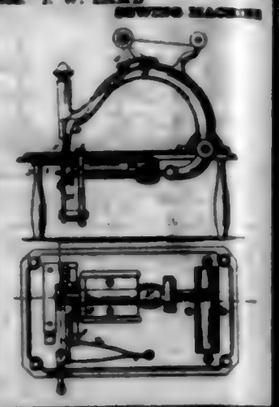
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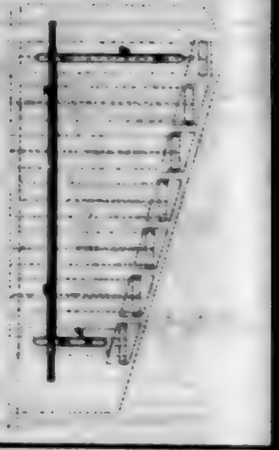


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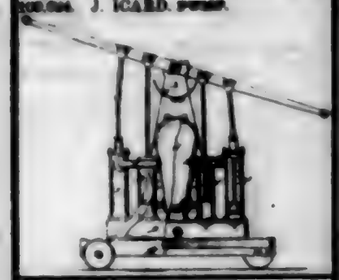


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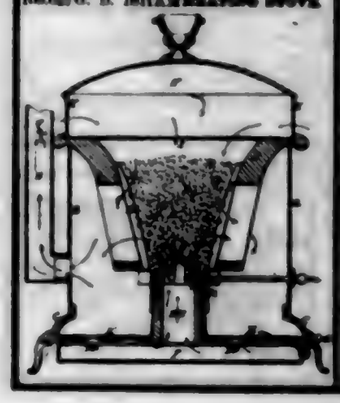


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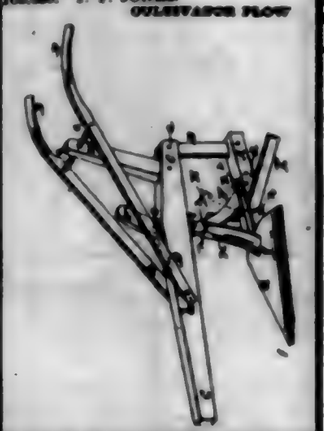


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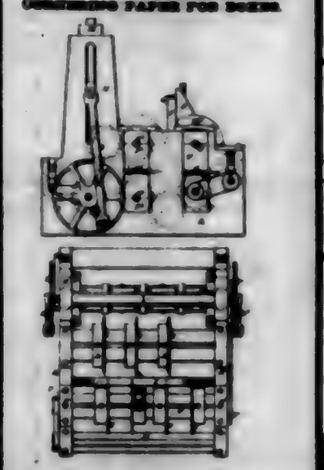
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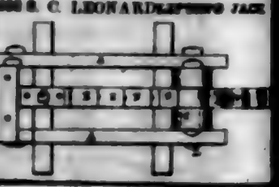
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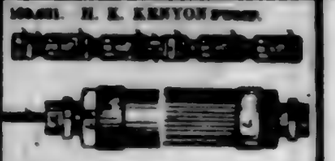
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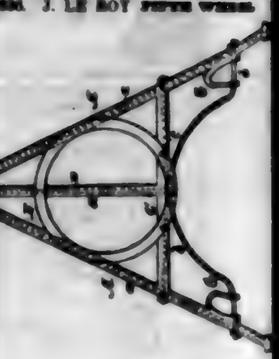
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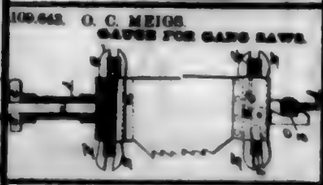
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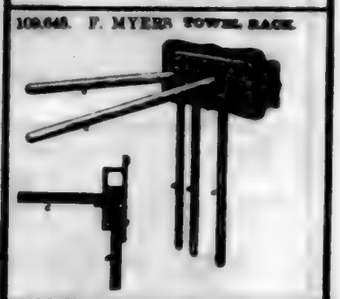
109,647. W. N. AND A. K. MOORE, CLOTHES DRIER.



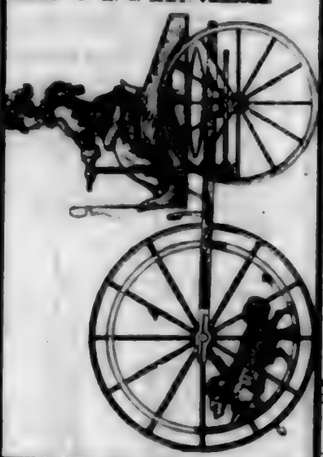
109,643. O. C. MEIGS, GAUGE FOR GANG SAWS.



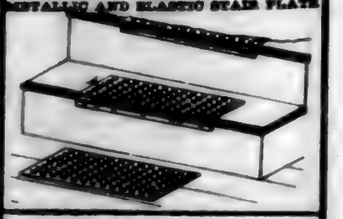
109,645. F. MYERS TOWEL RACK.



109,644. F. H. C. MEY VELOCIPEDE.



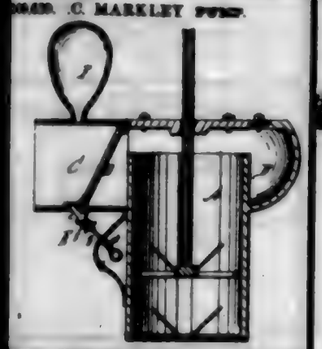
109,648. P. W. NEEFUS, METALLIC AND ELASTIC STAIR PLATE.



109,650. P. W. NEEFUS, METALLIC AND ELASTIC DOOR MAT.



109,639. C. MARKLEY PUMP.



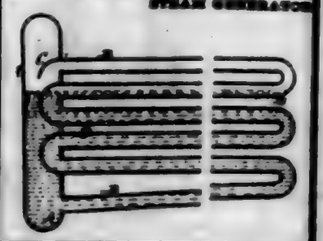
109,640. F. G. McCLELLAND BOLT.



109,641. J. W. McGILL, HAT.



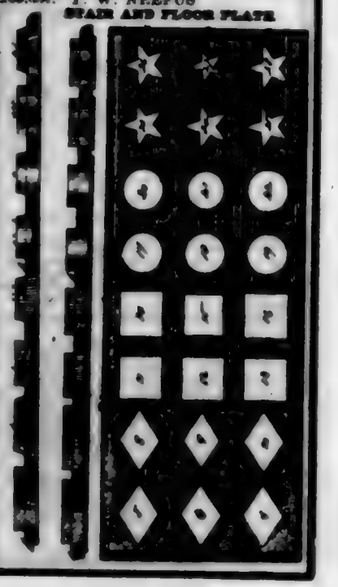
109,646. J. A. MILLER, STEAM GENERATOR.



109,649. C. A. MOORE, MANUFACTURE OF GLASS ARTICLES.



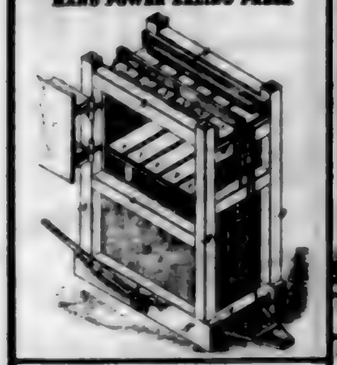
109,651. P. W. NEEFUS, STAIR AND FLOOR PLATE.



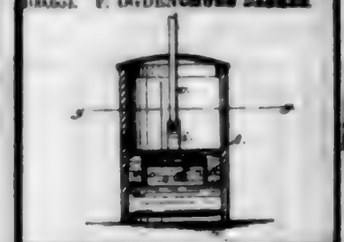
109,682. E. NEUMANN
STEAM GENERATOR.



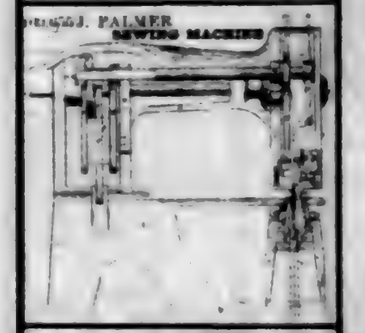
109,683. W. R. NEWMAN
HAND POWER BALING PRESS.



109,684. F. OEDENCHUEN DASHER.



109,685. J. PALMER
SEWING MACHINE.

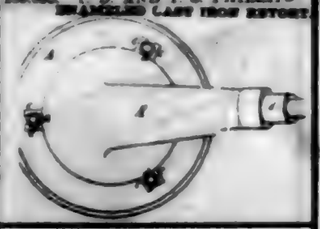


109,686. C. F. PANKNIN COMPOUND
FOR BATING HIDES AND SKINS.

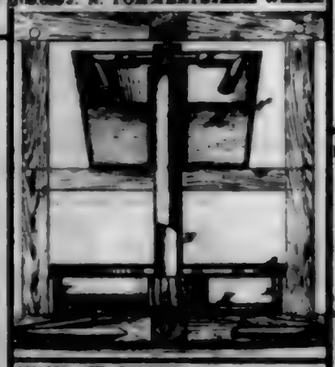
109,687. L. AND F. PERROT AND
C. H. BATES COMBINED GARDEN TOOL.



109,688. T. D. AND T. S. PHILLIPS
BRAKELESS CAST IRON RETORT.

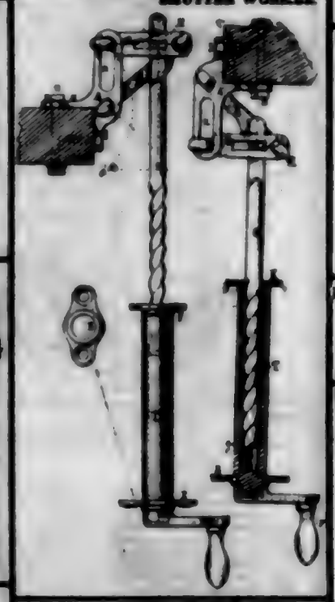


109,689. J. N. POMMERT STEAM WHEEL.

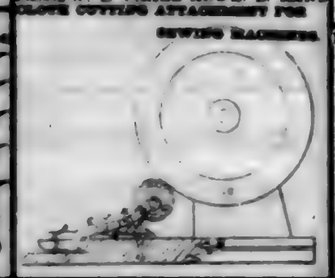


109,690. W. PORTER
MATCH FOR CIGAR LIGHTERS.

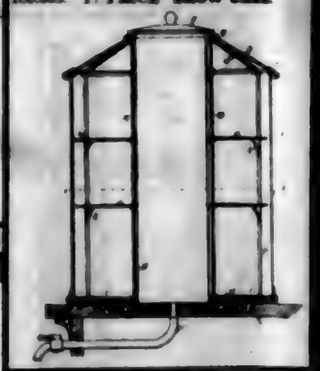
109,691. C. A. POTTER
SHUTTER WORKER.



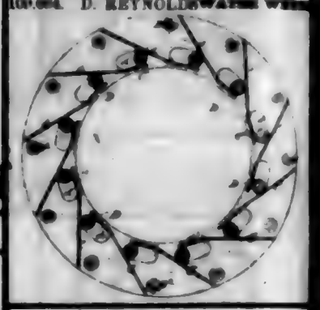
109,692. W. E. PRALL AND A. B. RAND
GLOVE CUTTING ATTACHMENT FOR
SEWING MACHINES.



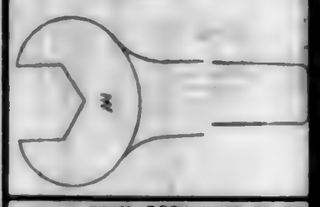
109,693. P. PRICE SHOW CASE.



109,694. D. REYNOLDS WATER WHEEL.



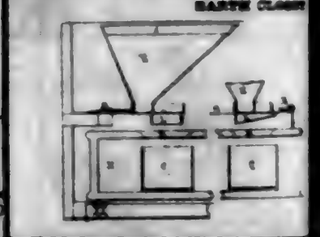
109,695. J. RICHARDS
MANUFACTURE OF WHIPCORDS.



109,696. R. RICHARDS SAFETY SWIVEL.



109,697. G. W. ROBERTS.
EARTH CLOSET.

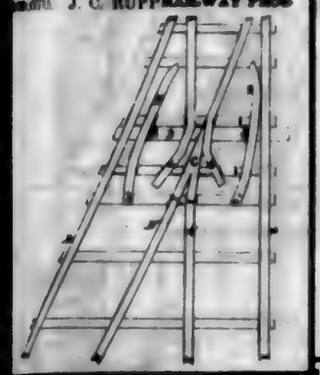


109,698. ROGERS AND E. K. SPERR
GLOVE SEWING ATTACHMENT FOR
SEWING MACHINES.



109,699. J. L. ROWLAND
MANUFACTURE OF ARTIFICIAL STONE.

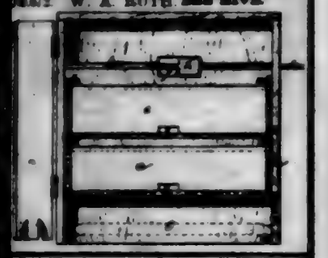
109,670. J. C. RUPPRAH WAY PROP.



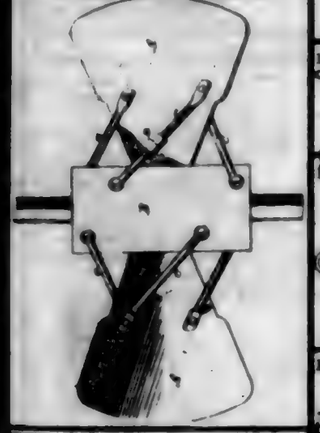
109,671. S. RUST, Jr.
COCK FOR CARBURETORS, &c.



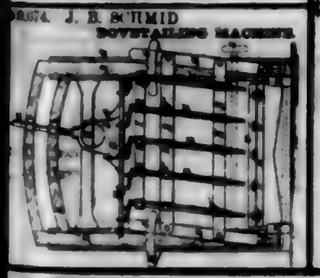
109,672. W. A. RUTH, 2ND REVR.



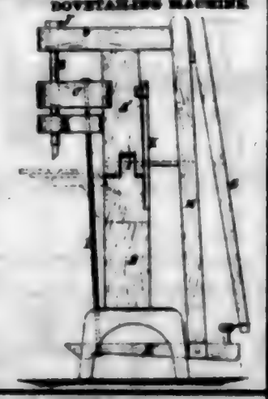
109,673. J. SALTER PROPELLER.



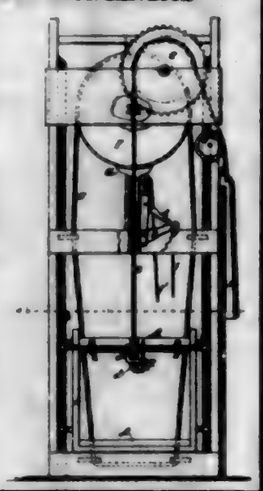
109,674. J. B. SCHMID
DOVETAILING MACHINE.



109,675. J. B. SCHMID
DOVETAILING MACHINE.



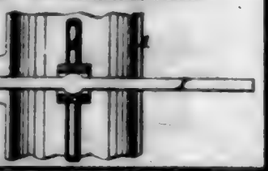
109,676. G. SCOTT. ELEVATOR.



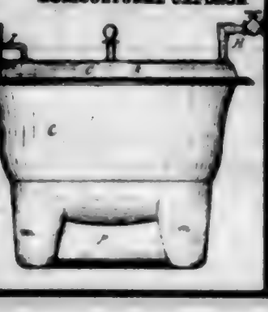
109,677. A. SEITZ.
CONFECTIONERY FOR DRUGGISTS.



109,678. W. SHEARER PUMP.



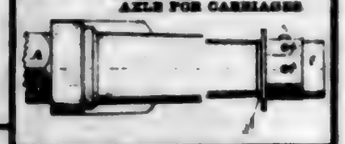
109,679. E. E. SILL AND
A. H. BENNETT.
AGRICULTURAL CALDRON.



109,680. S. A. SLOCUMB
GRAIN AND FRUIT CLEANER.



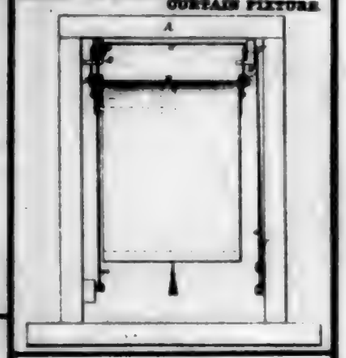
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AXLE FOR CARRIAGES.



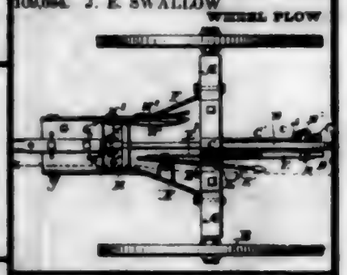
109,682. E. S. SPEAR. SLEIGH.



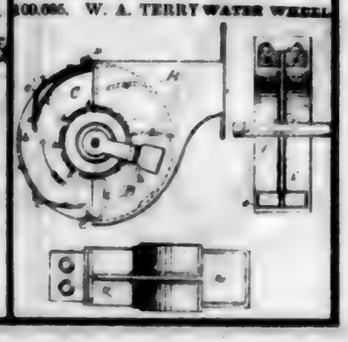
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CURTAIN FIXTURE.



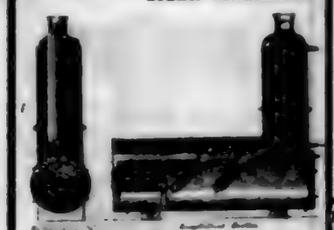
109,684. J. E. SWALLOW
WHEEL PLOW.



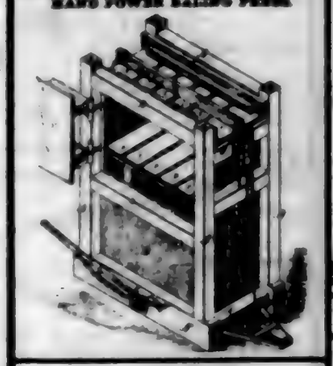
109,685. W. A. TERRY WATER WHEEL.



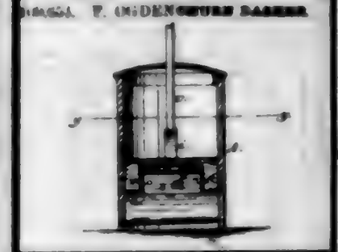
109,652. E. NEUMANN
STEAM GENERATOR.



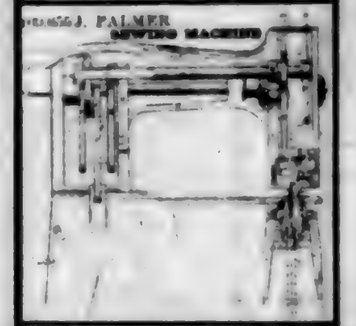
109,653. W. R. NEWMAN
HAND POWER BALING PRESS.



109,654. F. OGDEN, Jr. SAUSAGE STUFFER.

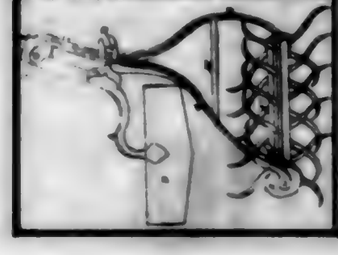


109,655. J. PALMER
SEWING MACHINE.

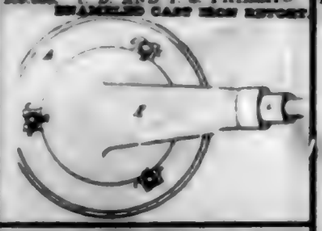


109,656. C. F. PANKNIN, Composition
FOR TANNING HIDES AND SKINS.

109,657. L. AND F. PERROT AND
C. H. BATES, Jr. COMBINED GARDEN TOOL.



109,658. T. D. AND T. S. PHILLIPS
REVERSIBLE CAST IRON RUTTER.



109,659. J. N. POMMERT, Jr. STEAM WHEEL.

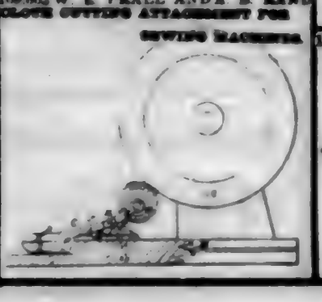


109,660. W. PORTER
MATCH FOR CIGAR LIGHTERS.

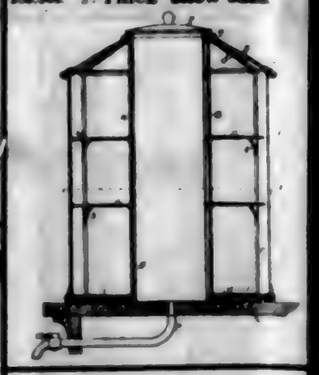
109,661. C. A. POTTER
SHUTTER WORKER.



109,662. W. E. PRALL AND A. B. RAND
CLOTH CUTTING ATTACHMENT FOR
SEWING MACHINES.



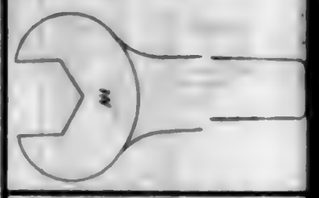
109,663. P. PRICE SHOW CASE.



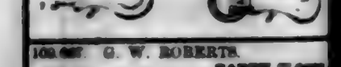
109,664. D. REYNOLDS, Jr. WATER WHEEL.



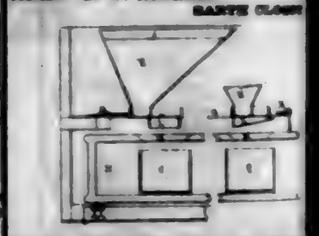
109,665. J. RICHARDS
MANUFACTURE OF WHEELS.



109,666. R. RICHARDS, Jr. SAFETY SWIVEL.



109,667. G. W. ROBERTS.
EARTH CLOSET.

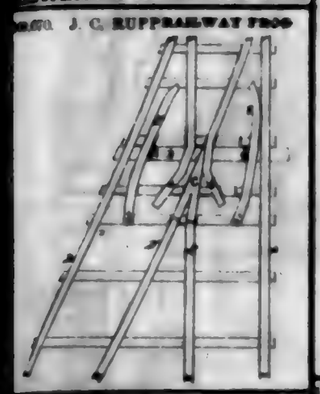


109,668. S. ROGERS AND R. K. SPERRY
CLOTH CUTTING ATTACHMENT FOR
SEWING MACHINES.



109,670. J. L. ROWLAND
MANUFACTURE OF ARTIFICIAL STONE.

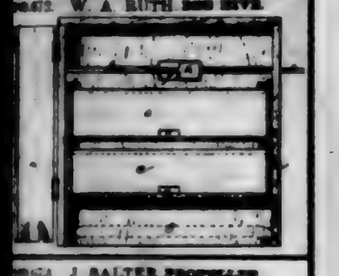
109,670. J. C. RUPPRAH, Jr. WAY PROD.



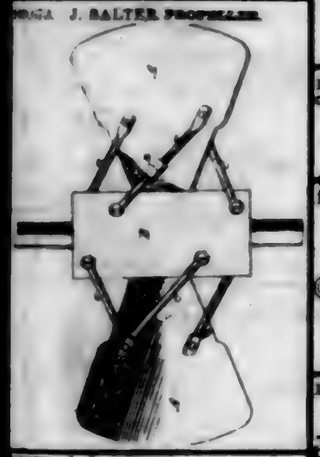
109,671. S. RUST, Jr.
COCK FOR CARBURETTORS, &c.



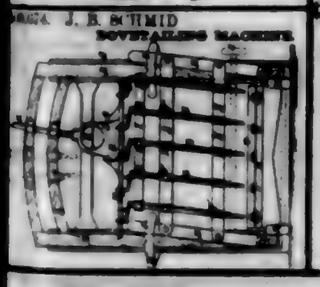
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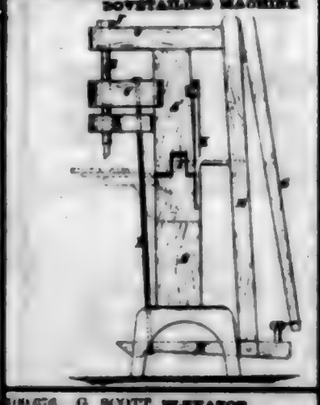
109,673. J. SALTER, PROPELLER.



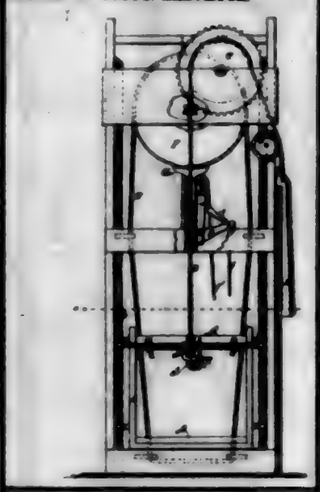
109,674. J. B. SCHMID
DOVETAILING MACHINE.



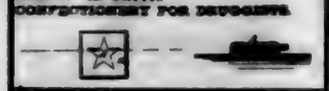
109,675. J. B. SCHMID
DOVETAILING MACHINE.



109,676. G. SCOTT, ELEVATOR.



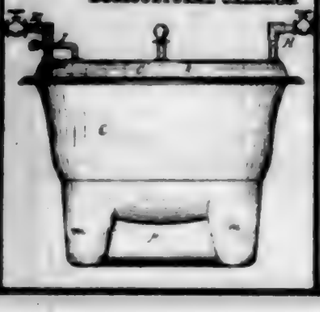
109,677. A. SEITZ.
CONFECTIONERY FOR DRUGGISTS.



109,678. W. SHEARER, PUMP.



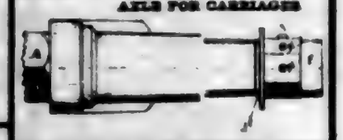
109,679. E. E. SILL AND
A. H. BENNETT.
AGRICULTURAL CALDRON.



109,680. S. A. SLOCOMB
GRAIN AND FRUIT CLEANER.



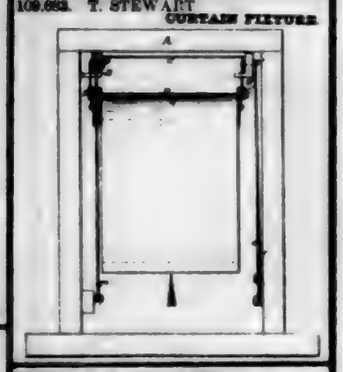
109,681. A. E. SMITH
AXLE FOR CARRIAGES.



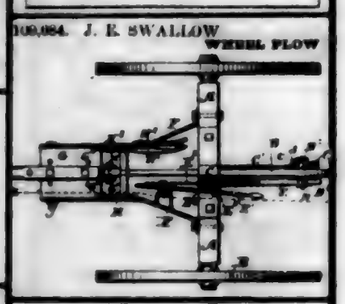
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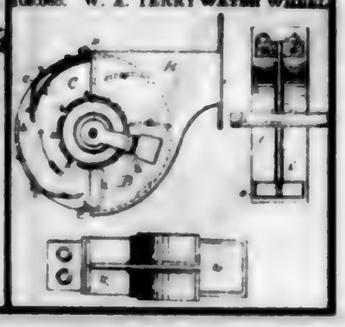
109,683. T. STEWART
CURTAIN FIXTURE.



109,684. J. E. SWALLOW
WHEEL PLOW.



109,685. W. A. TERRY, WATER WHEEL.



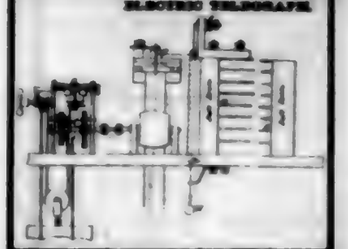
109,686. A. THOMAS
APPARATUS FOR MARKING CLOTH.



109,687. A. THOMAS
APPARATUS FOR MARKING CLOTH.



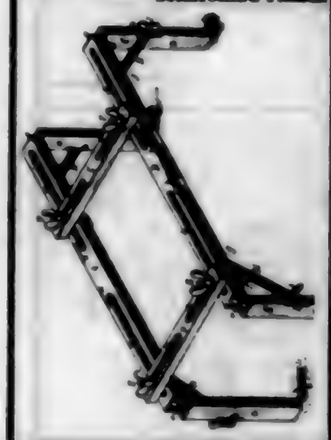
109,688. W. THOMSON
RECORDING INSTRUMENT FOR THE ELECTRIC TELEGRAPH.



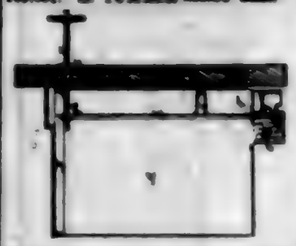
109,689. J. S. TOAN.
AUTOMATIC STOVE DAMPER.



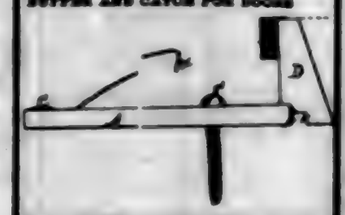
109,690. J. TONNER.
STRETCHING FRAME.



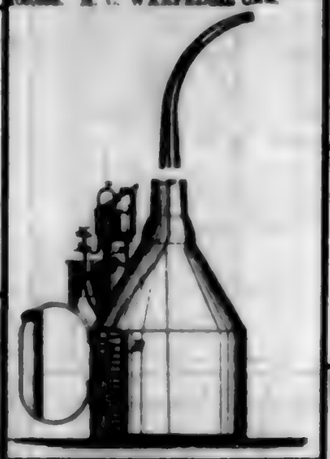
109,691. A. TUMLER SHEEP CAR.



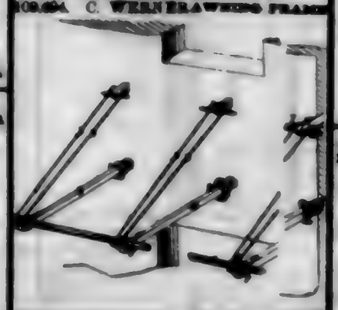
109,692. A. A. VEEB.
BUFFER AND CATCH FOR DOORS



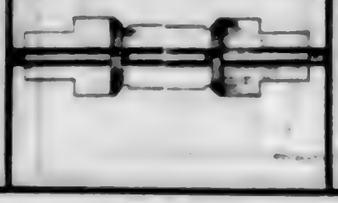
109,693. M. C. WARFEL, OIL CAN.



109,694. C. WERNER, DRAWING FRAME.



109,695. G. WESTINGHOUSE, Jr.
ATMOSPHERIC GAS BRAKE PIPES.



109,696. M. W. WHITE, VIOLIN



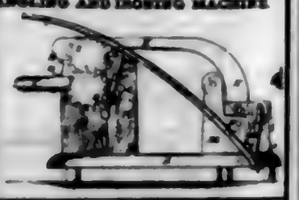
109,697. L. B. WHITNEY.
WASHING MACHINE.



109,698. G. L. AND L. P. WILD.
DANCING TOY.



109,699. S. WILLIAMS
MANGLING AND IRONING MACHINE.



109,700. J. E. WISNER
HORSE HAY RAKE.



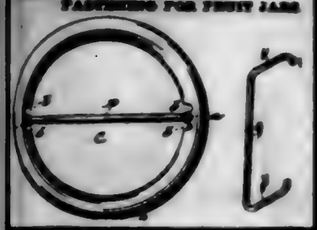
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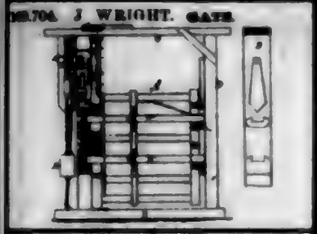
109,702. J. W. WOOD. [illegible]



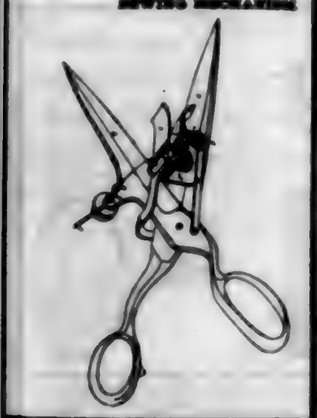
109,703. T. F. WOODWARD
FASTENING FOR FRUIT JARS.



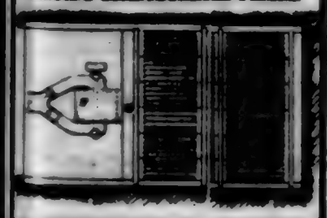
109,704. J. WRIGHT. GATE.



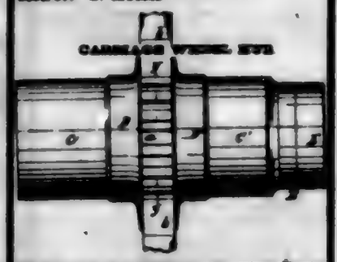
109,705. J. L. YOUNG
SEWING MECHANISM.



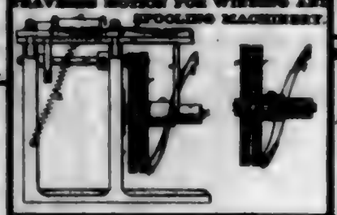
109,706. W. ADAMSON
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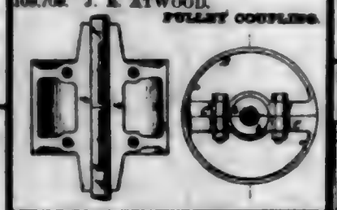
109,707. S. ATHA
CARRIAGE WHEEL NUT.



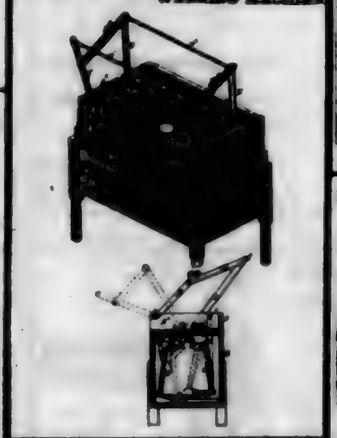
109,708. J. E. ATWOOD.
TRAVERSE MOTION FOR WINDING AND SPOOLING MACHINERY.



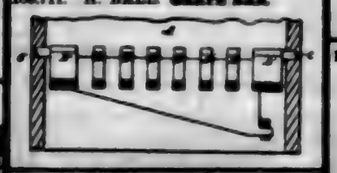
109,709. J. E. ATWOOD.
PULLEY COUPLING.



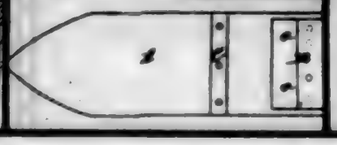
109,710. B. C. BAILEY
WASHING MACHINE.



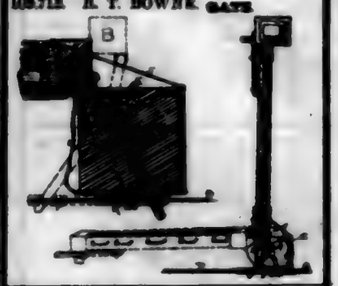
109,711. H. BALL. GRATE BAR.



109,712. J. H. BEIDLER.
IRONING BOARD.

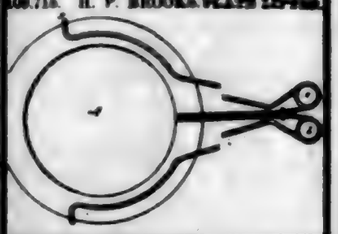


109,713. B. T. BOWNE. GATE.

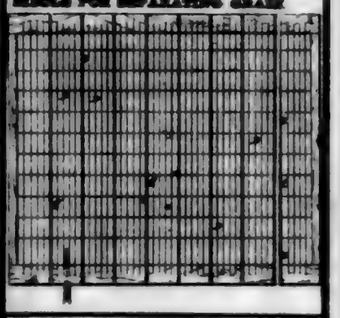


109,714. W. B. BRITTINGHAM
TANNING COMPOSITION.

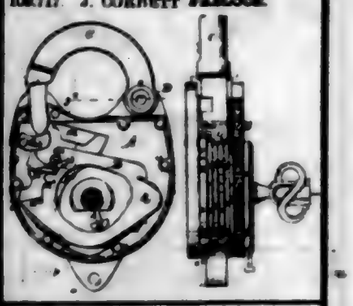
109,715. H. P. BROOKS. PLATE LIFTER.



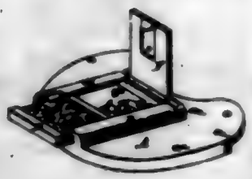
109,716. M. M. COOPER AND J. W. DONALDSON
MIDDLE FOR SEPARATING GRAIN.



109,717. J. CORBETT. PADLOCK.



109,719. J. CORBETT AND F. W. BROOKS. SEAL LOCK.



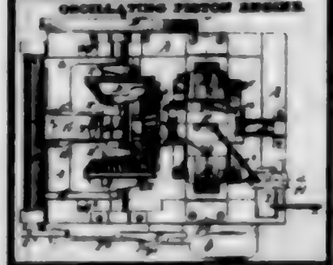
109,719 A. W. CORBIN HARROW TOOTH



109,720 J. R. DARNALL FLY BRUSH



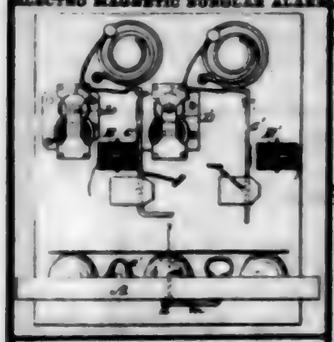
109,721 J. R. AND S. M. DAVIS OSCILLATING PISTON ENGINE



109,722 S. DEACON AND J. RUSSELL PACKING BOX FOR ROTARY STEAM CYLINDERS

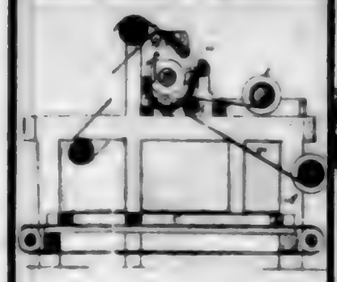


109,723 J. M. DILLE ELECTRO MAGNETIC BURGLAR ALARM

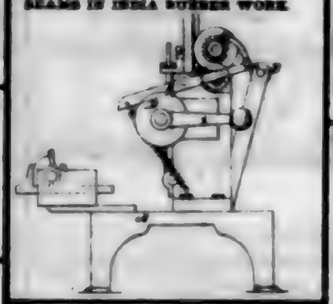


109,724 F. DUEMPELMAN CONCRETE FOR PAVING AND ROOFING

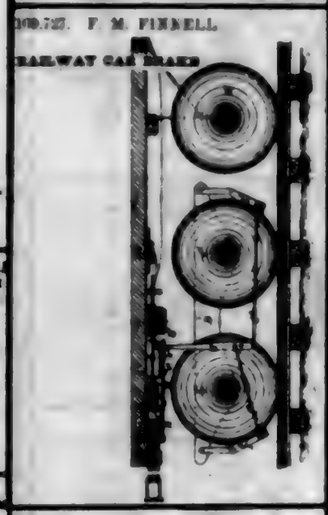
109,725 C. A. ENSIGN MACHINE FOR CUTTING SHEETS OF INDIA RUBBER



109,726 C. A. ENSIGN MACHINE FOR JOINING TUBULAR SEAMS IN INDIA RUBBER WORK



109,727 F. M. FINNELL RAILWAY CAR BRAKE

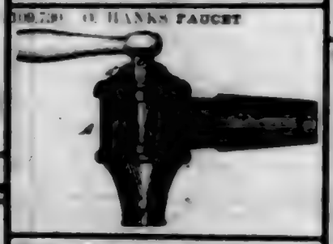


109,728 SUSPENDED

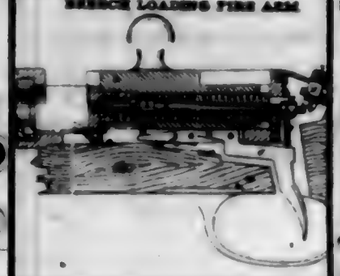
109,729 J. W. FISHER SHOE



109,730 O. HANKS FAUCET



109,731 J. HANSON BREECH LOADING FIRE ARM



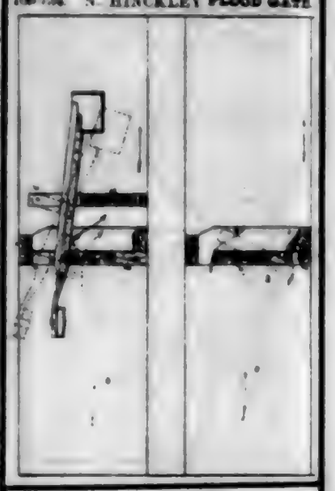
109,732 J. F. HASKINS AIR PUMP



109,733 B. B. HERRICK CLOTHES LINE FASTENER



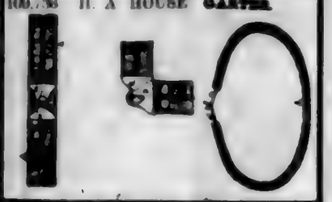
109,734 N. HINCKLEY FLOOD GATE



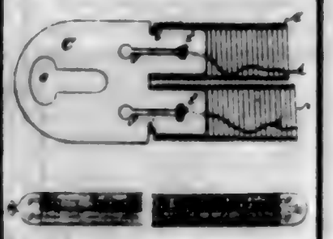
109,735 C. M. HOPKINS AND J. A. STRAIGHT SAFETY TUBE FOR LAMPS



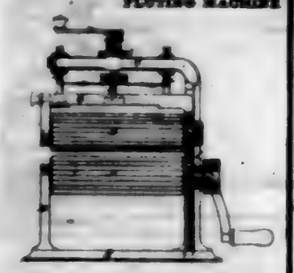
109,736 H. A. HOUSE GARTER



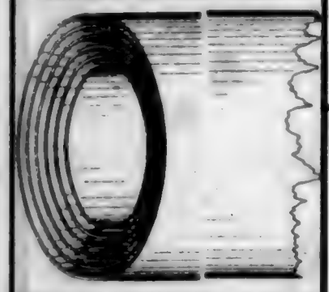
109,737. H. A. HOUSE. GARTER.



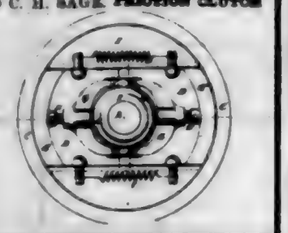
109,738. A. Y. HUBBELL. FLUTING MACHINE.



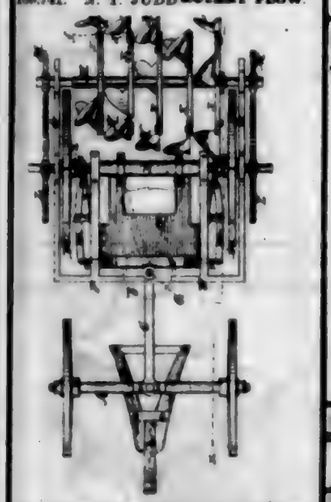
109,739. G. M. HUNTLY. PACKAGE FOR LARD, BUTTER, &c.



109,740 W. W. JEROME, S. B. ALGER AND C. H. SAGE. FRICTION CLUTCH



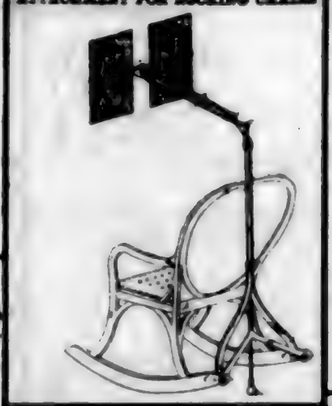
109,741. N. T. JUDD ROTARY FLOW.



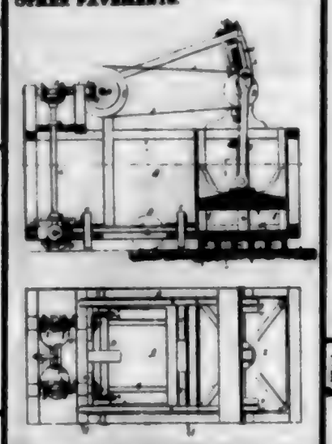
109,742. M. L. KEEN PAPER STOCK.

109,743. S. W. KIRK SEPARATING LEAD FROM THE PRECIOUS METALS.

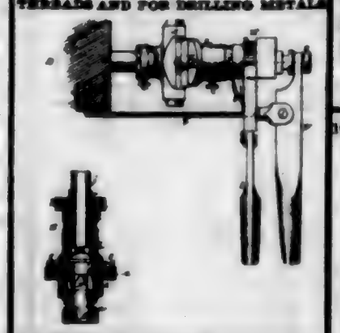
109,744 R. KNAPPL AND T. M. SCHLEIER FAN ATTACHMENT FOR ROCKING CHAIRS



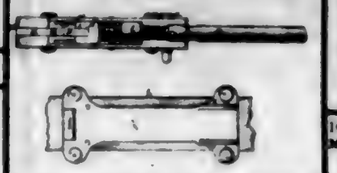
109,745. A. L. LANSING. RAMMING MACHINE FOR WOOD AND OTHER PAVEMENTS.



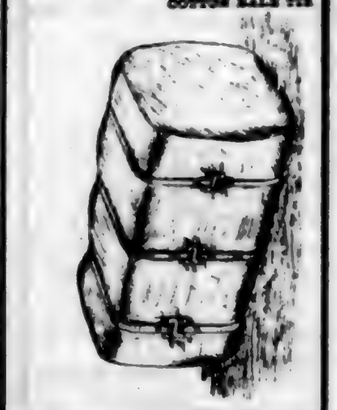
109,746. J. W. MAHLON. DEVICE FOR CUTTING SCREW THREADS AND FOR DRILLING METALS.



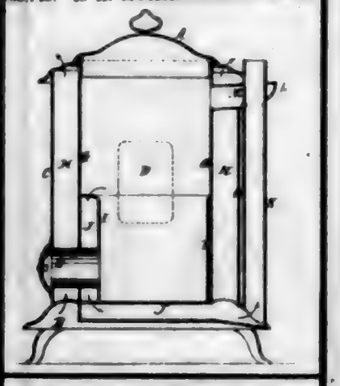
109,747. J. W. MAHLON DEVICE FOR CLAMPING OR CUTTING OFF TUBES AND RODS.



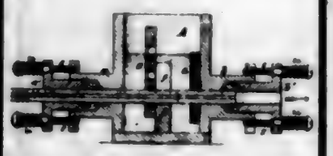
109,748. J. F. MILLIGAN. COTTON BALE TIE



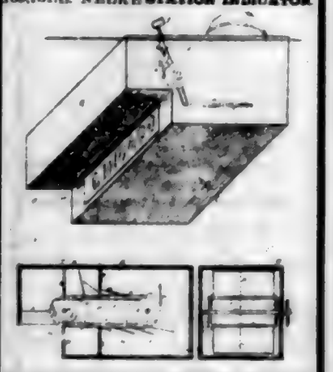
109,749. L. A. MORSEBRATING STOVE



109,750. T. H. MULLER AND H. C. BENSON MACHINE FOR VARNISHING PENCILS

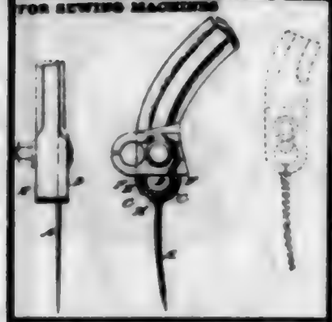


109,751. L. NELKE STATION INDICATOR.

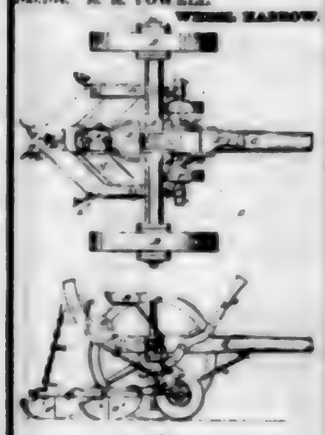


109,752. C. M. NES MANUFACTURE OF IRON AND STEEL.

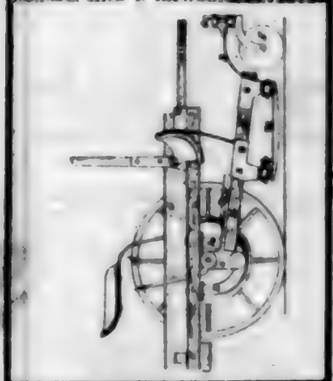
100,753. C. H. PALMER.
FEEDING AND TRIMMING CARPETING AND FOR SEWING MACHINES



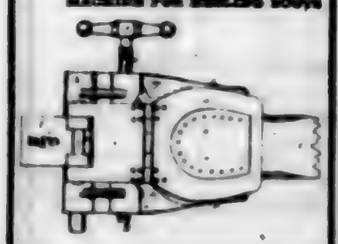
100,754. R. R. POWELL.
WIRE HARROW.



100,755 S. AND I. RAWSON. HARVESTERS.



100,756 T. K. REED AND A. H. KEITH.
MACHINE FOR BENDING HOOPS.

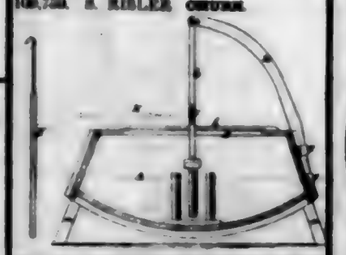


100,757. T. C. RICE.
MANUFACTURE OF PAINT.

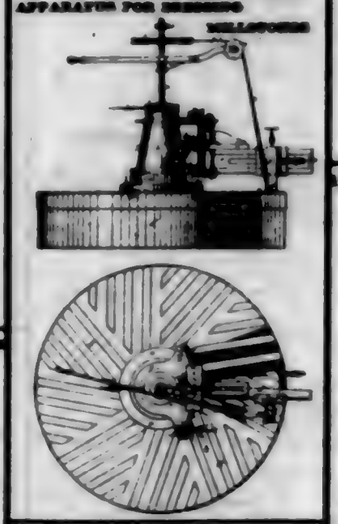
100,758. W. S. RICE. WINDOW SHADE.



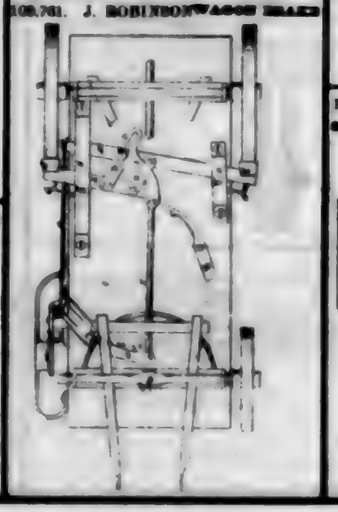
100,759. S. RIBLER. CHURN.



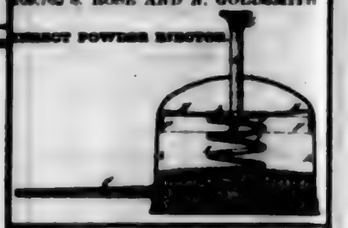
100,760 H. ROBINSON AND J. SMITH.
APPARATUS FOR BRIDGING WELLS OR SINK



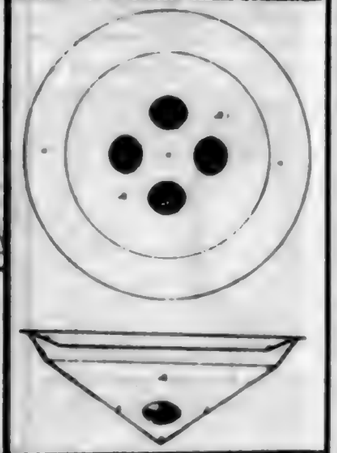
100,761. J. ROBINSON. WAGON BRAKE.



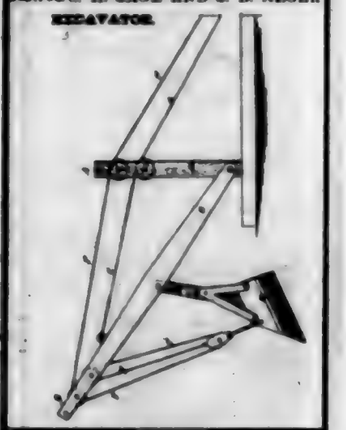
100,762 S. ROSE AND N. GOLDSMITH.
CHEMICAL POWDER EJECTOR.



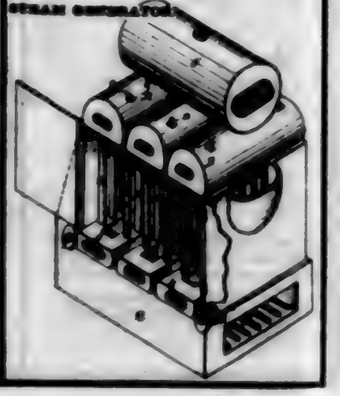
100,763. P. S. RYAN. MILK STRAINER.



100,764 C. H. SAGE AND S. B. ALGER.
EXCAVATOR.

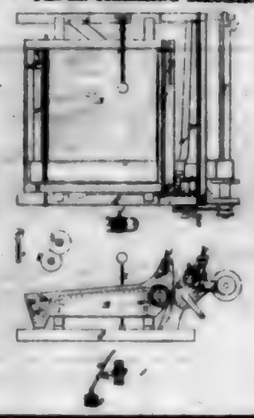


100,765. W. G. SAVAGE.
STEAM GENERATOR.



100,766. C. B. SAWYER.
MANUFACTURE OF PAPER PULP.

100,767. J. F. SCHUYLER.
PAPER TRIMMING MACHINE.

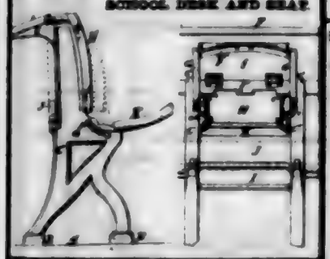


100,768 D. L. SHEPARD. ROAD SCRAPER.

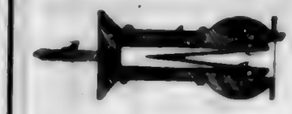


100,769. T. R. SHERRY.
FILLING FOR WOOD.

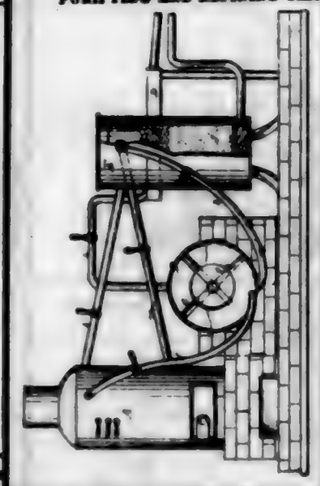
100,770. W. A. SLAYMAKER.
SCHOOL DESK AND SEAT.



100,771. O. SLIKER.
DOOR HOLDER OR CHECK.

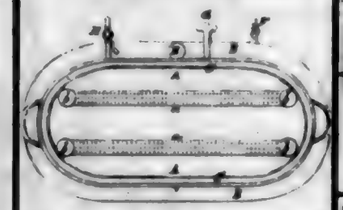


100,772. W. M. SLOANE.
PURIFYING AND REFINING OILS.



100,773. G. SMITH. PERFUMERY.

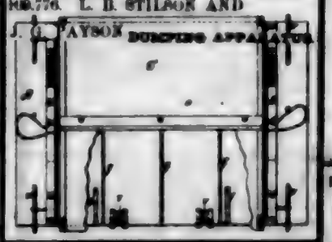
100,774. H. L. SPRAGUE AND J. N. GUYON. WAGE BOILER.



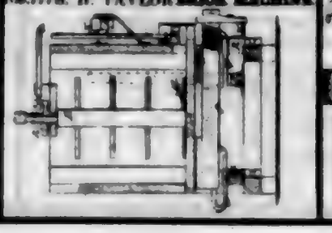
100,775. M. STEPHENS. UMBRELLA.



100,776. L. B. STILSON AND J. C. PAYSON. DUMPING APPARATUS.



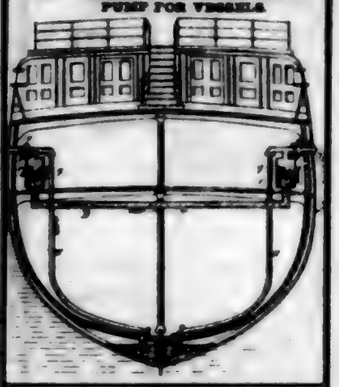
100,777 S. H. TAYLOR. BRICK MACHINE.



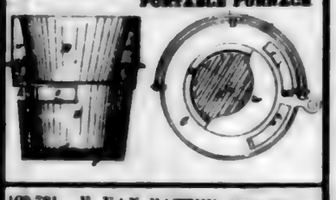
100,778. S. H. TAYLOR. BRICK MOLD.



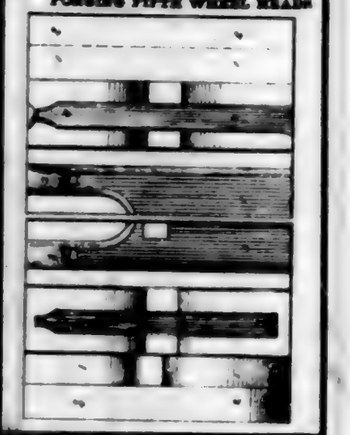
100,779. W. F. J. THIERS.
VENTILATOR, ALARM, AND BILGE PUMP FOR VESSELS.



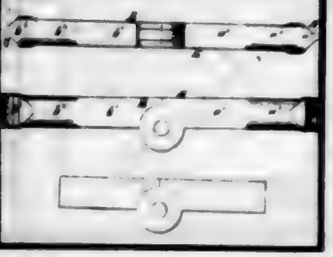
100,780. C. VAN DE MARK.
PORTABLE FURNACE.



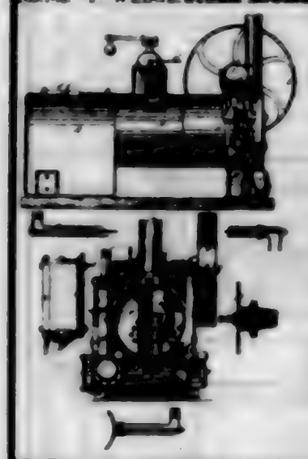
100,781. F. VAN PATTEN. DIE FOR FORGING FIFTH WHEEL HEADS.



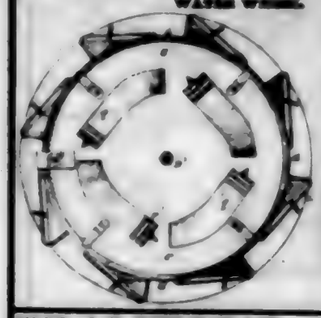
100,782. F. VAN PATTEN AND E. D. CLAPP. STUDS AND JOINT FOR CARRIAGE TOP BRACES.



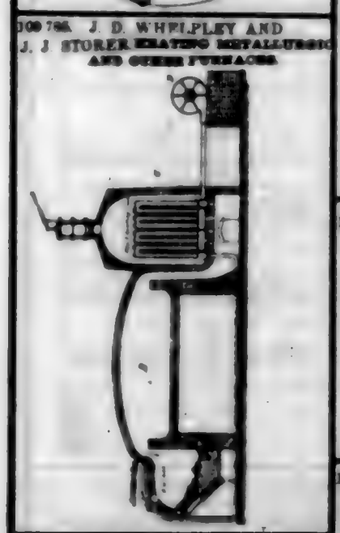
100,793. F. WEDGE, STEAM ENGINE.



100,794. G. W. WERNTZ. WATER WHEEL.



100,795. J. D. WHIPLEY AND J. J. STORER, HEATING METALLURGIC AND OTHER FURNACES.



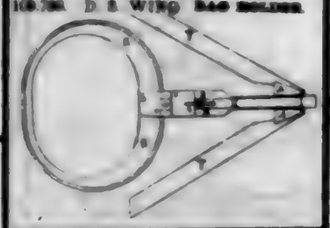
100,796. J. R. WHITE. CASTING SYPHON TRAP.



100,797. F. WICKS, ELEVATOR.



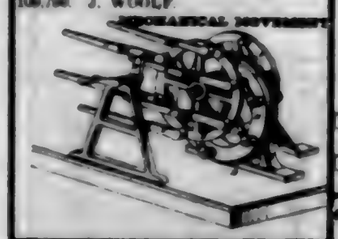
100,798. D. S. WIRO, BAG HOLDER.



100,799. R. E. WOOD. ANIMAL TRAP.



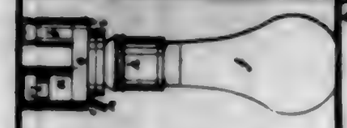
100,800. J. WOOLF. MECHANICAL MOVEMENT.



100,801. E. A. WORTHEN. DEVICE FOR MANUFACTURING METALLIC CARTRIDGE SHELLS.



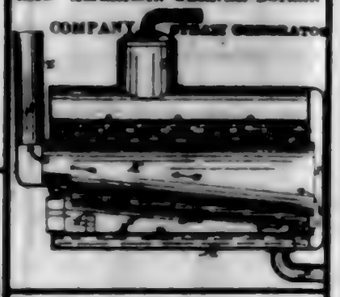
100,802. A. ZANTZINGER, HAND STAMP.



4,185. W. E. BARTON. ATTACHING METALLIC SHELLS TO STRAPS.



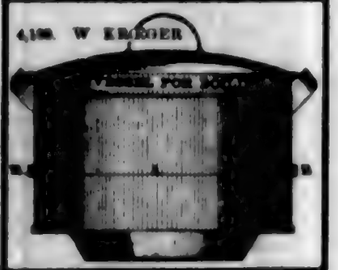
4,186. AMERICAN GERNER BOILER COMPANY. STEAM GENERATOR.



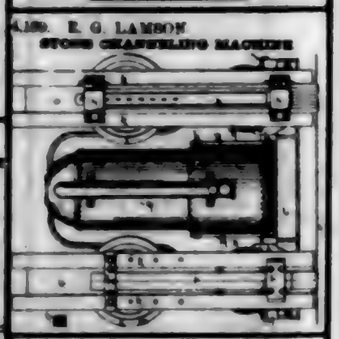
4,187. J. M. HORTON, AXLE FOR HANDLE.



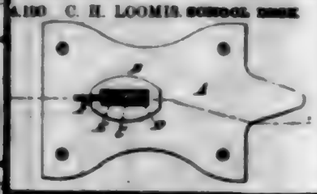
4,188. W. KRUGER. WHEEL FOR [illegible].



4,189. E. G. LAMSON. STONE CHAMFERING MACHINE.



4,190. C. H. LOOMIS, SCHOOL DESK.



4,191. H. SCOTT, SEATS FASTENING.



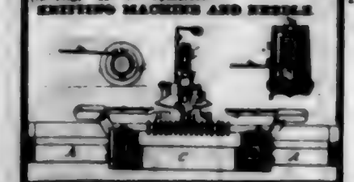
ILLUSTRATIONS OF PATENTS

ISSUED FROM

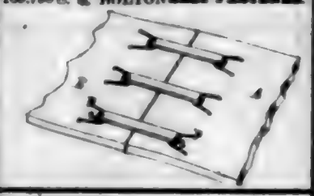
THE UNITED STATES PATENT OFFICE,

DECEMBER 6, 1870.

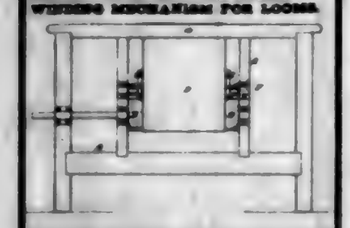
100,792. A. W. ALLEN. KNITTING MACHINE AND NEEDLE.



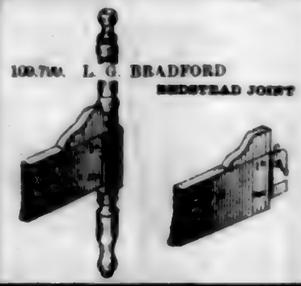
100,793. S. S. BOLTON, BELT FASTENER.



100,794. W. A. ARNOLD, CLOTH WINDING MECHANISM FOR LOOMS.



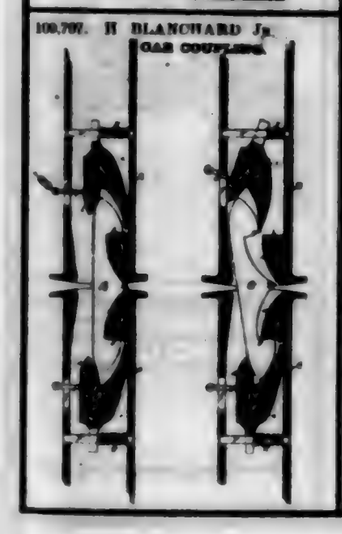
100,795. I. C. BRADFORD. BEDSTEAD JOINT.



100,796. C. D. AUSTIN, LUBRICATOR.



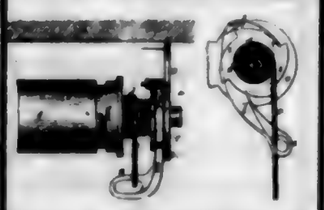
100,797. H. BLANCHARD, Jr. GAS COUPLING.



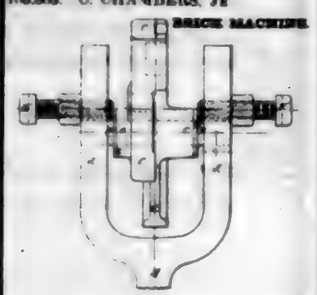
100,798. R. BERRYMAN, VALVE COCK.



100,799. J. G. BROTHWELL. CURTAIN FIXTURE.



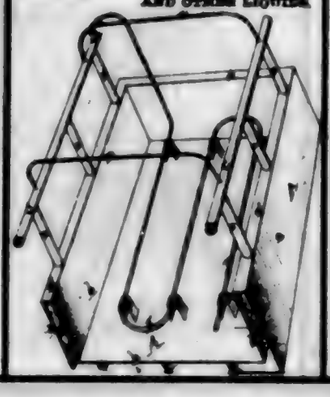
100,800. C. CHAMBERS, Jr. BRICK MACHINE.



100,801. E. L. BROWN, SASH LOCK.



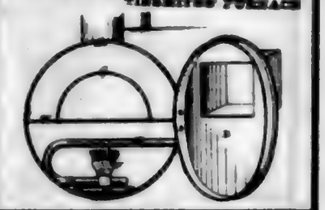
100,802. J. BUCHANAN, APPARATUS FOR EVAPORATING BRINE AND OTHER LIQUIDS.



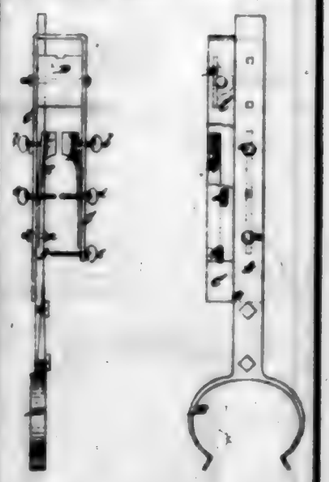
100,803. W. CHAMBERS. COTTON BALE TIE.



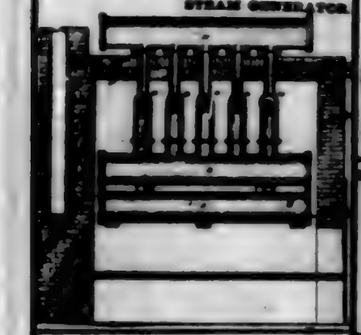
100,804. M. CONNER. TUBULAR FURNACE.



100,805. E. H. CORBIN. CIRCULAR SAW JOINTER.



109,807. L. B. CORNELL.
STEAM GENERATOR.



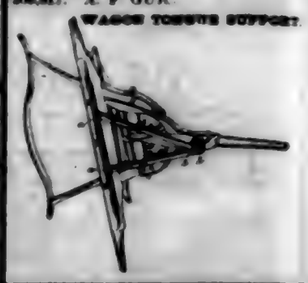
109,812. A. EHRLEMAN CULTIVATOR.



109,813. B. F. EVANS.
BARREL SAFETY VALVE OR VENT.



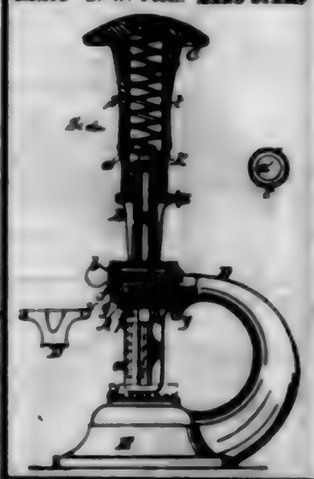
109,817. A. F. GUR.
WAGON TONGUE SUPPORT.



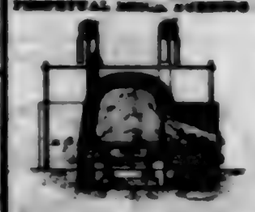
109,809. J. P. CURRY.
RAILWAY RECLINING CHAIR.



109,814. D. W. FISH. HARD STAMP.



109,815. W. GILBERT.
PERPETUAL SOLAR ASTRONOMICAL CLOCK.



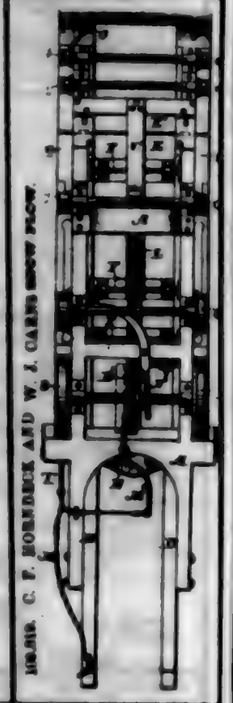
109,816. R. D. GIRD SEWING
MACHINE FOR MAKING FUSTIAN.



109,818. T. HARRISON. CARD STRIP.



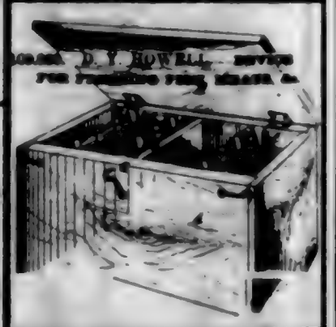
109,819. C. F. HORNBECK AND W. J. CARD SEW PLOW.



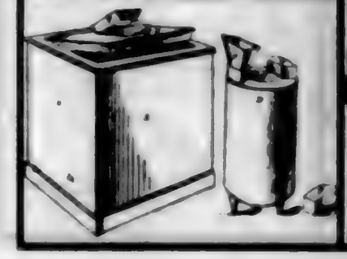
109,810. H. DICKINSON.
WASHING MACHINE.



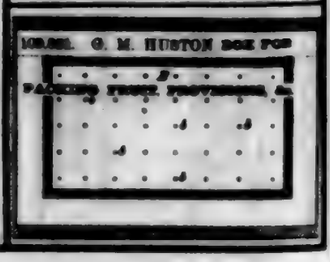
109,820. D. Y. HOWELL. DEVICE
FOR FASTENING PIPES, SHAFTS, &c.



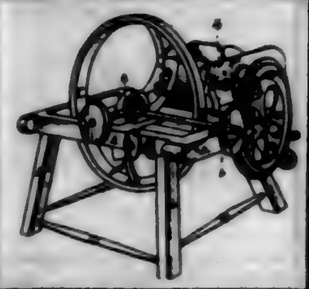
109,811. H. F. EBERT. CONDENSATOR.



109,821. C. M. HUSTON. BOX FOR
PACKING FRUIT, PROVISIONS, &c.



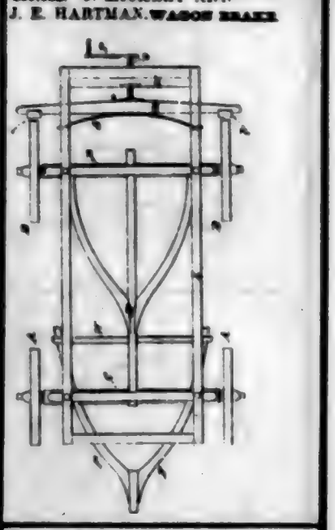
109,822. W. HUTCHINSON. CUTTER.



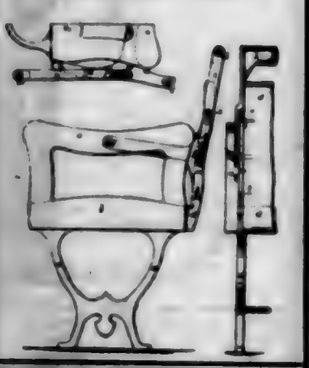
109,827. J. LEHMAN. POCKET BOOK.



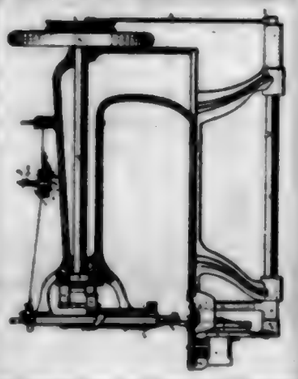
109,822. J. MICKLEY AND
J. E. HARTMAN. WAGON BRAKE.



109,823. E. M. JUDD.
HEAD REST FOR CAR SEATS.

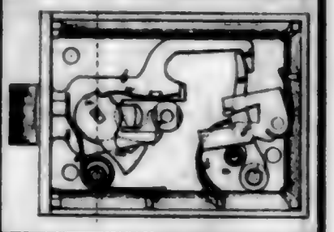


109,828. T. A. MACAULAY.
SEWING MACHINE.



109,833. J. W. MORGENEIER. VARNISH
FOR COATING PHOTOGRAPHIC
NEGATIVES.

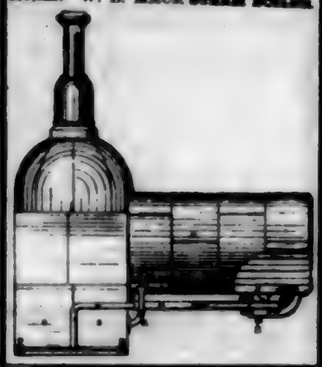
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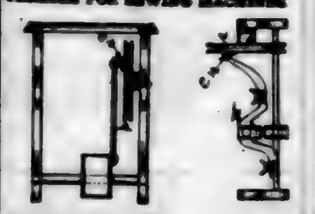
109,825. W. M. KIRCHNER. GLASS
CUTTER.



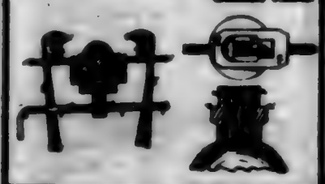
109,830. W. B. MACK. STEAM BOILER.



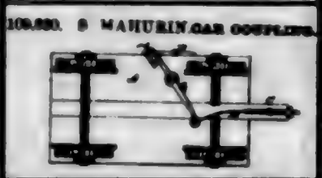
109,835. A. NIELSON.
TREADLE FOR SEWING MACHINES.



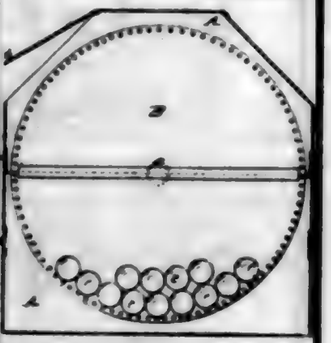
109,826. W. M. KIRCHNER. TOOL
FOR FORMING SCREW THREADS ON
GLASS RODS.



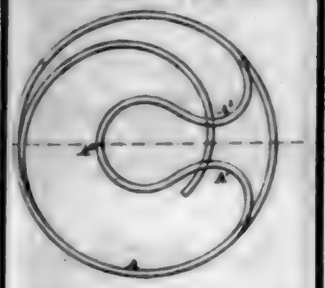
109,830. S. MAHURIN. CAR COUPLING.



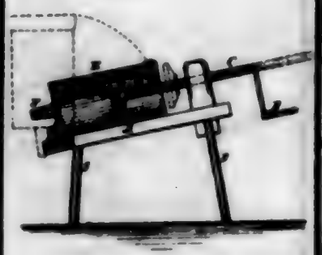
109,836. L. B. OSGOOD.
WASHING MACHINE.



109,831. C. KLINE.
HAIR STUFFING OF WAGONS, &c.



109,831. J. MICKLEY AND
J. E. HARTMAN. SAUSAGE STUFFER.



109,837 G. PADDINGTON COMB PLATE

109,838 J. D. PIERCE AND J. B. SMITH
STOVE PIPE THIMBLE

109,839 H. RAYMOND
GRAIN SEPARATOR

109,840 G. RAYMOND
WASHING MACHINE

109,841 S. O. ROLLINS BUR MILL

109,842 S. BOWELL
CARRIAGE AXLE AND AXLE TREE

109,843 G. W. SANBORN WAGON BRAKE

109,844 F. SANDHAM
MACHINE FOR STAMPING, PUNCHING, AND PUNCHING HORSESHOE BLANK

109,845 S. W. SHOREY
LAST FOR BOOTS AND SHOES

109,846 W. SMEEDSHAFT COUPLING

109,847 G. SMITH MILKING STOOL

109,848 J. H. SMITH
APPARATUS FOR THE MANUFACTURE OF GAS FROM HYDROCARBONS

109,849 O. E. STEDMAN BUCKLE

109,850 J. STOKES PEG FOR BRAKE

109,851 L. P. SUMMERS
MACHINE FOR COUNTERSINKING THE MORTISE IN NUT BINDER

109,852 C. VALKMAR BED BOTTOM

109,853 J. W. WATTLES

109,854 P. WELCH
MACHINE FOR TURNING BARRELS

109,855 W. WELLS SPRING HOOK

109,856 H. J. WHITE LANTERN

109,857 D. WHITELEY
PROCESS OF SEPARATING THE HAIR FROM THE WARP IN HAIR CLOTH

109,858 WILSON AND F. P. GRIMES
WIRE FENCE

109,859 R. L. ALLEY AND T. W. SHAPLEIGH

109,860 C. R. ANDERSON

109,861 R. C. ANDRUS

109,862 H. P. BAKER

109,863 O. A. BENTON HAT BLOCK

109,864 G. BONNER ATTACHING LAMP FOUNTS TO BRACKETS
CHANDELIERS, &c.

109,865 J. H. BROOKMIRE
APPARATUS FOR CLEANING AND POLISHING OYSTER

109,868 W. BROWN. FEEDING ROLLER.



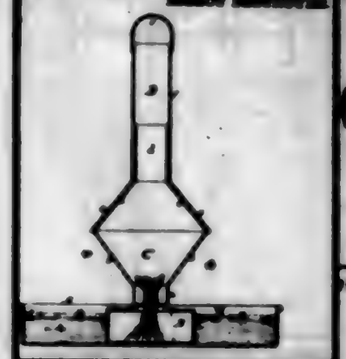
109,867. J. H. BUNNELL. AXE AND PICK.



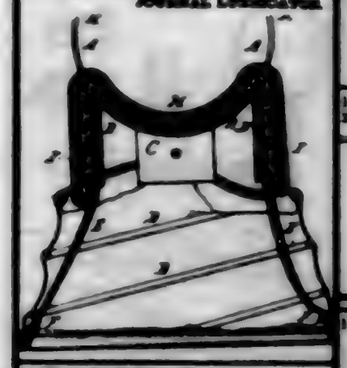
109,869. G. G. BURGE. BULL NOSE, SQUARE, ADJUSTABLE.



109,870. T. BYRNE AND D. STRUNK. FEEDING DEVICE FOR STEAM BOILERS.



109,871. J. A. COWLES. JOURNAL LUBRICATOR.



109,872. C. M. CRESSON. SEASONING AND PRESERVING WOOD.

109,873. C. M. CRESSON. SEASONING AND PRESERVING WOOD.

109,874. C. M. CRESSON. TREATING AND RECOVERING THE LIQUIDS USED IN SEASONING AND PRESERVING WOOD.

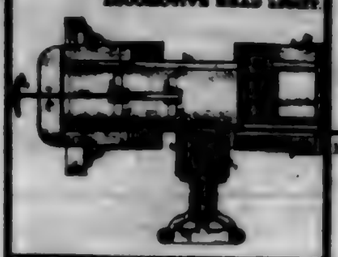
109,875. W. H. DAGGETT. BREAD PAN.



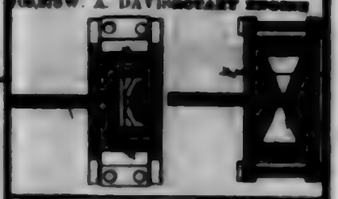
109,876. I. N. DAIN. PULLING GEAR.



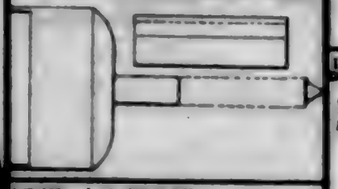
109,877. S. M. DAVIES. LOCOMOTIVE HEAD LIGHT.



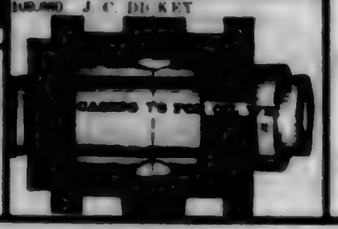
109,878. W. A. DAVIS. CUTTER HEAD.



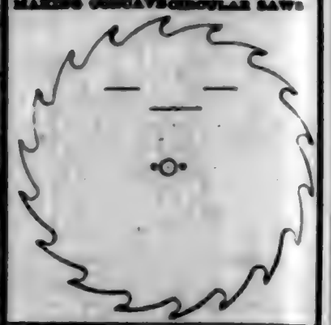
109,879. M. DE MONTUFAR. INSULATOR FOR TELEGRAPH WIRES.



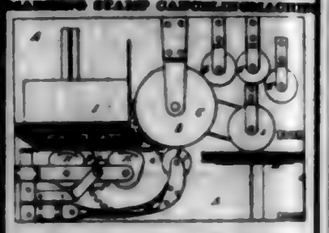
109,880. J. C. DICKEY. CASING TO PUMP GEARS.



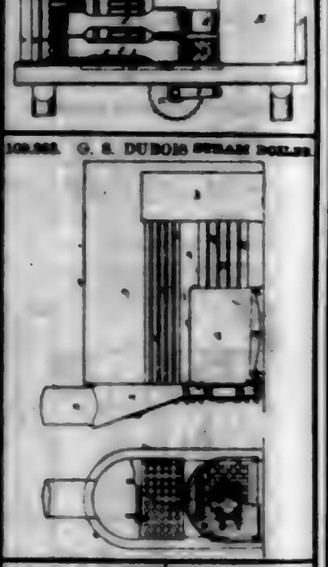
109,881. T. S. DISSTON. PROCESS FOR MAKING CONCAVE CIRCULAR SAWS.



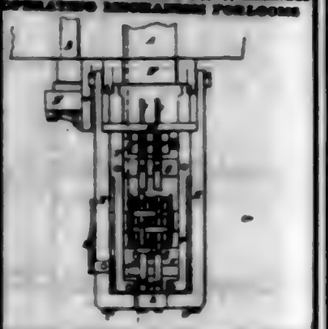
109,882. C. R. DONNELLAN. POST MACHINE FOR SAWING GAINS, CHAMFERS, MORTICES, AND TENONS.



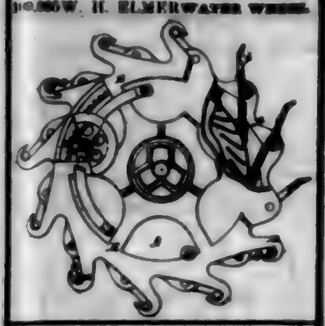
109,883. G. S. DUBOIS. STEAM BOILER.



109,884. J. C. DUCKWORTH. HARNESS OPERATING MECHANISM FOR LOOMS.



109,885 W. H. ELMERWATER. WHEEL.

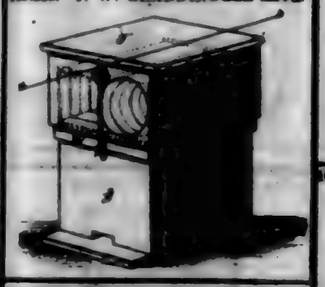


109,886 M. G. FREEMAN. CULVERT.

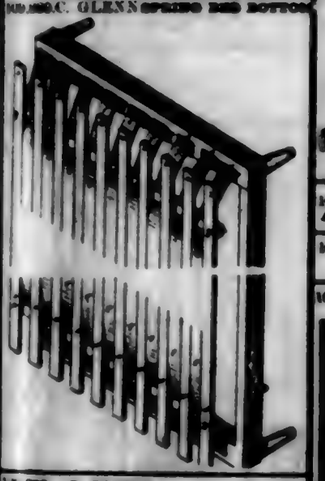


109,887. C. H. FRINGS. SACCHARIFYING MASH FOR GRAIN.

109,888. J. W. GLADDING. BEE HIVE.



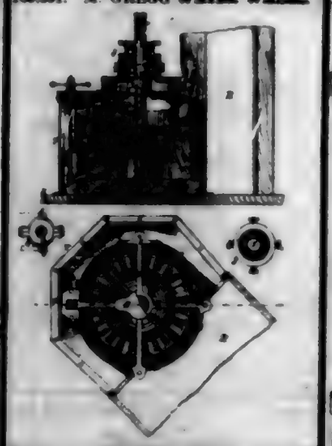
109,889 C. GLENN. SPRING BED BOTTOM.



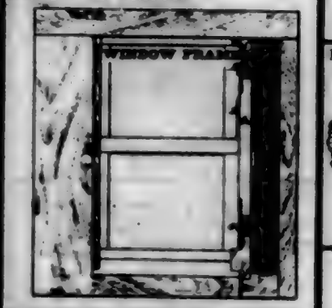
109,890 C. GREEN. BREECH LOADING FIRE ARM.



109,891. M. GREGG. WATER WHEEL.



109,892 W. H. GRIFFIN. WINDOW FRAME.



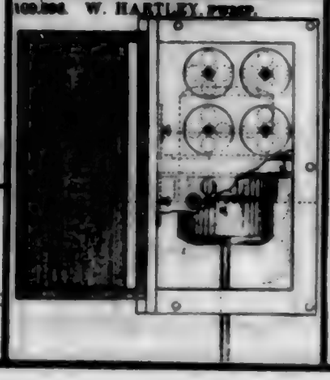
109,893. T. GUICE. COTTON PLOW.



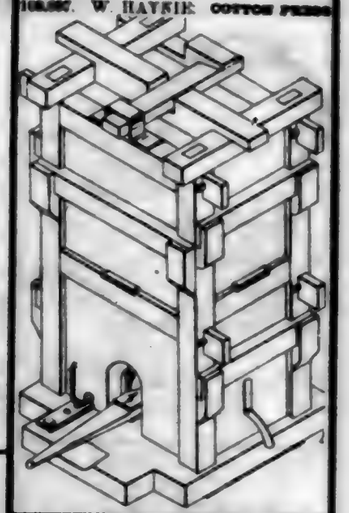
109,894. W. HAINSWORTH. MOLD AND CORE FOR METALLIC CASTINGS.

109,895. O. P. HARRIS. MEDICAL COMPOUND.

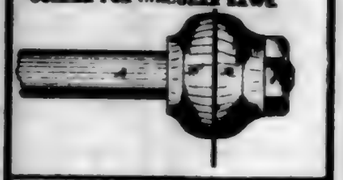
109,896. W. HARTLEY. PUMP.



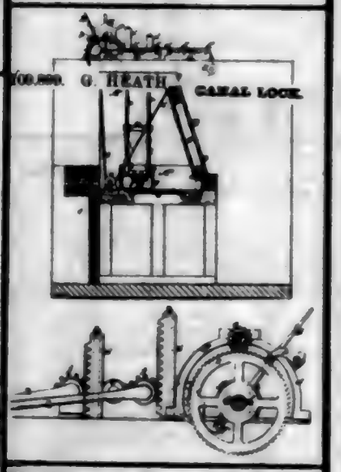
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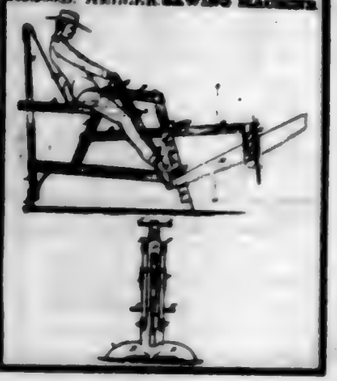
109,898. J. B. HEALD. COLLAR FOR CIRCULAR SAWS.



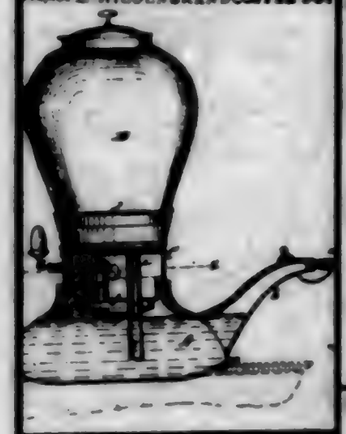
109,899. G. HEATH. CANAL LOCK.



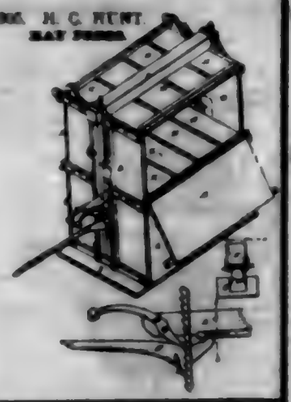
109,900 D. HEILER. SAWING MACHINE.



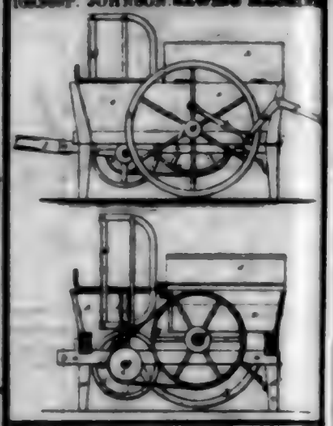
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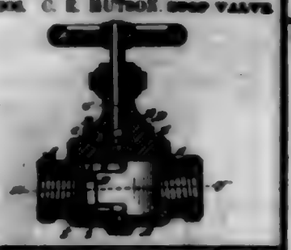
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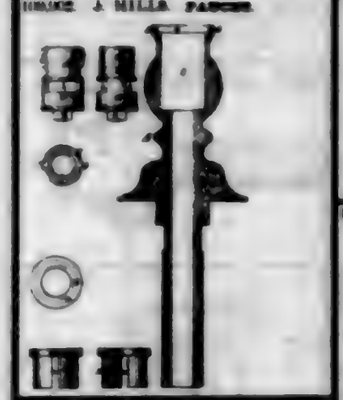
100,906 P. JOHNSON SAWING MACHINE



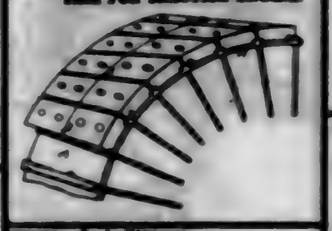
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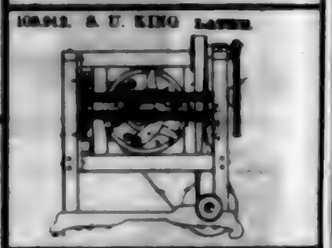
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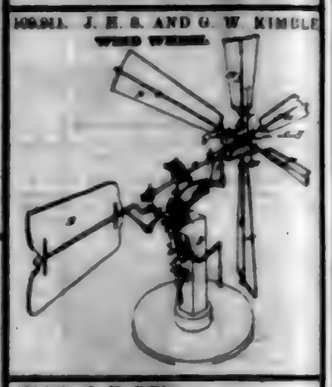
100,909 O. HYDE HOOD FOR DRAFTING HOUSES



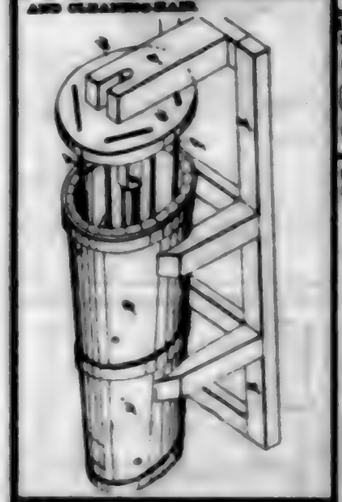
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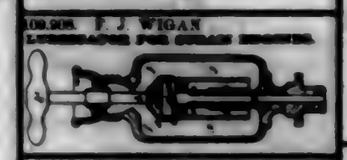
100,911 J. H. S. AND G. W. KIMBLE WIND WHEEL



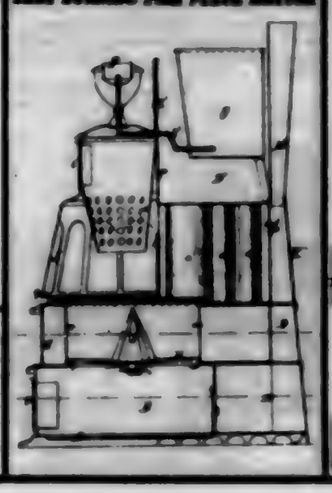
100,912 G. P. HOLLOWAY AND W. J. HUEY MACHINE FOR BRAIDING AND CLEANING HAIR



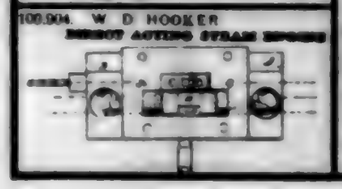
100,913 F. J. WIGAN LUBRICATOR FOR STEAM ENGINES



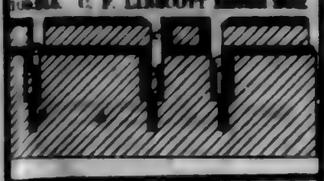
100,914 J. JARDER BASE BURNING STOVE FLUE HEATER



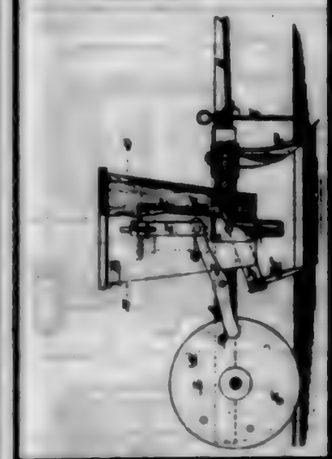
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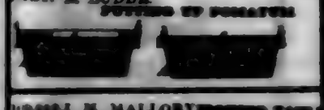
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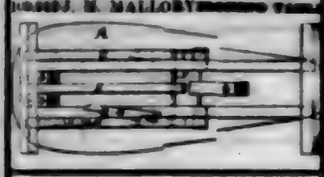
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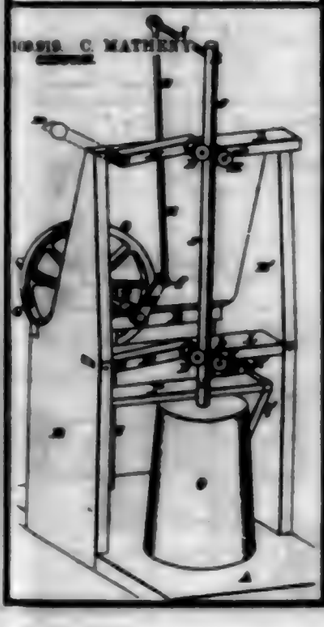
100,918 E. LUDDE SUPPORT FOR BOILERS



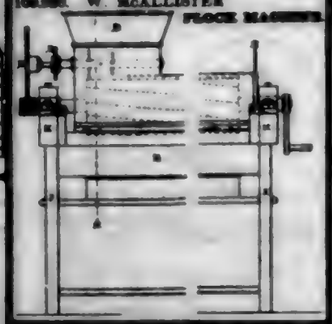
100,919 J. H. MALLORY BRAIDING TABLE



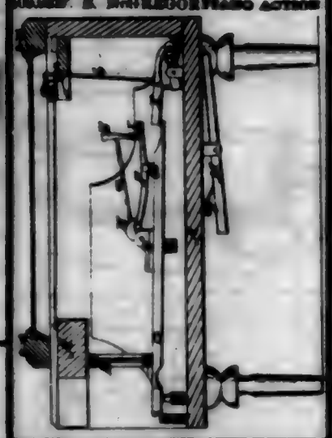
100,920 C. MATHENY



100,921 W. McALLISTER FLOUR MACHINE



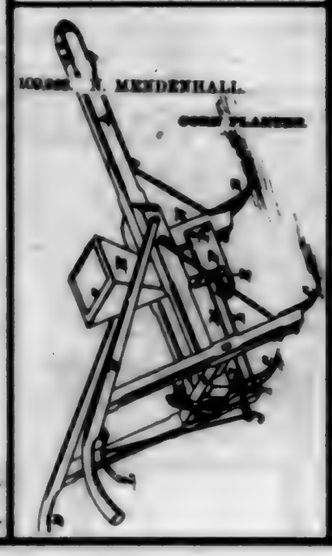
100,922 P. McGREGOR FEED ACTUATOR



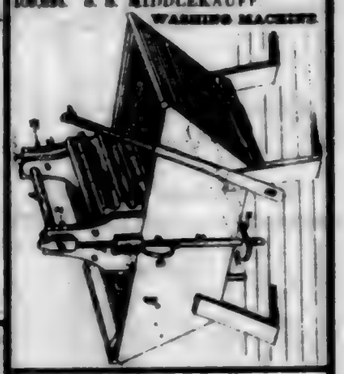
100,923 W. McINTYIRE PADLOCK



100,924 N. MENDENHALL PIPE PLANTER



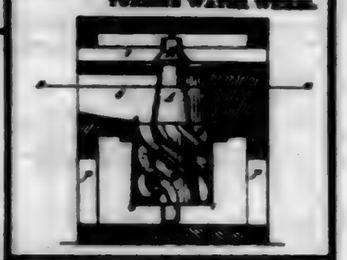
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100,926 M. MILLARD WAGON WHEEL



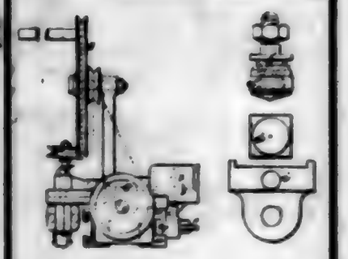
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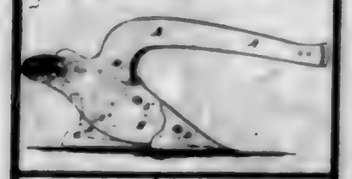
100,928 F. B. MORSE TRUCK COUPLING



100,929 J. L. NORTON APPARATUS FOR DRESSING AND FURROWING MILLSTONES



109,929 J. K. ODELL AND W. S. LITTLE. CAST IRON PLOW.



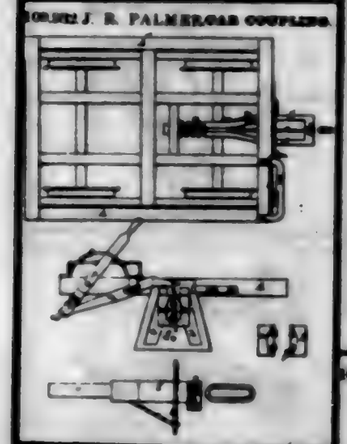
109,930 T. ORCHARD. CARTRIDGE FOR BREECH LOADING FIRE ARMS.



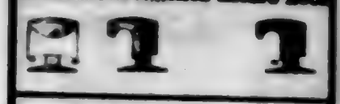
109,931 W. L. PAGE. METALLIC CARTRIDGE.



109,932 J. R. PALMERGAR. COUPLING.



109,933 A. PATTERSON. LACING HOOK.



109,934 E. PHILLIPS. CORN PLOW.



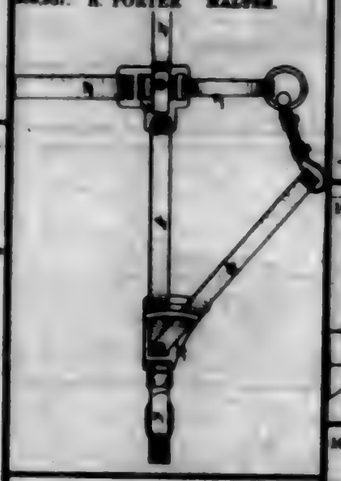
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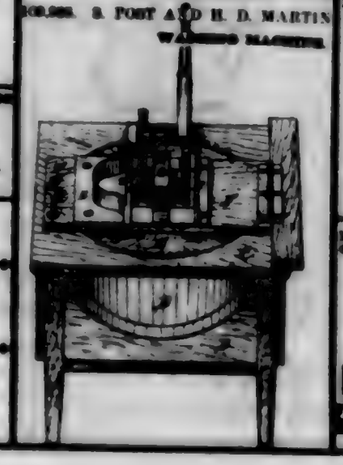
109,936 H. G. PORTER. BOBBIN PLANTER.



109,937. R. PORTER. HALTER.



109,938. S. POST AND H. D. MARTIN. WASHING MACHINE.



109,939. A. POTTS. LETTER BOX.



109,940. T. PRICE. COKE FURNACE.



109,941. P. PUETZ. BUCKLE.



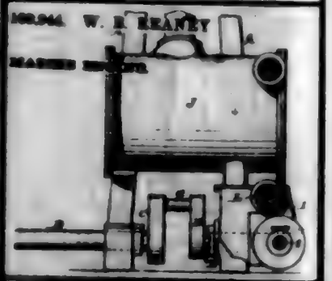
109,942. A. D. PUFFER. APPARATUS FOR COOLING SODA WATER AND OTHER LIQUIDS.



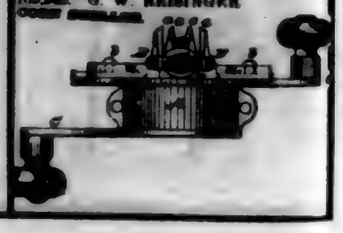
109,943. J. C. RANKIN. WAGON SEAT FASTENING.



109,944. W. B. REANEY. MARBLE MACHINE.



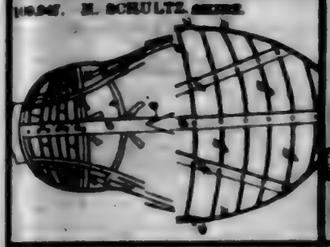
109,945. G. W. REBINGER. CORN PLANTER.



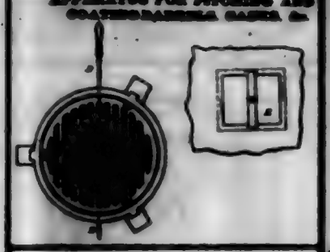
109,946. R. ROCKWELL AND Z. R. CUSTER. SCRUBBING BRUSH.



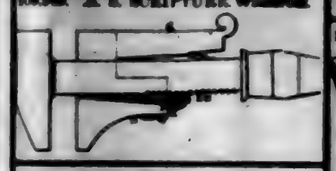
109,947. H. SCHULTZ. SEINE.



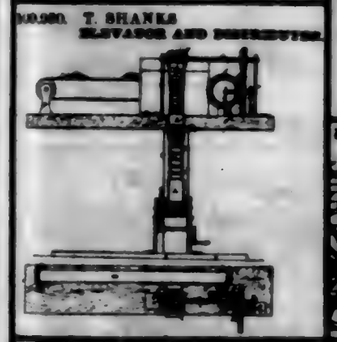
109,948. L. SCHULZE. APPARATUS FOR STUFFING AND COASTING SAUSAGE SKINS, &c.



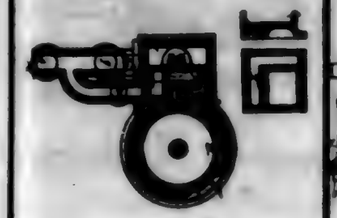
109,949. E. S. SCRIPTURE. WRENCH.



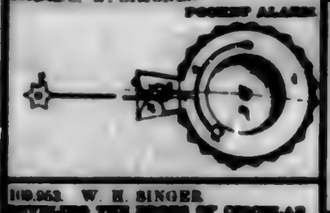
109,950. T. SHANKS. ELEVATOR AND DISTRIBUTOR.



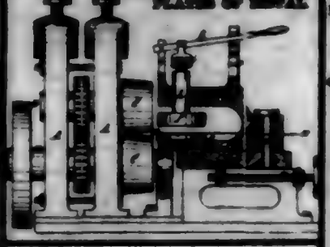
109,951. S. F. SHELBOURNE AND C. E. EMERY. RECOIL ACTING BRAKE.



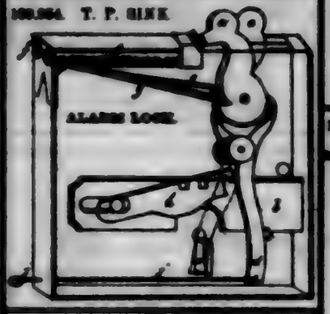
109,952. C. W. SIMONDS. POCKET ALARM.



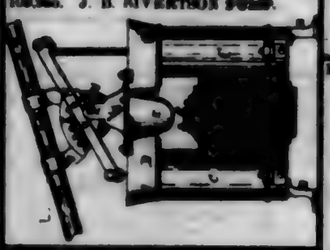
109,953. W. H. SINGER. MEANS FOR THE BENDING OF CIRCULAR PLATES OF METAL.



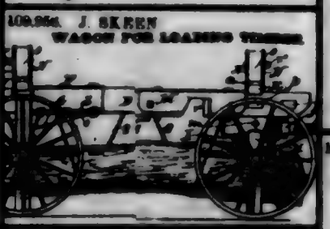
109,954. T. P. SIXE. ALARM LOCK.



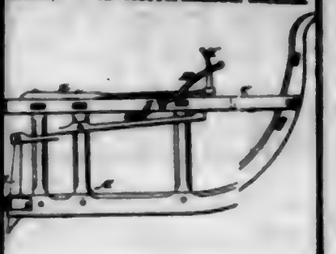
109,955. J. B. SIVERTSON. PUMP.



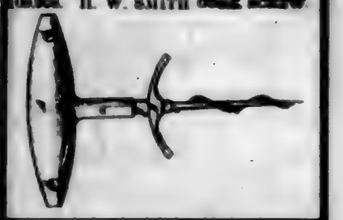
109,956. J. SKEEN. WAGON FOR LOADING TIMBER.



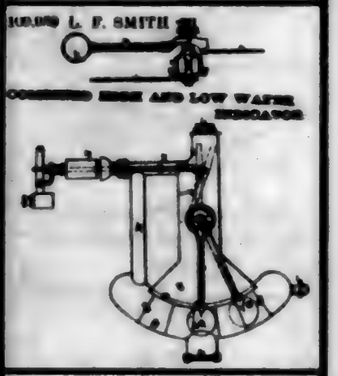
109,957. J. A. SMITH. CARRIAGE BRAKE.



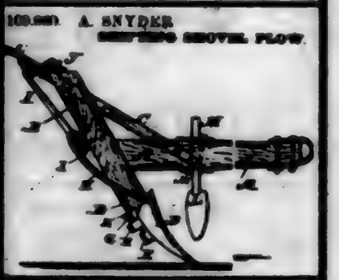
109,958. H. W. SMITH. CORE SCREW.



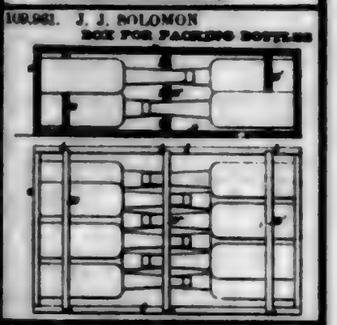
109,959. L. F. SMITH. CONDENSED MILK AND LOW WATER INDICATOR.



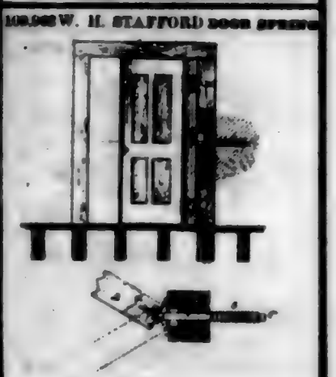
109,960. A. SNYDER. SHIFTING SHOVEL PLOW.



109,961. J. J. SOLOMON. BOX FOR PACKING BOTTLES.



109,962 W. H. STAFFORD. DOOR SPRING.



109,969. W. J. STEVENS

109,970. J. M. THATCHER SPOUT GRATE

109,971. J. H. THORP. ALARM ATTACHMENT

109,972. J. TURNER AND S. WOODWARD WATER WHEEL

109,973. L. P. TEED ENGINE POWER

109,974. N. VANDENBERG ROTARY ENGINE

109,975. W. P. VAN DEURSEN FIRE EXTINGUISHER

109,976. J. R. VAN DYNE FIRE EXTINGUISHER

109,977. S. S. VOLLUM AND W. H. GREEN CARRIAGE WHEEL LUBRICATOR

109,914. C. A. STOCK BRAKE BANDS

109,915. R. F. STOCKING AND C. P. GREENE RED GATE FOR WAGONS

109,916. R. F. STOCKING AND C. P. GREENE RED GATE FOR WAGONS

109,917. J. VAN ANTWERP CLEVIS FOR SLED

109,978. C. C. WARREN AND E. BALDY MACHINE FOR POLISHING COFFEE

109,979. R. L. WEBB TWINE HOLDER

109,980. G. M. WEINMANSDORF PUMP

109,981. E. WELLS. LANDAULET CARRIAGE

109,982. A. O. WHEELER. MODE OF SETTING TIRES OF WHEELS

109,983. G. H. WHITEFORD BASKET

109,984. A. J. WHITNEY CANAL WASTE WAY AND SLUICE GATE

109,985. J. H. WHITNEY COMBINED GRAIN HARVESTING AND REPER

109,986. R. A. WILLIAMS [illegible] RIVE

109,987. H. A. WILLIS. MACHINE FOR POMPING HAIR

109,988. N. WONLARLARSKY SOWING MACHINE

4,192. A. A. WOOD WATCH CASE

4,193. W. ZINSSER. COMPOUND FOR TREATING MALT LIQUORS

109,991. C. DELAMAR. MANUFACTURE OF SUGAR OR SYRUP FROM SWEET POTATOES

109,992. A. W. HART AQUATIC TOY

4,195. J. BARCLAY MANUFACTURE OF PLATED METAL BRACELET

4,196. DEDERICK HARVESTING COLLAR

4,194. H. H. SCOVILLE. HARVESTER RAKE

4,196. E. L. TOMLINSON TRIP RAIL

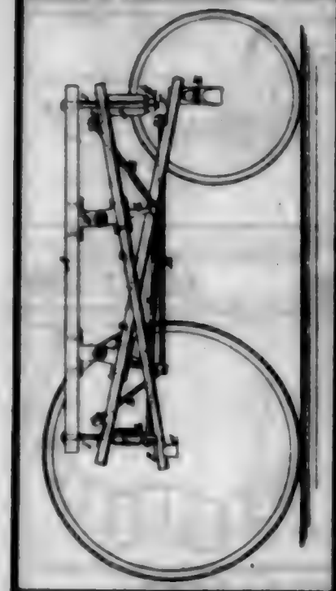
ILLUSTRATIONS OF PATENTS

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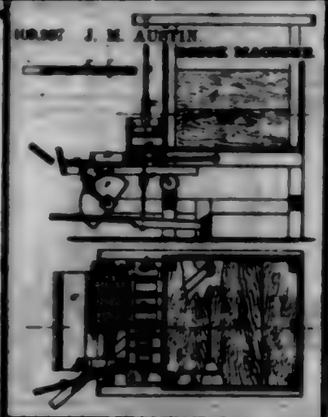
THE UNITED STATES PATENT OFFICE

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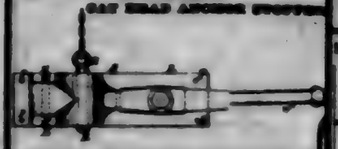
110,001 S. ABBOTT CARRIAGE SPRING



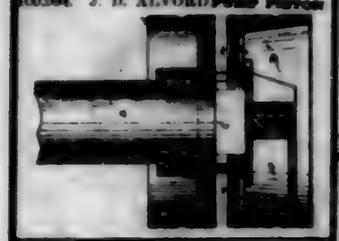
110,002 J. M. AUSTIN ROCK MACHINE



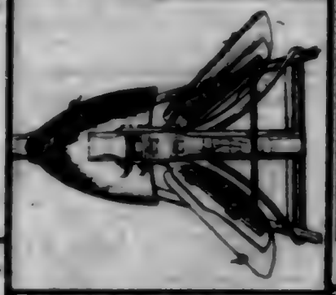
110,003 W. H. BARKER CAST HEAD ANCHOR FLUKE



110,004 J. D. ALVORD FORGE PISTON



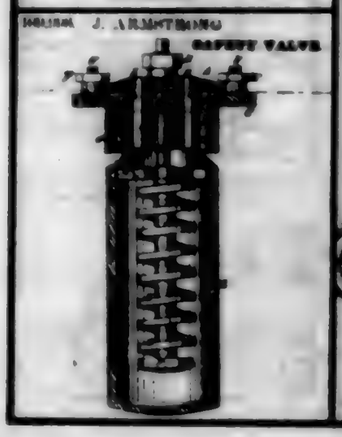
110,005 I. A. BENEDICT GROOVE PLOW



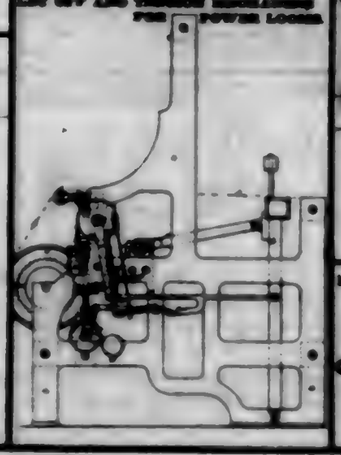
110,006 R. A. ARMSTRONG



110,007 J. ARMSTRONG REPEAT VALVE



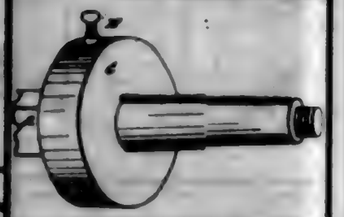
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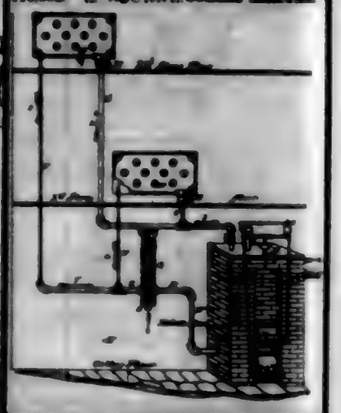
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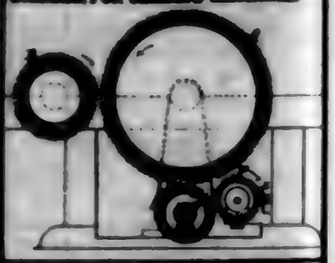
110,010 G. P. BLAISDELL



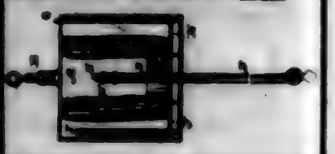
110,011 E. BOURNE STEAM HEATER



110,012 I. W. BOYNTON



110,013 J. H. BROWN



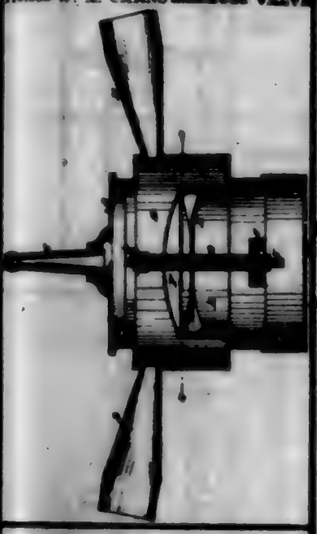
110,008 J. BULLARD ADJUSTABLE BRACKET FOR CARRIAGE SPRINGS



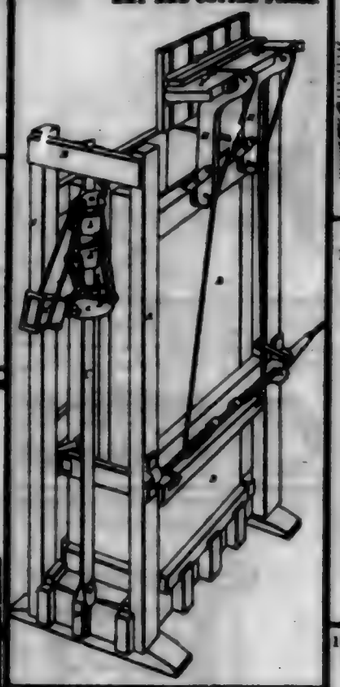
110,009 C. S. CARR TOOL CHEST



110,010 W. A. CARNS STEAM VALVE



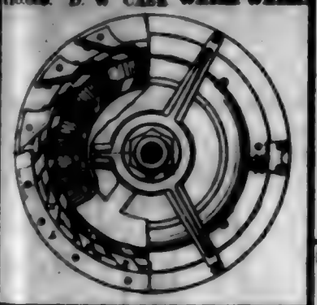
110,011 N. CHAPMAN HAT AND COTTON PRESS



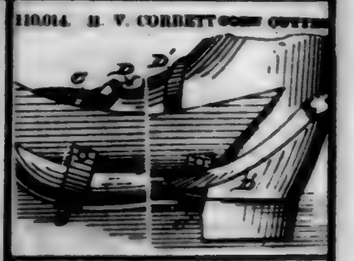
110,012 P. CUCKER WOVEN FINISHED FABRICS



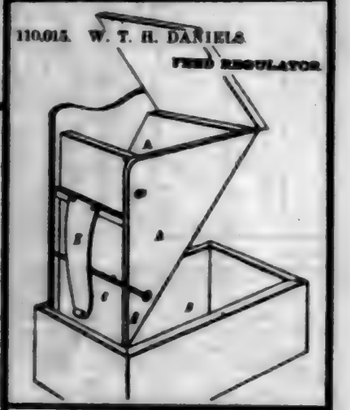
110,013 D. W. CASE WATER WHEEL



110,014 H. V. CORBETT CORN CUTTER



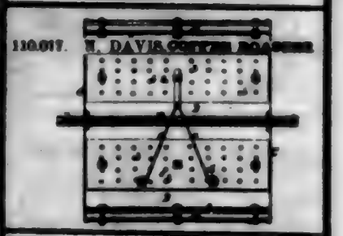
110,015 W. T. H. DANIELS FEED REGULATOR



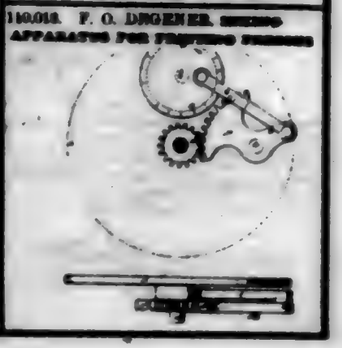
110,016 J. H. DAVIS ALARM ATTACHMENT FOR CLOCKS



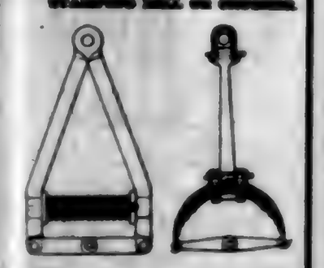
110,017 H. DAVIS CUTTER BOARDS



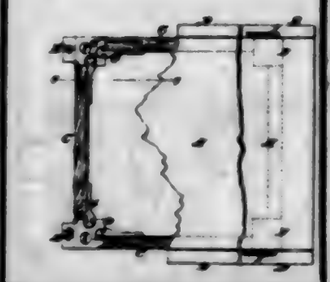
110,018 F. O. DEGENER



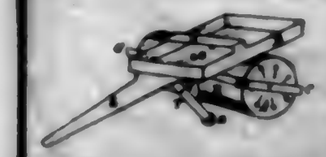
110,019 G. F. CASE



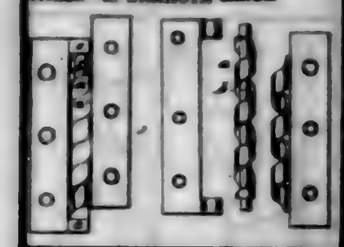
110,020 G. J. CONGLE PANEL



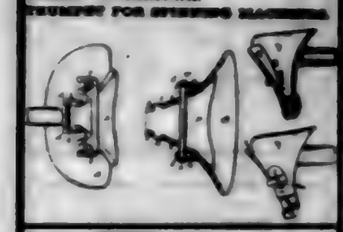
110,040. G. C. DOLPH, Land Roller.



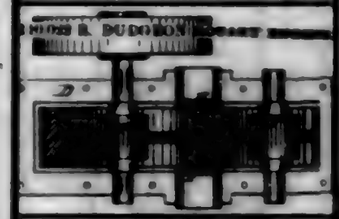
110,041. R. DRAHOTA, Sewer.



110,042. G. DRAPER.



110,043. R. DUDGEON, Steam Engine.



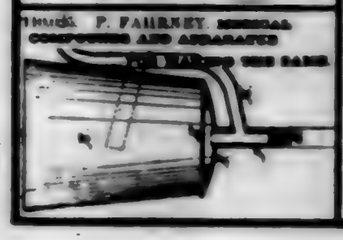
110,044. J. A. ELLIOT, Machine for Mixing Tire Material.



110,045. W. H. ELLIOT, Machine for Loading Tires.



110,046. P. FAHRNEY, Method of Compounding and Aerating Dough.

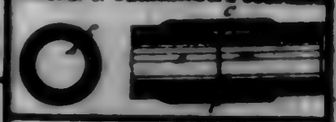


110,047. W. H. FARRERY, Door Stop.

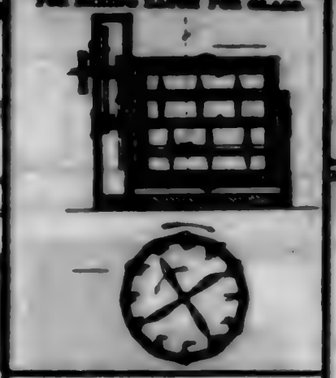


110,048. F. W. GERDES, Manufacture of Paints.

110,049. C. C. GERMAIN, Conduit.



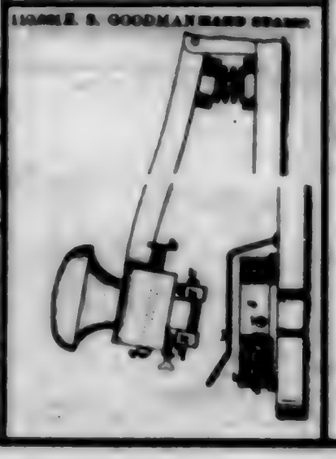
110,050. W. T. GILLINDER, Machine for Blowing Shades for Glass.



110,051. R. GIROUX, Means of Attaching Boot and Shoe Soles.

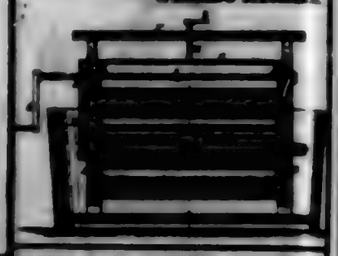


110,052. E. S. GOODMAN, Hand Stamp.

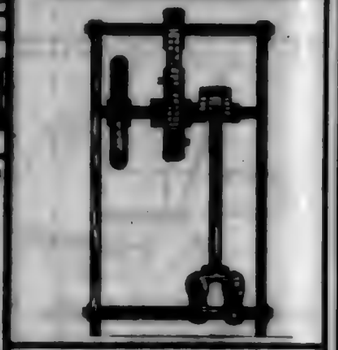


110,053. J. GORMAN, Stamp for Printing Purposes.

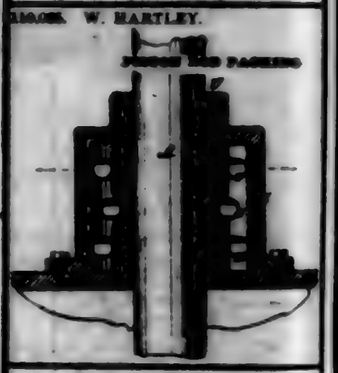
110,054. D. C. HARLOW, Washing Machine.



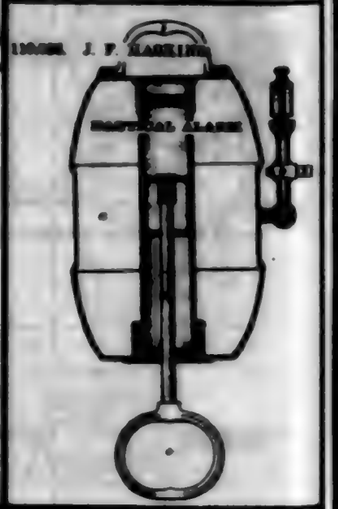
110,055. A. W. HARRIS, Device for Raising Sinking Machines.



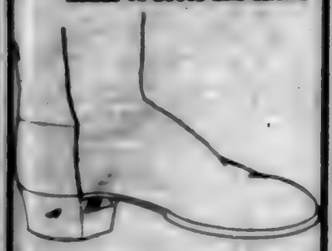
110,056. W. HARTLEY.



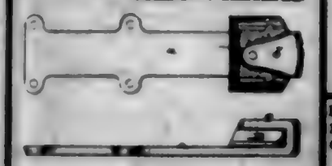
110,057. J. P. HASKINS, Electrical Alarm.



110,057. C. H. HELME, Means of Attaching Composition Heels to Boots and Shoes.



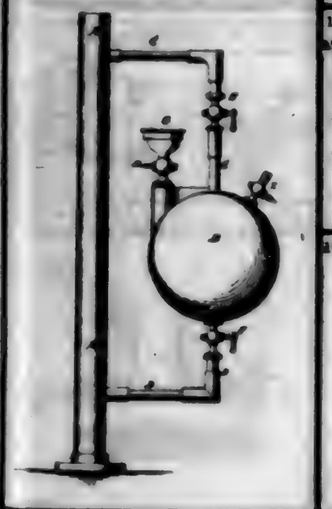
110,058. J. HERALD, Cores for Castings.



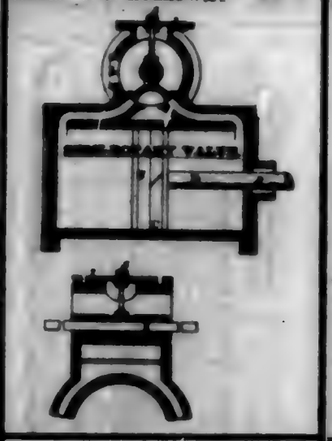
110,059. E. M. HERMANCE, Culinary Vessel.



110,060. M. NEIMAN, Lubricator.

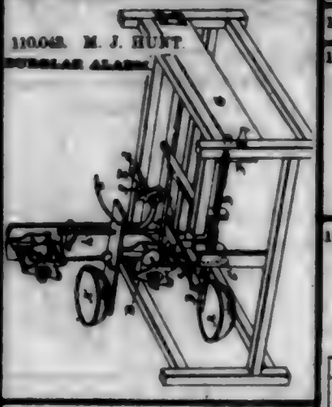


110,041. J. F. HOLLOWAY, Steam Exhaust Valve.

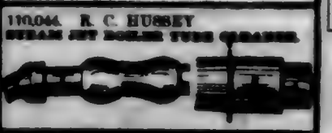


110,042. D. HULL, Sweetening and Decolorizing Sirup and Other Liquids, and Material for the Same.

110,043. M. J. HUNT, Burglar Alarm.



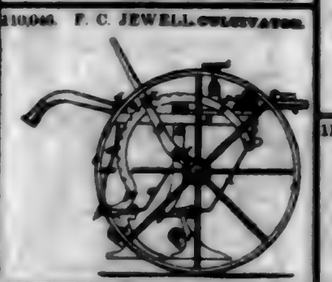
110,044. R. C. HUSSEY, Steam Jet Boiler Tube Cleaner.



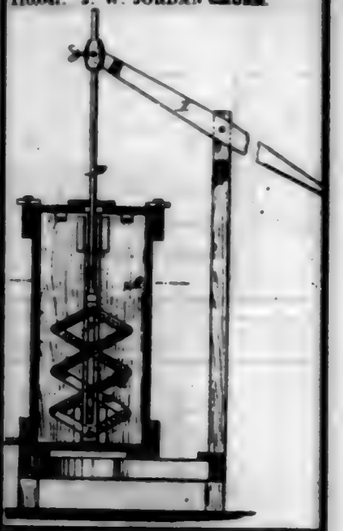
110,045. J. C. JENSEN, Tuck Creaser Attachment for Sewing Machines.



110,046. F. C. JEWELL, Cultivator.

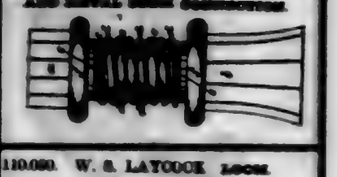


110,047. J. W. JORDAN, Churn.

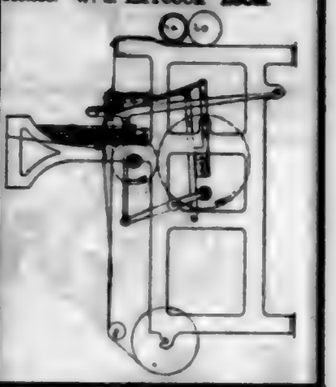


110,048. J. KIRCHER, Printing Ink.

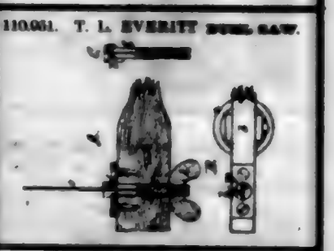
110,049. C. L. KNECHT, Glassware and Metal Stem Construction.



110,050. W. S. LATCOCK, Loom.



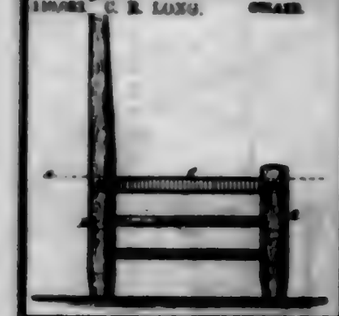
110,051. T. L. EVERITT, Pump Saw.



110,052. J. LOGAN AND D. W. ELDRIDGE, Gathering Gap Retractor.

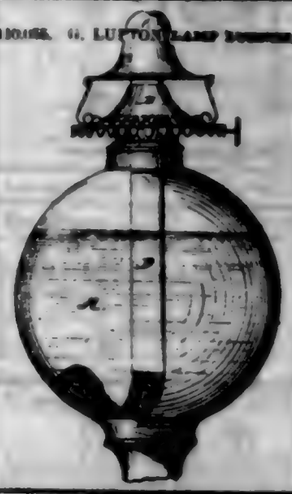


110,051. C. R. LONG. CHAIR.



110,054. G. LUPTON. PUMPING ENGINE.

110,055. G. LUPTON. LAMP BURNER.



110,056. J. B. LYON. MOLD FOR MAKING CRUCIBLES.



110,057. H. A. MALTBY. VELOCIPEDE.

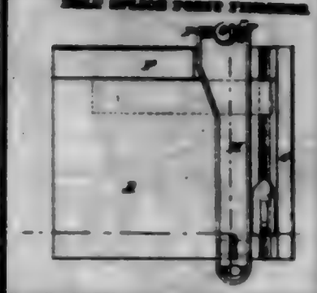


110,058. A. C. MAXFIELD. HAIR RESTORATIVE.

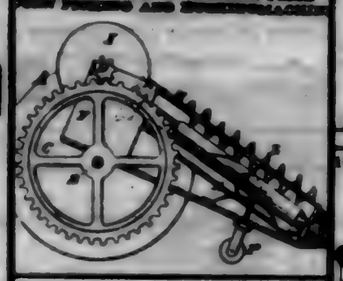
110,059. D. McFARLAND. LIFE RAFT.



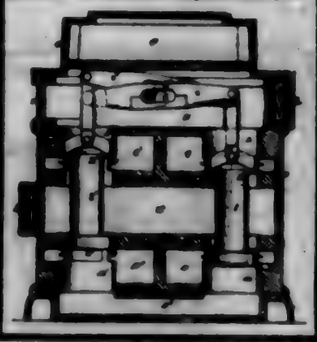
110,060. J. C. McLAREN. DRILL SPADE FORK FURROWER.



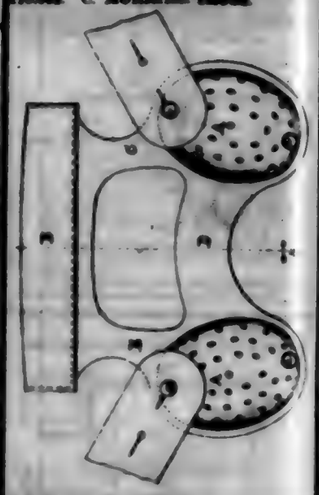
110,061. G. AND C. MEADER. FIELD ROLLER FOR PLOWED AND HARROWED GROUND.



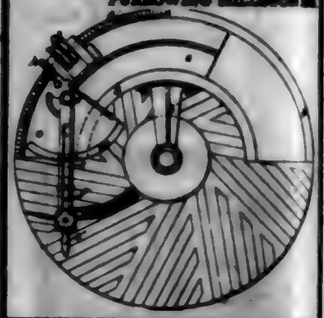
110,062. C. MOORE. LIQUID MEASURE.



110,063. C. MORRILL. VENEER.



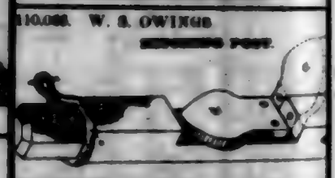
110,064. J. L. NORTON. APPARATUS FOR DRESSING AND FURROWING MILLSTONES.



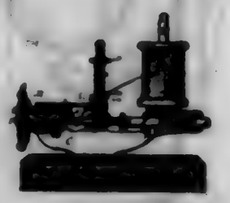
110,065. E. OLIVER. ANIMAL TRAP.



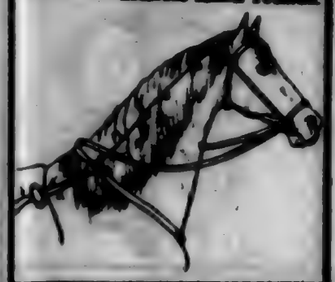
110,066. W. S. OWINGS. SPINNING TOP.



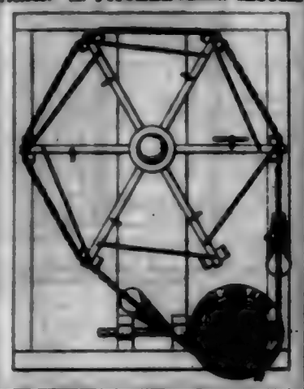
110,067. J. L. PATCH. BOBBIN WINDER FOR SEWING MACHINES.



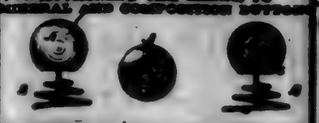
110,068. C. PHELPS. HARNESS HAME FASTENER.



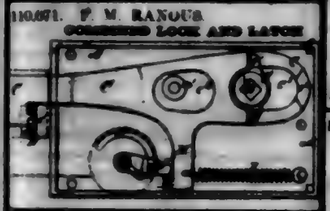
110,069. H. PITCHER. GRAIN CLEANER.



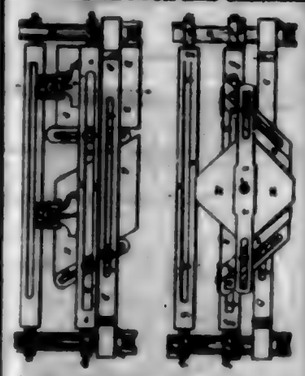
110,070. C. L. POTTER. DEVICE FOR ATTACHING THE SHANK TO METAL AND COMPOSITION BUTTONS.



110,071. F. M. RANOUS. CONDENSED LOCK AND LATCH.



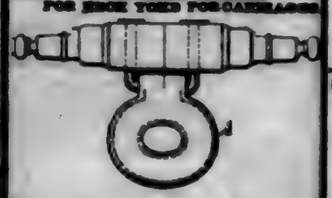
110,072. P. C. RENIERS. BASKET FOR MILK CONDENSERS.



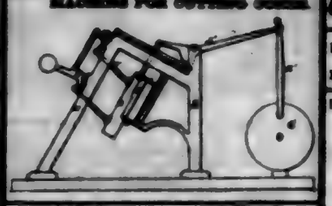
110,073. A. G. RISLEY. DEVICE FOR TREATING OTOLOGICAL DISEASES.



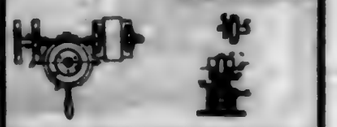
110,074. H. SANDERS. LEATHER FOR EDGES TURNED FOR CARTRIDGES.



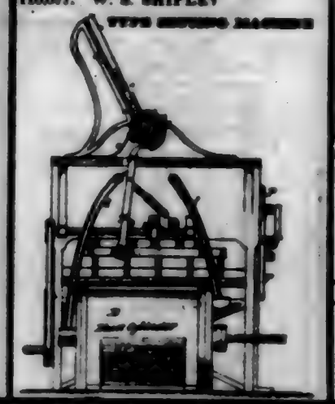
110,075. E. O. SCHAEFAN. MACHINE FOR CUTTING GEARS.



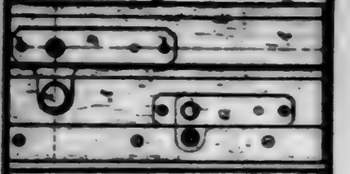
110,076. E. O. SCHAEFAN. GEARS MACHINES.



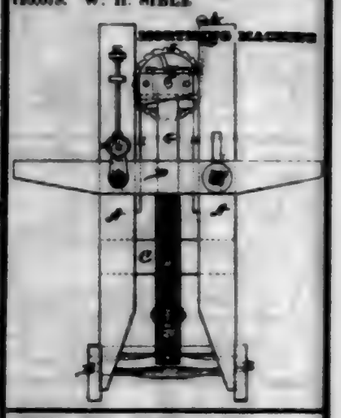
110,077. W. S. SHIPLEY. TYPE SEWING MACHINES.



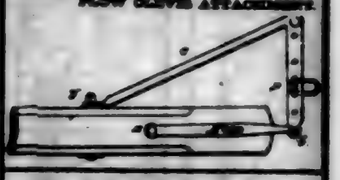
110,078. C. SHOLL. SASH LOCK.



110,079. W. H. SIBLE. SEWING MACHINE.

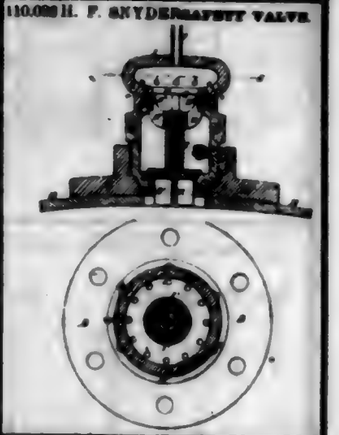


110,080. H. C. SIEVERLING. FLOW SLEEVE ATTACHMENT.

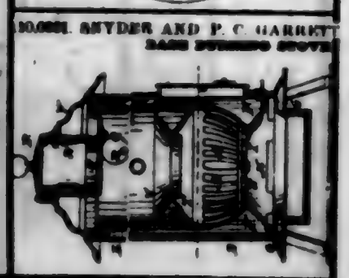


110,081. M. SMITH. PROCESS OF REMOVING BARYTIC MATTER FROM BRONZE AND OTHER CASTINGS.

110,082. H. F. SNYDER. SAFETY VALVE.



110,083. SNYDER AND P. C. GARRETT. BASE BURNING STOVE.

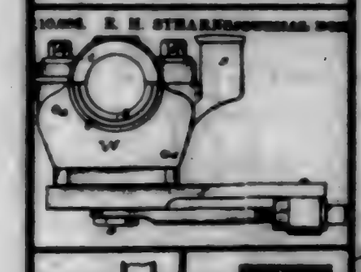


110,094. P. SPENCE. MANUFACTURING OF ALKALI AND CHLORINE FROM NATURAL PHOSPHATES.

110,095. F. J. STALEY. HEAD BLOCK FOR SAW MILLS.



110,096. E. H. STRAFF. [illegible]

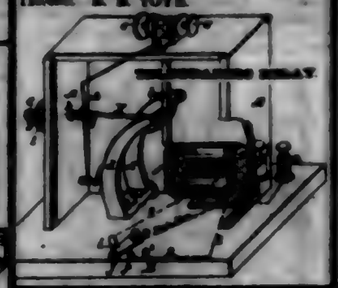


110,099. D. C. WILLSON. STONE DRAG.

110,100. A. F. STREET. GAS GOVERNOR.



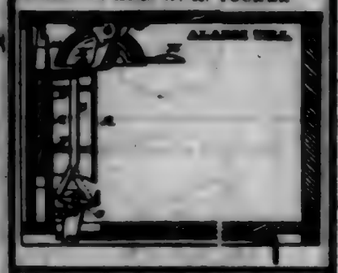
110,098. R. B. TOTE.



110,101. C. W. TRUESDELL.



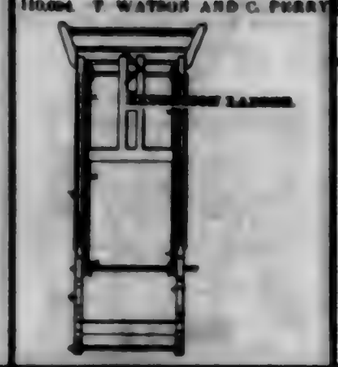
110,102. C. AND W. H. TUCKER. ALARM SEAL.



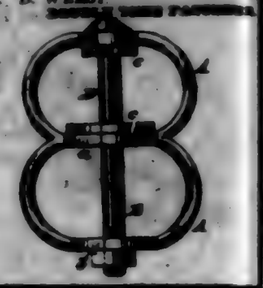
110,103. J. WARDROBE, C. D. B. FISK, J. F. CURTIS, AND G. PETLEY. RAILWAY AXLE BOX.



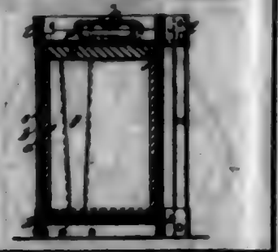
110,104. T. WATSON AND C. PERRY. [illegible] LADDER.



110,105. D. WEBST. [illegible]



110,106. J. W. WESTON. [illegible]



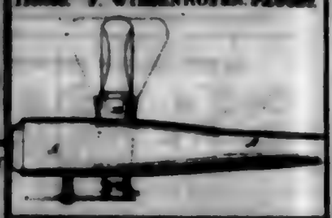
110,107. F. WETMORE. [illegible] AND LATCHCOST GARMENTS.



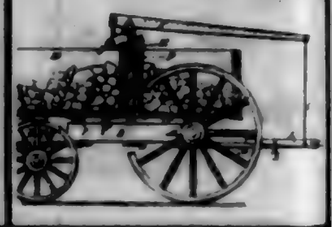
110,108. L. H. WHITNEY. [illegible] CRAFT FOR WHEELS.



110,109. T. WIRKENHOFER. PATENT.



110,100. G. A. WILCOX. WINNING WAGON.



110,098. J. A. THOMPSON. METHOD OF UNITING WOOD.

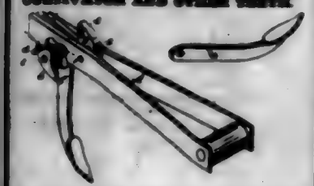


110,101. E. WILSON. [illegible]

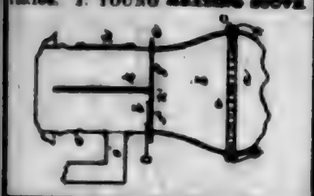


110,102. J. F. WOOD. MANUFACTURE OF [illegible] WHEELS.

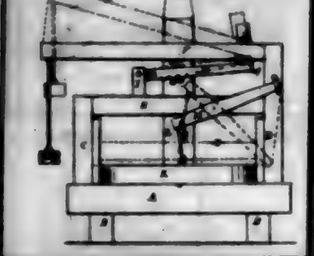
110,103. W. WORKMAN AND J. HITCHCOCK. [illegible] BLOCK FOR ATTACHING CULTIVATOR AND OTHER TEETH.



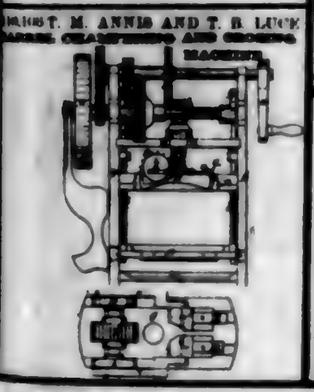
110,104. T. YOUNG. HEATING STOVE.



110,105. R. ALLEN. [illegible] PRESS.



110,106. T. M. ANNIS AND T. B. LUCE. [illegible] CRACKERS AND COOKIES. MACHINE.



110,107. R. HALL, Jr. WAGON.



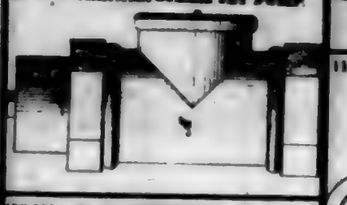
110,108. H. T. BAILEY. PRESERVING SWEET POTATOES.



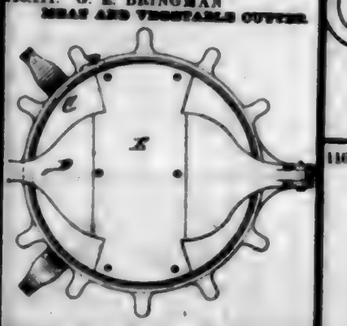
110,109. H. BELMONT. MACHINE FOR TILLING OR CULTIVATING.



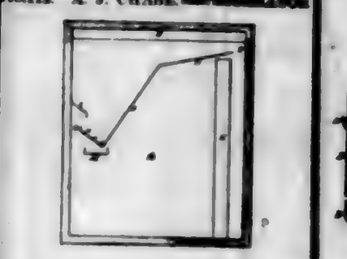
110,110. A. J. BLAKSLEE AND G. C. WILLIAMS. STEAM JET PUMP.



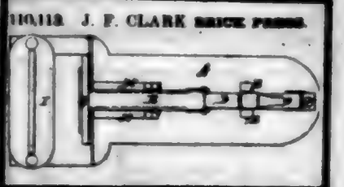
110,111. G. E. BRINGMAN. MEAT AND VEGETABLE CUTTER.



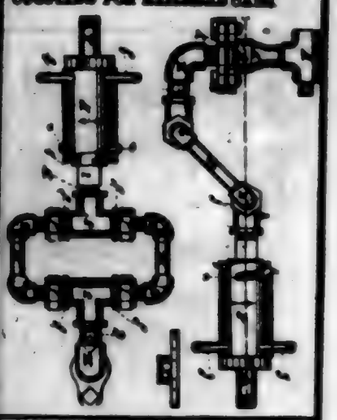
110,112. A. J. CHASE. [illegible]



110,113. J. F. CLARK. BRICK PRESS.



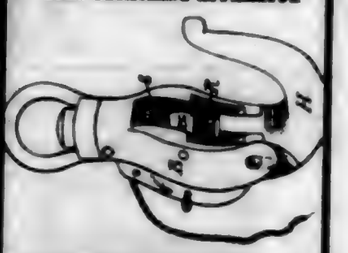
110,114. J. CONNER. STEAM JET COUPLING FOR RAILROAD CARS.



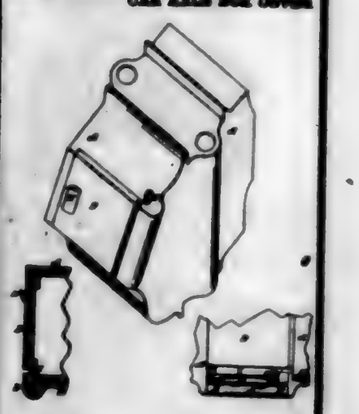
110,115. E. P. CORWIN. BUGGY.



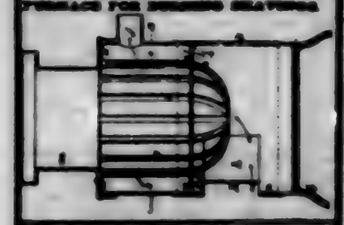
110,116. J. C. COTTINGHAM. BOAT BREACHING APPARATUS.



110,117. D. COWLEY. CAR AXLE BOX COVER.



110.119. L. CRANDALL.
FURNACE FOR BURNING SMOKING



110.120. M. CUNNINGHAM MACHINE



110.121. W. G. DAY
PIANO FORTE ACTION



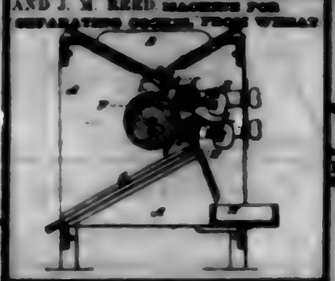
110.122. A. DICKENS, Jr.
CAN CRIMPER



110.123. J. DILL. GROOVING TOOL.



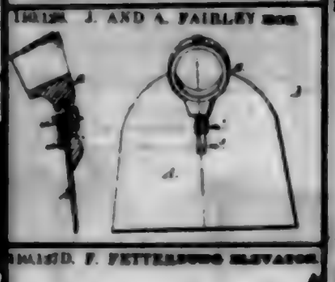
110.124. W. G. AND H. T. DOUGLASS AND J. M. REED MACHINE FOR SEPARATING COCKLE, FROM WHEAT



110.125. J. M. EARLE.
COFFEE TEA AND SPICE CAN



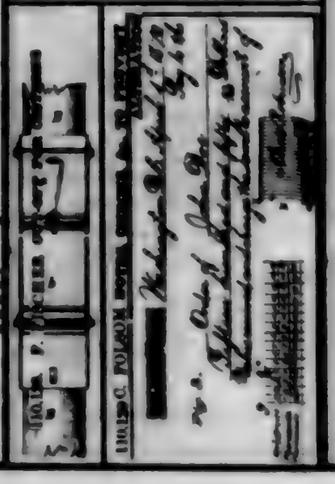
110.126. J. AND A. FAIRLEY
SOLE



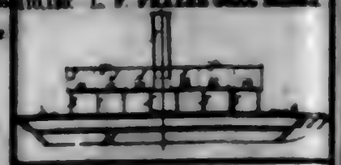
110.127. D. F. PETTERSONS ELEVATOR.



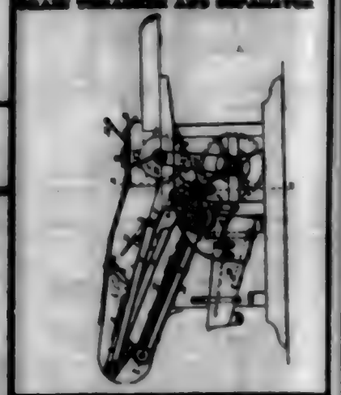
110.128. C. FOLSOM
BOOK



110.129. L. F. FRAZER COAL BARGE.



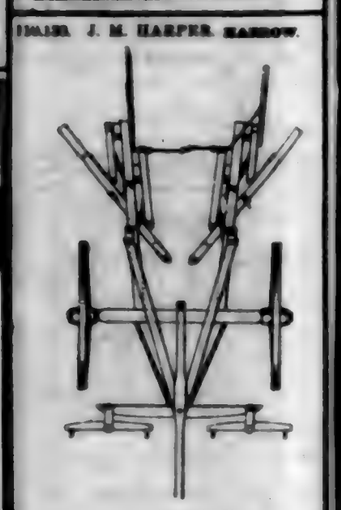
110.131. H. GILL.
CHAIN UNLOADER AND SEPARATOR



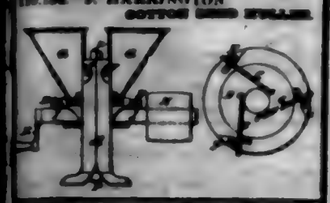
110.132. J. W. W. GORDON
TREADLE FOR SEWING MACHINES



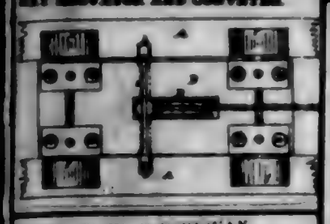
110.133. J. M. HARPER. HARROW.



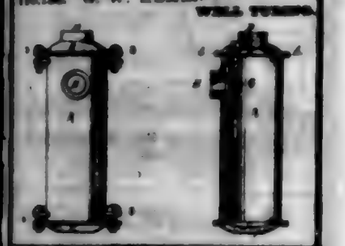
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COTTON SEED STELLER.



110.135. T. E. HAYMOND
HAY ELEVATOR AND CONVEYER.



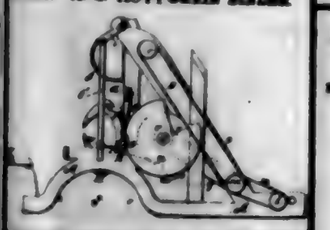
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WELL TUBING.



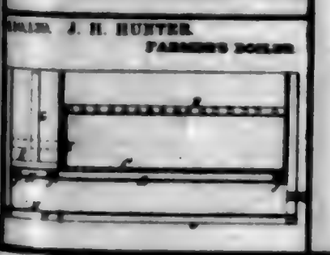
110.137. I. HOOKLAND
CLOTHES REEL.



110.138. A. S. HOTTGRAIN SENIOR.



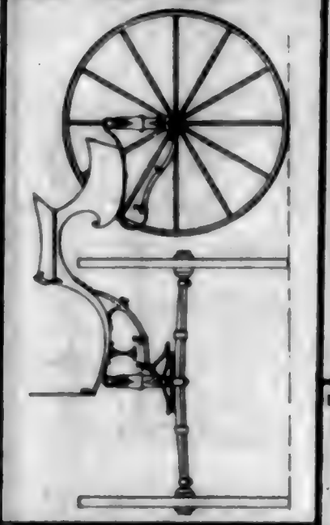
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FARMERS BOILER.



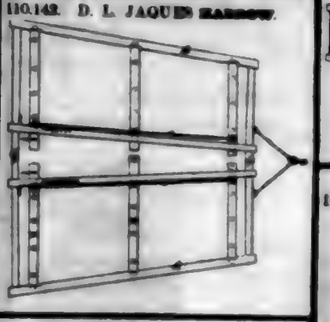
110.140. J. W. JACOB
BRAKE FOR SEWING MACHINES



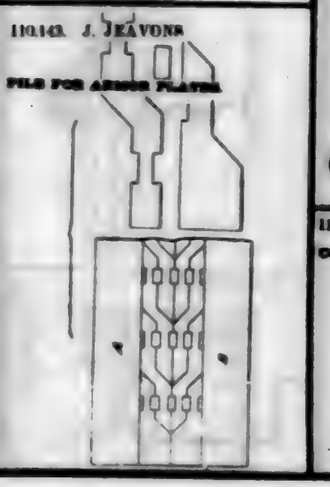
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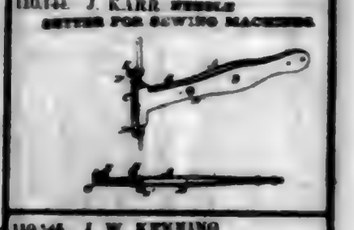
110.142. D. L. JAQUES HARROW.



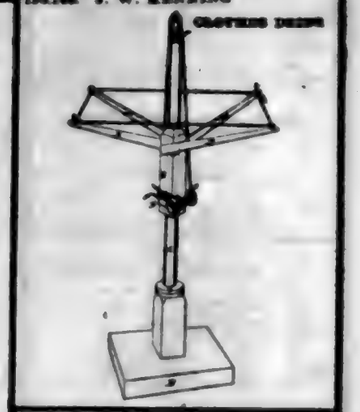
110.143. J. JEAVONS
FILE FOR ARMOR PLATES



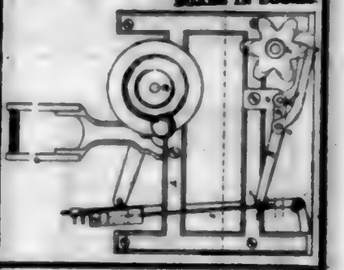
110.144. J. KARR, Jr.
SETTER FOR SEWING MACHINES



110.145. J. W. KENNING
CLOTHES DRIER



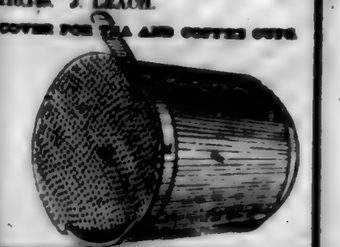
110.146. L. J. KNOWLES MECHANISM FOR OPERATING SHUTTLE BOXES IN LOOMS



110.147. A. LAWRENCE
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110.148. J. LEACH.
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110,149 J. B. LYNN.

110,150 W. MEAD, P. D. MAY, AND R. L. HOYT.
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110,151 T. M. MILLETT, Sr.

110,152 L. MORRIS MILK CABINET.

110,153 W. S. MORSE.
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110,154 J. W. MURPHY.
WROUGHT IRON COLUMN.

110,155 A. H. NORDYKE.
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110,156 T. J. NOYES.

110,157 L. PICKARD.
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110,158 P. QUINN STEAM JOINT.

110,159 C. R. RAND GATE BALANCE.

110,160 W. O. REID.
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110,161 L. F. ROBERTSON COMPOUND FOR DRESSING HIDES AND SKINS.

110,162 C. L. ROORBACH IMPLEMENT FOR REMOVING CORES, SUPERSEDING &c.

110,163 J. SCHIEDER MATERIAL FOR MAKING SURFACES IN MACHINERY.

110,164 V. J. SHRYOCK STRAW CUTTER.

110,165 S. F. SMITH.
SAND SIFTING MACHINE.

110,166 H. S. SNOW SELF ACTING VALVE OR CUT-OFF FOR LIQUID GAS.

110,167 H. SOGGE.
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110,168 G. N. STEARNS SPOKE SHAVE.

110,169 E. STINSON WATER WHEEL.

110,170 W. W. SULLIVAN FENCE.

110,171 E. P. TERRILL SHUTTLE OPERATING MECHANISM FOR LOOMS.

110,172 W. A. TORREY SINKA RUBBER AND COMBINATION HOSE.

110,173 M. TURLEY.

110,174 H. C. VELIE.
UPHOLSTERING SPRING.

110,175 W. WALKER.
MECHANICAL MOVEMENT.

110,176 W. G. WARD.
RAIL REPAIRING.

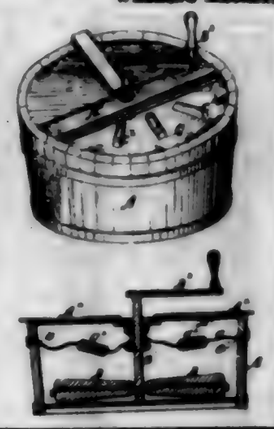
110,177 W. G. WARD PUMP.

110,178 W. A. WICKS.
SHUTTER SUPPORTER.

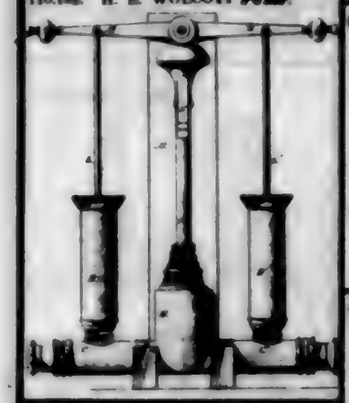
110,179 C. H. WILLIAMS MACHINE FOR MAKING COUPLING PINS.

110,180 L. WILLIAMS NUT HEAD.

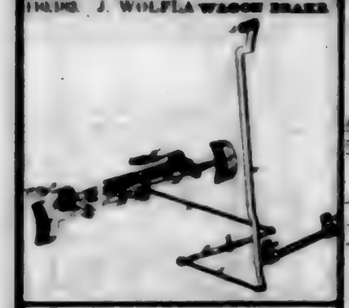
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WASHING MACHINE



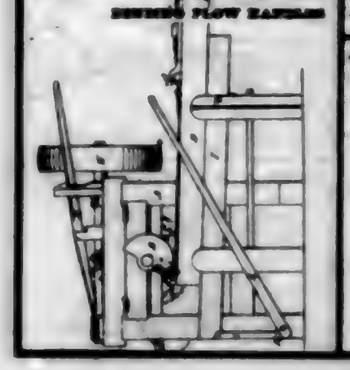
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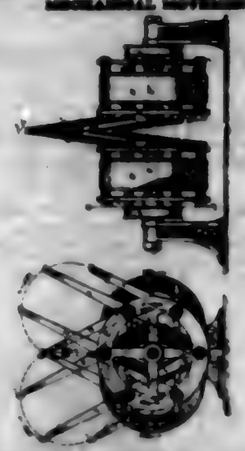
110,193 J. WOLFLA WAGON BRAKE



110,194 J. WOODBURN AND A. P. SMITH MACHINE FOR SHARPENING PLOW RAZORS



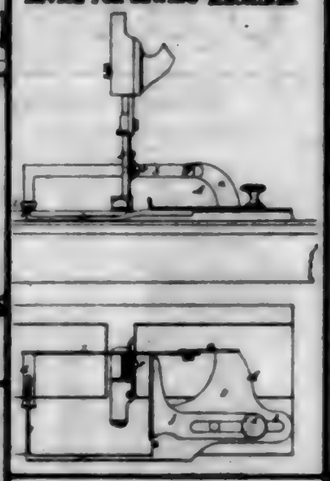
110,195 J. WOLF
MECHANICAL MOVEMENT



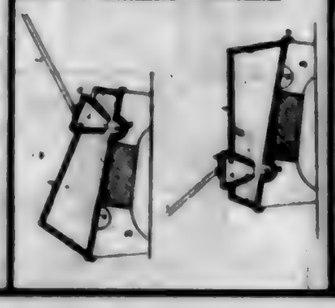
110,196 G. W. WOOLLEY PEN.



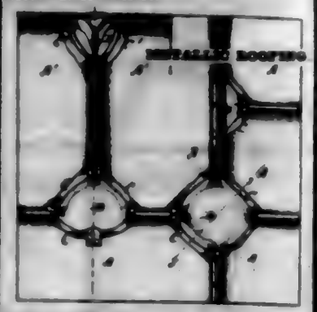
4,196 J. BOLTON TOOL CHARGING DEVICE FOR SEWING MACHINES



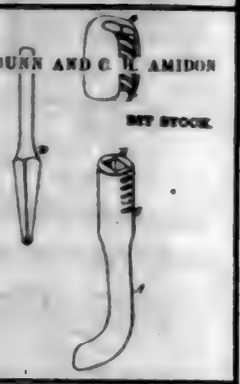
4,197 S. DARLING HORSE RAKE



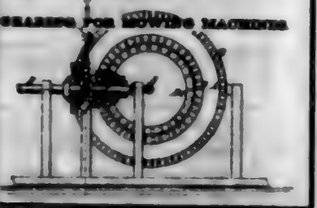
4,198 S. HUGHES
METALLIC ROOFING



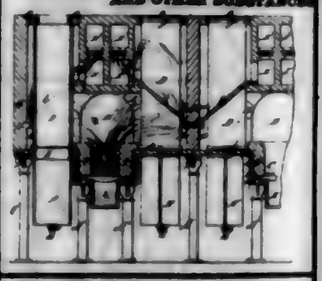
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L. J. GUNN AND C. H. AMIDON
BIT STOCK



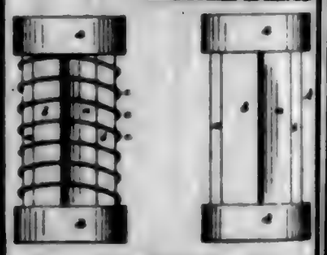
4,200 J. V. STRAIT.
GRADING FOR MOWING MACHINES



4,201 A. WEBER
FURNACE FOR BURNING BONE BLACK AND OTHER SUBSTANCES



4,202 THE NATIONAL SPRING COMPANY CORRUGATED INDIA RUBBER AND STEEL SPRINGS



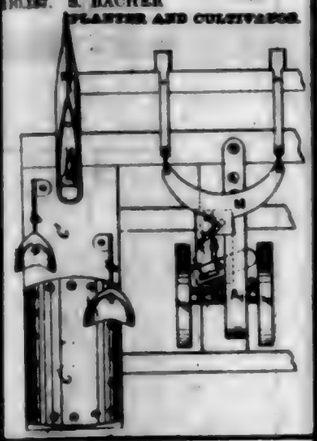
ILLUSTRATIONS OF PATENTS

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DECEMBER 20, 1870.

110,187. S. BACHER
PLANTER AND CULTIVATOR.



110,188. P. BAKER LAMP WICK.

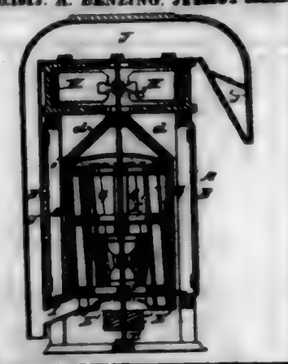


110,189. H. BALMAIN
PACKING CARBONIC ANHYDRIDE

110,190. W. H. BATE APPARATUS FOR GENERATING CARBONIC ACID.



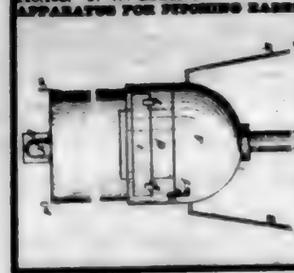
110,191 J. A. BENZING. Jr. SEED SEAL.



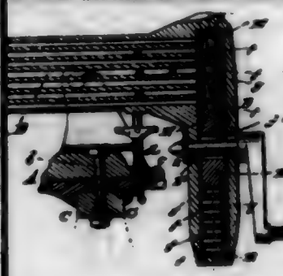
110,192. J. S. BLYMYER.
CANE JUICE EVAPORATOR.



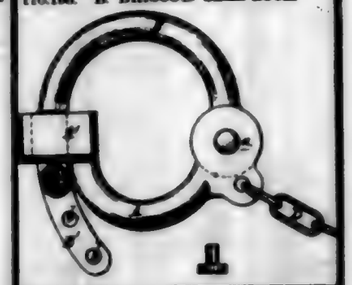
110,193. J. W. BRADY
APPARATUS FOR STOPPING BARRELS



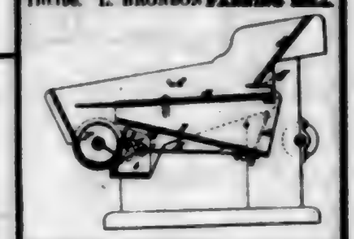
110,194 E. BREHM REVOLVING CANNON



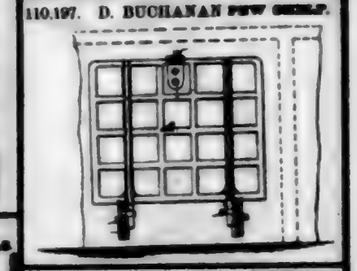
110,195. B. BRISCOE SEAL LOCK.



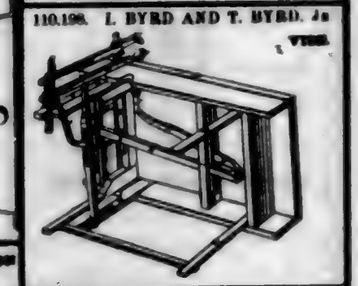
110,196. L. BRONSON PANNING MILL.



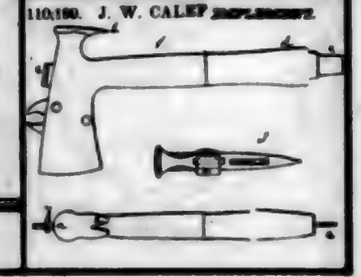
110,197. D. BUCHANAN PEW SHELF.



110,198. I. BYRD AND T. BYRD, Jr.
VISE.



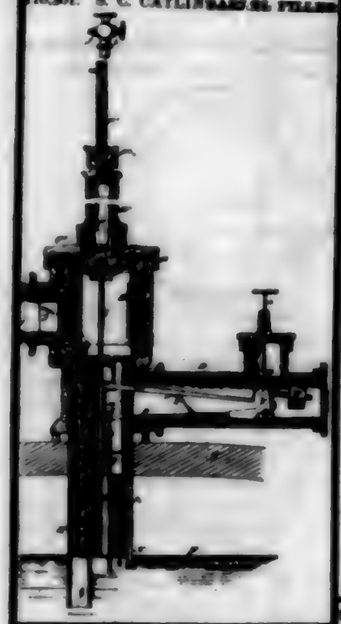
110,199. J. W. CALEF IMPLEMENT.



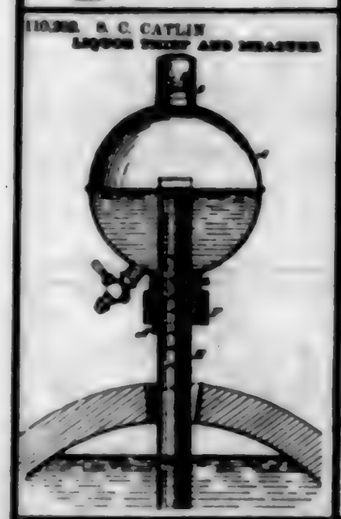
110,200. D. M. CASTLE CLEVIS.



110,201. S. C. CATLIN RADIAL PILLAR.



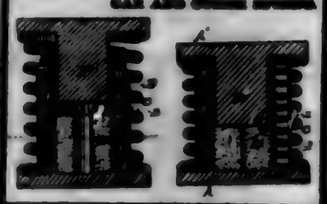
110,202. S. C. CATLIN LIQUOR PRESS AND HEATER.



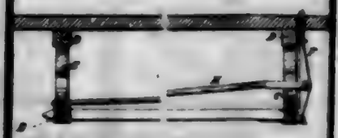
110,203. E. G. CHORMANN AND F. McLAUGHLIN KITCHEN AND HOUSEHOLD SINK.



110,204. J. W. COCHRAN GAS AND OTHER BURNER.



110,205. C. DANIEL VENEER.



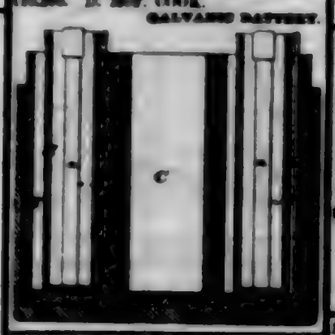
110,206. H. COLL INDUCTOR.



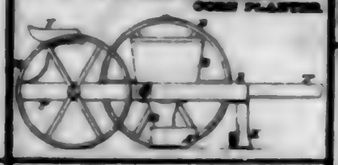
110,207. F. E. DARROW POWDER FLASK.



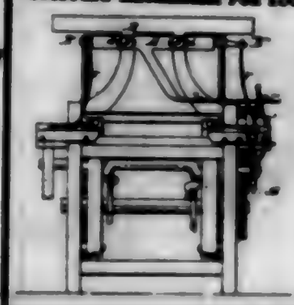
110,208. D. McF. COOK. GALVANIC BATTERY.



110,209. R. R. AND H. COBURN CORD PLASTER.



110,210. J. COWGILL. STOPPING MECHANISM FOR LOOMS.



110,211. A. DAVIS TRANSPLANTING IMPLEMENT.



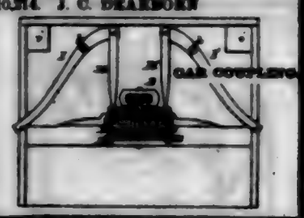
110,212. T. DAVIS MOTIVE POWER APPARATUS.



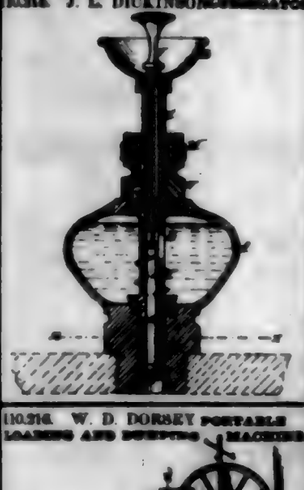
110,213. B. DAY. SPIRITUAL IMAGE.



110,214. J. C. DEARBORN GAS COUPLING.



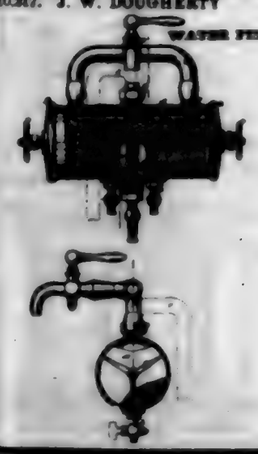
110,215. J. L. DICKINSON, DECORATOR.



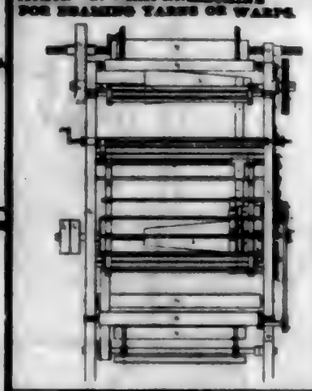
110,216. W. D. DORSEY PORTABLE LOADING AND DUMPING MACHINE.



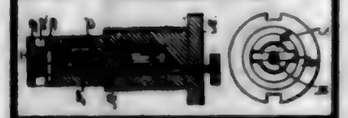
110,217. J. W. DOUGHERTY WATER FILTER.



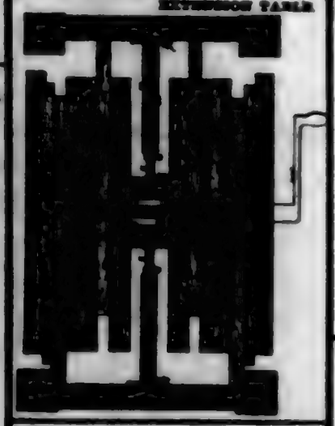
110,218. G. DRAPER MACHINE FOR DRAWING YARNS OR WARPS.



110,219. J. EGGO. SHELL FUSE.



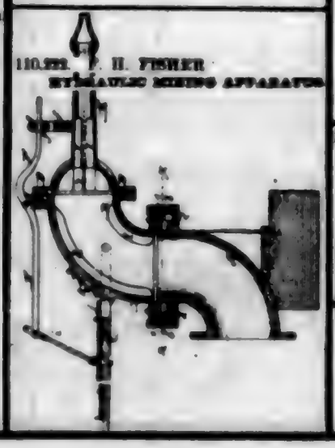
110,220. T. C. ELLISON KEYBOARD TABLE.



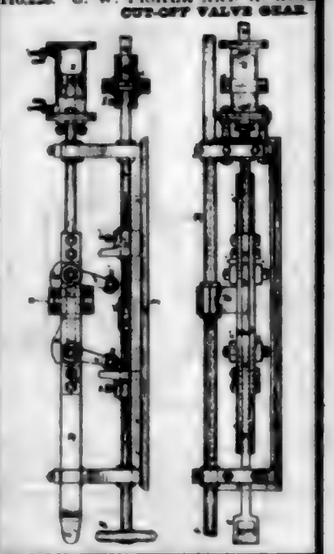
110,221. P. M. FILSON. FENCE POST.



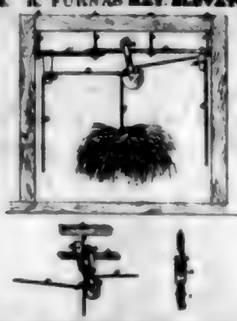
110,222. F. H. FISHER HYDRAULIC MINING APPARATUS.



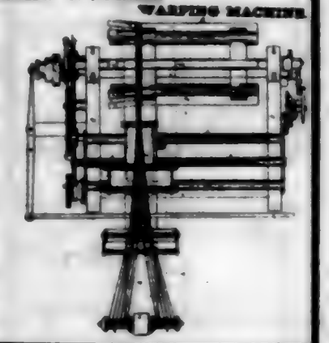
110,223. G. W. FISHER AND H. KNIT CUT-OFF VALVE GEAR.



110,224. R. FURNAS HAY ELEVATOR.



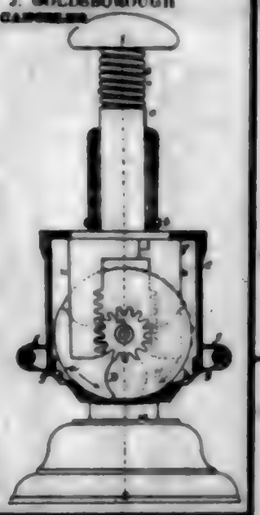
110,225. J. FURRER WARPING MACHINE.



110,226. A. GALE AND H. R. JOHNSON HAME FASTENER.



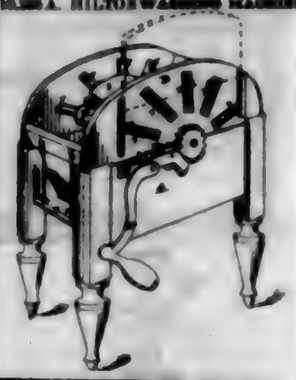
110,327 J. GOLDSBOROUGH
STAMP CANCELLER



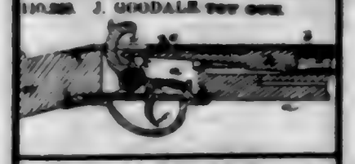
110,328 A. HALLOWELL
TURBINE WASHER



110,329 A. HILTON WASHING MACHINE



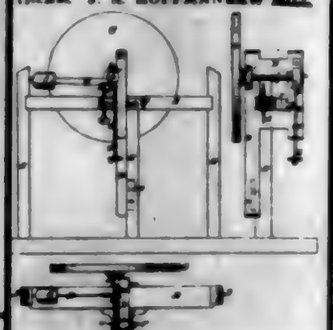
110,330 J. GOODALE TOY GUN



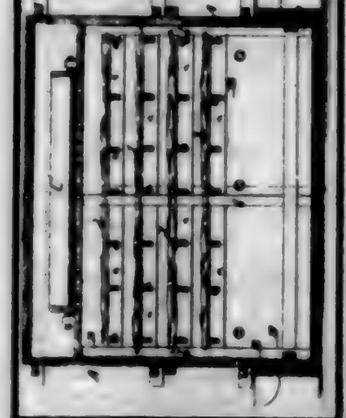
110,331 T. HARVEY
BARREL



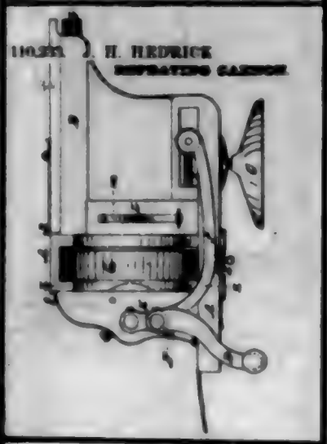
110,332 J. R. HOFFMAN SAW MILL



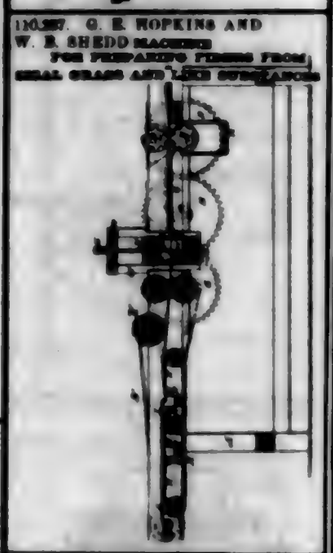
110,333 T. GRUNDMANN APPARATUS FOR THE MANUFACTURE OF WIREGAS



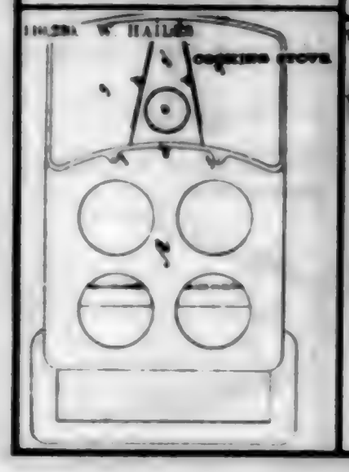
110,334 J. H. HEDRICK
REPEATING CANNON



110,335 G. E. HOPKINS AND W. B. SHEDD MACHINES FOR PREPARING FIBRES FROM SEAL GRASS AND LIKE SUBSTANCES



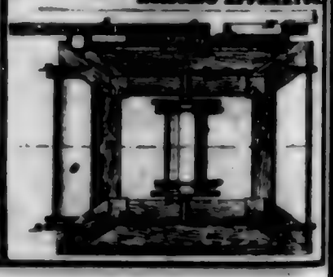
110,336 A. HAILES
COOKING STOVE



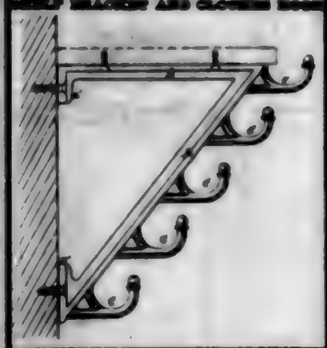
110,337 W. D. HILLISTROM



110,338 E. H. HUNT
BOOKING APPARATUS



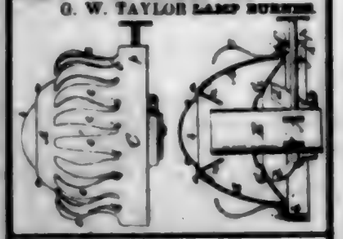
110,339 H. R. HUTCHINSON
HOOK MACHINE AND CLOTHES HOOK



110,340 D. H. JAMES FOOT REST AND BOOT JACK COMBINED



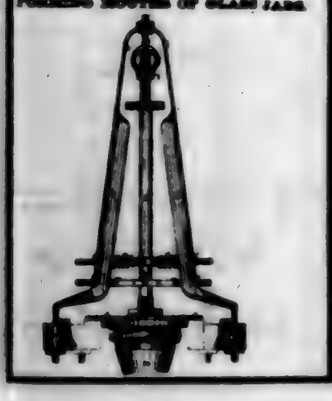
110,341 W. P. JENNEY AND G. W. TAYLOR LAMP BURNER



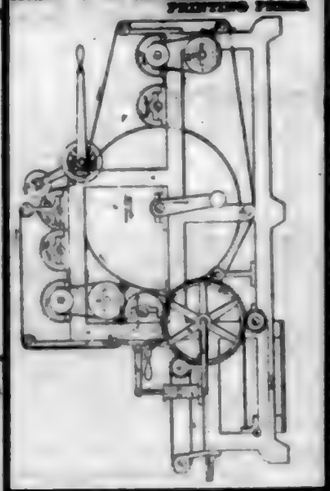
110,342 A. KEATING
HOODED GARMENT



110,343 U. M. KREFFER TOOL FOR FORMING MOUTHS OF GLASS JARS



110,344 J. W. KELLBERG
PRINTING PRESS

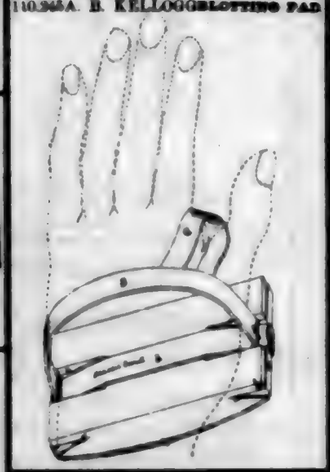


110,345 A. J. KRAMERBACH BOLSTER

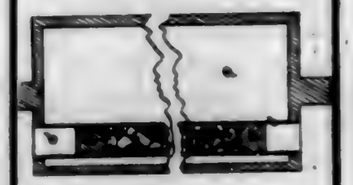


110,346 F. C. KRAUSE CLAY RETORT FOR THE MANUFACTURE OF GAS

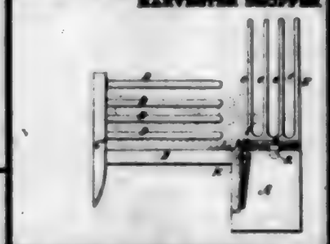
110,345A. B. KELLOGG BLOTTING PAD



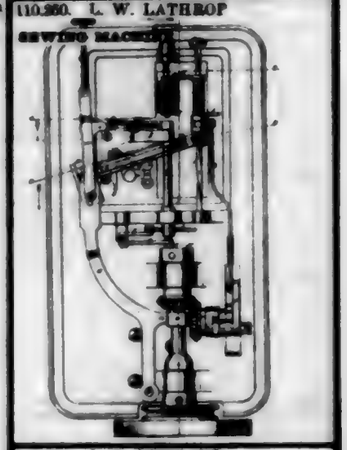
110,347 W. KITSON MODE OF BALANCING CYLINDERS, PULLEYS &c.



110,348 T. W. & KIDD
HARVESTER SHOPPER



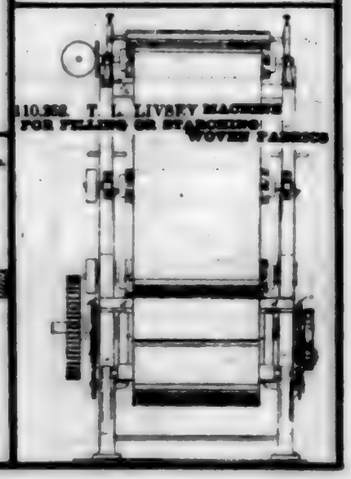
110,350 I. W. LATHROP
SEWING MACHINE



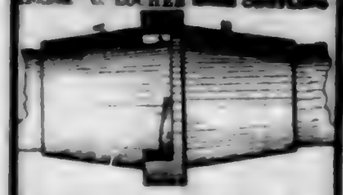
110,351 J. M. LEONARD
ADJUSTABLE PLOW JOINTER



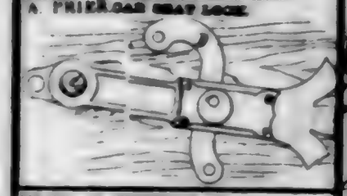
110,352 T. L. LIVSEY MACHINE FOR FILLING OR STARCHING WOVEN FABRICS



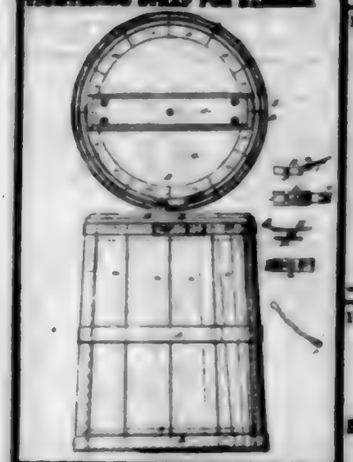
110,252 C. LOCHER WIRE COUPLING



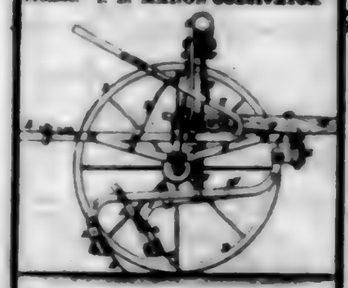
110,254 A. LOFFELHOLZ AND A. FRIEDGAS SEAT LOCK



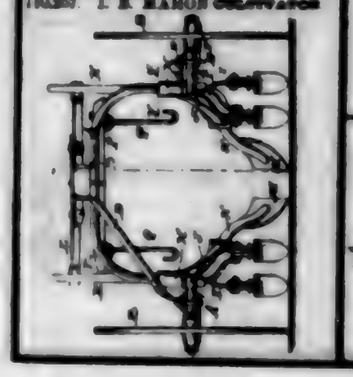
110,255 S. MACFERRAN REGISTERING SCREAT FOR BARRELS



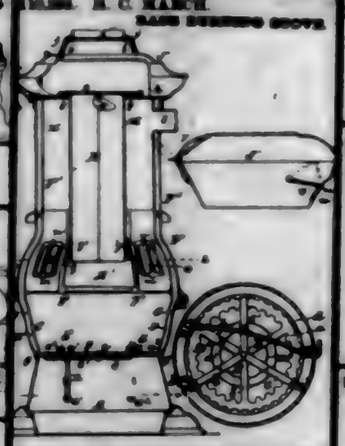
110,256 I. B. MAHON CULTIVATOR



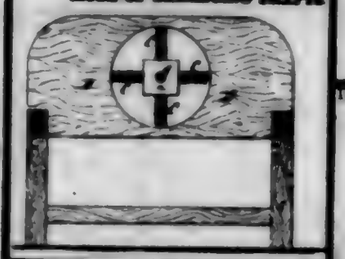
110,257 I. B. MAHON CULTIVATOR



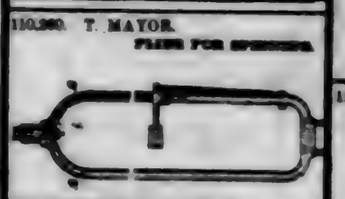
110,258 H. C. MARCH BASE BURNING STOVE



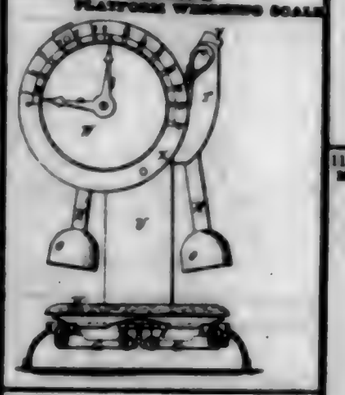
110,259 H. MARTINSON MODE OF BALANCING SHAFTS



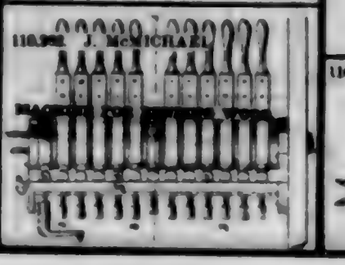
110,260 T. MAYOR PLOWS FOR SUBSOILING



110,261 R. J. McKEONE PLATFORM WEIGHING SCALE



110,262 J. McMICHAEL



110,263 W. MILLER CLOTHES PIN



110,264 R. A. MOFFATT CARTRIDGE



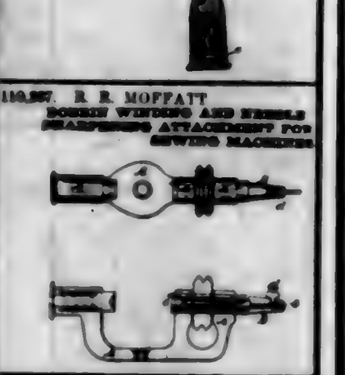
110,265 R. R. MOFFATT METALLIC CARTRIDGE



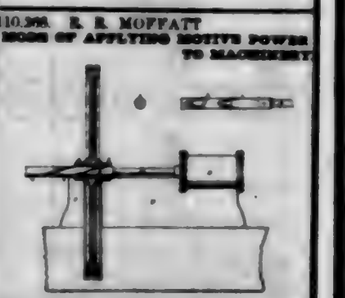
110,266 R. R. MOFFATT PERCUSSION PRIMER FOR CARTRIDGES



110,267 R. R. MOFFATT BOBBIN WINDING AND NEEDLE SHARPENING ATTACHMENT FOR SEWING MACHINES



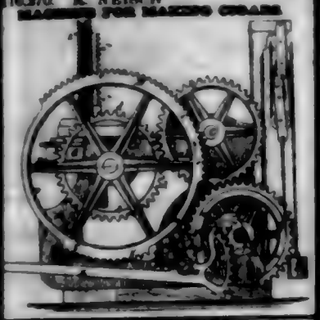
110,268 R. R. MOFFATT MODE OF APPLYING MOTIVE POWER TO MACHINERY



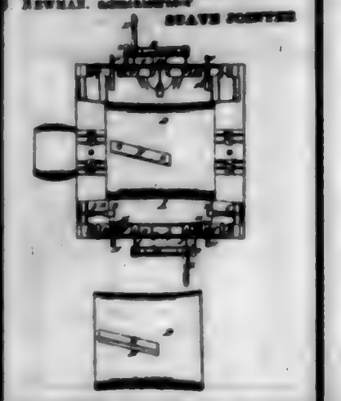
110,269 J. C. MORRIS CAR COUPLING



110,270 E. NEISCH MACHINE FOR MAKING CIGARS



110,271 S. NEWMAN, dec'd. J. NEWMAN, administrator SHAVE HOLDER



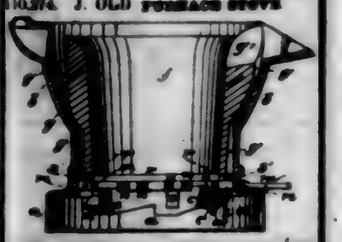
110,272 J. NEWTON WORK STAND



110,273 P. H. KILLIS CORSET CLASP AND SPRING

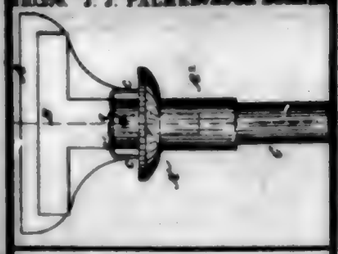


110,274 J. OLD FURNACE STOVE



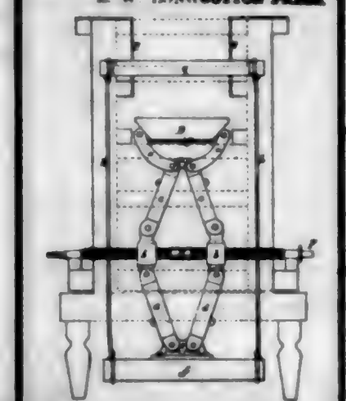
110,275 M. O'REILLY PREPARATION OF CRUDE LUBRICATING OIL

110,276 J. J. PALMER VAPOR BURNER

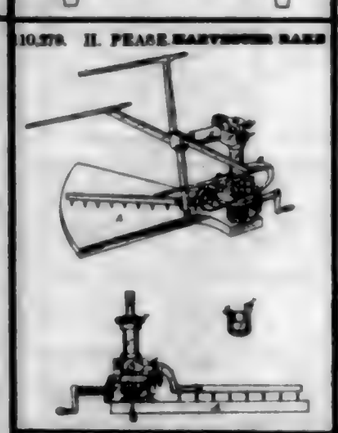


110,277 A. PARAF MANUFACTURE OF COLORS AND THEIR APPLICATION TO FABRICS

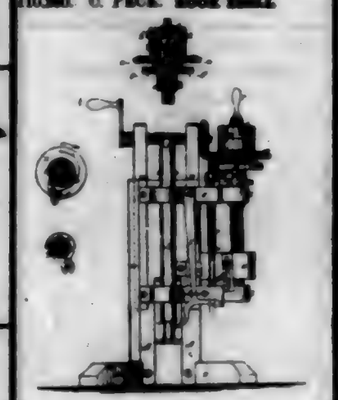
110,278 I. N. PATTEN AND E. W. LONG COTTON PRESS



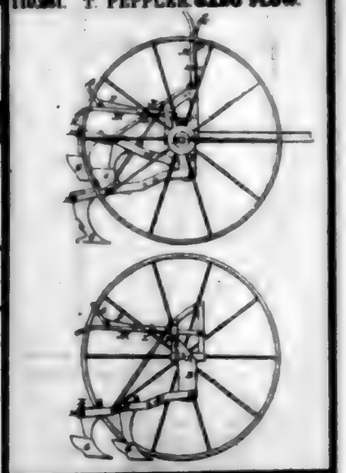
110,279 H. PEASE HARVESTER RAKE



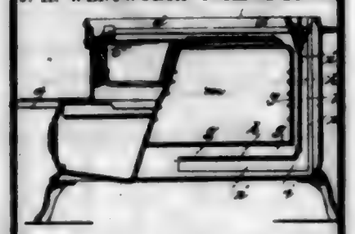
110,280 C. PECK BOOK BINDER



110,281 T. PEPPLER GANG PLOW



110,282 J. PRATT AND J. H. WENTWORTH COOKING STOVE



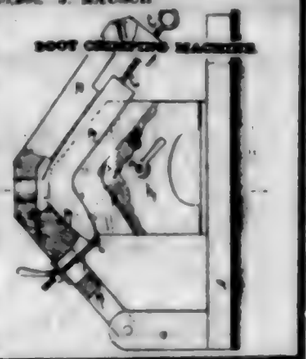
110,283 G. F. PYRIET CUTTER FOR PLOWS



110,284 J. H. QUACKENBUSH SPRING BED BOTTOM



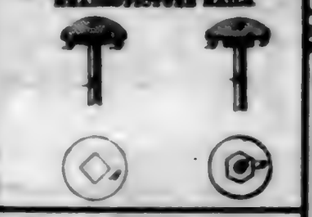
110,295. J. RAUSCH
BOOT CREASING MACHINE.



110,296 V. RHODES, JR. [illegible]

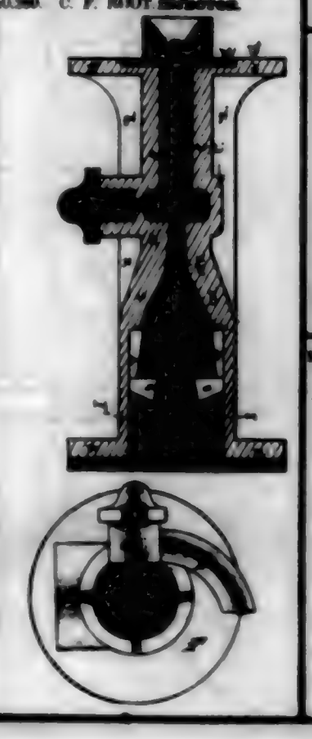


110,297. T. C. RICHARDS.
CONSTRUCTION OF ORNAMENTAL BRASS TUFTED RAILS.

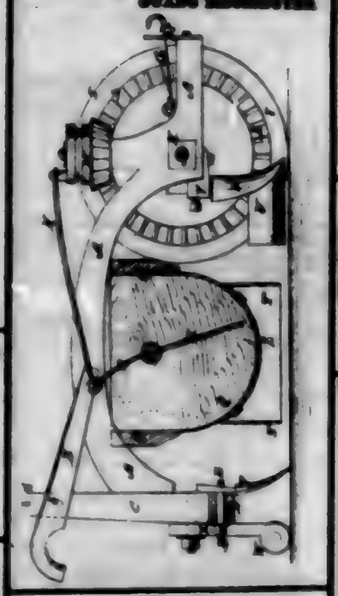


110,298. A. A. RIDDICK, ASSIGNOR TO [illegible]
FOR THE CURE OF RHEUMATISM.

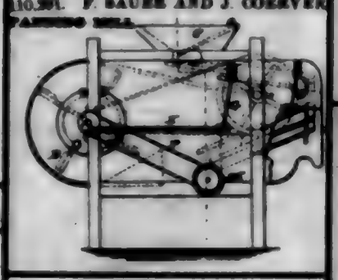
110,299. C. F. ROOT, INVENTOR.



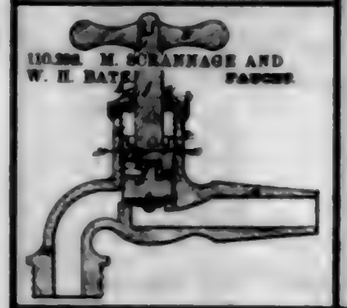
110,300. J. E. ROSE.
CONCEALED COTTON PLANTER AND GUANO DISTRIBUTER.



110,301. F. SAUER AND J. COERVER
FANNING MILL.



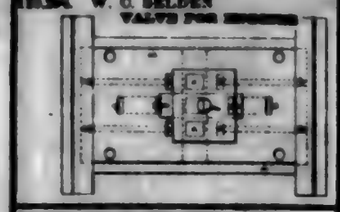
110,302. M. SCRANNAGE AND W. H. BATES, PACKER.



110,303. J. SEARS.
SPRING FOR SIDE SPRING SEATS, &c.



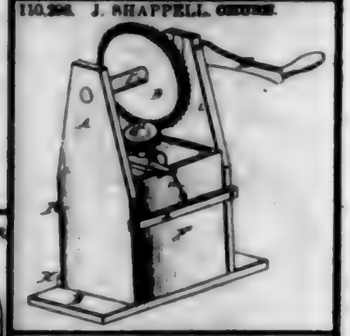
110,304. W. C. SELDEN
VALVES FOR ENGINES.



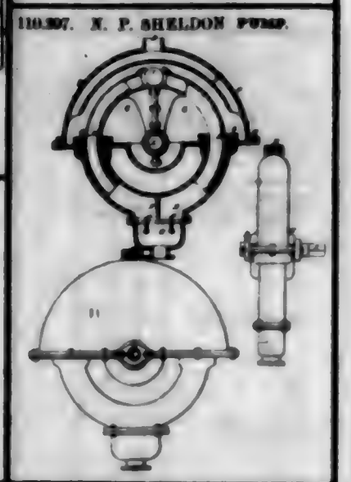
110,305. R. M. SHANER
ROOF RACKING MACHINE.



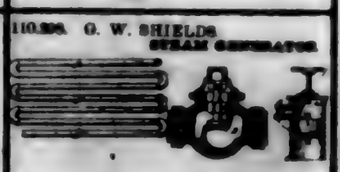
110,306. J. SHAPPELL, [illegible]



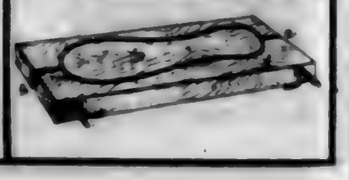
110,307. N. P. SHELDON PUMP.



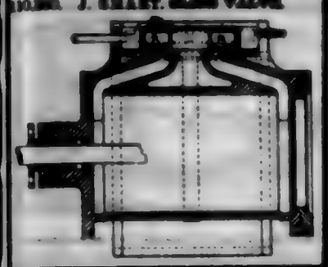
110,308. O. W. SHIELDS
STEAM GENERATOR.



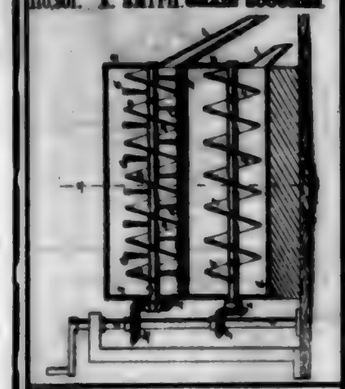
110,309. W. G. SLATER, ASSIGNOR
FOR FORMING SOLES FOR PACKS.



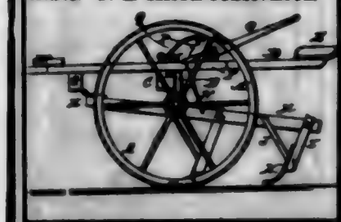
110,300. J. SMART, GRAIN VALVE.



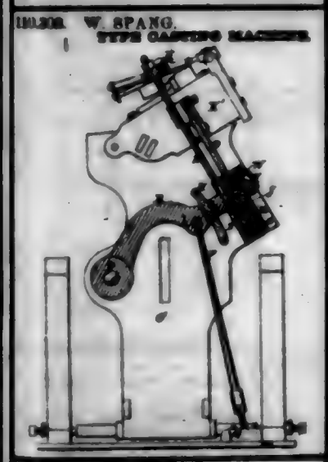
110,301. A. SMITH, GRAIN SCOURER.



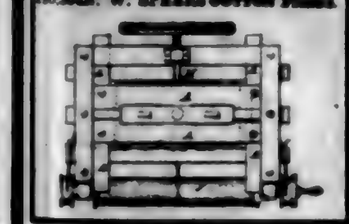
110,302. P. E. SMITH CULTIVATOR.



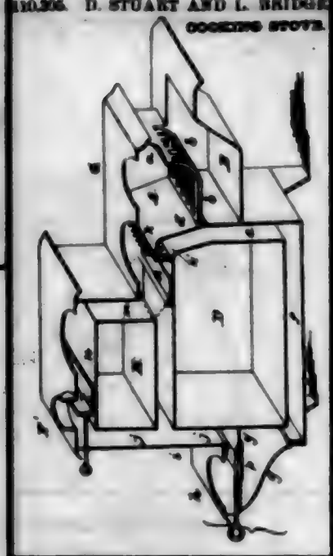
110,303. W. SPANG.
TYPE CASTING MACHINE.



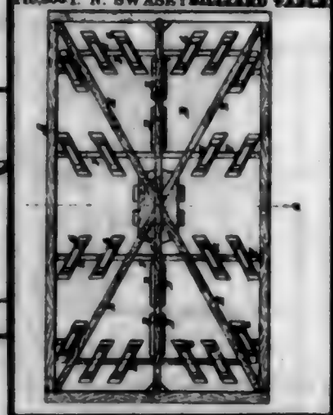
110,304. W. SPEERS, COTTON PRESS.



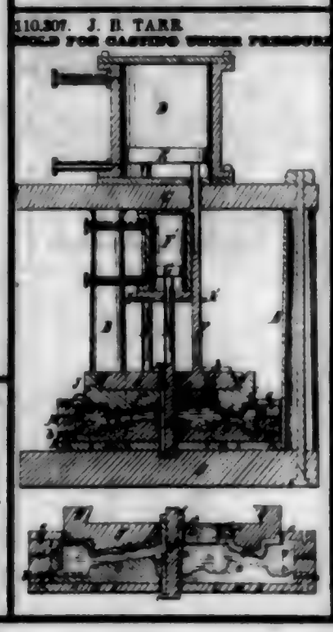
110,305. D. STUART AND L. BRIDGE
COOKING STOVE.



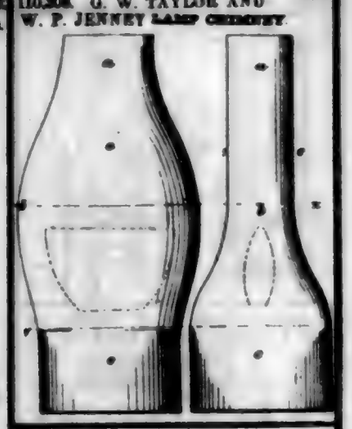
110,306 I. N. SWASEY, BILLIARD TABLE.



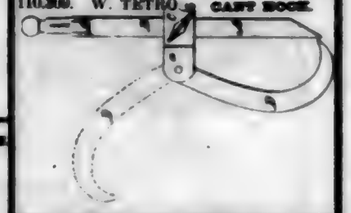
110,307. J. B. TARR.
MOLD FOR CASTING WHEEL FELLOES.



110,308. G. W. TAYLOR AND W. P. JENNEY LAMP CHIMNEY.



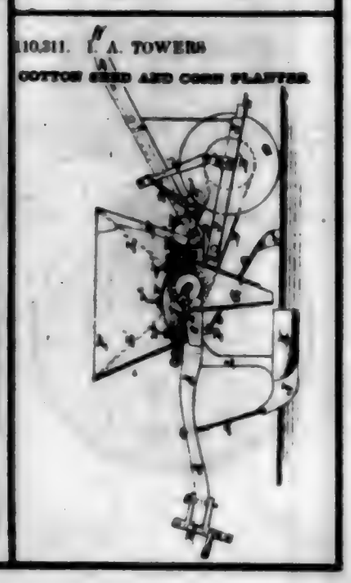
110,309. W. TETRO, CANE HOOK.



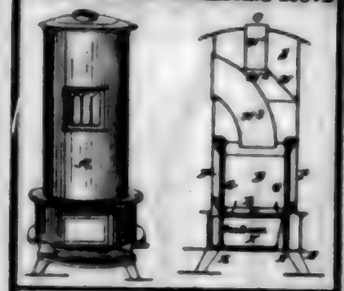
110,310. M. P. R. TILTON
PAD FOR CORSETS.



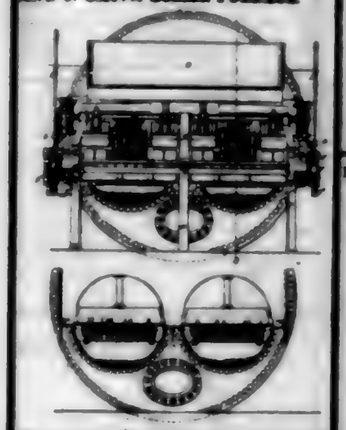
110,311. T. A. TOWERS
COTTON SEED AND CORN PLANTER.



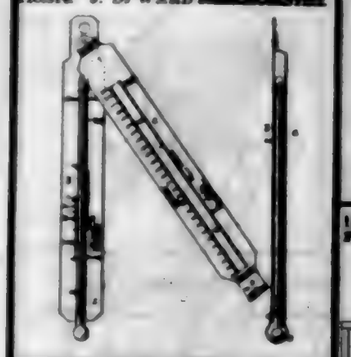
110,312 A. TRAVER. HEATING STOVE



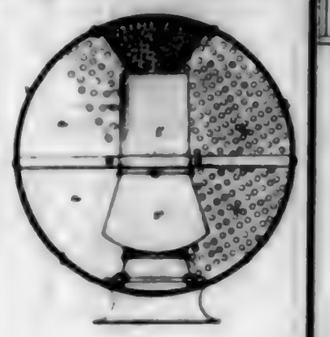
110,313 T. VICARS, Sr., T. VICARS, Jr. AND J. SMITH. BOILER FURNACE.



110,314. J. D. WARD.



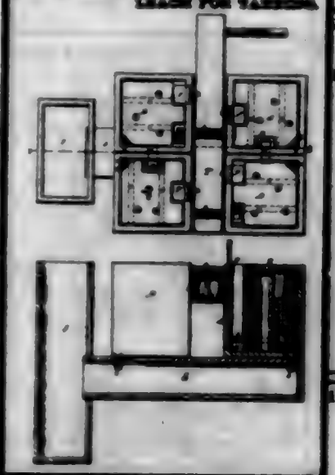
110,315 J. WEIDMAN, J. MAJOR, AND J. J. SAMPLE. SPARK ARRESTER.



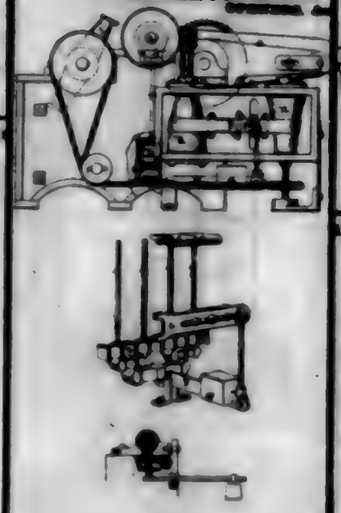
110,316. S. F. WEBNER. ADJUSTABLE SQUARE.



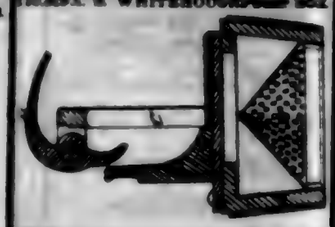
110,317. W. T. H. WHARTON. LEACH FOR TANNING.



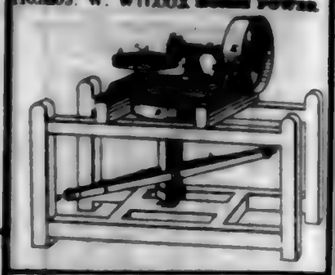
110,318. W. E. WHITEHEAD. FINISHING MECHANISM FOR COTTON GOODS, &c.



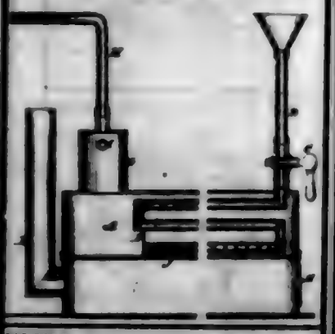
110,319. A. S. WHITEHOUSE. PUMP BOX.



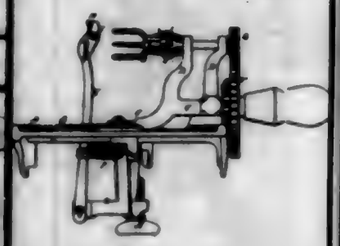
110,320 J. W. WILCOX. HORSE POWER.



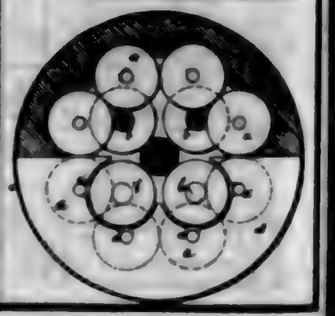
110,321. M. WOOD. STEAM CONDENSATING APPARATUS.



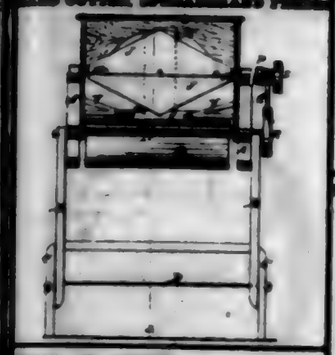
110,322 L. S. WOODBURY. PRINTING PAPER.



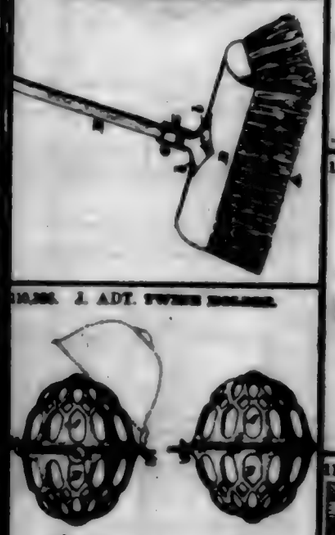
110,323. P. W. YARRELL. AXLE FINISHING JOURNAL.



110,324 W. W. YOUNG. AUTOMATIC BAND CUTTER, SPRINGBOARD FINISH.

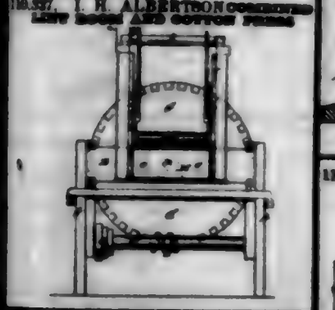


110,325. H. ACHEW. SOCKET FOR BROOM HANDLES.

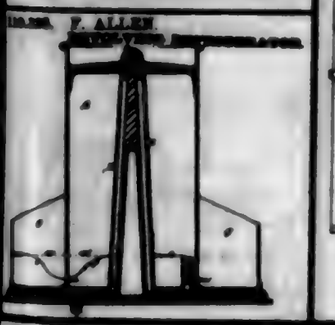


110,326. J. ADT. TWINE HOLDER.

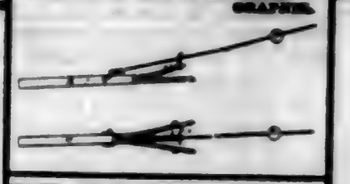
110,327. I. H. ALBERTSON. CORDAGE AND TWINE AND COTTON PRESS.



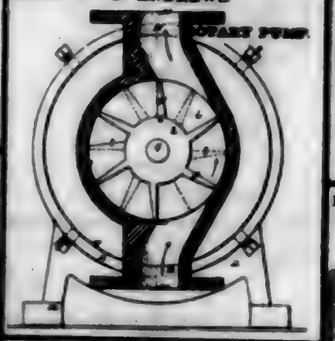
110,328. F. ALLEN.



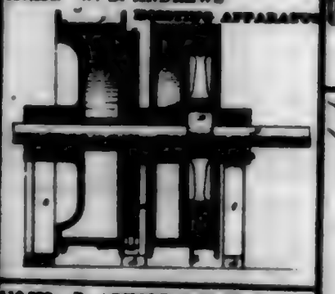
110,329. N. P. AND N. E. ALLEN. GRAPNEL.



110,330. W. D. ANDREWS. ROTARY PUMP.



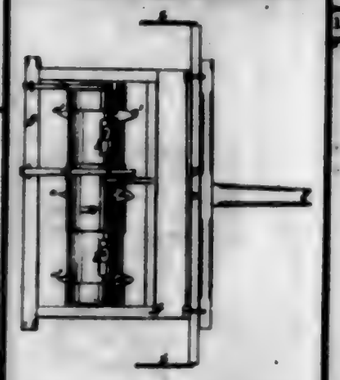
110,331. W. D. ANDREWS. SHINGLE MACHINE.



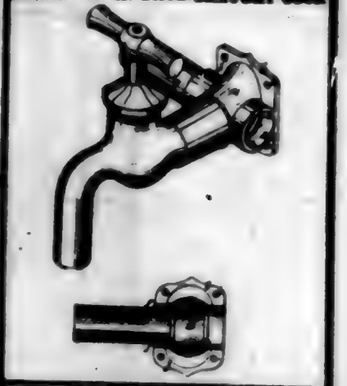
110,332. E. ARNOLD. SHIP RIVET.



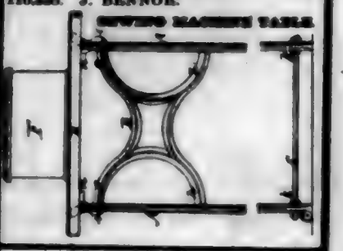
110,333. H. P. BAKER. CORDAGE LAID MACHINE AND MARKER.



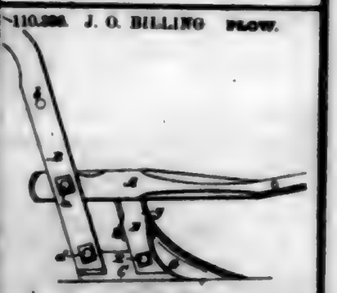
110,334. W. H. BATE. DRAUGHT GEAR.



110,335. J. BENNOR. TWINING MACHINE TABLE.



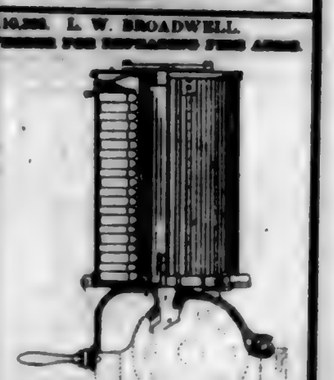
110,336. J. O. BILLING. PLOW.



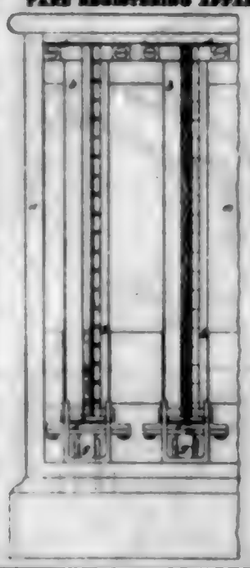
110,337. J. Y. BLACK. COTTON PRESERVING COVER.



110,338. L. W. BROADWELL. PRESS FOR SEPARATING FIBRE AND SEED.



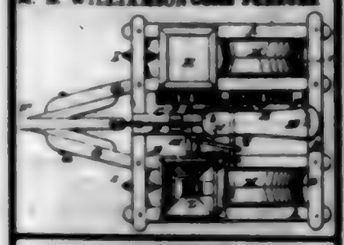
110,339 C. A. CALVERT.
FARE REGISTERING APPARATUS



110,340 J. CARTER.
SAFETY GAGE FOR FRUIT CANS.



110,341 J. T. CARTER AND M. B. WILLIAMSON CORN PLANTER.

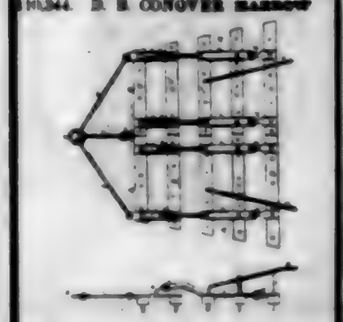


110,342 R. H. CHINN PEN.



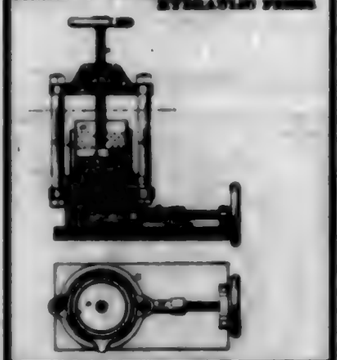
110,343 H. COLE ROOFING MATERIAL.

110,344 D. B. CONOVER HARROW

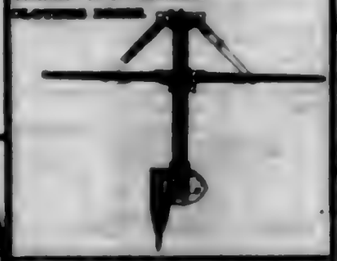


110,345 P. J. DELKER COMPOUND FOR PURIFYING MINE WATER.

110,346 J. A. DENGOFFE.
EYEGLASS FRAME.



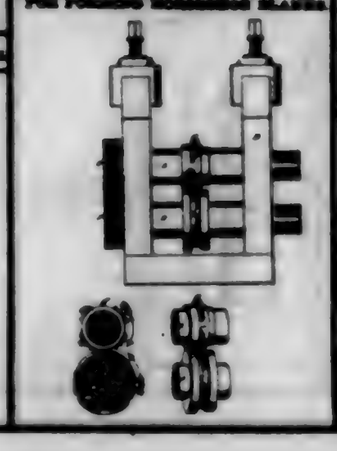
110,347 A. T. ELLIOTT



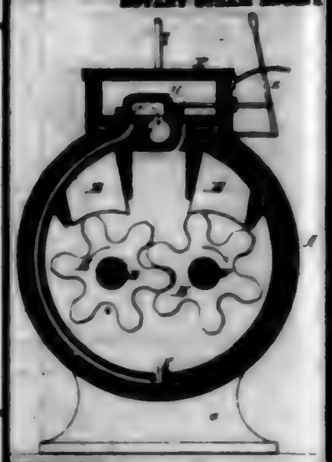
110,348 G. W. FILLMORE
SILK RECEPTACLE



110,349 C. L. FITZHUGH MOLD FOR FORMING HORSESHOE BLANKS.



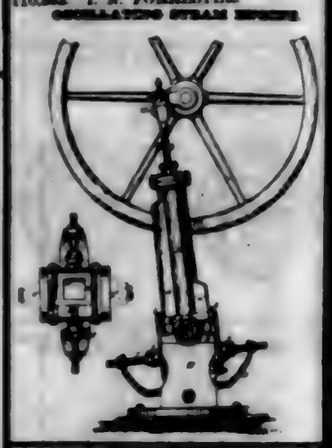
110,350 G. S. FOLLENSBEE
ROTARY STEAM ENGINE



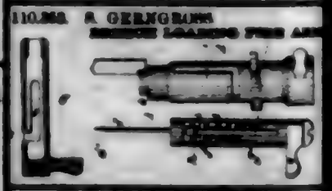
110,351 T. FOLLETT
GRAIN SIEVE AND OAT EXTRACTOR



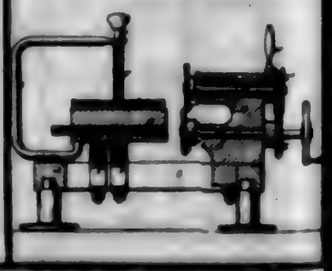
110,352 I. H. FORRESTER
OSCILLATING STEAM ENGINE



110,353 S. GERINGER
BREECH LOADING FIRE ARM

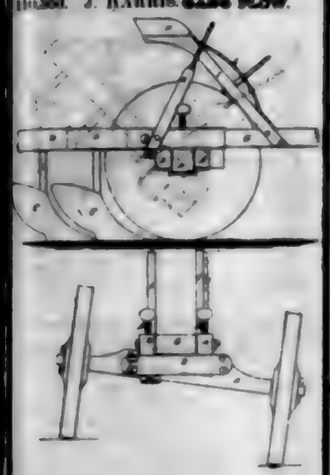


110,354 W. D. GRIMSHAW
MACHINE FOR CUTTING SCREW THREAD ON AN OVAL PIPE.

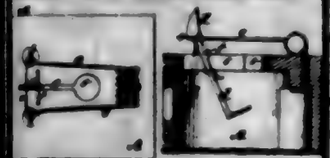


110,355 J. HAFFENEGGER
EXPLOSIVE COMPOUND.

110,356 J. HARRIS. GANG PLOW.

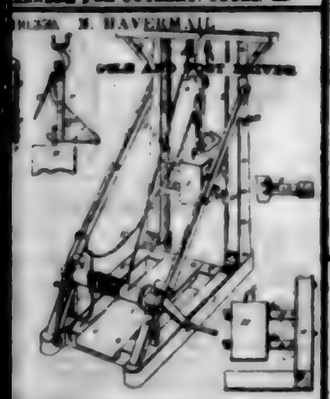


110,357 H. C. HART. MOUSE TRAP.

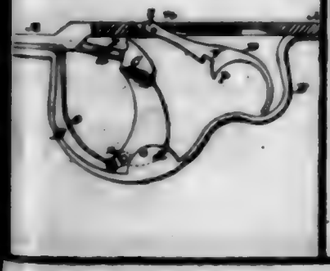


110,358 J. T. HAVILAND
HANDLE FOR CUTLERY, TOOLS &c.

110,359 N. HAVERMALE

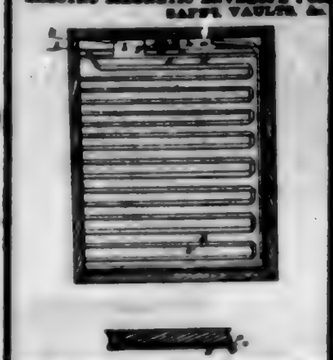


110,360 E. B. HENDEE. GUN LOCK.

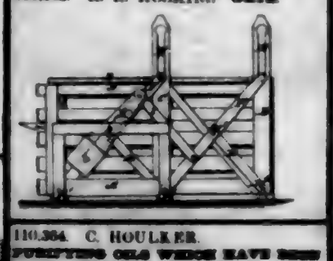


110,361 D. B. P. HILL
LUBRICATING OIL.

110,362 E. HOLMES AND H. C. BOOME
ELECTRO MAGNETIC DEVELOPE FOR SAFES, VAULTS, &c.

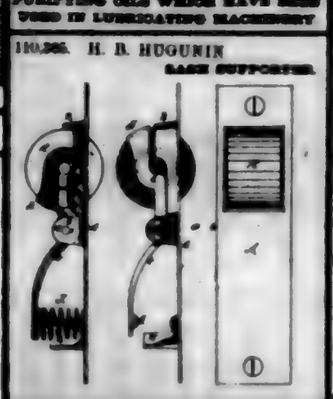


110,363 R. R. HOSKINS GATE.



110,364 C. HOULKER.
PUMPING OILS WHICH HAVE BEEN USED IN LUBRICATING MACHINERY

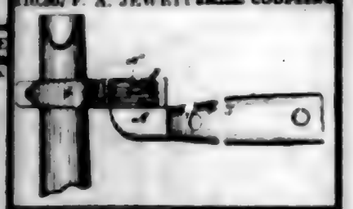
110,365 H. B. HUGUNIN
SASH SUPPORTER.



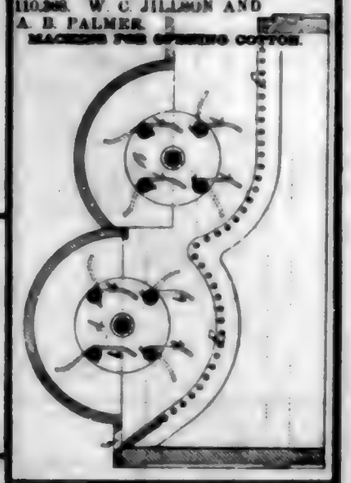
110,366 J. B. HYDE
STRAINING SEWERAGE MATTERS



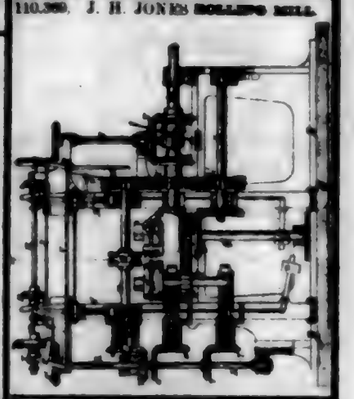
110,367 F. A. JEWETT DRILL COUPLING



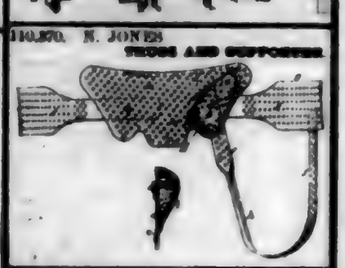
110,368 W. C. JILLSON AND A. B. PALMER.
MACHINE FOR OPENING COTTON.



110,369 J. H. JONES ROLLING MILL.



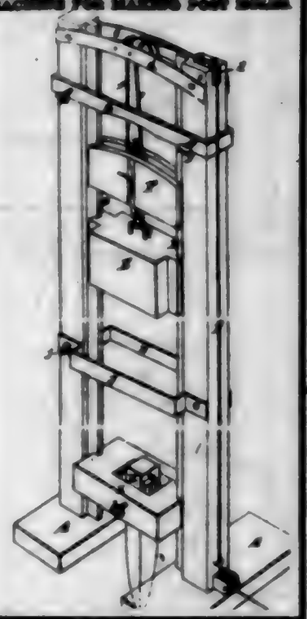
110,370 E. JONES
HOOK AND SUPPORTER



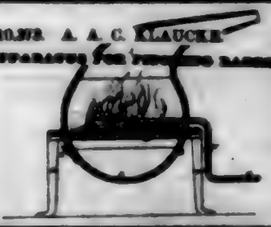
110,371 G. W. JOPE AND W. HUNTON
ROLLED BAR FOR PLOW BEAM BLANK.



110,372. J. M. KIRKPATRICK
MACHINE FOR MAKING POST HOLES.



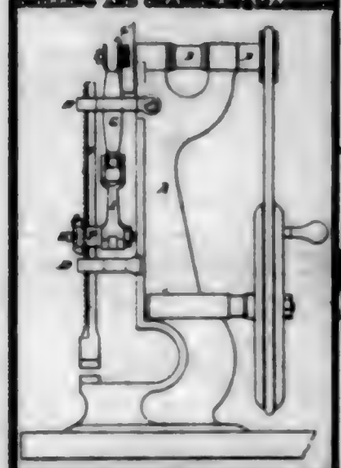
110,373. A. A. C. KLAUCKE
APPARATUS FOR [illegible]



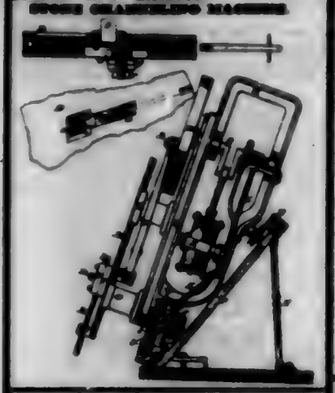
110,374. A. KOMP. HEATING
STOVE FOR [illegible]



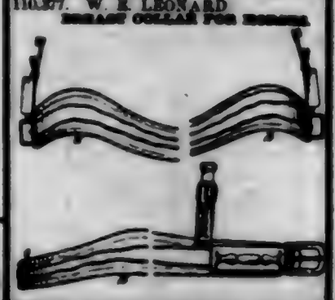
110,375. E. G. LAMSON STONE
DRILLING AND CHANNELING MACHINE.



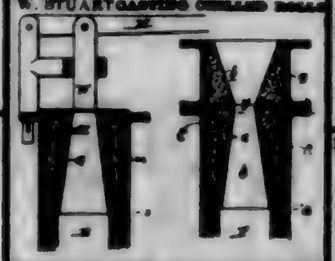
110,376. E. G. LAMSON
STONE CHANNELING MACHINE.



110,377. W. E. LEONARD
BREAST COLLAR FOR HORSES.



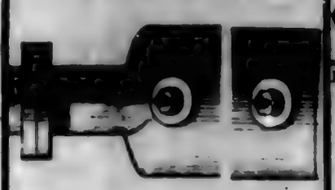
110,378 G. G. LOBDELL AND
W. STUART CASTING CURLED HOLLOW



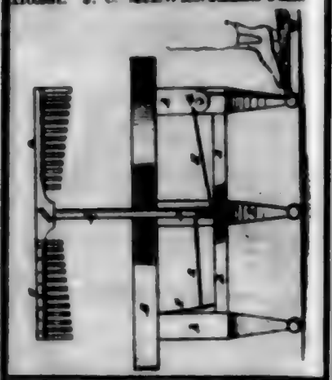
110,379 J. C. LUDLAM CASTING BOX



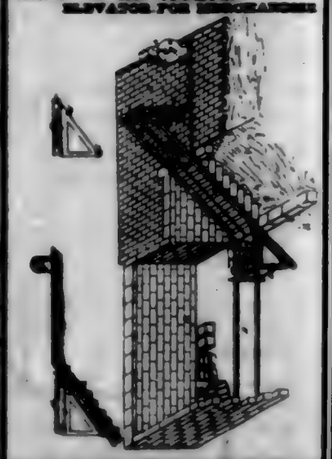
110,380. E. M. MARCHANT PUMP.



110,381. J. C. McEWAN TABLE FAN.



110,382. W. McNAUGHTEN
ELEVATOR FOR [illegible]



110,383. R. R. MOFFATT
STOVE CASTINGS.



110,384. W. MOREHOUSE
RAILWAY BAR JOINT.



110,385. F. B. MORSE METHOD OF
FORMING SLAT IRONS FOR
CARRIAGES.



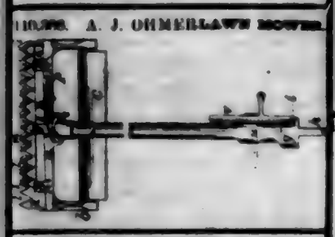
110,386. F. B. MORSE
SLAT BAR FOR CARRIAGES.



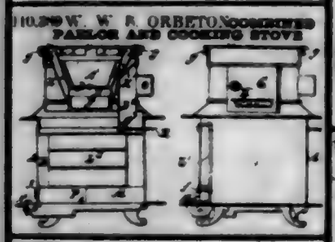
110,387. C. A. NEWTON
[illegible]



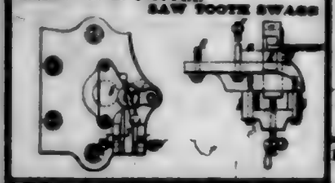
110,388. A. J. OHMERLAWN MOWER.



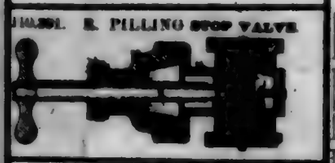
110,389 W. W. S. ORBETON COMBINED
PARLOR AND COOKING STOVE



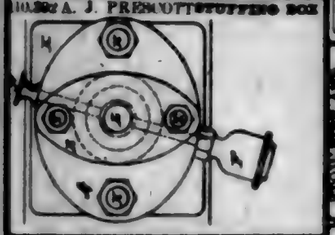
110,390. G. B. PATTEE
SAW TOOTH SWAGE



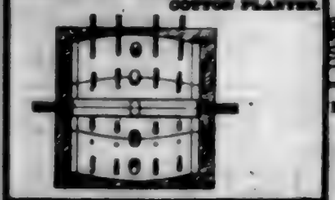
110,391. R. PILLING STOP VALVE



110,392 A. J. PRESCOTT STUFFING BOX



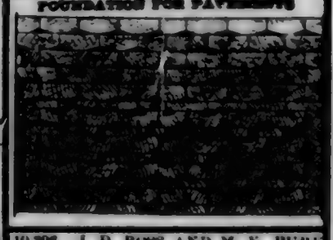
110,393. R. A. RAMSEY
COTTON PLANTER.



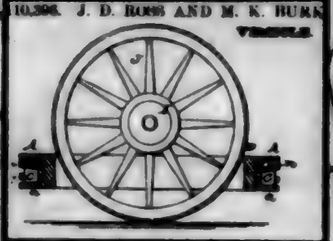
110,394. T. L. RANKIN
REFRIGERATING CAR.



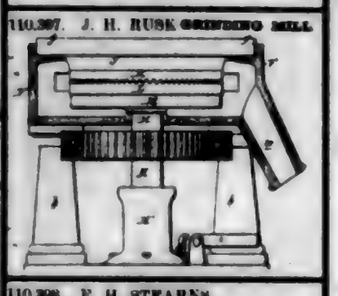
110,395. S. REEVE
FOUNDATION FOR PAVEMENTS



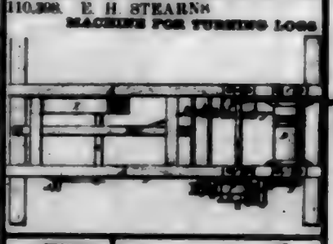
110,396. J. D. ROSS AND M. K. BURR
WHEELS.



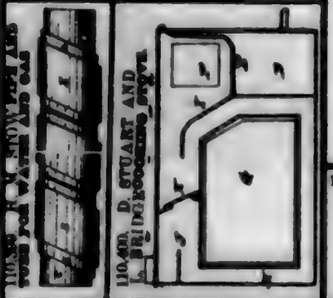
110,397. J. H. RUSK GRINDING MILL.



110,398. E. H. STEARNS
MACHINE FOR TURNING LOGS

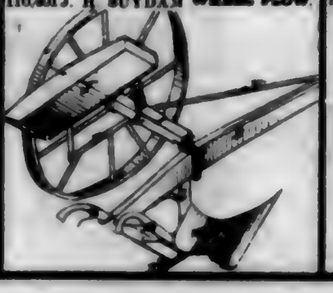


110,399. D. STUART AND
J. BRIDGEFORD, [illegible]

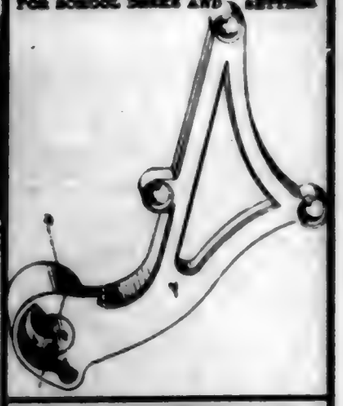


110,400. D. STUART AND
J. BRIDGEFORD, [illegible]

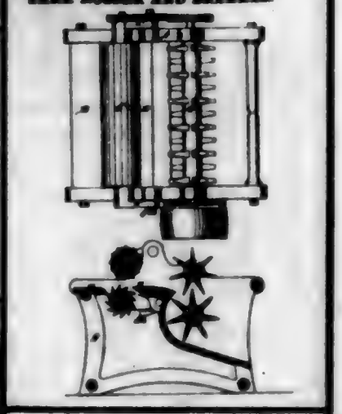
110,401 J. H. SUYDAM WEEDS, PLOW.



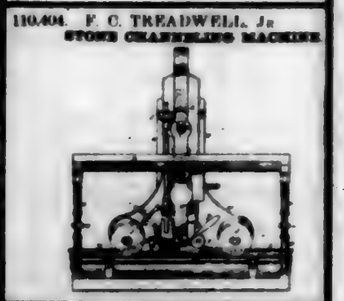
110,402. N. O. TIFFANY SEAT HINGE
FOR SCHOOL DESKS AND SETTEES.



110,403. G. S. TILLINGHAST AND
J. W. BURDWIN
BARK BOSSER AND BREAKER.



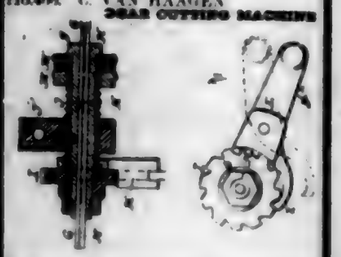
110,404. F. C. TREADWELL, Jr.
STONE CHANNELING MACHINE.



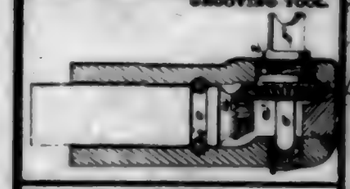
110,405. C. VAN HAAGEN.
PORTABLE DRILLING TOOL.



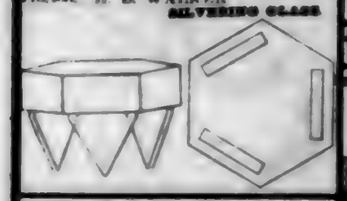
110,406. C. VAN HAAGEN
GEAR CUTTING MACHINE.



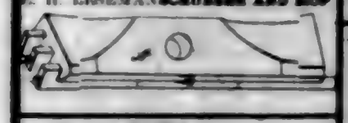
110,407. C. VAN HAAGEN. GROOVING TOOL.



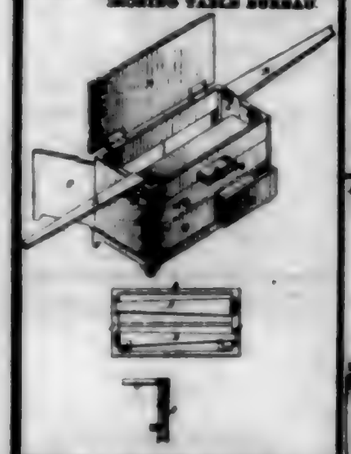
110,408. H. B. WALKER. SILVERING GLASS.



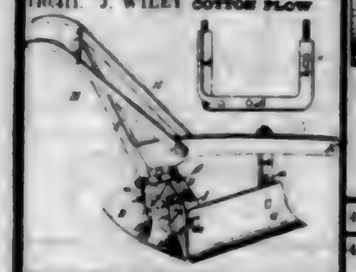
110,409. W. P. WALKER AND E. H. LISEMAN. SCRUBBER AND MOP.



110,410. M. WHITE. ROCKING TABLE BUREAU.



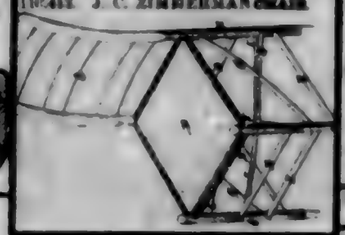
110,411. J. WILEY. COTTON PLOW.



110,412. N. WILLARD. LOCK.

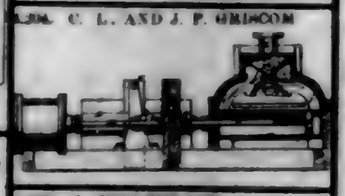


110,413. J. C. ZIMMERMAN. CHAIR.

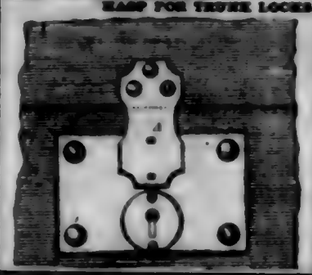


4,208. A. K. EATON. MANUFACTURE OF PAPER PULP FROM STRAW, &c.

4,209. C. L. AND J. P. GRISCOM.



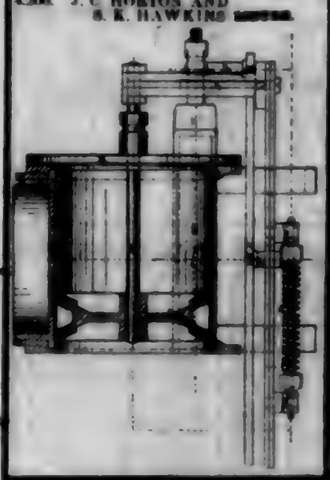
4,210. L. MILLEBRAND. HASP FOR TRUNK LOCKS.



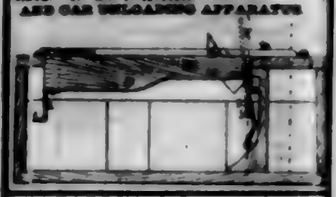
4,211. T. G. OTTERSON. PRESS JAR.



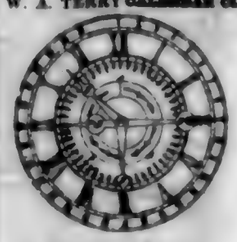
4,212. J. C. HORTON AND S. K. HAWKINS. LOOM.



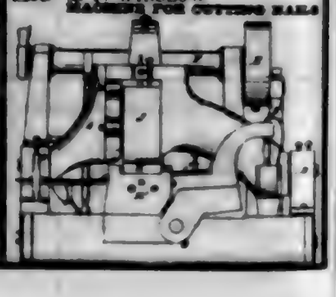
4,212. J. SWICKARD. WAGON AND CAR UNLOADING APPARATUS.



4,213. W. A. TERRY. CALENDAR CLOCK.

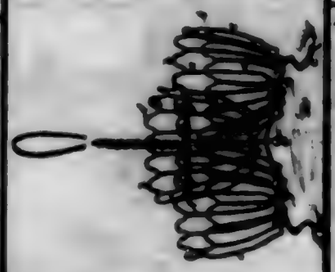


4,214. A. P. WINSLOW. MACHINE FOR CUTTING NAILS.



4,207. E. INGRAHAM. CLOCK CASE.

4,215. C. H. LATHAM. TABLE CASTOR.



4,216. C. H. LATHAM. CUP FOR CASTORS, &c.



4,210. E. D. MURPEY. MATERIAL FOR BEARINGS AND PACKINGS.

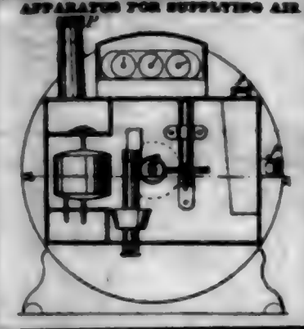
ILLUSTRATIONS OF PATENTS

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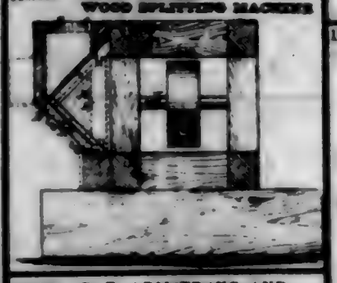
THE UNITED STATES PATENT OFFICE

DECEMBER 27, 1870.

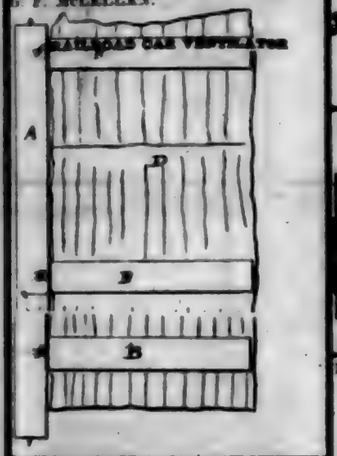
110,414. H. W. ADAMS. APPARATUS FOR SUPPLYING AIR.



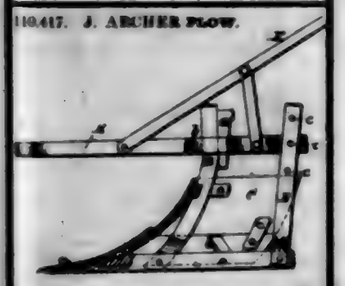
110,415. W. A. ALLEN. WOOD SPLITTING MACHINE.



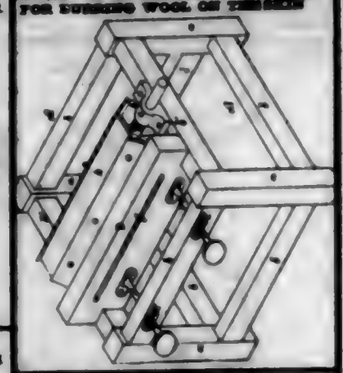
110,416. G. B. ARMSTRONG AND E. F. McLELLAN. GAS VENTILATOR.



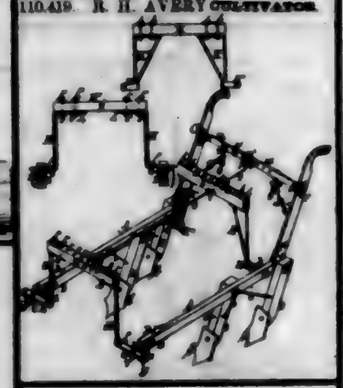
110,417. J. ARCHER. PLOW.



110,418. E. H. ASHCROFT. MACHINE FOR DRESSING WOOL ON THE SKIN.



110,419. R. H. AVERY. CULTIVATOR.



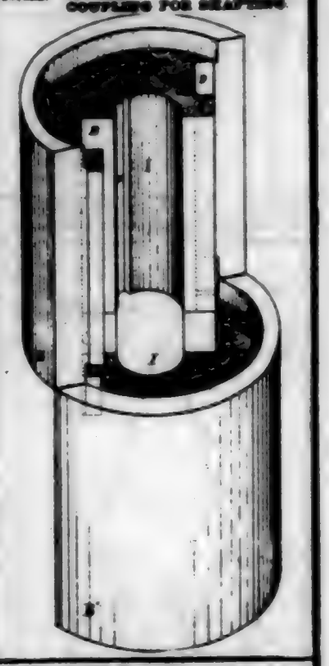
110,420. G. A. BAKRON. COFFEE POT STRAINER.



110,421. R. BATEMOUTH. FASTENING.

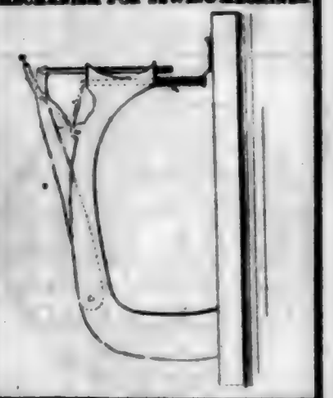


110,422. C. BEAN. COUPLING FOR SHAFTING.

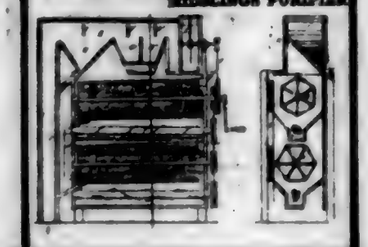


110,423. T. BENK. MEDICAL BITTERS.

110,424. W. BENNETT. TAKE UP MECHANISM FOR SEWING MACHINES.



110,425. L. G. BINKLEY. MIDDLINGS PURIFIER.



110,426. J. S. BORDEN

110,427. J. V. BOYNTON METHOD OF PRODUCING ILLUMINATING GAS.

110,428. A. BRADLEY PORTABLE FARE BOX

110,429. R. BROWN CURRY RAKE.

110,430. I. BYRD AND T. BYRD, Jr. SAW TOOTH.

110,431. D. H. CAMPBELL AND F. WOODWARD WIRE FOR MAKING FENCE FOR DOORS AND GRATES.

110,432. W. M. CANFIELD LUBRICATING COMPOUND FOR STEAM AND OTHER PACKING

110,433. W. S. CHATHAM DOOR JACK AND DOOR BUFFER.

110,434A. CLARKE UMBRELLA HOLDER

110,435. J. F. CLARKE ARTIFICIAL EARTHEN

110,436. W. R. CLOSE AXIAL RELIEVE POWER

110,437. W. T. COLE PLATE FOR SCREW CUTTING DIE

110,438. F. COLTON FOLDING CHAIR.

110,439. W. J. COWING FASTENING FOR BUCKLES.

110,440. P. D. CUMMINGS MACHINES FOR GROOVING BLOCKS FOR WOOD PAVEMENTS.

110,441A. M. CUMMINS AND H. ISREAL SELF CLEANING LOCOMOTIVE SMOKE STACK.

110,442. M. G. CUNNINGHAM PRESS FOR HAY, COTTON, &c.

110,443. J. E. DAVIS HAY AND COTTON PRESS.

110,444. J. F. DOHAN CARRIAGE WINDOW

110,445. J. W. DONALDSON GRAIN SEPARATOR.

110,446. T. DOUGHERTY SNOW PLOW FOR RAILWAYS.

110,447. J. E. FARGO COMBINED BROADCAST SEEDER AND CULTIVATOR

110,448. G. K. FARRINGTON DEVICE FOR SHOEING AND FIRE-SCREEN

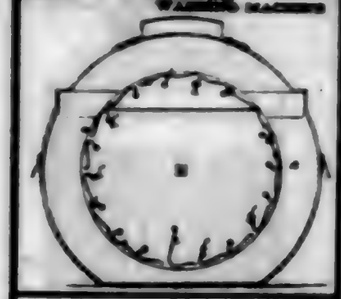
110,449. H. C. FELTHOUSEN LENS OR GLASS FOR HEAD LIGHTS

110,450. R. FERGUSON LOOMS FOR WARP BEAMS

110,451. C. M. FLINT SAW MILL

110,452. T. FOWLER SNAP ATTACHMENT FOR UMBRELLAS

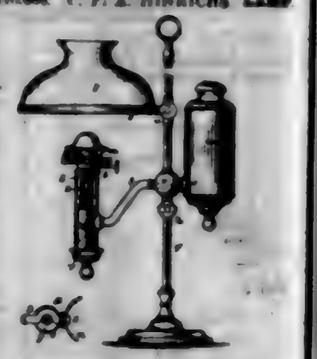
110,469. A. A. GARDNER
WASHING MACHINE



110,470. C. A. HASKELL
COOKING STOVE



110,471. C. F. A. HINRICHS
LAMP

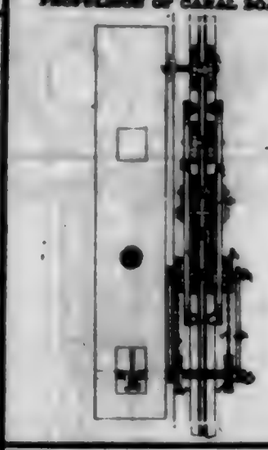


110,472. J. AND H. GRAVES
INCUBATOR

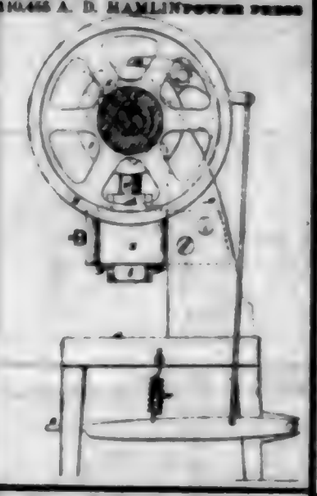


110,473. F. A. HOLCOMB
MANUFACTURE OF MATCHES

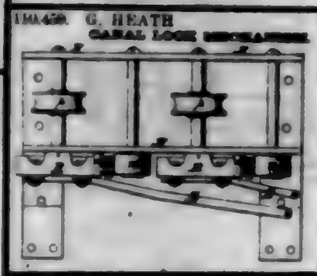
110,474. J. L. HORNIG
PROPULSION OF CANAL BOATS



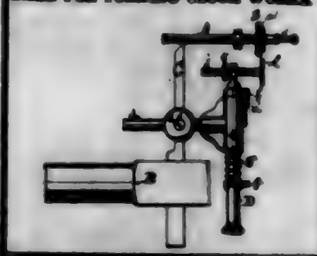
110,475. A. D. MAMLIN
POWER PRESS



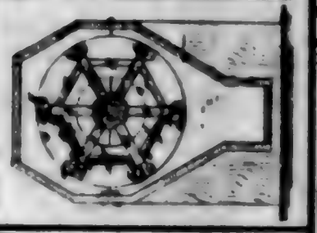
110,476. G. HEATH
CANAL LOCK MECHANISM



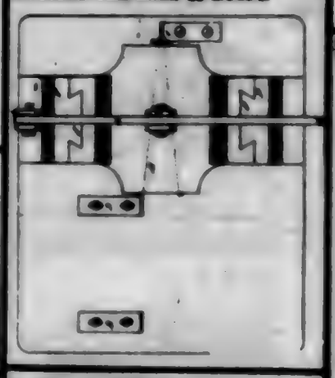
110,477. H. F. HENDERSON AND J. E. LADD
GAGES FOR TURNING CLOCK WORKS



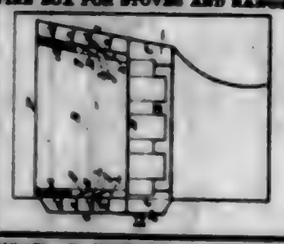
110,478. G. T. HANNA
POWER BOAT



110,479. L. N. HEWES
MACHINE FOR CUTTING THE RIMS OF SCOOPS

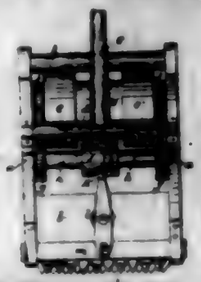


110,480. M. L. HORTON
FIRE BOX FOR STOVES AND RANGES



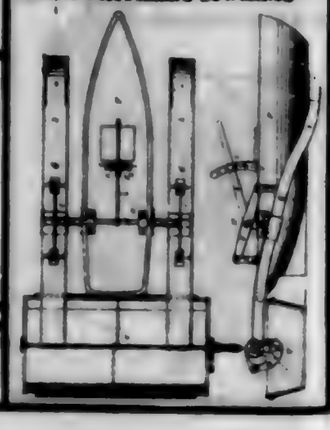
110,481. J. HUSSING
NON-CONDUCTING COMPOUND FOR COATING STEAM BOILERS

110,482. H. C. HART
LAWN MOWER



110,483. J. A. HEWETT
PROCESS OF REMOVING INCRUSTATIONS OF LIME FROM STEAM BOILERS, METALS &c.

110,484. G. HOWELL
SEWER FOR FILLING LOWLANDS

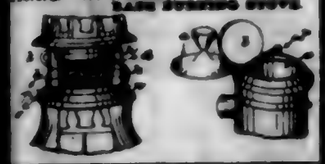


110,469. F. T. JARROLD
REVIVING OIL FROM COTTON WASTE &c.

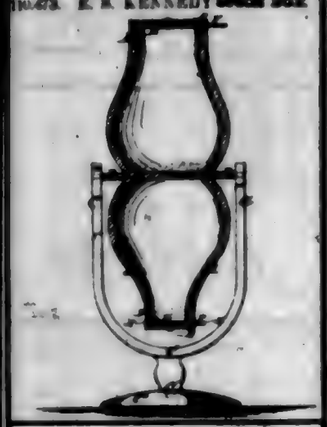
110,470. W. JENKIN
MEDICAL COMPOUND FOR CURE OF RHEUMATISM

110,471. CANCELED

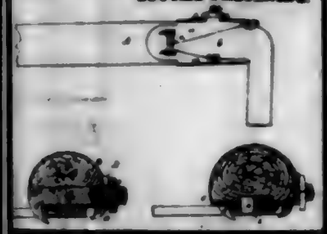
110,472. W. KAISER
GAS BURNING STOVE



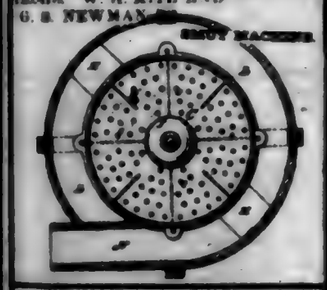
110,473. E. S. KENNEDY
SUGAR BOX



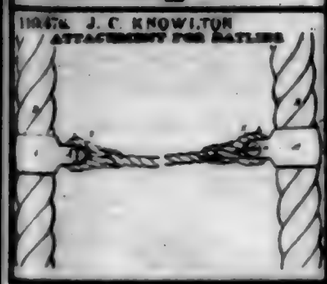
110,474. S. U. KING
BUTTON FASTENING



110,475. W. H. KITE AND G. S. NEWMAN
SHOT MACHINE



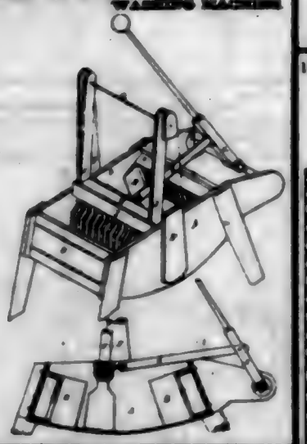
110,476. J. C. KNOWLTON
ATTACHMENT FOR HATLINES



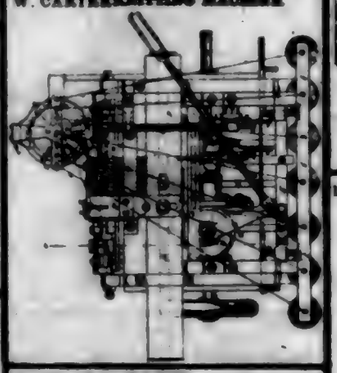
110,477. H. LAWRENCE
VINE AND WEED CUTTER



110,478. D. C. LAWSON
WASHING MACHINE



110,479. J. AND M. LEE AND W. CARTER
KNITTING MACHINE

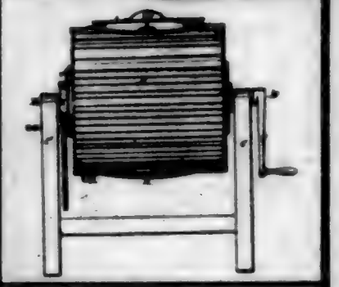


110,480. G. A. LLOYD
SPINDLE AND ITS CARRYING ARM FOR SEWING MACHINES

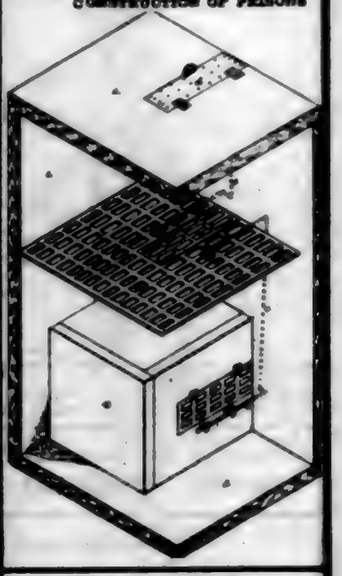


110,481. L. MARKS
COMPOUND FOR CLEANING CARPETS

110,482. M. S. MARSHALL
WASHING MACHINE



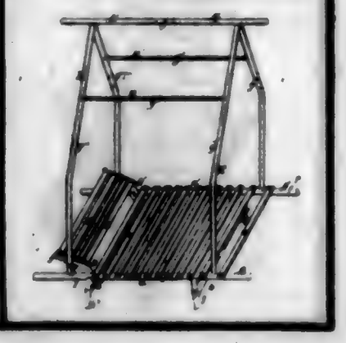
110,483. E. MAY
CONSTRUCTION OF PRISONS



110,484 P. A. MAYOR
WATER FAUCET



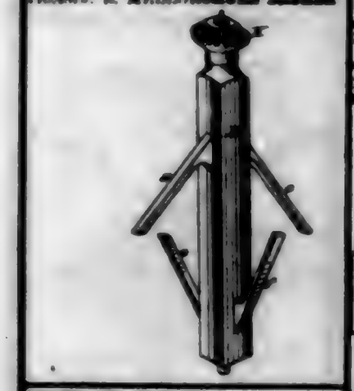
110,485. A. D. McCOY
CAMP BEDSTEAD



110,488. A. McKAY
AUTOMATIC DOOR BOLT.



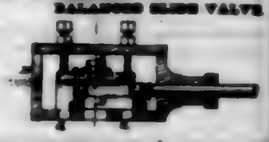
110,489. J. R. MELLOROWEN BASKIN



110,490. W. MOLLOR
FILTER TANK AND OTHER VESSELS FOR REFINING SUGAR &c.

110,491. J. MYERS Jr.
TREATING MALLEABLE IRON.

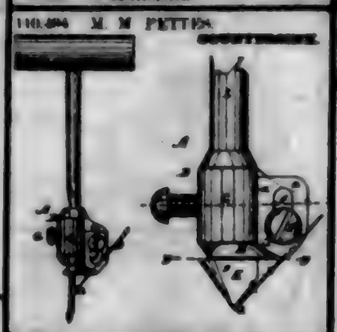
110,492. J. NESBITT
BALANCED SLIDE VALVE



110,493. W. PARK KEY FOR LOCKS

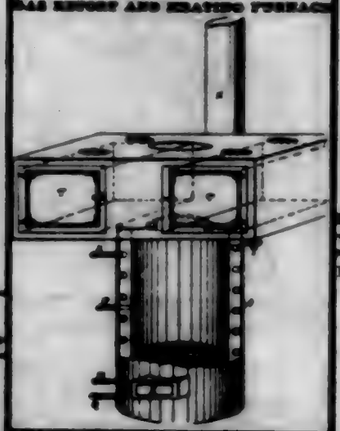


110,494. M. M. PETTES
SUSPENDING



110,495. O. H. POND
HEATING WOOL, COTTON &c.

110,496. O. H. POND
GAS REPORT AND HEATING FURNACE



110,497. A. PUTTS
RAILWAY GAS STOVE.



110,498. F. W. RANDALL



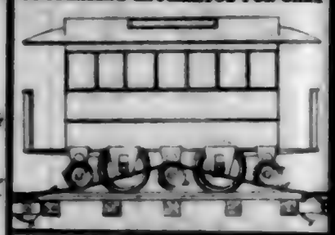
110,499. J. L. RANDOLPH DOOR STOP.



110,500. T. C. RICHARDS
RAIL FOR PICTURES



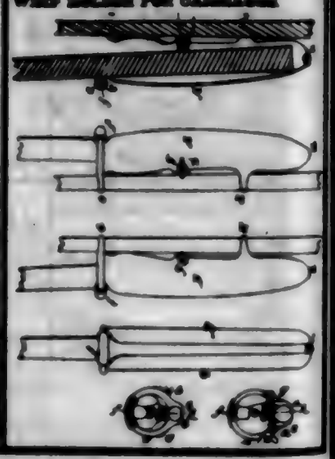
110,501. J. ROY
PROPELLING APPARATUS FOR CARS



110,502. M. S. SCHOFIELD
HANGER FOR HARROWS &c.



110,503. E. W. SCOTT
WHEEL BARROW FOR CARRIAGES

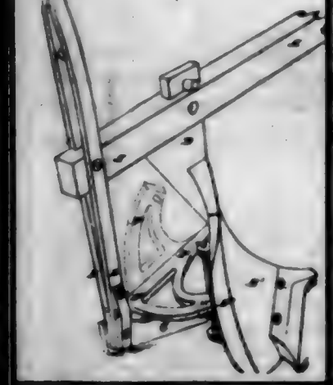


110,504. J. SIMMONS AND P. DONOHOE
PIPE WRENCH

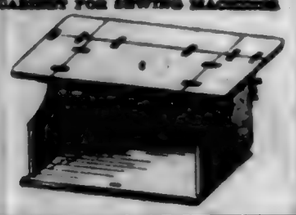


110,505. J. SMILEY
SPRING LOADED FIRE ARM

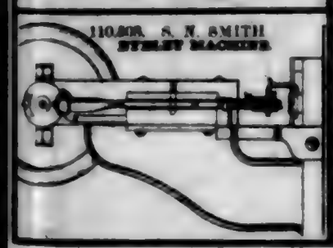
110,506. A. C. SMITH PLOW.



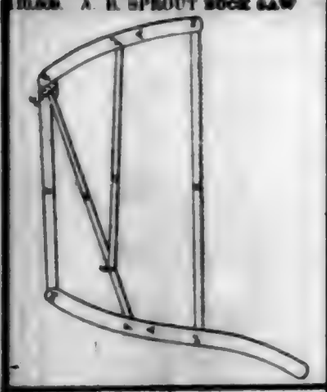
110,507. J. F. SMITH
CABINET FOR SEWING MACHINES



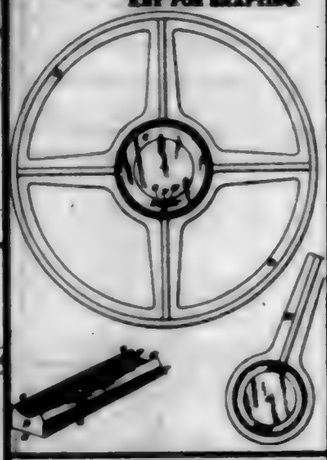
110,508. S. N. SMITH
STRAIT MACHINE



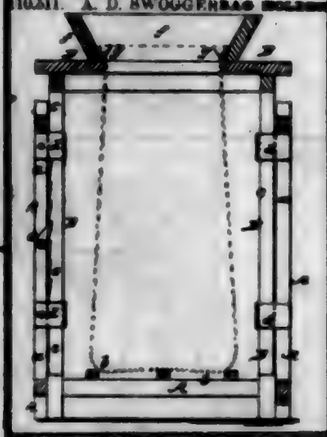
110,509. A. B. SPROUT BUCK SAW



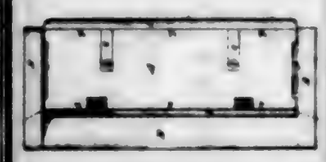
110,510. N. STEDMAN
KEY FOR SHAFTING.



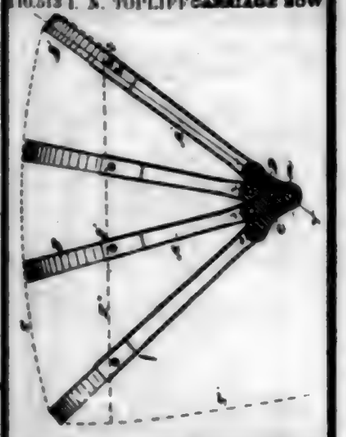
110,511. A. D. SWOOGENBAG



110,512. J. P. TIBBITS
TURN UP SEAT FOR CHURCHES &c.



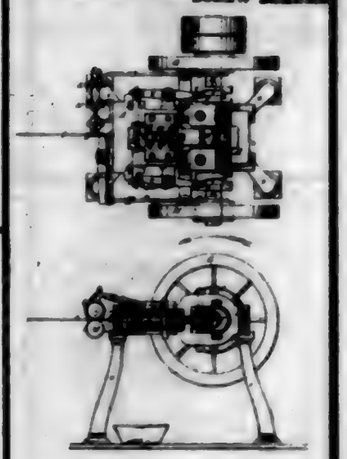
110,513 I. N. TOPLIFF CARRIAGE BOW



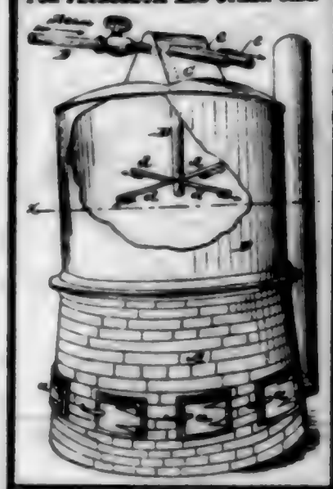
110,514. W. TRIPP POTATO DIGGER



110,515. V. DE M. UPHAM
MACHINE FOR BRANDING REVET AND SCREW BLANKS

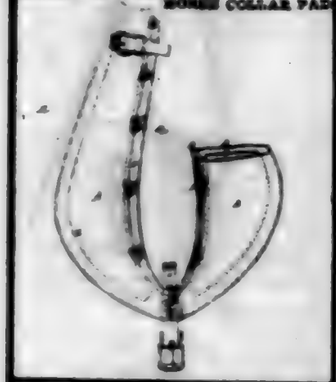


110,516. S. VAN SWEKEN STILL
FOR PETROLEUM AND OTHER OILS.



110,517 SUSPENDED

110,518. J. F. WALSH
HORSE COLLAR PAD.



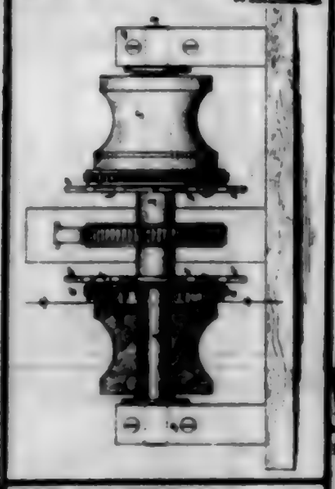
110,519. E. WARD TOY HOOP.



110,520. F. F. WARNER
AIMING MACHINE.



110,521. E. AND G. M. WATERBURY
WHEELBARROW.

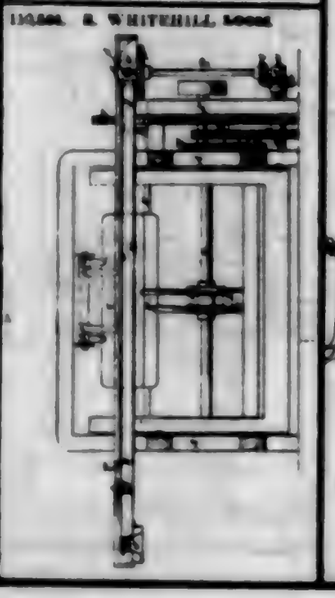


110,522. C. S. WENTZOTT
PRINTER'S INKING ROLLER.

110,523. E. WHITCOMB
ROLLER LIFTING POWER.



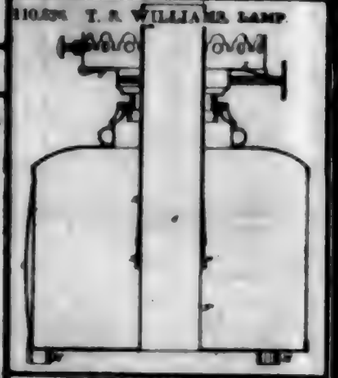
110,524. S. WHITEHILL, LOOM.



110,525 T. G. WILDER SUBSOIL PLOW



110,526. T. S. WILLIAMS, LAMP



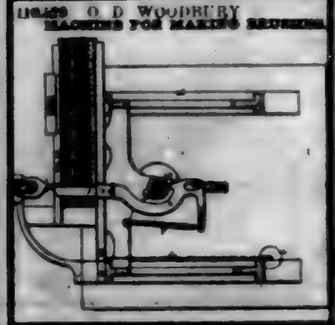
110,527. W. L. WILLIAMS
BRAT GUARD FOR BODY BORERS.



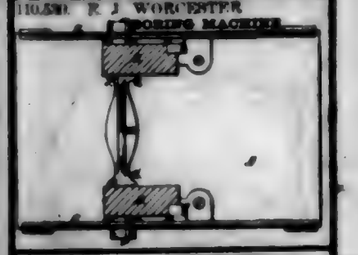
110,528. J. B. WITHEY
RUNNING GEAR FOR CARRIAGES.



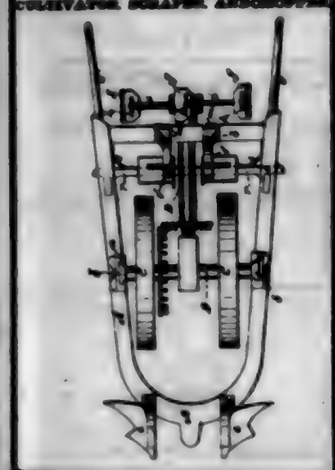
110,529. O. D. WOODBURY
MACHINE FOR MAKING SELVEDGE.



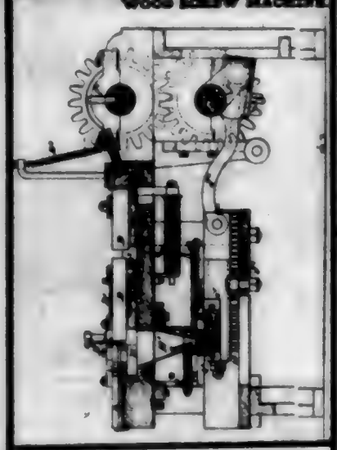
110,530. F. J. WORCESTER
BORING MACHINE.



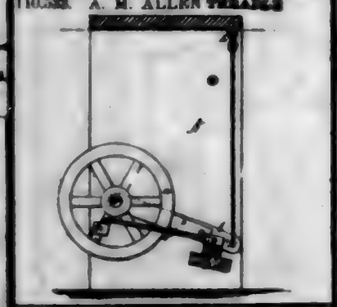
110,531. J. H. W. YOUNG COTTON
CULTIVATOR, SCRAPER, AND SCOOP.



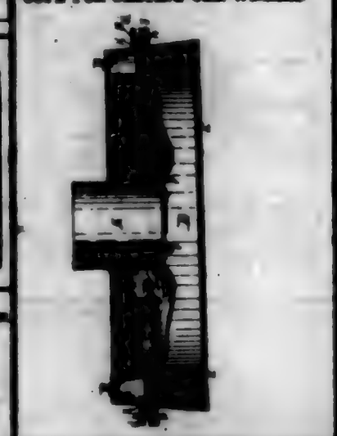
110,532. J. M. ALDEN
WOOD SCREW MACHINE.



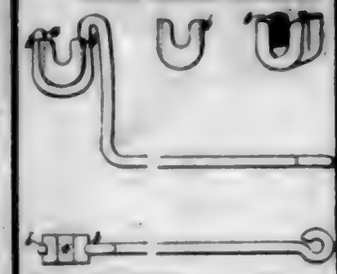
110,533. A. M. ALLEN TREADLE



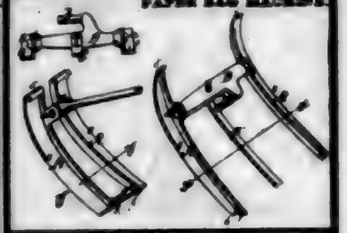
110,534. A. ALLING
CUPS FOR CASTING CAR WHEELS



110,535. W. W. ALTEMUS
TREAD GUIDE AND HOLDER FOR
SCREW WINDING MACHINES.



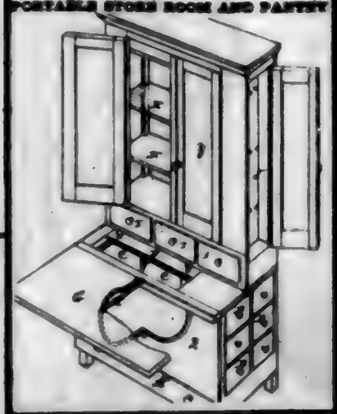
110,536. C. F. ANNAN
PAPER BAG MACHINE.



110,537C. F. ANNAN ADJUSTABLE CAM.



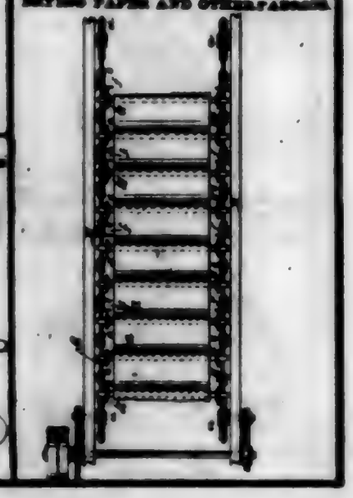
110,538. T. A. BARRELL
PORTABLE STORE ROOM AND PANTRY.



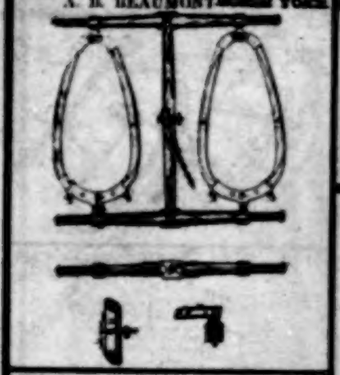
110,539. O. N. BEARD COTTON BALE TIE.



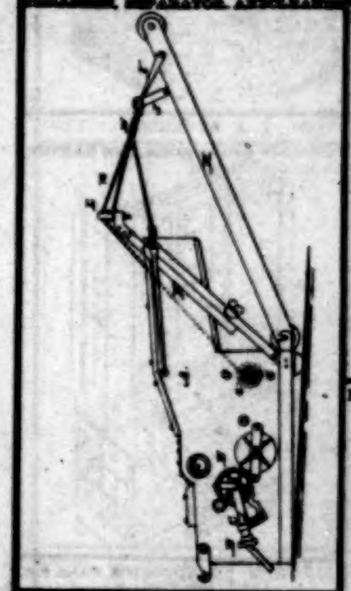
110,540. F. BECK, MACHINE FOR
MATCHING PAPER AND OTHER FABRICS.



110,541 A. B. BEAUMONT HORSE TOKE



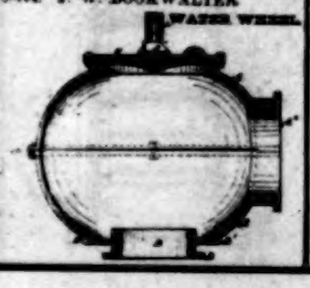
110,542. E. M. BIRDSALL GRAIN



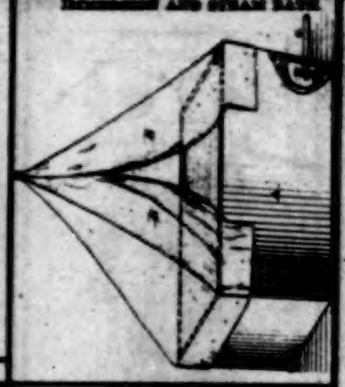
110,543. S. O. BLANDING



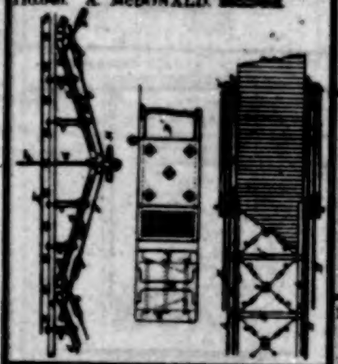
110,544. J. W. BOOKWALTER WATER WHEEL



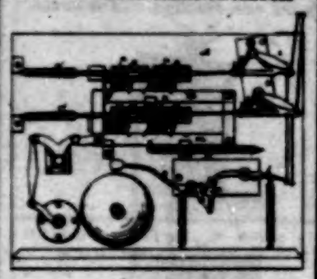
110,545. J. W. CALDWELL



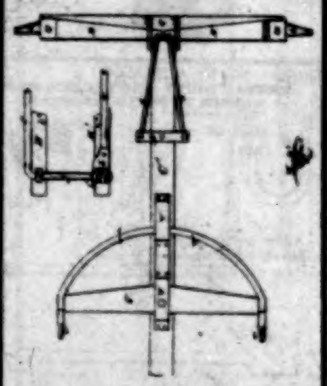
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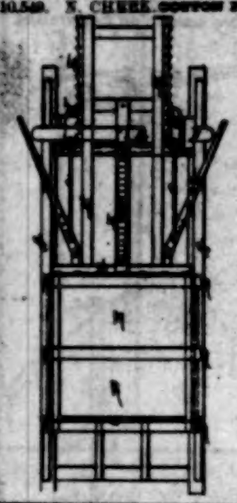
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110,548. J. H. CARLOW



110,549. S. CHEEK



110,550. J. CLIFTON PLOW.



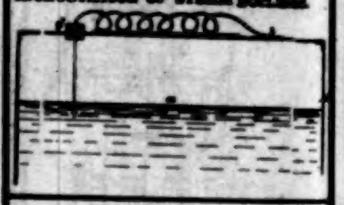
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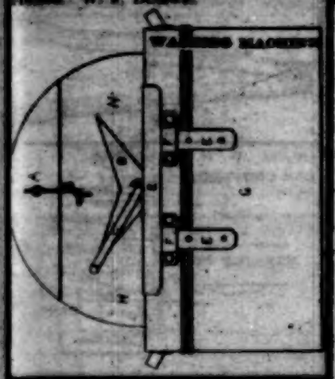
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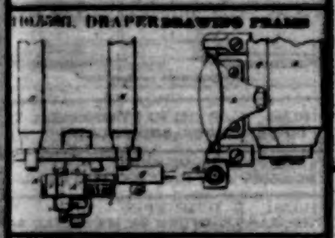
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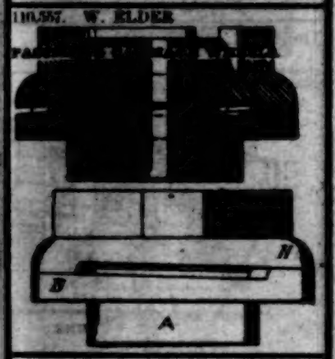
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110,556. DRAPER



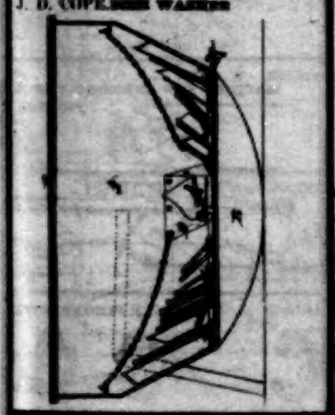
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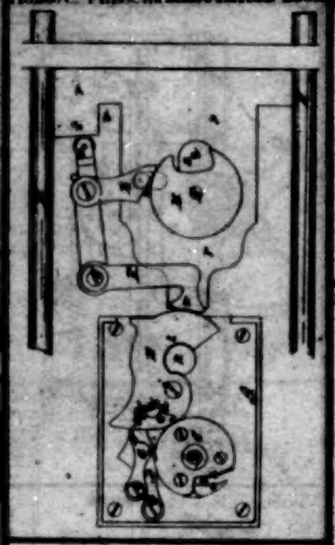
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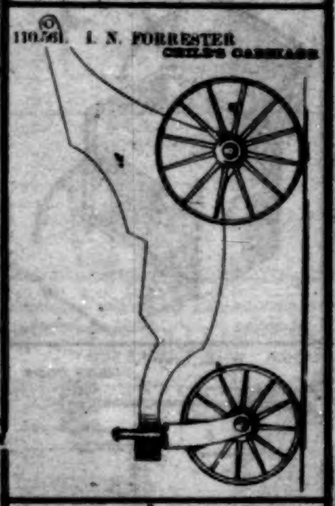
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110,560. C. FLECHTER



110,561. I. N. FORRESTER CHILD'S CARRIAGE

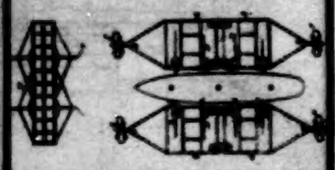


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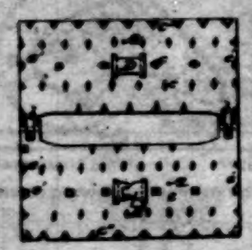
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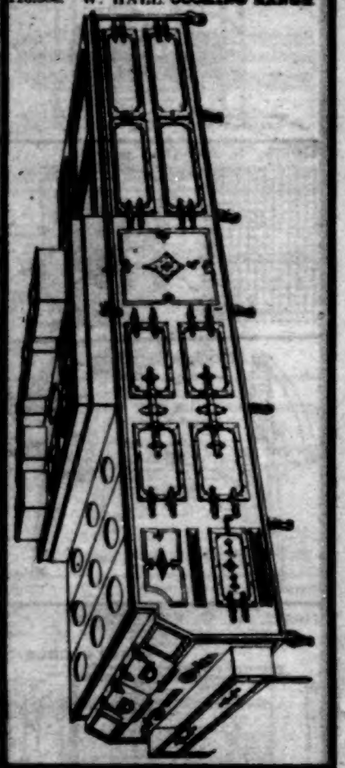
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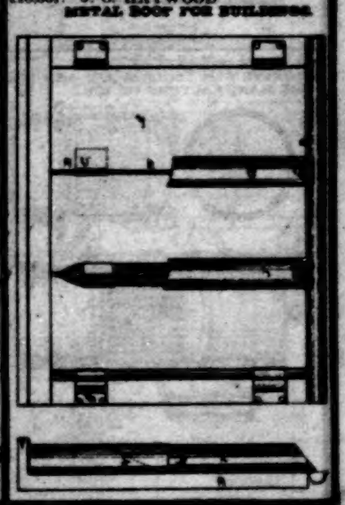
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110,566. W. HALL COOKING RANGE



110,567. J. S. HAYWOOD METAL BOOT FOR BUILDINGS

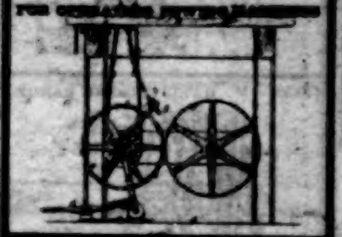


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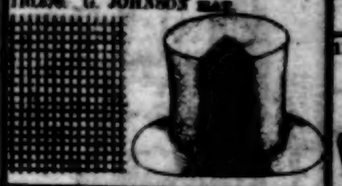
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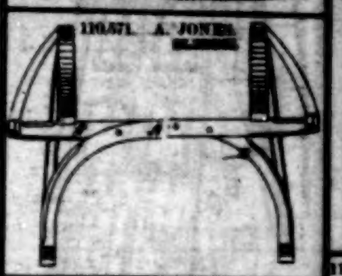
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110,570. G. JOHNSON HAT.



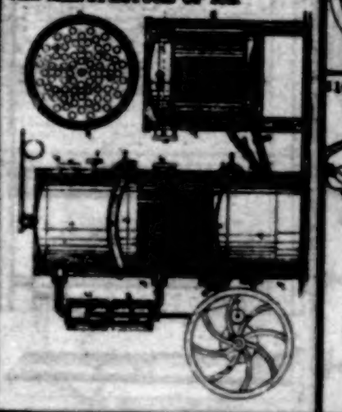
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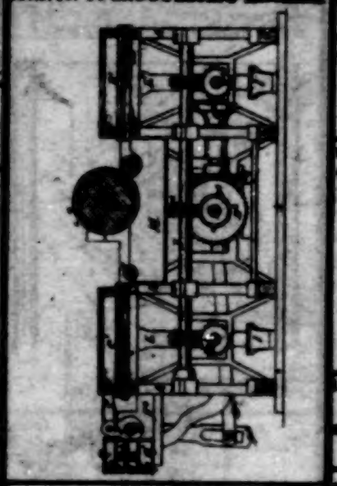
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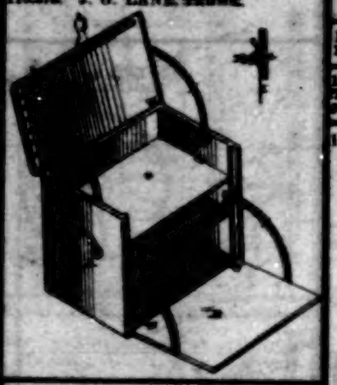
110,573. J. KRAFFERT MACHINE FOR COOLING AIR AND FOR THE MANUFACTURE OF ICE.



110,574. C. P. LADD FORGING MACHINE.



110,575. J. G. LANE SEWER.



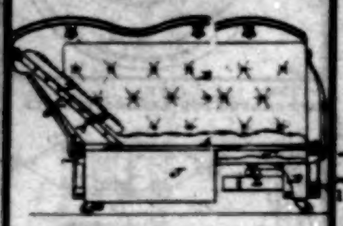
110,576. W. E. LAWRENCE CURRY COMB.



110,577. J. J. MARK BRONZING TABLE.



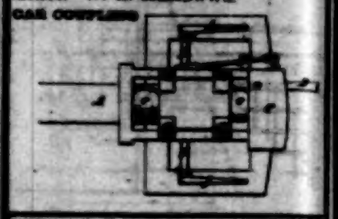
110,578. M. MARSO FORGING LOOPER.



110,579. L. MATHEW ARMS SOCKET.



110,580. W. H. MEADOWS GAS COUPLING.



110,581. F. B. MORSE CARRIAGE CLIP

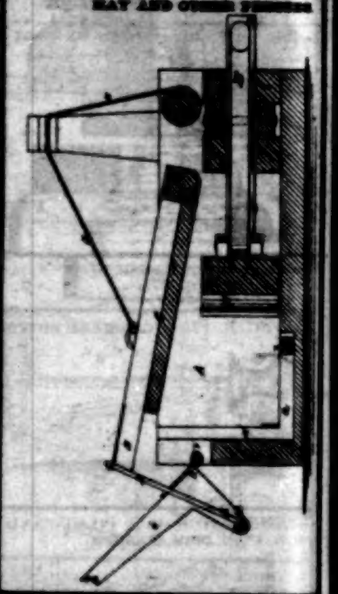


110,582. E. D. MURFEY MATERIAL FOR BRAIDING AND PACKINGS

110,583. E. D. MURFEY BRAIDING AND PACKING MATERIAL

110,584. E. D. MURFEY MEANS MANUFACTURE OF MATERIAL FOR PACKING BRAIDING AND PACKINGS

110,585. M. V. NORTHRUP HAT AND CURING FURNACE



110,586. W. AND J. F. NUELLE MACHINES FOR BRONZING PIANO FRAMES



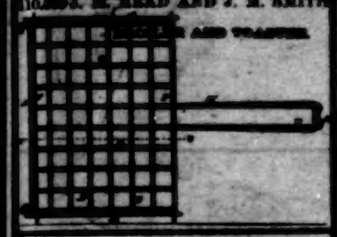
110,587. J. S. PALMER PIANO RING.



110,588. H. PRATT COOKING STOVE.



110,589. E. H. READ AND J. M. SMITH AXLE AND TRAMMEL.



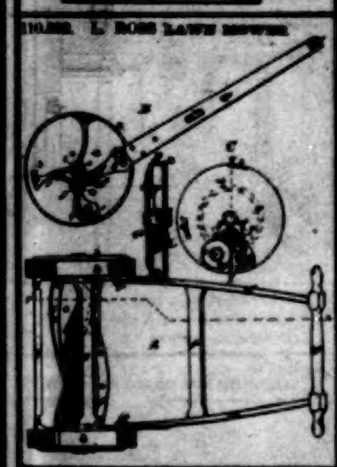
110,590. F. W. REINSMAGEN DRAFT COUPLING.



110,591. D. T. ROBINSON LAMP WICK.



110,592. L. ROSS LAWN MOWER.



110,593. C. SCHIECK COOKING APPARATUS.



110,594. W. SELPH TOBACCO PIPE.



110,595. S. H. SHEPLAR AND W. G. CONKLIN SEED DROPPER.



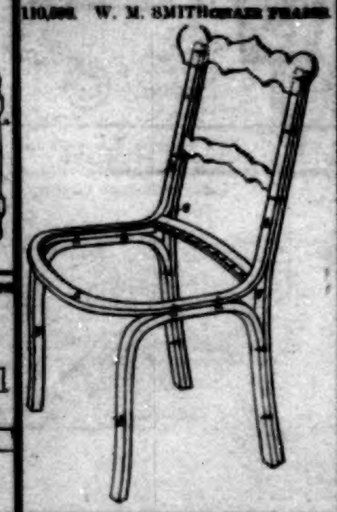
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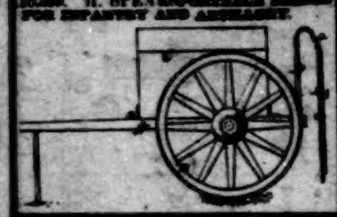
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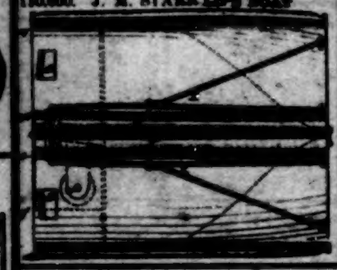
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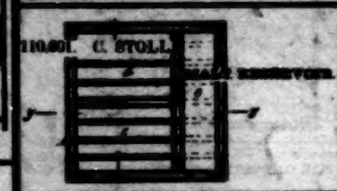
110,599. H. SPEARBRAKE SHIELD FOR INFANTRY AND ARTILLERY.



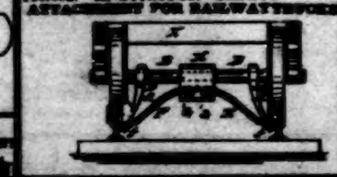
110,600. J. M. STARR LIFE BOAT.



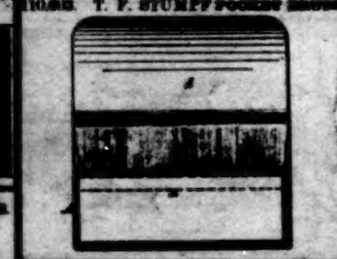
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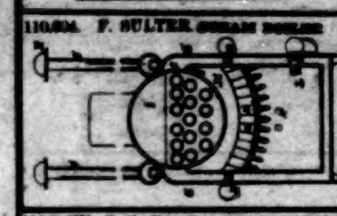
110,602. A. STRAUSS. SAFETY ATTACHMENT FOR RAILWAY TRUCKS.



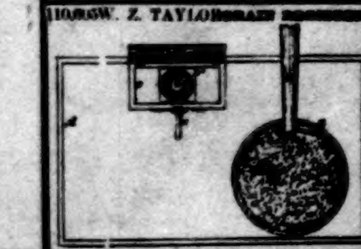
110,603. T. F. STUMPF FOLDING SEWER.



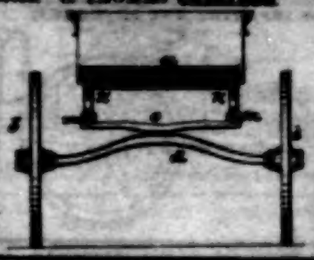
110,604. F. SULTER GRAIN BINDER.



110,605. W. Z. TAYLOR GRAIN BINDER.



10,608. G. THOMAS CARRIAGE.



10,609. W. TREDENICK CROSSING SWEEP.



10,610. S. S. WALBANK COMPOUND FOR TREATING LEATHER.

10,611. A. WARTH TAP FOR OIL PACKAGES.



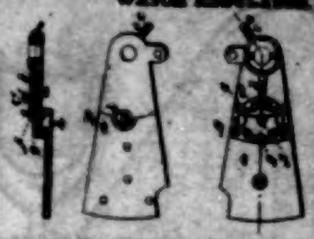
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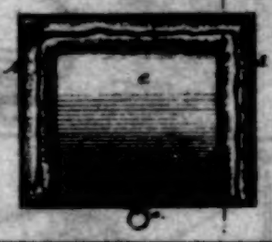
10,613. M. M. WELLS GRAIN RAKE.



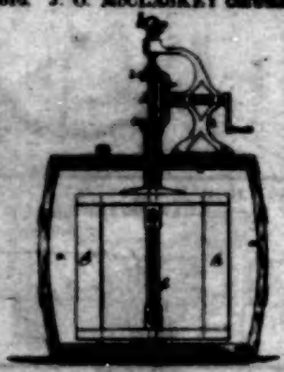
10,614. C. V. WOERD WATER REGULATOR.



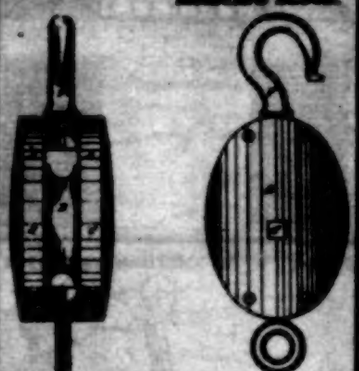
10,615. C. W. FRAZER PIPE CUT BOX.



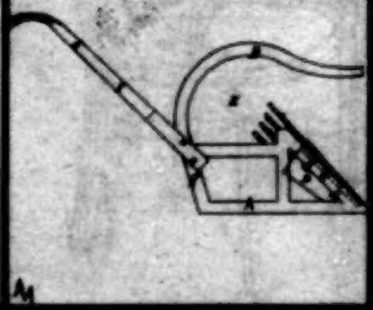
10,616. J. O. McCLASKEY CHURN.



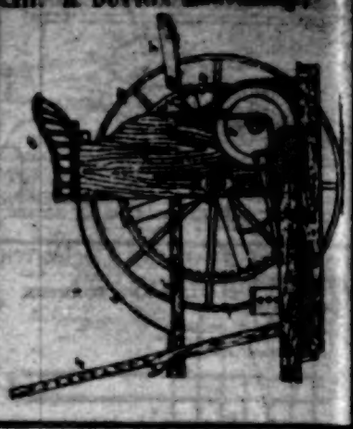
3,215. A. BURR, assignor to Burr & Co. REMOVING BLADE.



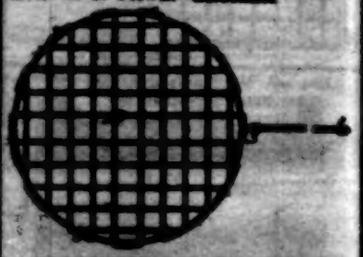
4,214. M. DICK, assignor to himself and W. H. ALLEN. SHOVEL PLOW AND POTATO DIGGER COMBINED.



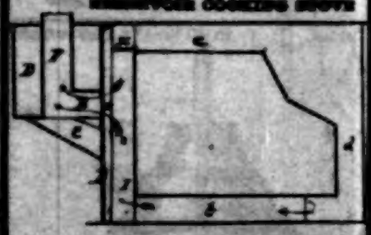
4,217. B. DUTTON



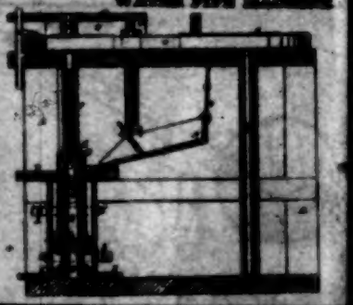
4,218. J. T. PAGE.



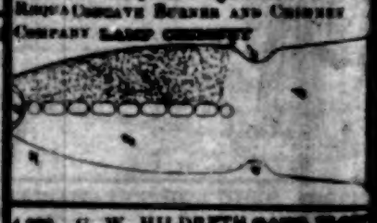
4,219. G. H. PHILLIPS. REMOVABLE COOKING STOVE.



4,220. J. W. STUCKWELL. WATER PIPE MACHINE.



4,221. R. REQUA, assignor to THE REQUA ONDRAVE BURNER AND CHIMNEY COMPANY. LAMP CHIMNEY.



4,222. G. W. HILDRETH GRAIN DRIER.



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